INTRODUCTION

Saint Kitts (also called Saint Christopher) and Nevis is located in the northern part of the Leeward Islands chain in the Caribbean. Saint Kitts has a land area of 176.12 km$^2$ (68 sq. mi.) and Nevis has a land area of 93.2 km$^2$ (36 sq. mi.), making the country's total land area 261 km$^2$. The islands are separated at their closest points by a three-km channel.

Saint Kitts became Great Britain's first colony in the West Indies with the founding of a settlement on the island in 1623. The country gained its independence in 1983. It is a sovereign democratic state, although the Queen of England remains the titular head of State and is represented in the country by the Governor-General. The Constitution of Saint Kitts and Nevis provides for a federal system of government with its seat in Basseterre, the country's capital. The federal government is responsible for
foreign affairs, national security, and justice and for the domestic affairs of the island of Saint Kitts. The Constitution gives the Nevis Island Administration autonomous responsibility for the domestic affairs of Nevis. Saint Kitts and Nevis is a member of the Organization of Eastern Caribbean States and cooperates with the other members in areas such as economic policy, defense, international diplomacy, and, in the health sphere, pharmaceutical procurement.

Saint Kitts and Nevis is an upper-middle-income country. However, the country is vulnerable to external shocks and natural disasters, as evidenced by the effects of the recent global economic downturn and the hurricanes that have struck the Caribbean in the past few years. The country’s real gross domestic product (GDP) grew by 4.0% in 2006, 3.1% in 2007, and 4.6% in 2008. However, growth turned negative in 2009 (−9.6%) and 2010 (−4.2%), largely as a result of the slump in the global economy (1).

The population grew steadily over 2001–2010 (see Figure 1). In 2001 it numbered 46,000; projections for 2010 were 52,000 (2).

Ministry of Health unpublished documents indicated that in 2006–2010, the average number of live births per year was 693, a decline of 5.7% from 736 in 2001–2005. There was minimal change in the number of live births between 2006 (662) and 2010 (656). However, the crude birth rate increased during the period, rising from 13.2 per 1,000 population in 2006 to 14.4 in 2009, with a low of 12.6 in 2010. The crude death rate was 7.5 per 1,000 population in 2006 and 7.0 in both 2007 and 2008. In 2009, the rate declined to 6.8, but in 2010 it returned to the 2006 level of 7.5 (Table 1). Life expectancy was 74.4 years in 2010 (males, 72; females, 76.8). That figure compares favorably with the 2006 figure of 73 years. The total fertility rate declined from 2.3 children per woman in 2009 to 1.85 in 2010.

The use of information and communications technology increased during the period. The number of people with cell phones rose from 128.49 per 100 population in 2006 to 161.44 in 2010. Internet users increased from 28.13 per 100 population in 2006 to 32.87 in 2009. At the same time, the number of people with telephone landlines decreased from 41.46 per 100 in 2006 to 39.31 in 2010 (3).

**FIGURE 1. Population structure, by age and sex, Saint Kitts and Nevis, 1990 and 2010.**

The population increased 19.8% between 1990 and 2010. In 1990, the population structure presented an irregular pyramidal shape that narrowed and was relatively similar among age groups older than 40 years. By 2010, the pyramidal shape shifts toward older ages, with relative similarity among age groups younger than 55 years. Fertility and mortality have been relatively low in the intervening decades, showing a steeper decrease in the last decade and a half.


* Each age group’s percentage represents its proportion of the total for each sex.
Health conditions in Saint Kitts and Nevis are favorable to human development. Several factors have contributed to improvements in the population’s health. The country has embraced the primary health care approach, with its strategies of community participation, health promotion, and intersectoral collaboration, and has ensured that health care is accessible and affordable to the population, which has barrier-free access to government services spanning the range from prevention to palliation. The country has had much success in addressing the health-related Millennium Development Goals. Life expectancy is high, infant mortality is low, and maternal mortality is virtually nonexistent.

**HEALTH DETERMINANTS AND INEQUALITIES**

A national survey of living conditions (4) conducted in 2007 estimated the poverty line$^1$ on Saint Kitts to be EC$ 7,329$ (US$ 2,714) per year and that of Nevis to be EC$ 9,788$ (US$ 3,625), while the indigence line$^3$ was estimated at EC$ 2,595$ (US$ 961) and EC$ 2,931$ (US$ 1,086) per adult per year for the two islands, respectively. The “vulnerability line”—which measures the number of persons who, while above the poverty line, are at risk of becoming poor if some adverse situation affects them—is 125% of the poverty line (i.e., 25% above it). The vulnerability line for Saint Kitts was estimated at EC$ 9,161$ (US$ 3,393) and for Nevis at EC$ 12,235$ (US$ 4,531).

The country poverty assessment (4) revealed a national poverty rate of 21.8%. Poverty declined on both islands over 2000–2007 (see Table 2). Over the same period, indigence also declined from 11% to 1.4% on Saint Kitts and from 17% to 0% on Nevis. Children and female-headed household were more vulnerable to poverty than other groups. The assessment showed that 13.5% of households were living below the poverty line. Remittances accounted for over 30% of income among the poorest 20% of the population of Saint Kitts. The parishes with the highest poverty levels on Saint Kitts were Saint John (20.9%) and Saint George-Basseterre West (18%) and on Nevis, Saint John (39.3%) and Saint George (19.7%).

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$^1$ The poverty line is defined as the minimum annual consumption expenditure, in dollar terms, needed to meet the basic food and non-food requirements of an average adult, at existing prices (Kairi Consultants Limited, 2009).

$^2$ One East Caribbean dollar (EC$) is fixed at 2.7 per US$ since 1976.

$^3$ The cost of a basic basket of goods selected in such a way as to maximize nutrient intake at the lowest possible cost. Households unable to meet the cost of obtaining this basket of food items are indigent.
Poverty reduction was a priority for the Government during the period. Twenty percent of gross domestic product (GDP) was devoted to social safety, health, and education programs, including a number of social assistance programs targeting the poor and vulnerable. The country poverty assessment estimated the overall unemployment rate in 2007 at 5.1%. Unemployment was highest (14.3%) in the poorest quintile of the population, and the rate was higher on Saint Kitts than on Nevis (6.3% versus 1.5%). Fewer males than females were unemployed on both islands: 6.0% for males and 6.6% for females on Saint Kitts and 1.4% for males and 1.6% for females on Nevis.

The country has attained Millennium Development Goal 2 (achieve universal primary education). The Education Act of 1975 (updated in 2005) mandates compulsory school attendance from 5 to 16 years of age. Data from UNESCO’s Institute of Statistics show that in 2009, 38% of children up to 2 years old participated in formal early-childhood education programs and 76% of children 3–5 years old were enrolled in primary education. Gross primary enrollment was 94% and net enrollment was 89%, 90% for girls and 88% for boys. In terms of secondary school, gross enrollment was 99% and net enrollment, 90% for that same year. Primary, secondary, and tertiary education, including at the Clarence Fitzroy Bryant College, is free in Saint Kitts and Nevis. The adult (age 15+) literacy rate is almost 97%. Tertiary institutions (one on each island) provide education and training in academic, technical, and professional disciplines. Diploma and associate degree programs are available through the University of the West Indies and other institutions.

### THE ENVIRONMENT AND HUMAN SECURITY

#### ACCESS TO CLEAN WATER AND SANITATION

More than 99% of the population has access to improved water sources and sanitation facilities. The country poverty assessment for 2007–2008 reported that 83.5% of the population had a water piped to their dwelling and 9.7% to their yards; 85.4% indicated that they had a water supply seven days per week. In 2000, the Caribbean Development Bank approved a loan of US$ 8.4 million and a grant of US$ 0.34 million for a project to enhance the capacity of the water supply network on the island.

#### SOLID WASTE

The Solid Waste Management Corporation is responsible for the management of solid waste on both islands. The average volume of waste generated daily was 120 metric tons on Saint Kitts and 21 metric tons on Nevis.

#### DEFORESTATION AND SOIL DEGRADATION

The islands are mountainous in the center, with peaks rising to 3,700 feet, then the topography tapers to sea level. Forests cover 42.3% of the surface area. No human activity is permitted above the 1,000-foot level. No deforestation occurred during the period. However, soil erosion has become an issue since the demise of the sugar industry in 2005. The industry used earthen drains to divert heavy rainwater runoff into the cane fields. The cessation of this activity is causing more silt to flow through residential areas and major roads to the sea.

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**TABLE 2. Poverty rates (%), by year and island, Saint Kitts and Nevis, 2000 and 2007.**

<table>
<thead>
<tr>
<th>Poverty indicators</th>
<th>Saint Kitts</th>
<th>Nevis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty headcount index&lt;sup&gt;a&lt;/sup&gt;</td>
<td>30.5</td>
<td>23.7</td>
</tr>
<tr>
<td>Indigence level</td>
<td>11.0</td>
<td>1.4</td>
</tr>
</tbody>
</table>

<sup>a</sup> The poverty headcount index is the percentage of the population living in households whose adult-equivalent per capita consumption falls below the poverty line. In other words, it is a measure of the prevalence of poverty. Unlike per capita consumption, which is measured at the household level as total household expenditure divided by the number of household members, adult equivalence measures the total number of equivalent adults in the household (Kairi Consultants Limited, 2009).
**Air Pollution**

Based on data from the United Nations Economic Commission for Latin America and the Caribbean (ECLAC), the level of carbon dioxide emissions was estimated to be 235,000 tons in 2006 and 249,000 tons in 2007 and in 2008 (6).

**Disasters**

Saint Kitts and Nevis is susceptible to hurricanes. Hurricanes Omar and Earl affected the country in 2008 and 2010, respectively. Omar caused damage to the Four Seasons Resort, the largest tourism resort on Nevis, which remained closed for two years, resulting in 600 job layoffs on an island of 12,000 persons. Omar’s impact on the country’s balance of payments was estimated at US$ 19 million—about 3.5% of GDP (7). Disaster plans have been developed and training in disaster management was conducted for Ministry of Health first responders, nurses and physicians and staff from the disaster management department, the Red Cross, and the Defense Force.

**Climate Change**

The country is also vulnerable to the impacts of climate change, such as increased sea level, rising ocean temperatures, and stronger hurricanes. Saint Kitts and Nevis ratified the Kyoto Protocol to the United Nations Framework Convention on Climate Change in 2007 and cooperates with other countries in the Caribbean in adaptation to climate change.

**The Work Environment and Workers’ Health**

The quality of workplace environments is monitored by the Labor Department. There were no major issues in this area during the period under review.

**Road Safety**

Road safety provisions were enhanced during the period thanks to advocacy by the Police Traffic Department. Legislation mandating the use of seatbelts and prohibiting mobile phone use while driving was approved in 2009. The construction of a drag racing facility on Nevis in 2009 was expected to reduce speeding on the island’s roads.

**Food and Nutritional Security**

With regard to food and nutrition security, Saint Kitts and Nevis has a school feeding program with a focus on primary schoolchildren. In 2010, the sum of EC$ 4,064,000 (US$ 1,505,185) out of the total budget of EC$ 535,735,586 (US$ 19,842,059) (0.7%) was allocated to agriculture. During the period 2006–2010, imports of food and live animals far outweighed exports. In 2009 imports amounted to EC$ 136,947,105 (US$ 50,721,150), while exports totaled EC$ 667,753 (US$ 247,315). The incidence of food-borne diseases was low during the period 2006–2010. There were no cases of avian influenza or other diseases that might affect food safety.

**Health Conditions and Trends**

**Health Problems of Specific Population Groups**

**Maternal and Reproductive Health**

The country has had success in addressing Millennium Development Goal 5 (improve maternal health). All births during the period 2006–2010 were attended by a trained health professional. The Prevention of Mother-to-Child Transmission of HIV Program operated throughout the reporting period: in 2007, all HIV-positive pregnant women were treated with antiretrovirals; in 2008 there were no HIV-positive pregnant women; and in 2009, one of two HIV-positive women was treated. There were three maternal deaths during the period, compared with four in 2001–2005. The causes of the maternal deaths were preeclampsia, postpartum hemorrhage, and dilated cardiomyopathy. There were also 46 stillbirths. Contraceptive prevalence in 2006 was 54%.
Infants (under 5 years old)

Children under 5 accounted for an estimated 6.9% of the population in 2010. Total infant deaths declined slightly from 60 in the period 2000–2005 to 58 in 2006–2010. The infant mortality rate fluctuated between 2006 and 2010, ranging from a high of 20.3% in 2007 to a low of 11.3% in 2008. Neonatal mortality accounted for 90% of infant mortality. The main causes of neonatal death were respiratory distress syndrome of immaturity and congenital malformations. The 2007–2008 Country Poverty Assessment report stated that 7.8% of infants died before their first birthday. Low birthweight incidence ranged between 8% and 10% during the period 2006–2010. Exclusive breastfeeding for the first four months of life is actively promoted.

Acute respiratory infections and gastroenteritis were the main causes of post-neonatal morbidity, but did not account for any associated deaths.

Children (5–9 years old)

Children aged 5–9 represented an estimated 7.6% of the population in 2010. Acute respiratory infections and gastroenteritis were the main causes of morbidity in this age group.

A 2007 study of Grade 1 students reported a dental-caries prevalence of 70%. There were five deaths in this age cohort during the reporting period.

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

In 2010, youths aged 10–14 and 15–19 made up 8.6% and 8.2% of the population, respectively. Various studies conducted in 2006–2010 found significant risks to the health of adolescents (and preadolescents), including excess weight, physical inactivity, substance use, physical violence, and sexual violence (see Box 1). The Global Youth Tobacco Survey, conducted in 2010 among students aged 13–15, showed that 1 in 10 of the youths surveyed used some form of tobacco. During 2006–2009, births to teenaged mothers accounted for 20.4% of all births in 2006, 15.2% in 2007, 15.1% in 2008, and 19.1% in 2009. The 2007–2008 country poverty assessment found that 1.3% of females reported giving birth to their first child before the age of 15, while 4.1% reported their first birth between the ages of 15 and 18. There were 24 deaths in the 15–19 age group during 2006–2010; the majority were of males and were due to homicide. Total deaths among adolescents aged 10–14 decreased from 9 in 2001–2005 to 6 in 2006–2010.

Adults (25–64 years old)

A WHO STEPwise Approach to Surveillance (STEPS) survey of risk factors was conducted only in Saint Kitts in 2008 among persons aged 25–64. The study showed high levels of overweight and obesity (33.5% and 45%, respectively, in the population surveyed). More than half of respondents (54%) had elevated systolic blood pressure or were taking antihypertensive medication. The percentage of the population at high risk (at least three risk factors and aged 45–64 years old) was 67.4%. The 35–39 age group was most affected by HIV, representing approximately a quarter of the persons in Saint Kitts and Nevis who were HIV-positive. In 2008, about 50.0% of persons 62 years and older were covered by social security retirement pensions. Despite considerable expenditures on social pensions, however, poverty among the elderly remains a concern. Persons 62 years and older were entitled to fee waivers for health care and pharmaceuticals at public health care facilities.

The Elderly (65 years old and older)

Persons 65 years and over accounted for 7.5% of the population. The Social Security Non-contributory
Assistance Pensions targeted the elderly and the disabled poor who were not covered by social security contributory pensions. The number of persons receiving pensions rose from 1,277 in 2006 to 1,585 in 2010. The privately-run Grange Health Care facility and two government-run institutions—Cardin Home and Saddlers Home—provide residential accommodations for the elderly in Saint Kitts. There are two homes for the elderly in Nevis: the government-assisted Flamboyant Nursing Home and the privately-run Saint George and Saint John Senior Citizens’ Home.

**Mortality**

A review of in-country information showed that infant mortality was 13.6 per 1,000 live births in 2006, 20.3 in 2007, 11.3 in 2008, 18.3 in 2009, and 13.6 in 2010. The country’s small population is responsible for this fluctuation (in small populations small changes in the number of deaths can produce significant variations in mortality rates). During 2006–2010, 90% of infant deaths occurred in the early neonatal period, the majority from conditions originating in the perinatal period. Among children under 1 year old the leading causes of death were prematurity and congenital anomalies. Neonatal mortality accounted for 90.0% of infant mortality. The crude mortality rate was 7.5 per 1,000 population in 2006, 7.0 in 2007 and 2008, 6.8 in 2009, and 7.5 in 2010. Between 2006 and 2010, there were 1,811 deaths. In that period, diseases of the circulatory system and malignant neoplasms accounted for 35% and 17% of deaths, respectively. Twelve percent of deaths among adults in that period were caused by external injuries and 11.0% were due to diabetic complications.


**Improper diet:**
- 32.5% of secondary students were overweight; 14.4% were obese (SHS)
- 61% usually consumed carbonated drinks on one or more days in the 30 days prior to the survey (SHS)

**Physical inactivity:**
- 58.4% of students spent three or more hours per day engaging in sedentary activities (SHS)

**Substance use:**
- lifetime prevalence of substance use: alcohol, 66%; any illicit drug, 35%; cigarettes, 13% (SSDS)
- current tobacco use, 10% (YTS)

**Self-inflicted violence:**
- contemplating suicide, 16.4%; attempted suicide, 13.9% (SHS)

**Family-based violence:**
- 17% disagreed with the statement that “Sexual activity between adults and children is never OK, no matter what” (UNICEF)
- statutory rape 2006–2010: 7% of new mothers (average: 50) aged 16 years or under (HIU)

**Interpersonal violence:**
- 47.1% had been seriously injured once or more in the 12 months prior to the survey (SHS)
- 37.8% had been in a physical fight once or more in the 12 months prior to the survey (SHS)
- 22.7% had been bullied one or more days in the 30 days prior to the survey (SHS)
Table 3 shows the leading causes of death among adults in 2008. The leading causes of death among men during the period 2006–2010 were complications of diabetes, gunshot injuries, cerebrovascular accident, prostate cancer, and myocardial infarction. Among women, the main causes were cerebrovascular accident, complications of diabetes, cardiac failure, myocardial infarction, and breast cancer.

**Morbidity**

**Communicable Diseases**

*Vector-borne Diseases*

Dengue is endemic in Saint Kitts and Nevis. During the reporting period, 122 cases were reported, 100 of them during an outbreak in 2008. There were no cases of indigenous malaria, but three imported cases were diagnosed in 2007–2009.

*Vaccine-preventable Diseases*

The country continued to participate in the Expanded Program on Immunization during the period. Vaccination coverage for all vaccines was over 90% for the period, although it declined from 2009 to 2010. The first dose of the MMR vaccine is administered to children on their first birthday. During the period 2006–2010 there were no reported cases of the vaccine-preventable diseases covered under the routine immunization schedule (see Table 4); however, there were 131 reported cases of chicken pox, the majority of them occurring in 2010. The chicken pox vaccine was not included in the immunization schedule.

### Table 3. Leading causes of death, by rank order, and percentage, Saint Kitts and Nevis, 2008.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Cause</th>
<th>Number</th>
<th>Percentage</th>
<th>Cumulative percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Malignant neoplasms</td>
<td>56</td>
<td>15.7</td>
<td>15.7</td>
</tr>
<tr>
<td>2</td>
<td>Diabetes mellitus</td>
<td>47</td>
<td>13.2</td>
<td>28.9</td>
</tr>
<tr>
<td>3</td>
<td>Cerebrovascular disease</td>
<td>43</td>
<td>12.0</td>
<td>40.9</td>
</tr>
<tr>
<td>4</td>
<td>Ischemic heart disease</td>
<td>32</td>
<td>9.0</td>
<td>49.9</td>
</tr>
<tr>
<td>5</td>
<td>Intentional injuries (self inflicted, violence)</td>
<td>21</td>
<td>5.9</td>
<td>55.8</td>
</tr>
<tr>
<td>6</td>
<td>Unintentional injuries (road traffic accidents, falls, drowning, unspecified hanging)</td>
<td>20</td>
<td>5.6</td>
<td>61.4</td>
</tr>
<tr>
<td>7</td>
<td>Hypertensive diseases</td>
<td>15</td>
<td>4.2</td>
<td>65.6</td>
</tr>
<tr>
<td>8</td>
<td>Neuropsychiatric disorders</td>
<td>8</td>
<td>2.2</td>
<td>67.8</td>
</tr>
<tr>
<td>9</td>
<td>Certain conditions originating in the perinatal period</td>
<td>7</td>
<td>2.0</td>
<td>69.8</td>
</tr>
<tr>
<td>10</td>
<td>Digestive disorders</td>
<td>7</td>
<td>2.0</td>
<td>71.8</td>
</tr>
</tbody>
</table>

**Source:** Saint Kitts Health Information Unit Statistical Report 2008.

### Table 4. Immunization coverage (percentage of the target population vaccinated), by vaccine and year, Saint Kitts and Nevis, 2006–2010.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPT3*</td>
<td>99</td>
<td>100</td>
<td>98</td>
<td>98</td>
<td>95.7</td>
</tr>
<tr>
<td>Polio3*</td>
<td>99</td>
<td>100</td>
<td>99</td>
<td>98</td>
<td>92</td>
</tr>
<tr>
<td>MMR*</td>
<td>100</td>
<td>98.8</td>
<td>99</td>
<td>99</td>
<td>99.5</td>
</tr>
<tr>
<td>BCG*</td>
<td>100</td>
<td>97</td>
<td>95.2</td>
<td>95</td>
<td>91</td>
</tr>
<tr>
<td>Hep B*</td>
<td>99</td>
<td>100</td>
<td>98</td>
<td>98</td>
<td>95.7</td>
</tr>
<tr>
<td>Hib*</td>
<td>98</td>
<td>100</td>
<td>98</td>
<td>98</td>
<td>95.7</td>
</tr>
</tbody>
</table>

**Source:** Data provided by the Health Information Unit, Ministry of Health, Saint Kitts and Nevis.  
* DPT3, three doses of the diphtheria/pertussis/tetanus vaccine; Polio3, three doses of oral polio vaccine; MMR, measles/mumps/rubella vaccine; BCG, bacille Calmette-Guérin vaccine; Hep B, hepatitis B vaccine; Hib, Haemophilus influenzae type b vaccine.
Zoonoses

Four cases of leptospirosis were reported in 2007, 1 in 2009, and 8 in 2010.

Neglected Diseases and Other Infections Related to Poverty

In 2010, one case of leprosy was reported in Nevis. No other cases of neglected diseases were reported in the period under review.

HIV/AIDS and Other Sexually-transmitted Infections

Total cases of HIV infection decreased 22% in 2006–2010 in comparison with 2001–2005, falling from 73 to 57. The male-to-female ratio was 1:0.6 in 2001–2005 and 1:0.9 in 2006–2010. During the period under review, 36 males and 21 females were newly diagnosed. There were 17 diagnoses of AIDS during the period and 7 deaths. In 2010, 42 HIV-positive persons were under medical supervision, of whom 34 were on medications; anti-retroviral treatment was available free of charge.

Tuberculosis

The tuberculosis mortality rate showed a notable decline, from 2.8 per 100,000 in 2006 to 1.5 in 2007, 0.76 in 2008, and 0.62 in 2009. The prevalence was 11 per 100,000, the incidence 9.2 per 100,000. There were 17 new cases reported during the reporting period. Although no cases of tuberculosis and HIV co-infection were reported, the country is striving to further integrate the delivery of HIV and tuberculosis services. All tuberculosis cases between 2006 and 2010 were detected and treated through the Directly Observed Treatment, Short course (DOTS) for tuberculosis.

Emerging Diseases

Saint Kitts and Nevis experienced two waves of pandemic A(H1N1) 2009, the first in March–April and the second in October of that year. There were 10 confirmed cases and 3 deaths. All of the fatalities involved persons with underlying medical conditions.

Chronic, Noncommunicable Diseases

Chronic, noncommunicable diseases continued to rank among the leading causes of illness, disability, and death. The main causes of morbidity in adults are excess weight, hyperlipidemia, hypertension, diabetes, schizophrenia, depression, and substance abuse. The country poverty assessment of 2007–2008 reported that 15.7% of individuals surveyed (12.3% of males and 18.6% of females) had a chronic disease.

Cardiovascular Diseases

Data from the Joseph N. France General Hospital on Saint Kitts revealed that 8.7% of admissions during the period 2006–2010 were due to cerebrovascular disease. Cardiac disease was responsible for 16.7% of admissions between 2008 and 2010.

Malignant Neoplasms

Between 2006 and 2010, there were 325 reported cases of malignant neoplasms. The most frequent cancer sites were breast (24.3%), uterine cervix (24.3%), uterus (5.5%), and prostate (8%). Average annual cancer deaths increased from 44 in 2002–2005 to 63 in 2006–2009—a rise of 43%—owing to increases in prostate and breast cancer.

Diabetes

The prevalence of diabetes mellitus in 2010 was 20%. The disease accounted for 577 hospital admissions (12.4% of total admissions) in the period 2006–2010.

Hypertension

The prevalence of hypertension in 2008 was estimated to be 34.5% among the adult population, with higher rates among males than among females (38.2% versus 31.9%). There were 566 hospital
admissions due to hypertension (12.1% of all admissions).

**Accidents and Violence**

Motor vehicle accidents increased by 9.8% between the periods 2001–2005 and 2006–2010, injuries decreased by 10.6%, and road fatalities remained essentially unchanged (30 versus 32), with an average of 1.2 per 10,000 population.

Interpersonal violence is a major concern. There were 103 homicides during the period 2006–2010, compared with 42 in 2001–2005, an increase of 160%. Of those deaths, 96 were of males and 7 of females. Sixteen of the homicides took place on Nevis; 15 (14.6%) occurred in the population aged 15–19 and 49 (47.6%) in the 20–29 age group. All except 13 were due to gunshot wounds. The 2009 homicide rate of 5.4 per 10,000 population was the highest ever recorded in the country. In 2008, the main hospital on Saint Kitts commenced reporting injuries due to domestic violence; the rate recorded for that year was 46 incidents per 10,000 women.

**Mental Disorders**

The WHO Assessment Instrument for Mental Health Systems (AIMS) was used in 2009 to collect information on the mental health system in Saint Kitts and Nevis (10). A draft Mental Health Act was developed in 2007 to update and enhance the Mental Health Act of 1956 currently in force. A Mental Health and Substance Abuse Strategic Plan for 2010–2014 was drafted in 2007.

In 2007, approximately 1% of the country’s current and non-recurrent expenditure (EC$ 450,583 total; EC$ 285,101 for Saint Kitts and EC$ 165,482 for Nevis) was allocated to mental health services. Most mental health services are community-based. There is no psychiatric hospital, but 12 beds are reserved for mental health patients in the country’s main hospital. The major mental illnesses diagnosed in 2007 were schizophrenia, depression, and substance abuse disorders. The population has free access to needed medication. The next steps to be taken in order to strengthen mental health services include finalization of the new mental health legislation and formulation of a national mental health policy.

**Risk and Protection Factors**

The STEPS survey showed that 8.7% of the population (16.2% of males and 1.1% of females) was using tobacco in 2008 and that 6% smoked daily. Of those who smoked daily, the average age of first tobacco use was 17.2 years. The survey also showed that 10.8% of the survey population had consumed no alcohol in the previous year. The percentage of women who had consumed four or more drinks on any day in the week preceding the survey was 20.7% and the percentage of men who had consumed five or more drinks on any day in the preceding week was 20.1%. The vast majority of survey respondents (97.3%) reported eating fewer than five servings of fruits or vegetables per day.

**HEALTH POLICIES, THE HEALTH SYSTEM, AND SOCIAL PROTECTION**

**Health Policies**

Each island has a parallel organizational structure and each has a ministry of health and a minister with responsibility for health. The Ministry of Health, Social Services, Community Development, Culture and Gender Affairs on Saint Kitts has additional federal responsibilities, such as public health surveillance, disease prevention and control programs, and regulation of health professions. The two ministries have a close working relationship and there is substantial harmonization of policy, legislation, and programming. There is a single Chief Medical Officer for the country whose responsibilities include oversight of scientific and technical matters pertaining to public health policy, health status monitoring, and regulation of health professionals, except nurses, who are regulated by the Principal Nursing Officer and by the Saint Christopher and Nevis Nurses and Midwives Council. The ministries of health are
responsible for steering functions such as policy formulation, standard-setting, and monitoring and evaluation, as well as for the delivery of health services. There is no formal health policy document but health policy statements exist in a number of health-related unpublished documents. In 2010, the country reaffirmed the primary health care strategy as the means for improving population health.

**The Health System’s Stewardship Role**

The strategic vision guiding the work of the Ministry of Health, Social Services, Community Development, Culture and Gender Affairs is “People First, Quality Always.” The Ministry’s mission is to organize and develop its resources so as to ensure healthy population development. The National Strategic Health Plan for 2008–2012 addresses seven priorities: reducing chronic, noncommunicable disease and promoting good nutrition and physical activity; promoting the health of the family; health systems development; improving mental health and reducing substance abuse; preventing and controlling HIV/AIDS and sexually-transmitted infections; safeguarding the health of the environment; and human resources development (11).

**The Health System’s Performance**

The country poverty assessment 2007–2008 indicated that more than half of the population was very satisfied and 43.6% was satisfied with the treatment received from health services. None expressed dissatisfaction.

There is no national health insurance scheme that covers the population. All employed persons are required to contribute to the Social Security Fund. Vulnerable populations, including children and youths under 18 years of age, persons over the age of 62, prisoners, and the indigent, are exempt from all charges and user fees. Several of the larger private-sector companies provide medical insurance coverage for their employees and their families.

Health care facilities are strategically located throughout the two islands and every household is within three miles of a health center. Tertiary-level diagnostic and curative services not available locally may be accessed on neighboring islands through a combination of public assistance and personal funds.

**Health Legislation**

Several pieces of legislation enable the Ministry of Health, Social Services, Community Development, Culture and Gender Affairs to carry out its steering role. However, many of these laws are outdated and consequently are being reviewed and updated, including the Food Safety Act, the Mental Health Act, and the Pharmacy Act.

**Health Expenditures and Financing**

Annual health expenditure averaged US$ 370 per capita and amounted to approximately 8% of total government expenditure during the period. Total health expenditure increased from EC$ 28,804,000 in 2006 to EC$ 38,239,000 in 2009. Community health services and institutional services receive similar shares of the health ministry’s budget. Human resources costs accounted for approximately 70% of total health spending.

The public treasury provided over 92% of the financial resources for the health sector during the period 2006–2010. Some funding is derived from user fees for selected services, such as dental services, radiology, and pharmaceuticals, but cost recovery is minimal.

**The Health Services**

Each ministry of health has directorates of community health services and health institutions. The latter directorates manage primary, secondary, and tertiary medical services in hospitals and rural urgent care centers, as well as long-term care in senior citizen homes. The main referral hospital is the new
The 150-bed Joseph N. France General Hospital on Saint Kitts. Two district hospitals on Saint Kitts provide basic inpatient services. The 50-bed Alexandra Hospital is the main health facility on Nevis.

The Directorate of Community Health provides population-based services. The country is served by a network of health facilities. The 17 community health centers (11 on Saint Kitts and 6 on Nevis) are staffed by nurses and nursing auxiliaries, medical officers, and environmental health officers. Each center is responsible for the health of the population in a defined area and provides a range of services, including maternal and child health care, general medical services, and chronic disease management. The services are free at the point of delivery.

All medical products, vaccines, and new technologies were imported during the period. Most (90%) of the medications used in the public sector are obtained through the Organization of Eastern Caribbean States Pharmaceutical Procurement Service. Vaccines were purchased through the PAHO Revolving Fund for Vaccine Procurement.

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

**Scientific Production in Health**

While there is no formal public health research agenda, the country has worked to build research capacity. Research studies carried out in the period under review included the Saint Kitts STEPS Survey (2008) and the Global Youth Tobacco Survey (2010).

**Human Resources**

In 2004, the ratio of doctors per 10,000 population was estimated to be 11.8. The figure had increased to 13 per 10,000 by 2010. There were 2 dentists per 10,000 population. The number of registered nurses fell steadily over the period. In 2005, there were 37.9 per 10,000 and in 2010, 32 per 10,000. The ongoing downward trend is due in part to migration of nurses.

**Health Personnel Training**

Saint Kitts and Nevis is host to four medical schools, one veterinary school, and two nursing schools that cater mainly to students from the United States of America. The country’s medical doctors are generally trained at the University of the West Indies or at medical schools in Cuba or the United States of America. During 2006–2010, 16 nationals (11 from Saint Kitts and 5 from Nevis) were trained at the offshore medical schools on Saint Kitts-Nevis. Most nurses were trained locally, but some received training in Cuba. In addition to formal professional training, health sector personnel had the opportunity to participate in short-term training programs conducted at the national or regional level.

**Health and International Cooperation**

Saint Kitts and Nevis benefited from funding from the World Bank and the Global Fund to Fight AIDS, Tuberculosis and Malaria; the Pan Caribbean Partnership against HIV/AIDS; and the United States President’s Emergency Plan for AIDS Relief (PEPFAR). The European Union, the World Bank, and the Caribbean Development Bank funded a water supply improvement project and infrastructure improvements at the Joseph N. France General Hospital. Taiwan Province of China provided funding for medical equipment and vehicles.

United Nations agencies assisted with strengthening of skills and programs. Regional agencies such as CARICOM and the Caribbean Health Research Council have also provided technical support. The PAHO biennial work program with Saint Kitts and Nevis contributed to systems development and overall progress in improving health. The country also benefited from resources available through the
Organization of Eastern Caribbean States, including a grant for treatment and care for persons with HIV. The governments of Cuba and Venezuela provided eye care through the *Operación Milagro* (Operation Miracle) initiative.

**SYNTHESIS AND PROSPECTS**

The Federation of Saint Kitts and Nevis has a high standard of health thanks to the provision of enabling conditions for its people to flourish to their full potential. The population has barrier-free access to health, education, and social safety net services. Social determinants of health continue to be adequately addressed. The main health challenges at present are mobilizing resources and changing human behavior. Lifestyle choices account for over 90% of mortality and disease burden. The relatively high rates of noncommunicable diseases, mental disorders, and family- and gang-based violence are placing tremendous strain on the current resources.

The primary health care approach to health system stewardship and development has been reaffirmed as the most cost-effective way to strengthen service provision in order to meet needs and demands. Health promotion strategies have been adopted to prevent and control the burden of chronic disease. In order to maintain and further the gains made in reducing communicable diseases, the Government is applying the International Health Regulations (2005), participating in the Expanded Program on Immunization, and continuing to devote resources to safeguarding the environment. The attainment of health goals is a national imperative. The Government is committed to the idea that good health plays a determining role in the achievement of higher levels of personal well-being and national productivity, and accordingly it will continue to lead efforts to improve health. Indicators of performance include the maintenance of universal coverage and access, achievement by the health system of quality aims, maximized utilization of prevention and primary care services, high care recipient and care provider satisfaction scores, and adequacy of funding.

**REFERENCES**
