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# DOMINICA

## GENERAL SITUATION AND TRENDS

### Socioeconomic, Political, and Demographic Overview

**T**he Commonwealth of Dominica became independent from Great Britain in 1978. It is the largest of the Windward Islands, and it lies between the French dependent territories of Martinique and Guadeloupe. Dominica extends for 790 km<sup>2</sup>; its landmass is of volcanic origin and its topography is the most mountainous in the Commonwealth Caribbean. The island has lush forests and an abundance of rivers.

Dominica is divided into 10 regions, or parishes. The most populous is the Parish of St. George, where the capital city, Roseau, is located. According to the 1991 Population and Housing Census Report, the population of St. George was 20,365, or 28.6% of the country's total population.

Dominica is the only Eastern Caribbean territory with an indigenous Carib population, which is estimated to be around 2,000 persons. The Carib people are mainly concentrated in a reservation of some 3,000 acres that stretches for 13 km along the eastern coast and up into the ridges behind.

Dominica has a long democratic tradition of changing governments through elections; elections held in June 1995 marked Dominica's first change in government in 15 years. The Prime Minister is the head of the Government and the President is the Head of State. The Parliament is the government body for debate and enactment of legislation.

In its inaugural budget presentation in 1995, the new political directorate emphasized its commitment to stimulate the country's faltering economy and stated its vision for sustained and balanced growth in the agriculture, industry, tourism, and service sectors. Through a series of national consultations, the Government has enlisted the opinion of all involved stakeholders in the development of a socioeconomic development reform strategy.

Parliament has recently passed a resolution to reform the health care delivery system. Specifically, reforms would intro-

duce a national health insurance scheme and increase user fees as a way to improve local health care services and make the health care system more efficient, without discriminating against anyone who is unable to pay for services.

Dominica's economy has been traditionally described as small, open, and especially vulnerable to external shocks. Between 1992 and 1995, the gross domestic product grew in real terms at an average annual rate of just 2.1%. In comparison, during the 1986–1990 period, GDP increased at an average annual rate of 5.6%. This flattening of the economy was due in large measure to the poor performance of the banana industry, which dominates agricultural output: banana exports fell by 30.9% between 1994 and 1995.

The communication sector is the fastest growing sector of the economy, having registered real growth of 12.0% and contributed 8.8% to the GDP in 1995. Real expansion in the communication sector is followed closely by gains in the banking and insurance sector and in the construction sector, in that order. In terms of overall contribution to the GDP, however, the dominant sectors have been agriculture (despite registering negative growth for each of the last three years), government services, wholesale and retail trade, and banking and insurance, in that sequence.

The real per capita GDP of Dominica rose from US\$ 2,000 in 1992 to US\$ 2,047 in 1995—a 2.4% increase over the period. This represents an economic deterioration when compared to the 1988–1991 period, which showed an 8.1% increase.

The 1995 poverty assessment survey for Dominica showed that 27% of households live in poverty and are unable to adequately meet their basic needs, including their nutritional needs. The assessment concluded that despite considerable improvements in specific living conditions such as access to water, sanitation, electricity, health, education and the availability of television, “there was a great deal of poverty and an intensifying of poverty and vulnerability.”

The unemployment rate in Dominica has been estimated officially at 9.9%, using the 1991 Housing and Population

Census as the basis for analysis. This represents a significant improvement over the figure of 18.6% reported in 1981.

There is no compulsory education policy. However, both males and females have historically maintained a relatively high level of school enrollment. For example, in 1993 (the last year for which complete data are available), 91.6% of the age group 5–19 years old were registered in the school system, a percentage that has been more or less consistent for the past decade. The population's level of education attained breaks down as follows: 67.1% completed primary school education, 15% completed secondary and post-secondary education, and 1.7% reached university or completed an advanced-level education and training.

The 1991 census report also found that, although the population aged 15–19 years old totaled 7,756, only 2,798 (36.0%) of them were enrolled in the school system, a fact that is largely the result of the limited number of available slots at the secondary level. Thus, almost two-thirds of the population terminate their formal education at the primary school level, at about the age of 15 years. The report indicated that 10.5% of the adult population had no formal education and could, therefore, be regarded as functionally illiterate. This illiteracy is evenly distributed among the sexes.

The total number of households was 17,310 in 1980 and 19,374 in 1991, an increase of 16.5% in the period between the last two census years. Most of these households were owner-occupied (72.0%), with 19.2% private-rented. In 1991, 5.1% of households had one room, 31.4% had two rooms, 22.4% had three rooms, 23.4% had four rooms, and the rest had five or more rooms.

The 1991 National Population and Housing Census counted 12,231 households, of which (63.1%) were headed by males and 7,143 (36.9%) were headed by females. There are no data on the number of single-parent families, but it can be safely assumed that the vast majority of households headed by women are single-parent homes.

Dominica is an extremely versatile producer of agricultural goods, which are used for local consumption and export. In terms of volume, the main agricultural crops produced since 1992 have been bananas, citrus, coconuts, and root crops, in that order. Combined, they account for 20.3% of GDP. Even so, Dominica is not self-sufficient in food production, especially in food high in protein. This is demonstrated by the fact that the importation of meat and meat products, milk and cheese, and fish and fish products amounts to more than US\$ 7.4 million (2% of GDP) annually. This is an area that is targeted for attention under the national agricultural diversification thrust.

The 1991 National Population and Housing Census showed a revised final count of 71,373 persons, a decline of 2,420 (3.3%) since the 1980 census. This drop has been largely due to emigration, which has been a characteristic

demographic feature of Dominica since 1960. The cities of Roseau and Portsmouth had populations of 15,853 and 4,644, respectively, with the remainder spread out among rural villages.

The Central Statistical Office has projected the population at the end of 1995 at 74,707, with males (52.3%) being slightly more numerous than females (47.7%). The population is relatively young, with 40% under the age of 15 years. The mid-year population was estimated by the Central Statistical Office at 71,892 in 1992 and at 74,729 in 1995.

During the 1983–1989 period, emigration caused a negative population growth. The flight had its greatest impact in 1989 when net migration returned a deficit of 2,355. Since 1992, emigration has slowed, with a positive net migration of 479 seen in 1994—the only such occurrence in more than 20 years. A deficit of 960 was recorded again in 1995. The most popular destinations are now the United States Virgin Islands, the British Virgin Islands, and the French Territories of Guadeloupe and Martinique.

In 1991, the total fertility rate was reported at 3.0 children per woman, decreasing from 4.2 in 1981. Projections put the corresponding figure for 1995 at 2.9. The group aged 25–29 years old is the most highly reproductive, with an age-specific fertility rate of 141.4 per 1,000 women, followed by the age group 20–24 years old (129.7) and the age group under 20 years old (114.6). The mean age at childbearing is 26.8 years. The crude birth rate declined from 25.5 per 1,000 population in 1992 (1,835 live births) to 20.1 in 1995 (1,501 live births), with a rate of 22.8 for the four-year period. There is no under-registration of births.

The crude death rate for the 1992–1995 period was 7.6 per 1,000 population, with annual rates of 7.9 in 1992 (566 deaths), 7.7 in 1993 (562 deaths), 7.2 in 1994 (529 deaths), and 7.8 in 1995 (584 deaths). There is no underregistration of deaths.

During 1992–1995, infant mortality rates per 1,000 live births were 14.2 in 1992 and 1993 (26 infant deaths in 1992 and 25 in 1993), 22.5 in 1994 (36 infant deaths), and 16.0 in 1995 (24 deaths), with a rate of 16.5 for the entire period. The high value of 22.5 recorded in 1994 was due to a decrease in the number of live births (1,599 that year, compared to 1,757 in 1993) concomitant with an increase in the number of infant deaths.

Life expectancy at birth, for both sexes combined, has been projected at 67.8 years for the period 1990–1995 (64.1 for males, 71.4 for females), an increase of 1.1 years over the 1985–1990 estimate of 66.7 years (63.5 for males and 69.8 for females). During the 1995–2000 period, life expectancy is expected to reach 68.8 years (64.8 in males, 72.8 in females). These estimates and projections were prepared by the United Nations Economic Commission for Latin America and the Caribbean, Demography Unit, Trinidad and Tobago.

## Mortality Profile

During the 1991–1994 period there were 2,175 deaths, of which 12.3% were assigned to ill-defined causes. Of the remaining 1,907 deaths from defined causes, 717 (37.6%) were attributed to diseases of the circulatory system. Within this cause group, hypertensive diseases (ICD-9, 401–405) and heart diseases (415–429) were foremost, with 296 and 269 deaths, respectively. A total of 381 (20.0%) deaths from defined causes were ascribed to neoplasms; 130 deaths (6.8%), to external causes; and 123 deaths (6.4%), to communicable diseases.

An analysis of the distribution by sex of deaths from the predominant cause group of diseases of the circulatory system indicates that women (437 deaths) were considerably more affected than men (280 deaths). However, there was a fairly even distribution between the sexes for neoplasms, with 183 deaths in women and 198 in men. External causes affected men much more than women, with 112 and 18 deaths, respectively.

## SPECIFIC HEALTH PROBLEMS

### Analysis by Population Group

#### *Health of Children*

The 1995–1999 National Health Sector Plan identifies children 0–5 years old as one of the priority groups. In fact, this cohort has been targeted for special attention in every major health policy document since 1980. Not surprisingly, considerable improvements have been recorded in child health care over time.

Prenatal care programs follow prescribed standards. In addition, there are adequate facilities and trained personnel to carry out an intranatal care program; child health clinics are available for the ongoing care of young children and the monitoring of high-risk infants; and health promotion programs are offered to parents and guardians.

Thanks to an aggressive expanded program of immunization that is delivered through public and private health facilities, coverage among infants has reached 100%. Apart from measles, vaccine-preventable diseases have disappeared from the morbidity statistics in Dominica. The number of measles cases reported has been very small, 1 to 2 cases per year between 1992 and 1995.

Undernutrition among young children (0–59 months), as determined through weight-for-age criteria proposed by the Caribbean Food and Nutrition (CFNI) Growth Chart, has been extremely low since 1991, hovering at an annual average of 1.4%. Indeed, in 1995 there were no cases of severe under-

nutrition reported. On the other hand, obesity has climbed as high as 8.7%, and may point to a reason for concern in the future.

Most newborns in Dominica weigh at least 2,500 g at birth; still, an annual average of about 7% of newborns exhibit a weight under 2,500 g at birth. The number and percentage of newborns with low birthweight in each of the years between 1992 and 1995 was 138 (7.5%), 97 (5.5%), 108 (6.7%), and 108 (7.1%), respectively.

The leading reported causes of mortality among children under 5 years old were prematurity, congenital anomalies, and respiratory distress syndrome. An average annual number of 32 deaths occurred in this age group between 1992 and 1995, with an average annual age-specific death rate of 2.8.

#### *Health of Adolescents*

The adolescent age group generally is very healthy in Dominica, save for the incidences of teenage pregnancy and sexually transmitted diseases, including AIDS. Contrary to popular belief, teenage pregnancy is neither a new nor a worsening phenomenon. Indeed, the number of births to teenage women declined from 20% of all births in 1992 to 14.2% in 1995—the lowest on record.

A total of 399 cases of sexually transmitted diseases including syphilis, gonorrhea, and HIV/AIDS, was reported in 1994; because data are not available by age group, no informed statement can be made on the incidence and prevalence of sexually transmitted diseases among this age group.

#### *Health of Women*

Women of childbearing age (15–44 years old) have been identified as one of the vulnerable groups in the 1995–1999 National Health Sector Plan. As a result, specialized programs relating to prenatal and postnatal care and family planning services have become institutionalized.

Pregnant women have universal access to care in Dominica, which is available through a generous distribution of clinics and health centers. Only 540 of the women seen for prenatal care at health centers in 1995, however, sought care by the 16th week of pregnancy (33.3% of a total of 1,501 births), which is below the recommended levels in the maternal and child health protocol. In 1994 there were 518 women seen by the 16th week (32.3% of 1,599 births), in 1993 there were 531 (36.4% of 1,757 births), and in 1992 there were 640 (34.8% of 1,835 births). This statistic must be interpreted with caution, since it is reported that a significant though unknown number of pregnant women in Dominica make their first prenatal visit to private physicians, rather than to the

public health sector. About 70% of all deliveries occur at Princess Margaret Hospital, with the remainder taking place at the home or in a health center.

Records show that the number of women of childbearing age who are currently using family planning methods increased from 5,578 (38% of women 15–44 years of age) in 1992 to 5,739 (44%) in 1995. Of current users, 62% in 1992 and 66% in 1995 attended government health centers; these are the consolidated figures from government health centers and the nongovernmental Dominica Planned Parenthood Association. The most popular methods in 1995 were oral contraceptives (58%) and injectables (34%).

A total of three deaths related to complications of pregnancy, childbirth, and the puerperium (ICD-9, 630–676) were recorded during the 1992–1995 period. Although this number is minimal, the target of zero maternal deaths was only reached in 1993.

### *Health of the Elderly*

The elderly (population older than 60 years old) accounted for 9.8% of Dominica's population at the end of 1995; 73.2% of all deaths occurred among this age group. Morbidity and mortality patterns in Dominica are influenced strongly by common conditions that commonly affect the elderly, particularly hypertensive diseases, heart diseases, malignant neoplasms, cerebrovascular accidents, and endocrine and metabolic diseases.

There are no specialized health care programs for the elderly, but they are exempt from payment for using the health services at all levels. The elderly also benefit from routine hypertensive and diabetic clinics that are conducted island-wide.

## **Analysis by Type of Disease or Health Impairment**

### *Communicable Diseases*

**Vector-Borne Diseases.** The only vector-borne disease of significance in Dominica is dengue fever. After a relatively uneventful period in 1994, when only three cases were confirmed, an epidemic occurred in 1995, with 148 laboratory-confirmed cases reported. Dengue serotypes 1 and 2 have been identified as causative agents. The combined total of laboratory confirmed and clinically diagnosed cases in 1995 was 297; four of these were confirmed as dengue hemorrhagic fever. The continuing endemicity of dengue fever is due to the high prevalence of the *Aedes aegypti* mosquito. In 1995, the household index of the vector was reported as 15.42%, and the Breteau Index was estimated at 30%.

**Intestinal Infectious Diseases.** In 1994, gastroenteritis (395 cases in children under 5 years old), typhoid fever (8 cases), dysentery (7 cases), and tuberculosis (11 cases) were the most common infectious diseases. Significantly, three of the leading conditions are related to fecal contamination and personal hygiene practices.

**Chronic Communicable Diseases.** Tuberculosis remains a public health concern, and a set of protocols have been established for finding cases, tracing contacts, and providing treatment. No association has been drawn between the incidence of the disease and the presence of AIDS.

**AIDS and Other Sexually Transmitted Diseases.** There is considerable underreporting of sexually transmitted diseases. For example, in 1994 there were 307 laboratory-confirmed cases of syphilis, while only 36 cases of gonococcal infections were reported. Local expert opinion is that reporting on sexually transmitted diseases is not very reliable.

A total of 53 new cases of AIDS were reported between 1992 and 1995. Most of the cases (54%) occurred in the age group 20–29 years old, with a male/female ratio of 3:1. A continuing program of HIV testing, surveillance, and education and counseling is in place.

### *Noncommunicable Diseases and Other Health-Related Problems*

**Malignant Tumors.** Neoplasms caused 20.0% of deaths from defined causes in Dominica in the 1991–1994 period. The main sites (as demonstrated by pathology confirmations, rather than by registered causes of death) are breast (112 of a total of 439 laboratory confirmations), cervix (78 confirmations), stomach (65 confirmations), and skin (49 confirmations). The peak incidence for malignant neoplasms is reported in the age group 55–64 years old.

Screening for cervical cancer is offered in Dominica through the facilities of the pathology laboratory at the Princess Margaret Hospital. The services are available to all women at risk upon referral, although the public health sector targets especially active family planning clients. A total of 15,136 Pap tests were examined between 1992 and 1995 and, apart from 1992 when a somewhat inflated figure of 4,642 smears were done as a result of a special campaign, a consistent pattern of 3,497 examinations were completed each year, on average.

**Diabetes and Hypertension.** The best statistics on clinic visits indicate that diabetes and hypertension are the most common reasons for health care demand. There are an estimated 4% diabetics and 18% hypertensives in the general

population, and they account for increasing numbers of visits to Ministry of Health clinics and health centers. In 1994, there were 10,123 visits by diabetics (a 20.3% increase from 1993) and 24,705 visits by hypertensives (a 28.5% increase from 1993).

**Mental Disorders.** The 1995 Mental Health Report estimates the age-adjusted prevalence of schizophrenia in Dominica as 0.9%, with 68 new such patients being registered in that year. The major causes of mental illness are related to schizophrenia and depression. A total of 2,166 mental health outpatient visits were recorded in 1995, compared with 2,148 in the previous year.

In 1995, 8.7% of the total 652 admissions to Princess Margaret Hospital Psychiatric Unit presented with a diagnosis of alcoholism, 7.6% with cannabis psychosis, and 2% with cocaine abuse. The 1995 Mental Health Report concluded that 90% of all patients seen at the prison psychiatric clinic had a history of drug abuse, but much more work must be done to determine the size and scope of the problem of substance abuse in Dominica.

A Draft Mental Health Policy has been formulated and is awaiting ratification. This document addresses services and legal and advisory frameworks.

## RESPONSE OF THE HEALTH SYSTEM

### National Health Plans and Policies

In the 1995–1999 National Health Sector Plan, the Government of Dominica reaffirms its commitment to the belief that “all citizens have the right to attain the highest possible level of health in order to be able to work and live in accordance with acceptable standards of human dignity at an affordable cost.” The plan continues to emphasize the shared responsibility between the Government and the community in achieving lasting improvements in the quality of life.

The gains in health status achieved from sustained public health interventions are well recognized and documented. The current strategy further emphasizes preventive health care and pursues the following priorities: applying the principles of health promotion to program planning, implementation, and evaluation; reforming the health sector to meet the special challenges involved in institutional strengthening, the mobilization and efficient use of resources, and human resource development; improving the health infrastructure through an ongoing process of retrofitting and maintenance; and strengthening the community’s participation and intersectoral linkages. The thrust toward health sector reform is directed toward cost recovery, cost containment, reconfiguration of the management system, and more accountability. The

priority groups have been defined as children aged 0–5 years old, pregnant and lactating mothers, women of childbearing age, adolescents, the elderly, and the underserved population in urban and rural areas, such as indigenous populations.

Chronic diseases have been targeted for special attention, given their prominent place among the morbidity and mortality statistics. Health promotion is considered to be pivotal in the delivery of these programs.

### Organization of the Health Sector

In 1979, Hurricane David brought massive devastation to Dominica’s health infrastructure, precisely at a time when the health services reorganization was being planned in light of the Declaration of Alma Ata. A model primary health care system was fashioned out of this adversity.

The main thrust of the reorganization divided the island into seven health districts, each with its own management team responsible for organizing the delivery of health services at that level. A Central Technical Committee provides policy, advisory, and technical support services to these District Health Teams.

Under this arrangement, primary health care has its own budget, which has been disaggregated by district and is based on programming needs and priorities. Some authority and responsibility have devolved to the District Health Teams as a way to enhance program delivery. As a result, various program areas now operate better with one another and activities are more goal oriented. This process also encourages greater community input. The reorganization of primary health care services has proceeded well, and the system has once again been endorsed by the 1995–1999 National Health Sector Plan.

The broad objectives for the development of health and health-related services are set out in the above-mentioned plan, and involve strengthening local health systems to meet the specific needs of communities, including prioritizing programs and allocating resources more efficiently; exploring new avenues for generating resources to sustain the sector; managing information within the sector effectively; improving the quality of secondary care by instituting structural changes, infrastructural improvements, human resources training, and better care; and streamlining the functional relationships between main administration and peripheral services regarding personnel and financial and supplies management. It is anticipated that these objectives will be accomplished through the careful harnessing of all available national, regional, and international levels. Further, close links will be maintained with regional governments and with organizations such as PAHO and CARICOM, in order to access required technical and other forms of assistance.

## Health Services and Resources

### *Organization of Services for Care of the Population*

**Health Promotion and Community Participation.** Dominica's Ministry of Health has a Health Education Unit responsible for developing and managing public information and education efforts on health issues. The Unit trains various other staff in the principles and practice of health education, plans and implements health education programs and activities with community groups, produces and presents mass media programs on relevant health and health-related topics, and produces graphic materials.

Because the Government of Dominica acknowledges that health promotion is one of the most effective weapons to combat health problems and promote healthy lifestyles, it has endorsed the Caribbean Charter on Health Promotion that was launched in 1994. As a result, one of the program priorities identified in the 1995–1999 National Health Sector Plan is the application of the principles of health promotion to program planning, implementation, and evaluation. Insufficient intersectoral cooperation and inconsistent community participation have hindered the application; the media's awareness and interest on the subject, however, will help offset this obstacle.

A national directive holds that communities and individuals should be involved in the development process. Thus, whether at the national development planning level or at the health sector reform level, deliberate efforts have been made to involve communities in the decision-making process. The community's involvement in the drafting of a National Socio-economic Development Strategy, the public debate that was encouraged on the new initiatives for health sector financing, and community members' active role in the work of District Health Teams have all been hailed as success stories in community participation. Many persons in Dominica, however, view community action merely in terms of coalescing around a given issue, rather than as an ongoing pursuit.

The 1995–1999 National Health Sector Plan, by committing itself to "fostering a copartnership with the community," keeps faith with the practice of community participation in health. At the same time, it acknowledges that "new strategies must be sought to achieve meaningful social mobilization."

**Environmental Protection.** The Government of Dominica is committed to "preserve the environment in its most pristine form," and it pursues several strategies to that end. For example, the Government controls land use practices, which includes the protection of forest reserves from exploitation. Environmental impact assessments and hydrogeological studies are required in all physical development projects, and these projects must be formally approved by the National Physical

Planning Board. Waterways are protected from chemical pollution, particularly regarding chemical contamination from agriculture. Sand mining is closely controlled through a zoning process, and it is restricted in beaches.

Typhoid fever is perhaps the most worrisome environmental health problem in Dominica. During the 1991–1995 period there were 44 confirmed cases of typhoid fever, for an annual average of 9 cases. The main source of contamination has been traced to food handling practices linked to inadequate sewage disposal methods. Most reported cases came from Marigot, Portsmouth, and Grand Bay, where sewage disposal has been an ongoing problem.

**Drinking Water Supply, Sewerage, and Waste Disposal.** According to the 1991 Population and Housing Census Report 77.5% of households had direct access to piped water supply from the national system, which is operated and maintained by the Dominica Water and Sewerage Authority. The water supply is routinely treated to maintain bacteriological quality. Significantly, neither springs nor rivers were mentioned as sources of domestic water supply; also noteworthy is the fact that private water supplies maintained by 12% of households may or may not be treated.

There are many serious concerns over the state of sewage disposal in Dominica. First, fully one-quarter of the total number of households (25.5%) have no approved form of sewage disposal. And although this figure represents an improvement over that in 1981, when the corresponding figure was 40%, it remains unacceptable. The situation is even more grave in some west coast villages, where as much as 60% of households have no sewage disposal facilities. The high water table creates practical difficulties in drilling holes to erect toilet facilities, while the population density of these areas compounds the problem.

The predominant means of sewage disposal is the water closet (36.8%), followed by the pit latrine (35.4%). Given the status of sewage disposal in the country, it is hardly surprising that gastroenteritis was the leading notifiable infectious disease (181.2/100,000 population) in 1994.

The proper management of solid and liquid waste is a priority. About 55% of the population are served with an organized communal solid waste collection and disposal service. The serviced area runs from Portsmouth in the North to Scottshead in the South, including the capital city of Roseau. This service is expected to be extended nationwide by 1998 under a new solid waste management initiative. A new landfill site at Fond Cole has been earmarked for development with a projected lifespan of 15 years.

**Food Safety.** The Government's policy regarding food safety involves ensuring that all foods intended for human consumption are sound, wholesome, and fit for use. There-

fore, the food protection and safety program aims at achieving the highest standards in the selection, preparation, storage, and display of any food offered for human consumption.

In 1995, there were 2,340 food handling establishments in Dominica, including grocery shops, restaurants, bakeries, hotels, and food manufacturing plants. The greatest concentration of food handling establishments is in the Roseau Health District (47.1%), followed by the Portsmouth Health District (20.1%) and the Marigot Health District (13.1%). The Ministry of Health's Environmental Health Division estimates that 82% of all food handlers in the country were medically examined and registered.

A major function of the food safety program is the inspection of locally produced meats intended for sale, especially beef and pork. In 1995, a total of 1,329 animals slaughtered for meat were inspected by the Environmental Health Division. It is estimated that this number represents between 55% and 60% of all animals slaughtered for this purpose.

In practice, only about 25%–30% of all imported foods are routinely inspected. Reportedly, this deficiency is almost entirely due to human resource limitations; there is no officer with exclusive responsibility for port health services. Most of the laws governing food safety are outmoded and in need of revision. A process of review has been in process for many years but remains incomplete.

**Workers' Health.** The occupational health and safety programs encompass the assessment and approval of new industrial establishments, routine inspection of plant operations and maintenance, and the monitoring of outdoor occupations such as construction work. These programs are jointly implemented by the Environmental Health Division of the Ministry of Health, Education, and Sports and the Ministry of Labour and Immigration. The 1992 Employment Safety Act stipulates that all injuries and accidents at the workplace should be reported to the Labour Division. The number of such cases reported between 1991 and 1995 ranged between 2 and 8 incidents per year. It has been suggested that there is considerable underreporting.

**Disaster Preparedness.** Dominica has suffered the brunt of at least three destructive hurricanes in recent history, which have wrought enormous damage to the country's economic, physical, and social infrastructures. This risk has made the country critically aware of the importance of emergency preparedness.

A National Disaster Preparedness Committee has coordinated the development of a National Disaster Plan and holds responsibility for its periodic update. The health sector, for its part, has produced a Health Disaster Plan that details actions to be taken at every level in the event of any emergency situation. While it is fair to conclude, therefore, that emergency preparedness planning is well entrenched, it is also true that

very little has happened in terms of simulation exercises to practice and sharpen responses. This is one of the objectives that the health sector has committed itself to pursue on an annual basis. New emphasis also is being placed on mass casualty management at the pre-hospital and casualty stages.

#### *Organization and Operation of Personal Health Care Services*

Health services in Dominica are basically organized in two levels—primary health care services and secondary care services. The country's well-organized health care delivery system adequately responds to the population's needs. Coverage at the community level is provided through a network of 7 health centers and 44 clinics strategically located throughout the island. The services are provided with no direct cost to the consumer.

The country's seven health districts are used as the structure for organizing the delivery of primary health care services. Each health district is provided with a network of Type I clinics that serve, on average, a population of 600 persons within a five-mile radius. Primary care nurses deliver health district services, and they undergo a two-year training program to prepare them to work at this level of care.

Types II and III health centers offer comprehensive services; the district's administrative headquarters are located at Type III health centers. Staffing at this level includes the district health officer, district nurse midwife, and other support staff. A polyclinic at Princess Margaret Hospital provides general medical care, accident and emergency services, and specialist outpatient referral services to the entire population.

Secondary health care services are provided through Princess Margaret Hospital, which currently has a capacity of 195 beds. As a rule, medical services at the Hospital are accessed through inpatient, outpatient, and casualty facilities.

The activity level at Princess Margaret Hospital remained relatively constant during 1992–1995: there was an annual average of 7,867 admissions and an annual average of 7,901 discharges. In 1995, there were 7,858 discharges, with an average length of stay of 7.8 days. Apart from obstetric conditions, the major causes of hospital admissions were heart conditions, hypertensive disease, diabetes, and upper respiratory tract infections. The hospital provides both acute and chronic disease care.

#### *Inputs for Health*

**Essential Drugs and Medical Supplies.** Dominica is a full participant in the Eastern Caribbean Drug Service, a regional pooled procurement service for pharmaceutical and medical supplies. Participation has resulted in an average of 25% savings on items purchased, as well as in improvements in the quality, reliability, and availability of essential drugs and sup-

plies. About 10% of the health budget is allocated to the purchase of drugs and medical supplies. The range of drugs available within the government service is determined by a National Formulary Committee, which reviews the National Formulary biennially in order to rationalize and update the list of drugs, including essential drugs, that should be available within the system.

Legislation relating to prescription drugs, drug registration, and license to dispense drugs is outdated and in urgent need of review. The country has no drug inspector responsible for enforcing the legislative provisions.

### *Human Resources*

Human resources available for health care delivery in Dominica have remained constant since the turn of the decade, with no significant changes in either the categories or the numbers of health personnel available, although deployment of staff to strengthen primary health care services has been favored somewhat. The new categories of Primary Care Nurse and Community Health Aide, as well as the institutionalization of a legislative and administrative framework within which Family Nurse Practitioners can function, reflect this orientation.

In 1995, the ratio of personnel (public sector posts) per 100,000 population were as follows: 46.8 for medical doctors, 8.0 for dentists, 28.1 for pharmacists, 311.9 for nurses, 108.4 for nurse assistants, 26.8 for laboratory technologists, 22.8 for environmental health officers, and 5.4 for radiographers.

**Training of Human Resources.** Two institutions in Dominica offer training for health care professionals—the government-run School of Nursing and the private, offshore Ross University Medical School. The program in the School of Nursing is tailored to the specific needs of Dominica's national health service, whereas the curriculum at Ross University leans toward external market demands.

Recently, the expansion in human resources for health has been limited by the controls placed on public sector spending precipitated by the economic downturn and the structural adjustment program. Even with the availability of adequate financing, however, targeted human resource expansion and development may prove difficult, since the optimum needs of the health sector in terms of number, mix, and deployment are yet to be defined. This will be an important challenge in the future.

### *Expenditures and Sectoral Financing*

The actual government expenditure in the health sector has averaged 13.2% of total recurrent budget for the 1992–1995 pe-

riod. This ranks health as the third largest consumer of government resources, behind administration (21.3%) and education (16.4%). In 1995, 39% of the total recurrent expenditure on social and community services was allocated to health. These figures relate to public sector expenditures only, since private sector expenditure is not captured. In terms of the GDP per capita expenditures on health, an increase was recorded from EC\$ 245.37 in 1991 to EC\$ 312.73 in 1995. The total government recurrent health expenditure in health for 1995 was US\$ 8,870,000, which represents approximately 13.5% of the total government recurrent expenditure.

Expenditure in the health sector is still skewed in the direction of secondary care, with hospital and laboratory services consuming about 50% of the financial resources for health. The allocation that falls under primary health care has shown only a marginal increase, from 22.3% in 1992 to 22.9% in 1995. It must also be noted, however, that environmental health services account for 7.7% of the health expenditure, thereby increasing overall expenditure on primary health care services. Almost three-quarters (72.9%) of the total expenditure on health is directed towards personal emoluments, with the remainder applied toward all other operating costs.

A schedule of user fees for bed charges, use of operating theater facilities, and diagnostic services exists for persons seeking secondary care at Princess Margaret Hospital. As a way to attain equity in health, all persons under 17 years old, prenatal women, the indigent, and persons suffering from communicable diseases are exempt from user charges. Of the total public health budget, only 5.5% is recovered from direct user charges; the remainder is financed through the consolidated fund.

### *External Technical and Financial Cooperation*

There are few prospects for bilateral international partnership for health, with the possible exception of cooperation with the Government of France, which has remained strong. Most international partnerships that have emerged over the past decade have been multilateral and have involved other Caribbean countries.

The Government's response to this situation has been to infuse health and environment considerations into all of its economic and social development initiatives and to strengthen regional ties. For example, the World Bank funded a regional Organization of Eastern Caribbean States Solid Waste Management Project that will benefit Dominica and that has been promoted as improving tourism, health, and the environment. Dominica also continues to participate in the Caribbean Cooperation in Health (CCH), which offers a platform for a regional approach to health services delivery, including shared services. In this regard, CARICOM and PAHO have been invaluable collaborators.