INTRODUCTION

Aruba is one of the Leeward Islands of the Lesser Antilles island chain in the Caribbean. It lies some 32 km from the northern coast of Venezuela. The island is 31 km long and 8 km wide, with a landmass of 180 km². The climate is arid, with a mean temperature of 28°C (82°F), and rainfall averages 500 mm a year (falling mainly between October and January).

Aruba was part of the Netherlands Antilles until 1986, when it became an autonomous country within the Kingdom of the Netherlands. The Queen of the Netherlands appoints the Governor of Aruba as her representative for a six-year term. The Aruba constitution provides for the election of 21 members of Parliament, headed by the Prime Minister. The Prime Minister's Cabinet has six members. There are eight administrative districts, with the capital in Oranjestad. Aruba’s two official languages are Dutch.
and Papiamento, a Creole language spoken by most of the population; English and Spanish are taught in schools and spoken widely. Aruba maintains strong economic, cultural, and political ties with its partners in the Kingdom of the Netherlands (1).

In 2009, the real gross domestic product (GDP) was US$ 1.62 million. The per capita GDP (in purchasing power parity [PPP]) in 2009 was US$ 15,181 (2) compared to US$ 16,657 in 2008. Aruba is characterized by an open economy, dependent on imports from and exports to other countries, as well as tourism, banking, and transportation (3). In 2010, the services sector, especially the tourism industry, represented the main economic activity (51.4% of GDP). Earnings from tourism amounted to US$ 1.2 billion in 2010, significantly contributing to the country’s social and economic development. Aruba experienced an economic recession in 2008 and 2009, triggered by the international economic crisis and the closing of the local oil refinery. The Aruban economy was expected to rebound in 2011, with investment projects such as hotel construction and improvements in infrastructure, including the renovation of the hospital and the reopening of the refinery (4).

Aruba has several providers of fixed, mobile, and Internet telecommunications. In 2010, 42% of the population used the Internet.

In 2010, the estimated population was 107,795. The population grew by 5.2% between 2006 and 2010, with annual net migration of 6.0% (more men migrated out of the country than did women) (2). A wide range of foreign nationals reside in the country, most coming from Colombia, the Dominican Republic, and Venezuela. The sex ratio is 92 men per 100 women. In 2010, total life expectancy at birth was 75.5 years (72.5 for men and 78.6 for women); the total fertility rate was 1.9 children per woman and the crude birth rate was 12.8 births per 1,000 population (1, 2, 5).

In 2000, 23.1% of the population was under 14 years old, and 7.0% was 60 years old and older. By 2010, the age group under 14 years old had declined to 18.9% of the population, while the number of adults 60 years and older more than doubled, comprising 15.1% of the population. The age dependency ratio (proportion of dependents per 100 people working) was 41.7.

Aruba’s population structure has a pyramid shape for age groups older than 45 years and an inverted pyramid for age groups 20–45 years old. The proportion of age groups younger than 15 years old has been declining. This irregular shape reflects a reduction in fertility rates and migration movements (2, 5, 6). Figure 1 presents a comparison of the population structure in 1990 and in 2010.

HEALTH DETERMINANTS AND INEQUALITIES

Monthly income per capita from employment in Aruba was US$ 1,543 in 2006. The lowest income decile earned US$ 562 per month while the top decile earned US$ 2,778 (7). In 2010, half of households (50.5%) had a monthly income between US$ 1,681 and US$ 5,040, 28.7% of households earned between US$ 841 and US$ 1,680, and 12.2% earned US$ 840 or less. Under 10% earned more than US$ 5,000 per month (8).

In 2010, there were 34,880 households in Aruba with an average size of 3.1 persons and 28 collective living quarters such as homes for the elderly, at-risk youths, or persons with disabilities (7, 9). The proportion of working-age Arubans who were employed in 2007 was 62.4%, and youth employment (ages 15–24) was 23.3% (10).

In 2009, adult literacy was 99.4% (99.3% for men and 99.5% for women) (10). In that same year, the total net enrollment ratio in primary education was 96.8% (95.0% for boys and 98.4% for girls) and the primary completion rate was 94.8%. In 2006, there were 34 primary schools, 13 secondary schools, and two higher-learning institutions—the Aruba Pedagogic Institute and the University of Aruba (5, 11). The gender parity index for primary and secondary education is close to 1.0, but it is 1.4 for tertiary education (10).
THE ENVIRONMENT AND HUMAN SECURITY

ACCESS TO CLEAN WATER AND SANITATION

Aruba has no natural source of fresh drinking water and very little rain. Drinking water is produced through desalination of ocean water. The resulting distilled tap water is safe for consumption and is supplied to all inhabitants.

W.E.B. Aruba N.V., which operates the world’s second largest desalination plant, supplies drinking water and electricity to the island’s residents and businesses.

Aruba has 100% water sanitation coverage for households and businesses. Aruba’s sewer system is adequate, and all households have their own septic tank. San Nicolas, Oranjestad, and the hotels have their own sewage systems.

ROAD SAFETY

Between 2000 and 2009, there were an average of 16.6 deaths due to road traffic accidents; 55% of them involved persons aged 25–44 years and 75.3% were males.

Disasters

Aruba lies outside the hurricane belt and usually experiences only the fringe effects of passing tropical storms. However, there is close surveillance of hurricane and flooding alerts in the region and disaster preparedness programs are in place.

FOOD AND NUTRITIONAL SECURITY

Food and nutritional security fall under the responsibility of the Department of Public Health’s Veterinary Service and Hygiene departments. The Veterinary Service inspects slaughterhouses and any imported meat and poultry products at the point of entry. Aruba follows the regulations and requirements in use for importing meat and poultry in the European Union. The Hygiene Department oversees the Merchandise Regulations, under which all other products imported for consumption, such as seafood, fruits, vegetables, and drinks, are inspected. The Hygiene Department also inspects establishments that sell food to the public, such as restaurants. The Infectious Disease Service carries out surveillance of food handlers, conducting a yearly screening for pathogens that cause salmonellosis, shigellosis, or other foodborne diseases. If
cleared by the screening, food handlers then receive a “green card” that certifies them to work in food establishments. The Infectious Disease Service works closely with the National Laboratory and the Department of Public Health’s Epidemiology and Research Unit on the surveillance and control of foodborne diseases. Any increase is flagged in this system and the necessary measures are taken to contain its spread.

**Food Safety**

There is close surveillance and inspection for foodborne diseases and of food handlers in Aruba, with a special emphasis on tourist safety. Aruba is authorized to give sanitation certification to cruise ships arriving in the country (12, 13, 14).

**Health Conditions and Trends**

**Health Problems of Specific Population Groups**

**Maternal and Reproductive Health**

No maternal deaths were registered in the period 2006–2010. The fertility rate decreased from 2.8 in 1991 to 1.7 in 2010. In 2010, 13.1% of live births were to teenage mothers. There is universal coverage of maternal care (irrespective of ethnicity, gender preferences, religion, or politics). Antenatal care is provided by a general physician, a midwife, or a gynecologist, depending on the medical advice of the physician. A family planning foundation (*Famia Planea*) provides guidance on the use of contraceptives and reproductive health. Secondary schools provide information and contraceptives to adolescents in their schools, when necessary. Oral contraceptives are the most common method of contraception used (58.2%), followed by injections (19.4%), condoms (18.4%), and intrauterine devices (4.1%) (2, 5).

**Infants and Children (0–4 years old)**

There were 44 infant deaths between 2007 and 2010 (infant mortality rate of 9.3 deaths per 1,000 live births). The main causes of infant deaths were conditions originating in the perinatal period. In that period, there was only one death in the 1–4-year-old age group (a case of drowning) (2, 5). Vaccination coverage in 2009 was 98% for DPT3, 98% for polio 3, and 98% for MMR.

**Children (5–9 years old)**

Between 2007 and 2010 there were no deaths in children 5–9 years old.

In that period, the most common infectious disease reported in this age group was varicella, with a total of 39 reported cases to the health authorities. The next most common infections were diseases affecting the gastrointestinal tract, such as salmonellosis, shigellosis, and enteritis caused by the *Campylobacter* bacteria.

**Adolescents (10–19 years old)**

In 2007–2010, 4 deaths occurred in the 10–14-year age group and 14 deaths in the 15–19-year age group; 71.4% of deaths in the age group 10–19 years were male. The most common cause of death was external causes (57.1%), mainly traffic accidents. During the health screening of children in the age group 6–14 years that was carried out in the 2009/2010 school year, 21.6% of students were found to be obese or overweight, 72.0% had no tooth decay, 10.5% were referred to an oculist, 2.4% to an audiologist, and 8.0% to a general physician, psychologist, or speech therapist (2).

**Adults (20–64 years old)**

Between 2007 and 2009 there were 11 deaths in the age group 20–24 years old. The leading cause of death was external causes, specifically land transport accidents that involved motorcycle riders, pedestrians, and car drivers and occupants. Accidental drowning also was an important cause of death in this age group. Hepatitis B is the most common infectious disease in 20–24-year-olds, followed by sexually transmitted infections such as syphilis, chlamydia, and gonorrhea.
Between 2005 and 2009, 175 deaths (105 men and 70 women) occurred in the age group 25–64 years old (278.7 deaths per 100,000 population). Diseases of the circulatory system and neoplasms were the most important causes of death in this age category (25.7% and 26.9%, respectively). External causes were responsible for 19.0% of deaths in men in this age group but only for 8.6% in women. Land transport accidents were the most common external cause of death (2).

According to the WHO STEPwise Approach (STEPS) Survey, conducted in Aruba in 2006, the prevalence of chronic disease (including heart disease, stroke, and cancer) and risk factors (such as high blood pressure, increased blood glucose, and high cholesterol) increased among persons 55–64 years old for both sexes. The survey revealed that 32.5% of men and 32.7% of women considered their own physical condition to be “fair” or “poor.” The most common self-reported chronic conditions were migraine or severe headaches (23.0% of the population). Psychological problems were closely linked to health complaints such as chronic spinal problems, migraines/headaches, and stomach problems (12, 13, 15).

The Elderly (65 years old and older)

In 2009, there were 424 deaths in the 65-year-old and older age group (210 men and 214 women), a mortality rate of 39.1 deaths per 1,000 population for the age group. The two leading defined causes of death were diseases of the circulatory system, causing 33.3% of deaths, and malignant neoplasms, causing 21.9%; the category “other diseases” caused 25.9% of all deaths and 30.4% of deaths in women in this age group. In 2008, 1.6% of the population over 60 years resided in geriatric homes and this decreased to 1.3% in 2009 (2).

The Family

In 2007, there were 5.1 marriages and 4.0 divorces per 1,000 population. With the wide range of nationalities represented in the country, intercultural marriages are common. In 2007, 63.9% of babies born had mothers who were native to Aruba or the Netherlands Antilles, and 18.0% were from Latin American countries. In 2010, 61.1% of births were outside marriage (2).

Workers

Aruba provides social security for all workers to prevent income loss in case of illness or accident at work. In 2008, social security covered 6,353 workers in the public sector (47.9% male and 52.1% female) and 38,023 workers in the private sector (48.6% male and 51.4% female). The absenteeism rate for the public sector in 2010 was 9.5% and 3.4% for the private sector. The average period of absenteeism in 2010 was 7.7 days for workers in the public sector (7.8 days for men and 7.7 days for women) and 11.5 days in the private sector (12.1 days for men and 11.0 days for women) (2, 13).

Persons with Disabilities

According to the 2010 Census, 1.2% of the total population had difficulty walking or climbing stairs, 0.9% had difficulties washing or dressing, and 0.7% had difficulties remembering, concentrating, or communicating. The Foundation for the Mentally Handicapped provides services and day care for persons with behavioral disorders, autism, and Down syndrome (13).

Mortality

Diseases of the circulatory system, malignant neoplasms, and external causes had the highest age-standardized mortality rates in Aruba between 2005 and 2009.

Table 1 shows the age-standardized mortality rate for the leading causes of death in Aruba from 2005 through 2009. In 2006, malignant neoplasms displaced cardiovascular diseases as the leading cause of death in Aruba, with external causes remaining in third place. Communicable diseases did not rank among the top three causes of death and maintained low age-standardized mortality rates throughout
those years (a low of 7.6 in 2005 and high of 14 in both 2006 and 2009). Certain conditions originating in the perinatal period showed the lowest rates, although from 2006 to 2009, rates steadily increased from 1.47 to 5.93, almost a fourfold increase (5).

**Morbidity**

**Communicable Diseases**

**Vector-borne Diseases**

Between 2006 and 2010, there were three major dengue outbreaks in Aruba, with all four virus serotypes circulating. The largest outbreak was in 2006, with 1,486 laboratory-confirmed cases. In 2010, 617 cases of dengue were laboratory confirmed with all the dengue virus serotypes circulating in the island. In the period 2006–2010, 11 dengue hemorrhagic fever cases were reported, resulting in 2 deaths. Three imported malaria cases were reported during 2006–2010; two were caused by *Plasmodium falciparum* and one by *Plasmodium vivax*.

**Vaccine-preventable Diseases**

There have been no notified cases of poliomyelitis, acute flaccid paralysis, or diphtheria in the reporting period. In 2010, there was one recorded case of whooping cough, one case of tetanus, one case of measles (male, under 1 year old), two cases of mumps, and four cases of hepatitis C. In 2010, there were 19 cases of hepatitis A (57.9% in males and 42.1% in females); 8 of these cases were in the 25–44-year age group (62.5% in males and 37.5% in females), 8 were in the 45–64-year age group (62.5% in males and 37.5% in females), and 3 were in other age groups (2, 16).

**Zoonoses**

No cases of zoonosis were reported during 2006–2010.

**Neglected Diseases and Other Infections Related to Poverty**

There were six cases of leprosy registered during 2006–2010, all in males. One case was in the 15–24-year age group, three were in the 45–64-year age group, one in the 65–74-year age group, and one in the 75-year and older age group (16).

**HIV/AIDS and Other Sexually-transmitted Infections**

Between 2005 and 2010, 116 new HIV cases were reported (75.9% in males and 24.1% in females). The age group 25–44 years old (50 men and 17 women) was the most affected, followed by 45–64-year-olds.

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**TABLE 1**. Age-standardized (<70 years) mortality rate (per 100,000 population), by broad groups of causes and sex, Aruba, 2005–2009.

<table>
<thead>
<tr>
<th>Cause</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Diseases of the circulatory system</td>
<td>68.43</td>
<td>24.49</td>
<td>44.79</td>
<td>99.26</td>
<td>29.31</td>
</tr>
<tr>
<td>Malignant neoplasms</td>
<td>59.45</td>
<td>50.47</td>
<td>54.48</td>
<td>51.28</td>
<td>38.06</td>
</tr>
<tr>
<td>External causes</td>
<td>84.48</td>
<td>19.34</td>
<td>50.07</td>
<td>61.01</td>
<td>22.58</td>
</tr>
<tr>
<td>All other diseases</td>
<td>42.59</td>
<td>18.59</td>
<td>29.95</td>
<td>39.13</td>
<td>36.63</td>
</tr>
<tr>
<td>Symptoms, signs, and ill-defined conditions</td>
<td>8.04</td>
<td>15.51</td>
<td>12.05</td>
<td>4.82</td>
<td>10.38</td>
</tr>
<tr>
<td>Communicable diseases</td>
<td>7.40</td>
<td>7.94</td>
<td>7.62</td>
<td>26.40</td>
<td>3.22</td>
</tr>
<tr>
<td>Certain conditions originating in the perinatal period</td>
<td>5.63</td>
<td>2.94</td>
<td>4.31</td>
<td>2.89</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Source: Reference (5).
(26 men and 8 women). In 45.8% of the new cases, the disease was transmitted through heterosexual contact, in 15.3% of cases transmission was from men having sex with men, and in 13.6% of cases transmission was due to bisexual contact.

Between 1986 and 2010 there were a total 542 HIV/AIDS cases registered. There was one HIV case diagnosed in 2009 (23 years old) and one in 2010 (20 years old). In 2010 Aruba had an HIV prevalence of 0.4%, which represents 435 people living with HIV/AIDS in Aruba. From 1996 until 2009 there were 57 deaths registered with a direct cause due to HIV/AIDS.

In 2010 there were a total of 3,162 HIV tests conducted at the National Laboratory; 23 were positive (0.55%). In 2011 there was one case of mother-to-child transmission.

There were 209 cases of syphilis reported between 2005 and 2010 (136 males and 63 females), mainly among 25–44-year-olds, and 5 cases of congenital syphilis (3 females and 2 males under 1 year old). Gonorrhea is underreported in Aruba, and only 24 cases were notified between 2005 and 2010. Two hundred thirty-one cases of hepatitis B were also reported in those years.

Tuberculosis

Thirty-nine cases of pulmonary tuberculosis were registered in Aruba in 2005–2010 (16).

Emerging Diseases

Although there were cholera outbreaks elsewhere in the Caribbean, Aruba reported no cases in the reporting period. There were 36 confirmed cases of influenza A(H1N1) in 2009. That year, a cruise ship with influenza A(H1N1) cases on board was denied entrance at numerous ports in the Caribbean. Aruba received the ship, and the country’s Department of Public Health, in collaboration with other agencies, put in place the necessary public health interventions. Subsequently, the Kingdom of the Netherlands shipped sufficient vaccine for preventive application to the entire population of Aruba (14). About 20% of the total population has been vaccinated. This proportion of the population was the population at high risk, such as children younger than 5 years, adults older than 65 years, and people with chronic diseases or diseases which affect their immunity system.

Intestinal Diseases

In the period 2006–2010, 139 cases of salmonellosis and 59 of shigellosis were reported.

Chronic, Noncommunicable Diseases

Cardiovascular Diseases

Diseases of the circulatory system are the leading cause of death in Aruba, although there has been a decline in prevalence since 2000 (see Figure 2) (16). Men are most affected by these diseases. Ischemic heart disease was the most frequent specific cause of death (37.6 annual deaths per 100,000 population in the period 2007–2009, 48.2 in men and 28.0 in women) (5, 16).

Malignant Neoplasms

Malignant neoplasms were the second leading cause of death in Aruba between 2006 and 2010. Malignant neoplasms of the trachea, bronchus, and lung...
accounted for 13.9% of all deaths due to neoplasms between 2000 and 2009, followed by neoplasms of the digestive organs and peritoneum (except stomach and colon neoplasms). Malignant neoplasms of the female breast accounted for 10.6% of the total deaths due to neoplasms from 2000–2009. Males died primarily from malignant neoplasms of the trachea, bronchus, and lung (70.2%) during this period, while nearly all deaths (97.8%) in women due to neoplasms were caused by breast cancer (16).

**Diabetes**

There is a high prevalence of diabetes in Aruba. According to the STEPS Aruba Survey 2006, 8.3% of the population between 25 and 64 years old reported having type 2 diabetes mellitus (9.2% in women and 7.0% in men) (15). Between 2000 and 2009, diabetes mellitus was the main cause of death in the group of causes “death due to all other diseases” (31.5% of all deaths; 60.9% women and 39.1% men).

**Hypertension**

According to the 2006 STEPS Survey, the prevalence of hypertension was 19.8% in men and 12.2% in women in the 25–64-year age group (15).

**Nutritional Diseases**

**Obesity**

The 2006 STEPS Survey revealed that 77.0% of the adult population (25–64 years old) was overweight or obese (82.8% of men and 72.5% of women) (15).

**Accidents and Violence**

Between 2000 and 2009, Aruba had an annual average of 16.6 deaths due to traffic accidents; 55% were in the 25–44-year age group (75.3% men and 24.7% women) (16).

**Mental Disorders**

In the population of 831 registered psychiatric patients older than 18 years old, the five most common mental disorders were: schizophrenia and psychotic disorder (34.0%); mood disorder, including depression (27.0%); bipolar disorder (7.0%); fear disorders (6.0%); and disorders related to drug use (4.0%) (17).

**Other Health Problems**

**Ocular Health**

Only 0.5% of the Aruban population indicated that they had problems with their vision (2, 13).

**Risk and Protection Factors**

**Smoking**

In the STEPS Aruba Survey conducted in 2006, 16.2% of the respondents between 25 and 64 years of age reported they smoked (22.4% of men and 11.2% of women), and 12.6% reported they were daily smokers (17.2% of men and 8.9% of women). Almost 80.0% of daily smokers stated they smoked an average of 14 cigarettes daily. The average age that respondents reported they started smoking was 19 years. Exposure to second-hand smoke at home was reported by 1.0% of survey respondents and 1.2% reported exposure at work (15).

**Alcoholism**

When questioned about drinking alcohol during the STEPS Survey, 38.3% of respondents between 25 and 64 years old (52.9% of men and 26.6% of women) stated that they were current drinkers, i.e., had drunk alcohol in the 30 days prior to the survey. Of this group, 12.8% of men and 1.9% of women stated that they had drunk alcohol on four days in the week prior to the survey (15).
Illegal Drugs

Aruba’s National Security Plan for 2008–2012 lists “international drug trafficking/business and effects on community safety” as the fourth of six major threats to national security. The Ministry of Health coordinates illegal drug control, with policies aimed at halting mental, social, and physical dependency associated with drug use. Aruba is a convenient transshipment point for illegal drugs, making them readily available and inexpensive for residents. In 2008, an estimated 10.0% of the total population stated they had used illegal drugs. Of these, an estimated 400–500 drug addicts, the so-called chollers, were homeless (18).

The Aruban Anti-Drug Foundation (Fundashon Anti Droga Aruba) is the most active nongovernmental organization working in drug prevention. It conducts awareness campaigns, lectures, and programs aimed at youth, parents, and workers.

Physical Activity

There is low participation in sports activities in the schools; it is estimated that 27.0% of primary schoolchildren play sports on one day or less during the week. Of the adult population (25–64-year-olds) surveyed in the STEPS Survey, 70.0% reported they do not participate in physical recreation activities, and 60.0% stated they did not do any type of physical activity (including work-related activities or walking from one place to another) (15).

Health Policies, the Health System, and Social Protection

Health Policies

Public health functions in Aruba are informed by health guidelines and standards of the Netherlands, as well as international covenants such as the International Health Regulations and guidelines provided by the World Health Organization.

Examples of multi-sector working groups involved in health-related action include one that addresses discrimination of people living with HIV/AIDS on Aruba and one that focuses on traffic issues (the Safe Traffic Commission) (13).

The Health System’s Stewardship Role

The Ministry of Health has the leading role in the health sector and develops four-year strategic plans within the broader National Development Plan of the Government. The plan for 2003–2007 focused on controlling costs in public health care, optimizing the work of the Department of Public Health, strengthening health promotion, updating legislation related to preventive care, and providing home care (especially for diabetics), among other issues. Activities relating to environmental health focused on management of regular solid waste, sewage effluent, and air pollution (12).

The Health System’s Performance

The Algemene Ziektekostenverzekering (AZV) was established by legislative statute to provide universal access to health care for all Aruban citizens as well as persons who legally work on the island for extended periods. AZV is an autonomous executive arm of the Ministry of Health and is appointed by that ministry. The operational plans of AZV must correspond with the strategic planning of the Ministry of Health. Health care providers, including all primary care physicians, specialists, most dentists, physical therapists, and midwives, are contracted by the AZV (2, 13).

Health Legislation

Aruba’s Public Health Law, passed in 1989, provides for monitoring the quality of public health and medical care on the island, with the aim of promoting the population’s general health. The legislation directs the Department of Public Health to monitor, control, and inspect different aspects of health care, including communicable diseases and the quality of medical care provided by physicians,
dentists, physical therapists, and midwives. There are specific regulations governing different areas of public health, such as health professions, mental health provision, supervision of drugs and narcotics, hygiene, and diseases. Since 2008, the Department of Public Health has worked to revise and update health policies and regulations, including those on health inspection (13).

**Health Expenditures and Financing**

Financing for the health sector is provided primarily by the Government of Aruba (52.4%), premiums paid by employers and enrollees in the AZV, and other sources such as public organizations, companies, international donors, and individuals. The annual expenditure on health in 2007 was US$215.7 million, representing about 8.4% of GDP, and there was a deficit of US $17.1 million that year, due to low premiums, high costs of medicines, and payment for health care provided abroad.

**The Health Services**

The health care network is organized into three levels of care—primary, secondary, and tertiary with inpatient care. The Dr. Horacio Oduber Hospital is the only hospital serving the island’s population and is administered by a private, nonprofit foundation. It has 290 beds and had an occupancy rate of 85% in 2008. It provides emergency, secondary, and tertiary care. The outpatient departments provide hemodialysis as well as diagnostic and therapeutic clinical support. Specialists are increasingly establishing private outpatient clinics (either stand-alone or grouped by specialty), rather than using the outpatient facilities of the hospital. The Posada Clinic provides hemodialysis primarily to tourists visiting the island, but local residents can also use their services. The Dr. R. Engelbrecht Medical Center is an ambulatory health care center with emergency, primary, and secondary care, including centralized ambulance services. The White Yellow Cross Foundation administers six health care facilities around the island (facilitating geographic access of the population) in close cooperation with the Department of Public Health. Their services include home health care (especially for the elderly population); preventive health care for children, including the national child immunization program; nutrition programs; child growth and development; health screening; and dental consultations. The Youth Health Division focuses on infants, children, and youth (up to age 19), providing outpatient consultations, health services at primary schools (including health screenings and vaccination), and guidance regarding nutrition. Ambulatory services for chronic psychiatric patients are provided through the social psychiatric care service under the jurisdiction of the Department of Public Health. The Foundation for Elderly Care (known as SABA), which is subsidized by the Government, owns three geriatric homes with a total of 250 beds. There has been a rise in the number of private geriatric homes in recent years, but given the lack of regulation there are concerns about low standards (an issue under study by a governmental commission) (2, 12).

**Knowledge, Technology, Information, and Human Resource Management**

**Scientific Production in Health**

The Epidemiology and Research Unit of the Department of Public Health contributes to health information by carrying out surveillance and outbreak investigations and providing data in support of needs assessments, policy making, research, surveys, and health promotion activities. It provides information to the medical sector through regular reporting and bulletins such as Epi-Alert (bulletin on epidemics or outbreaks in Aruba or in the region) and Info-Epi (epidemiological information) (2, 13).
**Human Resources**

In 2010, there was one general practice physician for every 2,560 persons. The ratio of general surgeons to population in 2010 was 1 to 21,520. The ratio of psychiatrists was 1 to 35,867 persons. At the end of 2010 Aruba had the following health personnel registered: 42 primary care physicians; 71 specialist physicians; 24 physicians employed by the Government; 36 physicians employed by other institutions (social security fund [SVb], general health insurance fund [AZV], Dr. Horacio Oduber Hospital, or the Army); 29 dentists/orthodontists; 20 pharmacists; 9 midwives; and 37 physiotherapists (2).

**Health Personnel Training**

Aruba does not have a medical school, and health professionals are trained primarily in the Netherlands, the United States, and Costa Rica. Two foreign medical universities are located in Aruba but their graduates cannot practice on the island.

**Labor Market for Health Professionals**

Aruba is highly subject to professional emigration, particularly since professionals who study and graduate abroad tend to remain abroad where there are more career options and salaries are higher (2, I3).

**Health and International Cooperation**

Aruba is a signatory to international and regional treaties concerning health and cooperates in developing regional health policy. International and regional cooperation is facilitated by Aruba’s status in the Dutch Kingdom and its active relationship with countries and municipalities of the former Netherlands Antilles. Aruba benefits from membership in the Pan American Health Organization/World Health Organization and the Caribbean Epidemiology Center in Trinidad and Tobago (I3).

**Synthesis and Prospects**

Aruba is a small country with an active and open economy that is primarily dependent on international banking and tourism. The island’s population growth is attributed both to natural increases and immigration. Education and sanitation (as proxies for living standards) are at a good level. Between 2006 and 2010 the health situation continued to improve, with progressive decreases in the level of mortality, including causes of chronic diseases such as cardiovascular diseases, and reductions in vaccine-preventable diseases. However, diseases of the circulatory system are the main causes of death, and prevention of noncommunicable diseases, including management of risk factors, has become a priority in public health. The National Development Plan for 2003–2007 included specific goals and actions for the Ministry of Health and Environment which continue to be a challenge. The general health insurance system provides universal coverage, and while there is a well-organized health care delivery network, high costs are a challenge. There is a predominance of secondary and tertiary care over primary and general care and curative services over preventive care. In the future, priority will continue to be given to health promotion; prevention and treatment of chronic, noncommunicable diseases; financing (dealing with high costs); and ensuring the availability of trained health personnel at all levels of health care.

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