INTRODUCTION

The Cooperative Republic of Guyana lies on South America’s northeastern coast, bordering Venezuela to the west, Brazil to the west and south, and Suriname to the east. The country covers an area of 215,000 km², and rainforest blankets roughly 80% of its territory. It is the only English-speaking country in South America, and belongs to the Caribbean Community (CARICOM), the Union of South American Nations (UNASUR), and the Amazonian Cooperation Treaty Organization (ACTO), among other regional and international coalitions.

Guyana gained its independence from the United Kingdom in 1966 and is a democratic republic functioning under a Westminster system of government, with an Executive President who serves as both the Head of State and Government. Although there are several political parties, the major ones are the People’s Progressive Party (PPP) and
the People’s National Congress (PNC), with constituencies mainly in the Indo-Guyanese and Afro-Guyanese communities, respectively. General elections took place in August 2006.

The 2002 Guyana Census showed a population of 751,223, with 50.1% males and 49.9% females, and an ethnic composition of 43.5% East Indian, 30.2% African, 9.2% Amerindian, 16.7% mixed, and 0.4% other. Major religious groups are Christian (48.0%), Hindu (28.8%), and Muslim (7.3%) (1). The Guyana Bureau of Statistics projected that the population increased to approximately 785,000 in 2010, with the under-15 age group accounting for approximately 27%, a 9% decline in this age group since 2002 (2) (see Figure 1).

Guyana’s population density is low—fewer than four persons per km$^2$—and only about 28.5% of the population lives in urban areas; 51.7% of urban dwellers are female, while 50.7% of the rural population is male. The country is divided into 10 administrative regions, and most of the population (85.1%) lives in the coastal areas (Regions 2, 3, 4, 5, and 6). Region 4, where the capital city Georgetown is located, is the most densely populated, with 41.3% of the population. Only 9.4% of the population lives in the rural interior (hinterland) (Regions 1, 7, 8, and 9), and Region 8, with 1.3% of the population, has the lowest population density (1). Each region is administered by a Regional Democratic Council, which is responsible for providing services, including health and education, to its catchment population (3).

The sparsely populated hinterland areas have very limited health infrastructure, posing enormous challenges for the delivery of health care and other essential services. Most of Guyana’s indigenous Amerindians live in the hinterland (1).

The crude birth rate between 2006 and 2010 averaged 19.4 per 1,000 population; the crude death rate fell from 6.6 to 6.4 per 1,000 population between 2006 and 2010 (2).

Guyana has a small, open economy with a domestic market limited by the modest population. In 2005, sugar production amounted to nearly 259,000 metric tons, accounting for nearly 12% of gross domestic product (GDP) and over 20% of

\[\text{FIGURE 1. Population structure, by age and sex,}^a\text{ Guyana, 1990 and 2010.}\]

The population increased 1.6% between 1990 and 2010. For 1990, the population structure has a pyramidal shape, although some narrowing can be seen in the age group under 5 years old, due to lower fertility. By 2010, the pyramid shifts to groups older than 50 years, and there is less variation among younger age groups; this is due to a gradual drop in fertility and low mortality. The proportion of adults in 2010 is lower than would be expected from the 1990 structure, which could have to do with emigration between those two years.


$a$ Each age group’s percentage represents its proportion of the total for each sex.
Guyana's exports. Most sugar exports are destined for the European Union under a preferential trade agreement, but the CARICOM region is also an important market for Guyanese sugar (4). Mining, logging, and, more recently, forest preservation and eco-tourism are also mainstays of the economy. Inflation has been high, averaging 9.0% between 2006 and 2008, but has fallen steadily from a peak of nearly 12% in March 2008. It was 6.4% at the end of 2008 and fell to 3.6% at the end of 2009, reflecting the softening in world commodity prices (5). According to the recent gross domestic product series of the International Monetary Fund (IMF), the country’s economic activity expanded by 3.3% in 2009 and 3.6% in 2010, compared to 2% in 2008; this was largely due to a recovery in agriculture in the second half of the year, along with continued strong gold production and robust activity in the non-tradable sector (5, 6). The per capita GDP was US$ 1,911 in 2006, US$ 2,277 in 2007, US$ 2,497 in 2008 and US$ 2,629 in 2009 (6).

Despite its abundance of natural resources, Guyana is categorized as a lower middle-income developing country, an improvement from its previous rankings as a low-income developing country and a heavily indebted poor country. Since 1997, the country has benefited from overall debt reduction through international cooperation, and has made more funds available for the enhancement of the social sectors. Investments in health, education, housing, water, sanitation, and poverty alleviation programs increased from 15% of GDP in 1997 to 22% in 2005. Public expenditure on education increased from 13.0% of the national budget in 2006 to 15.3% in 2010, and public expenditure on health rose from 9.0% in 2006 to 9.4% in 2010 (6).

Despite these advances, challenges remain, especially in the hinterland regions, and in the recruitment and retention of human resources (7). A significant number of Guyanese professionals and skilled personnel migrate to Europe, North America, and other Caribbean countries. In 2006 and 2008, net migration was 15,241 and 18,777, respectively. However, more recent figures indicate a net migration of 18,800 for 2009 and 4,200 for 2010 (8, 9).

A further challenge for Guyana lies in obtaining up-to-date, accurate, and consistent health data on the same indicators from both in-country and out-of-country data sources; there is need for strengthening the efficient and accurate reporting of public health and related data, and in consistently and objectively evaluating health interventions. Various national and international sources may issue differing data for the same indicators in the same time period. International agencies often rely on estimated values where there are perceived data gaps, non-standardized indicator definitions, or uncertain methods of data collection and analysis at national and subnational levels.

Guyana has renewed its commitment to achieve the objectives set out in the Millennium Development Goals (MDGs) (10). It also has continued to work with other parties to the United Nations Framework Convention on Climate Change (UNFCCC) to support the establishment of a global Reduced Emissions from Deforestation and Degradation (REDD+) mechanism. This is consistent with Guyana’s Low Carbon Development Strategy that is its national development framework (11). Additionally, the country continues to focus on the development and advancement of information and technological initiatives, such as the One Laptop Per Family (OLPF) program, the establishment of the Guyana Learning Channel, and the laying of the digital cable from Guyana to Brazil.

HEALTH DETERMINANTS AND INEQUALITIES

Guyana is party to several international human rights treaties and, in fulfillment of its obligations, has established constitutional commissions to address the rights of women, indigenous people, children, and ethnic groups, among other population subgroups (12). Poverty levels, as measured by income- and expenditure-related data, are highest among Amerindians, and Amerindian women have the highest poverty levels among Guyanese women (13). Guyana's Ministry of Amerindian Affairs focuses on interventions to improve the quality of
life of indigenous people, while preserving their culture; Amerindians are self-sufficient in some areas, including food security (14). The 2005 Amerindian Act protects indigenous peoples’ rights and sets forth benefits, including land titling (15). As a result of the Act, the national territory under the control of indigenous peoples increased from 6.4% to 14%.

Women’s role in Guyana’s decision-making processes is on the rise; women represent 61% of the workforce, 31% of judges, 75% of magistrates, 31% of parliamentarians, and 29% of government ministers. Furthermore, of national-university graduates, 40% are women (16). Since 2010, the Women of Worth Initiative, a partnership between the public and private sectors, has enabled single mothers who earn less than US$ 196 per month to access loans to start micro-businesses. As of June 2011, 1,029 loans had been approved, valued at US$ 933,660, with a 96% repayment rate (17).

Guyana’s Government administers both a Women’s Affairs Bureau and a Men’s Affairs Bureau, and there are mechanisms for mainstreaming gender issues in the health sector. For example, the Constitutional Reform Commission recommended that 33.3% of candidates from all political parties contesting general and regional elections should be women (18).

In 2010, the Government passed the Disability Act, which guarantees the rights and freedoms of people with disabilities, including their right to vote. The Act sets out the responsibilities of various sectors such as health, education, labor, housing, water, social services, sports, and communication toward persons with disabilities (19).

The country is well on track to achieving MDG 2 (universal primary education). Education is compulsory for children between the ages of 5 years and 9 months and 14 years. Primary school enrollment is high, at 95% for both boys and girls, and the attendance rate was 96% between 2005 and 2009. However, in 2010, disparities in secondary school attendance emerged, with figures of 73% and 68% for girls and boys, respectively (20). Transition to secondary school is measured at 67%, and 97% of children enrolled in Grade 1 reached Grade 5.

In 2009, the mean years of education for women aged 25 years or older was 9.4, compared with 9.3 for men; in 1990, figures were 6.5 and 7.5 years, respectively (21). The adult literacy rate is reported at 92.0% (22), and the average number of years of education increased from 7.5 years in 1990 to 9.3 years in 2009 (21).

In 2008, the Government implemented school feeding, school uniform, and textbook programs targeting nursery and primary schools, which has resulted in improved school attendance among children in the hinterland (23). The One Laptop Per Family Initiative launched in 2010 aims to provide 90,000 Internet-ready computers primarily to poor families and teenagers to increase their access to education and information (24).

There has been substantial improvement in basic water and sanitation services, as well as in solid waste management. Between 2000 and 2008, overall access to improved drinking water increased from 83% to 94%. However, in-country differences persist, with 97% of the coastal population having access to improved drinking water compared to 52% in the hinterland. Access to sanitation facilities is almost universal (98%), with 63% of the population using traditional pit latrines and 24% septic tanks (25). The use of ventilated improved pit latrines is being promoted where appropriate. A hydro-clave to treat biomedical waste was installed in Georgetown, and the Montfort incinerator is being used by seven regional hospitals for the destruction of sharps.

Challenges still exist with regard to the quality of water and sanitation, as reflected in the high rates of diarrhea in children aged 1–5 years old in Region 3 (24.6%) and Region 4 (30.8%); other regions report rates between 2.4% and 7.5% (26).

While Guyana has the potential to feed itself, as well as to contribute toward the food and nutrition security elsewhere in the Caribbean and South America, difficult terrain and long distances deter efficient food distribution to hinterland communities in the country. There is a multi-sectoral National Food and Nutrition Security Strategy that has components for strengthening the availability, acceptability, and accessibility of food for the entire population (27).
The proportions of persons living in moderate poverty\(^1\) fell from 43.2% in 1993 to 36.1% in 2006; extreme poverty\(^2\) declined from 28.7% to 18.6% over the same time period (10). The highest incidence of poverty was in the rural interior, where Amerindians are concentrated; the lowest incidence was in the urban areas, though pockets of urban poverty with levels higher than the norm were identified (28).

In 2006, estimates showed that 36% of the population lived in moderate poverty and 19% in extreme poverty, demonstrating little change from the 1999 survey (13). However, it was noted that given the Amerindians’ lifestyle characteristics, this group is particularly prone to measurement error when using the same consumption basket to calculate poverty lines, and that expenditure patterns for this group may be quite different from those of other ethnicities. There has also been increased social spending that has benefited populations living in the interior, including the Amerindians (13). The National Development Strategy, the Low Carbon Development Strategy, and several social safety net programs are part of the Government’s poverty alleviation program.

THE ENVIRONMENT AND HUMAN SECURITY

**Climate Change and Disasters**

Guyana is vulnerable to a range of natural and human-caused disasters that can be exacerbated by climate change, including flooding. These factors contribute to increases in vector-borne diseases that are endemic in some areas of the country.

The Low Carbon Development Strategy sets out a new path for the country which is based on preservation of the nation’s forest resources, thereby mitigating climate change. In return, Guyana will receive carbon credits/offsets from global carbon trading markets. In November 2009 Guyana and Norway joined in the Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD+) Partnership, within the framework of the United Nations Framework Convention on Climate Change (11).

Guyana has been recognized by the United Nations Environmental Program as a global leader in advocacy for climate change mitigation, and in 2010, the country’s president was presented with a “Champion of the Earth” award (29). Near-term investments for hydropower, fiber optic cable technology, drainage, irrigation, and road construction, among others, form part of the national climate change mitigation strategy.

Gold mining, which is one of the main drivers of Guyana’s economy, mainly occurs in the hinterland regions through public-private partnerships. Studies in the gold mining areas of Region 1 in 2006 showed that all water samples contained mercury above the WHO drinking water quality guideline of 1 \(\mu\)g/l, and sediment samples showed levels of mercury that exceeded the Canadian Environmental Quality Guidelines of 0.486 ppm. About one-third of all fish caught had mercury levels higher than those recommended by the United States Environmental Protection Agency of 0.5 ppm, and results from a survey of the human environment showed a significant level of mercury contamination in the northwest area of the country (Region 1) (30).

**Deforestation and Soil Degradation**

Under the Low Carbon Development Strategy, controlled logging will allow preservation and sustainable use of Guyana’s pristine forests. The country has recognized that deforestation not only

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1. Moderate poverty is defined as not having enough income to cover a specified package of basic food and non-food items. This consumption bundle, expressed as the average national household monthly expenditure on food and non-food items, was set at G$ 11,840 in 2006 and G$ 3,960 in 1993.
2. Extreme poverty is defined as having insufficient income to afford even the food items in the bundle. This consumption bundle was set at G$ 8,400 in 2006 and G$ 2,930 in 1993.
causes increased greenhouse gas emissions, but also has negative social, economic, and environmental consequences (11).

**Road Safety**

Road traffic accidents and their resulting injuries and fatalities—which mainly affect males—are a major public health concern in Guyana. In 2008, there were 125 deaths caused by road traffic accidents, compared to 171 fatalities in 2006 (26). Between 2006 and 2007, the National Road Safety Council was reactivated, and “Operation Safeway” was launched in response to a 54% increase in land transport fatalities. Operation Safeway is a campaign which focuses on strict enforcement of traffic rules and regulations and zero tolerance by law enforcement officers for violation of traffic laws. As a result of the introduction of this initiative, road fatalities fell by 40% in 2008. However, road safety remains a major challenge and sustained action is needed (31).

**Violence**

Gender-based violence (GBV) is widespread and rising among all socioeconomic and ethnic groups; it affects more women than men. Between 2006 and 2007, there was an estimated 50% increase in the total number of GBV victims, 3,600 more than the previous year. The largest increase was recorded in Berbice (Regions 5 and 6), where reported cases skyrocketed from approximately 300 in 2006 to 1,890 in 2007, representing a 500% increase (32). At least one in three Guyanese women has reportedly been a victim of GBV, and Help and Shelter, a nongovernmental organization working in this area, served 324 female clients between January and July 2008. Of these, 128 were of African descent, 112 of East Indian descent, and 84 from other ethnic groups.

The Sexual Offences Act was passed in May 2010 to strengthen measures for GBV prevention; among other regulations, it makes spousal rape illegal. A National Policy for Domestic Violence is in place, with a special unit established in the Ministry of Labor, Human Services, and Social Security to oversee and monitor its implementation. As evidence of the deep-seated beliefs that can form barriers to progress on this issue, a survey reported that one in five women felt that a husband or male partner was justified in beating his spouse under certain circumstances, a belief that was even more prevalent in the interior (39%) (32, 33).

Security and homicide are concerns; the murder rate in Guyana in 2010 was 18.5 per 100,000 population (34).

**Health Conditions and Trends**

**Health Problems of Specific Population Groups**

**Maternal and Reproductive Health**

The 2009 Demographic and Health Survey (DHS) revealed that early childbearing, particularly among teenagers, has had negative socioeconomic and sociocultural consequences, such as early school dropout. There was an overall prevalence of 18% for pregnancy among 15–19-year-olds, with 10% prevalence among teenagers in urban areas, 22% prevalence among rural teens, and 43% prevalence in the hinterland areas (35). Only 14% of girls aged 15–19-years-old involved in unions are married, and 22% of women aged 22–24 years had given birth before age 18 (35).

Nationwide, 96% of deliveries are attended by skilled personnel. However, in 2008 in the hinterland Region 9 the figure was 57%; nonetheless, it represents an increase from the 2003 figure of 43% (35). Most deliveries (80%) take place in a health facility, and antenatal first visits are recorded for 92% of all pregnant mothers. Almost 8 in 10 women (79%) with a live birth in the five years preceding the survey had had four or more antenatal visits as recommended, without significant difference by place of residence—49% of the visits took place during the first semester, ranging from 42% in the interior to 67% in Georgetown (35).
The maternal mortality ratio (MMR) decreased from an adjusted baseline of 320 deaths per 100,000 live births in 1991 to 86 in 2008 (10) (the national target for Millennium Development Goal 5 is fewer than 100 maternal deaths per 100,000 live births). However, there was an increase in MMR to 92.2/100,000 live births in 2009 (10) and a spike in maternal deaths in 2010 (36), but the data for 2010 have not yet been officially collated and published.

There are about 6,000 deliveries at the Georgetown Public Hospital Corporation annually. The Hospital Corporation is the national referral hospital and has two staff obstetricians. Interventions have been implemented to improve the distribution and availability of skilled personnel to provide emergency obstetric and neonatal care in all major health facilities, including training in Advances in Labor and Risk Management (ALARM), training of additional midwives, and postgraduate training in obstetrics. Contraceptive prevalence is 42.5% among all women and approximately 58% of the total demand for family planning is unmet. The unmet demand is highest among women in the 15–19-year age group (35%) and declines with age to approximately 26% among women in the 40–49-year age group, with 29% of married women having an unmet need for family planning (35).

Children (under 5 years old)

Infant mortality in Guyana has declined overall between 2006 and 2010: it was 19.2 per 1,000 live births in 2006, rose slightly to 20.3 in 2007, decreased in 2008 (17.5) and 2009 (14.9), and rose again slightly in 2010 (35). Children under 1 year old accounted for 5.2% of total deaths, and the leading causes of infant mortality in 2005–2008 were respiratory disorders (31%) and congenital malformations (9.7%). Other major causes were bacterial sepsis of the newborn (8.1%), intestinal infectious diseases (7.6%), acute respiratory infections (4.7%), obstetric complications and birth trauma (4.5%), slow fetal growth (4.5%), and nutritional deficiencies (3.2%). The neonatal mortality rate declined from 12.5 per 1,000 live births in 2006 to 9.5 in 2008 (26).

Low birthweight prevalence was recorded at 13% in 2008 and 19% in 2009 (35), which is high, based on the Healthy People 2010 target prevalence of 5% (37). In 2006, only 43% of infants were introduced to early breast-feeding and only 33% were exclusively breast-fed for six months. Of those children who were breast-fed for 6–9 months, 59% had complementary feeding, and 11% of those showed moderate to severe malnutrition (35).

Mortality rates in children under 5 years old decreased from 20.3 per 1,000 live births in 2006, to 20.2 in 2008, and 19.8 in 2009; the figure recorded for 2010 was 20.5 (35). These deaths accounted for 1% of the total number of deaths, and the leading causes were accidental drowning (14%), intestinal infectious diseases (7%), congenital malformations (8%), acute respiratory infections (6%), and chronic lower respiratory diseases (3%) (26).

Moderate to severe malnutrition in Guyana was recorded at 5.9% in 2008, especially among children between 6 months and 2 years old. In 2006, the distribution of micronutrient supplements reduced overall cases of anemia by 30%–40%, and resulted in a 12% improvement in the rates of breast-feeding, particularly in the coastal regions (35). The Sprinkles program, which provides nutritional supplements to pregnant mothers, addresses this issue, and there are efforts to increase the promotion of breast-feeding and to strengthen and expand the Baby Friendly Hospital program. Obesity in children under 2 years old was recorded at 3.9% for the period 2006–2008 (26).

Adolescents and Young Adults (13–24 years old)

In 2009, the prevalence of current cigarette smoking in students 13–15 years old was 9.5% (35), nearly double that of the country’s university health-science students (5.3%) (38). Significantly more students aged 13–15 years old also had used other forms of tobacco (20.9%) than had the health-science students (16%) (35). Selling of cigarettes to minors is still a major problem in the country—58% of students aged 13–15 years were able to purchase cigarettes (38). A high percentage (31.8%) of that
Suicide and malignant neoplasms were listed as the major causes of death in the 15–24-year age group in the 2006–2008 period. Suicide was ranked first, accounting for 22.4% of deaths during 2006–2010. Malignant neoplasms ranked fifth, with 4.6% of total deaths in this age group attributed to that cause (26).

Adults and the Elderly (24–64 years old and 65 years old and older)

In 2006, AIDS was the leading cause of death among persons aged 25–44 years (17%), followed by suicide (13.6%), land transport accidents (11%), homicide (9.9%), and neoplasms (5.3%). Ischemic heart disease was the leading cause of death before age 65 (17%), while cerebrovascular disease was the major cause of death after age 65 (17.4%). In that same year, other major causes of death in these age groups were diabetes mellitus, neoplasms, hypertensive disease, cirrhosis and other chronic liver disease, acute respiratory infection, and land transport accidents. Persons 65 years of age and over recorded the greatest percentage of deaths (40.7%), followed by those aged 45–64 years (29.2%) (26).

Ethnic or Racial Groups

During the reporting period, ischemic heart disease was the major cause of death among persons of East Indian (15.3%), Chinese (27.8%), and Portuguese (27.3%) ethnicity, while neoplasms and AIDS were the major causes among those of African (10.8%) and Amerindian (5.5%) ethnicity (26).

Mortality

Life expectancy for 2005–2008 was 69 years for females and 63 years for males. A total of 15,100 deaths were recorded between 2006 and 2008, of which 56.9% were males and 43.1% females. Overall, ischemic heart disease, cerebrovascular disease, neoplasms, and diabetes were the major causes of death, in that order (26). Other major causes of death, in rank order, were AIDS, hypertensive disease, suicide, land transport accidents, heart failure, acute respiratory infection, and cirrhosis. Ischemic heart disease was the major cause of death among males, while cerebrovascular disease was the major cause of death among females. Neoplasms were the major cause of death in Regions 1, 7, and 10; ischemic heart disease led in Regions 2, 3, 4, and 6; diabetes in Region 9; and cerebrovascular disease in Regions 5 and 8 (26). The reasons for these regional differences warrant investigation. Table 1 shows the leading causes of death in Guyana between 2006 and 2008 (40).

Morbidity

The major causes of morbidity in the years 2005–2008, in rank order, were symptoms, signs, and abnormal clinical findings; respiratory tract infections; malaria; hypertension; accidents and injuries; skin disorders; diabetes mellitus; arthritis and rheumatism; worm infestation; and anemia (26). Excluding symptoms, signs, and abnormal clinical findings, the three leading causes of morbidity in 2006 were respiratory tract infections (17.6% of all causes), malaria (8.7%), and hypertension (7.2%); in 2007, the leading causes of morbidity were respiratory tract infections (22.8%), hypertension (16.3%), and skin disorders (10.9%); respiratory tract infections (23.3%), hypertension (12.4%), and skin disorders (10.9%) led the list in 2008.

Communicable Diseases

Vector-borne Diseases

Malaria continues to be a major public health problem and remains endemic in the hinterland (Regions 1, 7, 8, and 9), affecting mainly the indigenous and mining populations. Between 2005 and 2010, the total number of cases fluctuated—there were 38,984 positive cases in 2005, compared with 22,935 in 2010, with an average of 20,021 per year (41). The incidence of infection is as much as
four times greater in males (78.0%) than in females (21.9%). In 2010, the 15–49-year age group was the most affected (78.6%), followed by the 5–14-year age group (9.5%), the over-50 year age group (6.4%), and children under 5 years of age (4.8%). There were 85 infants and 990 children under 5 years of age infected (41).

The most common malaria agents identified were, in rank order, Plasmodium vivax (32.4%), P. falciparum (48.7%), and P. malariae (0.6%); there were also mixed infections (13.8%). Malaria-related deaths are on the decline, but are more likely to occur when the disease coexists with malnutrition (41).

Dengue fever has been on the increase. There were 1,468 cases recorded in 2010, up from 258 in 2006; there was one recorded death in the period, due to dengue hemorrhagic fever. Males and females are equally infected. Serotypes 1 and 2 were identified by laboratory tests (42). There is ongoing surveillance to monitor and control larval and adult Aedes aegypti populations which are most prevalent in the hinterland and along the coast.

Leishmaniasis is common in hinterland communities where mining and logging are practiced. The cumulative number of cases in 2002–2007 was 56, from a total of 136 examinations completed by cutaneous laboratory microscopy. Only one visceral laboratory microscopic examination was done over that period, and it was positive (43).

In 2008, a system for screening all blood for Chagas’ disease was introduced at the National Blood Transfusion Services. This revealed that of the first 1,000 samples screened, 15 were reactive. Studies on the prevalence of this condition are needed (44).

### Vaccine-preventable Diseases

Most common vaccine-preventable diseases remain under control in Guyana. Vaccination coverage is high: 98% of children under 1 year of age are immunized against TB, DPT, and hepatitis B and 97% are immunized against polio and measles; 90% of all newborns are protected against tetanus (26). That said, children in the interior are somewhat less likely to be vaccinated than other Guyanese children, indicating a need to scale up efforts to reach these populations and improve the quality of vaccination services overall, including recording and monitor-
ing systems. Guyana incorporated rotavirus and pneumococcal vaccines into its immunization schedule in April 2010 and January 2011, respectively, and is planning to introduce the human papillomavirus (HPV) vaccine in late 2011, targeting 11-year-old girls.

Zoonoses

Guyana was certified free of foot-and-mouth disease (FMD) in 2001. However, because the disease is still present in at least one neighboring country, surveillance along the borders is critical for the country to maintain its FMD-free status, which is vital to the expansion of its livestock industry. Ongoing measures and interventions to strengthen the country’s core capacities for implementing the International Health Regulations (2005) will greatly facilitate this process.

Neglected Diseases and Other Infections Related to Poverty

Lymphatic filariasis seems to be endemic in Georgetown and New Amsterdam, with females and persons of African descent more commonly affected. There has been a decline in the number of infected persons between 2006 (42 cases) and 2007 (32 cases). There has also been a decline in the prevalence of lymphedema from 2.4% in 2003 to 0.6% in 2006 (45). In 2008, a program of mass drug administration to control the disease in endemic areas in Regions 5 and 6 was reactivated.

In 2010, the prevalence of leprosy was recorded as 0.04 per 10,000, with an average annual detection of 26 new patients; there were 63 cases registered in 2010 (46).

HIV/AIDS and Other Sexually-transmitted Infections

The prevalence of HIV infection has been on the decline in Guyana. Between 2004 and 2009, the estimate of adult prevalence of HIV decreased from 2.2% to 1.1%; the prevalence in female sex workers decreased from 21.2% to 19.4%; and in men who have sex with men, from 26.6% to 16.6%. Among blood donors, prevalence dropped from 0.9% in 2002 to 0.16% in 2009 (47). Concomitantly, the proportion of deaths attributed to AIDS fell from 9.5% in 2005 to 4.7% in 2008 (46). HIV prevalence among women is shifting: the male-to-female sex ratio changed from 1.16 (348/300) in 2000 to 0.91 (446/490) in 2008, with a slight change to 1.05 (600/567) in 2009 (47).

The success of the HIV program has been attributed to various interventions, among them the introduction in 2007 of an annual national day of testing, which subsequently has been extended to a week. In 2007, 4,504 persons were tested (males 38.1%; females 61.9%), with a reported prevalence of 1.01%; in 2009, 28,360 persons were tested (males 48.9%; females 51.5%), with 0.5% prevalence; and in 2010, 35,711 persons were tested (males 47.6%; females 52.4%), with a prevalence of 0.8% (48). Despite an increase in sexually transmitted infections noted during the period 2007–2009, HIV data, in addition to those from the day/week of testing, reveal decreasing prevalence among sex workers, men who have sex with men, and pregnant women.

The Prevention of Mother-to-Child Transmission (PMTCT) program has been successful, and is available country-wide. HIV testing of all pregnant women is a requirement, and in 2005, pregnant women aged 15–44 years comprised 43% of persons with HIV in Guyana. This figure decreased to 41.8% in 2008 (35). All HIV-positive pregnant women are offered antiretroviral treatment (ART) as part of the PMTCT program. The number of HIV care and treatment sites increased from 8 in 2005 to 19 by the end of 2010, and the number of voluntary counseling and testing sites increased from 27 to 75 over the same period. In 2010, 93,532 persons were counseled and tested, compared with 16,065 in 2005. At the end of 2010, a total of 3,059 persons were receiving ART compared with 1,965 in 2007 and 942 in 2005. Guyana began monitoring HIV drug resistance in 2011, the first country in the Caribbean to do so using WHO guidelines (49).

Sexually transmitted infections (STIs) increased between 2007 and 2009, then decreased slightly in 2010. The increase is partly attributable to improvements in the surveillance system and expan-
sion of sites providing STI services. Of persons with STIs in 2010, 87% were female (50). The prevalence of antenatal syphilis in Guyana decreased between 2004 (2.4%) and 2006 (0.7%). No cases of congenital syphilis were reported in 2009. The rates of self-reported “leak” and genital sores/boils were high in 2008 and 2009 (7.6% and 4.6%, respectively) (51), but represent a significant decrease from rates in 2003 and 2004 (17.3% and 10.9%, respectively) (50).

Tuberculosis

The prevalence of tuberculosis (TB) infection declined from 17.9 per 10,000 population in 2005 to 14.8 in 2008. The incidence rate is higher in males (11.8) than in females (5.1) and the most affected are those aged 25–44 years, as a result of tuberculosis/HIV co-infection (52). Supervised directly observed treatment, short-course (DOTS) for active tuberculosis cases is available in all administrative regions, although not yet in every district (52).

Emerging Diseases

The Ministry of Health adopted the guidelines established by the WHO Global Influenza Preparedness Plan to prepare and respond to pandemic influenza. For H1N1 2009, there was a total of 30 positive cases out of 140 samples tested between 2009 and 2010 (53). The level of uptake of the H1N1 vaccine has not been determined.

Chronic, Noncommunicable Diseases

In 2008, approximately 60% of all deaths (81% of all female deaths and 69% of all male deaths) were caused by chronic, noncommunicable diseases (26). Cancer accounted for 20% and diabetes for approximately 10% of those deaths; similar trends were noted in 2009 and 2010. Between 2005 and 2008, an annual average of 8,872 new cases of diabetes was reported, with 71% of those being in persons under 65 years of age. In that same period, 53% of all deaths in females were due to cancer, with breast and cervix cancer accounting for 36.6% of those deaths. In males, prostate cancer accounted for 34.2% of cancer deaths (26).

A review of data from the Guyana Cancer Registry showed that there was no significant difference between cervical and breast cancer incidence in women of African or East Indian descent, but cases of cervical cancer were significantly higher among Amerindian women (54). The study noted challenges to the work of the registry, but also highlighted factors that could contribute to the findings among the Amerindian population, including mean age at first sexual intercourse of 16.8 years, a 22.8% prevalence of high-risk HPV among 412 women screened, and a mean of 4.5 babies per woman. The study also reported that 65% of prostate cancer occurred in men of African descent.

Mental Disorders

Mental disorders are an important contributing factor to morbidity in Guyana, and though recent quantitative figures are not available, the perception is that mental disorders and substance abuse pose significant public health challenges. The Mental Health Ordinance of 1930 was revised and a new mental health policy was drafted in 2009. As a result greater emphasis is being placed on community mental health and primary care interventions. Interventions for the prevention and management of suicide, depression, and substance abuse are being implemented, and in 2010, 21 persons enrolled in a nine-month course for training psychiatric patient-care assistants conducted in Berbice. Eight nurses enrolled in a psychiatric nurse practitioner program in 2010; upon completing the program, they will be deployed to the Georgetown Public Hospital Corporation and the National Psychiatric Hospital as one strategy to compensate for the few psychiatrists in the country (0.5/100,000 population) (55).

Suicide was the seventh leading cause of death overall between 2004 and 2006. It was the leading cause of mortality among persons 15–24-years old
and the third leading cause of death among those 25–44-years old. The highest incidence of suicide attempts and deaths occurred in the 15–24-year age range for females and the 15–34-year age range for males. The prevalence of completed suicides was 24 per 100,000 population, which was more than twice the average global prevalence, and is likely to be an underestimate. Risk factors for completed suicide in the Guyanese population have not been rigorously evaluated (56), but the results of a “suicide follow-back” study started in 2010 may provide relevant information.

HEALTH POLICIES, THE HEALTH SYSTEM, AND SOCIAL PROTECTION

The Ministry of Health is the primary steward of Guyana’s public health system. The Minister of Health has parliamentary responsibility for the health care of the population as stated in the Ministry of Health Act of 2005. The country has a decentralized health system and service delivery responsibility is being further devolved from the Regional Democratic Councils to Regional Health Authorities and the Georgetown Public Hospital Corporation, which are semi-autonomous providers with statutory authority (57). Budgetary flows and lines of responsibility have been agreed on between the Ministry of Finance, the Ministry of Local Government and Regional Development, the Ministry of Health, and the Regional Democratic Councils.

Guyana’s health sector has led in developing policies, plans, strategies, and programs to address priority concerns relating to certain population groups, specific diseases, and health issues. Other sectors need to better analyze and consider the possible health impact of their policies.

The Health System’s Performance

The country’s health system performance and health outcomes have improved over the years, but challenges remain, especially related to data management and quality of care. Formal data needed for monitoring and evaluating health system performance at the regional level are limited, and information flows among central, regional, and facility levels are fragmented and not fully integrated. In addition, data from the private sector are not systematically collected, analyzed, and integrated.

With respect to quality of care, while protocols and guidelines exist, and training is conducted,

BOX 1. Health in all of Guyana’s policies.

Where people live and work has a major impact on their health and welfare. The ability of the Ministry of Health to integrate its work with that of other sectors such as education, labor, or agriculture is vital to improving these circumstances and the population’s health. Guyana’s “Health in all policies” approach is a way to highlight and more effectively integrate health policies and programs in other sectors. Some examples of this approach are:

- Inclusion of strategies to address HIV/AIDS in the policies and programs of the tourism, education, and labor sectors.
- Implementation of the Health and Family Life Education Program in schools through collaboration between health and education sectors.
- Recognition of the role of the health sector in the Food and Nutrition Security Strategy, which is led by the agriculture sector.
- Collaboration between the Ministries of Labor and Health in addressing occupational health issues.
- Cooperation of the Ministries of Home Affairs and Health to carry out suicide prevention programs.
inadequate monitoring and enforcement of standards and loss of trained health human resources present barriers to sustained improvement (57).

The National Health Sector Strategy for 2008–2012 has five major components: (1) the decentralization of health service providers; (2) strengthening the skilled workforce and human resource systems; (3) increasing government capacity for health sector leadership and regulation; (4) improving sector financing and performance management systems; and (5) building strategic information capacity for data collection, analysis, and use in planning, management, and evaluation (57).

In the fully decentralized health system, health facilities will be held accountable for delivering quality services as outlined in the Package of Publicly Guaranteed Health Services and Service Agreements made with the Ministry of Health. Implementation of this system is ongoing.

The limited capability to analyze costs has been identified as an important deficit. Further, the National AIDS Program is the only health program with a formally established monitoring and evaluation unit (established in 2010). In order to address this gap, the Ministry of Health is currently developing its monitoring and evaluation capacities and aims to establish a formal monitoring and evaluation unit. The Ministry of Health’s Standards and Technical Services Department is responsible for developing health care delivery standards for the public and private sectors, and overseeing their implementation. The department has formulated standard treatment guidelines for HIV/AIDS, tuberculosis, malaria, diabetes, hypertension, and the Integrated Management of Childhood Illness (IMCI). The licensing and accreditation of health care facilities is the responsibility of the Ministry of Health, and will help to ensure compliance with the standards.

**Health Legislation**

The 1953 Public Health Act regulates the health sector. Among other matters, it addresses the control and treatment of specific diseases, the registration and licensing of health professionals, the provision of sanitation services, and vector control. The Act also deals with health standards, which the Ministry of Health monitors through the Central Board of Health. Environmental health officers monitor public health matters in the districts or regions (58). The 1971 Food and Drugs Act and its supporting regulations safeguard the health and well-being of consumers with respect to food, drugs, cosmetics, and medical devices (59). The extent to which health is reflected in legislation governing other sectors has not been assessed.

**Health Expenditures and Financing**

The country’s National Insurance Scheme reimburses patients for health expenditures incurred in private facilities; the Scheme provides some funding to the health sector and a pension to contributors to the system when they reach age 60. The Ministry of Health provides partial support to some persons who need tertiary care that is not available in the public sector, including complex cardiac and renal interventions and oncology treatment. Certain procedures, such as magnetic resonance imaging (MRI), attract a cost-recovery fee. Table 2 presents some indicators of Guyana’s expenditures on health (60).

**Human Resource Development Policies**

The low availability of qualified and skilled personnel is a major challenge for Guyana’s public health system. More than 90% of the specialist medical staff in the public sector are foreign nationals. Current vacancies range between 25% and 50% for most categories of workers, and in rural areas, specialties such as pharmacy, laboratory technology, radiography, and environmental health have even higher vacancy rates. The health sector has difficulty in attracting and retaining skilled staff due to low wages, challenging working conditions, limited opportunities for training, inadequate career development systems, and the absence of a comprehensive human resources development plan (57).
To address this situation, local matriculation has been increased in certain programs such as those for nurses, medex (physician assistants who work in the public health sector), and other allied health professionals, such as pharmacy, laboratory, and rehabilitation assistants and audiology technicians. Scholarship opportunities have increased, particularly in medicine, and most notably through Guyana’s bilateral agreement with Cuba (61). Postgraduate programs in medicine and nursing have been introduced through a collaboration among the University of Guyana, the Georgetown Public Hospital Corporation, and selected overseas institutions. The Georgetown Public Hospital Corporation houses the Institute of Health Sciences, which provides in-service training, while the University of Guyana offers undergraduate degree programs in dentistry, medicine, pharmacy, medical technology, nursing, optometry, and rehabilitation sciences through its Faculty of Health Sciences. The university also offers an associate degree in environmental health (62).

**Research and Knowledge Management**

The Ministry of Health and the University of Guyana participated, along with other stakeholders such as PAHO/WHO and the Georgetown Public Hospital Corporation, in the development of a national unified health research agenda for 2010–2015, in line with global and regional initiatives. The Ministry hosts a local chapter of the Caribbean Bioethics Society (established in 2010) and is a member of the Caribbean Health Research Council. The country also has a National Science and Research Council. A proposal to establish ethics committees at the University of Guyana and the Georgetown Public Hospital Corporation is being considered.

**The Health Services**

The Ministry of Health has renewed its commitment to strengthen the primary health care approach in order to improve access to basic health care, especially in the more remote, hinterland areas. This is concurrent with the recognition that strengthening the secondary and tertiary levels of care in Guyana is critical for improved performance of the health system.

There are ongoing efforts to adopt the Integrated Service Delivery model, with efficient and effective referral and counter-referral systems, and to effectively implement and expand the Package

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**TABLE 2. National expenditure on health (in millions GSD), selected indicators, Guyana, 2006–2010.**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2006 2007 2008 2009 2010</td>
</tr>
<tr>
<td>Total expenditure on health as a percentage of GDP</td>
<td>6.0 5.3 6.0 6.2 5.4</td>
</tr>
<tr>
<td>General government expenditure on health as a percentage of the total expenditure on health</td>
<td>65.7 57.0 90.8 86.6 85.4</td>
</tr>
<tr>
<td>Private expenditure on health as a percentage of the total expenditure on health</td>
<td>34.3 43.0 9.2 13.4 14.6</td>
</tr>
<tr>
<td>General government expenditure on health as a percentage of general government expenditures</td>
<td>11.3 10.0 18.2 17.3 14.9</td>
</tr>
<tr>
<td>Total expenditure on pharmaceuticals as percentage of the total expenditure on health</td>
<td>16.2 17.7 16.2 17.8 0.0</td>
</tr>
<tr>
<td>Government compensation of health employees as a percentage of the general government expenditure on health</td>
<td>47.1 37.6 143.5 105.0 127.1</td>
</tr>
<tr>
<td>Total per capita expenditure on health at purchasing power parity (GSD per US$)</td>
<td>164.0 144.0 170.0 182.0 167.0</td>
</tr>
<tr>
<td>General per capita government expenditure on health at purchasing power parity (GSD per US$)</td>
<td>108.0 82.0 154.0 158.0 142.0</td>
</tr>
</tbody>
</table>

Source: Reference (60).
of Publicly Guaranteed Health Services. This package provides a detailed guide for the delivery of quality basic health services to the population, and is a tool for policymakers and managers to ensure proper planning and budgeting. The health sector is expected to deliver services according to the targets established in the package by 2012 (63).

The Ministry is also adopting and/or adapting models such as Integrated Management of Childhood Illness (IMCI) and the Integrated Management of Adult and Adolescent Illnesses (IMAI) to support the integration of programs related to HIV, chronic, noncommunicable diseases, and maternal and child health.

The Ministry of Local Government and Regional Development and the Ministry of Health manage, finance, and provide health services at the regional level through Regional Democratic Councils and Regional Health Authorities. The decentralized health system includes health care facilities that provide primary, secondary, and tertiary care across the 10 administrative regions. Tables 3 and 4 provide detail on the facilities available; each region offers at least three levels of health care facilities (64).

Guyana’s health care system is based on primary health care principles, but there is a major challenge in ensuring equitable access to health care for populations in the hinterland due to limited infrastructure, high cost of travel, and inadequate quality of care. In addition, many patients bypass facilities at levels I, II, and III and seek care directly at a level IV facility. The implementation of the Package of Publicly Guaranteed Health Services is expected to address this issue, as it will provide a minimum level of care that is guaranteed to all, regardless of geographic location and socioeconomic status. The 2008 review of the Essential Public Health Functions in Guyana found some improvement in access to health services (65).

The National Health Policy Committee is the guiding and supervising body for the development, maintenance, and implementation of the country’s national medicines policy.

The central blood bank at the National Blood Transfusion Service receives blood from several collection centers throughout the country, and all blood is screened for HIV, human T-cell lymphotropic virus, hepatitis B and C, syphilis, and Chagas’ disease. A minimum standard for the operation of the blood bank was formally adopted in 2009. Guyana has eight laboratories equipped to perform sputum microscopy testing for tuberculosis.

Standard radiology, ultrasound, and MRI are available in the public sector; basic radiotherapy is available through a public-private partnership; and

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**TABLE 3. Number and distribution (%) of health facilities, by level and administrative region, Guyana, 2010.**

<table>
<thead>
<tr>
<th>Type of facility</th>
<th>National total</th>
<th>Coastal administrative regions</th>
<th>Hinterland administrative regions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>3 4 5 6 10</td>
<td>1 2 7 8 9</td>
</tr>
<tr>
<td>Specialist hospital*</td>
<td>4</td>
<td>0 2 0 2 0</td>
<td>0 0 0 0 0</td>
</tr>
<tr>
<td>National hospital (level V)</td>
<td>1</td>
<td>0 1 0 0 0</td>
<td>0 0 0 0 0</td>
</tr>
<tr>
<td>Regional hospital (level IV)</td>
<td>6</td>
<td>1 2 0 1 1</td>
<td>0 1 0 0 0</td>
</tr>
<tr>
<td>District hospital (level III)</td>
<td>20</td>
<td>3 0 2 2 2</td>
<td>4 1 2 2 2</td>
</tr>
<tr>
<td>Health center (level II)</td>
<td>133</td>
<td>13 39 15 28 12</td>
<td>3 12 3 5 3</td>
</tr>
<tr>
<td>Health post (level I)</td>
<td>210</td>
<td>27 10 4 16</td>
<td>42 20 22 16 52</td>
</tr>
<tr>
<td>Private hospital</td>
<td>6</td>
<td>0 6 0 0 0</td>
<td>0 0 0 0 0</td>
</tr>
<tr>
<td>Total</td>
<td>380</td>
<td>44 60 18 37 31</td>
<td>49 34 27 23 57</td>
</tr>
<tr>
<td>Distribution of total population (%)</td>
<td>100</td>
<td>13.3 41.0 7.1 19.7 5.4</td>
<td>2.5 6.0 2.0 0.8 2.1</td>
</tr>
</tbody>
</table>

* Source: Reference (64).

* Includes geriatric, rehabilitation, ophthalmological, and psychiatric facilities.
computerized tomography (CT) and hemodialysis are available only in the private sector. In 2006, the Ministry of Health commissioned four diagnostic centers that were built as part of an agreement with Cuba. The centers offer laboratory tests, ultrasound, endoscopy, radiology, electrocardiography, surgery, deliveries, and dental treatment. In 2009, two new medical centers offering ophthalmology and laparoscopy services were also brought online through collaborative efforts between Guyana and China.

Several hospitals and health centers have improved their laboratory, imaging, and infection control capabilities, and in 2010 the Georgetown Public Hospital Corporation commenced construction of a new wing to accommodate additional patients.

The Ministry of Health conducts procurement through the Public Procurement System, and manages its supplies through the Medical Management Unit, a computerized warehouse that dispatches supplies, materials, and equipment to various facilities as the need arises. There have been occasional reports of stock-outs of pharmaceuticals, which if urgently needed, are procured directly from suppliers or obtained on loan from other countries in the region.

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

#### Public Health Workforce and Human Resources

Approximately 57% of physicians and 12% of nurses work in the private sector. If physicians, nurses, midwives, and nursing assistants in both the public and private sector are counted, the number of health professionals per 10,000 population in Guyana would increase to 17.7 (66). In addition to physicians and nurses, the health workforce includes 77 medex, 91 pharmacists and pharmacy assistants, and 34 dentists. Inadequate rewards and incentives for working in the hinterland are responsible for the low number of health practitioners in those regions. In addition, hinterland communities have limited health and educational facilities, and the cost of living is generally higher than that of Georgetown (66). Table 5 shows the number and distribution of physicians and nurses in the country’s various administrative regions (67).
Labor market for health professionals and careers in health

A 2009 study revealed that nurse migration rates varied from 9.5% to 62%, depending on the school and year (68). The study also revealed that over a 10-year period, 143 nurses left Guyana, for a modest nurse emigration rate of 26%. Reasons cited for leaving included better opportunities, professional development, better quality of life, and better working conditions. In 2009, a revised curriculum was developed for the professional nursing program (69).

In light of the number of physicians being trained in Cuba and increased matriculation at the local medical school, in 2010 the viability of the medex program was evaluated. It was decided that the medex program should continue, with renewed emphasis on its goal of supporting improvement in the quality of health services in the country’s remote areas (70).

### HEALTH AND INTERNATIONAL COOPERATION

Several United Nations (UN) agencies have a presence in Guyana, including the Food and Agriculture Organization (FAO), PAHO/WHO, UNAIDS, UNDP, UNFPA, and UNICEF. Others, such as ILO and UNESCO, have liaison offices in the country, and still others, such as UN Women and ECLAC, serve Guyana from their offices in other Caribbean countries. The UN agencies, through their individual programs and the joint UN Development Assistance Framework (UNDAF), contribute to capacity development; program development; implementation, monitoring, and evaluation of programs; and resource mobilization, among other areas.

Multilateral agencies such as the Inter-American Development Bank (IDB) and the World Bank, and partnerships such as the Global Fund to Fight HIV/AIDS, Tuberculosis, and Malaria; the Global Alliance for Vaccines and Immunizations; and the Clinton Foundation, among others, support the country’s health sector reform and associated programs, targeting infrastructure development and institutional strengthening.

The country receives assistance from the Canadian International Development Agency, the European Union, the Government of China, the Government of Cuba, the Japan International Cooperation Agency, and the United States of America through the United States Agency for International Development (USAID), the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR), and the Centers for Disease Control and Prevention (CDC), among other bilateral partners. Support is also provided by Caribbean regional bodies such as the Caribbean Food and Nutrition Institute and the Caribbean Epidemiology Center (61).

### SYNTHESIS AND PROSPECTS

Among the most important challenges for Guyana’s health sector are to ensure recruitment and retention

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**TABLE 5. Number and coverage (per 10,000 population) of public-sector physicians and nurses, by region, Guyana, 2008.**

<table>
<thead>
<tr>
<th>Administrative region</th>
<th>Physicians</th>
<th>Nurses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>Coverage (per 10,000 population)</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>2.0</td>
</tr>
<tr>
<td>2</td>
<td>13</td>
<td>2.6</td>
</tr>
<tr>
<td>3</td>
<td>21</td>
<td>2.0</td>
</tr>
<tr>
<td>4</td>
<td>287</td>
<td>9.1</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>2.0</td>
</tr>
<tr>
<td>6</td>
<td>40</td>
<td>3.2</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>390</strong></td>
<td><strong>5.1</strong></td>
</tr>
</tbody>
</table>

**Source:** Reference (67).
of an adequate number of skilled health practitioners; to provide the population with equitable access to integrated health services of good quality; and to improve coordination of national and international resources in order to strengthen and develop sustainable health programs.

Strengthening health information systems will facilitate planning for and management of resources based on the results achieved in the sector. Accomplishing national health objectives requires the determination of costs for health services and monitoring and evaluation of outcomes and quality of care. An integrated approach to the prevention and control of chronic, noncommunicable diseases, HIV/AIDS, and neglected infectious diseases and to improved maternal, child, and reproductive health will increase cost-efficiency and cost-effectiveness in the sector.

International and national collaboration through instruments such as the Country Co-ordinating Mechanism of the Global Fund to Fight HIV/AIDS, Tuberculosis, and Malaria and the Thematic Group on Health that was established by the Government of Guyana as one of the oversight entities for the Poverty Reduction Strategy offers opportunities for all stakeholders to work together to build on successes and overcome challenges to the country’s continued development in health.

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