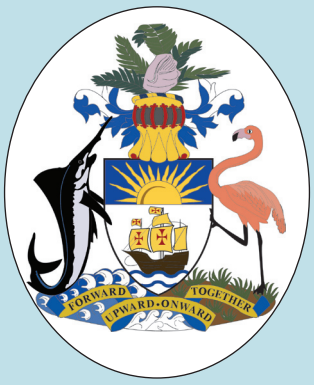
ANNUAL REPORT OF THE CHIEF MEDICAL OFFICER

2001 - 2003

Ministry of Health
Commonwealth of The Bahamas

April 2005



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EXECUTIVE SUMMARY

Background

The Commonwealth of The Bahamas is an archipelago of some 700 islands and cays located in the Atlantic Ocean. In 2002, the population was estimated to be 316,298. The two major population centres are New Providence and Grand Bahama where 85% of the population resides. The population is shifting from youthful to less youthful as a result of lower fertility rates and higher life expectancy rates. The national per capita income increased from B$11,041 (Bahamian dollars) in 1995 to B$21,531 in 2002. Tourism and tourism-related commerce are the most important economic activities in the country. According to the 2002 Human Development Report, The Bahamas ranked 49 out of 174 countries with a Human Development Index of 0.815. In 1999, the adult literacy rate was 95.7%. After Independence in 1973, The Bahamas remained a member of the Commonwealth of Nations, with Her Majesty the Queen as Head of State. The Bahamas is governed by a bi-cameral legislature based on the Westminster Model. The country's most recent elections were held in 2002.

The government is committed to protecting and promoting the health of the people of The Bahamas. The Ministry of Health (MOH) has a mandate "to ensure that the highest quality of services for health promotion, protection and care are accessible to all persons of The Bahamas in order to achieve optimal health", as well as a strategic plan to guide health development.

Objective

The Chief Medical Officer's (CMO) report is a comprehensive report on health developments in the country which is presented at an annual meeting of all CMOs in the Caribbean Community. The Pan American Health Organization (PAHO) has developed a template for standardized reports for the member states. Each country can, of course, vary the format to meet its own needs and experiences. This is The Bahamas' second report which updates the first report prepared in 2002. This report provides baseline information as well as trend data for the ongoing evaluation of the National Health Services Strategic Plan (NHSSP) 2003-2004.

Other reports exist which, when taken together, provide an analysis of the health situation in the country. Two such reports are PAHO's quadrennial report Health of the Americas, Bahamas Chapter and the Caribbean Cooperation of Health II report which charts the country's progress toward meeting a set of targets in eight priority areas.

Methodology

The Planning Unit of the MOH was responsible for preparing this report. In 2004, representatives from the MOH, its departments and agencies (Department of Public Health (DPH), Department of Environmental Health Services (DEHS), Public Hospitals Authority (PHA)), the Department of Statistics and the Ministry of Agriculture and Fisheries came together to begin work on the report. The team reviewed reports and documents, interviewed key persons, relied on the findings of the mid-term evaluation of the NHSSP 2000-2004 and conducted research on line.

Gains in Health

1. The Bahamas has made impressive gains over the years in the area of health:

- Life expectancy at birth has increased steadily from approximately 66 years between 1969-1971 to approximately 73 years between 1999-2001.
- The infant mortality rate (IMR) has declined from 19.7 per 1,000 live births in 1994 to 15.0 in 2003.
- The number of new persons testing HIV positive annually has declined by 56.1% from its peak level of 659 in 1994 to 259 in 2003.

- The prevalence of HIV in pregnant women is on the decline, from 4.2% in 1994 to 3.1% in 2003.
- After years of mono-therapy, in 2001 triple antiretroviral (ARV) therapy was given to pregnant women. In 2003, there was no mother-to-child transmission of HIV to newborns in mothers who received ARV therapy.
- Reported deaths from HIV/AIDS declined from 320 in 1999 to 102 in 2003, which reduced the number of years of potential life lost (YPLL) due to premature death from AIDS over the referenced period.
- The Communicable Disease Trend (Bahamas) 1994-2003 indicated that vaccine preventable diseases are becoming extinct. The Pentavalent (DPT, Hib. and HBV) vaccine was included in the national immunization schedule of The Bahamas.
- The government increased access to affordable quality health care for persons living with HIV/AIDS by removing cost barriers.
- Behavioural change initiatives against HIV which target adolescents have been initiated.

2. A revised version of the 2000–2004 NHSSP was completed in 2003. It provides indicators within a comprehensive framework to focus attention on areas of deficiency in the seven priority health programmes.
3. Since 2000, the budget allocated to the health sector has increased, health outcomes have improved and legislation has been strengthened.
4. The administrative offices of the MOH and the DPH relocated to a new, modern, multi million dollar facility in October 2002.
5. An ultra modern primary health facility opened in the Southern District of New Providence. It provides diagnostic services including ophthalmology, speech therapy, and preventive oral health for children, audiology, laboratory and radiology services.
6. The DEHS and The Bahamas Environmental, Scientific and Technical Commission were incorporated into the MOH.
7. The MOH's Planning Unit which is responsible for coordinating standardized planning was strengthened. Several existing programmes were improved and new ones established.

- Programme coordination was introduced in the DPH.
- The Chronic Non-Communicable Diseases (CNCD) National Programme was strengthened.
- The National Blood Programme was established.
- The National Laboratory Strengthening Project was established and phased in.
- The Public Health Information System Project Plan was completed and implemented according to schedule.
- Oral health services were expanded to provide oral prophylaxis (cleaning), sealants, fluoride treatments and restorations, dental prosthesis and school-based dental education throughout The Bahamas.

Areas of Concerns

Despite the gains in health care, some problem areas remained, and new concerns arose over the period 2002 – 2004. These are discussed under three main headings – health outcomes; health information management and research; and health policy, planning and management.

Health Outcomes

- The Bahamas Living Conditions Survey, conducted in 2001, showed that 34.4% of adults 21 to 60 years of age were overweight (body index mass (BMI) of 25 – 29.9) and 30.9% were obese (BMI 30-34.9).

- CNCD (in particular, hypertension, diabetes, coronary heart disease, stroke, chronic respiratory diseases and cancers) accounted for nearly 45% of all deaths in the country in 2003 and represent the single major contributor to the total YPLL. With increased life expectancy, lower fertility rates and lifestyle changes, CNCD have gained more importance as causes of mortality.

- The 2003 mortality data show that infants and persons 45 years old and older have a disproportionate share of deaths compared with their share of the total population.

- Over the five year period, 1999-2003, communicable diseases accounted for 30% of the total YPLL. This is largely attributable to younger people dying from AIDS.

- Between 2001-2003, more males died from external causes than did females. Conversely, more females died from neoplasms than did males.

- The overwhelming causes of death of infants were those originating in the perinatal period and congenital causes. Together these accounted for 80.4% of all deaths of infants.

- Between 2001-2003, child neglect and physical abuse were the most commonly reported types of child abuse and accounted for 42% and 32% respectively of all cases. Sexual abuse and incest accounted for an additional 23% of reported cases.

- Adolescent pregnancy is a continuing problem. In 2003, the live birth rate per 1,000 females aged 10-19 years was 23.0.

- The morbidity profile of adolescents and the results of a national youth survey showed that more attention must be paid to risk factors such as smoking, alcohol use and abuse which contribute to the high prevalence of homicides and injuries.

Health Information Management and Research

- Quality information is not available system-wide but is available from some units and departments, though not on a consistent basis. Consequently, coordination of information management remains a challenge.

- Technical problems with the automated Health Management Information System (HMIS) used in the PHA persist.

- Annual and other periodic reports need to be produced regularly.

- The quality of data, data processing and analysis and health information dissemination is weak.

- The surveillance system for communicable diseases is well developed but the surveillance system for non-communicable diseases is not.

Health policy, planning and management

- Results of the Essential Public Health Functions evaluation indicate that the public health care system performed below average in all but two areas.

- Various units and departments (e.g. human resource development, equipment) have not yet developed policies and operational plans within the framework of the Revised NHSSP 2003-2004.

- Procurement plans, procedures and standards are lacking.

- In keeping with the predominantly curative health delivery, tertiary care receives up to two-thirds of the national health recurrent budget. Cost recovery is less than 3%. Salaries and personal emoluments make up approximately 80% of institutional budgets.

- Although the morbidity and mortality profile of the country indicates that lifestyle diseases are the main causes of sickness and death, funding to public health (preventive and curative) has not increased for several years and remains at 10% of the total MOH recurrent budget.

Strategic opportunities

The health care system can take advantage of a number of strategic opportunities in order to help the citizens of The Bahamas achieve optimal health. They are:

- The prospect of harnessing the country's resources for advancing promotion/prevention strategies as the most effective means of achieving optimal health status for the population at the least cost.

- The establishment of a National Health Insurance scheme to provide universal health cover and adequate funding for quality health care.

- The on-going organizational reforms in health can facilitate and improve the relationship between the public health sector and the private health sector to achieve mutual health gains for the country's benefit.

- A political commitment to the NHSSP and to reducing the IMR.

- The Public Health Information System (*i*-PHIS) provides a sound basis for the strengthening of the HMIS, health planning and management, and the monitoring of health services.

- Support for the philosophy of a healthy environment for healthy people and the emphasis on sustainable development are evident in the increasing budget allocation to environmental health services which will translate into health gains.

The Role of the Ministry of Health

The MOH is determined to consolidate the gains that have been achieved over the past several years and to spread "best practices" throughout its programmes: this requires a willingness to be bold and innovative and to not simply maintain the status quo. Some of the steps along the way forward are discussed as public health interventions and health management and support services.

Public health interventions

Given that the primary causes of morbidity and mortality in The Bahamas are preventable, the MOH must continue the process it has begun of reorienting health services towards primary care. The budget and human resource implications of doing so include providing increased financing for prevention programmes and health promotion, and for the training of relevant personnel. Population health promotion will empower individuals and households with the knowledge and skills to avoid risky behaviour that could lead to, among other things, HIV, vehicular accidents, unwanted pregnancies and CNCD. It is now mandatory that medical students complete a rotation with the DPH and the Office of the CMO is actively recruiting young physicians to train for careers in public health.

Public health interventions must be disseminated widely, and necessary legislation either enacted where none exists, or enforced if it does exist, to regulate, among other things, tobacco advertising, environmental smoke, the use of seat belts, possession of fire arms and the importation of quality foods. The promotion of healthy lifestyles must include attention to proper diet, good nutrition, adequate exercise, non smoking, the judicious use of alcohol, and safe sex. Additional surveillance and surveys on the major causes of morbidity and mortality, namely injury, homicide, diabetes and circulatory disorders, are required to better understand the risk profile of patients and to guide the implementation of appropriate strategies to prevent these health problems.

Health Management and Support Services

- The quality of care provided across programmes and departments should be monitored through regular audits. Likewise, performance, process and outcome evaluations should be conducted routinely to enhance the development of the system.

- Capacity building must be strengthened in order to properly carry out policy formulation, information management, health promotion, financial management, human resource management, procurement and quality control.

- Heads of units and departments should prepare and use periodic reports as an integral management tool.

- The *i*-PHIS should be nationalised and promoted as the tool for creating the data upon which policy and management decision making will be made over the course of the next several years.

- Priority must be given to regulating pharmaceuticals and vaccines in the private and public sectors in order to determine the procurement costs of these items.

- It is imperative that the resource allocation formula currently in use be revised to emphasize primary and preventive care. As the demand for newer technologies and tertiary care increases, resources are shifted away from preventive and promotive health.

- The appraisal reports on health workers' performance should directly relate to their compensation.

- There is a need for the health system to improve its capacity for human resource planning and management in all departments.

ACKNOWLEDGMENTS

The Annual Report of the Chief Medical Officer (CMO) 2001-2003 was prepared through the collaborative effort of the Ministry of Health (MOH), the National Health Information and Research Unit (HIRU), the Department of Public Health (DPH), the Public Hospitals Authority (PHA), the Department of Environmental Health Services (DEHS), Pan American Health Organization (PAHO/WHO), the Department of Statistics, the Ministry of Agriculture and Fisheries, and the Department of Social Services. The following teams worked on preparing the report over a period of approximately five weeks:

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The team extends special thanks to the individuals in the various departments who provided data and technical support during the preparation of this report.

ACRONYMS AND ABBREVIATIONS

$B	Bahamian Dollar
AIDS	Acquired Immunodeficiency Syndrome
ARV	Anti Retro Viral
BEST	Bahamas Environmental, Scientific and Technology (Commission)
BLCS	Bahamas Living Conditions Survey
BMI	Body Mass Index
BRC	Blue Ribbon Commission
CAREC	Caribbean Epidemiology Centre
CDR	Crude Death Rate
CMO	Chief Medical Officer
CNCD	Chronic Non-Communicable Diseases
COB	College of The Bahamas
DALE	Disability Adjusted Life Expectancy
DEHS	Department of Environmental Health Services
DPH	Department of Public Health
DPT	Diptheria-Pertussis-Tetanus
EPHF	Essential Public Health Functions
EPI	Expanded Programme on Immunization
GDP	Gross Domestic Product
GNP	Gross National Product
HACCP	Hazard Analysis and Critical Control Point
Hep. B	Hepapitis B
Hib.	Haemophilus Influenza type b
HIRU	Health Information and Research Unit
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
IMR	Infant Mortality Rate
i-PHIS	Public Health Information System
KAP	Knowledge, Attitude and Practice
MMR	Measles Mumps Rubella
MOH	Ministry of Health
MTCT	Mother-to-Child Transmission
NGO	Non-Governmental Organization
NHSSP	National Health Services Strategic Plan
NIMCOST	National Inter-Ministerial Committee on Science and Technology
PAHO	Pan American Health Organization
PHA	Public Hospitals Authority
PLWHA	Persons Living With HIV/AIDS
PMH	Princess Margaret Hospital
PS	Permanent Secretary
RMH	Rand Memorial Hospital

SARS	Severe Acute Repertory Syndrome
SCAN	Suspected Child Abuse and Neglect
SIP	Perinatal Information System
SRC	Sandilands Rehabilitation Centre
STI	Sexually Transmitted Infection
TB	Tuberculosis
USA	United States of America
WHO	World Health Organization
YPLL	Years of Potential Life Lost

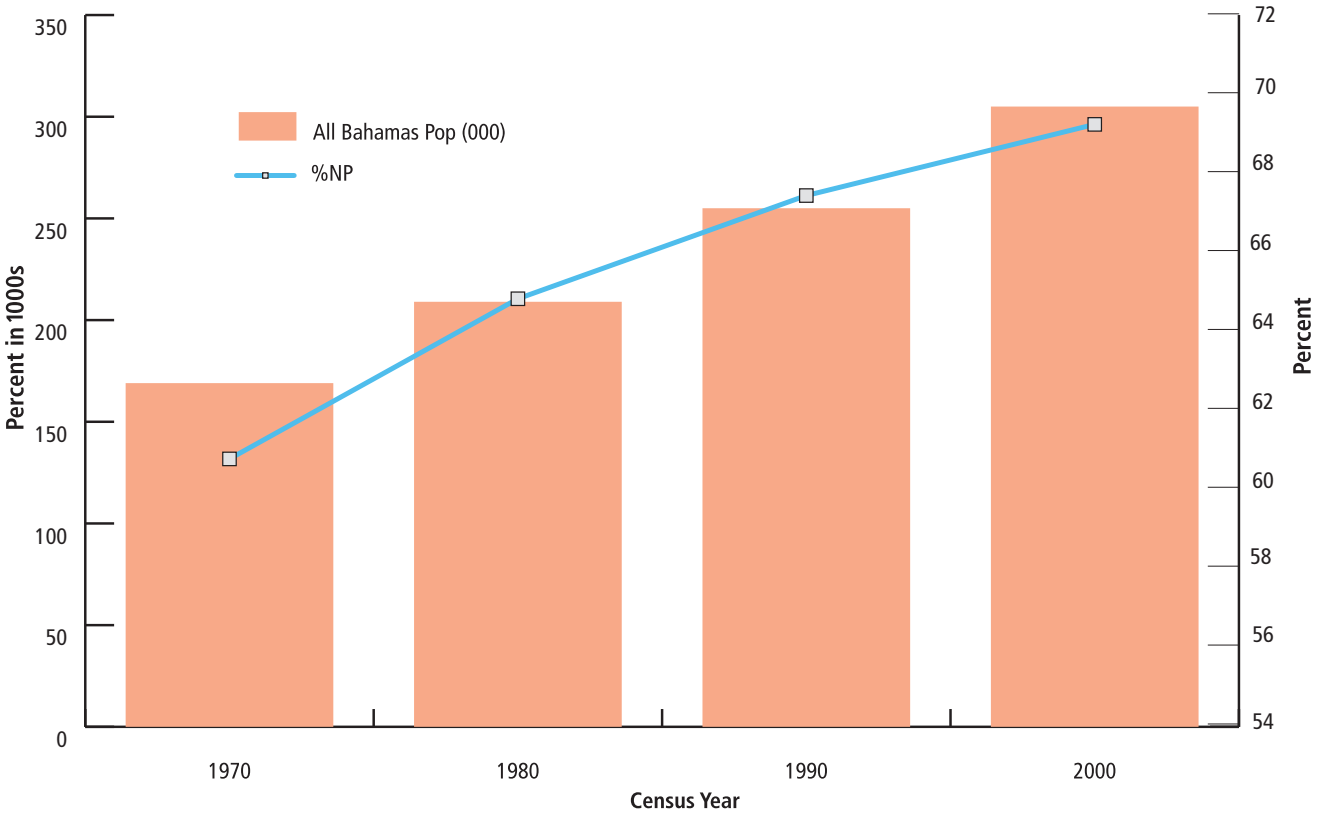
1.0 OVERVIEW

1.1 Brief Physical Description

A. Geography

The Commonwealth of The Bahamas is an archipelago of some 700 islands and cays located 55 miles southeast of Florida, off the south eastern coast of the United states of America (USA) (See Appendix 1 for map of country). Twenty-nine of these islands are inhabited. The 2000 census[1] reported a total population of 303,611, a 19% increase over the 1990 population figure of 255,000 (Fig. 1.1). Over 95% of the population lives on seven of the islands. In 2003, the projected population for The Bahamas was 316,298 (Table 1.1). The two major population centres are Nassau, the capital, located on the island of New Providence, and Freeport, which is in Grand Bahama: at the 2000 census, 69.7% of the population lived in New Providence and 15.4% in Grand Bahama. The other populated islands and cays are called "Family Islands". The proportion of the total population living on the Family Islands declined from 24.6% in 1970 to 16.5% in 1990 and even further to 14.9% in 2000.

Fig. 1.1 Population of The Bahamas, and the Proportion Living in New Providence, 1970-2000



1 *The Commonwealth of the Bahamas Census of the Population and Housing 2000. Preliminary results. Department of Statistics, 2001.*

Table 1.1 Projected Population, Bahamas, 2003, By Age Group and Gender

Age Group (Years)	MALES	FEMALES	TOTAL
0-4	15523	14900	30423
5-9	15536	14912	30448
10-14	14783	14291	29074
15-19	13855	13418	27273
20-24	13075	12673	25748
25-29	12777	12856	25633
30-34	13115	13483	26598
35-39	13009	13373	26382
40-44	12276	12719	24995
45-49	9182	9778	18960
50-54	6722	7014	13736
55-59	5309	5605	10914
60-64	4276	4851	9127
65-69	3053	3674	6727
70-74	2050	2616	4666
75-79	1122	1799	2921
80+	934	1739	2673
TOTAL	**15,6597**	**15,9701**	**316,298**

B. Physical Characteristics

The Bahamas occupies a total land mass of 5,382 square miles scattered over 80,000 square miles of the Atlantic Ocean. The population density per square mile increased from 47.4 in 1990 to 56.7 in 2000. New Providence is the most densely populated island, with 2,655.4 persons per square mile. Only three other islands or island groups have population densities greater than 100 per square mile.

The climate is tropical, moderated by the warm waters of the Gulf Stream. The average summer (June – September) temperatures can reach as high as 90^{o}F (29^{o}C) and drop to 78^{o}F (23^{o}C) at night. Winter (December – March) temperatures generally peak at 75^{o}F (21^{o}C) and seldom fall below 60^{o}F (14^{o}C).

The Bahamas experiences hurricanes and other tropical storms which cause extensive flood and wind damage. Hurricane Michelle struck the north western Bahamas in November 2001. It caused extensive damage to property: few people were injured as a result of this hurricane, however, several cases of post traumatic stress syndrome were reported after the hurricane.

C. Communications

Virtually all parts of the country are linked by sea, air and ground transport. There are regular mail boats and air transport from New Providence to the Family Islands. There are three sea ports located at Nassau, Freeport and

Matthew Town, Great Inagua. There are 60 airports located throughout the islands. There are some 2,400 kilometers of highways, approximately 1,400 of which are paved. Commercial transport in the form of buses, taxis and self-drive cars are readily available in the major centres. There is no rail transport.

With regard to telecommunications, Bahamas Telecommunications Company, a government-owned company, provides land and cellular phone services throughout the country. The number of telephone subscribers in 2002 was 226,513. In some of the smaller Family Islands, residential telephone service is not available, but telephone service is available at a central point. In 2003, the south easterly islands of Crooked Island, Acklins, Long Cay and Maygauana were supplied with telephone and internet services for the first time.

There were 13,100 internet users in The Bahamas in 2001, and internet connectivity in major business centres is increasing. More recently, a Wireless Fidelity Network was introduced in New Providence, Grand Bahama, Exuma and Abaco, which provides free wireless internet access for laptops and pocket personal computers.

There is universal access to radio throughout the country through three AM and six FM broadcast stations. National television coverage is accessible in most of the Family Islands. Many residents are able to view US television stations through cable services provided by Cable Bahamas (a privately owned cable company) or via privately owned satellite dishes.

There are four major newspapers which are circulated nationwide. The MOH produces a weekly column called "Joining Hands for Health" in one of the local newspapers.

1.2 Governance

The Commonwealth of The Bahamas gained independence from the United Kingdom on 10 July, 1973. The country is governed by a parliamentary democracy based on the Westminster Model, with a Governor General who represents Her Majesty the Queen, a bicameral legislature including an elected Parliament, and an independent judiciary. The government is headed by a Prime Minister who is also a member of the legislature. Government business is carried out by government ministries – each ministry is headed by a minister (political) and permanent secretary (administrative) - and by quasi-government institutions.

There is a local government system in the Family Islands comprised of a number of locally-elected district councils and a central council. The government administration is headed by an island administrator who is an established public officer. The local government system facilitates community participation in health planning and health care delivery.

After the last general elections held in 2002, the portfolio of the Ministry of Health (MOH) was revised to formally include the Department of Environmental Health Services (DEHS) and the Bahamas Environment, Science and Technology (BEST) Commission.

1.3 Socio-Economic Profile

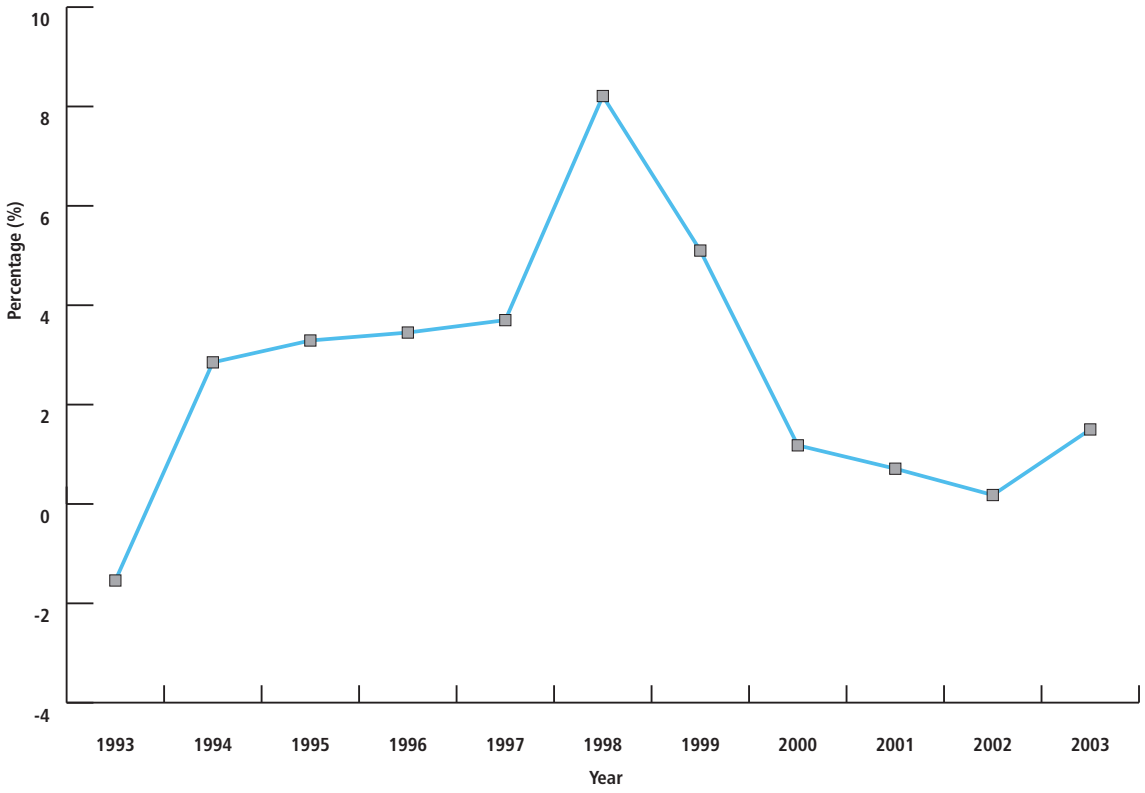
A. Gross Domestic Product (GDP) per capita

Since 1972, the exchange rate of the Bahamian dollar to the US dollar has been 1:1. The GDP per capita continued to increase, from $15,786 in 1999 to $17,315 in 2002. Provisional data for 2003 show an increase to $17,396 in the GDP per head.

The real GDP growth rate, based on constant 1991 market prices, decreased from 1.18% in 2000 to 0.81% in 2002. In 2003, it increased to 1.5% (Fig. 1.2).[2] Inflation rates, which are generally comparable to those in the USA, increased in the last three years from 1.6% in 2000 to 3.0% in 2003.

2 *www.bahamas.gov.bsSource: Central Bank of The Bahamas, Department of Statistics, IMF*

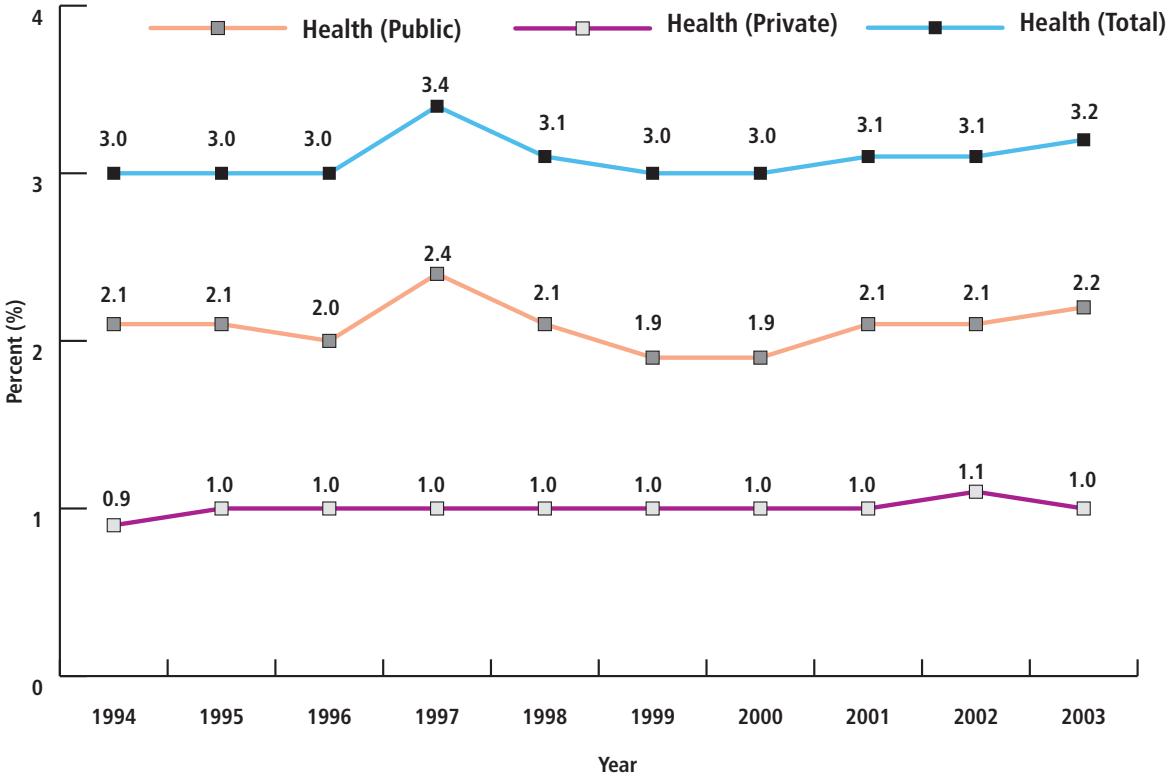
Fig. 1.2 Trends of Annual Gross Domestic Growth Rate, 1993-2003



B. Sector contribution to GDP

The Bahamas is a stable, developing nation with an economy based primarily on tourism and offshore banking. Other primary industries are cement, oil refining and trans-shipment, salt production, rum, aragonite, pharmaceuticals, and spiral welded steel pipes. In 2002, Industry accounted for approximately 8.8% of the GDP while agriculture accounted for 2.7% of the GDP. The agricultural sector is dominated by small-scale producers whose principal products are citrus fruit, vegetables and poultry. In the last decade, the health sector contribution to the GDP was consistently around 3% (Fig. 1.3). The ratio between public and private health contributions remained at 2:1 over the period.

Fig. 1.3 Health Sector Contributions to the Gross Domestic Product, 1993-200



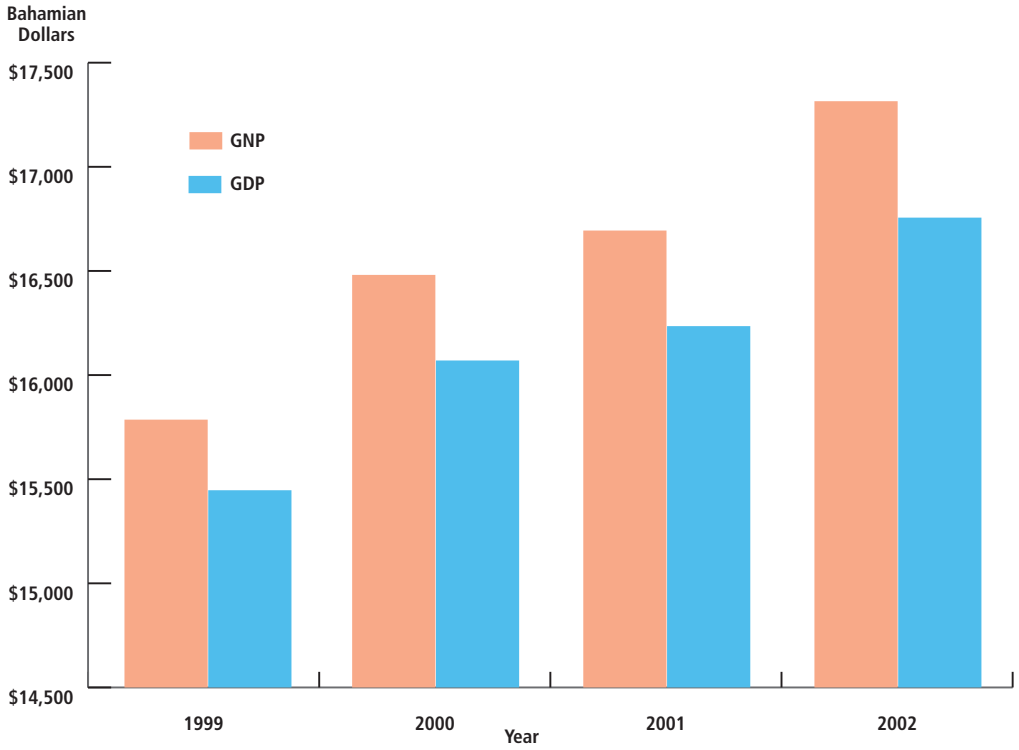
(Figure for 2003 is provisional)

Tourism and tourism related commerce remain the most important economic activities in The Bahamas, accounting for over 50% of GDP and, directly or indirectly, 60% of employment. In 2003, 4,594,042 tourists visited The Bahamas, an increase of 9% over the 2000 figure. The detailed sector contribution to GDP is presented in Appendix 2.

C. Consumption per capita

The economy remains strong and of the countries in the region of the Americas, only the USA and Canada have a higher GNP per capita than The Bahamas. The GNP increased from $15,447 per capita in 1999 to $16,756 in 2002. Trends for both GDP and GNP are shown in Fig. 1.4.

Fig. 1.4 GDP and GNP per capita (B$), 1999-2002



GNP	$15,786	$16,481	$16,694	$17,315
GDP	$15,447	$16,070	$16,235	$16,756

Source: Dept. of Statistics, Feb 2002

According to the Human Development Report of 2002, The Bahamas ranked 49 out of 175 countries with a Human Development Index of 0.815. The Human Development Index measures achievements in terms of life expectancy, educational attainment and adjusted real income.

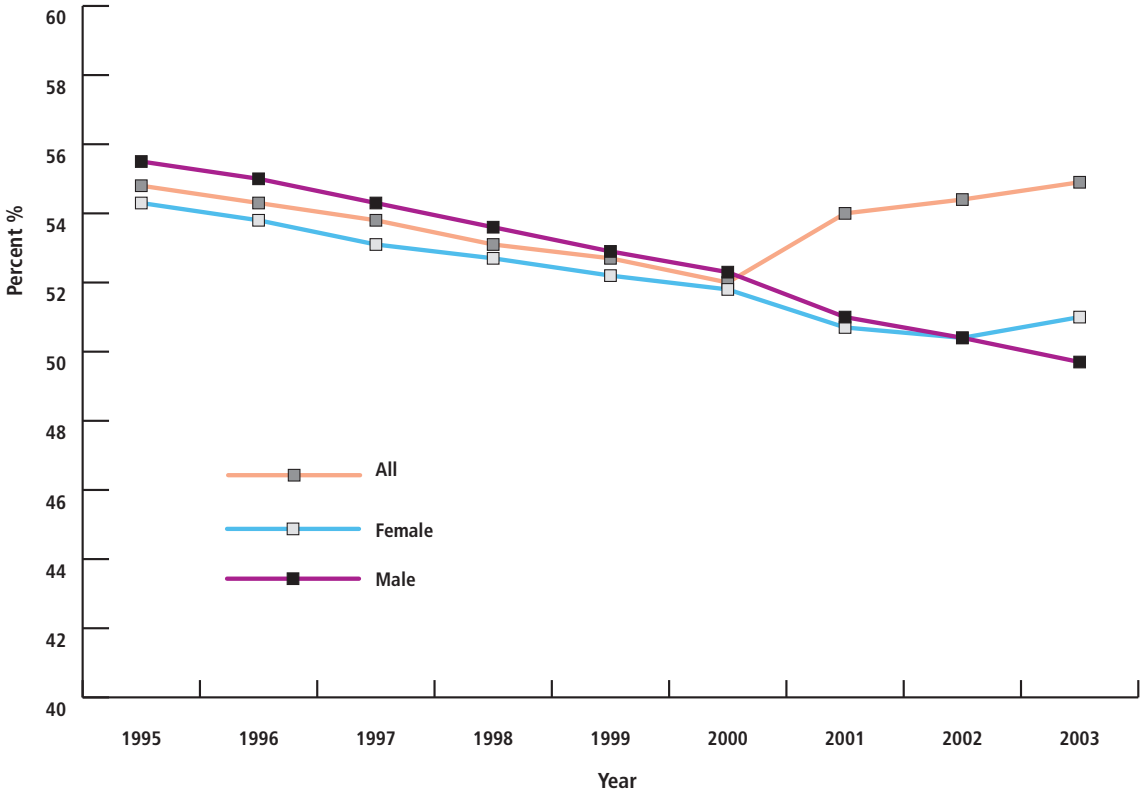
D. Employment data, dependency ratio and labour force by gender and age group

Service industries (including the public sector), tourism, banking and insurance, fishing and agriculture employ approximately 80% of the labour force. The working population increased from 157,640 in 1999 to 173,795 in 2003. About 50.5% of the work force is male, a decline of approximately 1.5% from 1999 figures. Approximately 67% of the total work force was between the ages of 20-44 years, a decline of 2% from the 1999 report. In 2003, the percentage of the work force between the ages of 55-64 increased to 8% from 7% in 1999.

Unemployment continues to be a problem in The Bahamas. According to the Department of Statistics, the overall unemployment rate in 2003 was estimated to be 10.8%. However, the rate was slightly higher for women (11.7%) than for men (10.0%). The unemployment rates are slightly higher in New Providence (11.9%) than in Grand Bahama (8.7%). In 2003, 41% of the unemployed labour force was younger than 25 years of age and 27% was between the ages of 25-34.

After a period of progressive decline in the dependency ratio from approximately 55% in 1995 to 52% in 2000, the ratio increased slightly to 54.9% in 2003 (Fig. 1.5). The ratio for males is now higher than that for females.

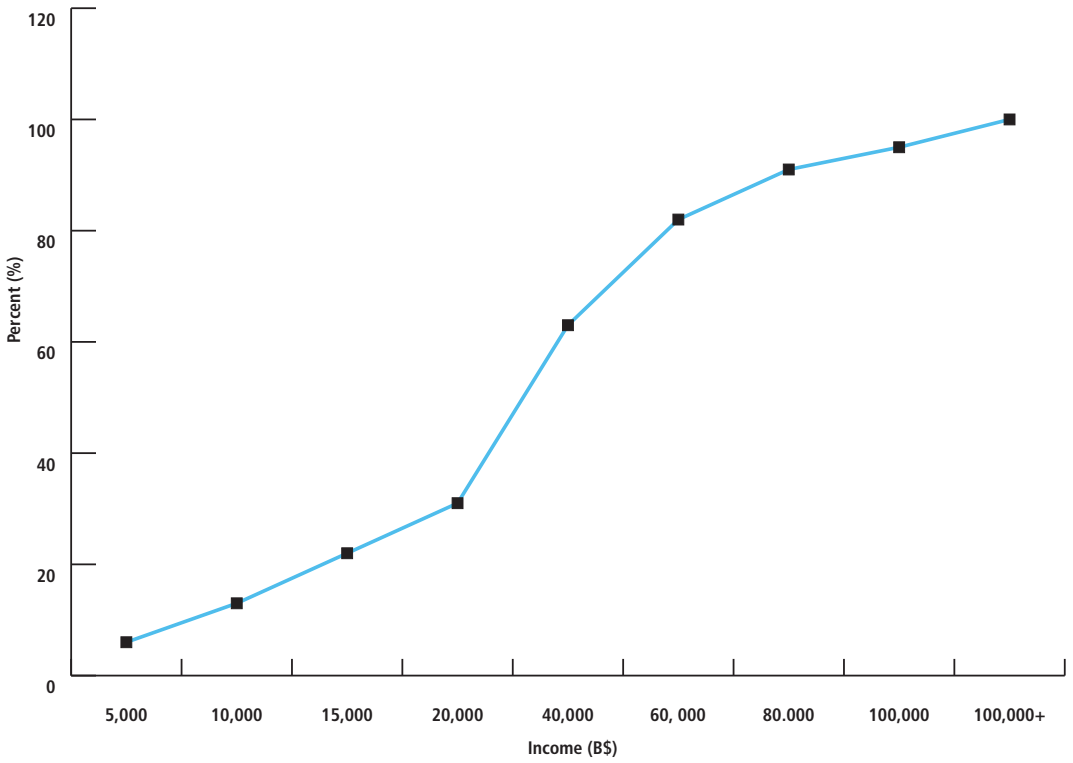
Fig. 1.5 Dependency Ratio of all Bahamas, by Gender, 1995-2003



E. Poverty levels

The Bahamas Living Conditions Survey (BLCS), conducted by the Department of Statistics in 2001, collected information on the levels of well-being and living conditions of persons residing in randomly selected households throughout the country. Results showed the poverty line to be an income of $2,863 per annum. The Department of Statistics reported that 5.5% of the 96,050 households which stated their incomes earned less than $5,000 and 12.3% earned less than $10,000 per annum (Fig. 1.6). Nearly two-thirds of all households earned less than $40,000 per annum in 2003.

Fig. 1.6 Cumulative Distribution of Stated Household Incomes, Bahamas, 2003



Source: Department of Statistics, Sept. 2003

F. Education indicators

The Bahamas enjoys a high standard of living and universal access to all essential social services including health, education and housing. Approximately 35% of the national recurrent budget is allocated to the social sectors. Education is compulsory for children 5-16 years of age. The adult literacy rate in The Bahamas was 95.7% in 1999. [3]

During the 2003/2004 academic year, there were 220 schools in The Bahamas - 157 public schools, 52 private schools and 11 schools for children with special needs. The total enrolment in the public primary and secondary schools was 49,456 and 48.6% of the students were females. The teacher-to-student ratio was approximately 1:17. Tertiary education is provided at the government owned College of The Bahamas (COB) and at a number of private institutions. Both the government and the private institutions offer associate and bachelor degree programmes. Selected masters degree programmes affiliated with American universities are also available at COB.

1.4 Demography

A. Total population by age and gender

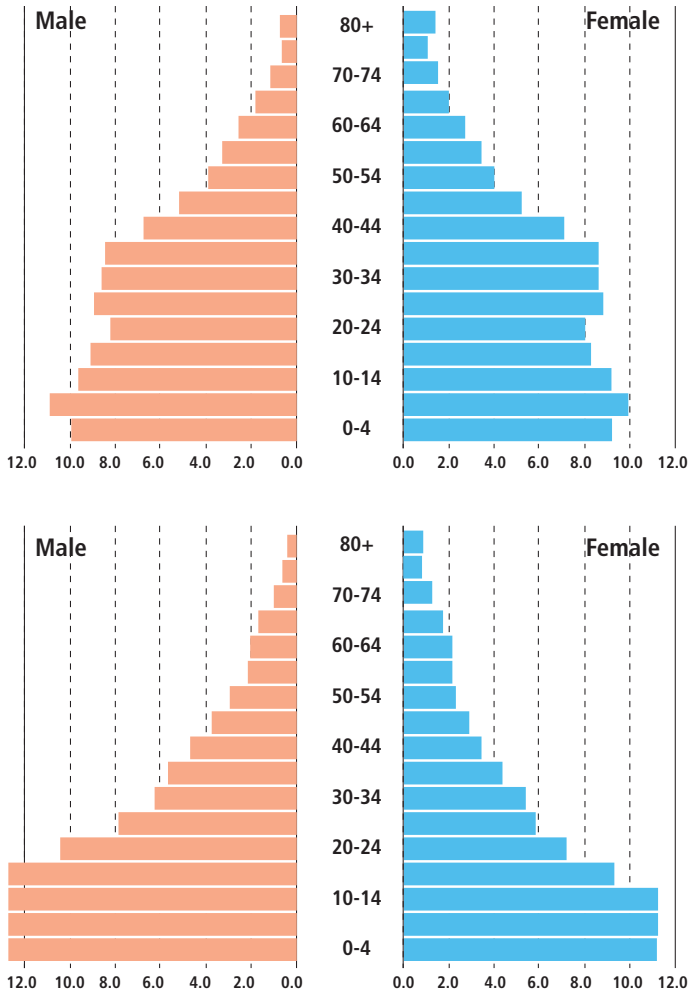
In 2003, 28.4% of the population of 316,298 was younger than 15 years of age and 5.2% was 65 years old or older. The median age was 27 years. Females constituted 50.5% of the population. Women of childbearing years aged 15-49 comprised 55.3% of the female population and 28% of the total population.

3 *UNESCO 2000 literacy assessment*

B. Population pyramid

The population pyramids based on data from the 1980 and 2000 censuses show a transition from a youthful to a less youthful population due to lower fertility and higher survival rates. In 1980, 39.4% of the male population and 37.4% of the female population were younger than 15 years old: 3.6% of males and 4.8% of females were older than 65 years (Fig. 1.7). In 2000, there were nearly 10% less males (30.5%) and 10% less females (28.7%) younger than 15 years old than there were in 1980. In 2002, the percentage of males and females older than 65 years of age increased by one over the figure for 1980: 4.5% of the male population and 5.9% of the female population were 65 years or older. Similarly, more people survived into their mid years in 2000 than did in 1980. The population pattern for 2000 shows that The Bahamas is in demographic transition – it falls between that of a typical less developed country and a typical industrialized country.

Fig. 1.7: Population Pyramids for Bahamas, 1980 (above) and 2000 (below)



C. Total fertility rates

The total fertility rate has, over the past five years, remained more or less constant at approximately 2.3 children per woman. The general fertility rate decreased from 63.9 births per 1,000 females aged 15-49 years in 1999 to 56.1 births in 2003 (Table 1.2). According to the Department of Statistics, the age specific rates for the 15-19 year and the 20-24 year age groups in 2003 were respectively 46.1 and 96.5 per 1,000 women (Fig. 1.8). This reflects a decrease

from the 1999 figures of 52.4 and 110.5 per 1,000 women for the respective age groups. The highest age specific fertility rates are in the 20-24 and 25-29 age groups. Although the rates among 10-19 year old females, based on registered births, were lower in Grand Bahama and in the Family Islands than in New Providence (Fig. 1.9), in the last two years there has been a rapid increase in fertility rates in Grand Bahama.

Table 1.2 Basic Demographic Information, 1999-2003

INDICATOR	YEAR 1999	2000	2001	2002	2003
Estimated mid-interval population	298,050	303,611	307,379	311,871	316,298
Estimated # women in 15-44 age group at mid-interval	75,947	77,515	77,436	78,027	78,522
Total births	5439	5350	5404	5270	5132
Live births	5364	5287	5353	5216	5054
Birth Rate (per 1,000 pop.)	18.0	17.4	17.3	16.7	16.0
Live births (Registered) for females 15 - 44 yrs.	5334	4511	4472	...	4942
General Fertility Rate					
(live births per 1,000 females 15 - 49 yrs)	63.9	61.4	60.9	...	56.1
Total Fertility Rates	2.06	1.99	2.00	...	...
Deaths occurring during the year	1644	1625	1745	1810	1649
Death Rate (per 1,000 pop.)	5.5	5.3	5.6	5.8	5.2
Still Births	75	63	51	54	78
Still Birth Rate (per 1,000 total births)	14.0	11.9	9.5	10.2	15.4
Natural Increase	3723	3633	3608	...	...
Natural Increase Rate (per 1,000 pop.)	12.5	12.0	11.7	...	...
Infant Death Rate (per 1,000 live births)	15.8	14.8	12.7	16.7	17.2
Perinatal Death Rate (per 1,000 total births)	17.3	15.5	11.0	...	19.2
Neonatal Deaths	29	29	23	...	30
Neonatal Death Rate (per 1,000 live Births)	5.4	5.5	4.3	...	5.9
Maternal Deaths	1	2	10	0	2
Maternal Death Rate (per 100,000 live births)	18.6	38.0	187.0	0.0	39.6
Child deaths (1 - 4) yrs.	12	19	15	...	10
Child Mortality Rate/10,000 children	4.6	7.3	5.9	...	3.9

... data not currently available.

N.B. (1) 2002 mortality data and 2003 death rate are provisional; (2) Population figures for 2001-2003 are based on the 1990 census.

Source: Department of Statistics & Health Information & Research Unit

Fig. 1.8 Age-Specific Birth Rates per 1,000 Females 15-49 Years, Bahamas, 1999, 2001, 2003

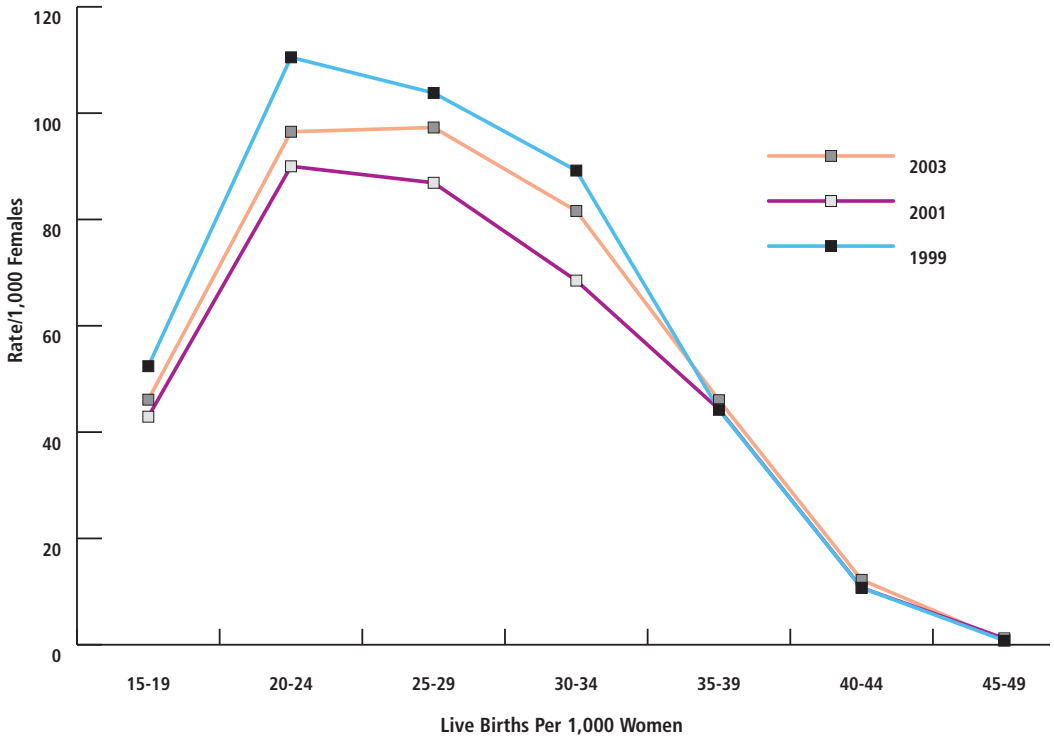
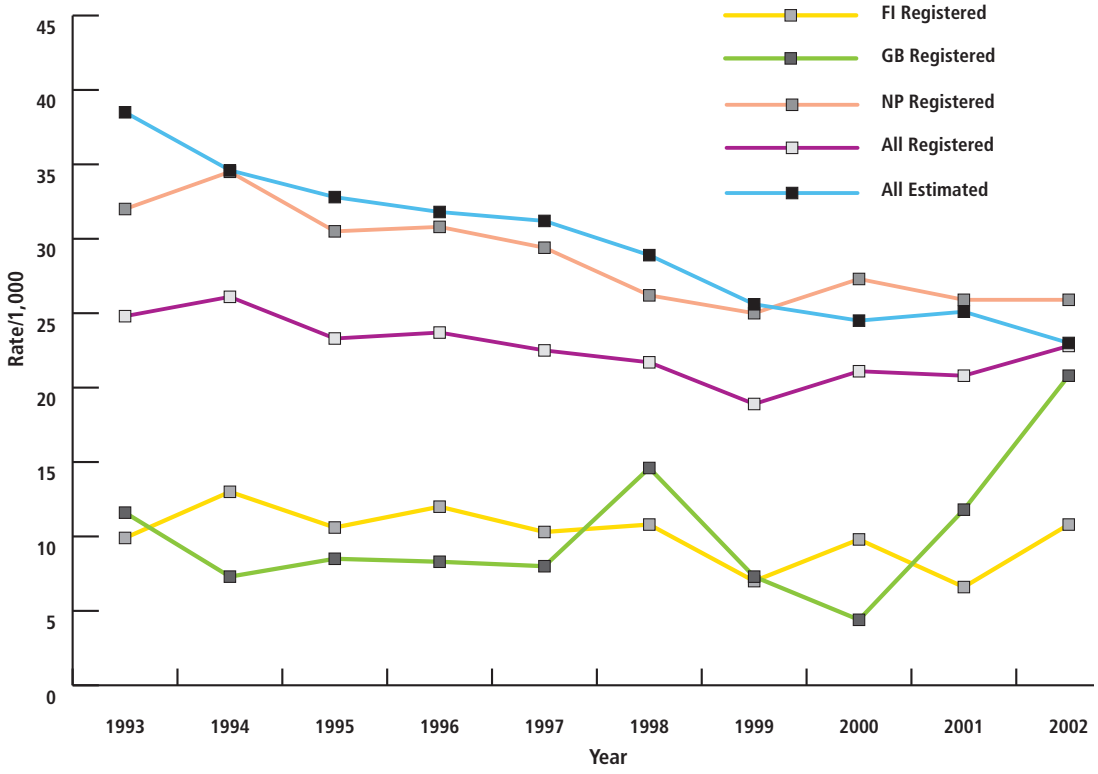


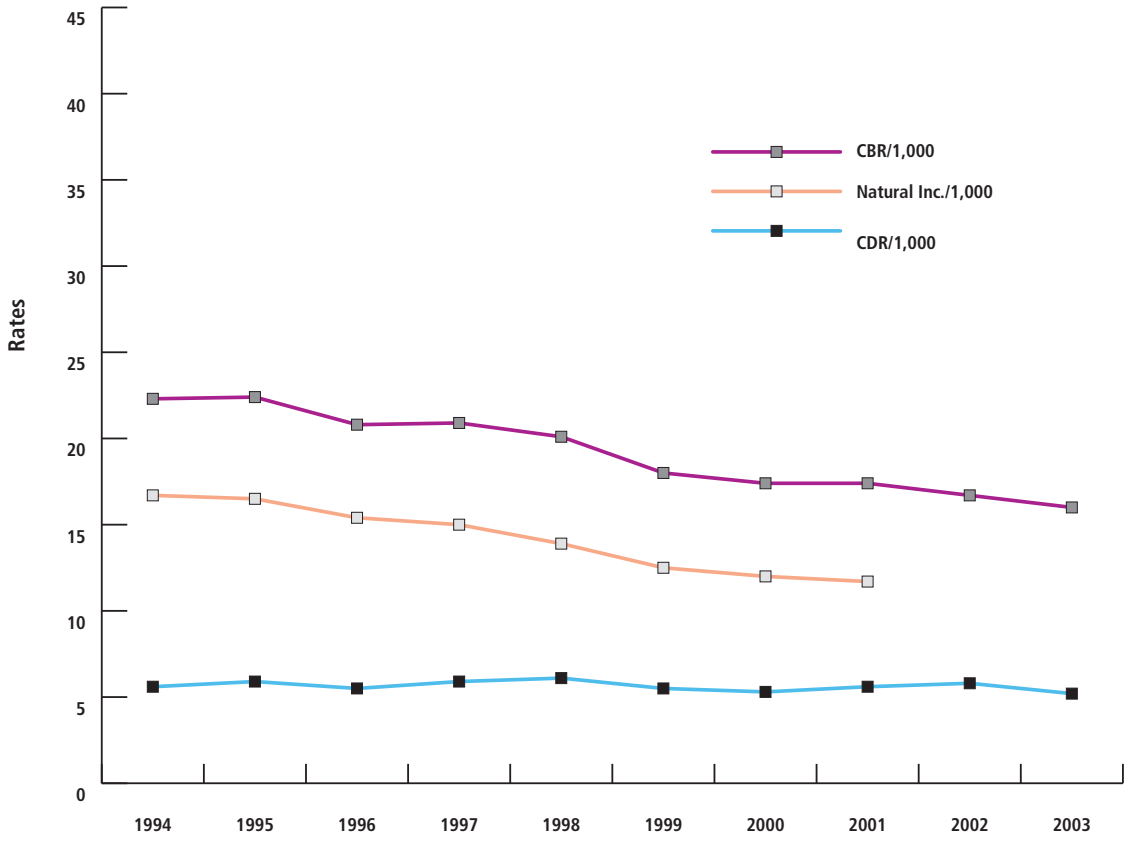
Fig. 1.9 Age-Specific Birth Rates Among Females 10-19 Years, by Island, Based on Registered and Estimated Live Births, 1993-2003



D. Population growth rate

The annual population growth rate has declined from 2.2% in 1980 to an estimated 1.9% in 2002. The crude rate of natural increase declined from 16.7 per 1,000 population in 1994 to 11.7 per 1,000 population in 2001 (Fig. 1.10).

Fig. 1.10 Crude Birth Rates, Death Rates and Natural Increase, 1994-2003



E. Transient population

According to the 2000 census, Bahamians constitute 87.3% of the population and non-Bahamians the remainder. Haitians make up approximately 52.1% of the immigrant population. The Bahamas government remains concerned about the large number of illegal Haitian immigrants entering The Bahamas, particularly as it impacts the health care system.

In 2003, 4.6 million people visited The Bahamas - a record number. Of these, 1.6 million were stop-over visitors. Approximately 65% of the visitors travelled to The Bahamas by sea. As a result of the booming tourist industry, tourist and port health programmes have been established.

Generally speaking, The Bahamas does not have a pool of migrant workers concentrated in particular industries. However, the construction industry in the major population centres has periodically attracted migrant workers.

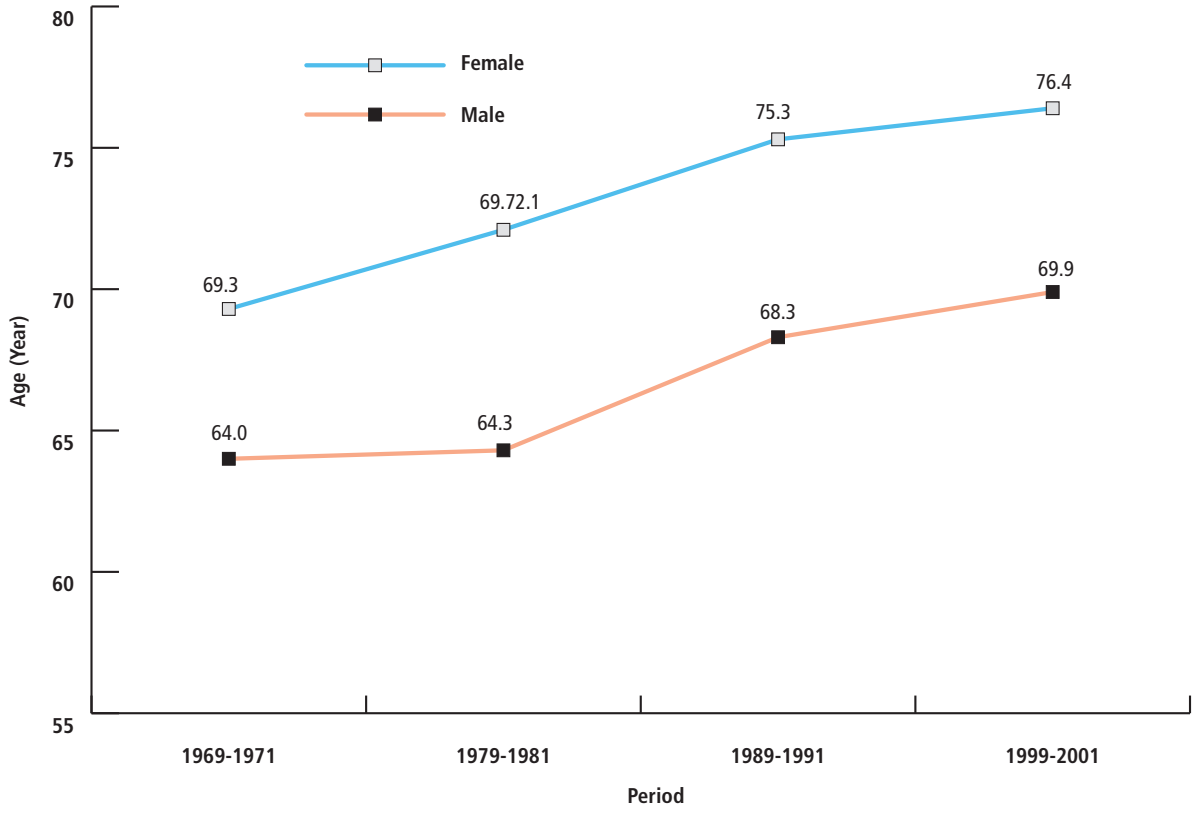
F. Indigenous population

About 85% of the Bahamian population is black and 15% white. Much of the population, black and white, emigrated from the Americas. The main and official language is English although Creole is spoken by Haitian immigrants.

G. Life expectancy by gender

Life expectancy at birth has increased steadily from approximately 66 years of age between 1969-1971 to approximately 73 years between 1999-2001 (69.9 years for males and 76.4 for females) (Fig. 1.11).

Fig. 1.11 Life Expectancy, by Gender, Bahamas, 1960-2001



In its World Health Report of 2000, the World Health Organization (WHO) computed a new indicator, Disability-Adjusted Life Expectancy (DALE), to measure healthy life expectancy.[4] It summarises the expected number of years to be lived in "full health" without disability. The DALE is calculated by weighting the years of ill-health according to severity and subtracting that number from overall life expectancy to give the estimated years of healthy life. The Bahamas ranked 109th out of 191 countries in terms of DALE – a rank lower than several other countries in the Caribbean Region. The DALE for males at birth is 56.7 years and for females is 61.6 years. In terms of child survival, for children under five years of age, The Bahamas scored an index of equality of survival of 0.857 on a scale of 0 to 1.

4 *WHO. World Health Report 2000. Health systems: improving performance.*

H. Crude birth rate

In the last five years, the crude birth declined from 18.0 per 1,000 population in 1999 to 16 per 1,000 population in 2003 (Table 1.2). The population pyramids, trends in the total and age-specific fertility rates and the crude birth rates suggest that Bahamians increasingly prefer smaller family sizes.

I. Crude death rate

Between 1999 – 2002, the crude death rate (CDR) increased from 5.3 to 5.8 per 1,000 population, and in 2003 it declined to 5.2 when 1,649 deaths were recorded (Table 1.2). In 2003, CDRs per 1,000 population in New Providence, Grand Bahama and the Family Islands were 5.6, 4.0 and 5.2 respectively. In the Family Islands, the CDR ranged from 2.1 in Inagua to approximately 12 per 1,000 population in Mayaguana (5 deaths) as well as Acklins (3 deaths). The population on each of the latter two islands is less than 500.

J. Basic demographic information

The operational definitions for the basic demographic indicators are shown in Appendix 3. A notable achievement is the decline in the infant mortality rate (IMR) from 19.7 deaths per 1,000 live births in 1994 to 15.0 in 2003. This decrease is attributed to a reduction in mother-to-child transmission (MTCT) of the human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) and to successful immunization programmes.[5] Much of the decline has been due to gains in the neonatal mortality rate. The Neonatal Intensive Care Unit, established in 1996 at the Princess Margaret Hospital (PMH), continues to enhance the viability of newborns with special medical needs.

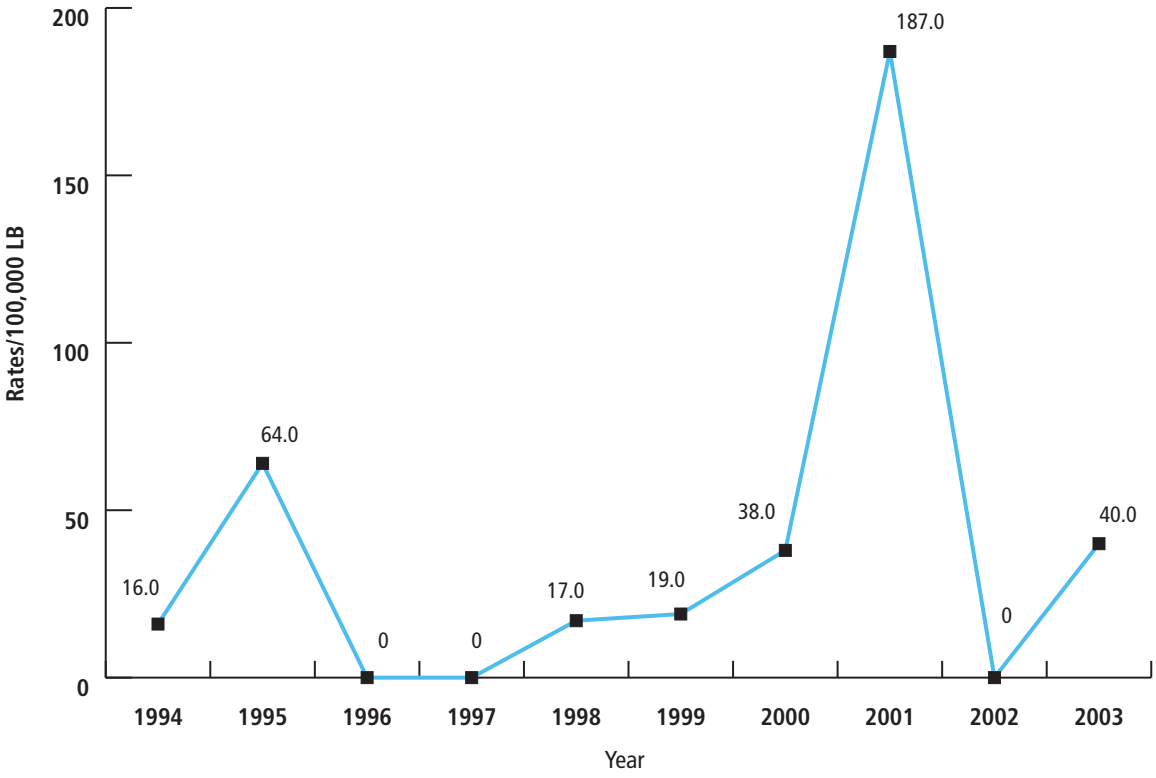
The stillbirth rate has fluctuated widely since 1994 when the rate was 12.9 stillbirths per 1,000 live births; it increased to 15.4 in 2003. The perinatal mortality rate has also fluctuated, declining from 22.4 per 1,000 live births in 1994 to 19.2 per 1,000 live births in 2003.

The child mortality rate decreased from 4.6 per 10,000 children in 1999 to 3.9 in 2003 (Table 1.2).

The trend in the maternal mortality ratio per 100,000 live births between 1994 and 2003 shows two peaks, in 1995 and 2001 (Fig. 1.12). The maternal mortality rate declined to 4.0 per 100,000 live births in 2003.

5 *PAHO/WHO. Health in the Americas 2002 Edition. Bahamas Chapter. July 2001*

Fig. 1.12 Maternal Mortality Ratios, 1994-2003



2. HEALTH SITUATION

2.1 Wellness

The BLCS conducted in 2001 showed the prevalence of under nutrition to be 6% in children 2-10 years of age. The highest prevalence of under nutrition was in the urbanized areas of New Providence and Grand Bahama and the lowest was in the less developed Family Islands. Overall, 14% of children 2-10 years old were overweight. More girls (16%) than boys (13%) were overweight (Table 2.1).

Eighteen percent of adolescents between the ages 11 to 20 were underweight. The highest prevalence of underweight was found in the less developed Family Islands. It was found that 9% of adolescents were overweight while 14% of adolescents were at risk for becoming overweight. Again, more females (9.4%) than males (8.4%) were overweight (Table 2.2).

Thirty-four percent of adults aged 21 to 60 years were overweight with a body mass index (BMI) of 25 – 29.9, and a further 30.9% were obese with a BMI of 30 - 34.9. Consequently, approximately two-thirds of the adult population was overweight. Females had a significantly higher prevalence of obesity (37%) than did males (24%) (Table 2.3).

Table 2.1 Low and High Z-scores for Children 2-10 Years of Age

Population Characteristic	HAZ-score (%)		WAZ-score (%)		WHZ-score (%)		No. obs.
	< -2.0	> 2.0	< -2.0	> 2.0	< -2.0	> 2.0	
Gender							
Male	11.2	6.7	4.2	7.4	7.6	13.0	492
Female	9.9	6.2	1.7	8.2	4.4	15.8	332
Total Sample	**10.7**	**6.5**	**3.3**	**7.7**	**6.4**	**14.0**	**824**

Table 2.2 Body Mass Indices for Adolescents, Ages 11-20 Years

Population Characteristic	BMI (%)					No. obs.	Mean BMI
	Under-weight	Normal	At risk for over-weight	Over-weight	Total		
Gender							
Male	20.0	56.8	14.8	8.4	100.0	483	21.4
Female	16.8	61.0	12.9	9.4	100.0	444	21.5
Age Group (years)							
11-15	15.2	60.8	16.5	7.4	100.0	549	19.7
16-20	22.7	56.2	10.2	10.9	100.0	378	23.8
Total Sample	18.4	58.9	13.8	8.9	100.0	927	21.4

Table 2.3 Body Mass Indices Among Adults, Ages 21-60 Years, by Gender

Population characteristic	BMI (%) Under-weight (< 18.5)	Normal weight (18.5-24.9)	Over-weight (25.0-29.9)	Obese (30+)	Total	No. obs.	Mean BMI
Gender							
Male	**2.1**	**36.1**	**37.6**	**24.1**	**100.0**	**1,071**	**27.0**
Female	**1.7**	**29.8**	**31.5**	**37.1**	**100.0**	**1,098**	**28.7**
Age Group (years)							
21-30	3.8	45.2	27.7	23.3	100.0	712	26.6
31-40	1.0	28.7	34.7	35.6	100.0	747	28.5
41-50	0.8	23.0	41.0	35.2	100.0	475	28.9
51-60	0.3	23.4	43.2	33.1	100.0	235	28.7
Total Sample	**1.9**	**32.8**	**34.4**	**30.9**	**100.0**	**2,169**	**27.9**

2.2 Morbidity

Morbidity is discussed under four main groups:

A. Non-Communicable Diseases (as reported from primary health care services)

B. Communicable Diseases

C. Hospital-based Reports

D. Bahamas Living Conditions Survey

2.2.1 Chronic Non-Communicable Diseases

Chronic non-communicable diseases (CNCD) account for nearly 45% of all deaths in the country. Taken together, CNCD (in particular, hypertension, diabetes, coronary heart disease, stroke, chronic respiratory diseases and cancers) represent the leading cause of morbidity and disability in The Bahamas.

An analysis of hospital discharges for the period 2002-2003 showed that in the adult population, diabetes, hypertension and cancer are the leading causes of morbidity in females aged 45-64 years, and fourth and fifth for men in the same age group. CNCD accounted for 22% of all hospital admissions to PMH between 2002–2003: this figure only refers to hospital discharge data.

Data from the BLCS 2001 showed a prevalence of 3.3% for self-reported cases of diabetes, with rates slightly higher among females than males, and a general increase in reported cases of diabetes in adults between the ages of 55 and 64 years. Results also indicated a prevalence of 9.3% in self-reported cases of hypertension.

As part of its more comprehensive approach to prevention, control and care of CNCD, the MOH will conduct a Disease Prevalence Study and a Risk Factor Survey to plan strategic interventions to reduce the disease burden in the country.

The MOH, in conjunction with the Ministry of Education, provides School Health Services. The objective of the School Health Services is to ensure optimal health of school aged children in public schools. The key feature of the School Health Services is health education which focuses on increasing students' understanding of health principles and modifying health related risk behaviour. The service also includes medical examination of students in grades 1, 6 and 10, immunizations, and treatment of minor ailments and dental care.

Results of the annual school health screening of students in grades 1, 6 and 10 for the period 2001-2003 in public schools (Table 2.4) show a decline in the number of students with high blood pressure, low haemoglobin, and vision and hearing defects. Although there was a decline in the number of students with dental caries over the period, it remains a school health concern.

Table 2.4 Selected Abnormal Screening Results in School Health

Conditions	2001 Grade 1	2001 Grade 6	2001 Grade 10	2001 Total	2002 Grade 1	2002 Grade 6	2002 Grade 10	2002 Total	2003 Grade 1	2003 Grade 6	2003 Grade 10	2003 Total
High Blood pressure					38	30	37	105	1	33		34
Hb<= 10 Grams	51	37	6	94	72	83	5	160	7	3	111	121
Vision problems	24	270	93	387	103	402	157	662	6	413	166	587
Hearing defects	4	4		8	4	12	1	17	2	2		4
Dental Caries	782	407	205	1,394	839	559	323	1,721	500	315	214	1,029
Abnormal Weight for age(malnutrition)	0	0	0	0	0	0	0	0	1	5		6
Underweight	20	51	23	94	151	145	107	403	30	45	121	196
Overweight	50	170	116	336	61	454	269	784	24	61	253	338

2.2.2 Communicable Diseases

2.2.2.1 Communicable Disease Surveillance

The Surveillance Unit of the Department of Public Health (DPH) maintains surveillance of communicable diseases and investigates disease outbreaks in The Bahamas. Periodically, other agencies such as the DEHS, the Infection Control Unit of PMH and the Ministry of Agriculture assist with outbreak investigations, depending on the nature of the outbreaks.

The Epidemiology Unit, in conjunction with the Surveillance Unit, coordinates the activities of the Tuberculosis (TB), sexually transmitted infections (STIs) and general surveillance programmes and maintains some control over the Expanded Programme on Immunization (EPI). The staff of the Surveillance Unit continues to provide services to the HIV/AIDS Programme by managing the weekly Infectious Disease Clinic at PMH.

Surveillance data are obtained from the Primary Health Care Reports, Notifiable Disease Report Forms, Laboratory Notification lists from PMH and private sector physicians. These data are then analyzed and a weekly report is generated and disseminated to all stake holders including the Caribbean Epidemiology Centre (CAREC).

Data for reported cases of communicable diseases can be found in Appendices 4 and 5.

The Communicable Disease Surveillance System is currently undergoing revision at the regional level. In anticipation of the revision, the Epidemiology Unit is to pilot the Syndromic Surveillance System which is a major addition to the revised Communicable Disease Surveillance System. Communicable disease surveillance in The Bahamas continues to face enormous challenges such as limited human and financial resources and inadequate training. Despite these challenges, the unit continues to remain focused on achieving its overall goal as outlined in the Revised National Health Services Strategic Plan (NHSSP) 2003-2004.

Between 2001-2003, outbreaks included gastroenteritis (2002 and 2003) and dengue fever (2003). In 2002, there were 165 reported cases of conch poisoning in which were related to poor handling of conch by vendors. The dengue fever outbreak in 2003 resulted in 180 clinical and confirmed cases, presenting predominantly with serotypes 2 and 3. No deaths were reported in either outbreak.

Eight imported malaria cases were reported between 2001-2003. Since the last major malaria outbreak in 1999 when 30 cases were reported, the incidence of malaria has reduced considerably.

Food-borne diseases and gastroenteritis continue to pose diagnostic challenges. The incidence rate of each increased during the winter months. Between 2001-2003, the incidence rate of food-borne diseases ranged from 318.2 to 417.2 per 100,000 population. The number of cases reported for gastroenteritis increased steadily from 2,521 in 2001 to 4,904 in 2002, and decreased to 3,759 in 2003. The increase can be attributed to better reporting and seasonal outbreak of gastroenteritis due to rota virus in children less than five years of age during the months of February and March.

There was an outbreak of Hepatitis A in 2001 when a total of 46 cases was reported. Only five sporadic cases were reported in 2002 and one case in 2003.

With the exception of Hepatitis B (Hep. B), there were no reports of vaccine preventable diseases in the last five years. This is attributed to the high immunization coverage in the country. Since the revision of the case definition for reportable Hep. B, there were only five notified cases of symptomatic Hep. B in 2002, and one in 2003. Prior to the revision, all screened samples positive for Hep. B Surface Antigen were classified as notified even if they were asymptomatic and no testing for Hep. B virus antibody had been done.

In 2001-2003, surveillance data showed a minimal increase in the number of STIs which indicates a need to increase health promotion activities.

Approximately 700 cases of scabies are reported annually to the Surveillance Unit and it is estimated that as many as half of all cases that occur are not reported. Between 2001-2003, 564 cases of ciguatera were reported. The incidence of ciguatera poisoning in The Bahamas is one of the highest in the world due to the high consumption of barracuda by Bahamians. Barracuda eat the dinoflagellates which carry the cigua toxin. The number of salmonellosis cases increased in 2003 (there were 28 cases), but none was linked to an outbreak. Between four to seven cases were reported in 2001 and 2002 respectively.

With respect to zoonotic diseases, there have not been many changes since the last Chief Medical Officer (CMO) report in 2000. It has not been possible to establish a link between veterinary and human health because of under reporting from veterinary clinics and private labs, and weak government veterinary capacity (especially with regards to diagnostic, surveillance, information management and epizoology).

Emerging and re-emerging infectious diseases, such as the global severe acute respiratory syndrome (SARS) outbreak in 2003, are of great concern. There was good collaborative support from all stakeholder agencies in The Bahamas during the SARS outbreak. Not only was the public well informed about SARS, but health care providers were involved in various SARS related training activities in disease control and prevention.

The report of West Nile Virus in one of the Family Islands resulted in an integrated approach to outbreak investigation. Although a formal survey was not conducted or research carried out, the experience gained in all the epidemiological investigations was well documented and two case reports were published in CAREC's Communicable Diseases Surveillance Report 2003.

2.2.2.2 Childhood Immunization

According to the Revised NHSSP 2003-2004, at least 98% of children entering pre-school or primary schools was immunized against Measles, Mumps and Rubella (MMR), Diptheria, Pertussis and Tetanus (DPT), Polio, Hep. B and the Haemophilus Influenza type b vaccine (Hib.) The EPI has the following objectives:

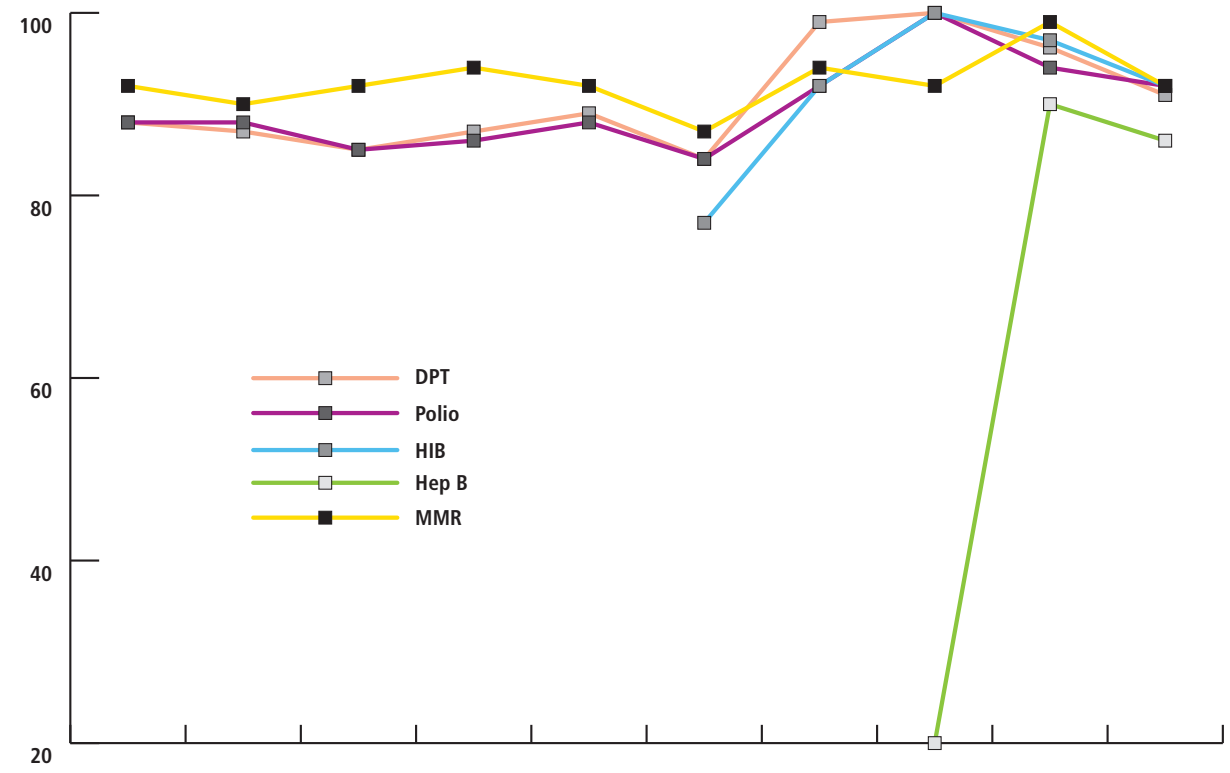
- To protect all children under one year of age against DPT, Hib., Hep. B and Polio (three doses)
- To protect all children at age one year against MMR (1st dose)
- To administer booster doses of DPT, Polio, Diptheria and MMR at specified intervals
- To protect pregnant women against Tetanus in order to prevent Neonatal Tetanus (future pregnancies)
- To protect postnatal women against Rubella in order to prevent Congenital Rubella Syndrome (future pregnancies).

The communicable disease trend in The Bahamas over the period 1994-2003 indicated that vaccine preventable diseases are becoming extinct. The last cases of the diseases reported were as follows: Pertussis (1996); Measles (children) 1990 (adults) 1997; Mumps (1995); Rubella (1998); Congenital Rubella Syndrome (1998); Tetanus (excluding neonatal) (1996); Haemophilus Influenza (2001). No cases of Polio, Diphtheria or Neonatal Tetanus were reported during this period. The success of the EPI is credited to children being routinely immunized, immunization campaigns which target adults, and to the continuous training of all heath care providers who rotate through the EPI Unit.

A mass MMR campaign targeting persons between the ages 4 – 40 years was successfully executed in 1997. A follow up MMR campaign was conducted in 2003 in order to increase MMR immunization coverage. There have been no cases of indigenous measles since 1990, and no cases of congenital rubella since 1998. The diphtheria and tetanus and Hep. B vaccines were offered to persons presenting for MMR during the campaign.

Immunization coverage in The Bahamas for childhood preventable diseases continues to be among the highest in the Caribbean region. Since 2000, immunization coverage for first and third doses of all the vaccines has exceeded 90%, except for Hep. B which was initiated in 2001 as a part of the Pentavalent Vaccine (five vaccines in one injection) (Fig. 2.1).

Fig. 2.1 Childhood Immunization Coverage in The Bahamas, 1994-2003



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
DPT	88%	87%	85%	87%	89%	84%	99%	100%	96.2%	91%
Polio	88%	86%	85%	86%	88%	84%	92%	100%	94%	92%
HIB						77%	92%	100%	97%	92%
Hep B								20%	90%	86%
MMR	92%	90%	92%	94%	92%	87%	94%	92%	99%	92%

The Pentavalent vaccine was first administered in July 2001 and contributed significantly to the EPI in The Bahamas. The Pentavalent vaccine includes DPT, Hib. and Hep. B. The Hib. vaccine which was introduced in 1999 continues to contribute to the reduction in the morbidity rate. The Hib. immunization coverage was 77% in 1999, and 92% in 2003. The level of antenatal diphtheria and tetanus coverage cannot be determined because this information is not routinely obtained from all clients on the first visit to their doctors. Some patients attending private clinics are not given the diphtheria and tetanus vaccines during pregnancy. The antenatal tetanus immunization coverage ranged from 64% to 77% in 2003. The last known case of infant tetanus was in 1970.

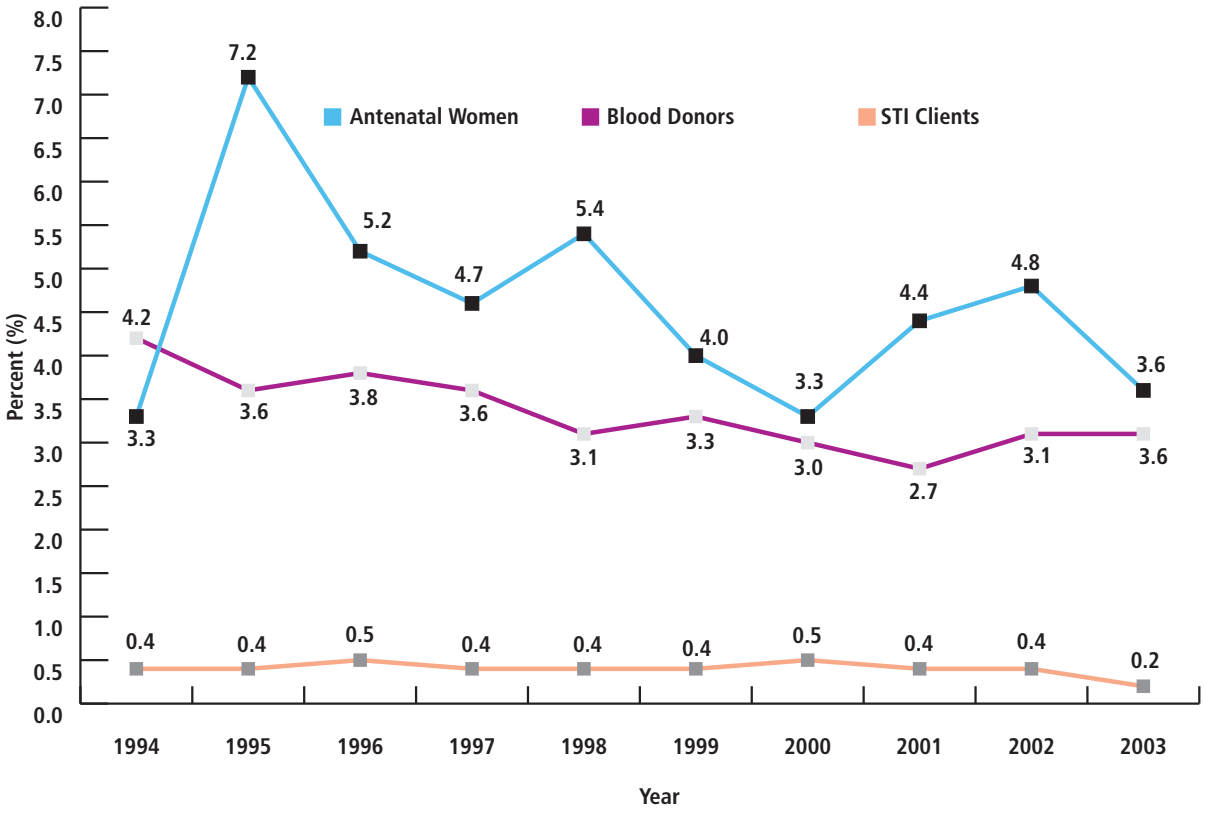
The estimated immunization target population is obtained from the number of live births recorded for the previous year minus the number of deaths of babies and the number of babies that immigrate minus the number that emigrate. It is accepted that the number of live births is inaccurate because there is no national system in place to automatically record all infant migrants. To help record the accuracy of immunization coverage, EPI Unit staff members have increased the frequency of supervisory visits to public and private clinics in New Providence and in the Family Islands.

2.2.2.3 HIV/AIDS by Age and Gender

The frequency of HIV is monitored through sero-prevalence surveys in sub-population groups of persons attending antenatal clinics and sexually transmitted infection (STI) clinic, blood donors and the prison. HIV infected persons are identified from these groups, and from volunteers and TB patients. The value of monitoring the incidence of HIV from all of these sources in order to assess programme performance may be limited by the differences in where the selected asymptomatic sub-populations are located and when they are surveyed.

Surveillance data show that the prevalence of HIV in pregnant women declined from 4.2% in 1994 to 3.1% in 2003 (Fig. 2.2). The HIV prevalence among STI patients has fluctuated over the past 10 years, with the highest prevalence seen in 1995 (7.2%), 1998 (6.4%) and 2002 (4.8%). This fluctuation may be due to variations in the number of clients screened from year to year and the inclusion of clients from the Skin Clinic. In 2003, the prevalence among STI patients was 3.6%. The prevalence of HIV among blood donors was more stable at approximately 0.4%, and was at its lowest (0.2%) in 2003.

Fig. 2.2 Prevalence of HIV in Antenatal Women, Blood Donors and STI Clients, Bahamas, 1994-2003



Previous data showed 88.4% of HIV is spread through heterosexual contact, 2.5% through bisexual contact and 1.1% through homosexual contact. Under-reporting remains a challenge, and intravenous transmission is still considered to be insignificant.

Although the prevalence of HIV in the STI population declined from 4.8% in 2002 to 3.6% in 2003, the prevalence has fluctuated between a high of 7.2% in 1995 to a low of 3.3% in 2000. The reason for this fluctuation may be related to a skew in the screened population. A Knowledge, Attitude and Practice (KAP)

study was conducted in 1998, but no follow-up study has been done. It would be useful to conduct a follow up KAP study to see if there has been a shift in knowledge, attitude and practices towards HIV/AIDS.

From 1985 to 2003, a cumulative total of 4,967 persons tested positive for HIV but had no symptoms of AIDS (Table 2.5). The female to male ratio is 1:0 but in the 10-14 and 15-19 year age groups, approximately twice as many females as males were infected. The ratio of infected females to males was 1.5:1 and 1.1:1 respectively in the age groups 20-24 and 25-29. In older age groups, the ratio of those infected was less than one female to one male. This reflects a shift in infection patterns seen over the last five years. Eighty-two percent of all infected persons fall in the age group of 15-49 years. The peak age for females (25-29 years) occurs earlier than for males (30-34 years). The younger age at which females contract AIDS may be due to their earlier sexual activity, a higher male-to-female transmission efficiency or the preference of older men for younger women.

Table 2.5 Cumulative Cases of Non-AIDS HIV and AIDS as at December 2003

	Cumulative Reported Non-AIDS HIV Cases 1985-2003					Cumulative Reported AIDS Cases 1985-2003				
Age Group	Male	Female	Total	% Total	F:M ratio	Male	Female	Total	% Total	F:M ratio
< 1	68	80	148	3.0	1.2	62	64	126	2.6	1.0
1-4	49	47	96	1.9	1.0	45	33	78	1.6	0.7
5-9	20	27	47	0.9	1.4	16	7	23	0.5	0.4
10-14	11	19	30	0.6	1.7	7	5	12	0.3	0.7
15-19	78	188	266	5.4	2.4	10	24	34	0.7	2.4
20-24	287	417	704	14.2	1.5	90	127	217	4.6	1.4
25-29	443	499	942	19.0	1.1	304	300	604	12.7	1.0
30-34	486	402	888	17.9	0.8	541	364	905	19.0	0.7
35-39	339	292	631	12.7	0.9	565	336	901	18.9	0.6
40-44	227	184	411	8.3	0.8	439	250	689	14.5	0.6
45-49	157	76	233	4.7	0.5	278	144	422	8.9	0.5
50-54	78	62	140	2.8	0.8	196	95	291	6.1	0.5
55-59	54	42	96	1.9	0.8	150	55	205	4.3	0.4
60-64	37	21	58	1.2	0.6	81	37	118	2.5	0.5
65+	42	13	55	1.1	0.3	86	33	119	2.5	0.4
Unknown	105	117	222	4.5	1.1	9	5	14	0.3	0.6
Total	**2,481**	**2,486**	**4,967**	**100.0**	**1.0**	**2,879**	**1,879**	**4,758**	**100.0**	**0.7**

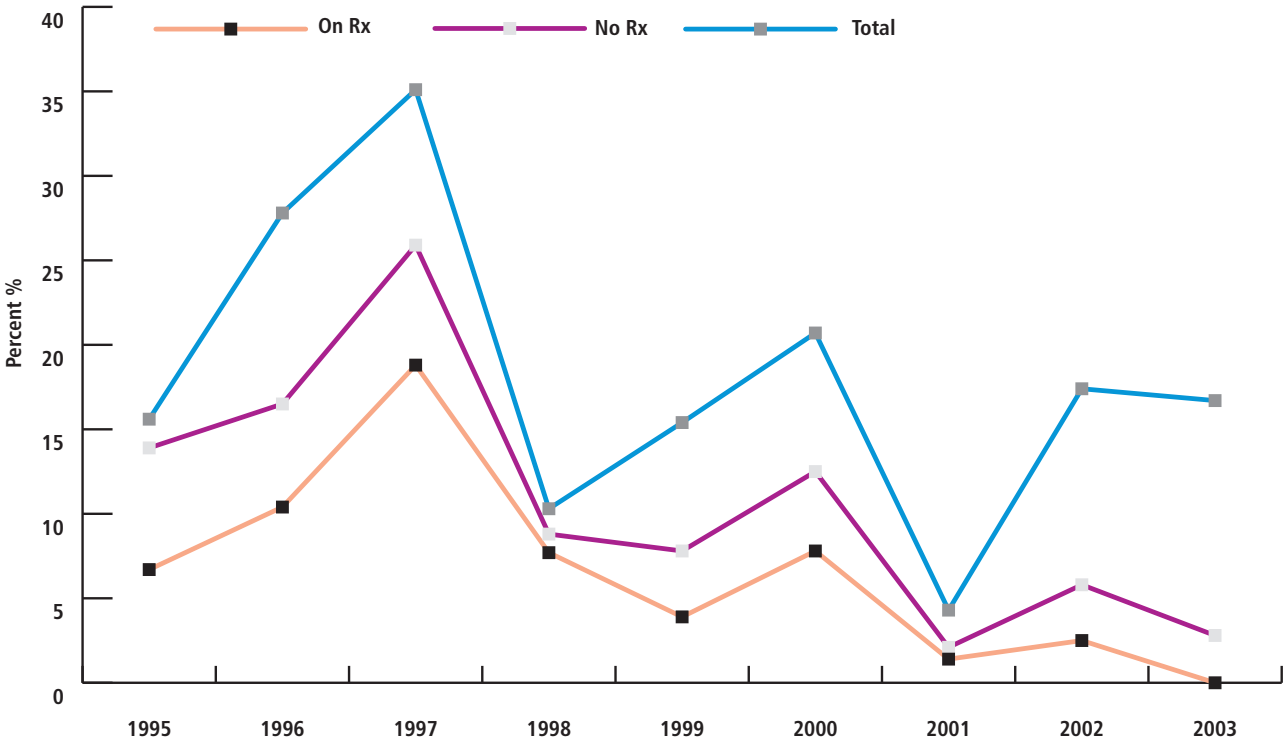
"F:M" - Ratio of females to males.

The number of new persons testing positive annually for HIV has declined by 56.1% from its peak level of 659 in 1994 to 289 in 2003 (Appendix 6). This translates into a decline in reported incidence rate from 240 per 100,000 population in 1994 to 91 per 100,000 in 2003. Over the past decade a decline was seen in all age groups, with the exception of children 5-14 years old. The age profile of non-AIDS persons suggests that resources should be targeted at children less than 15 years of age in order to significantly reduce the incidence of HIV in The Bahamas. Children less than 15 years old comprised 6.1% of persons reported with HIV and 5.3% of those reported with AIDS.

In 1995, in an effort to reduce neonatal mortality, the government of The Bahamas introduced a policy to screen all pregnant women for the HIV virus if they voluntarily consented to the test. In 1996, the rate of transmission of HIV from mother to infant decreased from 30% to 10%, a fact attributed to the screening which was implemented the year before. It has been documented that the MTCT of the HIV virus can be reduced from 10% to 5% with appropriate interventions. Available data show greater effectiveness of treatment among mothers in most years (Fig. 2.3). In 2003, there was no vertical transmission of HIV from mothers to newborns.

From 1985 to the end of 2003, a cumulative total of 4,758 AIDS cases was reported (Table 2.5). Of AIDS patients, 39.5% were females and 60.5% males. Twice as many female as male adolescents 15-19 years old were reported to have AIDS. As with HIV, most patients (78.2%) were between the ages of 15-49 years. The annual reported incidence of AIDS rose from 115.4 cases in 1994 to 137.7 in 1995, and thereafter declined to 93.3 in 2002. It rose to 110.0 in the following year. At the end of 2003, there were 25 infants under one year and 20 children 1-4 years old living with AIDS. There were also 1,449 persons living with AIDS, and 3,309 (70%) of all reported AIDS cases had died. Of the total persons reported with AIDS in 2003, 75% were Bahamians.

Fig. 2.3 Trends in HIV MTCT Rates by Treatment Status, 1995-2003



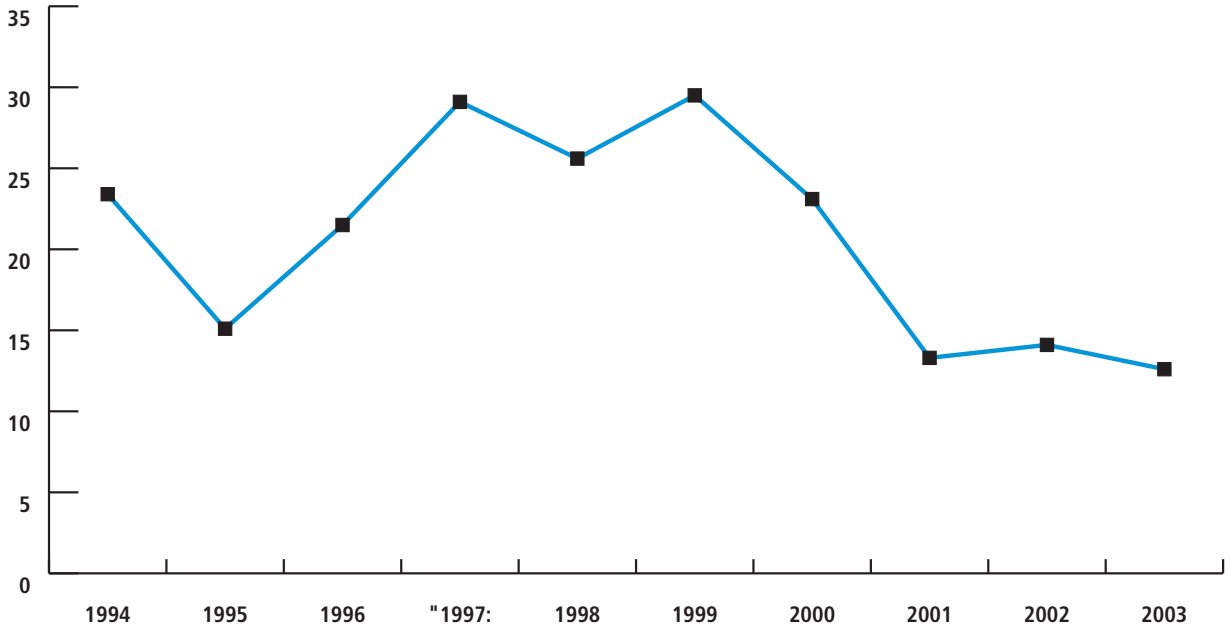
N.B. Total excludes women who: i) had no antenatal care; ii) were not located; iii) delivered prior to being treated, e.g, late attendees, premature labour; iv) had abortions/miscarriages; or v) refused treatment.

As at the end of December 2000, 86.1% of persons living with HIV/AIDS (PLWHA) resided in New Providence, 8.2% in Grand Bahama, 1.9% in Eleuthera (including Harbour Island and Spanish Wells), 1.3% in Abaco and the remaining 2.5% on other Family Islands.

2.2.2.4 Tuberculosis by age and gender

There has been a significant improvement in surveillance of TB in The Bahamas, and the quality of data collected has likewise improved. In the last 10 years the notification rates of new cases of TB have declined from 23.4 per 100,000 population in 1994 to 12.6 per 100,000 population in 2003 (Fig. 2.4). The burden of TB has remained high in the 25- 49 age group. The co-infection rate with HIV/AIDS remains high at 39% and 31.5% in 2002 and 2003 respectively. The case fatality rate for TB co-infection with HIV/AIDS was 46.6% in 2002 and 71.4% in 2003. With the introduction of anti retroviral (ARV) therapy for TB co-infected clients, it is expected that the case fatality rate will decline in the near future. About seven out of ten TB clients are Bahamian, while one in four is Haitian. There was a gradual shift in the gender distribution of cases in the last three years. The male to female ratio was 2.1:1 in 2001, and 1.2:1 in 2003.

Fig. 2.4 TB Notification Rates per 100,000 Population 1994-2003



2.2.3 Hospital-Based Reports

The public hospitals (PMH, Rand Memorial Hospital (RMH) and Sandilands Rehabilitation Centre (SRC)) use a computerized patient retrieval system, called First Coast, to record their morbidity and mortality data. However, data on outpatient diagnoses are not currently coded and are, therefore, not available.

2.2.4 Other

2.2.4.1 Rehabilitation Services

In 1996, a community-based rehabilitation programme was successfully established in the islands of Abaco, Long Island and Eleuthera. The programme has been suspended pending its evaluation. Depending on the results of the evaluation, the programme might be extended to include Exuma and Andros. A videotape of the community-based rehabilitation programme in Long Island was produced and was included in a documentary for international circulation by the Pan American Health Organization (PAHO). The programme relies on trained volunteers from the community to assist individuals with various disabilities to reach their full potential. It is supported by the MOH and the Ministry of Education and its main beneficiaries are young and elderly persons who may have one or more of the following disabilities – lack of mobility, sight impairment, hearing loss, speech difficulties, learning disabilities and mental disabilities. A register of all disabled persons was compiled where community-based rehabilitation programmes exist.

In 2001, a pilot three year diploma programme in physiotherapy was completed. Three students were sent to the University of Manchester for clinical placement and evaluation. After completing their studies, they were employed as physiotherapists with the Public Hospitals Authority (PHA). During 2001-2003, as part of an exchange programme with the University of Manchester, students from the United Kingdom, Ireland and the USA came to The Bahamas to complete their final year of training in rehabilitative services. In 2003, rehabilitative services in The Bahamas celebrated 50 years of existence.

2.2.4.2 Oral Health

A 1999/2000 National Oral Health Survey concluded with several recommendations on oral health which have resulted in the establishment of a number of programmes.

In January 2003, the National Family Island Dental Prevention Programme was initiated. Several dental professionals (usually two dentists, two hygienists, two assistants and a technician) travel to the Family Islands to provide primary, secondary and tertiary dental treatment. They use the clinics in the community and take portable dental equipment with them. Dental clinics are held on school premises during school hours for school aged children.

In 2003, 1,127 patients were seen in the Family Islands: 818 people received fluoride treatment, 863 prophylaxes, 83 had their teeth filled and 5 people obtained dentures.

A National Sealant Programme was established and incorporated into the National Family Island Dental Prevention Programme. Dental officers and hygienists have been encouraged to place more sealants. Abaco, Andros and Long Island were identified as islands which required specific dental attention. A permanent dental officer has been stationed in Abaco, and dental officers are being recruited for Andros and Long Island.

Programme evaluation includes focus meetings with staff members on standard dental procedures and the appropriate use of dental materials and oral health aids. Outcome evaluation assesses the effect of treatment.

To date, five of the seven recommendations for the 1999/2000 National Oral Health Survey have been addressed.

2.2.4.3 Prison Health

The Prison Health Service falls under the direction of the MOH. In October 2002, a Prison Reform Commission was established. This commission is responsible for reviewing the government owned prison facility and its related affairs. The commission recommended upgrading the medical facilities at the prison, hiring additional

nursing staff to enable the prison to provide comprehensive health care for prison staff and inmates, establishing a mental health team and improving pharmaceutical services.

Medical services at the prison are headed by a general physician, supported by nursing and allied health staff. The medical team is responsible for overseeing the health of the prison staff and inmates. Upon admission, all new inmates are screened for HIV, Hep. B, TB and STIs. Services include routine medical evaluations, management of chronic medical conditions and acute minor medical emergencies, infectious disease management, drug demand reduction and routine dental health care. Mental and psychological health care are provided by personnel from the government owned psychiatric hospital, SRC.

In 2002, six prison officers commenced training to become Trained Clinical Nurses or Enrolled Nurses. Once trained, these persons will supplement the current nursing and allied health staff. Since 2002, there have been marked improvements to the physical infrastructure of the health facilities at the prison, including the opening of a new health unit for staff.

2.2.4.4 National Blood Programme

In order to ascertain the quality of the blood procurement services in the country, the government of The Bahamas requested PAHO to conduct an audit of the three blood banks operating in The Bahamas. The blood banks were audited in April 2001. As a result of the audit, PAHO recommended the establishment of a National Blood Programme Committee which was established in 2003. The main goals of the committee were to establish a National Voluntary Blood Donor programme and to draft regulations and guidelines governing blood centres, blood and blood products. The regulations have been drafted and submitted for review, and a national coordinator selected for the programme. To enhance the functioning of the blood procurement programme, an individual is being trained in blood banking. This person will be the country's first specialist in blood banking upon qualifying in late 2004.

In 2003, there was a total 4,152 blood donors from PMH and RMH, and 987 blood donors from the only private hospital, Doctors Hospital.

2.2.4.5 Holistic Health

This is a new programme which is in development.

2.3 Mortality

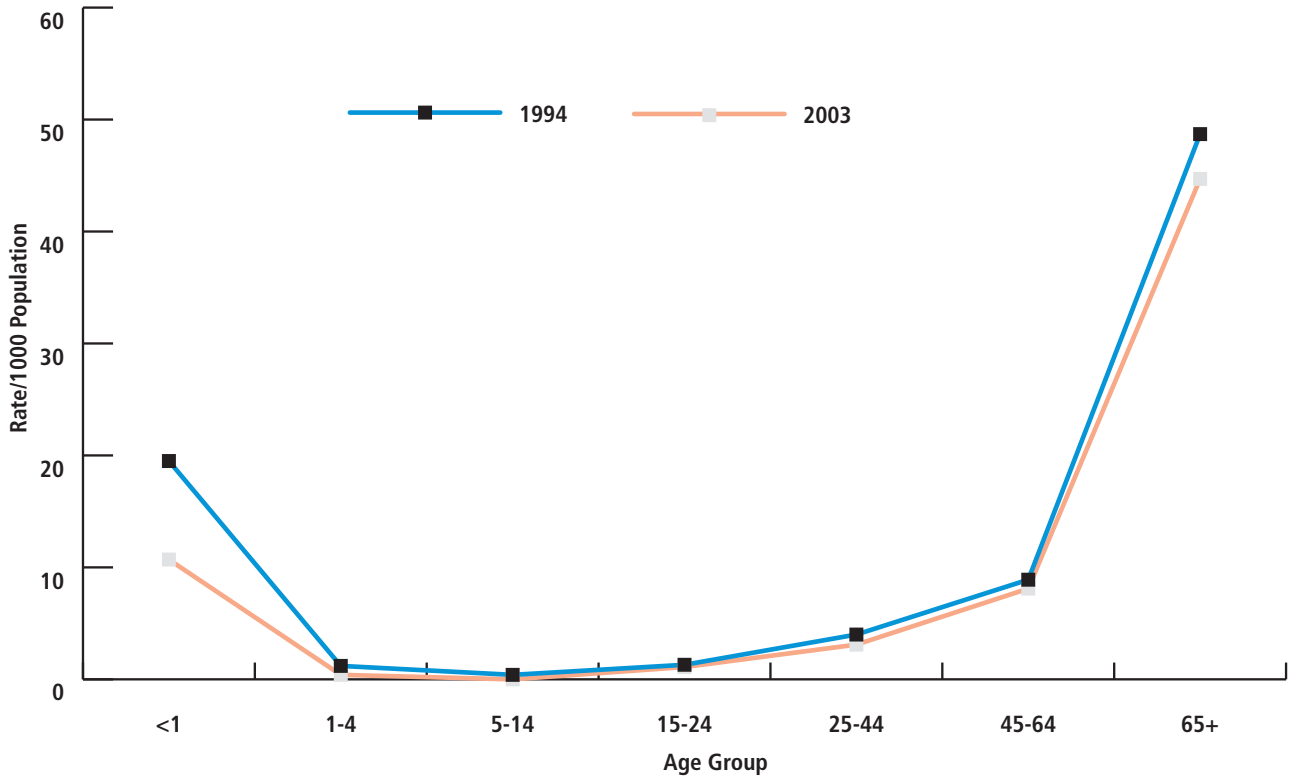
2.3.1 Age-Gender Distribution of Deaths

Appendix 7 shows the distribution of deaths by gender and age groups for 2003.

In 2003, the CDR was 5.2 per 1,000 population. Among males, it was 5.6 per 1,000 and 4.8 per 1,000 among females. Of the 1,649 registered deaths in 2003, 46.8% were females. The age-specific death rates per 1,000 ranged from 0.4 in children 1-4 years old to 44.7 in elderly persons 65 years or older. The corresponding rates for males were 0.5 and 49.6 per 1,000 population for the respective age groups. Similarly, for females, the rates were 0.3 and 41.1 per 1,000 respectively. Overall, the pattern of age-specific death rates by gender was J-shaped with the highest death rates at the extremes of life, particularly in the elderly. At all ages, the age-specific death rates were higher for males than for females. The additional burden of childbearing does not seem to impose excess mortality in females.

The CDR a decade earlier in 1994 was 5.6 per 1,000 population. However, substantial gains have been made in the age-specific death rates especially at the extremes of life. The death rate in infants in 1994 was nearly twice as much as that in 2003 (19.7 per 1,000 population versus 10.7). With the exception of the elderly, age-specific death rates in the other age groups were comparable. Among the elderly, the rate was 48.7 per 1,000 in 1994, but decreased to 44.7 in 2003 (Fig. 2.5).

Fig. 2.5 Age-Gender Specific Death Rates in Both Genders, 1994 & 2003



Persons 45 years and older constituted 22% of the total population and accounted for 71.8% of total deaths. Among males and females, those 45 years and older accounted for 69.5% and 74.3% of deaths respectively.

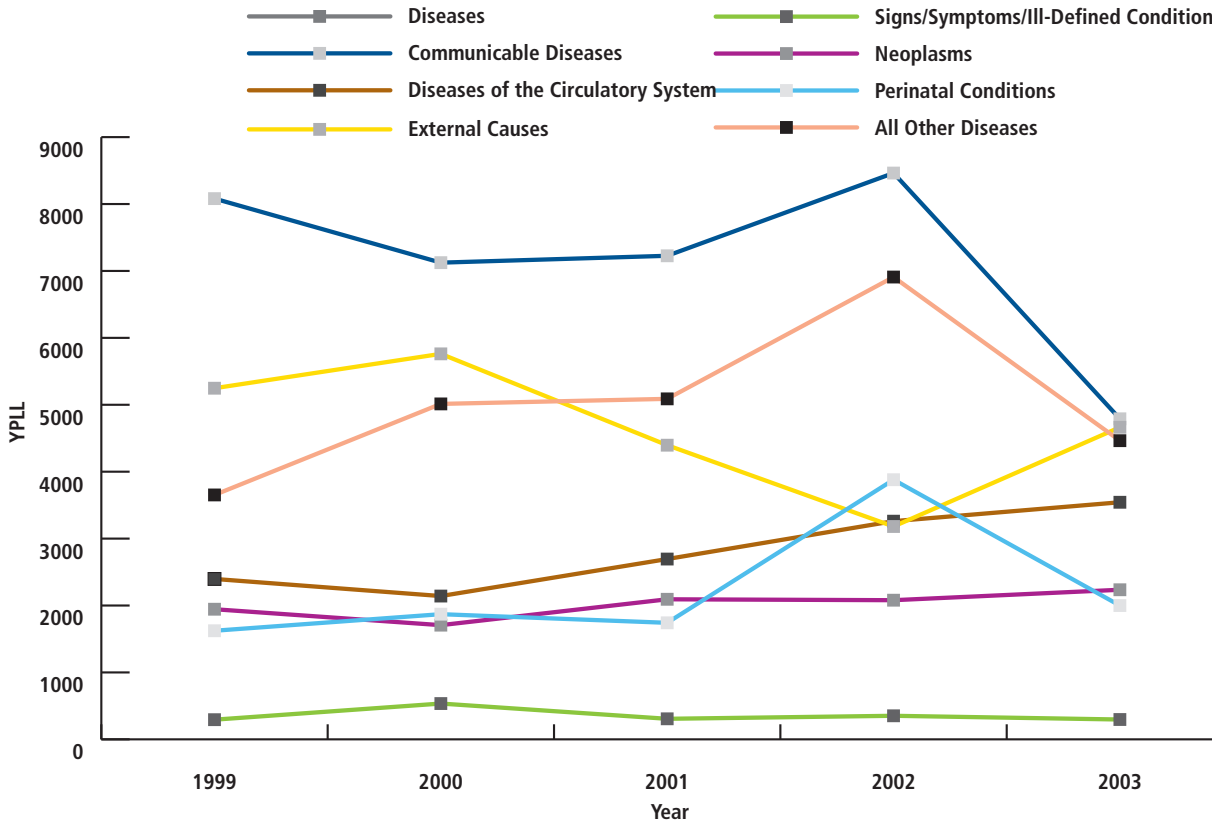
Certain steps could be taken to positively impact the CDR in infants and persons 45 years and older, while taking into consideration biological limitations to reducing death rates in the oldest populations. One such step would be to focus more resources on these populations. While considerable progress has been made in reducing the IMR, the potential to further reduce this rate exists, particularly in the post-neonatal period.

2.3.2 Proportionate Mortality by Causes of Death by Gender

Appendix 8 shows that the years of potential life lost (YPLL) over the five year period 1999-2003 by cause: among both sexes, communicable diseases accounted for 29.5%, external causes of injury (including poisoning) for 19%, perinatal conditions 9.2%, diseases of the circulatory system 11.6% and neoplasms 8.3%. By gender, external causes accounted for 25.5% of the total YPLL for defined causes of death in males compared with 9.2% in females. Conversely, neoplasms accounted for 12.1% of the total YPLL in females compared with 5.8% in males. Patterns of deaths and YPLL suggest that deaths due to external causes peak in the 25-44 age group while the diseases of the circulatory system are more likely to affect adults 45 years and older (Appendix 9).

The YPLL due to external causes of injuries and poisonings decreased from 5,761 in 2000 to 3,181 in 2002. Although it rose to 4,463.5 in 2003, it was still below the 1999 level of 5,247.5. There has also been a slight increase in the YPLL due to neoplasms and diseases of the circulatory system over the period 1999-2003; the increase was more rapid for the latter (Fig. 2.6).

Fig. 2.6 Annual Trends in Years of Potential Life Lost by Cause of Death, 1999-2003

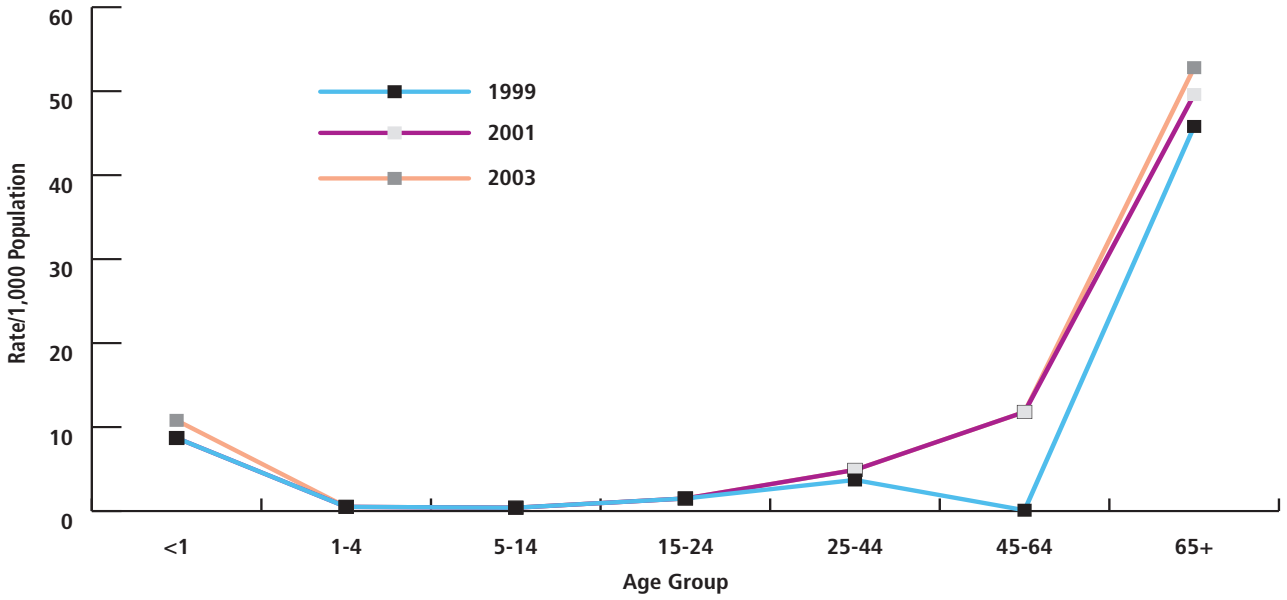


2.3.3 Group Causes of Death by Age Group and Gender

Using PAHO's six broad causes of mortality, the causes of death by age and gender between 2001–2003 are presented in Appendices 9 and 10. A total of 5,195 cumulative deaths occurred, of which 5,122 had defined causes. Among defined group causes of deaths, diseases of the circulatory system accounted for 28.8%, communicable diseases 19.1%, neoplasms 16.4%, external causes 8.3%, perinatal conditions 2.3% and all others 24.2%; unspecified illnesses comprised 1.4% of total deaths. The major gender differences in the proportionate mortality by cause were that diseases of the circulatory system accounted for 31.8% of female deaths compared with 26.2% of male deaths. On the other hand, external causes of injury and poisoning constituted 4% of total female deaths compared with 11.9% of total male deaths.

The peak age of death was 65 years for both males and females. The age specific death rate per 1,000 population for males 65 years and older was lowest in 1999 and highest in 2001; for females, the highest and lowest rates were in 2001 and 2003, respectively (Fig. 2.7 and Fig. 2.8). The age specific death rate for males 65 years and older dropped from 52.8 per 1,000 in 2001 to 49.6 per 1,000 in 2003, while for females it dropped from 46.4 per 1,000 to 41.1 per 1,000 over the same period.

Fig. 2.7 Age Specific Death Rate of Males, 1999, 2001, 2003

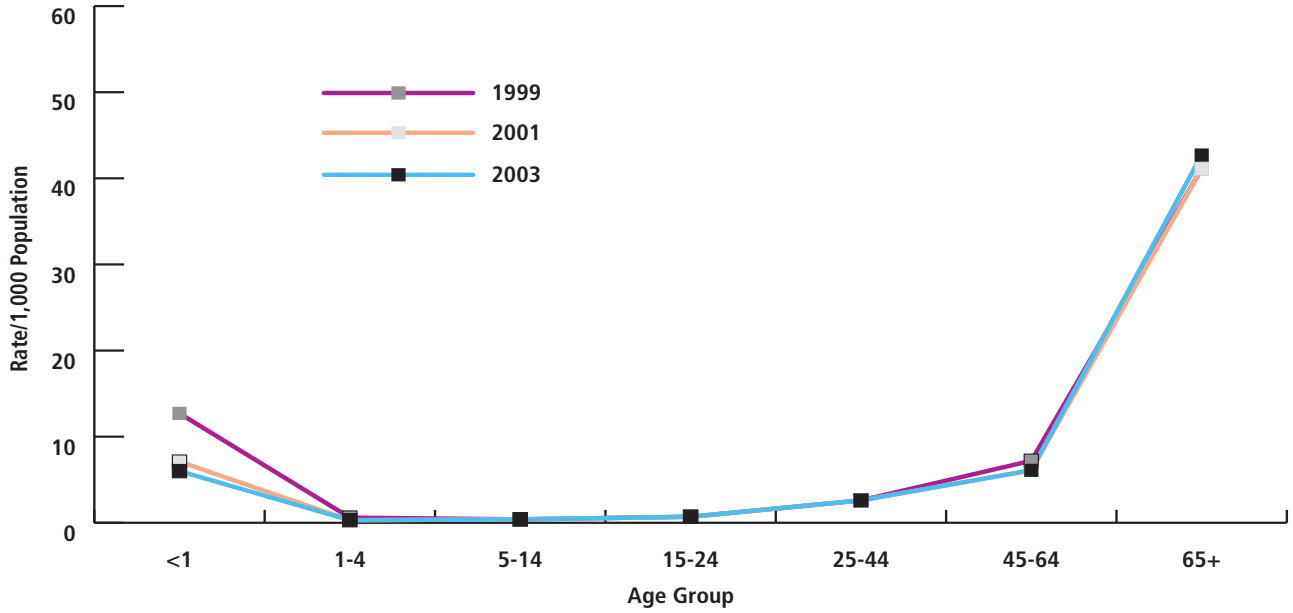


Between 2001-2003, males of all ages died more frequently from external causes than did females. Conversely, females died more frequently from neoplasms than did males.

The main causes of death in infants were illnesses which originated in the perinatal period and congenital causes; together these accounted for 80.4% of all infant deaths.

External causes accounted for 30.8% of total deaths in children 5-14 years old and for 48.3% of total deaths in young adults 15-24 years old. The male to female ratio of deaths from external causes was 1.4:1 in the 5-14 year age group and 6:1 in the 15-24 age group. In the latter group of young adults, communicable diseases accounted for 19.2% of deaths while neoplasms had a much higher impact on mortality (56.2%).

Fig. 2.8 Age Specific Death Rate of Females, 1999, 2001, 2003



The leading group causes of death among adult males aged 25-44 years old were communicable diseases (which accounted for 42.0% of defined causes of deaths), diseases of the circulatory system (13%) and external causes of injury and poisoning (21.7%). In adult females, the three leading group causes of deaths were communicable diseases (39.9%), neoplasms (16.5%) and diseases of the circulatory system (13.8%). The male to female ratio of deaths due to external causes in this age group was 6.5:1.

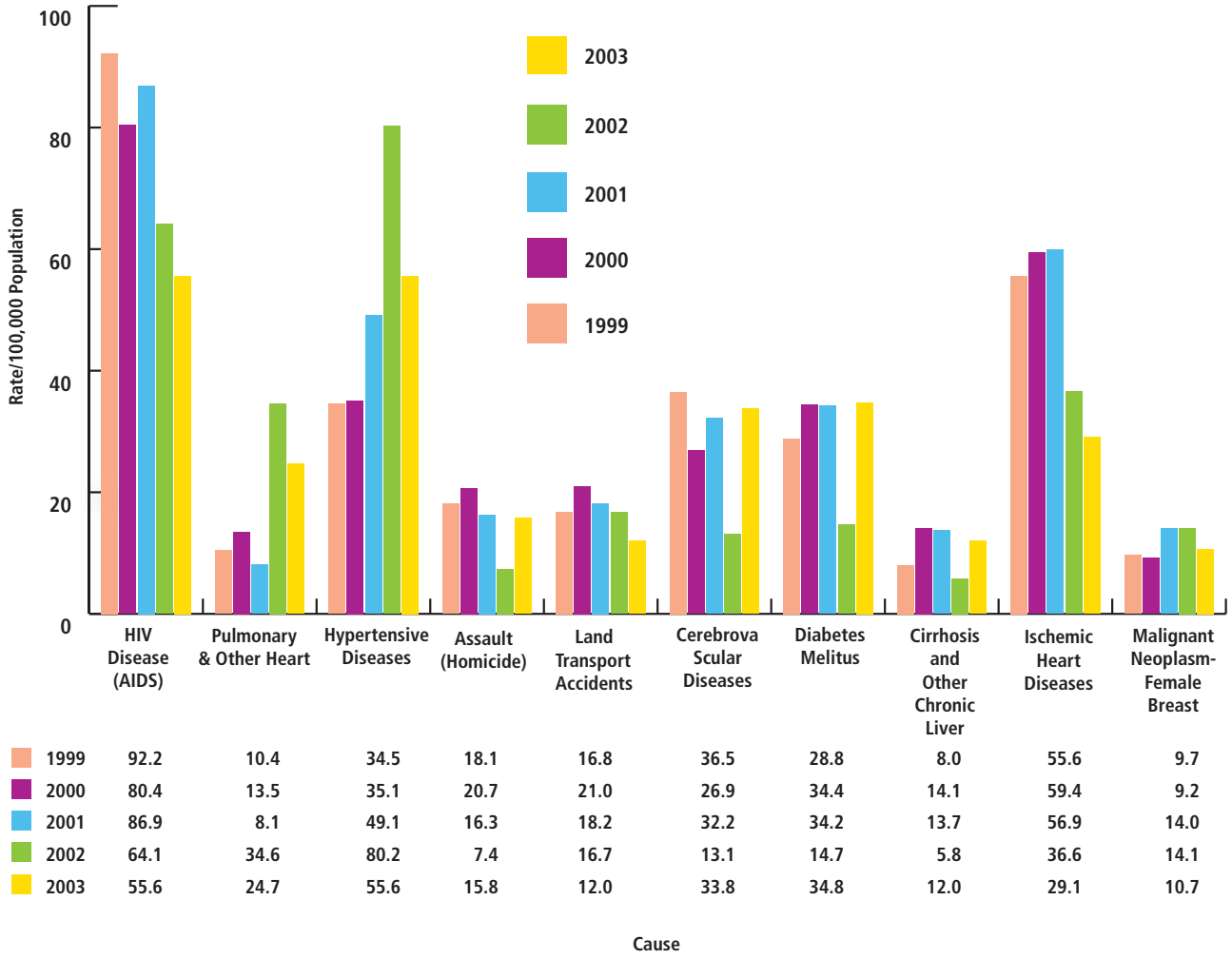
In elderly persons aged 65 years and older, the leading group causes of death among males were diseases of the circulatory system (37.4%), neoplasms (24.6%) and communicable diseases (9.1%). In elderly females, the leading causes were the same as for males with respective percentages of 42.8%, 17.4% and 9.5%. Over the period 2001-2003, the annual trends for these conditions fluctuated.

2.3.4 Leading Causes of Death

Using PAHO's 6/67 mortality cause groupings, the mortality rates for the 10 leading causes of death in 2003 were determined. Over the period 1999-2003, HIV/AIDS, land transport accidents and ischaemic heart diseases have shown general decreasing trends; only in 2000 did the rates deviate from downward trends. On the other hand, hypertensive diseases showed an increasing trend between 1999 and 2002. The mortality rate for hypertensive diseases rose from 34.5 per 100,000 population in 1999 to 80.2 in 2002 but declined to 55.6 in 2003 (Fig. 2.9). Rates for most of the other leading causes of death showed fluctuating patterns.

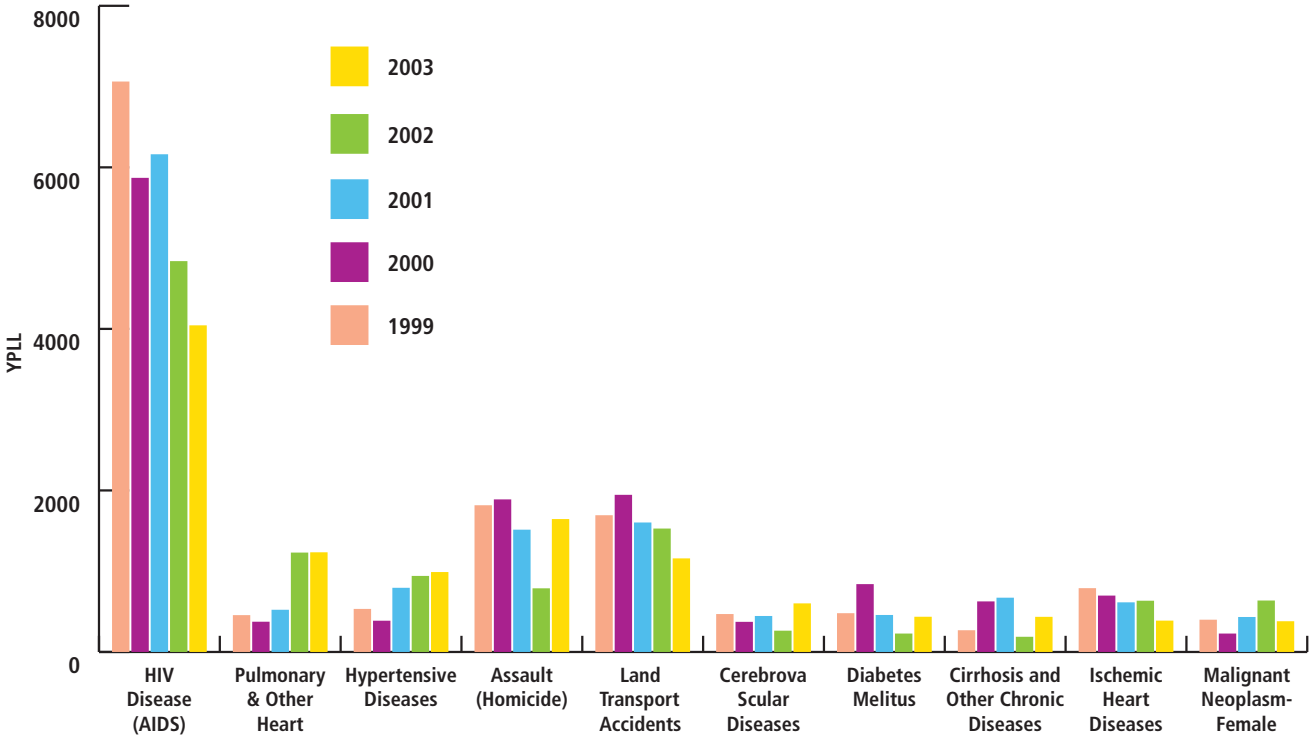
When a similar analysis of leading causes of death based on YPLL was conducted, HIV/AIDS ranked first, followed by assault (homicide) and then by land transport accidents. Other diseases ranking below the top three recurred over the period 1999-2003, but in no particular order. The trend for YPLL and for mortality rates is similar – YPLL and mortality rates due to HIV/AIDS, land transport accidents and ischaemic heart diseases are declining, while hypertensive diseases are rising (Fig. 2.9 and Fig. 2.10). Deaths from HIV/AIDS led to 4,044 YPLL in 2003, a decrease of 42.7% from 1999. The YPLL for land transport accidents also showed a decrease of 31.5% from 1,693 in 1999 to 1,159 in 2003.

Fig. 2.9 Ten Leading Causes of Death, 1996-2003



	HIV Disease (AIDS)	Pulmonary & Other Heart	Hypertensive Diseases	Assault (Homicide)	Land Transport Accidents	Cerebrova Scular Diseases	Diabetes Melitus	Cirrhosis and Other Chronic Liver	Ischemic Heart Diseases	Malignant Neoplasm-Female Breast
1999	92.2	10.4	34.5	18.1	16.8	36.5	28.8	8.0	55.6	9.7
2000	80.4	13.5	35.1	20.7	21.0	26.9	34.4	14.1	59.4	9.2
2001	86.9	8.1	49.1	16.3	18.2	32.2	34.2	13.7	56.9	14.0
2002	64.1	34.6	80.2	7.4	16.7	13.1	14.7	5.8	36.6	14.1
2003	55.6	24.7	55.6	15.8	12.0	33.8	34.8	12.0	29.1	10.7

Fig. 2.10 Ten leading Causes of Death by YPLL, 1996-2003



	HIV Disease (AIDS)	Pulmonary & Other Heart	Hypertensive Diseases	Assault (Homicide)	Land Transport Accidents	Cerebrova Scular Diseases	Diabetes Melitus	Cirrhosis and Other Chronic Diseases	Ischemic Heart Diseases	Malignant Neoplasm-Female
1999	7062.5	456.0	533.0	1816.5	1693.0	469.5	480.0	269.0	790.0	399.5
2000	5870.0	374.5	387.0	1889.0	1945.5	373.0	840.0	626.0	698.0	228.0
2001	6172.0	522.5	794.5	1514.0	1603.0	445.5	458.0	672.0	614.5	433.0
2002	4839.0	1230.5	941.5	788.0	1528.0	263.5	228.0	188.0	634.5	637.0
2003	4044.0	1234.0	989.5	1645.5	1158.5	601.5	436.0	435.0	388.0	380.5

Causes

The leading causes of death, by gender, for the year 2003 are presented in Table 2.6. Among males, the leading cause of death was HIV/AIDS, followed by hypertensive disease. Other causes of death for males included ischaemic heart disease, cerebrovascular disease and malignant neoplasm of the prostate. Of the 88 deaths due to homicides and land transport accidents in 2000, 74 (84.1%) were males. Hypertensive diseases ranked as the leading cause of death for females followed by HIV/AIDS. Other leading causes among females include diabetes mellitus, cerebrovascular diseases and ischaemic heart disease.

Table 2.6 Ten Leading Causes of Death, by Gender in 2003

Rank	Condition	Number of Deaths	% of Defined Causes	Rate Per 100, 000 Males
	MALES			
1	HIV Disease (AIDS) (B20-B24)	102	11.8	65.1
2	Hypertensive diseases (I10-I15)	75	8.6	47.9
3	Ischemic heart diseases (I20-I25)	54	6.2	34.5
4	Cerebrovascular diseases (I60-I69)	53	6.1	33.8
5	Malignant neoplasm of prostate (C61)	51	5.9	32.6
6	Assault (homicide) (X85-Y09)	44	5.1	28.1
7	Diabetes mellitus (E10- E14)	43	5.0	27.5
7	Pulmonary heart disease, diseases of pulmonary circulation and other forms of heart disease (I26-I45, I47-I49, I51)	43	5.0	27.5
9	Land transport accidents (V01-V89)	30	3.5	19.2
10	Cirrhosis and certain other chronic diseases of liver (K70, K73, K74, K76)	28	3.2	17.9
Total Deaths, Leading Causes		**523**	**60.3**	**334.0**
Total Deaths, Defined Causes *		**868**	**100.0**	**554.3**
Total Deaths, All Causes		**881**		**562.6**
	FEMALES			
1	Hypertensive diseases (I10-I15)	101	13.3	63.2
2	HIV Disease (AIDS) (B20-B24)	74		
3	Diabetes mellitus (E10- E14)	67	8.9	42.0
4	Cerebrovascular diseases (I60-I69)	54	7.1	33.8
5	Ischemic heart diseases (I20-I25)	38	5.0	23.8
6	Pulmonary heart disease, diseases of pulmonary circulation and other forms of heart disease (I26-I45, I47-I49, I51)	35	4.6	21.9
7	Malignant neoplasm of female breast (C50 in women)	34	4.5	21.3
8	Malignant neoplasm of other and unspecified sites (C00-C14, C40-C47, C49, C50 in men, C58, C69-C80, C97)	21	2.8	13.1
9	Septicemia, except neonatal (A40-A41)	19	2.5	11.9
10	Diseases of the urinary system (N00-N39)	18	2.4	11.3
Total Deaths, Leading Causes		**461**	**60.9**	**288.7**
Total Deaths, Defined Causes *		**757**	**100.0**	**474.0**
Total Deaths, All Causes		**768**		**480.9**

Based on PAHO's 6/67 Mortality Cause Groups (ICD10).
* "Defined Causes" represent all causes of death except those classified as Signs, Symptoms, and Ill-Defined Conditions (R00-R99);
All rates are gender specific.
Source: Department of Statistics

2.4 Population Sub-Groups

2.4.1 Infants

There was a continuous reduction in the IMR between 1999-2001. The IMR decreased from 15.8 per 1,000 live births in 1999 to 12.7 per 1,000 live births in 2001; however, this reduction was not sustained, but rose to 17.2 per 1,000 live births in 2003 (Table 1.2). The still birth rate fell from 14.0 to 9.5 per 1,000 live births over the period 1999-2001. Just as the IMR increased in 2003, so did the still birth rate which rose to 15.4 in 2003. In 2003, registered infant deaths accounted for 3.3% of total deaths (Appendix 7).

The combined data from the Perinatal Information System (SIP) for PMH and RMH showed that the prevalence of low birth weight (less than 2500 grams) increased steadily from 8.5% in 1999 to 11.2% in 2003.

A total of 126 infants developed AIDS between 1985 and the end of December 2003. However, in 2003, there was no vertical transmission of HIV from mothers on treatment to their babies (see Section 2.2.2.2).

There have been no cases of vaccine-preventable diseases reported in children over the last five years. In 2001, the Hep. B vaccine was introduced as part of the immunization schedule and Hib. was introduced in 1999 (see Section 2.2.2.1).

2.4.2 Children (1-4 years)

A total of 10 deaths was recorded in 2003 in pre-school children aged one to four years old. This represented a 33% decrease from 2001 when 15 one to four year olds died. Diseases of the respiratory system (excluding acute respiratory infections) were among the leading causes of mortality in children in this age group in 2001 and 2003. Other causes of death included accidental drowning, congenital malformations/chromosomal abnormalities and pulmonary heart disease.

The leading cause of inpatient morbidity during 2001-2003 was acute respiratory infections. Other major causes of morbidity included injuries and poisonings, intestinal infectious diseases, slow foetal growth, low birth weight, pre-maturity and other diseases of the respiratory system.

Child abuse in this highly vulnerable age group continued to be a cause of concern despite a decrease from 612 to 526 (14%) reported cases from 2002 to 2003 (Table 2.7). During the period 2001-2003, child neglect and physical abuse were the most commonly reported types of child abuse and accounted for 42% and 32% respectively of all cases. Sexual abuse and incest accounted for an additional 23% of reported cases.

The Suspected Child Abuse and Neglect (SCAN) Programme which is dedicated to the prevention of child abuse and to the medical follow-up of abused children, registered a decrease in the number of first time clients seen at its weekly clinic during 2003 (Table 2.8). There was, however, an increase in return visits.

Table 2.7 Reported Cases of Child Abuse, by Type and Year

Type of Case	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Abandonment	18	26	24	24	16	22	21	18	15	5
Neglect	105	191	169	224	242	217	285	210	275	206
Physical Abuse	73	34	97	130	184	180	164	157	186	180
Sexual Abuse	57	18	63	55	66	126	63	83	80	84
Incest	16	3	35	25	28	50	51	41	45	39
Verbal Abuse	0	0	2	5	5	4	4	13	11	12
Total	**269**	**272**	**390**	**463**	**541**	**599**	**188**	**522**	**612**	**526**

Source: Department of Social Services

Table 2.8 Cases of Children Seen at SCAN Clinic 2001-2003 (0-16 years)

Type of Case	2001	2002	2003
New Cases	115	120	88
Return Cases	52	53	69
Total	**167**	**173**	**157**

Source: Department of Social Services

2.4.3 Children (5 - 14 years)

In 2003, there were 23 deaths among children 5-14 years of age, resulting in a mortality rate of less than 1 (0.4) per 1,000 children in this age group. Leading causes of mortality were primarily due to external causes such as assault or homicide, accidental drowning and submersion, exposure to smoke, fire and flames and land transport accidents. Together, these comprised 43.5% of all deaths among this age group. Diseases of the respiratory system were also a leading cause of death and accounted for 8.7% of deaths. The mortality profile for 2001 was different: HIV/AIDS was the leading cause of death and accounted for 28.6% of all deaths, and land transport accidents accounted for 14.3%.

The combined data on primary hospital discharge diagnoses for PMH and RMH in 2003 showed that the three leading causes of discharge diagnoses among children aged 5-14 years old were injuries (13.2%), acute respiratory infections (12.7%) and intestinal infectious diseases (11.5%). Together, these conditions accounted for 37.3% of discharge diagnoses (Appendices 11-14). Injuries and respiratory infections were also among the leading causes of morbidity in children 5-14 years old between 2001-2002.

There were eight registered HIV/AIDS deaths between 1999-2003. Twenty-four HIV/AIDS cases have occurred between 1985-2003. The age-specific incidence rate of non-AIDS HIV rose from 10.1 to 23.2 per 100,000 population and decreased to 6.6 per 100,000 population in 2003. Children aged 5-9 years old suffered various forms of abuse.

Findings from the Drug Survey of Secondary Schools (2002), which examined drug use within the last 30 days, showed that alcohol was the most popular drug among students in grade 8 where the prevalence was 9.7%. Among students in grade 8, 1.5% had used tobacco and 0.7% had used marijuana. Marijuana use increased in students in the higher grades (Table 2.9).

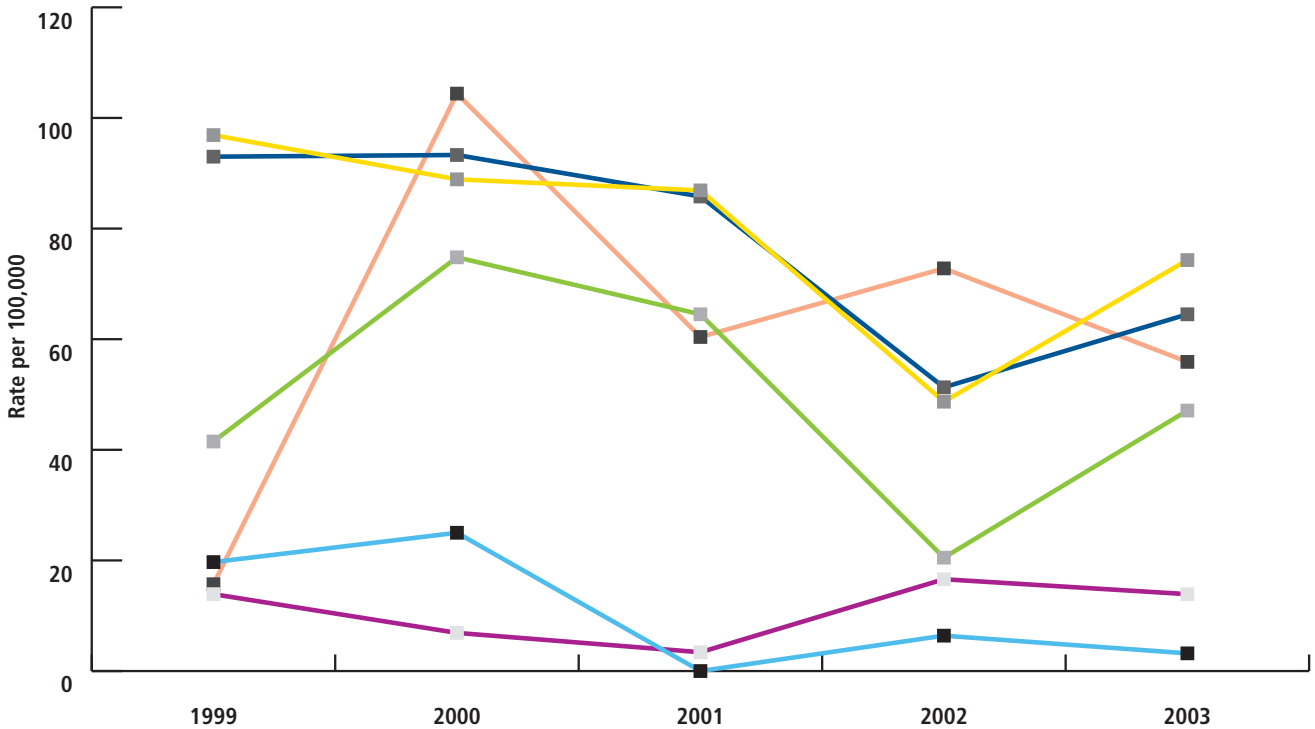
Table 2.9 Prevalence of Substance Use among Students During the Past Month, by Grade Level

Drug	Prevalence (%)		
	8th Grade	10th Grade	12th Grade
Tobacco	1.5	3.5	1.9
Alcohol	9.7	27.6	33.9
Marijuana	0.7	6.7	7.7

2.4.4 Adolescents (15 - 24 years)

Between 2001-2003, there were 172 deaths in the 15-24 year age group. External causes (primarily land transport accidents and homicides) accounted for nearly half (48.3%) of all deaths (Appendix 9). Land transport accidents accounted for 21.5% of all deaths in this age group and homicides for 18%. The male to female ratios for land transport accidents and homicides were 5.2:1 and 4.2:1 respectively. Between 1999 and 2002, there was a decline in land transport accidents and assaults among young males 15-24 years old and, despite an increase in the numbers in 2003, the rates remained below the 2001 level (Fig. 2.11).

Fig. 2.11 Age-Specific Death Rates from Land Transport Accidents, 1999-2003



	1999	2000	2001	2002	2003
0-4 Yrs	19.7	25.0	0.0	6.4	3.2
5-14 Yrs	13.9	6.9	3.4	16.6	13.9
15-24 Yrs	96.9	88.9	86.9	48.7	74.3
25-44 Yrs	93.0	93.3	85.8	51.3	64.5
45 64 Yrs	41.5	74.8	64.5	20.5	47.1
65+ Yrs	15.7	104.4	60.4	72.8	55.9

Of the 552 hospital discharge diagnoses from PMH and RMH in 2003 among males aged 15-24 years, 44.2% were due to injuries. Of the 2,827 hospital discharge diagnoses of females in the same age group, 46.7% were due to complications of pregnancy. There were 412 abortions: 61.9% of them took place at RMH; 53.9% were due to spontaneous abortions; 29.1% to unspecified abortions; and 10% to ectopic pregnancies.

Mental disorders (including alcohol and drug abuse) accounted for 2.5% of hospital primary discharge diagnoses in males and females 15-24 years old.

The proportion of births to females aged 10-19 years declined steadily from 16.9% in 1988 to 12.6% in 2003. In 2003, the live birth rate per 1,000 females in this age group was 23.0. In 2003, there were nine births among girls 10-14 years old, less than half of the 20 births in this age group in 1994. The birth rates among girls 10-14 years and 15 –19 years were 0.6 and 23 per 1,000 females respectively. Findings from the BLCS 2001 showed the prevalence of contraceptive use to be 5.6% in girls 10-19 years.

There were three HIV/AIDS registered deaths in the 15-19 year age group over the period 1999-2003, as compared to five between 1996-2000. Between 1985-2003, 34 AIDS cases were reported, 70.6% of which were females. Over the same period, a total of 266 15-19 years olds were reported as having non-AIDS HIV infections; females comprised 70.7% of the total. In this same age group, the overall ratio of females to males with non-AIDS HIV was 2.4 (Table 2.5).

Findings from the Drug Survey of Secondary Schools (2002) showed that alcohol was the most popular drug among students in grades 10 and 12. In those grade levels, the prevalence was 27.6% and 33.9% respectively. Among students in grade 10, 3.5% had used tobacco, compared to 1.9% in grade 12. The prevalence of marijuana use increased with age, ranging from 6.7% among students in grade 10 to 7.7% among those in grade 12 (Table 2.9).

2.4.5 Adult Females (25 - 64 years)

In 2003, there were 299 deaths in females 25-64 years old. Forty-four percent of these deaths were among women 25-44 years old. In 2003, the age-specific death rate for females aged 25-44 years was 2.6 per 1,000 population (Appendix 7). Among these women, the three leading causes of death were HIV/AIDS, pulmonary heart disease and malignant neoplasm of the female breast. Together, these accounted for 50% of all deaths in females. Other causes of death included hypertensive diseases (3%) and cirrhosis and other diseases of the liver (3%).

In 2003, there were 167 deaths among women 45-64 years old, with an age-specific rate of 6.1 per 1,000 population. Hypertensive diseases, HIV/AIDS and pulmonary heart disease were the leading causes of death. They accounted for 35.5% of the total deaths among older women. Other causes of death included diabetes mellitus (9%) and malignant neoplasm of the female breast (7.8%).

The death rate from breast cancer was highest in women aged 65 years and older. The rate increased from 116.6 per 100,000 population in 1999, to 186.4 per 100,000 population in 2001, and decreased to 132.3 per 100,000 population in 2003. Overall, the death rate from breast cancer in all females increased from 18 per 100,000 population in 1999 to 21.3 per 100,000 population in 2003. Deaths from breast cancer constituted 21.9% of all female cancer deaths in 2003. Deaths from cancer of the cervix constituted 9% of all female cancer deaths in 2003.

Hospital discharge diagnoses for PMH and RMH are shown in Appendices 11 and 13.

The combined morbidity data based upon hospital discharge diagnoses for 2003 from PMH and the RMH showed that the primary causes of inpatient morbidity in females aged 25-44 years old were obstetric complications of pregnancy, childbirth and the puerperium. These represented 40.4% of hospital discharges in 2003. The second

and third leading causes were other infectious and parasitic diseases (7.8%) and carcinoma in situ, benign neoplasms and neoplasms of uncertain or unknown behaviour (3.3%). To a large extent, this reflected patterns seen over the period 2001-2003. Mental disorders and injuries and poisonings were also among the five leading causes of morbidity seen at RMH over the same period.

In 2003, the major causes of morbidity in females 45-64 years old were hypertensive disease, which represented 8.7% of hospital discharges, followed by all other diseases of the digestive system (8.1%), injuries and poisonings (6.7%) and carcinoma in situ (6.6%). Between 2001-2002, benign neoplasms, hypertensive diseases, diabetes mellitus and other diseases of the digestive system were also leading causes of morbidity in this age group.

Antenatal and postnatal care in the community clinics in New Providence remain centralised. The teams of midwives were reorganized in 2003. There are still four midwives teams but, unlike in the past, two teams rotate while the other two are stationary at two major polyclinics. The objective of this approach is to reduce maternal and perinatal mortality. All antenatal, delivery and postnatal services are provided free of charge. Postnatal clinic is provided at four weeks post-delivery. A revised Parentcraft Education Programme was launched in June 2003. The aim of this project is to teach parentcraft skills to expectant couples. A train-the-trainers workshop was also held for nursing staff.

The family planning programme seeks to promote responsible sexual behaviour, reproductive patterns and parenting. Its broad objectives are to screen clients for cervical and breast cancer and STIs, to increase the availability and accessibility of family planning services and to establish a comprehensive male health programme.[6] Family planning services continue to be free of charge to all women of childbearing age. Results from the BLCS 2001 showed the prevalence of contraceptive use was 57% in women 30-39 years and was lower (33%) in women 40 years and older. The birth control pill was found to be the most popular contraceptive method used among all females (47%), followed by female sterilization (19.7%).

The Male Reproductive Health Initiative was initiated in 1998 to encourage responsible manhood and quality reproductive health. It continues to promote activities to foster health promoting behaviours among men and boys.

2.4.6 Adult Males (25-64 Years)

In 2003, there were 446 deaths among males 25-64 years old. Of this number, 188 (42.1%) occurred in males 25-44 years. The age-specific mortality rate in this age group was 3.7 per 1,000 males. The leading cause of mortality among males in this age group was HIV/AIDS, which accounted for 31.2% of all deaths. Other leading causes of death were: assault or homicide (11.8%); pulmonary heart disease and disease of pulmonary circulation (6.5%); hypertensive disease (5.9%); and land transports accidents (4.3%).

Among males 45-64 years old, the age-specific mortality rate was 10.1 per 1,000 males. As was the case for males aged 25-44 years old, the leading cause of death was also HIV/AIDS (14.5%), followed by hypertensive diseases (7.5%), pulmonary heart disease and diseases of pulmonary circulation (7.5%) and cerebrovascular disease (7.5%).

Hospital discharge diagnoses for PMH and RMH are shown in Appendices 12 and 14.

In terms of morbidity, in 2003, the leading hospital discharge diagnoses at PMH and RMH among males aged 25-44 years old were injuries (28.2%), mental disorders (7%), HIV/AIDS (6.7%), diseases of other parts of the digestive system (6.1%), acute respiratory infections (3.5%) and hypertensive diseases (3.2%). Together, these conditions accounted for 54.7% of hospital discharge diagnoses among males 25-64 years old.

6 *Carter P. Department of Public Health, MOH. Hand-Over Notes Prepared for Permanent Secretary. January 10, 2002*

In 2003, the leading hospital discharge diagnoses in males 45-64 years old were injuries (11.5%) and hypertensive diseases (10.1%), followed by diseases of other parts of the digestive system (7.2%). In 2001 and 2002, these were also the three leading hospital discharge diagnoses. Other causes of morbidity for 2003 were cerebrovascular diseases (4.2%) and diseases of the urinary system (3.9%).

2.4.7 The Elderly

As is the case throughout the world, the population in The Bahamas 65 years and older is growing at a phenomenal rate. Despite this, in comparison to many countries, The Bahamas still has a fairly young population. In the region, "elderly" is defined as anyone 60 years of age and older. In the USA, a person is deemed elderly upon attaining the age of 65 years. The average age is expected to be 36 years by 2010.

Given the demographics of the population, attention must be focussed on both ends of the spectrum of the life cycle. As stated by the WHO, "longer life can be a penalty as well as a prize."[7] The MOH continues to place emphasis on the health of older persons.

The majority of older persons are females and the likelihood is that this trend will continue. Thus, the number of older women who are economically challenged will increase since many of them are unprepared to live without financial support from a spouse or their children.

The government has a national plan for ageing contained in its National Policy for Older Persons which was presented by the National Council on Older Persons in September 2000. That national plan is in the process of being expanded and revised. In the Revised NHSSP 2003-2004, the objective for Older People is to reduce the disability rate among persons 65 years old and older by 50% by 2010.

Universal access to health care is available for all persons 60 years old and older. Some persons must travel by boat or airplane to obtain the services of a physician on a neighbouring island. Health services are provided at PMH and RMH which offer acute care, at the Geriatric Hospital which offers chronic care and at the community clinics. There are also several private sector and non-governmental organizations (NGOs) which serve older persons. All government clinics provide medication free of charge to persons older than 65 years and several private pharmacies provide senior citizen discounts of 10%.

Some of the government health services available to the elderly are:

- Community Nursing Services – conduct monthly visits to the elderly and provide counselling and referral services.
- District Nursing Service – administers injections, gives baths, inserts catheters and provides dressing changes and similar care to the elderly at home.
- Three Gerontology Clinics – doctors, nurses, podiatrists and social workers provide services at these clinics. Clients can obtain medication and receive phlebotomy services.
- 130 bed Geriatric Hospital – provides care for the elderly who are too ill to be cared for at home or whose relatives are unable to afford adequate medical home care. The hospital provides comprehensive medical care which includes recreational and occupational therapy.

7 *WHO. The World Health Report 1997: Conquering Suffering, Enriching Humanity*

- Medical Loans – items such as wheelchairs, walkers, crutches or hospital beds are made available to the elderly, sometimes for a small fee. PMH can procure loans for persons to cover expenses for surgery and other health needs. A directory of services is also available at the Ministry of Housing and National Insurance (Ministry of Housing) and at the Ministry of Social Services and Community Development (Ministry of Social Development).

The Ministries of Housing and Social Development operate, as well as assist NGOs to provide, residential facilities in the community for older persons. Residential facilities are located on five of the Family Islands. There are two day care centres for the elderly - one is government operated while the other is privately owned. The government also oversees the operation of the privately owned facilities.

An NGO, the Bahamas Red Cross, operates the Meals on Wheels programme and has limited transportation services for eligible elderly persons. There are several clubs for elders, but there are no educational or literacy programmes specifically for elders.

The community needs to be better educated about the elderly and their unique needs. Likewise, physicians and allied health personnel require training in this area. The University of the West Indies Medical programme now includes geriatrics in its psychiatric rotation for 4th and 5th year medical students. The Family Medicine Residency second year residents have a three month module on geriatric medicine. In their final year, residents spend a month at the Geriatric Hospital and in the Clinics.

The Department of Social Services has spearheaded a basic training programme for caregivers, at the Continuing Education and Extension Services of the College of The Bahamas.

Legislation for the regulation and licensing of homes for the elderly, prepared by the Ministries of Housing and Social Development in collaboration with the MOH, has been drafted.

The retirement age in The Bahamas is 65 years. Pursuant to the National Insurance Act of 1972, retirement benefits are awarded to all insured persons 65 years old and older who have retired from gainful employment. In 1984, amendments made to the Regulations under the Act provided for insured persons to retire early, between the ages of 60 to 64 years, and receive their retirement benefit at a reduced rate (75% of the total benefit). Persons who do not qualify for retirement because they have not paid sufficient contributions into the National Insurance Board Scheme are entitled to receive an old age non-contributory pension from the National Insurance Board.

Older persons often suffer with multiple chronic illnesses. The most common causes of inpatient morbidity among persons 65 and older are hypertension, injuries and poisonings, cerebrovascular disease (stroke, myocardial infarction), pneumonia, urinary tract infections, diabetes mellitus and malignancies. These illnesses, along with arthritis, cataracts and glaucoma, dementia, depression and decreased hearing also affect the elderly.

In 2003, the leading causes of deaths in adults 65 years old and older were hypertensive disease, diabetes mellitus, cerebrovascular disease, ischemic heart disease, prostate cancer, urinary tract infections, acute respiratory infections and malignancies of other areas.

3. POLICIES, PLANS, PROGRAMMES

3.1 The National Health Policy and National Health Services Strategic Plan

Realizing the importance of health to social development, the philosophy of the government of The Bahamas is to provide quality health care to residents throughout all islands of the archipelago. Consequently, the MOH's mandate is to "to ensure that the highest quality of services for health promotion, protection and care are accessible to all persons of The Bahamas in order to achieve optimal health." The MOH fulfils its mandate through a network of public health institutions which include the PHA, the DPH, and the DEHS and the BEST Commission.

Policy directions, which guide the development of NHSSPs and the operations of public health institutions, are designed to ensure that the health response is relevant to the socioeconomic realities and the regional and global interests of the country. The MOH has renewed its commitment to the guiding principles of access, equity, affordability, quality, sustainability, accountability and efficiency and, based on these, resources have been allocated for:

- Upgrading of facilities
- Training and the development of staff in critical clinical and administrative areas
- Expanding services to provide quality care to greater numbers of persons
- Reorienting delivery models to achieve greater levels of efficiency and effectiveness
- Improving capacity for planning, monitoring and evaluation
- Developing an efficient automated health information system
- Strengthening public and private partnerships
- Implementing strategies to improve staff morale
- Promoting a culture of professionalism, punctuality and productivity
- Investigating options for health care financing.

The NHSSP 2000-2004, though ambitious, established markers to clearly view, analyze, evaluate and improve the country's health care system. In 2002, an Essential Public Health Functions (EPHF) Evaluation of the health system was conducted and a midterm evaluation of the NHSSP was carried out. These tools were used to assess the health situation in the country, to revise the national objectives, to enhance the policy role of the MOH and to improve public health practices.

Results of the EPHF Evaluation indicated that the system performed below average in all but two areas, namely, health promotion and capacity for the development of laws and regulations. Further analysis also revealed at all levels in the health system, an absence of formal evaluation processes, inefficient and ineffective utilization of established institutional capacity, and inefficient and ineffective management information systems.

In 2003, the NHSSP 2003-3004, a revised version of the NHSSP 2000 – 2004, was completed. It contains indicators to focus attention on the areas of deficiency. It provides a comprehensive framework that will achieve accountability and transparency. It is intended to promote a stronger sense of equity into the entire health care system so that Family Islanders are given levels of care comparable to persons in New Providence and to create a stronger sense of inclusiveness by all stakeholders. Monitoring and evaluation indicators are designed to ensure regular review of professional competence at all levels in order to consolidate and sustain previous gains while attaining new milestones.

3.2 Major Health Programmes

To achieve the goals of the Revised NHSSP 2003-2004, 7 priority health programmes have been determined, namely:

- Health promotion and protection
- Scaling up HIV/AIDS care and treatment
- Prevention and control of communicable diseases
- Prevention and control of CNCD
- Strengthening environmental protection and maintenance
- Improving efficiency of delivery systems
- Improving strategic management.

The newest initiatives which help strengthen the delivery system are the National Blood Programme and the National Laboratory Strengthening Project. There is also an ongoing project to address the shortage of pharmacists and other allied health professionals within the government health care sector.

3.3 Achievements and Progress Indicators

The midterm evaluation of the NHSSP 2000-2004 proved that substantial progress was made in most of the defined areas during the period 2000 – 2002. These years saw an increased budget allocation to the health sector, improved health outcomes and new and amended health care legislation.

As regards gains in health status, there was a reduction in the IMR, TB incidence rate, HIV mortality rate, hospital admission rates for HIV related conditions, HIV prevalence in pregnant women and MTCT of HIV. There were no outbreaks of vaccine preventable diseases and only a few reported cases of malaria.

Gains were also realized in the performance of the health system. Health personnel were trained extensively on Logical Framework Methodology in order to support planning; the capacity of the MOH's Planning Unit to coordinate standardized planning was strengthened; and programme coordination was introduced in the DPH.

3.4 Major Health Events and Developments 2001 - 2003

Policy Initiatives

1. In keeping with its policy to provide health care for all, regardless of ability to pay, and faced with the rising costs of health care, the government is seeking alternative means of financing health care while maintaining its commitment to universal coverage. The Prime Minister of The Bahamas appointed a Blue Ribbon Commission (BRC) in August 2002 to consider the feasibility of a National Health Insurance system. The BRC completed its report for submission to Cabinet in the last quarter of 2003.
2. The government increased access to affordable, quality health care for persons living with HIV/AIDS by removing cost barriers.
3. The MOH's policy directorate determined that all institutions and agencies within the public health sector were a part of one health system. Consequently, renewed focus was given to ensuring appropriate levels of integration at the policy, programmatic and service delivery levels. This approach was successfully applied to maternal child health, prevention and control of communicable diseases and oral health. However, there was limited success in incorporating this approach to planning, monitoring and evaluation. The efforts to do so are continuing.

4. Health officials determined that health promotion and prevention strategies were the most effective methods to achieve optimal health status for the population at the least cost. As a preliminary measure, the MOH provided direct allocations within the annual national health budget to strengthen existing national disease prevention and control programmes, to meet new and emerging primary care needs and to improve the overall quality of primary health care services. Additionally, it is now mandatory that medical students complete a rotation with the DPH and the Office of the CMO is actively recruiting young physicians to train for careers in public health.
5. Urgent attention is being given to recruiting and retaining sufficient numbers of appropriately trained personnel to meet the health care needs of The Bahamas and to alleviate the shortage of personnel in critical specialties. In order to attract larger numbers of suitable candidates, Cabinet has approved a substantial increase in the stipend paid to students enrolled in the Associate of Arts Nursing programme at COB, agreed to fund training of clinical nurses at COB and approved increases in salaries for allied health professionals to bring their salaries in line with their counterparts in the private sector.
6. Government agencies have an obligation to consult and collaborate with relevant stakeholders to ensure quality decision making in order to build strong partnerships to achieve the national health goals. The MOH consults and collaborates with other agencies in policy initiatives which impact the country's health situation. Examples of these include the Workers Health and Safety Act, 2002, the Mandatory Seat Belt Law and the Establishment of the National Disaster Preparedness Agency.

Programme Initiatives

- The CNCD National Programme was strengthened.
- The National Blood Programme was established.
- The National Laboratory Strengthening Project was established and implemented.
- The programme, planning and monitoring functions of the Planning Unit were strengthened.
- An intersectoral and multidisciplinary Health Planning Committee was established.
- The Public Health Information System Project (*i*-PHIS) Plan was completed and implementation commenced according to schedule.
- A National Mental Health Committee was established to oversee the development of the National Mental Health Policy and Plan and the integration of mental health into community health services.
- All government clinics, maternity wards and units now use the new Perinatal Information System (SIP) in an efficient manner.
- The Mobile Health Team was introduced in 2001 to routinely visit the Family Islands. Workshops are conducted to strengthen surveillance of communicable diseases and vaccine preventable diseases.
- The Pentavalent vaccine was included in the national immunization schedule of The Bahamas.
- Prison health services were reviewed, a plan developed, and additional resources allocated to achieve the objectives of the plan.
- Regional and international partnerships were strengthened which resulted in the enhancement of HIV/AIDS prevention and treatment programmes. Plans for the construction of laboratory facilities for HIV disease testing have been activated and the projected date for completion is 2005.
- The mid term evaluation of the NHSSP 2000-2004 was conducted and a revised NHSSP developed for 2003 – 2004.

Service Delivery Initiatives

- An ultra modern primary health facility was opened in the Southern District of New Providence. It provides diagnostic services including ophthalmology, speech therapy and preventive oral health for children, and audiology, laboratory and radiology services.
- The administrative offices of the MOH and the DPH relocated to a new, modern, multi million dollar facility.
- The first neurodevelopment clinic was established in 2001.
- Triple Therapy commenced for all persons living with HIV/AIDS who meet the criteria for ARV. This is being facilitated by the government of The Bahamas and the Clinton Foundation.
- Significantly more persons receive HIV/AIDS ARV treatment free of charge with the public health service.
- Access to oral prophylaxis (cleaning), sealants, fluoride treatments and restorations has improved for school children in the Family Islands.
- Oral health services were expanded in the Family Island clinics to provide dental prosthesis for adult populations.
- School based dental education initiatives were implemented and continue to improve the dental knowledge of school children.
- Preventive oral health services were expanded within the community health setting and prison oral health services were strengthened.

4. HEALTH INFRASTRUCTURE

4.1 Organization of the Health System

4.1.1 Organization and Management

The government health sector is comprised of four main clusters of services:

The Ministry of Health (MOH)

Department of Public Health (DPH)

Department of Environmental Health Services (DEHS)

Public Hospitals Authority (PHA).

The MOH is responsible for health policy and planning, regulation and monitoring, public health services financing, development and implementation of public health programmes, Community Health Services, and the provision and management of environmental health services.

The Minister of Health is responsible to his Cabinet colleagues for the efficient and effective administration of the MOH. The Permanent Secretary (PS) is the chief civil servant within the MOH and is responsible for the administration, supervision and control of all the resources allocated by the government for the operation of the public health services in the country (Appendix 15).

As the Minister's advisor, and specifically with respect to the formation of policy, the PS must work closely with the professional and technical heads, namely, the CMO, the Director of Public Health, the Director of Environmental Health Services and the Director of Nursing.

The PS advises the Minister and facilitates his relationships with the PHA and the Boards and Councils for which he has responsibility, namely, the PHA, the Nursing Council of The Bahamas, the Medical Council of The Bahamas, the Dental Council of The Bahamas, the Health Professions Council and the Health Facilities Board.

The CMO is the Chief Technical Officer in the MOH and has responsibility for all national disease prevention programmes, technical operating units, regulatory boards and councils.

The Minister of Health, the PS, the CMO, the Director of Nursing, the Director of Public Health and the Director of Environmental Health comprise the executive management. An Undersecretary, Deputy Permanent Secretaries and Technical Directors provide administrative and technical support at the policy and planning levels.

The DEHS was reinstated within the MOH in 1998 but operates under a separate budget head. The major sections in the DEHS are:

Health Inspectorate

Environmental Monitoring and Risk Assessment

Waste Management.

The number of Health Inspectors posted to the Family Islands has increased, thereby allowing consistent delivery of quality services.

Organizational and management review of the DPH is continuing under the leadership of the Director of Public Health. A proposal is in place to regionalize the public health delivery system. To that end, between 2001-2003,

a pilot project was commenced in the south eastern Bahamas to improve the quality of public health services. The project awaits evaluation. If the proposal is implemented, Assistant Directors would function as regional coordinators responsible for all curative and preventive services in a cluster of islands. District coordinators would be responsible for the delivery of quality health care on individual islands, for strengthening partnerships with local government officials and for promoting community based health promotion.

The PHA has responsibility for the three government hospitals — PMH, RMH and SRC. A Board, accountable to the Minister of Health governs the PHA. The Minister has no involvement in the day-to-day operations of the PHA. A Managing Director functions as Chief Operating Officer of the PHA and reports to the Board. Each hospital is managed by an Executive Management Team chaired by the Hospital Administrator. The team includes the Medical Staff Coordinator, the Principal Nursing Officer and the Financial Controller.

A joint planning committee of the MOH and the PHA provides a forum for consultation in the strategic allocation of resources, setting policies, review of issues and revision of the national health system.

The MOH has delegated responsibility to the PHA for the planning and management of shared services which include the National Emergency Medical Programme, the National Drug Agency, and the centralized Material Management Services which is responsible for bulk procurement of disposable medical and surgical supplies.

4.2 Resources

4.2.1 Manpower

The number of health personnel in the public and private health sector has continued to grow. There are now 16.2 physicians per 10,000 population. There were 840 professional nurses within the public and private sectors over the 2002/2003 period which represented 26.6 nurses per 10,000 population. There are more pharmacists in the private sector than in the public sector (Table 4.1).

Table 4.1 Number of Health Personnel in the Public & Private Sector, with Rates per 10,000 Population, 2002/2003

Category	Total	No. Per 10,000 Pop
Physicians	523	16. 8
Dentists	79	2. 5
Hospital Administrators	35	1.1
Professional Social Workers	128	4.0
Nutritionists/Dieticians	15	0.5
Registered Nurses/Nurse Practitioners	840	26.9
Enrolled Nurses/Trained Clinical Nurses	508	16.3
Radiographers	43	1.4

Laboratory Technologists/Technicians	119	3.8
Pharmacists/Dispensers	133	4.2
Pharmacy Technicians	7	0.2
Physiotherapists	30	0.9
Occupational Therapists	8	1.0
Dental Assistants	131	4.0
Public/Environmental Health Inspectors	72	2.0
Statisticians	4	0.1

Source: Bahamas Medical Council, Health Professions Council Department of Social Services

The shortage of nurses in the public sector continues to be a concern. Recruitment and retention are major issues. In 2002, the MOH decided on a three-pronged approach to address the shortage by providing certain incentives: sponsorship and stipends for nursing students were increased, opportunities for continuing education were promoted and high school students were encouraged to choose nursing as a career. A Nursing Task Force was established which led to the development of a more comprehensive Strategic Plan for Nursing in The Bahamas. It is expected that this plan will further the advancement of the nursing profession and nursing education.

In 2002, an additional 50 persons commenced training as Trained Clinical Nurses or Enrolled Nurses: six of them were prison officers. Seventeen registered nurses were trained as Health Visitors. 2001-2003 saw a total of 66 persons trained as registered nurses. A Defence Force officer is currently being trained as a professional nurse. Training is also being provided in dialysis nursing and psychiatric nursing to further meet the growing needs in specialty areas.

Physicians are the second largest group of health care providers in The Bahamas. In 2002, the University of the West Indies expanded its enrolment of students at the St. Augustine's Campus in Trinidad and Tobago. Medical students at the university can now complete their 4th and 5th year clinical programmes in The Bahamas. Post graduate medical training has been established in The Bahamas in collaboration with the University of the West Indies in the disciplines of Family Medicine, Obstetrics, Gynaecology and Internal Medicine.

Most of the health care workers in the country are on the islands of New Providence and Grand Bahama where most of the population resides and where the hospitals are located. The MOH and the DPH endeavour to ensure that each Family Island has at least one doctor. Acklins, Crooked Island and Long Cay, islands located in the south eastern Bahamas, continue to share one doctor.

4.2.2 Facilities and Technology

In 2003, there were five public and private hospitals in The Bahamas with a total of 1,068 beds which represented 35 hospital beds per 10,000 population. There were 55 health centres or main clinics – nine in New Providence, five in Grand Bahama and 41 in the Family Islands. There were 59 satellite clinics throughout the country, and 286 privately owned health care facilities that offered primary care and diagnostic services.

Certain infrastructural and technological developments have occurred within the DPH which have improved access to quality care.

In 2001, a new ultra modern health centre opened to serve south central New Providence. It is the largest of the more than 115 Community Health Clinics, and the only public health facility that offers ophthalmology, laboratory, radiology and audiology services. This clinic also holds a weekly nutrition clinic for at risk obese school children.

The PHA continues to develop its infrastructure. Between 2001–2003, several initiatives were carried out to improve the delivery of health care.

SRC has undergone a number of structural upgrades and renovations: these included refurbishment and commissioning of the dental operatory, upgrades to the Centre for Special Education for children, renovations to the Occupational Therapy Department and repairs to the kitchen roof. Technology upgrades included the installation of hardware and cabling to improve data and communication systems, security monitoring systems and a radio communication system in the transport department. The mechanical plant, including the generators boilers and vacuum tanks, were repaired and maintained.

The Accident and Emergency Department at PMH was upgraded and renovated to alleviate the demand on the main operating theatre. A building was specifically renovated to house the rehabilitative and some laboratory services. Extensive renovations and upgrading were carried out to the Maternity and Gynaecological Wards, which included the Post Natal Wards and the Labour and Delivery suites. One of the delivery rooms can now be converted easily to an Emergency Operating Theatre with provision made for piped medical gases. It also has an emergency exit.

At RMH, infrastructural improvements included renovations to the Medical and Surgical Wards and the Special Baby Care Unit. An off-site facility was renovated to house mammography, ultrasound and ophthalmology services. Electrical upgrades were also carried out to the hospital. In addition, the clinics in West End, High Rock and McClean's Town were renovated.

4.2.3 Financial

The total recurrent health expenditure increased from $84,295,460 in 1993 to $148,271,603 in the 2001/2002 fiscal year. The estimates for 2002/2003 showed a budget of $155,261,671 allocated to health. In relative terms, health expenditure as a proportion of the total actual recurrent expenditure increased from 13.4% in 1993 to 15% in 2002/2003, while 15.1% of the total budget was allocated to health in 2002/2003 (Fig. 4.1).

As shown in Fig. 4.2, the PHA received two-thirds of the recurrent expenditure for tertiary care in 2003 while DEHS received 10% for primary care services.

Fig. 4.1 Health Expenditure as a Proportion of National Recurrent Expenditure, 1993-2003

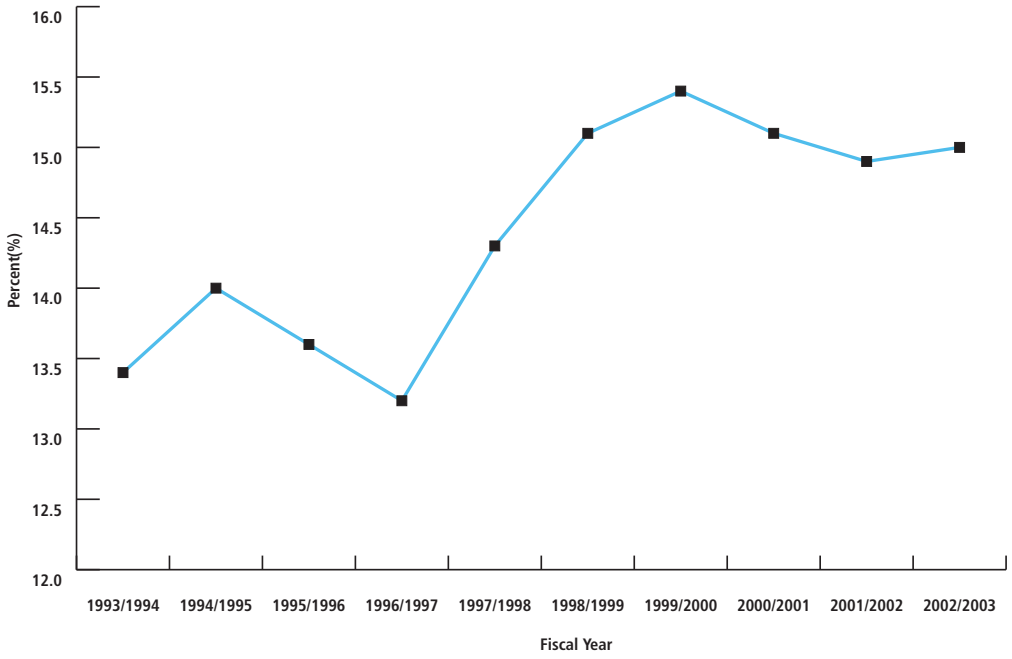
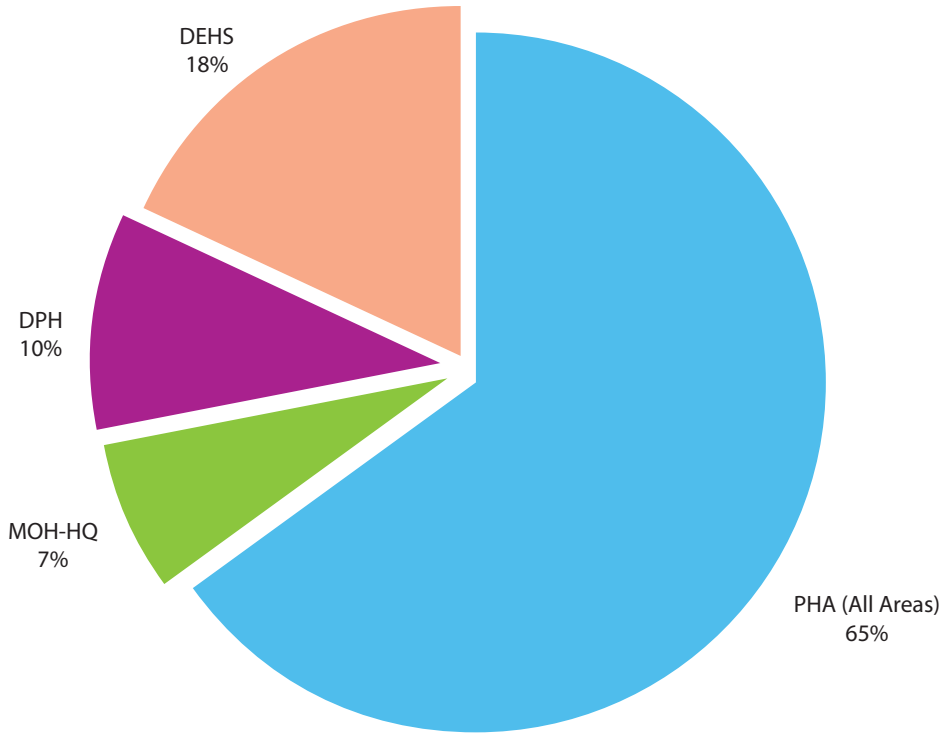


Fig. 4.2 Recurrent Expenditure in Health, by Department, 2003/2004



4.3 Legislation

The only health related legislation passed in The Bahamas between 2001 -2003 was the Health and Safety at Work Act, 2002.

Two statutes were passed or amended during this period which, though not entirely related to health, included health related provisions. They were:

- The labour laws amended in 2002 which now entitle women to 12 weeks maternity leave. Unpaid paternity leave is also provided after the birth of a baby, and during the illness of the baby or the baby's mother.
- The Employment Act, 2002 which eliminates discrimination against HIV infected persons in the work place.

4.4 Information Systems Development

4.4.1 National Health Information and Research Unit

The National Health Information and Research Unit (HIRU), established in 1979, is the main agency in the MOH responsible for planning, implementing, monitoring and coordinating the collection, analysis and dissemination of statistical information relating to health services delivery and to the health situation in the country. The areas of operation of the HIRU include biostatistics utilisation analysis and demand estimation, programme planning and evaluation, cost control and productivity enhancement, quality assurance in health delivery, education and research.[8]

The subsystems which comprise the national health information system are the hospital information systems, vital statistics information system, environmental health information system, the primary health care information system, surveillance system and the laboratory services system. The various subsystems collect, process and report aggregated data to the HIRU.

The information unit is under the direct line of authority of the CMO. Its prime function is to provide planners and administrators with the information necessary to aid them in their decision-making activities.

In line with the information subsystems, the main sources of health information are the PHA, the primary health care clinics, the Surveillance Unit, the DEHS and vital statistics (Box 4.1). Other sources of information are surveys, other governmental sectors, the private and non-governmental sectors, civil society and the community. The primary health care reporting form covers antenatal and postnatal services, child health, school health, other (curative) clinic services, other domiciliary services, patients requiring emergency flights, new cases of notifiable diseases, industrial accidents, births, deaths, fees collected, summary of visits and general remarks.

8 *Health Information Research Unit, MOH, Bahamas. 2001 Annual Report.*

Box 4.1 Sources of Health Data

I. Morbidity

A. *Hospital data*
Inpatient – public and private
Outpatient – Accident & Emergency, General Practice Clinic

B. Community Health Services
Clinic data – Primary Health Care Clinics
Infectious Disease Surveillance
Special Surveillance – HIV/AIDS

C. *Other Special Disease Registries*
Cancer Registry

II. Vital Statistics

A. *Registered Information*
Births, Deaths, Marriages etc.

B. *Institutions Involved*
Occurrence – hospital, non-hospital
HIRU
Registrar General
Department of Statistics

III. Environmental Health

A. *Environmental Monitoring and Risk Assessment*

B. *Environmental Sanitation and Consumer Plan*

C. *Solid Waste*

IV. BEST Commission

V. Other data sources

A. *National Insurance Board*
Indigent, Occupational Injuries, Disabled

B. *Insurance Companies*

C. *Surveys*

Source: Health Information Unit

Some of the activities undertaken in the area of health information systems were:

- Ongoing analysis of data from the public health services
- An evaluation of potential information technology solutions by the DPH and identification of the *i*-PHIS as a potential technology solution. In December 2003, the planning process for a pilot implementation of *i*-PHIS in four sites in New Providence was initiated.
- The provision of health information to health staff, students, researchers and to the lay public upon request.

4.4.2 Public Health Information System

In 2000, the DPH developed a long-term strategy to strengthen the public health information system to improve the way public health data is collected and analyzed and to improve the quality of available data.

In 2001 and 2002, the DPH, with support from PAHO, documented key functional and data requirements to initiate the process. In late 2002, the DPH identified the *i*-PHIS as a potential technology solution.

In December 2003, planning began for a pilot project of *i*-PHIS at four sites in New Providence.

i-PHIS is a Canadian based information system developed through a collaborative effort by the federal, provincial and territorial governments of Canada. It is a secure web based software system that provides frontline public health professionals and managers with case management tools to record, store, access and manage patient specific health information treatment and outcomes. The information generated can be used to support health surveillance in The Bahamas. The *i*-PHIS includes modules on immunization, high risk targeting, health assessment, communicable disease control, automated lab reporting, STI/HIV/TB case management and client services, outbreak registry and comprehensive demographic and medical record encounters.

The goal of the national health information system is to ensure that the quality of health data is high, that it is reliable and that it is readily available to health professionals. A compatible system needs to be put in place which allows the data bases of the various health information systems to be accessible to all users. It is essential that collaboration between the Planning Unit and the HIRU be strengthened to better facilitate the production of annual and periodic health reports. In order to properly monitor and evaluate NHSSPs and for other purposes, health service data must be made available by geographical units (islands, districts, etc.) and by monthly trends.

Although this is beyond the purview of the MOH, it is important to note that the quality of birth and death registration needs to be improved as this information impacts health data.

4.5 Research

In the MOH, the HIRU is responsible for planning, monitoring and coordinating health research activities. The HIRU also conducts research and provides technical advice on study design and analysis of data upon request.

Some of the research activities carried out by the HIRU between 2001-2003 included:

- Designing the questionnaire on the health section for the BLCS (2001) and writing the chapter on the health section in collaboration with other health professionals;
- Conducting the National Schools Drug Survey (2002); and
- Assisting COB nursing students in instrument development and analysis of data.

The MOH acknowledges that its capacity for conducting and analysing research (particularly at the operational levels) needs to be strengthened considerably. A Research Committee is being established to address this problem. Draft terms of reference for the establishment of the committee are being reviewed and, once these terms are ratified, the Research Committee will prepare a national health research policy. The policy will provide guidelines for all health research conducted in The Bahamas. It is expected that the Research Committee will promote the capacity and culture for health research within the framework of the national health information system.

Several research areas have already been identified. They include the CNCD, maternal and child health, behaviour change, HIV/AIDS, impact of the prevention of MTCT of HIV, antibiotic susceptibility patterns of gonococcal isolates, impact of the automated health information system on quality of care at public hospitals and evaluation of projects and options for health financing by the government. Courses in research methodology are being planned for the future. Monitoring and evaluation of health programmes have assisted in enhancing evidence-based decision making.

4.6 Essential Public Health Functions

Ministries of Health measure EPHFs to identify factors such as human resources, management formulas and material resources when developing plans or strategies to strengthen public health infrastructure. It is also a tool for fostering multisectoral collaboration between all stake holders involved in the business of health.

The first EPHF evaluation was held in 2002. The results of this exercise indicated that there were several areas that needed to be addressed in order to improve the quality and provision of health care. The information gained was also valuable in assisting in the evaluation of the NHSSP 2000-2004, and in determining the priorities, goals and objectives for the Revised NHSSP 2003-2004. It is proposed that the EPHF be used as a tool for monitoring and evaluating the performance of the public health system.

5. ENVIRONMENTAL HEALTH

5.1 Water Supply and Quality

About 96.4% of the total population has access to water supply by house connections and other acceptable piped means. Most persons living in New Providence and Grand Bahama receive water which complies with WHO Drinking Water Guidelines. The drinking water supply in New Providence and the Family Islands is drawn from underground source facilities. The population not served by a piped system uses wells or rainwater tanks. Approximately 2,000 households are serviced by private wells, the majority of which are in the Family Islands. In these rural areas there are difficulties associated with providing treated water due to operational, resource and technical constraints.

The Water and Sewerage Corporation, as the body responsible for the provision of the municipal water supply, has implemented a programme for improved water supply, quality and distribution in several of the major Family Islands. At the most basic level, the programme addresses the disinfection process through evaluation and retraining of staff.

The municipal and private systems are systematically monitored and analysed by the DEHS' Water Quality Control Programme. The DEHS has regulatory responsibility for monitoring the Water and Sewerage Corporation. The Water Quality Control Programme provides analytical data relative to the bacteriological and chemical quality of water to the municipal supplier. The data obtained are used to evaluate trends, determine potential problems in the supply and make recommendations for improvement.

A significant number of persons consume commercially bottled water from both local and imported sources. Local sources include producers in New Providence as well as in the Family Islands. The DEHS monitors producers of bottled water to ensure that they are producing water under sanitary conditions and that their product is of acceptable quality.

5.2 Sewage Disposal

The sewage disposal systems in use in The Bahamas are septic tanks, sewer systems and privy closets. The Bahamas does not allow construction of new privy closets and is actively pursuing the phasing out of existing units. Approximately 16% of the population is connected to municipal sewer systems and approximately 82% is serviced by septic tanks.

The Ministry of Works and the DEHS regulate construction of septic tanks through a permitting system. All new projects, including renovations, are required to provide either a septic tank or a sewer system, depending on the nature and size of the project. The Bahamas Building Code provides guidlines for architects, engineers and contractors. The guidelines provide illustrations and design parameters to ensure that all systems meet the government's standard. Most hotels and island resorts have on site sewerage package treatment and disposal systems. Additionally, all private subdivisions which contain more than 25 lots have private sewage treatment and disposal plants.

Each government subdivision in New Providence has a package sewage treatment system and a disposal plant which provides secondary treatment. Tertiary treatment is provided at a single central facility. Final disposal is accomplished by re-circulation for irrigation and toilet flushing purposes in hotels, resorts and private communities supplemented by deep well disposal. Sludge is removed and dried and disposed of at a landfill or used for agricultural purposes.

The Water and Sewerage Corporation is currently evaluating the condition of all municipal sewage treatment systems with a view to implementing improvements.

5.3 Solid and Liquid Waste Disposal

In the last two years the New Providence Regional Landfill was completed and landfills in San Salvador, Bimini and Eleuthera were modified. This construction has led to a significant improvement in waste disposal which previously consisted primarily of a modified landfill in New Providence and open dumping in the Family Islands. It is proposed that over the next three years additional modified landfill sites will be constructed in all major Family Islands. The improvement in waste disposal has decreased the number of fires at the dump, odours from garbage and fly nuisances.

The New Providence Regional Landfill receives in excess of 181,000 tons of solid waste per year with the largest number of loads being received on Thursdays and Fridays. Average daily tonnage based on a seven day week is 750 tons per week. The waste generation rate for New Providence is calculated as 5.7 pounds per person per day while the generation rate for The Bahamas is 4.0 pounds per person per day. The average waste generation in the Family Islands is estimated at 3.0 pounds per person per day. The high waste generation rate in The Bahamas is a result of the reliance on imports which tend to have substantial packaging, the virtual absence of recycling initiatives which results in high volumes of paper, plastic and metal components, and the large numbers of tourists who visit the country.

The three largest waste sources are commercial (30.4%), residential (27.8%) and construction and demolition (20 %), with the remaining waste stream totalling 21.8%. It is projected that approximately 240,000 tons of waste will be generated in New Providence by the year 2006.[9]

The government of The Bahamas is seeking to improve the management of solid waste at the community level by providing a bulk waste collection programme and depository sites, and by implementing a national solid waste education and awareness programme. The programme will focus on recycling and separation at the source in order to involve the adult population. Both the bulk waste and depository site programmes were administered as pilot projects in 2001. The significant reduction in indiscriminate dumping in the test areas augurs well for the success of the expanded programme. The solid waste public education and awareness initiative has been successful in making school age children aware of the importance of proper waste management. Limited success has been noted in the adult population.

The Bahamas continues to address the problem of derelict vehicles through the DEHS' Derelict Vehicle Removal Programme. In 2001, approximately 7,200 derelict vehicles were removed from vacant properties, roadside garages and the roadsides in New Providence. A total of 8,121 tons of metal, the result of crushing vehicles, was exported to the USA for recycling. The programme will be expanded in 2002 to address the major Family Islands. In 2002, 4,000 derelict vehicles were crushed and exported.

5.4 Occupational Health

For many years, the MOH has provided basic services relating to occupational health and safety. There is an occupational health unit located at SRC which provides assistance to eligible patients. In many of the government's health units, there is an Employee Assistance Officer to offer basic advice and assistance on health and safety in the work place. The role of the Employee Assistance Officers has been strengthened to empower them to facilitate collaboration with supervisors and managers in the public and private sectors as they seek to assist employees in ensuring that health and safety matters are dealt with in an expedient manner.

Occupational Health and Safety has been highlighted during the past five years and the MOH is drafting a National Workers Health Plan in collaboration with the Ministry of Labour and Immigration, the trade unions and the employers' unions. The Health and Safety at Work Act, 2002, mandates the formation of an Advisory Council to oversee and manage all matters related to the implementation and execution of aspects of the programme. The Advisory Council will also function as an advisory committee on health and safety in the workplace to senior policy makers.

9 *Bahamas Solid Wase and Hazardous Materials Management Project*

The MOH is committed to strengthening services related to occupational health and safety. The risk management service within the PHA has been augmented, cooperation between health agencies and the National Insurance Board has been enhanced and collaboration between the MOH and employee and employer representatives continues.

5.5 Veterinary Public Health

The Veterinary Services include the abattoir, Animal Control Unit, animal quarantine and animal health. The work of the Veterinary Diagnostic Laboratory has been hampered since the laboratory technician resigned, particularly as regards developing a monitoring and surveillance programme. In order to better carry out its responsibilities, the Veterinary Services must hire additional veterinary officers, laboratory technicians, butchers, animal control wardens and support staff.

Legislation, including the Animal Contagious Diseases Act, the Veterinary Surgeons Act and the Public Market and Slaughterhouse Act, is in the process of being amended. An Animal Control and Welfare Act, which will replace the Dog Licence Act, has also been drafted. A contingency plan for animal health emergencies is being developed.

Recommendations have been made to join the World Organization for Animal Health (OIE), which is the agency recognized by the WTO as the expert in animal health. The Bahamas became a member of Codex in June 2002.

Efforts continue to improve the operations and the facilities at the abattoir, animal quarantine and Animal Control Unit. Collaborative efforts have been developed with NGOs and other parties to improve animal control efforts. These include a neighbourhood spay/neuter/education campaign in collaboration with the Rotary Club, the Bahamas Humane Society, private veterinarians and local businesses.

5.6 Food Safety

The DEHS monitors the safety of food offered to the public through meat inspections at the abattoir, sampling and testing of imported canned goods at ports of entry and sanitary inspections of food establishments. DEHS is monitoring global trends in diseases of current interest, such as Bovine Spongiform Encephalopathy, Foot and Mouth Disease, and Avian Influenza, which can adversely impact the safety of food supplies. In suspected cases of food borne diseases, DEHS collaborates with the Epidemiology Unit of the DPH in conducting sanitary inspections of premises that might be implicated, with a view to identifying and correcting any deficiencies that might have resulted in a food poisoning event.

The Codex Alimentarius, or the Food Code, contains food standards for commodities, codes of hygienic or technological practice, limits for pesticide residues and guidelines for contaminants.

The Public Market and Slaughterhouse Act has been reviewed, and a determination made that it needed no amendments. Poultry regulations are being drafted and Hazards Analysis and Critical Control Point (HACCP) based inspection will be implemented in the poultry industry. The DEHS plans to develop a national system of abattoirs and poultry processing facilities: these will require HACCP plans to ensure that all meat sold in The Bahamas is inspected.

There is a need to develop legislation and implement a modern inspection system with mandatory requirements for HACCP in poultry and other industries. A Codex contact point and Codex Committee will be established in the Ministry of Agriculture and Fisheries.

Amendments have been made to the meat import regulations under the Animal Contagious Diseases Act to protect The Bahamas from the introduction of Bovine Spongiform Encephalitis and Foot-and-Mouth Disease. The Act was amended in order to address such challenges as changing technology, country disease status and emerging diseases.

5.6.1 The Food Handlers Programme

In 2002, permission was sought from Cabinet to amend the Food Handlers section of the Public Health Act: this section provides for training of food handlers as a prerequisite to obtaining a food handler's certificate.

In November 2003, the MOH through the DPH began piloting the new Serve Safe Food course for all food and beverage workers in The Bahamas. It is estimated that 30,000 workers will require this training. The course is expected to be implemented in 2004.

5.7 Quality Control of Drugs

Currently, no legislative measures exist to protect consumers against drugs that are unsafe or which contain misleading claims on labels, or from misleading advertisements made by drug companies. The Bahamas National Drug Agency is guided by the following standards:

All products shall:

a. meet the requirements of the laws of The Bahamas and the conditions of the contract respecting drugs, their quality, labelling and packaging.

b. meet the requirements of the laws of the country of their origin with respect to quality, labelling and packaging.

c. be formulated and produced in accordance with Good Manufacturing Practices enforced in the country of the drug's origin and shall meet the requirements of the official reference stated, and where such is not stated shall meet those of the British Pharmacopoeia, BPC., US Pharmacopoeia/National Formulary, E.U.R.P. or any other standard approved by the Director of The Bahamas National Drug Agency.

d. meet all other specifications as identified in the Tender Document.

5.8 Pesticide Control

In 2000, a final draft of the Pesticide Control Bill was presented to the Ministry of Agriculture and Fisheries for review. The bill has not been submitted to Cabinet.

5.9 Disaster Management and Preparedness

The hurricane season in The Bahamas starts June 1 and ends November 30. The National Hurricane and Disaster Committee is responsible for pre-disaster planning and post-disaster response. The committee is located in the Cabinet Office and is comprised of representatives from various government ministries. The MOH has a Disaster Preparedness Plan which includes plans from each component department and agency within the health sector. Since July 1996, the DPH has had a Hurricane Preparedness Plan. The Plan was revised in 1999 and updated in 2003. The Plan describes the various categories of hurricanes, the dangers each category presents, an explanation of meteorological terms, pre- and post-hurricane instructions and the roles of various health care personnel (such as the District Medical Officer of Health, transport personnel and security officers) in relation to hurricanes. Each primary clinic maintains an emergency stock of drugs and supplies in conformity with an approved list.

In 2001, certain health centres were identified as hurricane treatment centres. These are to be used by persons requiring medical treatment during a hurricane, as all other clinics are closed during hurricanes. The Bahamas Red Cross Society oversees shelters and shelter management with support from the Royal Bahamas Defence Force and the Department of Social Services. The MOH Psychiatric Services and, occasionally, churches, provide care for those who are emotionally distressed. Expectant mothers on Family Islands who are near term and are at high risk are advised to locate closer to

the hospital in New Providence or Grand Bahama in case emergency care is required. MOH, DPH and PHA personnel have been trained in the use of the Humanitarian Supply Management System (SUMA) sponsored by PAHO as well as in the Medical Management of Disasters. A disaster preparedness workshop was conducted in August 2002 and a National Disaster Plan has been proposed.

5.10 Vector and Rodent Control

The Vector Control Unit of the DEHS has responsibility for monitoring and controlling of vector levels, treatment and public education. The Unit focuses primarily on mosquitoes and rodents. The mosquitoes of importance in The Bahamas are Aedes aegypti, Anopheles albimanus, Anopheles crucians, Culex pipiens and Culex quinqs. The data collected by the DEHS reflected significant trap catches in the months of February, March, May and June 2001, which, with the exception of the month of February, coincided with significant rainfall.

In 2001, the DEHS increased its use of guppies as biological controls, particularly in ponds and water storage containers. The Pond Monitoring Programme indicated that 9% of the ponds checked were positive for Anopheles, 24% for Culex and 6 % for Aedes (non aegypti).

An Aedes aegypti survey was conducted in 2001. It revealed that in two of the 12 areas surveyed, the Breteaux index of Aedes aegypti was above the safe level of five. The major contributing factor to the high levels in these areas was the proliferation of the use of tubs to store water. Aedes aegypti were found in 9.09% of the tubs checked. Only 3 % of all containers were found positive for Aedes aegypti. In order to decrease the level of breeding found in the two areas surveyed, the Vector Control Unit initiated an intensive house-to-house control campaign which emphasized the importance of solid waste management. A waste depository programme was implemented to allow for the proper disposal of solid waste in these communities.

There were no cases of dengue fever reported during 2001. There were, however, a few cases of imported malaria.

In 2001, the DEHS targeted specific areas to focus on reducing the rodent population, namely Cable Beach, Arawak Cay, Potters Cay, Bay Street and certain villages with large Haitian populations. These areas were systematically treated for vectors and rodents and more emphasis was placed on the management of solid waste. The DEHS provided additional trash containers, increased garbage collection and improved the monitoring of food vending operations. As a result, the rodent catch in these areas was reduced by 50%.

The rodent control programme addressed other areas through systematic monitoring and treatment of communities. It was determined that the major factors which influence rodent populations are overgrown properties, derelict vehicles and improper solid waste management by itinerant vendors. These conditions were addressed via various DEHS programmes and the prosecution of violators.

5.11 Port Health

Port Health includes an expansive range of services throughout the MOH. Some of the services are administered through the Office of the CMO, the DEHS and other agencies on behalf of the MOH. The principal goal of providing port surveillance is to maximize control and prevention efforts, especially as it relates to surveillance for communicable diseases at ports of entry. Health information is provided to persons stationed at ports of entry. Health authorities continue to collaborate with public and private sector agencies to ensure that the transport of goods, inclusive of food and agricultural products, human remains and postal parcels, is not hampered or delayed inordinately in order to ensure that communicable diseases are not transmitted into or out of the country.

International Travel and Health Services may be included under 'Port Health' since it relates to travel into and out of the country. This service offers yellow fever immunization and anti-malarial prophylaxis to international travellers. Port health

services are also provided by the DEHS – they include inspection of aircraft and ships, and raw and processed foodstuffs. There are plans to train junior medical officers in port health services.

5.12 Building Development

The Ministry of Works and the Ministry of Housing are the primary agencies responsible for formulating and executing policies related to building, structure, construction and screening.

The MOH's Estates Office is responsible for overseeing the maintenance and physical upkeep of all public health care facilities. It ensures that all physical plants are maintained at the required building and electrical standards set by the Ministry of Works. During the hurricane season it is responsible for ensuring that all buildings are secured in the event a hurricane should strike The Bahamas. This office also conducts post hurricane damage assessment.

The Chief Estates Officer works closely with the Ministry of Works to ensure that all MOH building projects are carried out to the specification and satisfaction of the Ministry of Works.

The DEHS' involvement in buildings is limited to issues of lighting and ventilation, bedroom sizes, and sewage treatment and disposal. It ensures that adequate lighting and ventilation are provided in food establishments in accordance with the requirements of the Bahamas Building Code. Compliance with the regulations is achieved via systematic monitoring of food establishments, monitoring of building developments and building applications, and by responding to complaints.

5.13 Bahamas Environment, Science and Technology Commission

The BEST Commission was designed after the National Inter-Ministerial Committee on Science and Technology (NIMCOST). NIMCOST was created in 1989 to coordinate The Bahamas' response to environmental, scientific and technological matters referred to the government by international organizations.

The BEST Commission was established in 1994. It consists of a chairman and a number of board members from government agencies who have responsibility for environmental oversight in The Bahamas. Since sustaining and protecting the environment is an important component of health, efforts have been made to revitalize the BEST Commission which now falls under the portfolio of the MOH.

The Bahamas is a contracting party to 23 international environmental agreements, treaties and conventions. All businesses operating in The Bahamas are expected to adhere to these international agreements which have been signed and ratified and are in force.

6. ISSUES, CONCLUSIONS AND RECOMMENDATIONS

The health of the people of The Bahamas is not only a function of the provision of affordable and good quality health care, but is also a function of education, the physical environment (good quality air, safe water), income, nutritious diet, social cohesion and healthy behaviour.

Between 2001-2003, the main issues under discussion regarding the health of the nation included health outcomes, implementation of priority health programmes and structural reforms specified in the NHSSPs, and health resources. Conceptually, health resources (funds, human resources, technology, information system, health policies, community knowledge) constitute the inputs; programmes and health management constitute the processes; and the health status constitutes the outcomes.

Health outcomes

The health of the people of The Bahamas continues to improve. Life expectancy has increased, the IMR rate has decreased from 15.8 per 1,000 live births in 1999 to 12.7 in 2001 and though it rose to 15 in 2003, it is still below the 1994 level of 19.7. Likewise, the HIV seroprevalence declined and the incidence of vaccine preventable diseases remained low.

With increased life expectancy, non-communicable diseases have become important causes of mortality. The leading causes of death between 2001-2003 were diseases of the circulatory system which accounted for 28.8% of all reported causes of death. While communicable diseases accounted for 19.1% of deaths, they were the leading causes of premature deaths, accounting for 28.2% of the total YPLL.

Among females, hypertensive diseases, HIV/AIDS, diabetes mellitus, ischaemic heart disease, cerebrovascular diseases, pulmonary heart disease and cancer of the breast were among the leading causes of death between 2001-2003. In males over the same period, HIV/AIDS, hypertensive diseases, ischaemic heart disease, cerebrovascular diseases, pulmonary heart disease, cancer of the prostate and assault were among leading causes of death.

Injuries from accidents and assaults were a much more common cause of admission to hospital and death in adolescent boys and young men than in women. Adolescent girls were frequently admitted for complications of pregnancy and the puerperium. The elderly population suffered and died most frequently from diseases of the circulatory system, hypertensive diseases, cerebrovascular diseases and diabetes. Death rates from ischaemic heart disease decreased between 1999-2003. Mortality due to land transport accidents and assaults has also shown general patterns of decline over the same period.

The mortality and morbidity profiles indicate the need to promote healthy lifestyles, target family planning at young women, intensify adolescent health services that target violent activities of teenagers, and improve the care provided to patients with ischaemic heart diseases and emergency trauma. The need exists for periodic youth behavioural surveys to be conducted, especially as the effects of some negative behaviour (such as smoking) are manifested much later in life.

The SCAN Unit is an initiative of the MOH to address sexual abuse of children. Although the number of abuse cases seen has decreased, child abuse issues and the need to implement interventions to decrease the incidences of abuse remain priorities.

The programmes to reduce perinatal and infant mortality should continue. The MOH should investigate why the post-neonatal mortality rate has been increasing.

Since the last report, a large communication campaign has been launched to provide HIV/STI education via the mass media. The HIV/AIDS Department collaborated with the Department of Education to coordinate on-going training, as well as sensitization and prevention presentations for various target groups such as school children, church leaders, work place groups and the Haitian community. The Focus on Youth programme continues to be implemented throughout the school system. The government continues to provide substantial financial support for the HIV programme and has fostered partnerships with NGOs such as the Samaritan Ministries, the Clinton Foundation, the Caribbean Regional Network of PLWHA (CRN+), the Caribbean Health Research Council (CHRC) and CAREC.

The HIV/AIDS Department and the government will continue to give priority attention to the issue of HIV/AIDS among the 15 – 24 year age group and to focus on implementing new initiatives in moral counselling, encouraging voluntary counselling and testing and following up on PLWHA.

The prevalence of TB in HIV patients and HIV among TB patients continues to be monitored.

The MOH maintains that the direction of health services should be oriented to preventive and promotive health, with a lesser focus on curative care.

Health processes and management

In accordance with the mandate of the new administration, a revised Revised NHSSP 2003-2004 was published. It updated and modified the NHSSP 2000-2004 and articulated 11 fundamental values and guiding principles for the health care sector, namely:

- Respect for human rights and individual dignity
- Accessible, available, affordable and appropriate health care provided
- Equity (services provided on the basis of need and without discrimination based on gender, age, race, income, place of residence or immigration status)
- Efficiency
- Quality care
- Accountability
- Effective partnerships with relevant stakeholders
- Empowerment of individuals and communities
- Evidence based decision making interventions
- Best practices and knowledge documented, disseminated and shared
- An organizational culture that recognizes the contributions of health care providers and facilitates their continuous development.

In keeping with these values and principles, the MOH's goal is to improve strategic management by promoting an organizational structure and culture which encourage informed decision making and facilitate improved managerial efficiency and accountability. Performance indicators are also used to monitor programme efficiency, accountability and health indices.

The government has made a substantial investment in the development of the *i*-PHIS which enhances the capacity of managers to make informed decisions as a result of access to quality information. Intersectoral collaboration and joint strategic planning between the MOH and all institutions of the government health sector have now been established as normal management procedures. Further, there have been several successful high profile projects and advancements in health which can be directly linked to strengthened partnerships with the private health sector and civil society. These successes have led to the inclusion of indicators in the Revised NHSSP 2003-2004, the purpose of which is to further entrench these practices within the management system.

One of the Planning Unit's primary responsibilities is to evaluate the progress made in meeting targets specified in the Revised NHSSP 2003-2004. With technical support from an external consultant, an evaluation system has been developed with some degree of success. However, the capacity of the system to set baselines needs to be strengthened. This task should be less onerous since the establishment of the *i*-PHIS which is currently in the pilot phase. The MOH is eagerly anticipating the positive impact of this initiative.

The MOH is proud of its achievements. In the area of Maternal and Child Health, the role of midwives has been expanded to enable them to perform pelvic examinations and PAP smears. Twenty-eight midwives have been trained thus far and the training continues. All government clinics, maternity wards and units are using the new SIP in an efficient manner and data from the system are being used in perinatal conferences, in case management and in other presentations. Routine output reports are analyzed and distributed quarterly. The percentage of early antenatal attendees to clinics increased from 4% to 44% in public clients and the percentage of post-partum women attending postnatal clinic fluctuates between 80% and 85%, exceeding the goal set of 75%.

There have been impressive improvements with regards to neonatal care. The neonatal facility at RMH has been upgraded and the capability of its staff to manage high risk infants has increased. As a result, the number of infants transferred from RMH to PMH continues to decrease. Another notable accomplishment is that more than 80% of the relevant staff within the government health sector has been trained in neonatal resuscitation and introduced to the sugar, temperature, airway, blood lab works and emotional support (STABLE) programme. Recertification is required every two years and there are 15 Neonatal Resuscitation Programme instructors in place to sustain this effort.

The Bahamas continues to maintain a successful EPI. DPT-3 vaccine coverage increased from 84% in 1999 to 100% in 2001 but decreased to 91% in 2003. MTCT of HIV/AIDS is now maintained below 3%. The indicators of the Maternal and Child Health programme were modified in the Revised NHSSP 2003-2004 to reflect the reduction in infant and maternal mortality, maternal morbidity and maintenance of a zero level incidence of vaccine preventable diseases.

Modest gains have been made in strengthening child and adolescent health services. One significant challenge has been the inability to identify a physician trained in adolescent health or a local physician interested in being trained in the discipline: efforts to identify such a person continue.

There has been significant progress with respect to addressing communicable diseases. One year ahead of schedule, health promotion protocols developed for timely response have been completed for 75% of the diseases targeted in the Revised NHSSP 2003-2004. In addition, protocols are now in place for 90% of diseases that have been identified and targeted for surveillance and control. There were almost 50% fewer cases of TB in 2001 and 2002 than there were in 2000. This is directly attributable to the consistent application of Directly Observed Treatment, Short-Course (DOTS) to all TB cases since 1998, and the use, since 2001, of ARV medications for persons co-infected with HIV.

The food and vector-borne programmes have improved as measured by the reduction in outbreaks of diseases. There has also been a reduction in the incidents of dengue fever, malaria and hepatitis A. The emergence of SARS highlighted the need to take proactive measures to counteract emerging communicable diseases that might enter the country through the port system. In response, the MOH has developed an action plan and requested funding for it.

In accordance with the Revised NHSSP 2003-2004, key personnel have been appointed to strengthen the national CNCD prevention and control programme. Leadership has been established and coordinators have been appointed for the areas of hypertension, diabetes, cancer and asthma. While national action plans are being developed, short-term interventions have been undertaken. Examples of the latter are the establishment of a specialty clinic for new diabetics, using the team approach to patient management, and the development of treatment and referral protocols for asthma patients at the primary, secondary and tertiary levels. Indicators in the Revised NHSSP 2003-2004 focus on developing and implementing strategies to reduce the prevalence of preventable lifestyle diseases among the population.

The revised HIV/AIDS programme has been evaluated and costed and a comprehensive plan developed to accelerate access to treatment to counteract the continuing spread of this epidemic in The Bahamas. There has already been a significant reduction in hospital admissions as a result of the introduction of treatment with ARVs to increasing numbers of persons and the strengthening of public education.

The need for local expertise in critical areas of the health service is undeniable. Consequently, indicators in the Revised NHSSP 2003-2004 address capacity building in nursing, medical and allied health specialties, biomedical engineering, health planning, health economics, health information systems management, biostatistics, research, monitoring and evaluation.

The Way Forward

The main issues which require focussed attention are the status of health legislation, the regulation of professionals, health information systems, health financing and infrastructure.

The MOH should continue to work with the relevant professional councils and regulatory bodies to ensure that appropriate standards are set and adhered to, particularly among private entities that provide health care services. The MOH should also ensure that statutes are amended as needed, provide continuing education, maintain registers and fulfil any of its other statutory functions.

Mainstreaming health information into policy planning and decision making remains a challenge for the MOH. Priority issues which require attention are the coordination of information management between various departments, the improvement of the quality of health data and the technical problems experienced with the automated HMIS in the PHA. The MOH is determined to improve the capacity for health research, to define health problems, and to monitor and evaluate interventions and programmes.

The morbidity and mortality profile suggests that The Bahamas should continue to allocate more resources to public health and environmental health services in order to reduce the burden of institutionalized care. The government's proposed implementation of National Health Insurance remains a viable option for reducing the burden on public funds which health care imposes.

Planning of health facilities, based on population density and need, must continue and facilities must be designed to meet the changing demographics and economic projections in the country.

Appendix 1 Map of the Commonwealth of The Bahamas

APPENDIX 2 Sector Contribution to GDP, 2000-2002 ('000)

(B$ thousands)

Industry	2000	2001	2002
Agriculture & isheries:	**119,808**	**109,804**	**145,862**
Agriculture:	30,669	36,079	33,518
Fishing:	89,238	73,725	112,344
Industry:	**421,216**	**435,027**	**474,915**
Mining:	46,828	44,324	56,327
Manufacturing:	199,297	231,904	246,372
Electricity:	155,856	132,729	141,956
Water:	19,235	26,070	30,260
Construction:	**425,133**	**380,809**	**399,484**
Wholesale & Retail Activity:	**627,154**	**627,443**	**673,632**
Wholesale Trade:	148,597	158,302	170,543
Retail Trade:	478,557	469,141	503,089
Hotel & Restaurants:	**522,388**	**558,176**	**565,396**
Hotels:	391,144	415,628	430,122
Restaurants:	131,243	142,549	135,274
Transport:	**246,570**	**251,348**	**277,367**
Land Transport:	84,094	76,960	81,933
Marine Transport:	85,263	103,290	125,934
Air:	77,213	71,099	69,500
Storage:	**5,753**	**9,388**	**20,135**
Communication:	**167,319**	**197,775**	**214,143**
Financial Intermediaries:	**601,452**	**677,614**	**699,991**
Banks:	383,832	394,124	416,812
Insurance:	217,620	283,490	283,179
Real Estate/Rent/Business Activity	**962,586**	**958,253**	**944,088**
Real Estate:	799,381	808,201	800,344
Other Bus. Ser:	163,205	150,053	143,744
Public Administration & Defence:	**282,736**	**293,107**	**314,189**
Education:	**220,483**	**229,754**	**243,574**
Private:	108,579	109,849	122,451
Public:	111,904	119,906	121,123
Health	**149,371**	**157,493**	**168,576**
Private:	52,498	51,631	57,609
Public:	96,873	105,862	110,967
Other Comm, Social & Personal Services	**344,751**	**327,614**	**325,869**
Gross Value Added at Market Prices	**5,003,699**	**5,131,452**	**5,400,064**

APPENDIX 3 Operational Definitions For Basic Demographic Indicators

Description Of Measure	Numerator (X)	Denominator (Y)	Expressed Per Number At Risk (K)
Birth Rate Crude; specific for age of mother, sex of child, socioeconomic status, etc	Number of live births reported during a given time period	Estimated mid-interval population	1,000
Fertility Rate Crude; specific for age of mother, race, socioeconomic status, etc	Number of live births reported during a given time interval from mothers aged 15-49 years	Estimated number of women in age group 15-49 years at mid-interval	1,000
Death Rate Crude; specific for age, race, sex, socioeconomic area, etc	Total number of deaths reported during a given time interval	Estimated mid-interval population	1,000
Still Birth Rate Crude; specific for age of mother, race, socioeconomic area, etc.	Number of fetal deaths of 28 weeks or more gestation reported during a given time period.	Number of fetal deaths of 28 weeks or more gestation reported during the same time interval plus the number of live births occurring during the same time interval.	1,000
Natural Increase Rate	Total live births - deaths occurring during the year	Estimated mid-interval population	1,000
Infant Death Rate Crude; specific for race, sex, socioeconomic area, birth weight, cause of death, etc	Number of deaths under 1 year of age reported during a given time period	Number of live births reported during the same time interval	1,000
Perinatal Death Rate Crude; specific for age of mother, race, socioeconomic area, etc	Number of late fetal deaths (of 28 weeks or more gestation for ICD-9, or 22 weeks or more gestation for ICD-10) reported during a given time interval plus the reported number of early neonatal deaths under seven days of life during the same time period	Number of fetal deaths of 28 weeks or more gestations reported during the same time interval plus the number of live births occurring during the same time period.	1,000
Neonatal Death Rate Crude; specific for race, sex, socioeconomic area, birth weight, cause of death, etc	Number of deaths under 28 days of age reported during a given time period	Number of live births reported during the same time interval	1,000
Age Specific Death Rate in children 1- 4 yrs	Number of deaths in children 1 - 4 years	Total population of 1-4 age group	100,000
Maternal Death Rate Crude; specific for age of mother, race, socioeconomic area, etc	Number of deaths assigned to causes related to pregnancy during a given time interval	Number of live births reported during the same time interval	100,000

APPENDIX 4 Communicable Disease Report, 2001-2003

Disease & (International Classification of Diseases)	Cumulative Total for Year 2001	2002	2003
Disease Subject to International Health Regulation			
Cholera (A00)	0	0	0
Plague (A20)	0	0	0
Yellow Fever	0	0	0
Diseases under International Surveillance			
Acquired Immunodeficiency Syndrome - AIDS (B20-24)	288	335	348
Malaria (B50-54)	4*	1*	3*
Influenza (J10-11)	607	577**	857**
Diseases under Expanded Programme on Immunization			
Tuberculosis (All Forms) (A17-19)	41	44	40
Tuberculosis (Pulmonary) (A15-16)	39	42	33
Tuberculosis (Lymphadenitis)	2	0	7
Tuberculosis (Miliary)	0	1	0
Tuberculosis (Pleural Efffusion)	0	1	0
Tuberculosis (Abscess)	0	0	0
Diphtheria (A36)	0	0	0
Pertussis (Whooping Cough) (A37)	0	0	0
Tetanus (excluding neonatal) (A34-35)	0	0	0
Tetanus neonatorum (A33)	0	0	0
Poliomyelitis, acute (A80)	0	0	0
Acute Flacid Paralysis	0	0	0
Measles (B05)	0	0	0
Mumps (B26)	0	0	0
Rubella (German Measles) (B06)	0	0	0
Congenital Rubella Syndrome (B35.0)	0	0	0
Other Diseases of Regional Interest			
Leprosy (Hansen's Disease) (A30)	0	0	0
Meningococcal Infection (due to Neisseria meningitis) (A39)	0	0	0
Dengue Fever (A90)	0	0	180
Sexually Transmitted Infections & Syndromes			
Syphilis (A51-53)	278	192	216
Congenital Syphilis (A50)	5	3	1
Gonococcal Infection (A54)	71	88	93
Chlamydial Infection (A55-56)	453	431	452
Other Diseases of Caribbean Interest			
Typhoid and Paratyphoid Fevers (A01)	1	0	1
Foodbourne Illness (A05-08)	978	1,301	1,164
Gastroenteritis <5 years (A09)	745	1,318	950
Gastroenteritis >=5 years (A09)	1,776	3,586	2809
Viral Hepatitis A (Lab Confirmed) (B15)	46	5	1
Viral Hepatitis B (Lab Confirmed) (B16)	363	5	1

Viral Hepatitis C	22	0	4
Rabies (in humans) (A82)	0	0	0
Leptospirosis (A27)	0	1	0
Ciguatera Poisoning (T61.0)	263	151	177
Other Diseases			
Salmonellosis (A02)	4	7	28
Shigellosis (A03)	4	16	19
Meningitis (due to Haemophilus Influenza) (G00.0)	1	0	0
Conjunctivitis	334	322*	6,387*
Chickenpox	577	139	602
Scabies	789	714	637

*Imported cases.

**Report based on clinical case diagnosis. Increased number of cases in 2003 were due to an outbreak.

Appendix 5 Summary of Cases Reported Rates for Selected Diseases, 2001-2003

Diseases	Cases Reported			Rates per 100,000 total population		
	2001	2002	2003	2001	2002	2003
Cholera	0	0	0	0.0	0.0	0.0
Plague	0	0	0	0.0	0.0	0.0
Diphtheria	0	0	0	0.0	0.0	0.0
Pertussis (Whooping Cough)	0	0	0	0.0	0.0	0.0
Tetanus (excluding neonatal)	0	0	0	0.0	0.0	0.0
Tetanus Neonatorum	0	0	0	0.0	0.0	0.0
Measles	0	0	0	0.0	0.0	0.0
Mumps	0	0	0	0.0	0.0	0.0
Rubella (German Measles)	0	0	0	0.0	0.0	0.0
Poliomyelitis	0	0	0	0.0	0.0	0.0
Tuberculosis	41	44	40	13.3	14.1	12.6
Gastroenteritis <5 years (A09)	745	1318	950	2408.4	4,,290.6	300.3
Viral Hepatitis A	46	5	1	15	1.6	0.3
Viral Hepatitis B	363	5	1	118.1	1.6	0.3
Viral Hepatitis C	22	0	4	7.2	0.0	1.3
Typhoid Fever	1	0	1	0.3	0.0	0.3
Ciguatera	263	151	177	85.6	48.4	56.0
Other Foodbourne	978	1301	1164	318.2	417.2	368.0
Malaria	4*	1*	3*	1.3	0.3	0.9
Dengue	0	0	180	0.0	0.0	83.2
Leptospirosis	0	1	0	0	0.3	0.0
Influenza	607**	577**	857**	197.5	185.0	270.9
Meningitis (H. Influenza)	1	0	0	0.3	0.0	0.0
Conjunctivitis	334	322**	6,387**	108.7	103.2	2,019.3
Leprosy (Hansen's Disease)	0	0	0	0.0	0.0	0.0
Syphilis	278	192	216	90.4	61.6	68.3
Gonococcal Infection	71	88	93	23.1	28.2	29.4
AIDS	288	335	348	93.7	107.4	110
Population, all	**307,379**	**311,871**	**316,298**			
Population, Children < 5 Years	**30,934**	**30,718**	**30,423**			

APPENDIX 6 Reported Incidence Rate of HIV Infections and AIDS by Gender, 1986-2003

	Reported AIDS cases 1986-2003					Non-AIDS HIV 1986-2003*					Estimated Population			Incidence rate per 100,000 AIDS			Incidence rate per 100,000 HIV		
Age group	Female	Male	Total	% total	F:M ratio	Female	Male	Total	F:M ratio	% total	Female	Male	Total	Female	Male	Total	Female	Male	Total
1986-88	101	172	273	5.7%	0.6	265	424	689	0.6	9.2%	NA	NA	-	-	-	-	-	-	-
1989	80	92	172	3.6%	0.9	187	308	495	0.6	6.7%	NA	NA	248,933	-	-	-	-	-	-
1990	69	99	168	3.5%	0.7	210	243	453	0.9	6.1%	130,091	124,958	255,049	53	79	66	161	194	178
1991	79	140	219	4.6%	0.6	238	271	509	0.9	6.9%	132,216	127,348	259,564	60	110	84	180	213	196
1992	100	164	264	5.5%	0.6	281	298	579	0.9	7.8%	134,403	129,844	264,247	74	126	100	209	230	219
1993	121	174	295	6.2%	0.7	283	282	565	1.0	7.6%	136,640	132,437	269,077	89	131	110	207	213	210
1994	112	204	316	6.6%	0.5	315	344	659	0.9	11.3%	138,918	135,102	274,020	81	151	115	227	255	240
1995	145	239	384	8.0%	0.6	250	250	500	1.0	6.7%	141,194	137,815	279,009	103	173	138	177	181	179
1996	154	219	373	7.8%	0.7	220	213	433	1.0	5.8%	143,458	140,509	283,967	107	156	131	153	152	152
1997	160	226	386	8.0%	0.7	197	231	428	0.9	5.8%	145,714	143,142	288,856	110	158	134	135	161	148
1998	113	207	320	6.7%	0.5	187	171	358	1.1	4.8%	147,958	145,715	293,673	76	142	109	126	117	122
1999	128	192	320	6.7%	0.7	175	172	347	1.0	4.8%	150,186	148,225	298,411	85	130	107	117	116	116
2000	139	181	320	6.7%	0.8	206	202	408	1.0	5.5%	155,833	147,778	303,611	89	122	105	132	137	134
2001	126	162	288	6.0%	0.8	202	183	385	1.1	5.2%	155376	152,003	307,379	81	107	94	130	120	125
2002	126	208	334	7.0%	0.6	169	163	332	1.0	4.5%	157560	154,311	311,871	80	135	107	107	106	106
2003	144	204	348	7.3%	0.7	166	123	289	1.3	3.9%	159,701	156,597	316,298	90	130	110	104	79	91
Total	**1,897**	**2,883**	**4,780**	**100.0%**	**0.7**	**3,551**	**3,878**	**7429**	**0.9**	**102.6%**									

APPENDIX 7 Age-Gender Distribution of Population and Deaths in Bahamas, 2003

Age Group	Population	% pop. in age-group	Total #Deaths	% deaths in age-group	Age-Specific Death Rate per 1,000
ALL (Both sexes)					
<1 Year	5,054	1.5	54	3.3	10.7
1-4	23,212	7.3	10	0.6	0.4
5-14	59,522	18.8	23	1.4	0.4
15-24	53021	16.7	57	3.4	1.1
25-44	103,608	32.7	320	19.4	3.1
45-64	52,737	16.7	425	25.8	8.1
65+	16,987	5.3	759	46.0	44.7
Total	**316,298**	**100.0**	**1,649**	**100.0**	**5.2**
MALES					
<1 Year	2499	1.6	22	2.5	8.7
1-4	13,024	8.3	6	0.7	0.5
5-14	30,319	19.3	11	1.2	0.4
15-24	26930	17.2	40	4.5	1.5
25-44	51,177	32.7	188	21.3	3.7
45-64	25,489	16.2	258	29.2	10.1
65+	7159	4.6	355	40.3	49.6
Total	**156,597**	**100.0**	**881**	**100.0**	**5.6**
FEMALES					
<1 Year	2488	1.6	32	4.2	12.7
1-4	12,412	7.8	4	0.5	0.3
5-14	29,203	18.2	12	1.6	0.4
15-24	26091	16.3	17	2.2	0.7
25-44	52,431	33.8	132	17.1	2.6
45-64	27,248	17.0	167	21.7	6.1
65+	9,828	6.1	404	52.6	41.1
Total	**159,701**	**100.0**	**768**	**100.0**	**4.8**

APPENDIX 8 Years of Potential Life Lost by Gender and Broad Causes of Death 1999-2003

Cause	1999	2000	2001	2002	2003	1999-2003	% in 2000	% in 1999-2003
MALES								
Communicable Dis.	5,011.5	4,233.0	4,497.5	5,593.0	2,748	22,083	21.7	30.3
Neoplasms	861.0	738.5	882.5	787	926.5	4,195.5	7.3	5.8
Dis. Circulatory Sys.	1,341.0	1,177.0	1,591.0	2,022.0	1,975.5	8,106.5	15.6	11.1
Perinatal Conditions	903.0	903.0	1,161.0	1,751.0	838.5	5,556.5	6.6	7.6
External Causes I/P	4,310.5	4,648.0	3,588.0	2,534.0	3,528.0	18,608.5	27.9	25.5
All Other Causes	2,060.0	2,675.5	2,718.5	3,571.5	2,494.0	13,519.5	19.7	18.5
SSI Conditions	218.0	219.5	0	248.5	157.0	843	1.2	1.2
TOTAL	**14,705**	**14,594.5**	**14,438.5**	**16,507**	**12,667.5**	**72,912.5**	**100.0**	**100.0**
FEMALES								
Communicable Dis.	3,069.5	2,891.0	2,747.0	2,870.0	2,124.0	13,701.5	22.3	28.5
Neoplasms	1,083.5	968.0	1,210.0	1,262.0	1,309.0	,832.5	13.7	12.1
Dis. Circulatory Sys.	1056.0	964.5	1,103.5	1,238.5	1,567.5	5,930	16.4	12.4
Perinatal Conditions	720.0	967.5	580.5	2,137.0	1,161.0	5,566	12.2	11.6
External Causes I/P	937.0	1,113.0	808.0	647.0	935.5	4,440.5	9.8	9.2
All Other Causes	1,592.5	2,337.5	2,370.0	3,337.5	2,296.5	11,934	24.1	24.9
SSI Conditions	76.0	315.5	0	103.5	139.5	634.5	1.5	1.3
TOTAL	**8,534.5**	**9,557**	**8,819**	**11,595.5**	**9,533**	**48,039**	**100.0**	**100.0**
BOTH SEXES								
Communicable Dis.	8,081.0	7,124.0	7,226.5	8,463.0	4,872.0	35,766.5	21.9	29.5
Neoplasms	1,944.5	1,706.5	2,093.0	2,079.5	2,235.5	10,059	10.1	8.3
Dis. Circulatory Sys.	2,397.0	2,141.5	2,694.5	3,260.5	3,543.0	14,036.5	16.0	11.6
Perinatal Conditions	1,623.0	1,870.5	1,741.5	3,888.0	1,999.5	11,122.5	9.0	9.2
External Causes I/P	5,247.5	5,761.0	4,396.0	3,181.0	4,463.5	23,049	20.1	19.0
All Other Causes	3,652.5	5,013.0	5,088.5	6,909.0	4,790.5	25,453.5	21.6	20.9
SSI Conditions	294.0	535.0	307.0	352.0	296.5	1,784.5	1.3	1.5
TOTAL	**23,239.5**	**24,151.5**	**2,3547**	**2,8133**	**22,200.5**	**121,271.5**	**100.0**	**100.0**

Notes: The years of potential life lost before age 65 as defined by PAHO in the Health Conditions of the Americas 1990 edition, Volume 1, page 305 states: "The indicator "Years of Potential Life Lost" (YPLL) provides an estimate of the number of years of life lost prematurely, defined here as the number of years of life lost by persons who die prior to 65 (between 0 and 64) years of age. These estimates are obtained by multiplying the number of deaths in an age group by the difference between 65 and the midpoint of that age group, and adding these products across all age groups."

APPENDIX 9 Group Causes of Death by Age and Gender, 2001-2003

CAUSE GROUPS (ICD-9)		TOTAL	AGE GROUPS IN YEARS								
			< 1	1-4	5-14	15-24	25-44	45 - 64	65+	Not Stated	YPLL
	M	**2,791**	**56**	**59**	**39**	**123**	**674**	**789**	**1,049**	**2**	**43,902**
TOTAL DEATHS	**F**	**2,404**	**55**	**62**	**41**	**49**	**407**	**534**	**1,254**	**2**	**29,948**
	M	39	2	1	2	0	10	10	14	0	712.5
Ill Defined Causes (SSI)	F	34	2	1	0	0	1	2	28	0	243
	M	2,752	54	58	37	123	664	779	1,035	2	43,189.5
Total Deaths from defined causes	F	2,370	53	61	41	49	406	532	1,226	2	29,705
	M	592	2	12	10	24	279	170	94	0	12,820.5
1. 00 Communicable Diseases	F	387	5	13	9	9	162	72	117	0	7,741
	M	417	0	0	2	7	28	125	255	0	2,596
2. 00 Neoplasms	F	424	0	3	0	2	67	139	213	0	3,781.5
	M	720	2	2	2	2	86	239	387	1	5,588.5
3.00 Circulatory Disorders	F	753	1	1	2	6	56	161	525	1	3,909.5
	M	19	8	5	0	2	2	2	0	0	1,001.5
4.00 Congenital Causes	F	27	10	6	3	3	2	1	2	0	1,394.5
	M	59	35	23	1	0	0	0	0	0	3,750.5
4.00 Perinatal Causes	F	61	33	28	0	0	0	0	0	0	3,878.5
	M	328	3	7	14	71	144	59	30	0	9,650
5.00 External Causes	F	95	1	5	10	12	22	23	22	0	2,390.5
	M	617	4	9	8	17	125	184	269	1	8,784
6.00 Other	F	623	3	5	17	17	97	136	347	1	8,004

Signs, Symptoms of Ill-defined causes (SSI): *% of death assigned to SSI is a measure of quality of mortality data.*

APPENDIX 10 Group Causes of Death by Age and Gender, 2003

CAUSE GROUPS (ICD-9)		TOTAL	AGE GROUPS IN YEARS									
			< 1	1-4	5-9	10-19	20-44	45 - 64	65-79	80+	Not Stated	YPLL
TOTAL DEATHS	**M**	**881**	**22**	**6**	**5**	**17**	**217**	**258**	**207**	**148**	**1**	**12,668**
Ill Defined Causes (SSI)	F	768	32	4	6	14	141	167	180	224	0	9,533
	M	13	1	0	0	0	2	3	2	5	0	157
Total Deaths from defined causes	F	11	2	0	0	0	0	1	0	8	0	140
	M	868	21	6	5	17	215	255	205	143	1	12,511
1. 00 Communicable Diseases	F	757	30	4	6	14	141	166	180	216	0	9,393
	M	135	1	1	1	0	67	44	10	10	1	2,748
2. 00 Neoplasms	F	114	2	0	0	0	57	23	11	21	0	2,124
	M	163	0	0	0	2	9	52	61	39	0	926
3.00 Circulatory Disorders	F	155	0	1	0	0	24	49	53	28	0	1,309
	M	253	0	1	0	2	30	84	75	61	0	1,976
4.00 Perinatal Causes	F	251	1	1	1	1	24	55	68	100	0	1568
	M	13	13	0	0	0	0	0	0	0	0	839
5.00 External Causes	F	18	18	0	0	0	0	0	0	0	0	1,161
	M	122	0	1	2	12	72	25	8	2	0	3,528
6.00 Other	F	36	0	1	2	5	13	6	3	6	0	935
	M	182	7	3	2	1	37	50	51	31	0	2,494
	F	183	9	1	3	8	23	33	45	61	0	2,297

Signs, Symptoms of Ill-defined causes (SSI): % of death assigned to SSI is a measure of quality of mortality data (See Appendix 12).

APPENDIX 11 Discharge Diagnoses From Princess Margaret Hospital in Females by Age Group, 2003

Discharge Diagnosis	< 1	1-4	5-14	15-24	25-44	45-64	65+	Not Stated	Total
Pregnancy, childbirth and the puerperium			9	1,104	1,748	13			2,874
Other infectious and parasitic diseases		14	24	274	357	19	15		703
Injuries & poisonings	0	45	51	52	83	62	66	0	359
Acute respiratory infections		84	67	22	48	27	41	1	290
All other diseases of the digestive system		20	14	24	113	67	46	1	285
Carcinoma in situ, benign neoplasms and neoplasm of uncertain or unknown behaviour			1	2	143	63	8		217
Hypertensive diseases				2	29	75	69		175
Intestinal infectious diseases		47	40	9	32	14	18		160
Remainder diseases of the respiratory system		31	36	11	25	11	12		126
Diseases of urinary system		4	6	10	29	16	38		103
Cerebrovascular diseases			1	1	12	30	58		102
Appendicitis, hernia of abdominal cavity and intestinal obstruction		3	12	10	21	22	21		89
Diabetes mellitus		1	10	9	19	32	18		89
HIV disease		1	4	6	52	16	4		83
Pulmonary heart disease, diseases of pulmonary circulation and other forms of heart disease		2		4	28	11	33		78
Septicemia, except neonatal		1	1	1	25	15	35		78
Dis. nervous system, except meningitis		8	15	6	18	18	7		72
All other diseases of the circulatory system		3		3	21	19	22		68
Malignant neoplasm of female breast				2	17	36	10		65
Slow fetal growth, fetal malnutrition, short gestation, low birth weight		47							47
Ischemic heart diseases			1	1	4	12	27		45
Remainder of other conditions originating in perinatal period		19	11	1	2				33
Malignant neoplasm of other and unspecified sites		2			7	15	6		30
Congenital malformations, deformations and chromosomal abnormalities		8	5	7	8	1			29
Heart failure					8	5	11		24
Mental and behavioral disorders			3	1	5	10	4		23
Chronic lower respiratory diseases		8	3		2	5	4		22
Nutritional deficiencies and nutritional anaemia		1	2		2	8	9		22
Respiratory disorders specific to the perinatal period		18	2						20
Malignant neoplasm of colon and rectosigmoid junction					5	3	8		16

Discharge Diagnosis	< 1	1-4	5-14	15-24	25-44	45-64	65+	Not Stated	Total
Malignant neoplasm of stomach					2	3	9		14
Malignant neoplasm of cervix uteri					5	4	4		13
Malignant neoplasm of lymphoid, other hematopoieic and related tissue					6	1	4		11
Cirrhosis and certain other chronic diseases of liver					4	5	2		11
Tuberculosis		1	1	5	2	1	1		11
Certain vector-borne diseases and rabies		1		1	2	5			9
Malignant neoplasm of uterus, part unspecified						7	2		9
Bacterial sepsis of newborn		3	4	1					8
Malignant neoplasm of digestive organs & peritoneum, except stomach and colon					1	3	3		7
Malignant neoplasm of corpus uteri						2	3		5
Malignant neoplasm of other genitourinary organs			2			1	2		5
Fetus & newborn-obstetric affected by obstetric complications, birth trauma		4							4
Meningitis		2	2						4
Leukemia				1	1		1		3
Cardiac arrest						1	2		3
Certain diseases preventable by immunization				1	1				2
Land transport accidents		2							2
Acute rheumatic fever and chronic rheumatic heart diseases						1			1
Atherosclerosis							1		1
Fetus and newborn affected by certain maternal conditions		1							1
Malignant neoplasm of respiratory and intrathoracic organs, except trachea, bronchus and lung						1			1
Malignant neoplasm of trachea, bronchus and lung							1		1
Remainder of all other diseases		35	68	63	231	164	73		634
Factors Influencing Health Status and contact with health services	2	1,708	19	22	26	14	3		1,794
Symptoms, Signs, and ill-defined conditions		54	54	37	104	49	27		325
***Total**	**2**	**2,178**	**470**	**2,268**	**4,018**	**888**	**728**	**2**	**9,206***

Total excludes normal deliveries

(Groupings are based on PAHO's 6/67 listing for ICD-10.)

APPENDIX 12 Discharge Diagnoses from Princess Margaret Hospital in Males by Age Group, 2003

Discharge Diagnosis	< 1	1-4	5-14	15-24	25-44	45-64	65+	Not Stated	Total
Injuries & Poisonings	0	63	96	177	299	93	53	0	781
Acute respiratory infections		109	61	12	46	27	37		292
All other diseases of the digestive system		17	21	18	59	44	39		198
Intestinal infectious diseases		78	67	5	26	15	5		196
Hypertensive diseases			1	5	29	82	76		193
Remainder diseases of the respiratory system		48	24	8	24	11	11		126
HIV disease (AIDS)		2	4	1	87	23	6		123
Appendicitis, hernia of abdominal cavity and intestinal obstruction		7	12	21	19	21	25		105
Diseases of urinary system		7	7	10	17	23	38		102
Other infectious and parasitic diseases		15	19	13	29	16	2		94
Cerebrovascular diseases		2	1		7	32	39		81
Certain vector-borne diseases and rabies			8	4	10	9	42		73
Dis. nervous system, except meningitis		8	10	6	13	19	11		67
Pulmonary heart disease, diseases of pulmonary circulation, and other forms of heart disease		1	2		22	23	16		64
Diabetes mellitus		1	2	8	17	26	5		59
All other diseases of the circulatory system		3	5	4	14	14	11		51
Slow fetal growth, fetal malnutrition, short gestation, low birth weight		46							46
Septicemia, except neonatal		1	2	1	8	13	20		45
Congenital malformations, deformations and chromosomal abnormalities		24	17	1	2	1			45
Mental and behavioral disorders			1	5	23	8	6		43
Remainder other conditions originating in perinatal period		21	19	3					43
Heart failure		1	1		4	18	15		39
Tuberculosis		2	1	4	15	10	4		36
Chronic lower respiratory diseases		8	17	1	2	2	6		36
Malignant neoplasm of prostate						8	22		30
Ischemic heart diseases					5	9	15		29
Malignant neoplasm of other and unspecified sites			4	5	3	7	7		26
Cirrhosis and certain other chronic diseases of liver					3	14	6		23
Malignant neoplasm of digestive organs & peritoneum, except stomach and colon					1	9	12		22
Respiratory disorders specific to the perinatal period		17		2	1				20

Discharge Diagnosis	< 1	1-4	5-14	15-24	25-44	45-64	65+	Not Stated	Total
Carcinoma in situ, benign neoplasm and neoplasms r of uncertain or unknown behaviou		1		1	2	7	3		14
Malignant neoplasm of stomach					2	6	4		12
Malignant neoplasm of trachea, bronchus and lung					2	7	2		11
Bacterial sepsis of newborn		6	2	2	1				11
Malignant neoplasm of lymphoid, other hematopoieic and related tissue			1	2	2	3	2		10
Nutritional deficiencies and nutritional anaemia			1		1	2	4		8
Fetus & newborn affected by obstetric complications, birth trauma		6				1			7
Malignant neoplasm of other genitourinary organs				5		1	1		7
Leukemia		1		1		4		6	
Certain diseases preventable by immunization		1		1	2		1		5
Malignant neoplasm of respiratory and intrathoracic organs, except trachea, bronchus and lung						4			4
Meningitis		2			1	1			4
Malignant neoplasm of colon and rectosigmoid junction					1	1	2		4
Acute rheumatic fever and chronic rheumatic heart diseases			2		2				4
Land transport accidents				1	1	1			3
Cardiac arrest					1		2		3
Atherosclerosis					1	1			2
Remainder of all other diseases		20	65	42	97	47	34		305
Factors influencing health status and contact with health services	6	1,656	4	5	12	12	2		1,697
Symptoms, Signs, and ill-defined conditions		88	53	26	57	43	31		298
***Total**	**6**	**2,261**	**531**	**399**	**971**	**714**	**621**		**5,503**

*Total excludes normal deliveries.

(Groupings are based on PAHO's 6/67 listing for ICD-10.)

APPENDIX 13 Discharge Diagnoses from Rand Memorial Hospital in Females by Age, 2003

Discharge Diagnosis	< 1	1-4	5-14	15-24	25-44	45-64	65+	Not Stated	Total
Pregnancy, childbirth and the puerperium			3	217	328	4			552
Injuries & Poisonings	0	15	12	32	42	21	13	1	136
All other diseases of the digestive system		9	5	6	32	34	15		101
Intestinal infectious diseases		40	26	7	8	13	5		99
Acute respiratory infections		47	24	7	8	2	10		98
Other infectious and parasitic diseases		5	2	17	45	10	4		83
Mental and behavioral disorders			1	13	34	13	5		66
Carcinoma in situ, benign neoplasms and neoplasms of uncertain or unknown behaviour			6	8	28	19	5		66
Hypertensive diseases					10	34	19		63
Diabetes mellitus			7	2	9	19	12		49
Appendicitis, hernia of abdominal cavity and intestinal obstructionDiseases of urinary system		6	9 7	6 4	13 7	5 4	2 16		41 38
Chronic lower respiratory diseases		11	11		2	5			29
Remainder diseases of the respiratory system		9	5	3	5	1	1		24
Malignant neoplasm of female breast					1	11	10		22
Pulmonary heart disease, diseases of pulmonary circulation and other forms of heart disease					6	8	6		20
Cerebrovascular diseases				1	1	5	13		20
Heart failure					5	8	5		18
Ischemic heart diseases					1	8	9		18
Septicemia, except neonatal		1	2	4	3	2	5		17
Dis. nervous system, except meningitis			1	2	2	10	2		17
All other diseases of the circulatory system				1	6	4	1		12
Respiratory disorders specific to the perinatal period	3	9							12
Slow fetal growth, fetal malnutrition, short gestation, low birth weight		8							8
HIV disease			1	1	3	2			7
Congenital malformations, deformations and chromosomal abnormalities		3	1	2	1				7

Discharge Diagnosis	< 1	1-4	5-14	15-24	25-44	45-64	65+	Not Stated	Total
Bacterial sepsis of newborn		7							7
Remainder other conditions originating in the perinatal period 6			6						
Tuberculosis					2	2	1		5
Cirrhosis and certain other chronic diseases of liver					2	2			4
Malignant neoplasm of other genitourinary organs					1	2	1		4
Malignant neoplasm of cervix uteri						1	2		3
Acute rheumatic fever and chronic rheumatic heart diseases							1		1
Fetus & newborn affected by obstetric complications, birth trauma		1							1
Leukemia						1		1	
Meningitis						1			1
Malignant neoplasm of colon and rectosigmoid junction						1			1
Malignant neoplasm of digestive organs & peritoneum, except stomach and colon						1			1
Malignant neoplasm of other and unspecified sites						1			1
Malignant neoplasm of stomach						1			1
Malignant neoplasm of trachea, bronchus and lung						1			1
Nutritional deficiencies and nutritional anaemia							1		1
Remainder of all other diseases		5	37	32	114	70	37		295
Factors influencing health status and contact with health services	50	285	6	77	105	4	1		528
Symptoms, Signs, and ill-defined conditions		16	28	21	71	32	26		194
***Total**	**53**	**483**	**195**	**617**	**1,114**	**361**	**229**	**1**	**2,679**

*The total excludes normal deliveries
(Groupings are based on PAHO's 6/67 listing for ICD-10.)

APPENDIX 14 Discharge Diagnoses from Rand Memorial Hospital in Males by Age Group, 2003

Discharge Diagnosis	< 1	1-4	5-14	15-24	25-44	45-64	65+	Not Stated	Total
Injuries & Poisonings	0	9	26	67	77	30	11	0	220
Mental and behavioral disorders			2	47	70	16	2		137
Intestinal infectious diseases		53	28	1	7	2	4		95
All other diseases of the digestive system		4	4	9	23	33	15		88
Acute respiratory infections		31	26	6	1	6	9		79
Appendicitis, hernia of abdominal cavity and intestinal obstruction		11	15	6	9	17	9		67
Hypertensive diseases				2	14	26	13		55
Chronic lower respiratory diseases		16	19	2		7	1		45
Diabetes mellitus			2	4	9	16	12		43
Diseases of urinary system			2	2	3	19	14		40
Cerebrovascular diseases					8	13	14		35
Other infectious and parasitic diseases		6	7	3	8	4	6		34
Remainder diseases of the respiratory system	1	8	13	3	4		2		31
Certain vector-borne diseases and rabies		15	7	1			2		25
Ischemic heart diseases				2	3	12	6		23
Pulmonary heart disease, diseases of pulmonary circulation and other forms of heart disease					3	12	8		23
Carcinoma in situ, benign neoplasms and neoplasms of uncertain or unknown behaviour		1	1	2	8	10			22
All other diseases of the circulatory system		1	2		5	7	7		22
Diseases of the nervous system, except meningitis			2	2	4	4	6		18
Respiratory disorders specific to the perinatal period	2	13			1				16
HIV disease (AIDS)				1	3	6	1		11
Congenital malformations, deformations and chromosomal abnormalities		3	6		1	1			11
Heart failure					2	5	3		10
Tuberculosis					7	2			9
Septicemia, except neonatal				1	1	4	1		7
Nutritional deficiencies and nutritional anaemia			1			4	2		7

Discharge Diagnosis	< 1	1-4	5-14	15-24	25-44	45-64	65+	Not Stated	Total
Malignant neoplasm of prostate							7		
Slow fetal growth, fetal malnutrition, short gestation, low birth weight		7							7
Malignant neoplasm of other and unspecified sites					2	1	2		5
Remainder other conditions originating in perinatal period	4	1						5	
Cirrhosis and certain other chronic diseases of liver					1	2			3
Malignant neoplasm of lymphoid, other hematopoieic and related tissue					2	1			3
Malignant neoplasm of digestive organs & peritoneum, except stomach and colon						2			2
Malignant neoplasm of trachea, bronchus and lung						2			2
Malignant neoplasm of colon and rectosigmoid junction						1	1		2
Bacterial sepsis of newborn		2							2
Malignant neoplasm of stomach						1			1
Fetus & newborn affected by obstetric complications, birth trauma		1							1
Meningitis							1		1
Remainder of all other diseases		7	19	18	37	47	24		152
Factors influencing health status and contact with health services	50	310	4		6	6	5		3 8 1
Symptoms, signs, and ill-defined conditions		25	23	15	43	38	26		170
Total*	**53**	**527**	**210**	**194**	**362**	**357**	**214**		**1,917**

*The total excludes normal deliveries
(Groupings are based on PAHO's 6/67 listing for ICD-10.)

Notification Rates of Tuberculosis by Age and Gender, 2000-2003

Age Group	Cases			Population Estimates			Notification per 100,000		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
				2000					
50-59	4	3	7	10,868	11,491	22,359	36.8	26.1	31.3
60+	1	7	8	10,148	13,114	23,262	9.9	53.4	34.4
Unknown	2	0	2						
Total	39	43	82	149,681	153,155	302,836	26.1	28.1	27.1
				2001					
50-59	2	2	4	11,218	11,820	23,038	17.8	16.9	17.4
60+	0	2	2	10,516	13,589	24,105	0.0	14.7	8.3
Unknown	1	0	1						
Total	**15**	**28**	**43**	**152,003**	**155,376**	**307,379**	**9.9**	**18.0**	**14.0**
				2002					
20-49	11	16	27	72,236	73,887	146,123	15.2	21.7	18.5
50-59	1	3	4	11,599	12,185	23,784	8.6	24.6	16.8
60+	2	4	6	10,950	14,116	25,066	18.3	28.3	23.9
Total	**19**	**25**	**44**	**154,311**	**157,560**	**311,871**	**12.3**	**15.9**	**14.1**
				2003					
20-49	15	8	23	73,434	74,882	148,316	20.4	10.7	15.5
50-59	2	4	6	12,031	85,465	97,496	16.6	4.7	6.2
60+	2	3	5	11,435	156,597	168,032	17.5	1.9	3.0
Total	**20**	**18**	**38**	**156,597**	**159,701**	**316,298**	**12.8**	**11.2**	**12.0**

Ten Leading Causes of Death with Rates per 100,000 Population, 1999-2003

CAUSES OF DEATH*	1999			2000			2001			2002			2003		
	Rank	No.	Rate	Rank	No.	Rate	Rank	No.	Rate	Rank	No.	Rate	Rank	No.	Rate
HIV disease (AIDS) (B20-B24)	1	275	92.2	1	245	80.4	1	267	86.9	1	250	80.2	1	176	55.6
Hypertensive diseases (I10-I15)	4	103	34.5	3	107	35.1	3	151	49.1	2	200	64.1	1	176	55.6
Diabetes mellitus (E10-E14)	5	86	28.8	4	105	34.4	4	105	34.2	10	46	14.7	3	110	34.8
Cerebrovascular diseases (I60-I69)	3	109	36.5	5	82	26.9	5	99	32.2	14	41	13.1	4	107	33.8
Ischaemic heart diseases (I20-I25)	2	166	55.6	2	181	59.4	2	175	56.9	3	114	36.6	5	92	29.1
** Pulmonary heart disease, diseases of pulmonary circulation and other forms of heart disease (I26-I45, I47-I49, I51)	13	31	10.4	10	41	13.5	14	40	8.1	4	108	34.6	6	78	24.7
Malignant Neoplasm of prostate	11	35	11.7	10	34		12	42		16	38	5.1	7	51	16.1
Assault (homicide) (X85-Y09)	6	54	18.1	7	63	20.7	9	50	16.3	22	23	7.4	8	50	15.8
Other Malignant Neoplasms (C00-C97)	10	36	12.1	18	22	7.2	15	39	11.7	8	50	16.0	9	42	13.3
Diseases of the urinary system (N00-N39)	10	36	12.1	12	31	10.2	18	25	8.1	16	38	5.1	10	40	12.6
Total Deaths, Leading Causes		**1,011**	**338.8**		**985**	**323.1**		**1,061**	**345.2**		**908**	**291.1**		**922**	**291.5**
Signs,symptoms and ill defined conditions		**19**	**6.4**		**24**	**7.9**		**31**	**10.1**		**44**	**14.1**		**24**	**7.6**
Total Deaths, Defined Causes		**1,556**	**521.4**		**1,601**	**525.2**		**1,714**	**557.6**		**1,766**	**566.2**		**1,625**	**513.8**
Total Deaths, All Causes		**1,575**	**527.8**		**1,625**	**533.1**		**1,745**	**567.7**		**1,810**	**580.4**		**1,649**	**521.3**

Ten Leading Causes of Deaths by Years of Potential Life Lost, 1999-2003

CAUSES OF DEATH*	1999		2000		2001		2002		2003	
	Rank	YPLL	Rank	YPLL	Rank	YPLL	Rank	YPLL	Rank	YPLL
HIV disease (AIDS)	1	7,062.5	1	5,870.0	1	6,172.0	1	4839	1	4044
** Land transport accidents	3	1,693.0	2	1,945.5	7	1,603.0	7	1,528.0	13	1,158.5
Assault (homicide)	2	1816.5	3	1,889.0	9	1,514.0	22	788.0	8	1,645.5
Diabetes mellitus	8	480.0	4	840.0	4	458.0	10	228.0	3	436.0
Ischaemic heart diseases	4	790.0	5	698.0	2	614.5	3	634.5	5	388.0
Cirrhosis & certain other chronic dis. of liver	13	269.0	6	626.0	13	672.0	26	188.0	14	435.0
Acute respiratory infections	7	495.0	7	568.0	8	721.0	6	981.0	11	329.5
Hypertensive diseases	5	533.0	8	387.0	3	794.5	1	941.5	1	989.5
*** Pulmonary heart disease, diseases of pulmonary circulation and other forms of heart disease (I26-I45, I47-I49, I51)	10	456.0	9	374.5	14	522.5	4	1,230.5	6	1,234.0
Cerebrovascular diseases	9	469.5	10	373.0	5	445.5	15	263.5	4	601.5
Other malignant neoplasms	6	496.0	18	2,10.0	15	339.0	8	576.5	9	294.5
Diseases of the urinary system	12	363.0	12	3,12.0	18	138	16	246.0	10	266.0
Malignant neoplasm of digestive organs and peritoneum, other than stomach and colon	14	146.0	14	176.5	10	271	18	215.5	12	237.5
Total YPLL		**15,069.5**		**14,269.5**		**13,819.5**		**12,660**		**12,059.5**
Total YPLL, Defined Causes		**22,945.5**		**23616.5**		**23240**		**27,388.5**		**21,904**
YPLL, Signs, Symptoms & Ill-Defined Conditions		**294.0**		**535.0**		**307.0**		**744.5**		**296.5**
Total YPLL, All Causes		**23,239.5**		**24,151.5**		**23,547**		**28,133**		**22,200.5**

CAUSES OF DEATH*	Sex	Total		Age Groups (With Number and Percent of Deaths in each Age Group)															
				< 1		1-4		5-14		15-24		25-44		45-64		65+		Not Stated	
		No.	% All Deaths	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
HIV disease (AIDS)	M	406	7.8	0	0	0	0	3	4	7	4.1	239	22.1	142	10.7	14	0.6	1	25
Ischaemic heart diseases	F	237	4.6	1	0.9	0	0	3	4	4	2.3	155	14.3	62	4.7	12	0.5	0	0
	M	204	3.9	0	0	0	0	0	0	1	0.6	10	0.9	73	5.5	120	5.2	0	0
Hypertensive diseases	F	152	2.9	0	0	0	0	0	0	0	0	5	0.5	35	2.6	112	4.9	0	0
	M	246	4.7	0	0	0	0	0	0	1	0.6	26	2.4	64	4.8	155	6.7	0	0
Diabetes mellitus	F	329	6.3	0	0	0	0	0	0	1	0.6	17	1.6	62	4.7	248	10.8	1	25
	M	109	2.1	0	0	0	0	0	0	0	0	11	1.0	35	2.6	62	2.7	1	25
Cerebrovascular diseases	F	151	2.9	0	0	0	0	0	0	0	0	1	0.1	37	2.8	112	4.9	1	25
	M	113	2.2	2	1.8	0	0	0	0	0	0	8	0.7	36	2.7	67	2.9	0	0
**Land transport accidents	F	134	2.6	1	0.9	0	0	1	1.3	1	0.6	5	0.5	23	1.7	103	4.5	0	0
	M	110	2.1	0	0	0	0	5	6.3	31	18.0	47	4.3	19	1.4	8	0.3	0	0
Assault (homicide)	F	36	0.7	0	0	1	0.8	4	5.0	6	3.5	9	0.8	13	1.0	3	0.1	0	0
	M	105	2.0	0	0	2	1.7	5	6.3	25	14.5	55	5.1	13	1.0	5	0.2	0	0
Suicides	F	16	0.3	0	0	0	0	1	1.3	6	3.5	6	0.6	2	0.2	1	0	0	0
	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acute respiratory infections	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	M	75	1.4	1	0.9	1	0.8	1	1.3	2	1.2	15	1.4	20	1.5	35	1.5	0	0
Cirrhosis and certain other chronic diseases of liver	F	81	1.6	1	0.9	5	4.1	2	3	0	0	11	1.0	7	0.5	55	2.4	0	0
	M	66	1.3	0	0	0	0	0	0	0	0	12	1.1	41	3.1	13	0.6	0	0
	F	32	0.6	0	0	0	0	0	0	1	0.6	9	0.8	17	1.3	5	0.2	0	0
Malignant neoplasm of prostate	M	130	2.5	0	0	0	0	0	0	0	0	0	0	15	1.1	115	5.0	0	0
Malignant neoplasm of female breast	F	119	2.3	0	0	0	0	0	0	0	0	30	2.8	50	3.8	39	1.7	0	0
*** Pulmonary heart disease, diseases of pulmonary circulation and other forms of heart disease (I26-I45, I47-I49, I51)	M	123	2.4	0	0	2	1.7	0	0	0	0	30	2.8	53	4.0	38	1.7	0	0
	F	103	2.0	0	0	1	0.8	1	1.3	2	1.2	26	2.4	37	2.8	36	1.6	0	0
Total (% All Deaths)		**2711**	**52.2**	**6**	**5.4**	**12**	**9.9**	**26**	**32.5**	**88**	**51.2**	**581**	**53.7**	**636**	**48.1**	**1358**	**59.0**	**4**	**100**
Total Deaths, Defined Causes		**5096**	**98.1**	**107**	**96.4**	**118**	**97.5**	**78**	**97.5**	**169**	**98.3**	**1064**	**98.4**	**1310**	**99.0**	**2246**	**97.5**	**4**	**100**
Signs, Symptoms & Ill-defined Conditions		**99**	**1.9**	**4**	**3.6**	**3**	**2.5**	**2**	**2.5**	**3**	**1.7**	**17**	**1.6**	**13**	**1.0**	**57**	**2.5**	**0**	**0**
Total Deaths, All Causes		**5,195**	**100.0**	**111**	**1,00.0**	**121**	**100.0**	**80**	**100.0**	**172**	**100.0**	**1081**	**100.0**	**1323**	**100.0**	**2303**	**100.0**	**4**	**100.0**

Visits by Adults & Children to Primary Care Clinics by Selected Causes, 1996-98

Condition	1996			1997			1998		
	New	Return	Total	New	Return	Total	New	Return	Total
ADULTS									
Hypertension	590	19,696	20,286	1,283	19,247	20,530	743	23,988	24,731
Diabetes	429	5,504	5,933	400	6,993	7,393	494	7,861	8,355
Arthritis	369	2,057	2,426	553	2,612	3,165	380	2,731	3,111
Diseases of the skin and subcutaneous tissue*	0	0	0	0	0	0	0	0	0
Injuries	177	50	227	384	103	487	309	183	492
Mental Disorders	0	0	0	0	0	0	0	0	0
Neoplasms	0	0	0	0	0	0	0	59	59
Eye Diseases	1,188	0	1,188	0	0	1	184	60	244
Ear Diseases	1,306	270	1,576	1,305	224	1,529	1,592	291	1883
Symptoms, Signs and Ill-defined Conditions	0	0	0	1,686	362	2,124	1,625	490	2115
CHILDREN									
Acute Gastroenteritis	2,012	151	2,163	1,234	46	1,280	1,304	38	1,342
Intestinal Parasitism	637	18	655	413	45	458	424	19	443
Scabies	151	2	153	179	4	183	310	10	320
Ringworm	599	26	625	635	26	661	664	28	692
Eye Diseases	771	15	786	867	25	892	804	34	838
Ear Diseases	1,943	126	2,069	1,741	108	1,849	1,644	134	1,778
Injuries	877	326	1,203	888	292	1,180	903	358	1,261
Poisonings	43	7	50	92	4	96	42	8	50

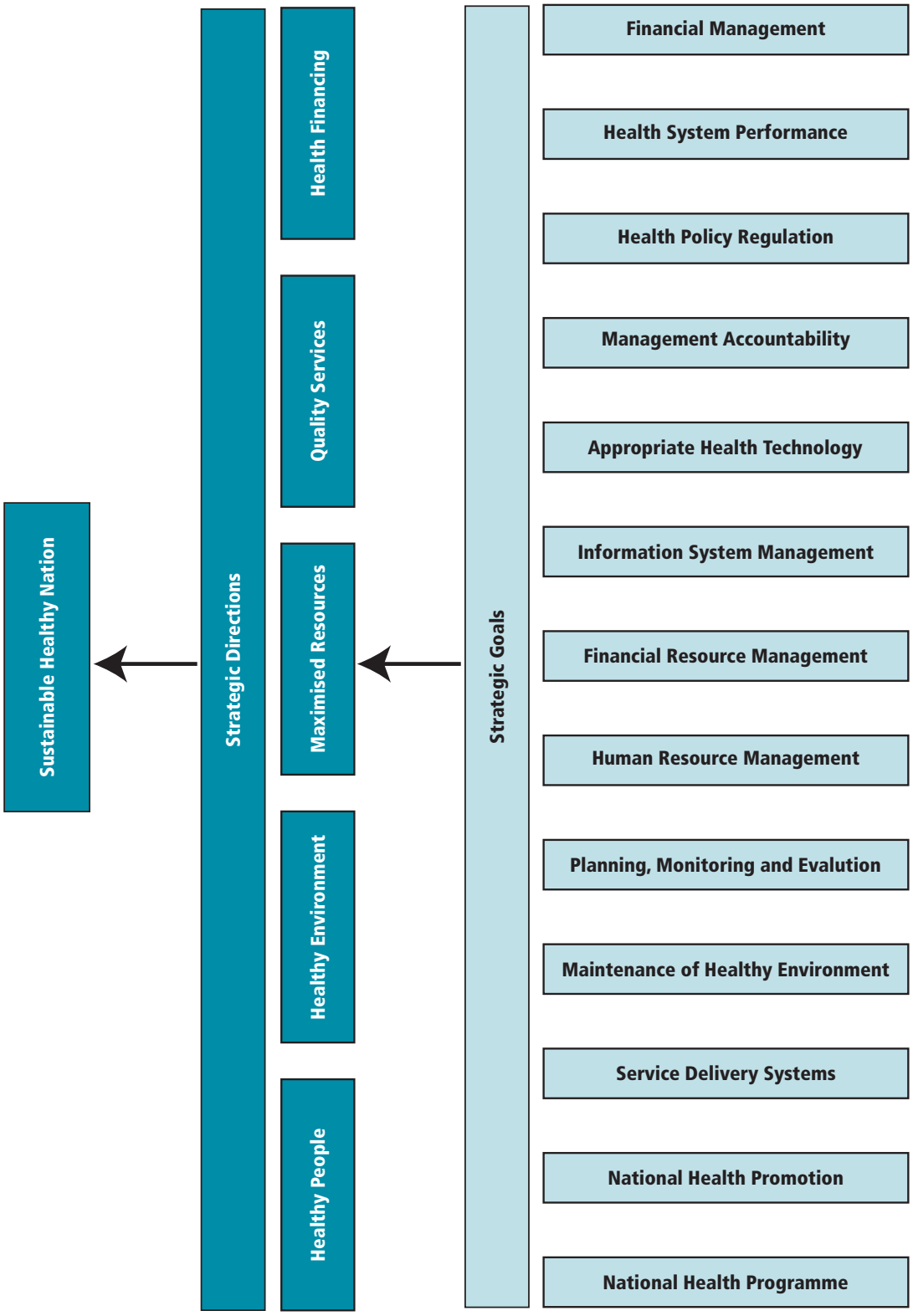
* (excluding scabies and ringworm)

**New and return visits may not have been specified in all instances.

R = REPEAT visits

N = NEW visits (First visit associated with health problem for that year

Framework of Strategic Directions and Strategic Goals



Infrastructural Developments (1993-2001)

(Physical upgrades, upgrade of existing technology and services and introduction of new technology and services).

1. Princess Margaret Hospital
   - Refurbishment of Private Wards, Labour and Delivery Units and Surgical Suites (partnership with Physicians Alliance Ltd.)
   - Neonatal Intensive Care Unit (NICU)
   - Trauma Unit
   - Refurbishment of Public Wards
   - Laboratory
     Remodeling and expansion of onsite Laboratories (histology lab, morgue etc.
     New Site (General Hardware Building)
   - Rehabilitation therapy (new site GH building)
   - Physical Plant Refurbishments: Water, Sewerage, Electrical, Medical Gases systems
   - New Dialysis unit
   - Ambulance Bay
   - MMD warehouse
   - X-Ray (introduced technology upgrades and new services)
   - Emergency Room
     Chest Pain room
     Privacy for sexual abuse cases
     Pediatrics room
     Operating Theatre
     Stat Laboratory
   - Pharmacy

     Introduction of pharmacy management information system (improvements in outpatients dispensary)
2. Sandilands Rehabilitation Centre
   - Geriatrics
   - Sandilands
   - Child and Adolescent Unit
   - Community Counseling and Assessment Centre (Relocation and expansion)
3. Grand Bahama Health System
   - Rand Memorial Hospital
     Accident and Emergency Upgrade
     The Morgue
     Ophthalmology Services

- Community Clinics in Grand Bahama
  New Eight Mile Rock Clinic

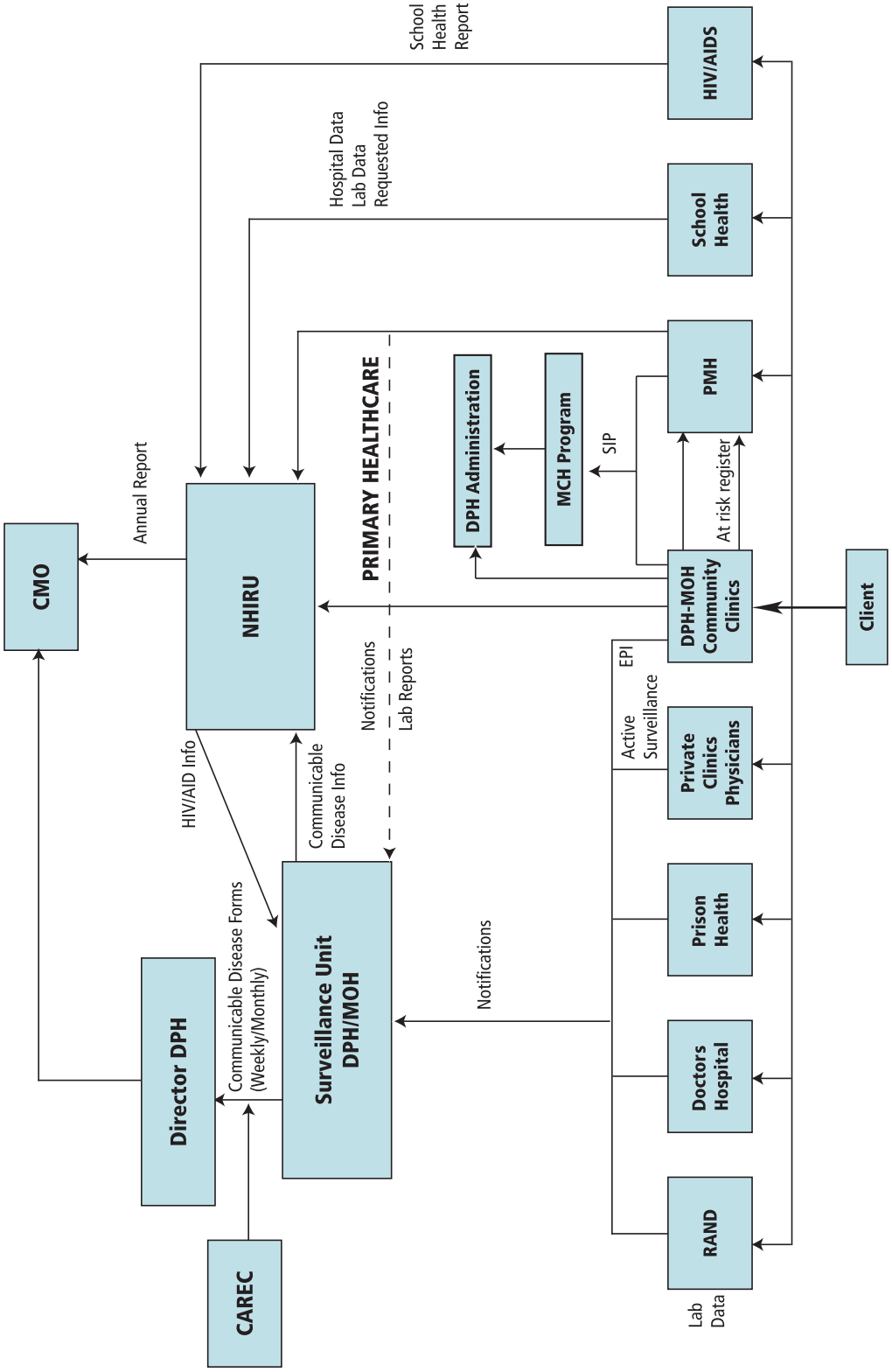
4. Public Health Department

- Community Clinics in New Providence
  Refurbishment of Gambier Clinic
  Repairs to Ann's Town, Coconut Grove and Balliou Hill Road Clinic
  New South Beach Clinic

5. Community Clinics in Family Islands

- Major Renovations of Family Island facilities examples:
  Wheymss Bight, Eleuthera, Governor's Harbour,
  Old Bight Cat Island, Smith's Bay Cat Island,
  Forbes Hill, Exuma
  Clarence Town, Long Island
  Deadman's Cay, Long Island
  Moore's Island Abaco etc.

Public Health Information System Design



Some of the Documents Reviewed for the CMO's Report

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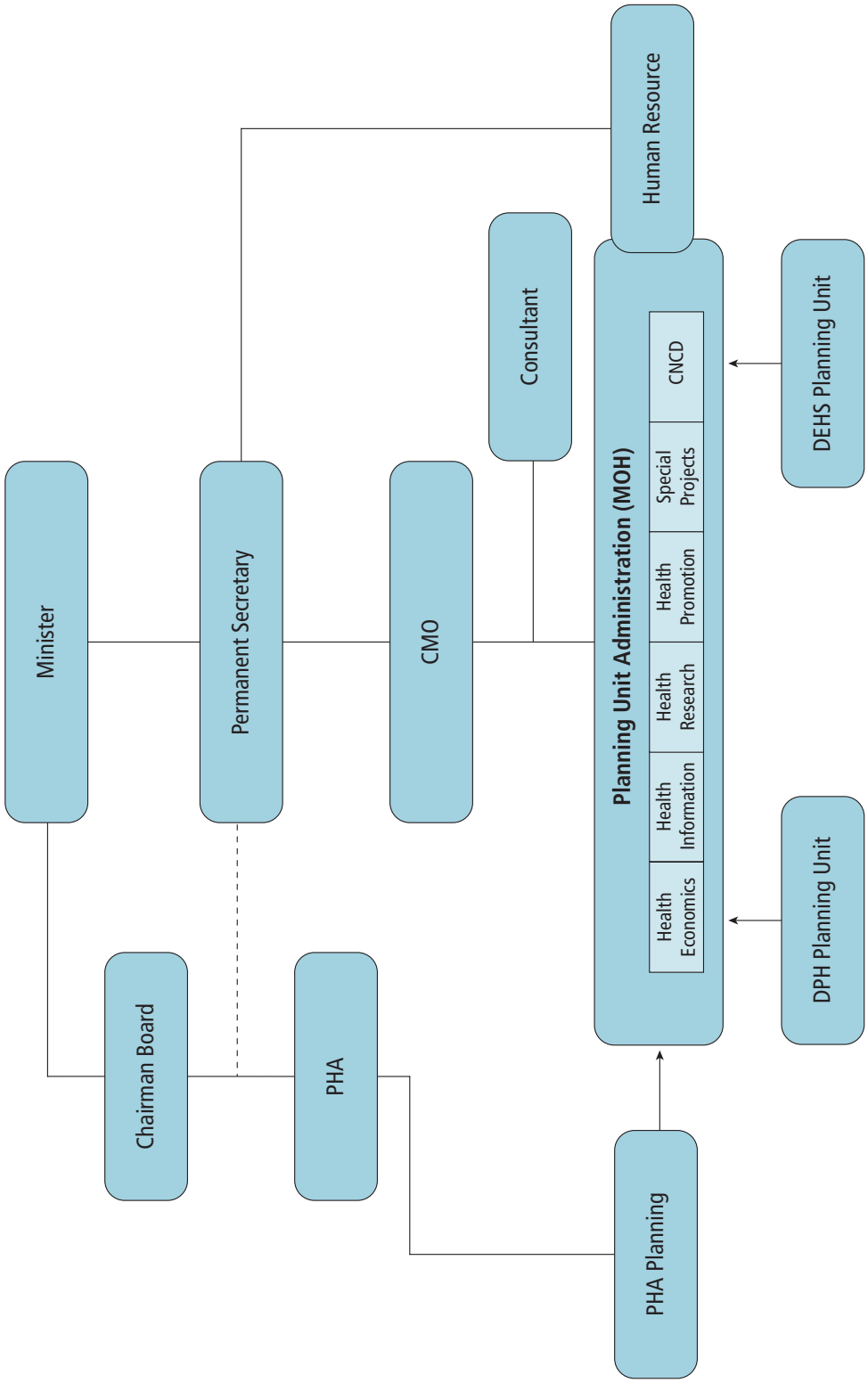
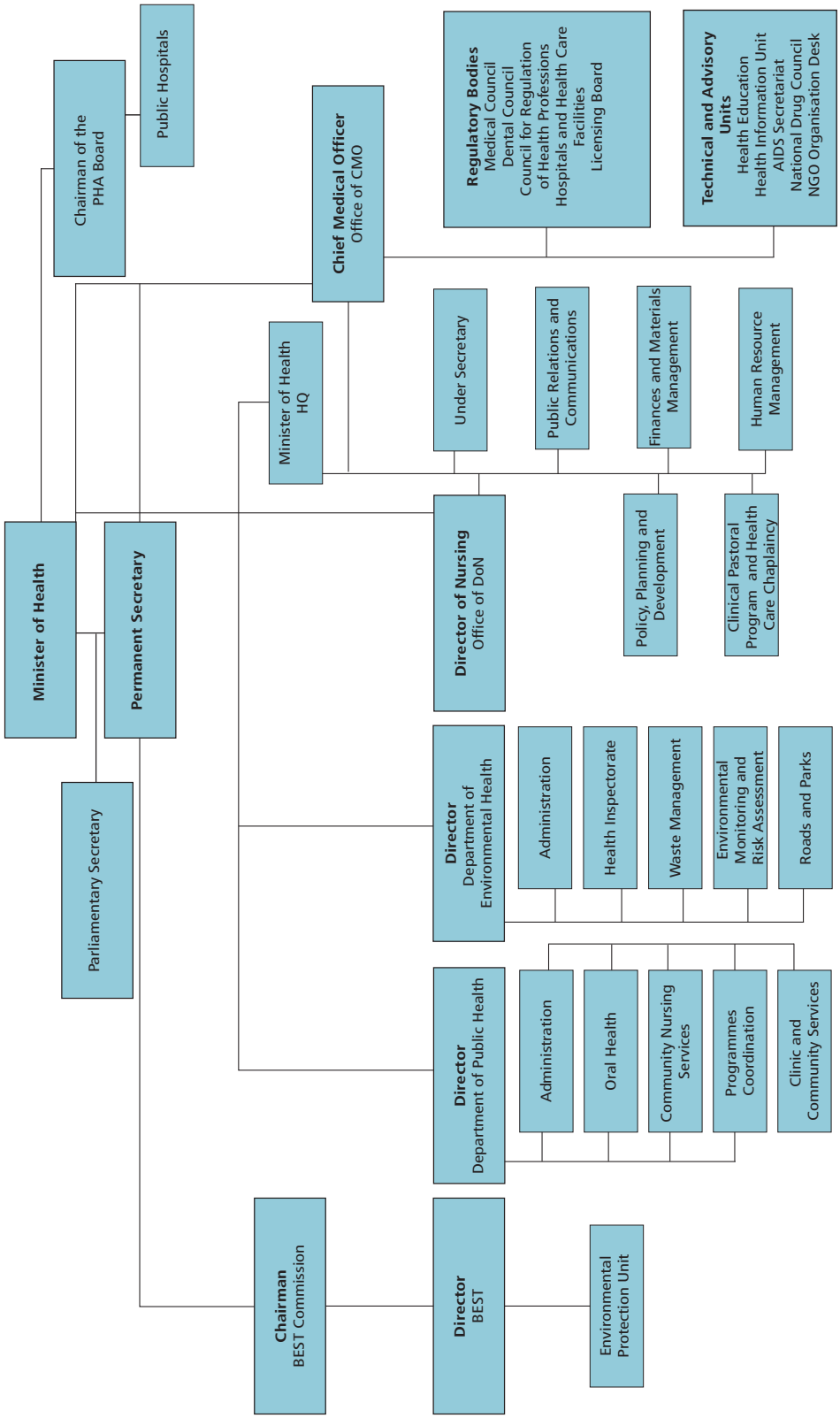
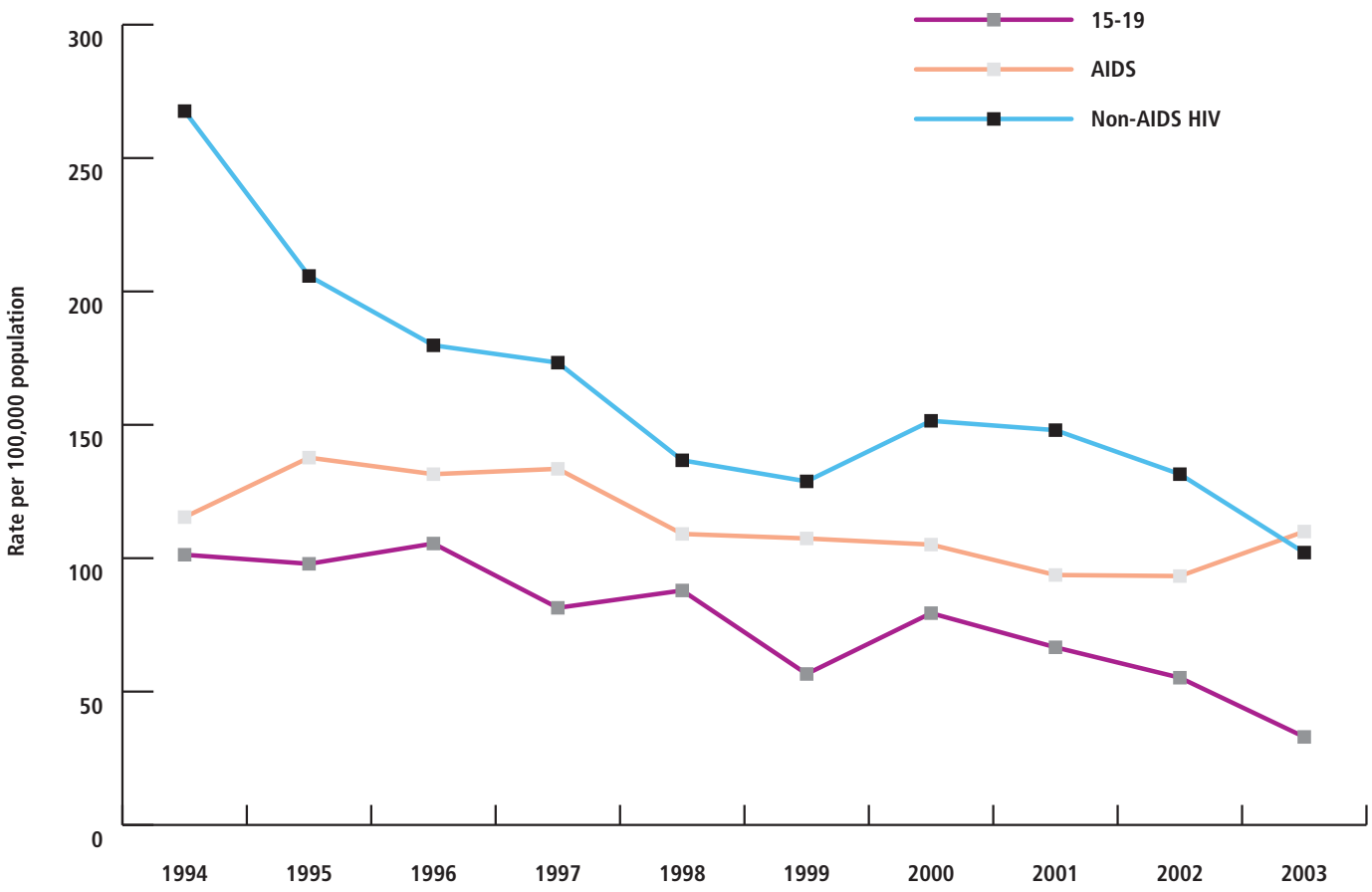
Organizational Structure of the Planning Unit of the Ministry of Health and Environment



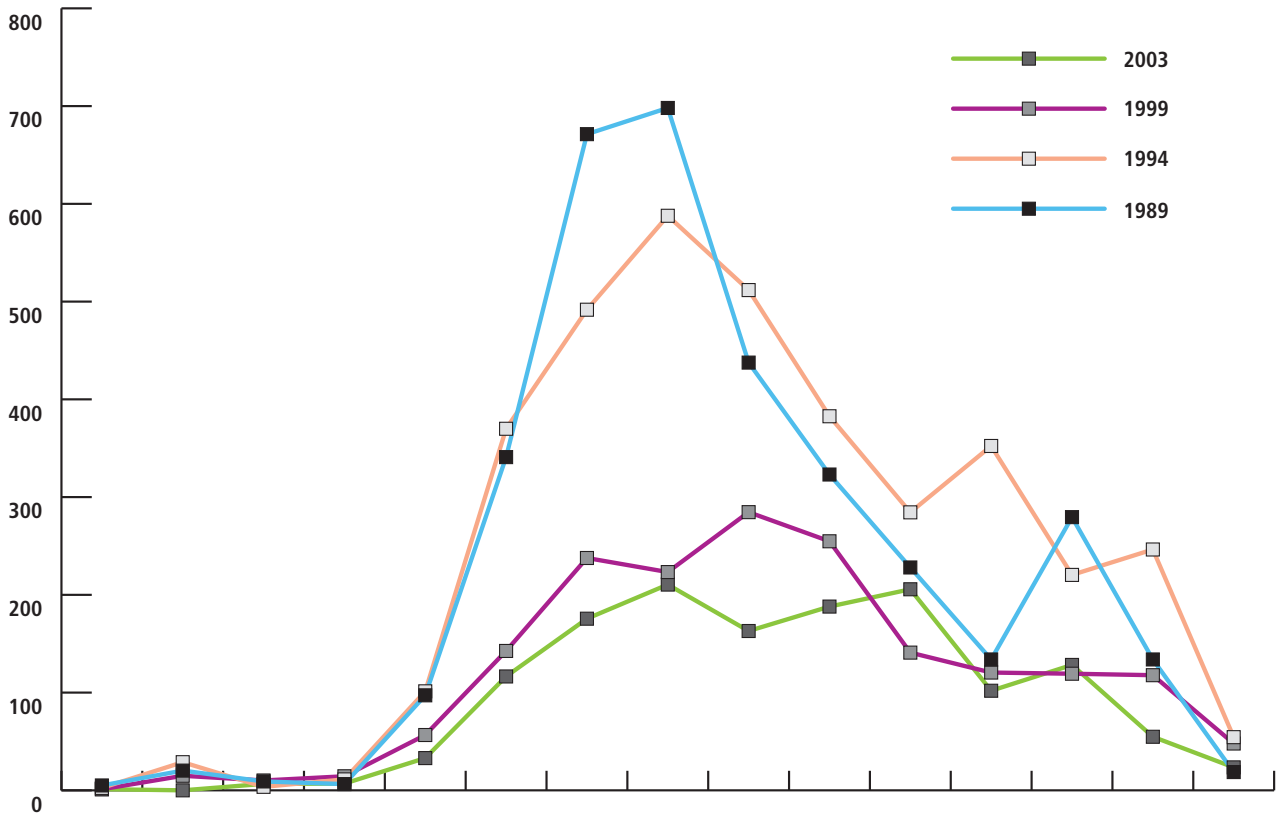
Organizational Chart of the Ministry of Health and Environment



Reported Incidence of Non-AIDS HIV (Total and Teenage) and AIDS, 1994-2003

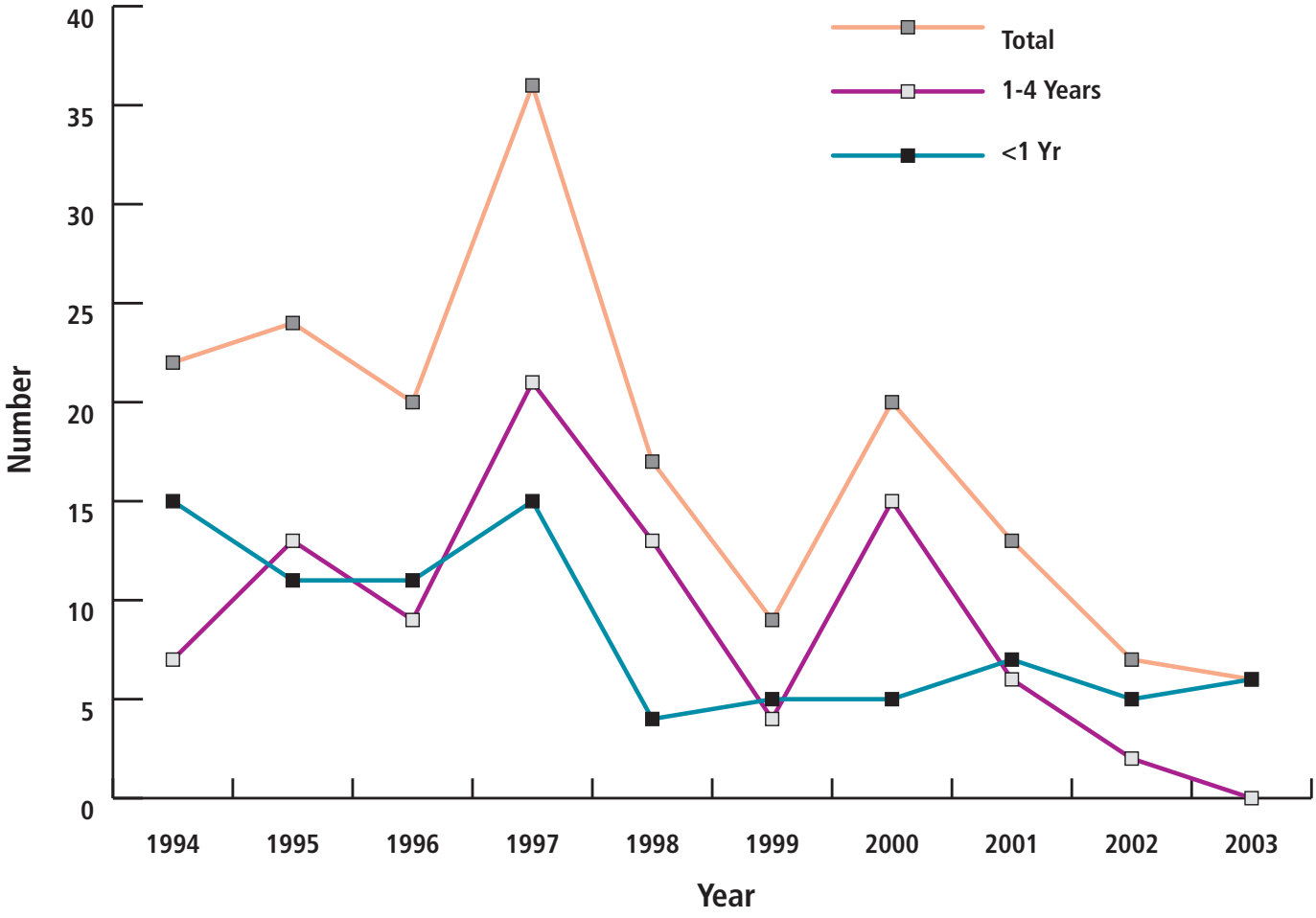


Reported Age-Specific Incidence Rate of Non-AIDS HIV, 1989, 1994, 1998, 2003

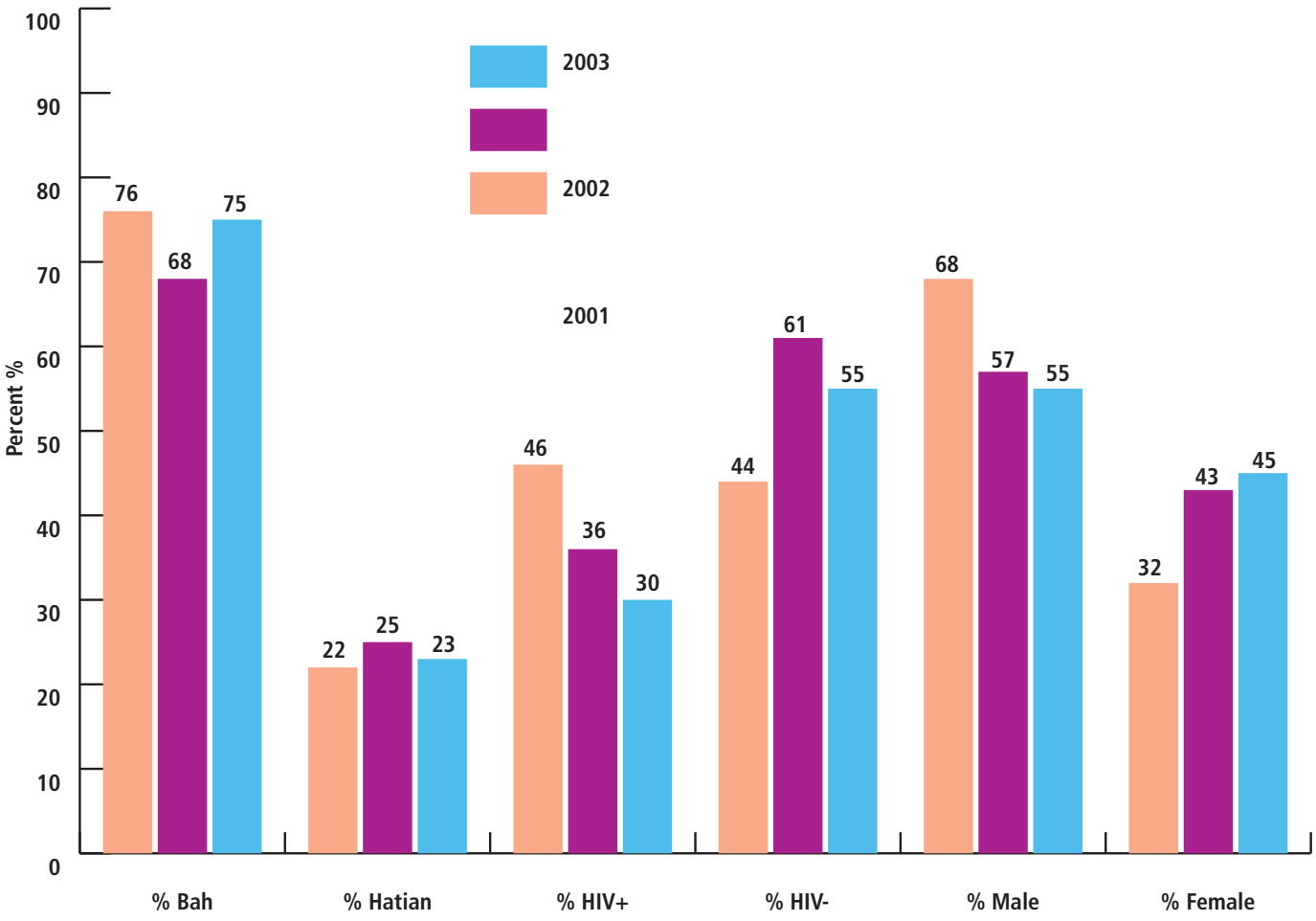


	Under 1	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 +
1989	5.0	20.2	9.1	6.4	97.2	340.9	671.3	698.1	437.6	323.1	228.0	133.9	279.5	133.9	18.7
1994	2.5	28.8	3.6	11.2	101.3	369.9	491.7	587.8	511.8	382.7	284.4	352.3	220.4	246.4	54.4
1999	1.1	14.9	10.1	14.4	56.6	142.6	237.7	223.3	284.6	254.8	140.9	120.5	119.3	117.8	47.9
2003	1.2	0.0	6.6	6.9	33.0	116.5	175.6	210.5	163.0	188.0	2.5.7	101.9	128.3	54.8	23.5

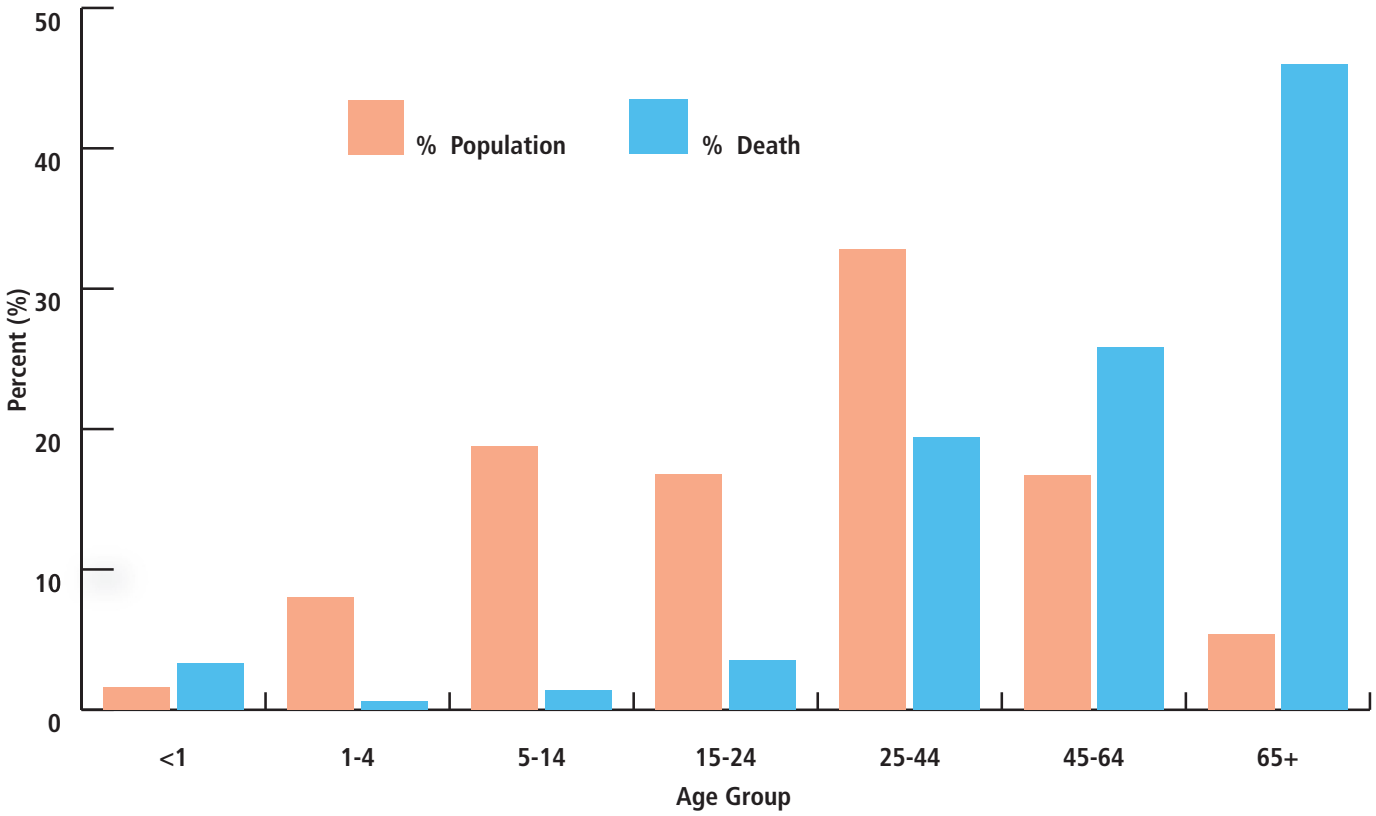
Reported Non-AIDS HIV in Infants and Children under 5 Years of Age, 1994-2003



TB Cases by Gender, Nationality & HIV Status, Bahamas, 2001-2003



Share of Total Population versus Share of Total Deaths, by Age Group, 2003



Proportionate Mortality by Years of Potential Life Lost (YPLL) in both Genders by Cumulative Causes of Death, 1999-2003