

1993

# HEALTH CARE IN BERMUDA

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Bermuda is a small group of islands located 586 miles east, southeast of Cape Hatteras, North Carolina. The islands cover an area approximately 20.5 square miles and have a maximum elevation of about 260 feet. The climate is subtropical, mild, frost-free and humid. The maximum temperature is 88 degrees Fahrenheit while the minimum temperature is 65 degrees Fahrenheit; the annual rainfall is 55 inches. Hurricanes during the season May to November are the only potential cause of natural disasters.

Permanent settlement began on the islands in 1609 and Bermuda is the oldest self-governing British Dependent Territory. It has a parliamentary system of government. A Cabinet of 11 members is appointed by the Premier, the Legislature consists of a Senate, whose 11 members are appointed by the Governor and a House of Assembly with 40 elected members.

There are virtually no natural resources on the island and it must import almost all of its consumable goods. The economy is based almost entirely on tourism and international company business. About one third of the work force is engaged in wholesale/retail trade, one third in restaurants, and hotels; another third is engaged in community, social and personal services.

The country generally shows a small balance of payments surplus; the Bermuda dollar ( BDS ) is pegged to the U.S. dollar on an equal basis and inflation is estimated at around 6% per annum. Per capita annual income is over US\$ 22,000. The recent recession however has had an adverse effect on the island's balance of payments resulting in a decrease in Government revenues.

Education is free in public schools and compulsory up to the age of sixteen. In 1993 a total of 10,403 students were enrolled in both government and private primary and secondary schools, and the Bermuda College. The literacy rate has been estimated as being as high as 97%.

Living standards are high, with good housing and well developed transportation and communication systems. Roads are of a good standard and there is a well-developed public transportation system ( bus, taxis and ferries ). Private car ownership is high although restrictions limit this to one vehicle per household. One hundred percent of the population has safe drinking water available in their homes, as well a hygienic waste disposal.

### DEMOGRAPHIC CHARACTERISTICS

The island's population was estimated at 58,990 in 1993. According to the 1991 Census, the population was 58,460. Fifty-two percent of the population were female and 48% were male. The annual growth rate fell slightly to 0.7%. The island has an 'aged' population. In 1991, 9% of the population was 65 years or older. The median age of the population increased from 29 years in 1980 to 31 years in 1991. The population distribution by age group is shown in the following table:

Table 1 Selected Age Distributions, 1991

Age	Number	Percentage of Total Population
0-4	4,051	7
5-14	7,354	13
15-44	29,684	51
65 and over	5,396	9

Source: The 1991 Census of Population, Census Office, Bermuda

The racial composition of population has not changed significantly over the past decade. In 1991, 58% of the island's residents were black and 42% white and other races. Data from the census indicate that 75% of the Bermuda-born population was black while the foreign-born population was primarily comprised of whites and other races ( 79% ). There was a significant increase in the foreign-born population since the last census.

Over half of the population belong to three religious groups, Anglican ( 27% ), Catholic ( 15% ) and African Methodist-Episcopalian ( 12% ).

In 1991, 13% of the population aged 16 years and older held university degrees, compared with 8% in 1980. Eighty-four percent of this population had completed secondary level education.

The island's labour force increased during the period from 1980 to 1991 by 12%. The number of females in the work force increased by 17%, males by 8%. Women now constitute 48% of the work force. Economic expansion during this period occurred primarily in the financial sector of the economy. However, as the economy entered the recession, unemployment levels reached unprecedented levels. The unemployment level reached 6% in 1991, triple the 2% recorded in 1980. The median annual household income recorded in 1991 was US\$ 48,588 a change of 16.4% since 1988 when household income was last measured.

There were 22, 430 households on the island in 1991. There has been a shift from multiple family member households to smaller households with the average number of persons per household dropping from 2.93 in 1980 to 2.61 in 1991.

Selected demographic indicators are shown in the table below:

Table 2 Demographic Indicators

Bermuda - 1991	
Estimated population	58,460
Population density (inhabitants per sq. mile)	3,160
Annual growth rate (%)	0.7%
Population < 15 years of age (%)	19.5%
Population ≥ 65 years of age (%)	9.0%
Birth rate (live births per 1,000 inhabitants)	16.4
Mortality rate (deaths per 1,000 inhabitants)	8.09

Source: Department of Health, Bermuda, 1992

## HEALTH STATUS OF THE POPULATION

### General Mortality/Morbidity

In general, Bermudians enjoy good health as measured by standard indicators. Life expectancy for females is 78 years compared with 70 years for males. Although life expectancy at birth has continued to improve, the difference between the sexes has continued to widen. Mortality and morbidity patterns have remained the same over recent years. Mortality rates for the population as a whole have not changed significantly. The crude death rate was 8.6 per 1,000 population in 1993. While the birth rate has declined, the infant mortality rate has improved. Selected vital statistics are shown below.

Table 3 Selected Vital Statistics

	1960	1970	1980	1990
Birth rate	28.2	20.4	14.6	15.2
Death rate	8.5	7.4	7.3	7.5
Infant mortality	31.5	15.1	13.9	7.8

Source: Department of Health, Bermuda

Fertility has declined since the 1970's. The general fertility rate in 1993 was 66.0 per 1,000.

In 1993, the leading causes of death on the island were: malignant neoplasms, diseases of the heart, cerebrovascular diseases, AIDS, accidents and violence, pneumonia, diabetes, renal disease and chronic liver disease.

Incidence rates for sentinel health events ( i.e. , uncontrolled diabetes, uncontrolled hypertension in adults ) are not readily available. The major, current health problems for Bermudians include cancer, ischaemic heart disease, fatal cerebrovascular disease ( stroke ), HIV infection and AIDS, and accidents ( motor vehicle ).

#### *Heart disease*

Death rates for heart disease remain unacceptably high. In 1993, one of every five deaths was due to ischaemic heart disease. Up through 1992, heart disease was the leading cause of death.

#### *Cancer*

One of every four deaths, was attributed to cancer and cancer has increased in frequency as a cause of death. Rates have increased gradually, primarily as a result of increases in deaths from cancer of the breast and the lung. The major types of cancer include: breast, lung, colon and stomach.

## **HIV/AIDS**

Incidence rates for sexually transmitted diseases have not altered significantly over the past five years. Reported cases of gonococcal infections have declined, while the rates of reported cases of syphilis, chlamydia and non-specific urethritis have increased slightly. The rate for herpes has remained about the same.

Human immunodeficiency virus ( HIV ) infection and the acquired immunodeficiency syndrome ( AIDS ) are a major public health problem on the island. AIDS was first reported in 1982; at the end of 1993, a total of 247 cases were recorded. Two hundred and thirteen persons with AIDS have died. Females accounted for 20.2% of all reported cases. The majority of cases ( 90.4% ) have occurred in the 20 - 49 year age group while one paediatric case has been recorded. Of the cases reported, 47.4% were reported in intravenous drug abusers and 28.7% in homosexual or bisexual men. The percentage of cases occurring in intravenous drug users has gradually declined while there has been an increase in cases in homosexual and bisexual men and among the heterosexual partners of persons infected with HIV.

## **Accidents**

Accidents are a major public health problem with significant morbidity and mortality. Although alcohol analyzers have been introduced, and road safety campaigns are on-going, fatalities from motor vehicle accidents remain high. Accidents represent the major cause of death in the 15 - 34 year old age group. Males are affected disproportionately.

## **Health of Children and Youth**

Maternal and child health indicators are good. In 1993, over 95% of pregnant women received prenatal care; 99% were fully immunized against tetanus and all births took place in hospital. A total of 4.1% of newborns had a birth weight of 2,500 grams or less compared with 1992 when there were 7% low birth weight infants.

In 1993, there were 9 deaths of infants under 1 year of age and the infant mortality rate was 9.6 per 1,000 live births. The main causes of death were congenital anomalies and conditions originating in the perinatal period. Over the past decade, the infant mortality rate has ranged from a high of 13.5 in 1986, to 3.2 in 1988.

For infants up to 1 year old, respiratory diseases were the leading cause of hospitalization. For children 1 - 14 years old, the leading causes were respiratory diseases and accidents.

In youths 15 - 19 years old, accidents were the leading cause of death and one of the major causes of hospital admissions along with pregnancy and respiratory diseases.

The incidence of vaccine preventable diseases is low. Immunization against all five of the common preventable childhood diseases ( measles, rubella, DPT, polio and mumps ) have been maintained at consistently high levels. Reported cases of mumps and measles declined considerably after the introduction of the triple vaccine MMR in the 1980's. Immunization against H. influenzae was introduced in 1990.

Obesity is a public health concern. Approximately 90% of children in the 5 - 15 years old age group have weight for age. There is some obesity in this age group.

Decreases in the incidence of dental decay have been dramatic over the past decade and oral health in children is generally excellent. This is largely attributed to a preventive dental care

programme for infants and children, that provides free fluoride treatment. The voluntary school-based programme has maintained high participation levels.

### Health of Adults

According to the 1991 Census, 33,581 persons, over 57% of the total population were between the ages of 25 and 64 years. The most important causes of mortality and morbidity in this segment of the population were chronic diseases and accidents and violence. Substantial increases in mortality occurred in the population 25 - 44 years old, between 1985 and the present. These increases were due primarily to deaths from AIDS, particularly in males. The leading cause of deaths in 1993 for persons 25 - 34 years old was accidents. AIDS was the main cause of mortality in those 35 - 44 years old.

The major causes of hospital admissions for adults aged 25 - 44 years include childbirth and accidents. For those aged 50 - 64 years diseases of the circulatory and digestive systems and cancers are the leading causes.

### Health of the Elderly

The aged represent the most rapidly growing segment of the islands' population. Among this age group, the leading causes of death include heart disease and cancer. For the elderly 65 - 74 years old, the most common causes of hospitalization included diseases of the circulatory system, cancer and diseases of the digestive system. For those 75 and over, the major causes were diseases of circulatory and respiratory systems. A major study of the elderly was completed in 1991.

## HEALTH CARE

The health care system in Bermuda is made up of both public and private sectors. Responsibility for health falls under the jurisdiction of the Ministry of Health, Social Services and Housing. The ministry is mandated to promote and protect the health and well-being of the islands' residents and is charged with assuring the provision of health care services, setting standards and providing coordination of the health care system. The Minister of Health sets public policy and reports to the Cabinet. The ministry has responsibility for health planning, and evaluation. There is no central planning agency.

The ministry comprises several departments and agencies, including Ministry Headquarters, the Department of Health, the Department of Child and Family Services, the Prisons Department, the Department of Financial Assistance and the Housing Corporation. Coordination and control of the Ministry's departments is handled through Ministry headquarters. Each department is responsible for its own operation, under the authority of the Permanent Secretary, and the direction of the department head or director.

The ministry also has responsibility for the islands' hospitals. These are administered by the Bermuda Hospitals Board, a statutory body appointed by the Minister. Public health services on the island are provided by the ministry through the Department of Health.

## Human Resources

In general, human resources for the provision of health services are sufficient to meet the country's needs.

### Physicians

There are 81 physicians in active practice on the island. This number is assumed to be in balance with current requirements although there are shortages in some specialty areas. There were 13.8 physicians per 10,000 population in 1993. Physicians are distributed by specialty as shown in the following table:

Table 4 Physician Population by Specialty 1993

Category	Number
General/Family Practice	25
Internal Medicine	6
Cardiology	1
Geriatrics	1
General Surgery	4
Orthopaedics	4
Ophthalmology	2
Otolaryngology	1
Urology	1
Paediatrics	5
Obstetrics/Gynaecology	4
Radiology	2
Psychiatry	6
Anaesthesiology	7
Pathology	2
Emergency Medicine	2
Sports Medicine	2
Public Health/ Preventive Medicine	6
	81

Source: Chief Medical Officer Department of Health, Bermuda, 1994

### Nurses

Nurses represent the largest group of health care providers in the country; there were 689 licensed nurses, including registered nurses, enrolled nurses and psychiatric nurses in 1993. Registered nurses constitute 75% of the nurses on the island. The greater percentage of nurses are hospital based; a significant proportion of these are non-Bermudian. There is an ongoing nursing shortage in some specialized areas of nursing.

### Dentists

There are 27 dentists in active practice; five are in the public health service. There are 4.6 dentists per 10,000 population. Most private dentists are in solo practice. Specialized dentistry, i.e. periodontics, orthodontics, etc., is available.

### **Mid-level Practitioners**

Health care providers such as nurse midwives are registered but do not provide independent care.

### **Allied Health Personnel**

There are a variety of allied health personnel as shown below:

Table 5 Allied Health Personnel

Category	Number
Physiotherapists	15
Speech-Language Pathologists	7
Nutritionists/Dietitians	9
Medical Lab Technologists	40
Radiographers, etc.	23
Occupational Therapists	15

Source: Council on Professions Supplementary to Medicine, Bermuda, 1994

### **Pharmacists**

There are 38 pharmacists who provide a range of services from retail pharmacy to clinical pharmacology. Most pharmacists are employed on a salaried basis.

### **Regulation of Health Care Providers and Training**

Licensing is required for most health professions. Regulation of physicians is provided through the Bermuda Medical Council under the Medical Practitioners Act, 1972. Nurses are registered with the Bermuda Nursing Council on an annual basis, while pharmacists are regulated through the Bermuda Pharmacy Council. Dentists are licensed by the Bermuda Dental Board.

Table 6 Health Care Professions

Category	Regulatory Body	Professional Association
Physicians	Medical Council	Bermuda Medical Society
Dentists	Dental Board	Bermuda Dental Association
Nurses	Nursing Council	Bermuda Nurses Association
Pharmacists	Pharmacy Council	Bermuda Pharmaceutical Association
Nutritionists/Dietitians	Council on Professions Supplementary to Medicine	Bermuda Dietetic Association
Physiotherapists	Council on Professions Supplementary to Medicine	Bermuda Physiotherapy Association
Psychologists		Bermuda Psychological Association
Opticians/Optometrists	Opticians Board	

Source: Chief Medical Officer, Bermuda



Allied health workers are registered with the Council on Professions Supplementary to Medicine, under the Professions Supplementary to Medicine Act. There are currently no provisions under legislation for the registration of nurse practitioners or physicians assistants.

Legislation governing psychologists has been drafted. There are no regulations on counselors.

No medical schools or graduate medical education programmes exist, continuing medical education is required for hospital based physicians. Refresher courses and a degree programme for trained nurses have been developed at the Bermuda College in conjunction with overseas institutions. A training programme for emergency medical technicians (EMT's) has recently been established.

## HEALTH CARE DELIVERY

Primary health care services are delivered from private physicians offices, government health centres and hospital outpatient clinics. Additional ambulatory care services are provided through specialty clinics and the emergency room at the hospital. A significant proportion of primary health care is delivered through the private sector. The majority of physicians and dentists are independent, private practitioners. Most other health care providers are employed on a salaried basis by the hospitals, the public health service or by private physicians.

There are no health maintenance organizations (HMO); independent practice associations (IPA); or preferred provider organizations (PPO's). There are no provisions for pre-paid medical care.

### Medical Practice

There are a small number of multi-specialty group practices and a limited number of partnerships involving specialists. The majority of physicians are self-employed and in solo practice. Salaried physicians are found in the public health service and in the hospitals.

Primary care physicians ( including internists and paediatricians ) constitute 50% of all physicians in active practice. General practitioners ( family physicians ) and other primary care physicians serve as gatekeepers and co-ordinate care and control access to other specialists. Access to primary care generally available on demand. Office visits are a major portion of physician patient contact. Almost all physicians have admitting privileges at the hospitals.

### Public Health Services

Responsibility for providing public health services rests with the Department of Health. The department is mandated to provide disease prevention and control, and health promotion services for the island. It serves as a regulatory agency, and monitors food safety, water and air quality. It also provides for a variety of public health services including personal health and dental health as well as environmental health services.

The public health service is substantially involved in providing personal health services and administers a number of traditional public health programmes including: maternal and child health, school health, immunization, communicable disease control, as well as home health care (including, health visiting and district nursing and select specialized care, i.e., AIDS), rehabilitation, health education and health promotion programmes. Services are generally categorical in nature and are provided across socioeconomic lines.

The delivery of public health services is facilitated by the division of the island into three health regions. The department operates a health centre in each of these regions. These centres offer antenatal care, family planning services, immunizations, child health and other primary care services as well as dental clinics for children.

Private voluntary agencies assisted by Government provide some specialized services, (i.e. community based oncology nursing, personal services for HIV infected persons, etc.).

## Hospitals

There are two acute care hospitals on the island; the King Edward VII Memorial Hospital, a general (community) hospital with 234 beds; and St. Brendan's Hospital, a psychiatric hospital with 166 beds. The King Edward VII Memorial Hospital also has 90 geriatric and rehabilitation beds. Both hospitals are operated by the Bermuda Hospitals Board which is appointed by the Government. The Board is a corporate body which can be sued. It delegates day to day responsibility for the running of the hospitals to an Executive Director; he is assisted by a number of senior managers, including a Chief of Staff, and a Director of Nursing and Patient Services at each hospital. Medical Staff Committees representing the physician staff are involved in the running of the hospitals as well. There are no private hospitals on the island.

The general hospital provides diagnostic and treatment services for patients with a variety of medical conditions (surgical and non-surgical). Services include: Medicine, Surgery, Paediatrics, Obstetrics and Gynaecology, Rehabilitation and Geriatrics. In addition the hospital provides some specialized and intensive services, including oncology, medical and surgical intensive care, and renal dialysis. A neonatal care unit is being developed. Both hospitals undergo periodic accreditation reviews by the Canadian Council on Hospital Accreditation.

The average length of stay at the general hospital was 8.7 days per admission in 1993; this has remained stable for several years. Average occupancy was 75% and there were 63,905 patient days.

There are no urgent care or freestanding outpatient surgery centres. Outpatient surgery is provided through the hospital. There were over 29,238 patient visits to the Emergency Room in 1993.

In addition to its specialty, ambulatory care clinics, the general hospital operates a primary care clinic for indigent patients.

There are no secondary, or tertiary referral hospitals on the island. However, there are traditional links for the provision of tertiary care with the U.S.A., U.K., and Canada.

Funding for the hospital is provided through a variety of mechanisms, including: insurance and Government subsidies. The Government provides an operating grant to the psychiatric hospital.

## *Mental Health Services*

Mental health services are provided through psychiatrists, psychologists, a psychiatric social worker and mental welfare officers attached to St. Brendan's, the only psychiatric hospital on the island. St. Brendan's provides care and treatment for both mentally ill and mentally handicapped individuals. The hospital operates a day hospital, an outpatient clinic and provides community based services. It maintains a half-way house and is developing additional supported facilities in the community.

With the exception of one psychiatrist in private practice, all of the consultant psychiatrists on the island are employed by the Hospitals Board on a salaried basis.

### Long-Term Care Facilities

Long-term care facilities are operated by the Hospitals Board and the Government. Skilled nursing care facilities include Lefroy House, with 57 beds and the Extended Care Unit at the general hospital, with 90 beds. A hospice facility for the terminally ill, Agape House was opened in 1991; it provides care for individuals with AIDS and other terminal illnesses. It is operated by the Hospitals Board and partially subsidized by public funds. There are eleven residential care facilities for the elderly including nursing homes that provide limited nursing care and personal services and domiciliary care homes that provide room and board and limited assistance with personal services. Most of these facilities are partially funded through public monies.

### HEALTH CARE FINANCING

The health care system is financed through a variety of mechanisms. Health services are either paid through an insurer, by a government agency or by consumers. There is no universal, publicly funded health insurance. Hospitalization insurance is mandatory for all employed and self-employed persons. Both employers and employees contribute to hospitalization insurance; employers must contribute 50% of the premium costs. Insurance coverage is nearly universal; there is some over insurance. Administration of Hospital Insurance is provided through the Hospital Insurance Commission. Insurance sold by private companies and public agencies is regulated through the Commission, and must provide mandated, minimum benefits ( the Standard Hospital Benefit ).

Health insurance schemes are provided through private companies, public agencies and employers. Government employees are insured through the Government Employees Health Insurance Scheme, while several major employers operate 'approved schemes' to cover their employees. The Hospital Insurance Commission operates a health insurance plan as well, the Hospital Insurance Plan. This plan has an annual open enrollment period designed to ensure access to health ( hospitalization ) insurance for all residents of the island.

There are no restrictions on direct payments to providers by consumers, and physicians may bill patients for charges in excess of standard insurance reimbursement or agreed fee schedules.

A Mutual Reinsurance Fund covers dialysis, kidney transplants, diabetes education and counseling, anti-rejection drugs, hospice care and long-stay ( in-hospital ) patients. It is funded through a compulsory levy on all health insurance premiums collected, and was introduced to spread the cost of high risk claims among all insurers. The fund is administered by the Commission as well. Hospitalization is provided free-of-charge to children and the aged; this is covered through a Government subsidy to the Bermuda Hospitals Board. The subsidies to the hospitals are also administered by the Commission.

Public health services are generally free, or provided at modest cost; they are funded through general revenues.

The prevailing method of payment for doctors and dentists is fee-for-service. There are no government controls on physicians' fees; however a fee schedule for hospital based physician services is established on an annual basis by agreement between the Bermuda Medical Society and the Health Insurance Association of Bermuda.

Government determines overall increases in hospital fees, and regulates the acquisition of major equipment and services.

## HEALTH POLICY

Government health policy places emphasis on several areas including: maternal and child health, health of the school-age child, community nursing for the elderly, dental health, control of communicable diseases, mental health, and alcohol and drug abuse. Population groups designated for special attention include mothers and infants, school-age children, and the elderly. Public policy on health is based on the following:

1. Government should be the provider of last resort, and should serve as the guarantor of public health.
2. All residents of the island should have the opportunity to participate in determining the priorities of the health care system.
3. Individuals, the community and the government share responsibility to maintain the public health and assure conditions in which the individual can maintain and improve his or her health status.

## FUTURE DIRECTIONS

In response to community concerns about escalating health care costs and the quality of health care on the island, Government initiated a comprehensive review of the health care system in 1993, involving providers, consumers, the government and the insurance industry. The review is focused on four major areas: health care costs, financing, quality and needs assessment.

The general practitioner or family physician will probably continue to play the role of 'gatekeeper' and control access to secondary care. It is likely that the island will develop more formal arrangements with preferred providers in the U.S.A. and Canada for tertiary care and some secondary care in an attempt to meet the challenge of increased costs. Insurers are facing increased pressure to expand coverage and increase benefits, particularly for the treatment of addictions and preventive services.

Both the Public Health Service and the Bermuda Hospitals Board have focused on the development of additional ambulatory and community-based services, and greater integration of existing community services, particularly for the elderly. There are already expectations that these services should be funded through insurance.

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