
GRENADA

GENERAL SITUATION AND TRENDS

Socioeconomic, Political, and Demographic Overview

Grenada lies at the southern end of the Windward Islands and comprises three sister islands: Grenada, Carriacou, and Petit Martinique. Grenada is situated between 12° North and 60° West and is about 100 miles north of Venezuela and 90 miles southwest of Barbados. The country's total land area extends for 133 mi².

The capital, St. George's, is located in the parish of St. George, and has an approximate population of 31,994 (33% of the total population). In 1991, the parish of St. Andrew had a population of 24,135 persons (25% of the population), followed by St. David, with 11,011 (12%); St. Patrick, with 10,118 (11%); St. John, with 8,752 (9%); and St. Mark, with 3,861 (4%). According to the 1991 population census, 6% of the population, or 5,000 persons lived in Carriacou and 726 persons lived in Petit Martinique.

The gross domestic product (GDP) at factor cost in constant 1990 prices was US\$ 195.1 million in 1995 (about US\$ 1,980 per capita), which represents a 5.3% increase from the 1992 figure, when it was US\$ 185.3 million (US\$ 1,920 per capita). Annual inflation between 1992 and 1995 averaged 2.6%. The tourism sector grew annually at a rate of 10% over the period.

Tourism was the most vibrant sector between 1992 and 1995—its percentage contribution to the GDP increased by 23.3%, moving from 7.3% to 9.0%. Stay-over visitors jumped from 87,554 to 108,007 during this period, an increase of 23.4%. In 1995, there were 446 cruise ships that came to the island, up 3.5% from the 1992 figure; they brought 249,879 visitors, representing a 27.6% increase over the number in 1992.

Agricultural production of traditional crops such as cocoa, nutmeg, and bananas had mixed success between 1992 and 1995. Cocoa production increased by 17%, nutmeg's de-

creased by 24%, and bananas's decreased by 32%. The combined production of these crops fell by 26.1% between 1996 and 1995, primarily due to a 57% drop in banana production. Other agricultural crops had fairly stable production during the period.

Telecommunications were significantly enhanced between 1992 and 1995, with the most modern services and communication technologies available by the end of that period. The single electricity generating plant was privatized in 1994, and there are plans for expanding its capacity.

The rate of inflation has remained relatively unchanged, increasing slightly from 2.1% in 1995 to 3.1% in 1996. Based on the findings from the 1996 Labour Force Survey, 6,835 persons between the ages of 15 and 60 years old were unemployed, for an unemployment rate of 13.6%. The survey also revealed that women accounted for 68% (4,844) and persons 15–29 years old accounted for 56% (3,826) of the total unemployed population.

The Government changed in 1995, when the New National Party replaced the National Democratic Congress. The new administration is committed to establishing a statutory body to manage the entire public health care system. As the first step in this process, a board of directors will be created to manage the General Hospital.

Total public sector recurrent expenditure in 1996 was US\$ 68.1 million, slightly higher than the US\$ 68 million spent in 1995, and 7.5% higher than the US\$ 63.3 million spent in 1992. Health expenditures were US\$ 8.2 million in 1992, US\$ 8.0 million in 1993, US\$ 8.2 million in 1994, US\$ 8.7 million in 1995, by 10.7% (US\$ 9.6 million) in 1996. This shows that health expenditures increased approximately 17% from 1992 to 1996, which more than doubled the 7.5% national increase on all expenditures over the same period. In 1996, per capita recurrent health expenditure was US\$ 97.10.

Grenada implemented a structural adjustment program between 1992 and 1994. Reforms focused on reducing public sector expenditure; stimulating private sector growth; pro-

viding incentives for projects related to tourism, manufacturing, and informatics; and facilitating the privatization of Government assets. During that period, the value of Government services as a percentage of GDP declined from 19% to 16.6%, decreasing further to 15.9% in 1995.

The adult literacy rate was estimated at 85% in 1996. During the 1994–1995 academic year, 3,448 children between the ages of 1 and 5 years old were registered in 73 public preschools. In that same year, there were 2,595 new admissions into the primary school system, resulting in 23,017 students enrolled in the 58 public primary schools; there were 869 teachers, with a student-to-teacher ratio of 26:1 in the public primary schools. There also are 16 private primary schools in the country. During the same academic year, 1,448 students were registered at the 19 secondary schools for the first time, resulting in a total enrollment of 7,260, with 41% males and 59% females. There were 381 secondary-school teachers, with a teacher-to-student ratio of 1:19. Between 1992 and 1995, there were 1,039 dropouts from the primary school system (59% males and 41% females) and, during that same period, there were 403 dropouts from the secondary school system (44% males and 56% females).

Population

Grenada's estimated population in mid-1995 was 98,500, 50.8% female and 49.2% male. The population structure was very young, with 47,313 persons (or 48.3% of the total population) below the age of 20 years. With life expectancy currently estimated at 68 years for men and 72 years for women, the population group aged 60 years old and older is expected to increase over the next decade.

Total live births have declined over the last decade, dropping from 3,107 in 1985 to 2,372 in 1992, and 2,286 in 1995. The crude birth rate decreased by 27%, declining from 34.0 per 1,000 population in 1985, to 24.6 per 1,000 population in 1992, and to 5.3% to 23.3 per 1,000 population in 1995, for a 5.3% decline. The crude death rate has been fairly stable; it was 8.2 per 1,000 population in 1995. The rate of natural increase in the population ranged between 20 and 26 for most of the 1980s, and was estimated between 15 and 17 per 1,000 population during the 1992–1995 period. The total fertility rate over the period averaged 3.2 children per woman of childbearing age.

In 1995, 28% of mothers delivered their first baby, 19% delivered their second child, and 16% delivered their third, a pattern similar to that observed in 1994. In the latter year, 26.1% of births were to women aged 20–24 years old, and teenage mothers accounted for 16.9% of all births, a change from 1992 percentages of 28.6% and 18.3%, respectively.

Mortality Profile

The quality of mortality data has improved in recent years, and there are ongoing efforts to build on those gains. For example, as a way to improve the completion of death certificates, seminars will be conducted with physicians to bring the reporting system in line with the requirements of the *International Classification of Diseases*.

In 1992 and 1995, leading causes of death included diseases of pulmonary circulation and other forms of heart disease, with 131 deaths and 119 deaths, respectively, and with corresponding rates per 100,000 population of 136.2 and 120.8. Other leading causes of death during these same years were cerebrovascular disease, with 94 and 114 deaths, respectively, and mortality rates of 97.7 and 115.7 per 100,000; malignant neoplasms with 72 and 95 deaths and mortality rates of 74.8 and 96.4; ischemic heart disease, with 30 and 51 deaths and mortality rates of 31.2 and 51.8; diseases of the urinary system, with 22 and 33 deaths and mortality rates of 22.9 and 33.5; endocrine and metabolic diseases, with 25 and 32 deaths and mortality rates of 26.0 and 32.5; certain conditions originating in the perinatal period, with 21 and 38 deaths and mortality rates of 21.8 and 38.6.

Morbidity

During 1992–1995, there were 31,440 admissions to the General Hospital, with an average length of stay of 6.1 days and a bed occupancy rate of 60%. Admissions and discharges from the General Hospital are categorized by service and diagnosis, but only data on service are regularly compiled into a report.

The older population is primarily affected by diabetes, hypertension, and coronary or cardiovascular diseases and their complications. For persons screened in the district health services over 1992–1995, between 8.5% and 14.1% were diagnosed with diabetes mellitus and between 10.5% and 11.7%, with hypertension.

Data on morbidity—which is limited to information about persons seeking treatment in the public primary health care system and reflects only notifiable diseases—show that the main causes of infant morbidity continue to be respiratory tract infections, gastroenteritis, and diarrhea. Data for 1996 show that the main causes of morbidity in children 0–4 years old also are respiratory tract infections (4,772), gastroenteritis (957), and diarrhea (550). Between 1992 and 1996, reported data show an alarming increase in gastroenteritis in children, increasing by 60% in children under 5 years old and by 73.5% in those older than 5. Better monitoring has contributed to the increase in reported cases in 1996, however.

SPECIFIC HEALTH PROBLEMS

Analysis by Population Group

Health of Children

Between 1992 and 1995, there were 119 deaths in children under 1 year of age, with 48% of these deaths occurring within the first day of life. The leading causes of death were congenital anomalies of the heart and circulatory system, hypoxia, birth asphyxia, other respiratory conditions, slow fetal growth, and fetal malnutrition and immaturity. In the same period, 27 children aged 1–4 years old died, with the leading causes of death in this cohort being diseases of the nervous system, the respiratory system, and the digestive system. In the age group 5–9 years old, 16 children died during the period.

The proportion of low-birthweight babies ranged between 9.7% and 10.6% of total births in 1992–1995. The infant mortality rate in 1992 was 10.5 per 1,000 live births, increasing to 14.4 per 1,000 and 14.6 per 1,000 in 1993 and 1994, respectively, and decreasing to 12.7 per 1,000 live births in 1995. The neonatal mortality rate was 9.9, 9.8, and 7.4 per 1,000 live births for the years 1993, 1994, and 1995, respectively.

According to data on the estimated population of children under 5 years old and the number of first visits to well-baby clinics, more than 80% of this age group is seen by trained personnel in the public sector. On their first visit in a given year, children are weighed and measured—during the 1992–1995 period, between 1% and 2% of children who came for their first visit were found to be either underweight or overweight. No information is available for children who visit private doctors exclusively. In 1995, the Ministry of Health instituted a campaign to encourage more breast-feeding. A total of 1,154 infants were seen at age 3 months, and of these, 397, or 34.4%, had been solely breast-fed for the first three months of life.

Health of Adolescents

In 1995, the country had an estimated 21,000 persons between the ages of 10 and 19 years old, and most were attending primary or secondary school. Data for 1996 show that 2,503 teenagers were employed.

Fertility rates among teenage women have continued to decline, dropping from 92.9 per 1,000 to 82.4 between 1992 and 1995. Teenage pregnancies decreased by 9.7%, from 433 to 391 births, representing 18.3% and 17.1% of total births in those years. In 1994 and 1995, 75% of teenage mothers delivered their first babies and 5% recorded their third or subsequent deliveries. The number of births registered by

mothers under age 15 years increased from 8 in 1994 to 17 in 1995.

There were 45 incarcerations of teenagers in 1995, 60% of which were for theft. There were 10 deaths within this age group, representing about 1% of total deaths.

Health of Women

It is estimated that approximately 78% of pregnant women attended prenatal clinics held in community health facilities and were seen primarily by a nurse. Only 5% to 7% of these women, however, registered their first visit before the 12th week of pregnancy, while 80% of those who attended did so by the 16th week of pregnancy or later. Some pregnant women visited a private physician prior to seeking attention at public prenatal facilities.

In 1995, 948 post-natal women requested family planning services in the district health services. Of these, 65% requested advice pertaining to family-planning options; 25% requested condoms; 7%, sterilization; and the rest sought advice mainly regarding intrauterine devices or injection. The Grenada Planned Parenthood Association also provides family planning services; in 1996, the Association provided services to 1,266 women, compared to 1,729 in 1995.

Health of the Elderly

Mid-year data indicate that persons 60 years old and older represent 10.8% of the total population (10,648 persons)—59% were women and 41% were men. Data also showed that 31% of households were headed by persons 60 years old and older, 53% of them by women and 47% by males. Among the elderly, 30% live alone, a percentage that is equally distributed between the genders. In 1996, 8.9% of the labor force (38,078 persons) were 60 years old and older, of which 59% were men and 41%, women. There are 13 homes that care for the elderly (1 public and 12 private), and a nongovernmental organization also works specifically with this age group.

Health of the Disabled

The National Council for the Disabled is the main body responsible for activities pertaining to this population group; it is charged with providing support for physically and mentally disabled persons and their parents. During 1997, the Council investigated the number of persons with disabilities in the country.

Analysis by Type of Disease or Health Impairment

Communicable Diseases

Vector-Borne Diseases. As a way to keep the spread of dengue fever in check, the mosquito control program continues to try to reduce the *Aedes aegypti* population. The main methods used are chemical control throughout the country, focusing on high-risk areas, and health education programs that encourage the public to maintain a clean and healthy environment. Source reduction and biological control with a heavy emphasis on community participation are being increasingly used.

After having had no cases of dengue fever in 1992 and an average of fewer than 10 in the following three years, there were 21 cases in 1996.

Rabies. The environmental health department continued to work toward reducing the incidence of rabies through the annual vaccination of domestic animals throughout the island, in an effort to break the link between the transmission of the rabies virus from the mongoose to man.

Vaccine-Preventable Diseases. In 1996, immunization coverage of children under 1 year old was lower than the expected standard for the country, showing an overall decline compared to previous years—80% were immunized against diphtheria, tetanus, whooping cough, and poliomyelitis and 85% were immunized against measles. A senior community health nurse has been charged with coordinating the program, and better monitoring is being put in place. All health centers have been visited in order to review how the target population is identified within each district, and staff were given guidance on possible improvements.

Legislation enacted in 1980, and currently being reviewed and updated, mandates that all children under 13 years old must be immunized against diphtheria, whooping cough, tetanus, measles, and poliomyelitis. There have been no reported cases of neonatal tetanus in the last two decades; immunization coverage of women attending the public prenatal services in 1995 exceeded 80%. The Ministry also provides immunization against mumps and rubella as part of the program, and the reintroduction of immunization against tuberculosis is being considered.

AIDS and Other Sexually Transmitted Diseases. The AIDS epidemic continues to progress slowly in Grenada. The cumulative total of reported HIV-infected persons stood at 141 at the end of 1996, with a male-to-female ratio of 2:1. Of these, 7 were pediatric cases, 3 of which died. All the pediatric cases have been linked to vertical transmission during pregnancy. In 1996, 19 new HIV-infected cases have been reported;

3 pediatric cases were reported that year. This is the first year in which more than one case has been reported. In 1996, 17 cases of AIDS were reported, resulting in a cumulative total of 96 cases—70 men and 26 women—of which 71 died.

The number of cases of syphilis reported to the Ministry of Health dropped from 127 in 1992 to 54 in 1996, a reduction of more than 57%. In 1996 there were 112 gonorrhea cases, more than double that of the previous year. These figures may understate the true numbers, since most persons tend to seek a private physician to treat these diseases. It is imperative for private doctors to provide this information so that the Ministry of Health can better assess the situation.

Noncommunicable Diseases and Other Health-Related Problems

Environmental Health, Water Supply, Sewerage Systems, and Solid Waste Disposal. The Ministry of Health's Environmental Health Department is responsible for controlling water pollution; improving wastewater treatment; ensuring that the population has access to an adequate supply of safe drinking water; improving systems for the disposal of excreta and other substances harmful to human, animal, and plant life; and improving the country's food hygiene. The department is staffed by 14 environmental health officers.

Grenada has no national policies or organized programs to combat coastal pollution, but is cognizant of the various international agreements protecting the Caribbean Sea from pollution. Legislation pertaining to environmental health is being revised, and the anti-litter act is currently being processed.

The 1991 Census of Population and Housing indicates that 50.2% of Grenadians had their water supply piped into their dwellings, another 13.4% had water piped into their yards, 7.5% had private catchments, and 21.1% used public standpipes. The National Water and Sewerage Authority estimates that in January 1994, the percentage of households with pipe connections was about 59%, which means that about 85% of the population has access to potable water—96.4% in St. George's and 76.1% in the rest of the country.

The Ministry of Health is responsible for monitoring water quality, but its resources are insufficient to do so. The National Water and Sewerage Authority currently handles the monitoring, and submits periodic reports to the Ministry through the Chief Medical Officer. The Ministry is working to acquire its own quality monitoring capabilities through the Caribbean Environmental Health Institute (CEHI) and in conjunction with resource personnel provided by the Produce Chemist Laboratory.

According to the 1991 census, 59% of households used pit latrines, 33% used septic tanks, 3% were linked to a sewerage

system, and 3.9% (more than 850 households) had no toilet facilities. The St. George's Sewerage system was upgraded in 1992, and in 1993, the Grand Anse Sewerage project was put in place.

The introduction of the 1995 Solid Waste Act established the Solid Waste Management Authority, a statutory body intended to accomplish a more efficient system of removal and disposal of garbage. These functions previously carried out by the MOH are now privatized and contractors have the responsibility to keep the country clean. The MOH will continue its regulatory role in its monitoring of solid waste management in the country.

Food Safety. The Ministry of Health continues to upgrade the food handling and processing situation with the objective of reducing foodborne diseases. Several workshops have been held and will continue to be held for itinerant vendors to provide information and support for better food-handling practices.

Nutritional Diseases. The Grenada Food and Nutrition Council is a statutory body managed by an intersectoral Board of Directors and ultimately responsible to the Minister of Agriculture. The Council works closely with the Ministry of Health to implement joint programs and conduct district- and hospital-level research.

There is no active monitoring of the prevalence of iodine or vitamin A deficiencies in Grenada.

In 1996, the Council launched a project to monitor iron deficiency anemia in the population. The project will develop a protocol for the treatment of anemia and investigate the causes of the high prevalence of anemia in different population segments. Preliminary results show that between April and September 1996, 30% of pregnant women attending prenatal clinics for the first time during their pregnancies had hemoglobin levels under 10 g/dl, and that 34% of those attended clinics in the rural parish of St. Andrew. Of the total 626 children under age 1 year who were screened, 55% showed hemoglobin concentrations under 11g/dl, indicating that iron deficiency anemia in children of this age group was a problem throughout the island. Of the 2,667 children aged between 4 and 5 years old who were checked, 39% had hemoglobin concentrations under 11g/dl.

Staff in the maternal and child health program check the hemoglobin levels in infants to estimate the incidence of anemia in that population. In 1995 and 1996, the program was improved so that every health center could conduct the screening. Of the 2,680 infants who made their first visit to the maternal and child health service in 1996, 629, or 23.5%, had hemoglobin levels under 11g/dl.

This iron deficiency screening will be expanded to cover other age groups, and the data will be used with other Min-

istry data to monitor the prevalence of iron deficiency anemia.

It was difficult to get an accurate picture of the country's nutritional situation, because the information on local food production and consumption was limited.

Behavioral Disorders. Since its establishment in 1986, the National Drug Avoidance Committee has worked to "shape policies and oversee the implementation of action programs aimed at reducing the demand for drugs and alcohol." A national master plan for the 1997–2001 period has been completed. The plan assesses the country's drug problem, proposes a strategy for dealing with it, and outlines activities to be implemented, resource requirements, and persons responsible for various parts of the plan.

The committee has compiled drug-abuse data in collaboration with the police, the prisons, and the Ministry of Health, which has supplied information about Carlton House, a substance abuse rehabilitation center, and Rathdune, the acute psychiatric unit in the General Hospital.

RESPONSE OF THE HEALTH SYSTEM

National Health Plans and Policies

Grenada's health policy aims at ensuring that every Grenadian has access to quality health services. The Government has embraced primary health care as the main strategy for improving the population's health status and attaining "health for all by the year 2000"; it also has adopted the goals and targets established through the Caribbean Cooperation in Health initiative as the priorities for its health services.

The country has undergone an epidemiological transition that has moved chronic diseases ahead of communicable diseases as causes of morbidity and mortality. This change is placing greater demand on the health sector's limited resources. It should be said, however, that despite the demand, everyone in Grenada has access to public health services, regardless of their ability to pay.

The Government is decentralizing the health services and placing them under the management of a board of directors established by law. As part of an effort to introduce a national health insurance program, the financing of the health services also is being reviewed. The insurance program would create an equitable way of injecting new resources into the health sector, contribute to improve the quality of care, and help to reduce the dependence on the central government for health sector financing. The proposal for implementing the health insurance program is being reviewed to ensure that it responds to Grenada's needs and that both health care providers and the public understand it fully.

In conjunction with the Ministry of Finance's Central Statistical Office, the Ministry of Health will undertake a community health needs assessment in 1997, which will become the basis for developing a national health plan for 1998–2002. The plan, which will be formulated through an intersectoral approach involving broad public consultation, will chart the health sector's direction. Projects designed to strengthen health programs and ensure the orderly development of the health sector will be identified. The Ministry's organizational structure will be one of the first issues to be addressed in preparing the plan, since it will affect the overall management system. In addition, strategies will seek to establish an environment in which health workers can be as productive as possible to facilitate infrastructure development and to improve the quality of care provided to the population. More complete information will be gathered on the population of each health district, in order to have a clearer view of the population's health profile. Finally, indigents who cannot pay for health services will be identified, and special provisions will be put in place so that they, too, have access to health care.

Because every health worker is considered to be a health educator, further staff training is planned, as is the organization of activities to reach the community effectively. The school health program will be particularly emphasized, because it is one of the best ways to effectively reach the country's youth to help improve their lifestyles.

Organization of the Health Sector

Institutional Organization

Grenada is divided into seven health districts. Six of the districts have a health center, which is the major primary care facility, and an additional 30 medical stations distributed throughout the country are usually the first point of contact within the health system. All facilities are within easy access to the entire population, and most are in satisfactory physical condition.

The community health services function as the Ministry's front line for health service delivery. Each health district is assigned a District Medical Officer; several categories of nurses, including family nurse practitioners, public health nurses, district nurses, and community health aides; dentists and dental auxiliaries; pharmacists; and environmental health officers.

Secondary care is provided through a network of hospitals. The acute care facilities in the public sector include a 240-bed at St. George's General Hospital and two rural hospitals, Princess Alice, with 60 beds and the Princess Royal, with 40. The General Hospital is in disrepair, and the Government plans to refurbish it; the design is under way, and financing for the project is being secured.

A 20-bed acute psychiatric unit is located on the grounds of the General Hospital, and it serves as the entry point for those seeking psychiatric care and support. There also is an 80-bed psychiatric hospital (Mt. Gay), which handles chronic patients, and a geriatric facility with 120 beds; occupancy rates usually exceed 100% at both. Carlton House provides support and assistance to substance abuse patients.

As part of its rationalization study of health facilities, the Ministry will analyze utilization levels to determine whether it would be better to have fewer, better equipped, and better staffed facilities. The study also will recommend a maintenance schedule for all facilities based on their current state and realistic projections of financial resources.

The health sector's basic organization has remained unchanged in recent years. Most program heads are based at Ministry of Health headquarters, as are those for administrative, planning, health promotion, and budget and expenditure.

In 1992, the budgets for Carriacou and Petit Martinique health services were consolidated under one program, which has led to better monitoring of resources and a more integrated management and delivery of health care services in the two sister islands. An administrator for the consolidated program was appointed in 1996.

Between 1992 and 1996, there were four ministers of health, five chief medical officers, five permanent secretaries, and three medical officers of health. This turnover in the Ministry has broken continuity, which, in turn, has hindered overall health sector management. In order to achieve its goals, the Ministry of Health has relied heavily on department heads for preparing and implementing program plans and budgets.

Organization of Health Regulatory Activities

A Medical Board chaired by the Chief Medical Officer is responsible for granting medical licenses to practice medicine in Grenada. Nurses must register with the Nursing Council. Once granted, medical licenses need not be renewed annually, and the doctor need not pursue continued education or prove to be physically fit to practice. A pharmacy council monitors the importation and distribution of pharmaceuticals to the public and private sectors and registers pharmacists and pharmacies on an annual basis.

Health Services and Resources

Organization of Services for Care of the Population

Health Promotion and Community Participation. The Ministry of Health relies on health promotion as one of its

main approaches for improving the overall health of the public. The Health Education Department, a well-established unit within the Ministry, has been working toward improving the health sector's links with other sectors. Several workshops have been held for health workers, teachers, religious and community leaders, and NGO members to ensure that every health worker knows that he or she is a health educator and shows a commitment to an intersectoral, community-based approach to health promotion.

The Health Education Department has involved the community in the planning of health activities, including participating in the health needs assessment, the organization of community health fairs, and the participation discussions about issues such as AIDS and chronic diseases. As a way to help institutionalize health and family life education in schools, a health education curriculum is being developed with the Ministry of Education.

To date, the community has only been minimally involved in the planning and implementation of national health activities, and its involvement varies considerably from district to district. In its planned revitalization of the primary health care program, however, the Ministry will involve the community in the development and implementation of health programs.

Several NGOs are involved in health promotion programs in the community. For example, the Grenada Planned Parenthood Association conducts a youth outreach program through which counselors visit schools and community groups to speak on family life and sex education issues. Three times a year, they also conduct a 15-week program for adolescents and school dropouts that teaches them coping skills and helps them with academic work.

Moreover, health promotion continues to be the primary mechanism used to foster lifestyle changes to avoid health problems, especially those targeting better diet and more exercise. Public and private groups will be integrally involved in planning programs targeting lifestyle changes.

Diabetes and hypertension, both of which are prevalent in the country, are conditions that have been linked to a person's lifestyle. The Ministry of Health's Education Department has emphasized programs that provide information pertaining to these chronic diseases, particularly those that can lead to positive lifestyle changes. The Department also relies on radio programs, community forums, health fairs, and programs in schools as part of its work.

A family life education curriculum has been developed for secondary schools, but not all schools have put it in place. Teaching the curriculum is left up to the discretion of the principal or teacher; many parents strongly object to their children being taught "sex education."

The Ministry also works closely with NGOs in programs aimed at influencing the public's behavior. For example, the

Grenada Planned Parenthood Association, which primarily focuses on providing family planning services, also operates a youth center staffed by a nurse, who conducts clinics, and a youth officer, who conducts outreach programs in schools and communities and has a weekly radio magazine program. They also provide training in a range of skills to slow learners and school dropouts.

Information Systems. Information systems providing public health data are not functioning properly. As a result, from 1992 to 1994, efforts were made in collaboration with PAHO to strengthen the areas of communicable diseases, nutritional surveillance, and environmental health. Because information from the private sector is limited, health situation analysis in some important areas may be distorted.

Organization and Operation of Personal Health Care Services

Consultants conduct specialist clinics in pediatrics; ears, nose, and throat; and mental health at the district level. The District Medical Officer refers persons seeking care in other specialties to the General Hospital, but there are long delays before receiving services. Referrals for admission to the General Hospital also are made through the Accident and Emergency Department. No established follow-up system is in place to inform the district medical team when a discharged patient returns to the community, and this is an area that also will be given high priority in the future.

Inputs for Health

Grenada procures most of its pharmaceuticals and medical supplies through the subregional program managed by the Eastern Caribbean Drug Service. The procurement cycle ensures that regional standards are reviewed annually and revised periodically, and that essential drugs are available on a timely basis. Persons under a doctor's care can obtain medication from a public pharmacy at a much lower cost, and patients who are unable to pay can be exempted from the fee at a doctor's request.

Pharmacists dispense medication at doctor's clinics, but referrals to the main dispensary in the capital or to the private sector are sometimes necessary.

Human Resources

In 1996, there were 50 physicians employed in the public health sector, and most of them also worked in private practice; 10 were District Medical Officers who conduct clinics at

the community level. There are 36 doctors who work primarily in a hospital setting, 16 of whom are consultants and the rest, junior doctors. Fifteen doctors work exclusively in the private sector, most of them as general practitioners. There are 6 physicians per 10,000 population.

Several categories of nurses work in the public health system—173 nurse/midwives work in the three hospitals; 50 work at the district level, including public health nurses, family nurse practitioners and district nurses; and 9 work in the mental and geriatric facilities. There are 24 nurses per 10,000 population.

Legislation giving family nurse practitioners the authority to prescribe medication in accordance with their training has not yet been enacted, which is a source of frustration for these health workers. The Ministry of Health is reviewing draft legislation.

The public sector employs 26 pharmacists, most of whom are based in the community, the procurement division, and at the hospitals. There are 18 private pharmacies staffed with 21 pharmacists. Grenada has 4.8 pharmacists per 10,000 population. Shifting the pharmacy school from the Ministry of Health to the Ministry of Education is being explored, but up to 1997 the Ministry of Health retained some administrative responsibilities. The school trains pharmacists for the public and private sectors through a three-year program; 13 pharmacists graduated from the program between 1992 and 1995.

Seven dentists are employed in the public sector, but they all have private practices as well; another seven work exclusively in private practice. The country has 1.4 dentists per 10,000 population. Five dental auxiliaries work with the dentist in the public sector, mainly with the school population.

In 1996, the Ministry of Health implemented a performance appraisal system. It also has developed a training program that will target staff at all levels of the system who work in priority areas. Training areas will include management, public and interpersonal relationships, and the promotion of a better understanding of the public service.

St. George's University School of Medicine provides annual scholarships to Grenadian nationals, but caters primarily to non-nationals. In 1997, Grenada was among four countries whose medical schools met eligibility criteria to participate in the United States of America's Federal Family Education Loan Program. In 1996, the school added a Faculty of Arts and Sciences, which offers undergraduate training in several disciplines, including pharmacy and nursing and physician's assistants.

Research and Technology

The Windward Island Research and Educational Founda-

tion was created in 1994 and registered in Grenada as a non-profit organization in November 1996. The Foundation's programs are designed to conduct collaborative research projects with scientists from local and international institutes on the epidemiology and control of communicable diseases, particularly zoonotic infections, noncommunicable diseases, and on health systems and conservation ecology.

Expenditures and Sectoral Financing

The health sector has consistently received more than 12% of the annual Government recurrent budget, and public health recurrent expenditure is estimated to have represented about 4.5% of GDP over the 1992–1996 period. The main hospital accounted for 40% of all health expenditures, and district health services—including community health services, environmental health, and dental department programs—accounted for approximately 26%. Wages and salaries in the sector accounted for approximately 70% of health expenditures on human resources.

The Ministry of Health prepares annual budgets for recurrent expenditures and capital expenditure that are coordinated by the Finance Officer and the Planning Officer, respectively. Each program head must fully justify budgetary requests and outline expected results, and staff at all levels participate in the budgetary process. Because the Government uses a line-item system for estimating its budget, it is difficult to monitor and price the various activities undertaken. The Ministry intends to continue having all departmental heads very involved in the planning and budgeting process, and focused on using the budget estimates as a management tool. Financial allocations by the Ministry of Finance usually are below the Ministry of Health's original request, a constraint that usually translates in budgetary reductions in such areas as maintenance and procurement.

The health sector in Grenada is underfinanced—the population's demand for resources is growing faster than the resources available for the sector. This is evident by the need for funds to rebuild the General Hospital; the insufficient funds for maintenance of other health facilities; and the inability to adequately pay health workers, especially physicians. The Government is presently reviewing the health sector's financing. In order to advance reforms, a financial model will have to be developed, showing current financing sources and the effect of the new funds generated by the proposed health insurance program. This process will entail in-depth discussions with the Ministry of Finance to determine necessary changes in the allocation of resources to the health sector. It should be noted that a major constraint in carrying out a financial reform of the health sector is the limited understanding of the level of health expenditure in the private sector,

which has grown in terms of numbers of physicians, pharmacies, and small hospitals.

External Technical and Financial Cooperation

Most international assistance provided to Grenada, excluding capital projects, is included as a component of the Ministry of Health's budget. During 1994–1996, however, some international assistance to the Ministry was not included in the total expenditure component. For example, Grenada partici-

pated in a USAID-funded health care policy, planning, and management project, which facilitated dialogue among officials of the Ministries of Health and of Finance and the social institutions in the member states of the Organization of Eastern Caribbean States. In addition, medical personnel from various organizations and groups from the United States and Canada have worked with local personnel to provide attention, and personnel teams from the United States military have assisted with refurbishing medical facilities and providing medical and dental care.