Report of the Chief Medical Officer

Dr. Merceline Dahl-Regis

Commonwealth of The Bahamas

2004-2008

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1 FOREWORD

The Chief Medical Officer's (CMO's) Report 2004-2008 is the third in a series of published reports that describes the health status of the peoples of The Bahamas. Since 1963, the Government of The Bahamas has made health care available to all citizens through the Department of Public Health. In more recent times the revised Health Act of 1999 supported the mission of the Ministry of Health which is to "ensure that the highest quality of services for health promotion, health protection and healthcare are accessible to all residents of The Bahamas in order to achieve optimal health." Guided by this mission The Ministry of Health continues to operate from a social model whereby improvements to health and well-being are achieved by directing efforts towards addressing the social and environmental determinants of health, among others.

The national healthcare system consists of three key components: the Ministry of Health, the Department of Public Health, and the Public Hospitals Authority, the latter of which was established by an act of Parliament in 1999. Recognizing that the Ministry cannot provide health services by itself, it partners with non-governmental organizations, and other private agencies to provide a comprehensive approach to healthcare for its residents.

The status of a nation's health, like an individual's, is largely a matter of choices. This report describes the health system's performance and identifies choices and possible linkages with related programmes. Data in this report can be used to guide design of national health services strategic plans and can provide direction to major programme priorities impacting the health outcomes of residents across the Bahamian archipelago.

The Bahamas' health care system has seen many improvements that include expansion of specialists' services. This has resulted in growing health expenditures, many of which are technology driven. It is vital that we strike a balance among preventive services, primary care services, and curative services. During the period 2004-08, gains were made, however we were not successful in reorienting health services, nor has there been a corresponding redistribution of resources that helps in striking such a balance. This redistribution must include appropriate funding for the three sectors of public health (human, environmental and veterinary) which will be the key to the success of improving the social determinants of health.

Moving forward, we must integrate environmental services with health services and balance primary health services and curative services, in order to make changes on those core determinants of health that will move us toward better results, thereby improving the lives of the residents of The Bahamas.

The data presented in this report underscore the necessity of accurate data to support the analysis in the overall assessment and evaluation of interventions to serve the health needs of the people of The Bahamas.

Optimal results are achieved when individuals also make healthy choices

Dr. Merceline Dahl-Regis
Chief Medical Officer
31 December 2010

2 EXECUTIVE SUMMARY

The period 2004-08 has proven to be a challenging time for the Ministry of Health (MOH). Many changes have occurred, in the health sector nationally and globally, that have impacted the health of the Bahamian people. Throughout this period, the MOH has transitioned through several organizational structures. Initially, the Government directed the inclusion of the Department of Environmental Health Services (DEHS) in MOH; later it reassigned DEHS to a newly created Ministry of Environment. The separation of public health activities in DEHS to another Ministry has been one of a series of challenges encountered by MOH in managing public health threats, emergencies and events.

The country has focused attention on social factors impacting health issues, including a rise in violence resulting from urbanization and economic problems. Nevertheless, the level of governmental commitment to health strategies and services has remained constant, despite an economic downturn. For its part, the MOH has worked to sustain the Bahamian people's health in the face of these mounting challenges.

The MOH adopted the WHO guidelines for food health/food safety, assuming full responsibility for training food handlers in food safety—shifting from physical exam and stool examination-based health certification to a knowledge-based food handlers certification process, in compliance with internationally accepted guidelines for food safety. Consequently, we have had zero outbreaks of foodborne illness in the community.

The World Health Assembly revised the International Health Regulations (IHR (2005)), and The Bahamas became a signatory at the 58th World Health Assembly. This revision laid the solid groundwork for capacity building in surveillance—nationally, regionally, and internationally—as well as strengthening port health surveillance. Pandemic planning incorporated a multitude of agencies; it sought to develop a national response to emerging threats posed by Influenza A (H5N1). The IHR (2005) came into effect in June 2007; and in 2008, The Bahamas conducted an assessment of its capacity to provide surveillance, response, and control for possible public health emergencies of international scale and scope. This established inter-sectoral, inter-ministerial, inter-departmental, and interagency networks and strengthened private-public partnerships for health promotion and prevention.

The MOH also conducted the "Chronic Noncommunicable Diseases (CNCD) Prevalence Study and Risk Factor Survey" in 2005, aimed at identifying determinants of CNCD's that contribute to the burden of disease in The Bahamas. The Healthy Lifestyles initiative was launched; a new MOH initiative aimed at increasing awareness—and reducing the impacts—of chronic non-communicable diseases on residents of The Bahamas. With the prevalence of hypertension and diabetes both on the rise, the Ministry of Health sought innovative approaches to strengthen community involvement in managing these epidemics.

The MOH also resourced the scaling up of access to antiretroviral therapy (ART) for persons infected with HIV/AIDS, and it has provided medications free of charge to all persons meeting treatment criteria. This has been beneficial in reducing both the level of hospitalizations and deaths associated with HIV/AIDS—moving it from one of the top one or two causes of death to the #4 cause of death by 2008. Gilead began production of the antiretroviral drug Viread® (tenofovir) in Grand Bahama. This drug has contributed to the management of AIDS locally and globally.

In addition, in 2006 The Bahamas successfully managed a malaria outbreak on the island of Great Exuma through cooperative efforts by the Department of Public Health (DPH) and DEHS with significant support from the Pan American Health Organization (PAHO). Commendation for our management of this outbreak internationally was echoed by US Centers for Disease Control and Prevention. We have been cited for "textbook" management of an outbreak, resulting in rapid containment of a potential public health threat of global concern.

The Department of Public Health began a restructuring exercise in 2006 and continued into 2007, which included the introduction of management teams in polyclinics aimed at increasing efficiency and improving patient care. These polyclinics aligned with regionalized groups of Family Island services and each polyclinic assumed responsibility for referral services for their regional cluster and to provide support for the staff resulting in a more efficient referral system and continuity of care. Extended hours for patient care were reintroduced in the polyclinics to meet increased patient demand for services.

In 2008, oncology services relocated to newly renovated facilities in Princess Margaret Hospital, enabling oncology care to be provided for persons with cancer in a setting that is more spacious and more appropriately equipped.

3 ACKNOWLEDGEMENTS

The production of this report would not be possible without the assistance of managers of the National Programmes and their support staff , including Ms. Camille Deleveaux and staff in the Health Information and Research Unit; Ms. Margaret Daxon and staff in the Chronic Noncommunicable Disease Unit; Dr. Cherita Moxey; Ms. Amelia Collie; and many other personnel throughout the Ministry of Health, the Department of Public Health and the Department of Environmental Health Services. Appreciation is extended to Ms. Sandra Smith and Mrs. Kathy Johnston of the Planning Unit in the Ministry of Health. Gratitude is also extended to Ms. Sherrylee Smith for editing the report. Special thanks are extended to the Pan American Health Organization/World Health Organization (PAHO/WHO), whose sponsorship of Ms. Yvette Holder, Consultant Epidemiologist and Biostatistician, enabled this report to come to fruition. Particular thanks are given to Dr. Merle Lewis (PAHO) for her inspiration and continued support.

4 ACRONYMS AND CONVENTIONS

-	No cases recorded
...	Data not available
ABG	Arterial Blood Gas
AIDS	Acquired Immune Deficiency Syndrome
Anti-HBS	Antibody to Hepatitis B Surface Antigen
ARI	Acute Respiratory Infection
ART	Antiretroviral Therapy
ATT	Attenuated Tetanus Toxoid
BP	Blood Pressure
CAREC	Caribbean Epidemiology Centre
CCAC	Community Counseling and Assessment Centre
CDR	Crude Death Rate
CLAP	Latin American Centre for Perinatology
CMO	Chief Medical Officer
CMV	Cytomegalovirus
CNCD	Chronic Non-Communicable Diseases
CSF	Cerebral Spinal Fluid
CVA	Cerebro-vascular Accident
DEHS	Department of Environmental Health Services
DHSS	Dengue Haemorrhagic Shock Syndrome
dmft	decayed, missing, and total deciduous teeth
DMFT	Decayed, Missing and Filled permanent Teeth
DOT	Directly Observed Therapy
DPH	Department of Public Health
DPT	Diphtheria, Pertussis and Tetanus Vaccine
EMS	Emergency Medical Services
ENT	Ear, Nose and Throat
EPI	Expanded Programme on Immunization
GBHS	Grand Bahama Health System
GC	Gonnococcal
GDP	Gross Domestic Product
G/E	Gastroenteritis
Gm(s)	Gram(s)
GPC	General Practice Clinic
HAV	Hepatitis A Virus
Hb	Haemoglobin
HBsAg	Hepatitis B Surface Antigen
HBV	Hepatitis B Vaccine
HCV	Hepatitis C Virus
HIRU	Health Information and Research Unit
HIB	*Haemophilus influenza type B* vaccine
HIV	Human Immunodeficiency Virus
HMP	Her Majesty's Prison
HR	Human Resource
HTLV 1 & 2	Human T-Lymphotrophic Virus 1 & 2
ICU	Intensive Care Unit
IHR	International Health Regulations
IMR	Infant Mortality Rate
L.E.	Life Expectancy
MCH	Maternal and Child Health
MDG	Millennium Development Goals
MOH	Ministry of Health
MMR	Measles, Mumps and Rubella vaccine
MTCT	Mother-to-child Transmission
NICU	Neonatal Intensive Care Unit
OB	Obstretrics
PAHO	Pan American Health Organization
PET	Pre-Eclamptic Toxaemia
PHA	Public Hospitals Authority
PHAC	Public Health Agency of Canada
PKD	Polycystic Kidney Disease
PMTCT	Prevention of Mother-to-child Transmission
RTA	Road Traffic Accident
RTI	Road Traffic Injury
PMH	Princess Margaret Hospital
PSW	Private Surgical Ward
RMH	Rand Memorial Hospital
SCBU	Special Care Baby Unit
SIP	Perinatal Information System
SLE	Systemic Lupus Erythematous
SRC	Sandilands Rehabilitation Centre
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
TB	Tuberculosis
UA	Urine Analysis
UHCG	Urine Human Chorionic Gonadotrophin
VDRL	Venereal Disease Research Laboratory (Test)
URTI	Upper Respiratory Tract Infection
WHO	World Health Organization
YPLL	Years of Potential Life Lost

5 INTRODUCTION

The Report of the Chief Medical Officer is intended to offer information about the performance of the health care system and the overall health of the population. This document provides a forum for discussion of health determinants that impact residents of the country and describes the impact that programmes designed to improve the health of our residents have had on the country. Further, it allows one to examine the relationship between health policy and the technical outputs that occur as a result of our national programmes. The use of data in this report can help policymakers and programme managers guide their development of interventions aimed at decreasing morbidity and mortality and promoting good health.

The Chief Medical Officer's Report also evaluates the performance of the health system, in identifying gaps in programmes and coverage, in order to improve upon currently available services. This report paints a picture of the nation's health status, as evidenced by the progress made toward the achievement of the Millennium Development Goals (MDGs).

Throughout the time period covered by most of this report, MOH has been challenged with major changes in its organizational structure, especially the migration and return of Environmental Health Services. As a key member of the public health team, the Department of Environmental Health Services is an essential component of the environmental management of determinants of health; as such, whether they are organizationally included in the Ministry of Health or situated in a parallel agency, they are critical to our attainment of improved health within the nation.

6 PHYSICAL AND POLITICAL DESCRIPTION

The Commonwealth of The Bahamas comprises an archipelago of some 700 islands situated in the Caribbean Sea. Fewer than 40 are inhabited. Most of our 300,000 Bahamians live on two main islands, New Providence, with the Commonwealth's capital Nassau, and Grand Bahama.

The country's economic mainstays are tourism and banking, both of which contribute to give the country one of the highest *per capita* Gross Domestic Products (GDP) in the English-speaking Caribbean. The *per capita* GDP had been increasing steadily until 2008, when the country began to experience the cascading consequences of the global economic downturn, including a decrease in tourist arrivals **(Table 1)**. Household income declined in 2008 to pre-2007 levels, although inequality in income distribution widened slightly—a marginal decrease in the Gini coefficient demonstrating a continued trend from 2001 (Gini coefficient of 0.5745 (Bahamas Survey of Living Conditions, 2001)).

Table 1. Socio-Economic Indicators

YEAR	Per capita GDP[1,2]	H/hold Income[3,4, 5]	Gini Coeff.[2]	Unemployment Rate%[3,4]
2004	19,281.4	39, 626	...	10.2
2005	20,132.6	38, 891	...	10.2
2006	22,060.9	43, 421	...	7.6
2007	22,448.7	45, 221	0.45	7.9
2008	22,102.2	43, 459	0.44	8.7

1 At current market prices

Sources:

2 World Statistics Pocketbook/United Nations Statistics Division (Economic Commission of Latin America and the Caribbean)

3 Department of Statistics, The Bahamas in Figures, 2007

4 Idem. 2008 Labour Force and Household Income Survey

5 Idem. 2009 Labour Force and Household Income Survey (in print)

Generally, the Commonwealth of The Bahamas has an active labour force. Participation rates have hovered around 76% for the past decade and participation continues beyond the retirement age **(Table 2).** Unemployment rates had been less than 10% since 2005 and youth unemployment has decreased slightly from 18.9% to 17.6%. Notable, too, is that 67% of the labour force is employed by the private sector. However, public service remains the largest employer, employing 31% of all employed persons. It is surmised that many persons, upon their retirement from public sector jobs, then are employed by the private sector.

30% of the labour force reported having no educational certificate—i.e., had passed no national examination. As expected, this rate is higher among the unemployed than among the employed, 45.0% and 28.6% respectively **(Table 3).** Men were more likely to have no educational certificate than women among both unemployed (52.0% vs. 40.2% respectively) and employed persons (35.2% vs. 21.6% respectively).

Table 2. Labour Force by age and sex, All Bahamas, 2008

AGE GROUP	Labour Force by Age, Gender and Employment Status																	
	Total Labour Force						Employed Labour Force						Unemployed Labour Force					
	Total		Women		Men		Total		Women		Men		Total		Women		Men	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
15-19	10,785	6	4,425	5	6,360	6	8,120	5	3,130	4	4,990	5	2,665	16	1,295	14	1,370	18
20-24	21,790	11	10,205	11	11,585	12	18,705	11	8,395	10	10,310	11	3,085	19	1,810	20	1,275	17
25-34	47,225	25	23,475	25	23,750	24	42,605	24	20,750	25	21,855	24	4,620	28	2,725	30	1,895	25
35-44	48,735	25	25,565	27	23,170	24	45,600	26	23,870	28	21,730	24	3,135	19	1,695	19	1,440	19
45-54	38,685	20	18,870	20	19,815	20	36,420	21	17,710	21	18,710	21	2,265	14	1,160	13	1,105	15
55-64	18,165	9	8,360	9	9,805	10	17,505	10	8,070	10	9,435	10	660	4	290	3	370	5
65 and over	5,185	3	1,675	2	3,510	4	5,020	3	1,605	2	3,415	4	165	1	70	1	95	1
Not Stated	1,025	1	585	1	440	0	945	1	555	1	390	0	80	0	30	0	50	1
Total	**191,595**	**100**	**93,160**	**100**	**98,435**	**100**	**174,920**	**100**	**84,086**	**100**	**90,835**	**100**	**16,675**	**100**	**9,075**	**100**	**7,600**	**100**

Table 3. Labour Force by highest examination passed, 2008.

EXAMINATION PASSED	LABOUR FORCE BY HIGHEST EXAMINATION PASSED AND SEX:2008 ALL BAHAMAS									
	TOTAL LABOUR FORCE				EMPLOYED			UNEMPLOYED		
	TOTAL	%	WOMEN	MEN	TOTAL	WOMEN	MEN	TOTAL	WOMEN	MEN
None	57,730	30	21,775	35,955	50,130	18,130	32,000	7,600	3,645	3,955
BJC/Pitman/RSA, Etc.	30,000	16	14,920	15,080	27,000	13,200	13,800	3,000	1,720	1,280
GCE O Level/BGCSE	35,770	19	20,040	15,730	32,555	18,035	14,520	3,215	2,005	1,210
GCE 'A' Level/Associate Degree	17,745	9	11,005	6,740	17,220	10,515	6,705	525	490	35
Degreed Persons	25,765	13	14,110	11,655	25,150	13,830	11,320	615	280	335
Professional (Non-University)/ Other Trade Certificate	22,085	12	10,485	11,600	20,835	9,895	10,940	1,250	590	660
Not Stated	2,500	1	825	1,675	2,030	480	1,550	470	345	125
Total	**191,595**	**100**	**93,160**	**98,435**	**174,920**	**84,085**	**90,835**	**16,675**	**9,075**	**7,600**

7 POPULATION DEMOGRAPHICS

7.1 POPULATION TRENDS

Fig. 1. Distribution of population by age and sex, 2004.

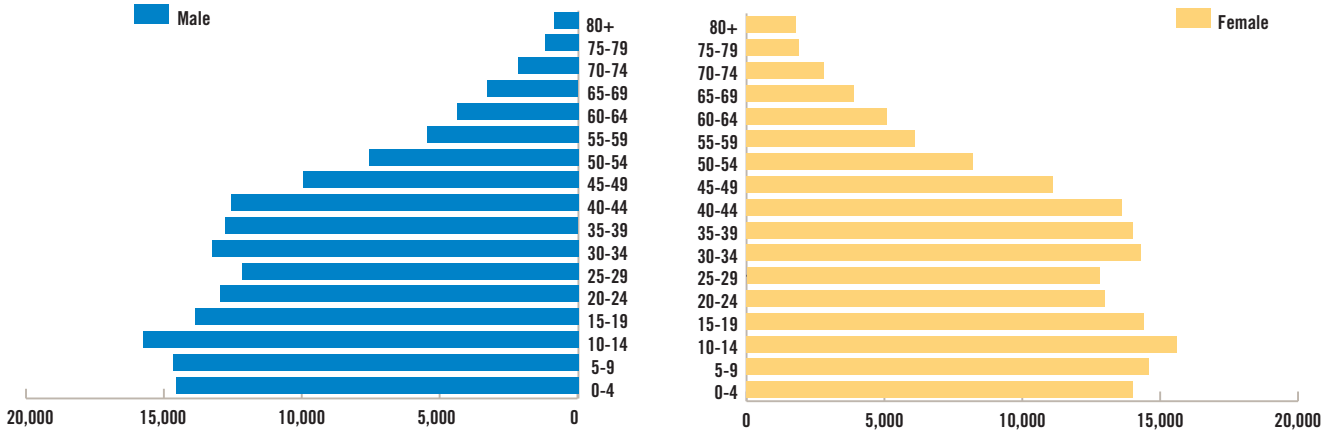
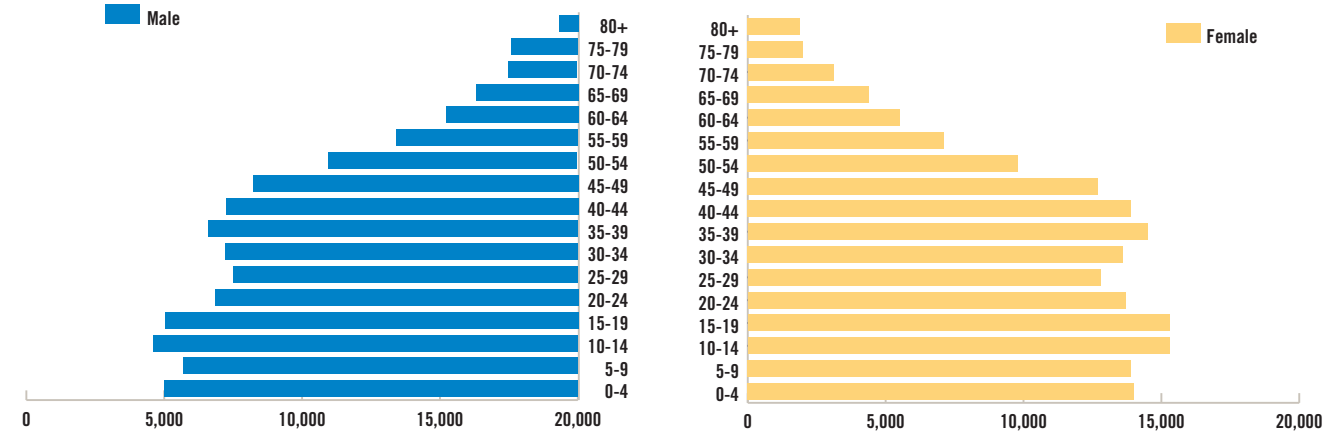


Fig. 2. Fig.2. Population distribution by age and sex, 2008.



Source: Department of Statistics

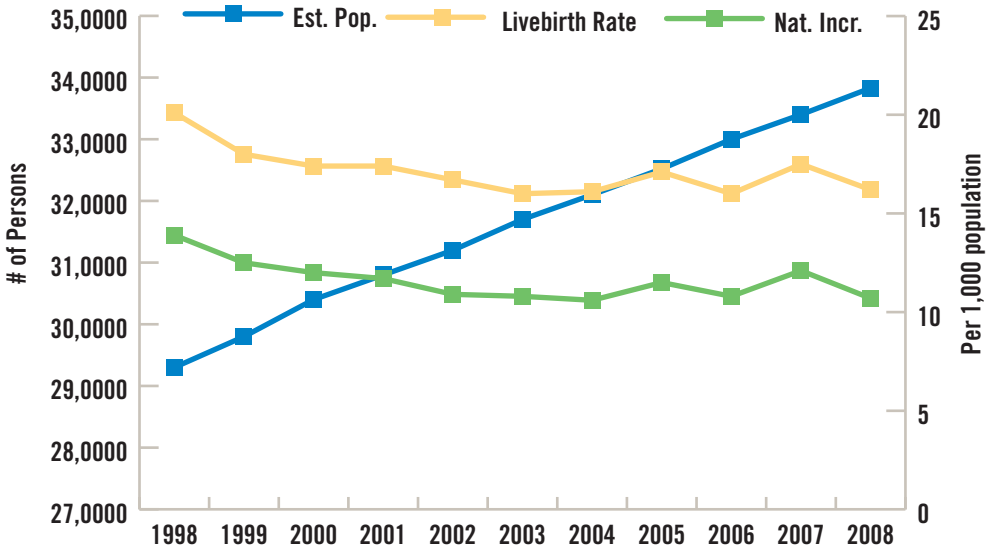
Population pyramids are evolving from a triangular shape to one like a barrel with a shrinking base, narrow apex and a bulging centre from which the labour force is drawn **(Figs. 1-2).** Given a low dependency ratio of 0.54, each person of employable age (15-59) needs to support less than one additional person who is not employed.

Table 4. Basic Demographic Indicators, 2002 - 2008

Indicator	Year						
	2002	2003	2004	2005	2006	2007	2008
Estimated Mid-Interval Population	312,100	316,298	320,800	325,200	329,500	334,000	338,300
Estimated # women 15-44 age group	79,800	80,700	81,400	82,100	82,900	83,200	83,800
Total Births	5,270	5,132	5,250	5,654	5,390	5,937	5,562
Live Births	5,216	5,054	5,154	5,548	5,296	5,854	5,480
Live Birth Rate (per 1,000 pop.)	16.7	16.0	16.1	17.1	16.0	17.5	16.2
Live Births (Registered*) for females 15-44 years	4,866	4,942	5,099	5,531	5,232	5,146	5,088
General Fertility Rate (live births per 1,000 females 15-49 yrs)	58.2	56.1	55.5	50.0	55.4	61.1	56.7
Total Fertility Rates	1.92	1.87	1.90	2.05	1.93	2.14	2.00
Total Number of Deaths	1,827	1,666	1,736	1,824	1,730	1,798	1,862
Deaths Rate (per 1,000 pop.)	5.9	5.3	5.4	5.6	5.2	5.4	5.5
Stillbirths	54	90	96	106	94	83	82
Stillbirth Rate (per 1,000 total births)	10.4	17.8	18.6	19.1	17.7	14.2	15.0
Natural Increase	3,414	3,388	3,418	3,724	3,566	4,056	3,618
Natural Increase Rate (per 1,000 pop.)	10.9	10.8	10.6	16.5	10.8	12.1	16.0
Infant Deaths	87	87	89	109	96	103	98
Infant Death Rate (per 1,000 live births)	16.7	17.2	17.3	19.6	18.1	17.6	17.9
Perinatal Death Rate (per 1,000 total births)** *(2006, estimated occurrence)	...	21.2	22.3	25.9	24.8	28.5	23.2
Neonatal Deaths *(2006, estimated occurrence)*	...	30	30	72	69	81	66
Neonatal Death Rate (per 1,000 livebirths)*	...	5.9	5.8	13.0	13.0	13.8	12.0
Maternal Deaths (Registered)	0	2	2	5	0	4	3
Child Deaths (1-4 Years)	...	10	15	18	8	6	15
Child Mortality Rate (per 10,000 children)	...	3.9	6.5	7.8	3.4	2.7	6.5

Sources: Department of Statistics and Health Information & Research Unit, Ministry of Health

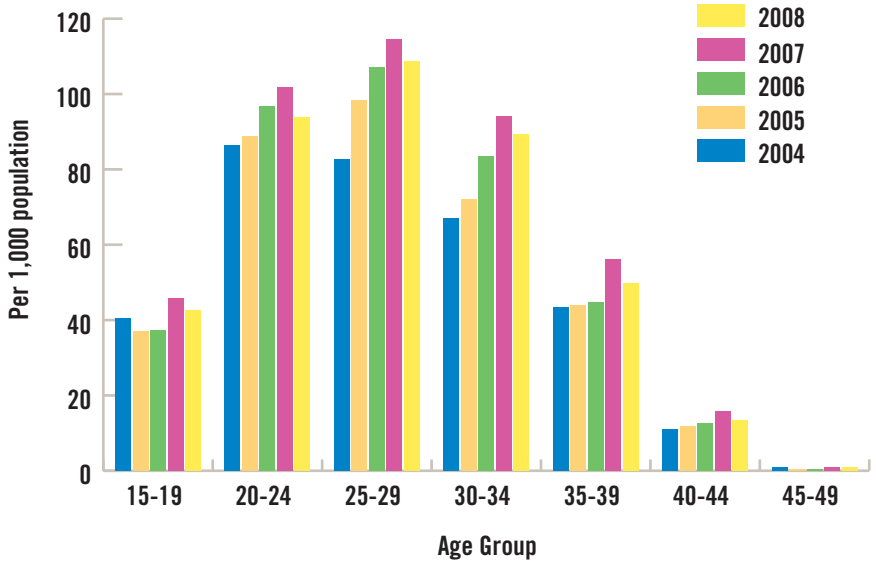
Fig. 3. Trends in population growth and associated factors, 1998 - 2008



Source: Department of Statistics

The natural increase of population varied between 10.6 and 12.1 persons per 1000, contributing to a stable average annual population growth of 1.9% for the past decade (**Fig. 3**).

Fig. 4. Age-specific fertility rates by age-group, 2004 - 2008



Source: Health Information and Research Unit

A slight increase in fertility rates was seen in all age-groups, including the 15-19 year old group (**Fig. 4**). This overall increase in all age groups peaked in 2007, with a decrease in 2008, however the rates never returned to the levels of 2004.

7.2 POPULATION MORTALITY TRENDS

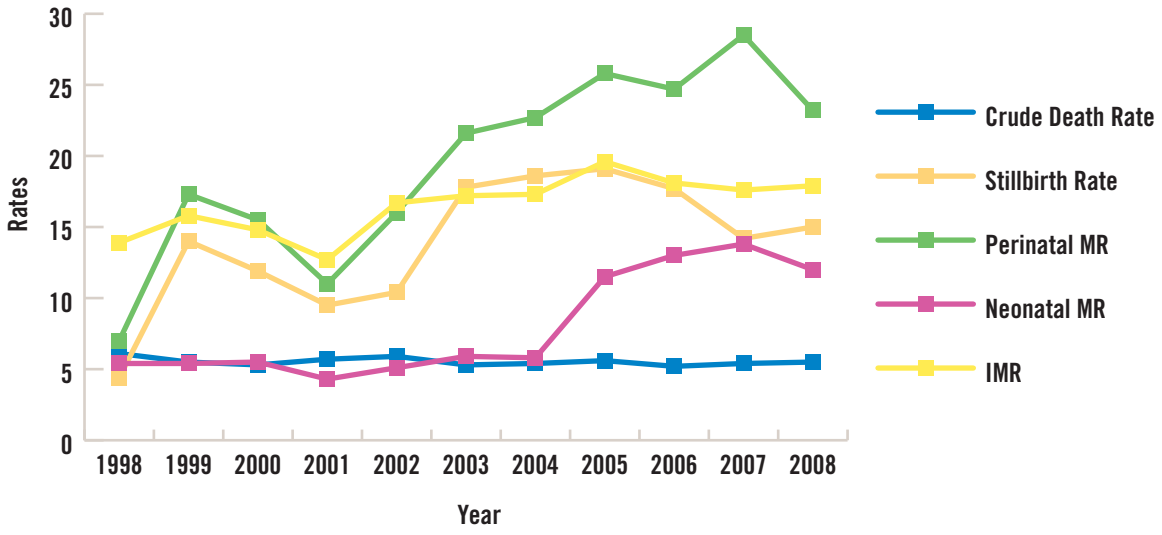
As death rates stabilized, so did life expectancies, with gains becoming relatively smaller (**Table 5).** Male life expectancy has steadily increased, while female life expectancy has varied slightly but remains greater than male life expectancy.

Table 5. Life expectancy at birth, 1980 – 2008

	ca. 1980		ca. 1990		ca. 2000		2008	
	L.E.	C.D.R.	L.E.	C.D.R.	L.E.	C.D.R.	L.E.	C.D.R.
Male	64.3	7.9	68.3	5.9	69.9	6.1	71.0	6.2
Female	72.1	5.0	75.3	4.6	79.4	4.7	76.7	4.8

Source: Department of Statistics

Fig. 5. Mortality rates – crude death rate per 100,000 pop., infant, neonatal and perinatal mortality rates per 1000 livebirths, and stillbirth rates per 1000 livebirths, 1998 - 2008



Source: HIRU

Stillbirth rates, and hence, perinatal mortality rates show a rising trend (**Fig. 5).** Neonatal deaths more than doubled in 2005, from 30 to 72; although decreasing from then onwards, these remained higher than previous levels (**Tables 4, 6).** Also notable was an increase in late neonatal deaths to 25 in 2005 from 8 the previous year, with no significant decline in subsequent years. The apparent increase may be due to improved reporting. It is remarkable that this was also the year of greatest natural increase.

Table 6. Foetal and infant Deaths by age, 1999 - 2008

YEAR	FOETAL DEATHS	REGISTERED INFANT DEATHS BY AGE			TOTAL INFANT DEATHS	
		<6 days	7-27 days	28 days-11mths.	Registered	Est. Occurrences*
1999	75	18	14	17	49	85
2000	63	19	10	23	52	78
2001	51	8	15	14	37	68
2002	54	...	...	...	...	87
2003	90	19	11	24	54	87
2004	96	21	8	27	56	89
2005	86	40	25	36	101	109
2006	72	30	23	26	89	96
2007	83	31	21	17	69	103
2008	82	29	11	31	71	98

**Based on institutional census.*

N.B. *Differences between tables on infant deaths due to late registration.*

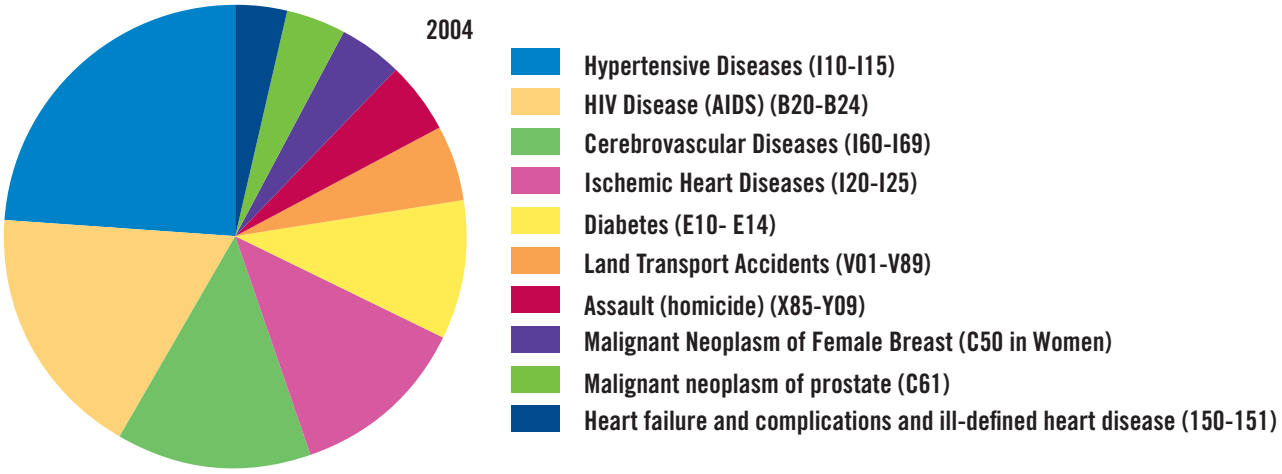
Source: Registered Deaths, Department of Statistics and Health Information & Research Unit

Table 7. Crude deaths rates (per 100,000 pop.) and ranks for leading causes of death, 2004 – 2008.

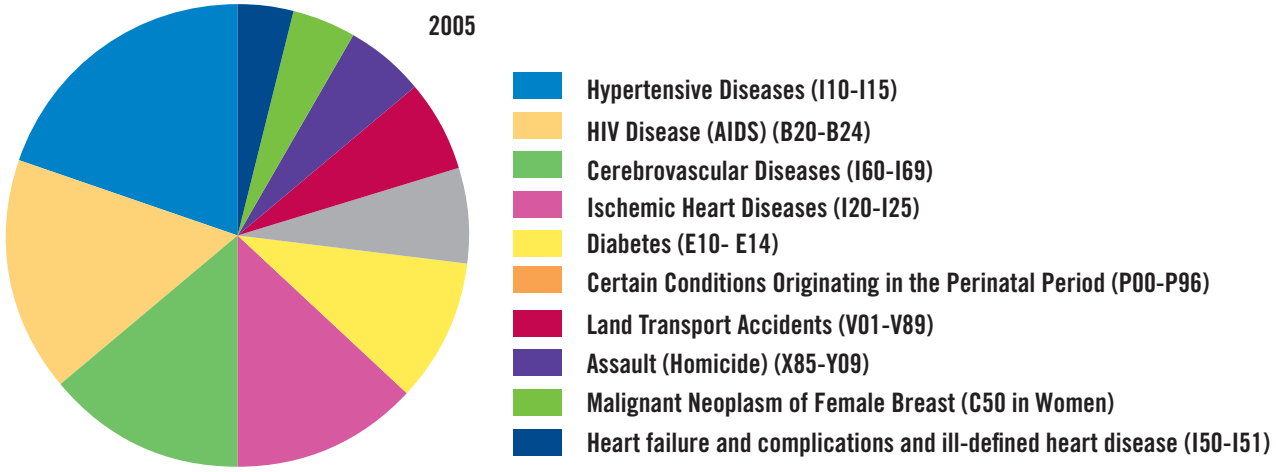
Condition	2004		2005		2006		2007		2008	
	CDR	Rank	CDR	Rank	CDR	Rank	CDR	Rank	CDR	Rank
Hypertensive Dis.	67.0	1	58.1	1	51.9	2	42.5	1	46.7	2
HIV/AIDS	49.8	2	48.6	2	56.4	1	39.8	2	34.6	4
Cerebrovascular Dis.	38.9	3	41.8	3	31.9	5	37.7	4	43.7	3
Ischaemic Heart Dis.	34.9	4	38.7	4	47.6	3	38.0	3	48.5	1
Diabetes Mellitus	27.1	5	29.2	5	29.7	6	28.1	5	24.2	5
Cancer of the Breast	24.8	6	25.1	6	32.5	4	25.6	7	25.4	10
Cancer of the Prostate	23.7	7	23.4	7	25.0	7	25.9	6	35.8	7
Motor Vehicle Inj.	15.6	8	19.1	8	14.0	9	14.7	9	13.9	8
Homicides	13.7	9	16.9	9	17.9	8	24.9	8	22.5	6

These nine conditions, namely hypertensive disease, HIV/AIDS, cerebrovascular disease, ischaemic heart disease, diabetes, motor vehicle injuries, homicides, cancer of the breast in women and of the prostate in men, accounted for roughly half of all deaths each year – 53.4% in 2004, 48.1% in 2005, 54.2% in 2006 and 45.2% in 2007 (**Table 7, Figs. 6, 7**) . Hypertension has remained the single leading cause of death in all years, except 2006 and 2008, when it was replaced by HIV/AIDS (2006) and ischaemic heart disease (2008). Most noteworthy is the marked increase in homicide rates, which have almost doubled in four years, where males were nine times more likely to be murdered than females. Also noted are decreases in the rates of deaths due to cancer of the breast in females and HIV/AIDS, although the death rates due to HIV/AIDS for males were almost one and a half times higher than that for females. Death due to diabetes is the only rate that has remained constant over time, despite population-based interventions that have been initiated.

Fig. 6. Leading causes of death, 2004, 2005

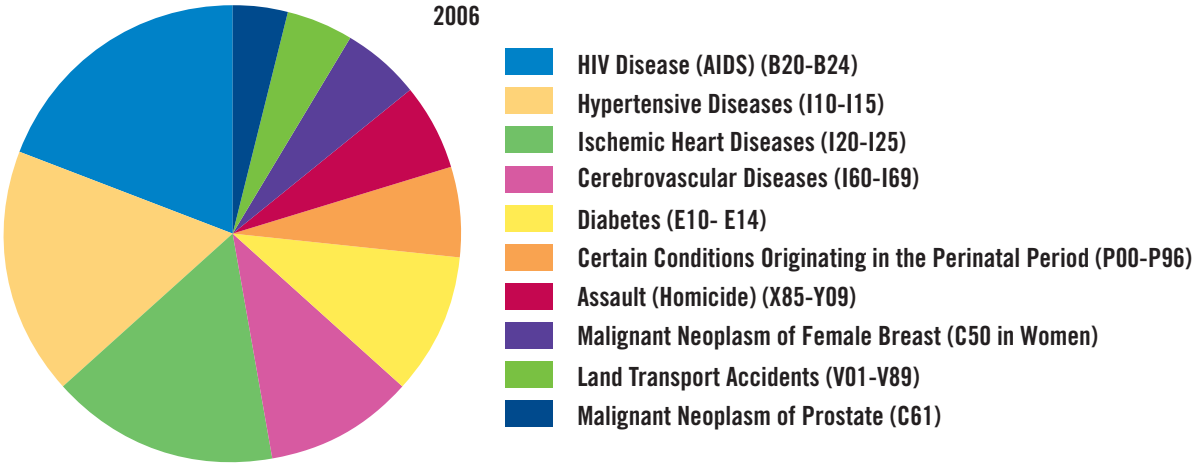


Based on PAHO's Standard List for Leading Causes of Death, 2006 (ICD10)
Source: Department of Statistics
Prepared By: Health Information and Research Unit, Ministry of Health 02/07

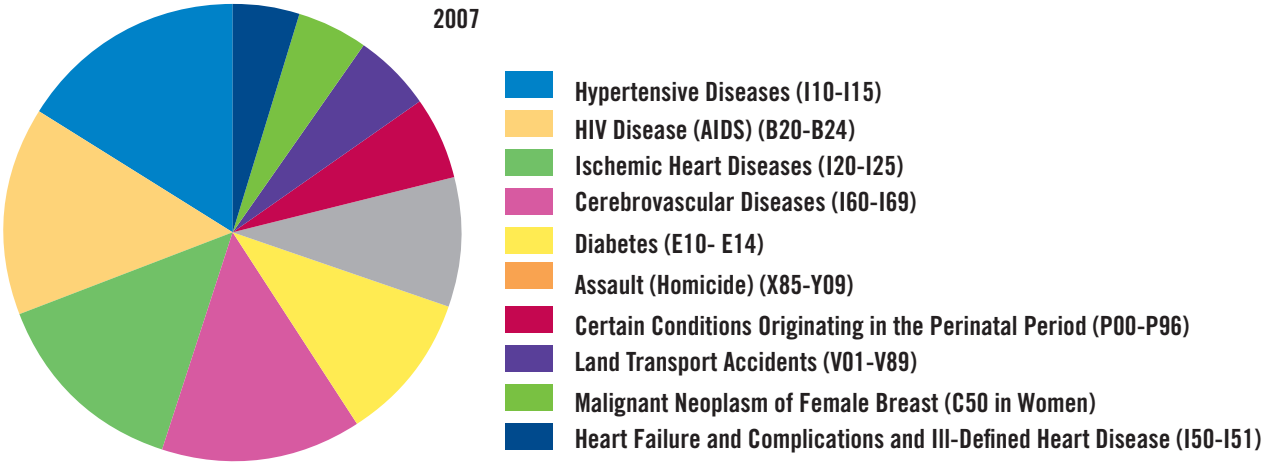


Based on PAHO's Standard List for Leading Causes of Death, 2006 (ICD10)
Source: Department of Statistics
Prepared By: Health Information and Research Unit, Ministry of Health 06/07

Fig. 7. Leading causes of death, 2006, 2007

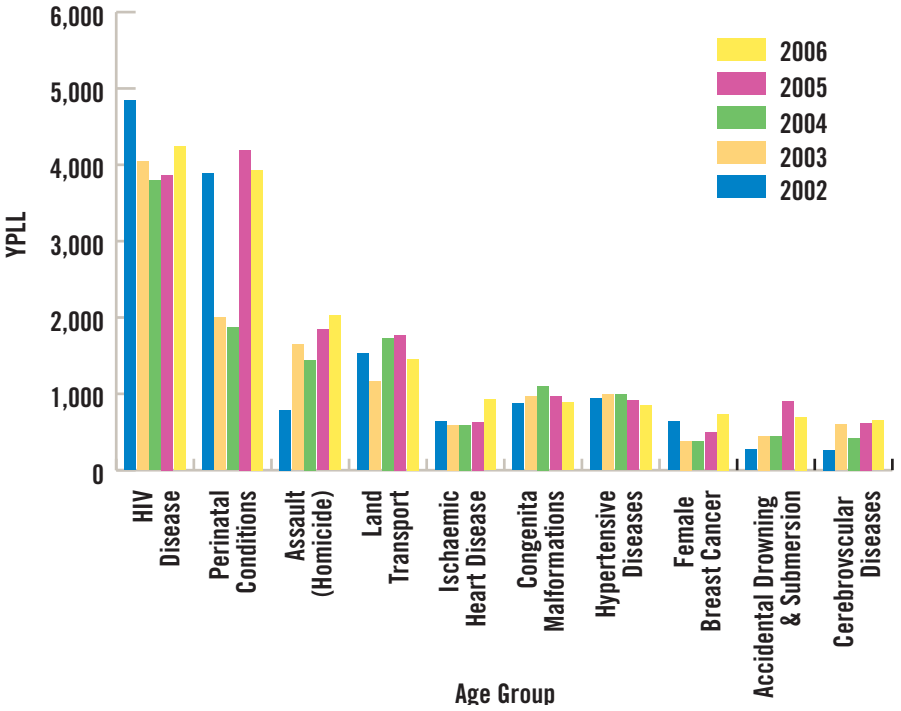


Based on PAHO's Standard List for Leading Causes of Death, 2006 (ICD10)
Source: Department of Statistics
Prepared By: Health Information and Research Unit, Ministry of Health 06/07



Based on PAHO's Standard List for Leading Causes of Death, 2006 (ICD10)
Source: Department of Statistics
Prepared By: Health Information and Research Unit, Ministry of Health 01/2010

Fig. 8. Years of potential life lost (YPLL) 2002-2006



Source: HIRU

When mortality is measured using Years of Potential Life Lost (YPLL), HIV/AIDS outranks hypertension as the leading cause of mortality (**Fig. 8**), because people with hypertension generally die later in life. For this reason, too, perinatal conditions and congenital anomalies ranked highly. Most troubling was a four-fold increase in YPLL due to homicides, the result of more deaths at increasingly younger ages.

8 SECTOR POLICIES, PLANS & SUPPORTING SYSTEMS

8.1 POLICIES TO GUIDE DELIVERY OF SERVICES

The National Food and Nutrition Policy and Agenda for Action for The Bahamas

The Government of The Commonwealth of The Bahamas recognizes the correlation between the social determinants and health outcomes. A healthy population is more productive, better able to learn and acquire skills, and more apt to engage in socially acceptable leisure and pleasure activities.

Notably, there is a close interrelationship between food, nutrition, levels of physical fitness and health status. Good nutrition leads to proper growth and development, protects against diseases and reduces health care costs. The health and well being of a population are dependent upon a good quality food supply system that is accessible, affordable, available, and sustainable. These fundamental elements of food security contribute significantly to quality of life. Low levels of physical fitness and lack of exercise are considered independent risk factors for many of the CNCDs, including hypertension, diabetes mellitus type 2, coronary heart disease, and some cancers.

The Ministry of Health and the Ministry of Agriculture and Marine Resources recognize this important relationship and the need for a comprehensive policy on food and nutrition. In collaboration with other government ministries, a multi-sectoral committee was established to review the current food, nutrition and health situation, and set guidelines for improving food and nutrition security for all segments of the population and the many visitors to the country. The result was the development of the Food and Nutrition Policy and Agenda for Action, which was proposed in 2008 by the Ministry of Health as a draft document, but not yet ratified.

8.2 PLANS, THEIR ASSESSMENTS AND EVALUATIONS

The National Health Service Strategic Plan 2006-2015 was drafted in 2005 but not given final approval. While this plan was not finalized, portions of the draft document helped to guide programmes during the period of this report.

8.3 LEGISLATION IN SUPPORT OF SERVICE DELIVERY

The following pieces of legislation have been prepared and/or enacted to facilitate delivery of quality health services to the people of the Commonwealth of The Bahamas.

Draft Revision of The Medical Act

The draft Medical Act, which will repeal the existing Act, makes the Medical Council more effective by establishing it as a more autonomous body with four committees: a preliminary Proceedings Committee, an Education Committee, a Health Committee and a Professional Conduct Committee. It is expected that the Act, once passed, will provide administrative structures to: (1) better regulate the medical profession, (2) upgrade doctors' skills through its continuing education requirements, and (3) better safeguard the public through improved means of receiving and responding to complaints.

Amendment to The Dental Act

A Bill for an Act to Regulate the Practice of Dentistry will repeal and replace the existing Dental Act, and will modernize and expand law and policy governing the practice of dentistry in The Bahamas by establishing statutory committees within the Dental Council. Clause 4 of the Bill establishes an Education Committee, a Health Committee, a Preliminary Proceedings Committee, and a Disciplinary Committee.

The Nurses and Midwives Act

The drafted Bill aims at addressing certain gaps in the existing Nurses and Midwives Act, Chapter 225. New provisions address the extended roles of nurses and midwives, the registration of specialty nurses and nurse practitioners, and their continuing professional education. Further provision is made to require practicing nurses and midwives to hold a license from the Nursing Council upon prescribed conditions. A requirement for ongoing medical education will be added as one of the criteria in the licensing of nurses and midwives.

The Health Services Act (Chapter 231) The Health (Amendment) Rules 2010

An amendment to Rule 77 of the Health Services Act was proposed to facilitate new requirements for the certification of food handlers, as opposed to previous requirements based on an examination by a medical practitioner.

The Health Services Act, Chapter 231) Public Health Emergency Rules

The new Public Health Emergency Rules are proposed to bring The Bahamas into compliance with International Health Regulations (2005) of the WHO, adopted by the 58th World Health Assembly on May 23, 2005.

8.4 HEALTH INFORMATION

iPHIS plans

The Integrated Public Health Information System (i-PHIS) is an automated client health record and reporting system that supports interventions by public health providers, including tracking, follow-up, case management, and public health reporting. The system is intended to provide access to all client records by multiple health care providers across The Bahamas. In February 2003 the Public Health Agency of Canada's (PHAC) i-PHIS application was presented to representatives from the Department of Public Health. The application was found to meet most of the key requirements for the Department of Public Health in The Bahamas.

A pilot study was conducted in June 2004 and evaluated a few months later in November. The evaluation team recommended that The Bahamas proceed in implementing i-PHIS across The Bahamas. Implementation of i-PHIS began in March 2007 and has continued since. Challenges remain, however, in terms of connectivity across the archipelago and for adequate computer support among the country's 30 inhabited islands.

9 HEALTH INFRASTRUCTURE

9.1 ORGANIZATIONAL STRUCTURE

The Ministry of Health's organizational structure has experienced four challenging years, with various agencies added to or removed from the Minister's portfolio during this time. Additions to the Ministry's organizational structure diverted attention from other matters impacting the country's health during these years.

Organizational Structure 2004-06 (February)

The Ministry of Health and the Environment was re-structured, with two of the three arms of public health under its authority: the Departments of Public Health and Environmental Health Services. Veterinary public health was placed under the authority of the Ministry of Agriculture.

Organizational Structure 2006-07 (February)

Ministry of Health and National Insurance
For one year, the MOH became Ministry of Health and National Insurance. This change aligned with the Government's initiative to provide universal health insurance (National Health Insurance). The resulting organizational structure moved the Department of Environmental Health Services to another Ministry; however, the Public Analyst's Laboratory remained under the Ministry of Health.

Organizational Structure 2007 (February – May)

Ministry of Health, National Insurance and Public Information
The Ministry of Health and National Insurance expanded for three months, to include Public Information, which included Bahamas Information Services and the Broadcasting Corporation of The Bahamas, Radio and Television Broadcasting.

Organizational Structure 2007 (May-June)

Ministry of Health
In May 2007, a new Government of The Bahamas was elected. Subsequent Cabinet appointments included a Minister for Health, whose portfolio included both the Ministry of Health and the Department of Environmental Health.

Organizational Structure 2007-2008 (July)

Ministry of Health and Social Development (including DEHS)
The Ministry of Health, which included the Department of Environmental Health Services, expanded to include Social Development for a little over a year.

Organizational Structure 2008 (September)

Ministry of Health (excluding DEHS and Social Development)
In September 2008, Cabinet re-assignments resulted in the Minister with responsibility for Health retaining only the Ministry of Health.

Organizational Structure 2004-2008

Public Hospitals Authority (PHA)
PHA's organizational structure remained stable from 2004-08, maintaining responsibility for three government hospitals, the primary health care system in Grand Bahama (Grand Bahama Health System), for shared services by the Bahamas National Drug Agency and Materials Management Directorate, and for the Emergency Medical Service.

Department of Public Health

The Department of Public Health was under the direction of the Director of Public Health during the period 2004-07. DPH was placed under the Office of the Chief Medical Officer from November 2007 to March 2009, during which time MOH conducted a search to fill the position of the Director of Public Health.

9.2 SERVICE DELIVERY

Primary health care is the core foundation of public health care services. This is delivered through a network of 28 health centres, 33 main clinics, and 35 satellite clinics dispersed across 30 inhabited islands. Through these local facilities, medical and nursing staff conduct general ambulatory care clinics and chronic non-communicable disease clinics that service patients with hypertension and diabetes, as well as specialized services through antenatal, postnatal and immunization clinics provided as part of a maternal and child health (MCH) programme, as well as school health and oral health clinics.

These different types of clinics include:

- Health centre: a health facility with resident medical officer and nursing staff— offers overnight beds for patients and deliveries; offers ambulatory care, X-ray facilities, MCH services, and other specialized care.
- Main clinic: a health facility with a resident and/or visiting medical officer, or with a resident nurse but no overnight bed facility—offers MCH services and minimal emergency care.
- Satellite clinic: a small facility for visiting medical and nursing staff—usually provided for people living in remote areas.

Other national programmes that support the MOH's primary health care thrust include:

- Health Education and Promotion
- Prison Health
- Infectious Disease Surveillance
- National HIV/AIDS Programme
- Chronic Non-Communicable Disease Surveillance
- Healthy Lifestyles and Nutrition
- Department of Environmental Health Services
- Health Information and Research Unit

Complementing the primary health care system are three public hospitals and their services to in-patients and out-patients:

- **The Princess Margaret Hospital**, (PMH)—400+ bed acute care facility that is the country's referral institution located in Nassau, New Providence. Its services/clinics include physiotherapy, speech therapy, occupational therapy, neurodevelopment, dialysis, ophthalmology, ear, nose and throat (ENT), obstetrics, oncology, oral health, orthopaedics, paediatrics, psychiatry, dermatology, surgery, and general medicine.
- **The Rand Memorial Hospital** (RMH)—85-bed hospital located on Grand Bahama, offering antenatal and postnatal clinics, paediatrics, gynaecology, psychiatry, orthopaedics, ophthalmology, ENT, surgery and general medicine.

- **The Sandilands Rehabilitation Centre** (SRC)—367-bed psychiatric and geriatric hospital in New Providence, offering a variety of mental health services including detoxification and occupational therapy.

The health system also includes private hospitals, Doctors Hospital and Lyford Cay Medical Facility and a chain of walk-in clinics, private practitioners and private medical offices.

9.3 FACILITIES

9.3.1 HOSPITALS

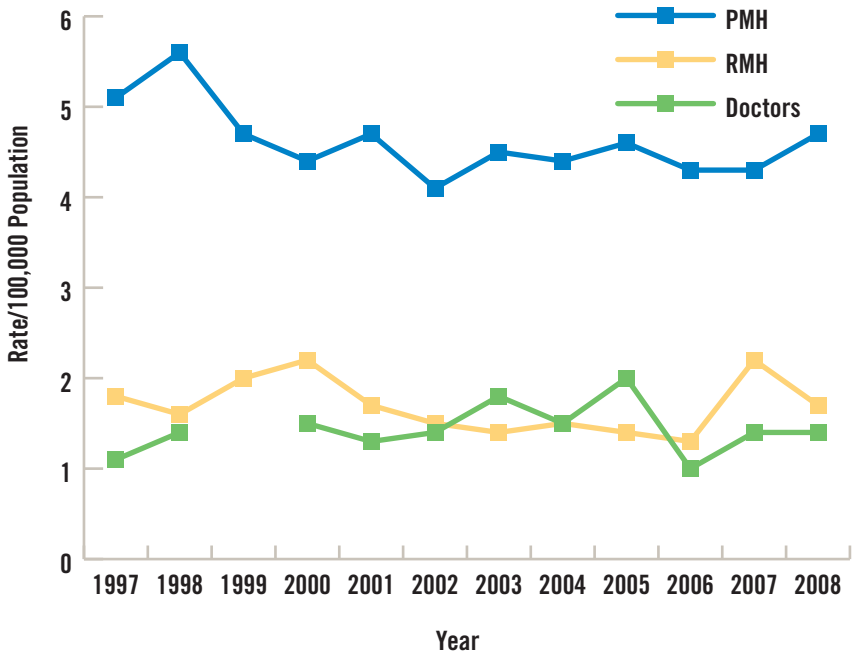
Table 8a. Hospital Statistics, 2004 – 2008.

Princess Margaret Hospital	2004	2005	2006	2007	2008
Number of Beds	423	405	405	405	405
Number of Discharges	15,212	14,846	14,876	14,969	15,874
Average Length of Stay	6.8	6.8	7.7	7.8	7.2
% Occupancy	69.6	70.4	81.4	82.0	80.2
Total Outpatient Visits	119,622	145,779	141,988	132,215	142,247
Rand Memorial Hospital					
Number of Beds	86	85	85	85	85
Number of Discharges	4,861	4,870	4,961	4,832	5,184
Average Length of Stay	3.2	3.3	3.3	3.2	3.2
% Occupancy	52.6	51.8	52.8	50.2	54.6
Total Outpatient Visits	56,036	60,827	60,848	64,618	68,196
Doctors Hospital					
Number of Beds	72	72	72	72	72
Number of Discharges	2,887	3,051	3,104	3,168	3,060
Average Length of Stay	3.7	4.1	4.0	4.2	4.3
% Occupancy	40.4	47.8	47.0	50.7	50.0
Total Outpatient Visits	12,976	14,826	15,155	10,039	10,155
Lyford Cay Hospital					
Average Outpatient Visits	**...**	**...**	**...**	**...**	**7,020**

Source: HIRU, Ministry of Health; Lyford Cay Hospital

In-patient stays at PMH were longer than those of RMH and Doctor's Hospital (**Table 8a**). Although PMH's in-patient mortality rate decreased during the past ten years, it remains nearly twice that of the other two institutions **(Fig. 9).** PMH serves as a primary referral hospital for the country. RMH refers severely ill patients to PMH under a transfer agreement for more specialized services. Lyford Cay Hospital does not support inpatient services and currently only provides outpatient services to its clientele.

Fig. 9. Hospital in-patient death rates, 1997 – 2008.



Source: HIRU, Ministry of Health

Table 8b. Hospital Statistics, Sandilands Rehabilitation Centre, 2004 – 2008.

Psychiatric Hospital	2004	2005	2006	2007	2008
Number of Beds	367	367	367	367	367
Number of Discharges	1,044	1,099	1,258	1,231	1,191
Average Length of Stay	108.4	102.0	92.6	92.7	95.3
% Occupancy	84.3	90.1	90.9	89.3	88.4
Total Outpatient Visits*	22,548	21,471	20,660	20,849	21,293
Geriatric Hospital					
Number of Beds	128	128	128	128	128
Number of Discharges	49	36	28	32	23
Average Length of Stay	610.0	767.3	867.2	672.3	829.1
% Occupancy	88.5	88.7	83.5	82.0	77.9

** These outpatient visits are held at the Community Counseling and Assessment Centre; figures estimated for 2007 and 2008.*

The average length of stay in the geriatric hospital is reflective of its function as primarily a custodial facility for the elderly. This extended length of stay speaks to the need for service costing under different models. The cost of providing services in a nursing home setting, with a greater emphasis on custodial care and less utilization of skilled staff in institutions, is a more efficient financing mechanism.

9.3.2 HEALTH CENTRES

Table 9. Community Health Centre Service Statistics, BAHAMAS, 2004-2008

New Providence	2004	2005	2006	2007	2008
Antenatal Clinic	23,117	25,848	24,831	27,076	25,957
Postnatal Clinic	9.432	10,047	11,778	10,811	8,857
Child Health Clinic	61,561	59,470	61,734	65,258	63,559
School Health Clinic	31,727	24,903	36,841	37,396	35,947
Other Clinic Services	108,161	97,894	95,086	101,715	93,821
Other Domiciliary Services	16,131	18,150	13,765	15,656	18,482
Total Outpatient Visits	**250,589**	**236,312**	**244,035**	**257,912**	**246,623**
Grand Bahama and the Family Islands					
Antenatal Clinic	9,309	9,519	9,622	9,590	9,245
Postnatal Clinic	4,072	4,729	5,521	6,026	5,850
Child Health Clinic	38,022	34,759	36,916	36,386	37,247
School Health Clinic	28,049	26,254	26,834	27,338	26,595
Other Clinic Services	127,658	128,297	131,954	142,754	142,097
Other Domiciliary Services	21,174	24,028	24,271	27,988	28,593
Total Outpatient Visits	**228,284**	**227,586**	**235,118**	**250,082**	**249,627**

Source: HIRU

Persons living in the Family Islands have made greater use of outpatient clinics. This is evidenced by an outpatient visit ratio of 3.38 visits per person compared to 1.13 per person for New Providence and 1.57 per person for Grand Bahama. This may be the result of greater access to and/or utilization of private facilities on New Providence. The total number of outpatient visits (**Table 9**) in New Providence remained relatively stable from 2004-08, while in Grand Bahama and the Family Islands the trend appears to be increasing with time.

Fig. 10. Clinic visits in New Providence, Grand Bahama and the Family Islands, 2004 - 2008

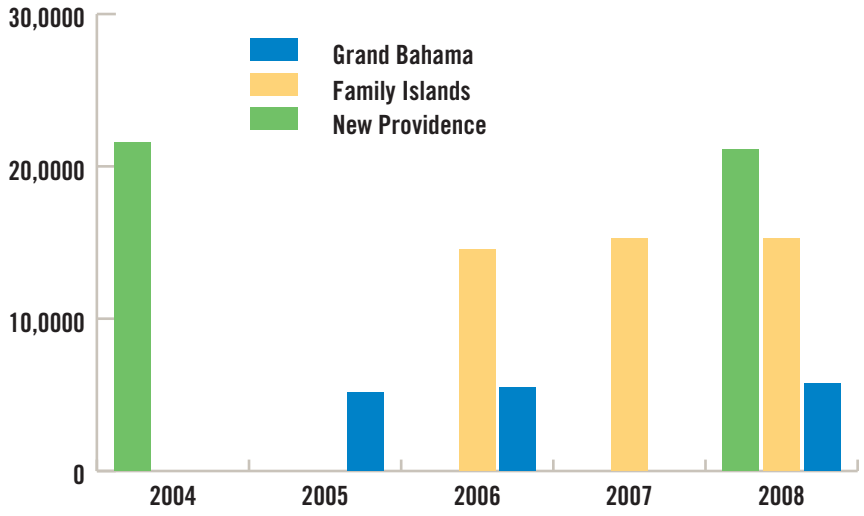
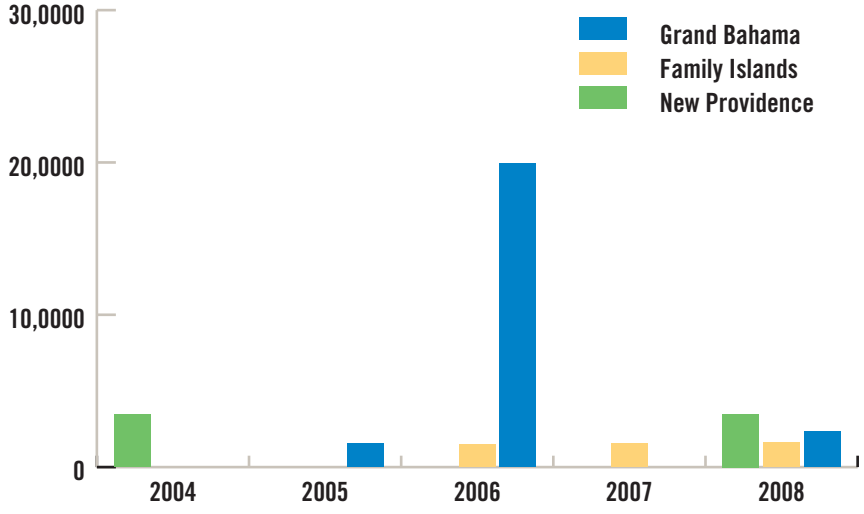


Fig. 11. Home visits in New Providence, Grand Bahama and the Family Islands, 2004-2008



9.4 RESOURCES

9.4.1 MANPOWER

Statistics for the health professions' human resource (HR) capacity for 2004-08 (**Table 10**) reflect an overall increase across all disciplines. In 2003, MOH recognized the need to maintain an adequate HR capacity in the nursing profession, in light of health care worker migration; thus, they developed a Nursing Recruitment and Retention Plan that prevented further mass migration of nurses from the system. The University of the West Indies Medical School saw an increased enrollment of Bahamian medical students, which is reflected in the increasing number of physicians in the work force, particularly from 2006-08.

Table 10. Human resources per 10,000 population, 2004 – 2008.

Health Care Workers	2004		2005		2006		2007		2008	
	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate
Physicians	720	22.4	756	23.2	849	25.1	907	27.2	947	28.0
Dentists	76	2.4	77	2.4	78	3.1	78	2.3	79	2.4
Registered Nurses	792	24.7	812	25.0	832	24.6	1004	31.4	1029	32.1
Trained Clinical Nurses	445	13.8	480	14.8	460	13.6	502	15.7	515	16.1
Pharmacists	158	4.9	140	4.3	156	4.9	142	4.4	138	4.1
Nutritionists & Dietitians	16	0.5	15	0.5	11	0.3	15	0.5	11	0.3
Radiographers	49	1.5	59	1.8	58	1.8	54	1.7	56	1.7
Med. Lab. Technologists	123	3.8	116	3.6	125	3.9	102	3.2	102	3.0

Source: Health Professions Council, Bahamas Medical Council, Bahamas Dental Council,

9.4.2 HEALTH SERVICES FINANCING

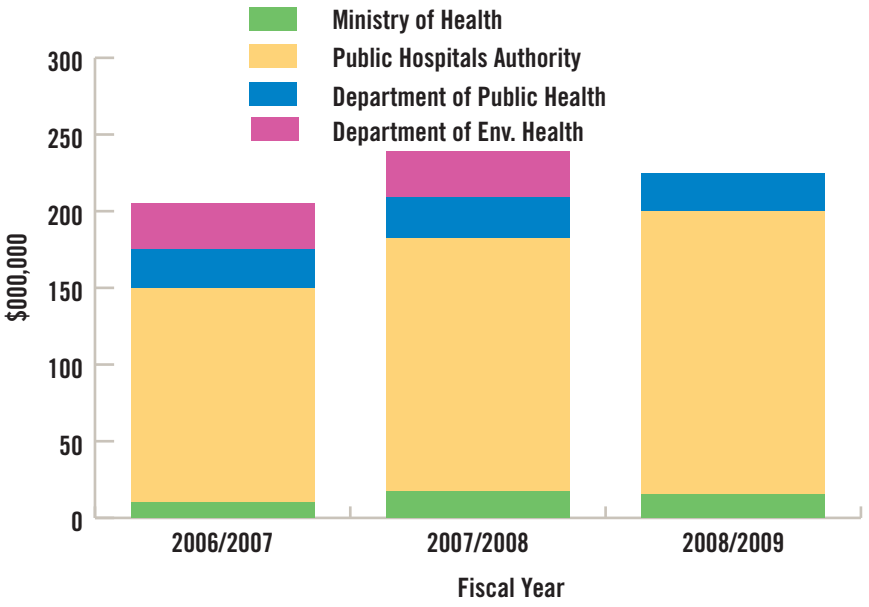
Table 11. Annual Health Budgets 2003/2004-2008/2009

Department	RECURRENT EXPENDITURES					
	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009
Ministry of Health	9,652,124	9,911,680	9,960,913	10,852,257	18,971,627	19,202,679
Department of Environmental Health	23,084,386	25,929,089	26,042,597	28,330,522	33,187,604	[1]
Department of Public Health	19,323,932	20,143,494	20,626,198	23,804,235	27,597,797	29,883,366
Public Hospitals Authority	108,611,339	118,948,888	127,926,488	142,420,539	164,364,206	174,140,170
Total	**160,671,781**	**174,933,151**	**184,556,196**	**205,407,553**	**242,121,234**	**223,226,215**
	Capital Expenditures					
Ministry of Health & Department of Public Health	...	1,558,415	1,736,877	1,846,000	4,086,000	3,900,000
Public Hospitals Authority	...	5,535,698	6,169,618	6,467,890	6,182.739	2,000,000
Department of Environmental Health Services	...	148,396,480	5,332,954	5,615,186	6,958,683	[2]
Totals	**...**	**155,490,593**	**13,239,449**	**13,929,076**	**11,727,419**	**5,900,000**

Source: finance Department, Ministry of Health:

1. *Department of Environmental Health Services was no longer under the Ministry of Health budget in 2008/2009.*
2. *Department of Environmental Health Services was no longer under the Ministry of Health budget in 2008/2009.*

Fig. 12. Expenditure on health activities, 2006 -2008



Source: Planning Unit, Ministry of Health

The Ministry of Health operates under a continuously increasing annual budget, which by fiscal year 2007/08 had reached roughly 242 million dollars. The majority of that budget was allocated to recurrent expenditures, the largest portion assigned to the Public Hospitals Authority for the inpatient management of health services. Outside of the MOH operational budget, the Department of Public Health operates the smallest portion of the health budget—while maintaining primary health care services on approximately 30 inhabited islands throughout the archipelago. The 2008/09 budgetary decrease reflects deployment of the Department of Environmental Health Services to another Ministry (**Fig. 12**).

10 HEALTH SERVICES & PROGRAMMES

10.1 MATERNAL AND CHILD HEALTH

Table 12. Summary of antenatal services, coverage and utilization, 2004 – 2008.

Service & Coverage	2004		2005		2006		2007		2008	
	#	%	#	%	#	%	#	%	#	%
# Pregnant women		4214		4330		4290		4606		4500
< 15 years	96	2.3	29	0.7	30	0.7	38	0.8	22	0.5
15-19 years	925	22.0	774	17.9	813	19.0	875	19.0	860	19.1
5+ gravid	219	5.2	208	4.8	270	6.3	244	5.3	200	4.4
Seen in <16 wks	1985	47.1	2115	48.8	2103	49.7	2098	45.6	2024	45.0
3+ visits @ 36 wks.	1457	81.6	1419	71.3	1668	89.7	1609	91.5	1689	77.8
High BP	234	5.8	219	5.2	315	8.0	315	7.1	227	5.3
Hb<10gm	460	11.5	400	9.6	389	9.7	302	7.1	290	7.2
Positive sugar	147	3.6	138	3.3	144	3.5	126	2.9	71	1.7
Positive albumin	291	7.2	379	9.1	465	11.5	432	9.7	331	7.9
GC Positive	273	8.3	239	7.0	188	5.1	390	10.4	275	7.3
VDRL positive	95	2.5	76	1.9	38	1.1	92	2.2	78	2.0
New cases of PET	139	3.3	200	4.6	144	3.4	147	3.2	135	3.0
New cases of eclampsia	4	0.1	19	0.4	25	0.6	7	0.2	3	0.1
New cases of severe anaemia	51	1.2	32	0.7	32	0.7	23	0.5	16	0.4

Source: Health Information and Research Unit

Table 13a. Summary of perinatal information (Maternal indicators) 2005 – 2008

Indicator	2005		2006		2007		2008	
	#	%	#	%	#	%	#	%
Mothers	4902		4713		5268		5021	
Mothers with pathology	202	4.1	184	3.9	265	5.0	140	2.8
" " " - multiple pregnancies	59	1.2	61	1.3	80	1.5	53	1.7
" " " - previous hypertension	13	0.3	20	0.4	29	0.6	9	0.2
" " " - preeclampsia	70	1.4	60	1.3	105	2.0	48	1.0
Prenatal visits	4616	94.2	4415	93.7	4934	93.7	4419	88.0
No visits or no data	286	5.8	298	6.3	334	6.3	302	6.0
Premature labour	788	16.1	665	14.1	724	13.7	677	13.5
Delivery - C-section	1083	22.1	1139	24.2	1339	25.4	1281	25.5
Contraceptive advice	2266	46.2	1020	21.6	2888	54.8	2469	49.2

Source: PAHO/WHO CLAP Perinatal Information System (SIP)

Table 13b. Summary of perinatal information (Neonatal indicators), 2005 - 2008

Indicator	2005		2006		2007		2008	
	#	%	#	%	#	%	#	%
Births	4838		4681		5220		4965	
Small for dates	549	11.3	490	10.5	662	12.7	611	12.3
Large for dates	358	7.4	334	7.1	295	5.7	323	6.5
Apgar score 4-6	484	10.0	467	10.0	449	8.6	354	7.1
Apgar score 0-3	92	1.9	47	1.0	49	0.9	49	1.0
Premature newborn	719	14.9	614	13.1	680	13.0	616	12.4
Low birth weight (<2500 gms)	528	10.9	505	10.8	617	11.8	576	11.6
Very low birth weight (<1500 gms)	123	2.5	110	2.3	126	2.4	126	2.5
Extremely low birth weight (<1000 gms)	53	1.1	49	1.0	53	1.0	57	1.1
Breast feeding	1102	22.8	1462	31.2	1206	23.1	1027	20.7

Source: PAHO/WHO CLAP Perinatal Information System (SIP)

Coverage of pregnant women by the antenatal service was high, with over 75% of pregnant women having 4 or more visits before term (**Table 12).** More than 94% of pregnant women received documented antenatal care, with an average number of visits which ranged from 7.4 per mother in 2005 to 6.5 in 2008 (**Table 13A**).

This coverage rate has evolved in response to the proportion of women at risk for perinatal complications: 20-25% were teenage pregnancies that included an annual average of 43 pregnancies in teens younger than 15 years of age (range 22-96), 4%-6% were highly multigravid, 5%-8% had high blood pressure and another 2%-4% had indications of diabetes or gestational diabetes . The incidence of anaemia has decreased from one in nine pregnant women in 2004 to one in 14 in 2008, resulting in an equally marked drop in new cases of severe anaemia. The proportion of women with gonococcal infection (range 5.1-10.4%) and women with positive syphilis serology (range 1.1-2.5%) highlights the need for greater education and contact tracing.

Given the above, 12-16% of deliveries have had the potential for adverse outcomes. That they do not lead to such outcomes underscores the effectiveness of our integration of MCH services at all levels, from clinic to hospital. The increasing rate of deliveries by Caesarean section, as evidenced in Table 13A, clearly indicates the need for monitoring trends and identifying determinants that contribute to these higher risk procedures which impact length of stay.

One area warranting attention is the promotion of breast-feeding. At the Maternity Ward of PMH, over 90% of mothers breastfed, but at the RMH, less than half the mothers breastfed (36%-45%) (**Table 13B**). At the Private Surgical Ward of the PMH, that percentage decreases to approximately 15%.

Table 14. Summary of Post natal and Infant Child Health Services

Service & Coverage	2004		2005		2006		2007		2008	
	#	%	#	%	#	%	#	%	#	%
# Deliveries	3036		3294		4042		4438		3886	
Home visit in 3 days	2056	67.7	2341	71.1	2351	58.2	2477	55.8	1503	38.7
2+ home visits in <10 days	1616	53.2	1744	52.9	2263	53.9	2270	51.1	1129	29.2
Clinic <6 wks post delivery	2466	81.2	2513	76.3	2337	55.6	2571	57.9	2711	69.8
Contraceptive use	2429	80.0	2463	74.8	2239	53.3	2295	51.7	2686	69.1
Hb <10gm	99	4.0	195	7.7	111	4.9	160	7.5	113	2.9
High BP	250	7.1	374	10.7	215	6.5	237	6.8	332	8.5
Positive sugar	8	0.2	105	3.2	28	0.9	30	0.9	42	1.1
Postpartum haemorrhage.	1	0.0		-		-	1	0.0	2	0.1
Puerperal Sepsis	3	0.1		-		-	1	0.0	17	0.4
1st postnatal home visit <10 days	2918	96.1	3126	94.9	1715	42.4	4403	99.2	2830	72.8
1st child health clinic visit < 1 month	2156	71.0	2240	68.0	1845	45.6	2730	61.5	2476	63.7
Solely breast-fed @ 4 wks	274	24.3	366	22.0	424	28.5	394	21.4	325	23.9
Solely breast-fed @ 12 wks	64	19.0	96	12.5	73	11.6	127	31.7	82	17.1
Overweight @ 1 yr.	4	0.1		-	10	0.3	4	0.1		-
Abnormal hearing	32	1.1	3	0.1	36	0.9	28	0.6	14	0.4

Source: Health Information and Research Unit

In the years prior to 2008, more than half of all new mothers had received a home visit within 3 days of delivery and two more home visits one week later **(Table 14).** The percentages of new mothers with hypertension were not insignificant, ranging between 6.5% and 13.7%. A higher than usual number of cases of puerperal sepsis occurred in 2008.

With the exception of 2006, rates of home visits of the newborn within 10 days were very high with nurses achieving near perfect coverage in 2007. Breast feeding rates were low: less than one-quarter of babies are solely breast fed at 4 weeks, with the exception of a surge that was seen in 2007 as a result of the return of certified lactation specialists. Unfortunately, this increase was not sustained, and while it had not returned to previous levels, the percentage of new mothers that solely breast fed at 4 weeks had again begun to decrease.

Table 15. Reasons for attendance (first visits only) at child health clinics, 2004 – 2008.

Condition	2004	2005	2006	2007	2008
URTIs	11579	13074	13079	12537	10789
Ear disorders	1609	1339	1129	1469	1697
G/E	1053	691	885	1195	1074
Injuries*	661	654	558	747	838
Ringworm	403	516	431	491	602
Eye disorders	520	551	521	570	589
Scabies	326	205	168	170	226
Thrush	472	432	444	417	456
Acute bronchitis	267	294	246	382	462

** Includes poisonings*
Source: Health Information and Research Unit.

Because it is difficult to identify new cases or measure the catchment populations to truly determine incidence of diseases leading to a child's first visit to the clinic, the relative magnitude of first visits is used as a proxy comparator. Notably, respiratory infections were the premier reason for first attendance at health centres by children aged less than five years **(Table 15).**

10.2 EXPANDED PROGRAMME OF IMMUNIZATION (EPI)

The EPI programme has maintained high levels of coverage **(Table 16)** despite challenges such as:

- Inefficient stock management
- Poor maintenance of refrigerators, thus threatening the cold chain
- Conflict with new child health policy requiring that all children be seen by a physician before being immunized.

The result of an efficient and effective immunization programme has been the decline or eradication of most vaccine preventable conditions over the past two decades. "The last recorded cases of vaccine preventable diseases were:

- Poliomyelitis (More than 30 years ago)
- Diphtheria (1988)
- Mumps (1995)
- Pertussis (1996)

- Measles (1997)
- Rubella & Congenital Rubella Syndrome (1998)
- Tetanus neonatorum (1998)
- Tetanus (2007)
- *Haemophilus Influenza* type B (2004)"

(EPI Report, 2009).

The first case of tetanus in twenty years occurred in 2007 in an unvaccinated Haitian national.

In 2006, Hepatitis B vaccine was introduced to school children aged 5-19 as part of the School Health Programme (**Table 16**).

Table 16. Immunization coverage rates, 2004 - 2008

Vaccine	2004	2005	2006	2007	2008
DPT	93%	93%	95%	95%	94%
HIB	93%	93%	95%	95%	94%
Hep B	93%	93%	96%	93%	90%
Polio	92%	93%	94%	95%	94%
MMR	89%	84%	88%	96%	90%
ATT	86%	94%	99%	94%	93%

Source: Department of Public Health

10.3 SCHOOL HEALTH SERVICES

The School Health Services Programme provides preventive and curative medical and dental care. These services are available without cost to students attending government primary and secondary schools throughout The Bahamas. The major objective of this programme is to ensure that students are physically and mentally healthy, "so they can derive maximum benefits from their education and achieve their fullest potential (Draft Food and Nutrition Policy, 2008)."

Table 17. Results of health screening of Grade I students, 2004 - 2008

Service & Coverage	2004		2005		2006		2007		2008	
	#	%	#	%	#	%	#	%	#	%
Children screened	2750		2006		3713		3294		3841	
High BP	43	1.6	17	0.9	43	1.2	24	0.7	126	3.3
Hb<10gm	122	4.4	90	4.5	242	6.5	344	10.4	77	2.0
Sugar positive	10	0.4	23	1.2	29	0.8	2	0.1	27	0.7
Vision problem	153	5.6	152	7.6	200	5.4	164	5	153	4.0
Hearing defect	3	0.1	1	0.0	34	0.9	6	0.2	2	0.1
Underweight	80	2.9	49	2.4	133	3.6	93	2.8	72	1.9
Overweight	131	4.8	70	3.5	233	6.3	287	8.7	355	9.2
Dental caries	959	34.9	520	25.9	807	21.7	1020	31	908	23.6

Source: Health Information & Research Unit

Table 18. Results of health screening of Grade 6 students, 2004 - 2008

Service & Coverage	2004		2005		2006		2007		2008	
	#	%	#	%	#	%	#	%	#	%
Children screened	3349		2508		3980		3850		4275	
High BP	36	1.1	30	1.2	101	2.5	47	1.2	164	3.8
Hb<10gm	82	2. 5	98	3.9	219	5.5	297	7.7	61	1.4
Sugar positive	9	0.3	15	0.6	20	0.5	10	0.3	11	0.3
Vision problem	590	17.6	350	14	506	12.7	527	13.7	393	9.2
Hearing defect	16	0.5	10	0.4	21	0.5	75	2.0	6	0.1
Underweight	103	3.1	44	1.8	106	2 .7	78	2.1	46	1.1
Overweight	356	10.6	238	9.5	420	10.6	703	18.3	707	16.6
Dental caries	637	19.0	399	15.9	765	19.2	720	18.7	633	14.8

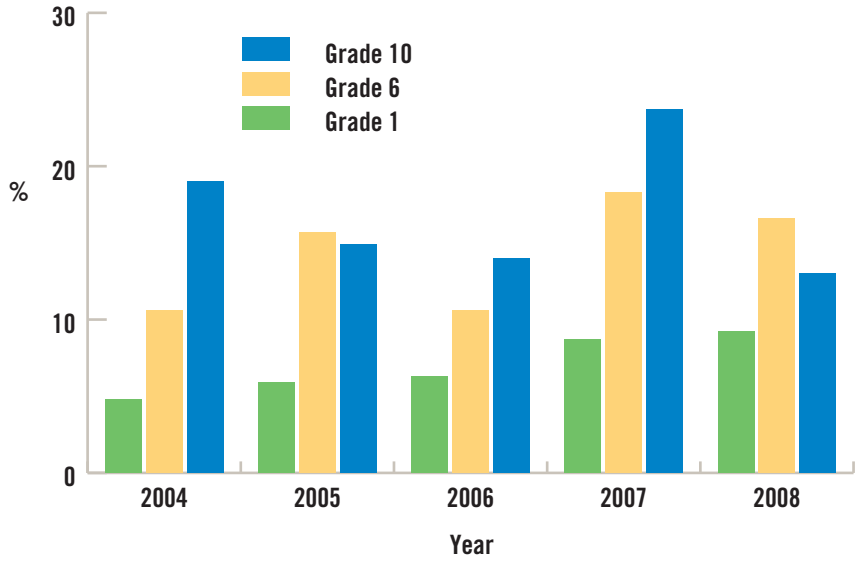
Table 19. Results of health screening of Grade 10 students, 2004 - 2008

Service & Coverage	2004		2005		2006		2007		2008	
	#	%	#	%	#	%	#	%	#	%
Children screened	2844		1242		3009		2845		3280	
High BP	53	1.9	30	2.4	118	3.9	113	4.0	103	3.1
Hb<10gm	135	4.8	49	4.0	102	3.4	163	5.7	169	5.2
Sugar positive	19	0.7	5	0.4	89	3.0	6	0.2	15	0.5
Vision problem	300	10.6	18	15	372	12.4	409	14.4	325	9.9
Hearing defect		-	42	3.4	26	0.9	45	1.6	1	0.0
Underweight	160	5.6	75	6.0	106	3.5	185	6.5	57	1.7
Overweight	540	19	155	12.5	421	14.0	673	23.7	426	13.0
Dental caries	654	23	268	21.6	650	21.6	646	22.7	747	22.8

Source: Health Information & Research Unit

Significant numbers of children with vision problems and dental caries, and to a lesser extent, with anaemia and hypertension, were seen at all grade levels (**Tables 17 - 19**). The situation with respect to oral health will be discussed further under that section.

Fig. 13. Percentage of children screened at school health clinic who were overweight

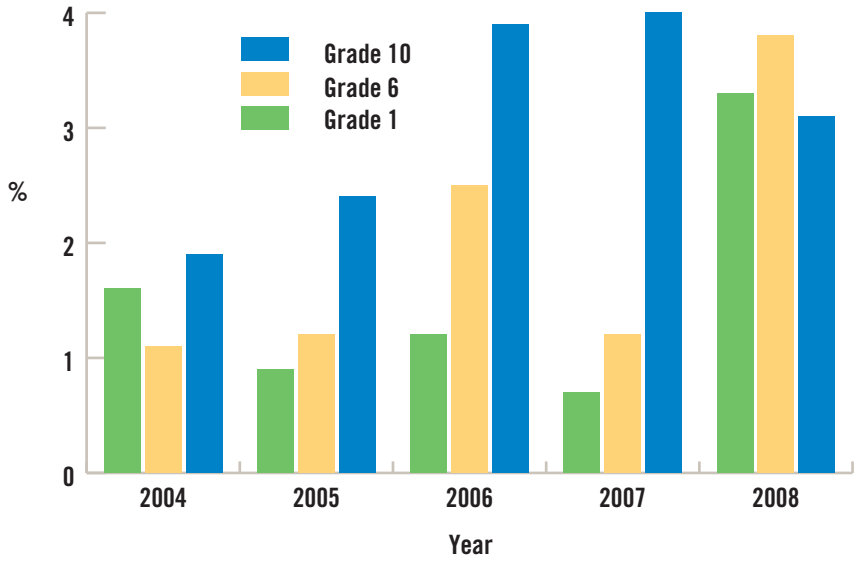


Source: Health Information and Research Unit

Not only is the percentage of overweight children increasing in each and every cohort of school entrants, but in general, the higher the grade, the greater percentage of overweight children. It would appear then firstly, that with each year, increasing numbers of school entrants are overweight and secondly, as the children age and progress through the grades, more of them become overweight (**Fig. 13).**

The 10.6% of Grade 6 school children in 2004 who were overweight increased to 13.0% by Grade 10 four years later—inferring a 0.6% increase each year. These data suggest that of the 2008 Grade 1 entrants, 14.6% or one in every seven children will be overweight by Grade 10. This highlights the importance of monitoring trends and patterns in order to evaluate the impact of programmatic changes on health outcomes.

Fig. 14. Percentage of children screened at school health clinic who had high blood pressure.



Source: Health Information and Research Unit

Although the numbers of school children with high blood pressure are small and must be interpreted cautiously, the increase in percentages of these school children over the years as they enter Grade 1, (from 1.6% in 2004 to 3.3% in 2008) , Grade 6 (from 1.1% to 3.8%) and Grade 10 (from 1.9% to 3.1%) as well as within the same cohort (1.1% of sixth-graders in 2004 to 3.1% when these students enter Grade 10) is still cause for alarm as a portent of increased morbidity in later life (**Fig. 14**).

These trends underscore the need to analyze data promptly and to use that data to alter programme direction and develop interventions that will prevent further poor health outcomes and reduce the occurrence of preventable diseases such as hypertension and diabetes.

10.4 INFECTIOUS DISEASE SURVEILLANCE

19 cases of malaria occurred on the island of Great Exuma between May-June, 2006 due to *Plasmodium falciparum,* imported and then locally transmitted. These cases were successfully treated by chloroquine and primaquine with no associated mortality, and other effective interventions including active case-finding, treatment of cases, and mosquito control, stopped transmission within 30 days ***(Surveillance Report)***

Table 20. Reported cases of infectious diseases and syndromes to CAREC, 2004 - 2008

Disease/syndrome	2004	2005	2006	2007*	2008*
Acute haemorrhagic conjunctivitis	408	416	650	...	...
Ciguatera poisoning	214	199	139	23	70
Dengue fever & DHSS	1	0	0	...	1
Food-borne illness	876	907	634	4429	..
Gastroenteritis in <5 year olds	1279	825	1418	1640	...
Gonococcal infections	111	99	104	...	...
Influenza-like disease (ARI)	4143	259	2904	1913	...
Leptospirosis	0	1	0	...	1
Malaria imported (introduced)	1	1	30 (19)	...	7(2)
Fever with rash	1	4	4	3	...
Fever with neurological signs	...	...	37	14	...
Undifferentiated fever	...	...	232	...	...
Meningitis due to *H. influenzae*	1	0	1	...	...
Acute flaccid paralysis	0	1		2	
Salmonellosis	20	17	10	7	4
Shigellosis	12	11	6	3	2
Syphilis	398	376	...	...	...
Tuberculosis (all forms)	47	48	64	48	49
Typhoid fever	1	0	2	...	2
Viral hepatitis	...	...	..	1	2
Tetanus	...	...	...	1	
Chicken Pox	1129	376	476	200	121
Undifferentiated fever	...	...	356	185	...
Pneumonia	...	...	...	...	4

Source: Surveillance Report, Public Health Department

The surveillance of notifiable diseases evolved to include surveillance of syndromes and other selected conditions over the period 2004-06 . Some discontinuity in reported cases was reflected during the transition period. Nevertheless, reports indicated that respiratory conditions, food and water-related illness and sexually transmitted diseases were the diseases with the highest incidence **(Table 20).**

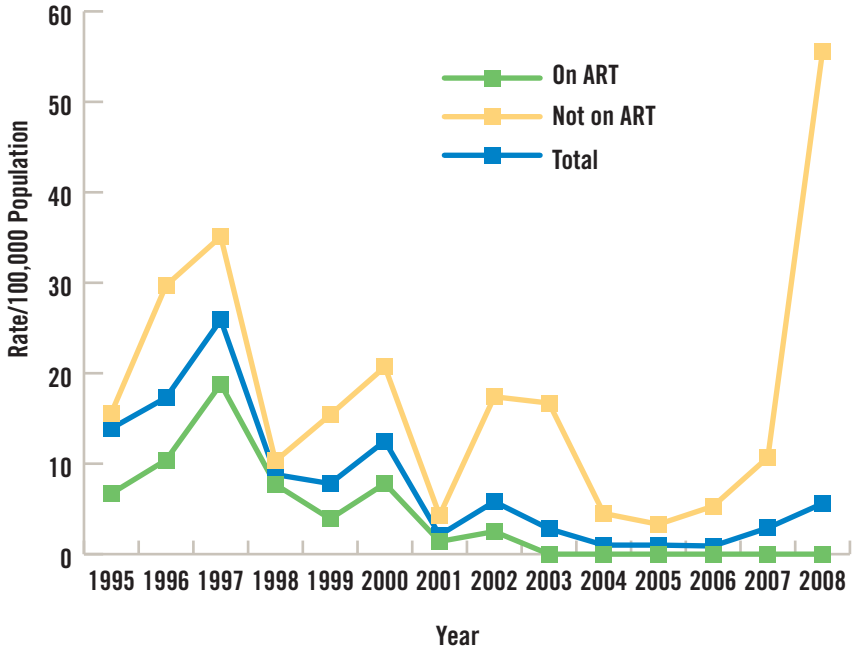
10.5 HIV/AIDS

HIV positive rates among pregnant women have remained stable during the review period **(Table 21).**

Table 21. HIV positivity rates among pregnant women screened, 2004 - 2008

Year	2004	2005	2006	2007	2008
Positivity Rate	3.0%	2.8%	3.1%	2.5%	2.0%

Fig. 15. MTCT Rates, 1995-2008



The HIV screening of antenatal women and treatment of those who are positive has steadily improved so that whereas in 1995, of 79 women screened positive, only 15 were on treatment, in 2008, of 89 women screened positive, 80 were on treatment **(Table 22).** Moreover, transmission rates in mothers on treatment decreased to 0.0. The artifactual increase in 2008 transmission rates among women highlights the challenges of managing prevention of mother to child transmission (PMTCT) in a highly mobile immigrant population that travels easily between countries in the Region during the gestational period and returning to The Bahamas for delivery of their infants and thus preventing the administration of effective antiretroviral therapy **(Fig. 15).**

Table 22. HIV Mother-to-Child Transmission Rates, 1995-2008

Year	AN On Treatment[a] No.			AN Not on Treatment[b] No.			Total AN No.		
	+ve ANs	+ve Infants	Rate	+ve ANs	+ve Infants	Rate	+ve ANs	+ve Infants	Rate
1995	15	1	6.7	64	10	15.6	79	11	13.9
1996	67	7	10.4	37	11	29.7	104	18	17.3
1997	48	9	18.8	37	13	35.1	85	22	25.9
1998	39	3	7.7	29	3	10.3	68	6	8.8
1999	51	2	3.9	26	4	15.4	77	6	7.8
2000	51	4	7.8	29	6	20.7	80	10	12.5
2001	71	1	1.4	23	1	4.3	94	2	2.1
2002	81	2	2.5	23	4	17.4	104	6	5.8
2003	88	0	0.0	18	3	16.7	106	3	2.8
2004	83	0	0.0	22	1	4.5	105	1	1.0
2005	74	0	0.0	30	1	3.3	104	1	1.0
2006	88	0	0.0	19	1	5.3	107	1	0.9
2007	76	0	0.0	28	3	10.7	104	3	2.9
2008	80	0	0.0	9	5	55.6	89	5	5.6

Note: Figures for 1996 and 2005 have been revised on 06/08 to include two new cases identified in June, 2008.
In addition, women who were not on treatment in 2003 and 2004 include one pregnant woman who tested negative antenatally but tested positive post-delivery.

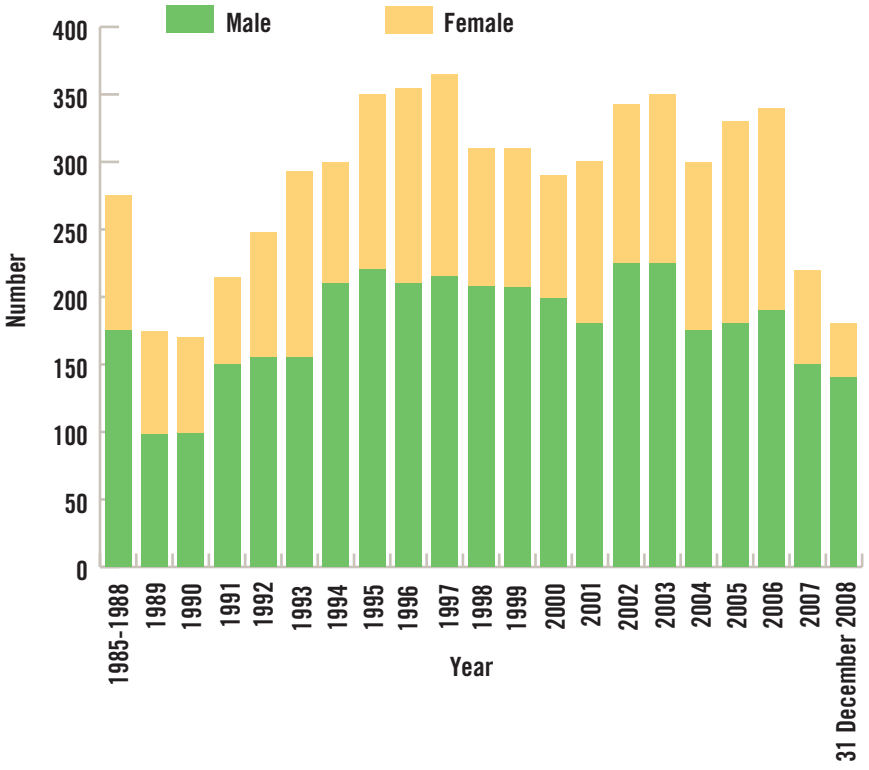
a Antenatals on treatment refers to those on a treatment regimen for pregnant women.

b Includes mothers who: i) had no antenatal care (some of whom may have been on treatment prior to pregnancy); ii) were not located; iii) delivered prior to being treated, e.g, late attendees, premature labour; iv) had abortions, miscarriages, stillbirths or intrauterine deaths before or after treatment; v) were on treatment prior to this pregnancy and did not take the required regimen for pregnancy; vi) had no treatment before or during pregnancy; or vii) refused treatment.

Table 23. HIV Surveillance of selected populations, 2004 – 2007, Bahamas

Year	Populations	HIV		
		Number Screened	Number Positive	Percent Positive
	Blood Donors	9346	41	0.4
2007	Antenatals	3880	98	2.5
	All STD Patients	1349	52	3.9
	Blood Donors	4846	14	0.3
2006	Antenatals	3443	106	3.1
	All STD Patients	683	36	5.3
	Blood Donors	5173	20	0.4
2005	Antenatals	3597	102	2.8
	All STD Patients	730	42	5.8
	Blood Donors	5210	12	0.2
2004	Antenatals	3645	105	2.9
	All STD Patients	879	36	4.1

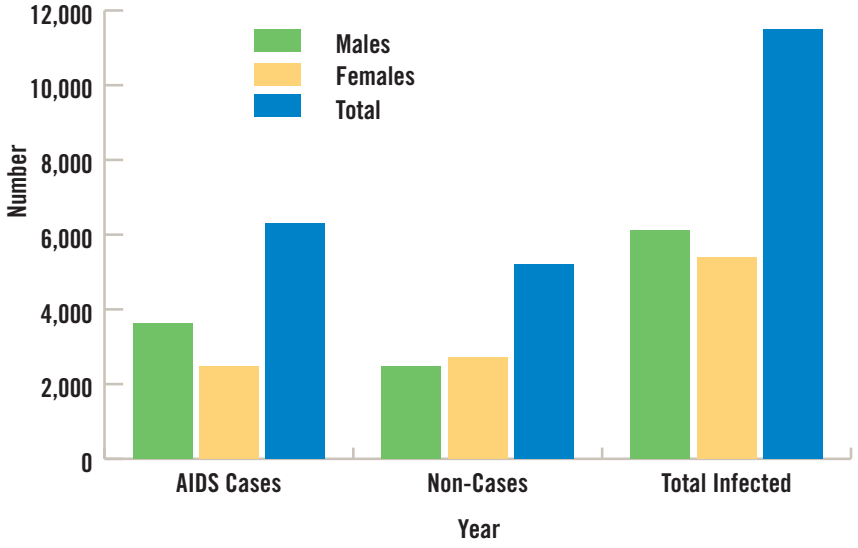
Fig. 16. New Cases of AIDS, by Gender and Year, August 1985-December 31, 2008, Bahamas



Source: Health Information and Research Unit

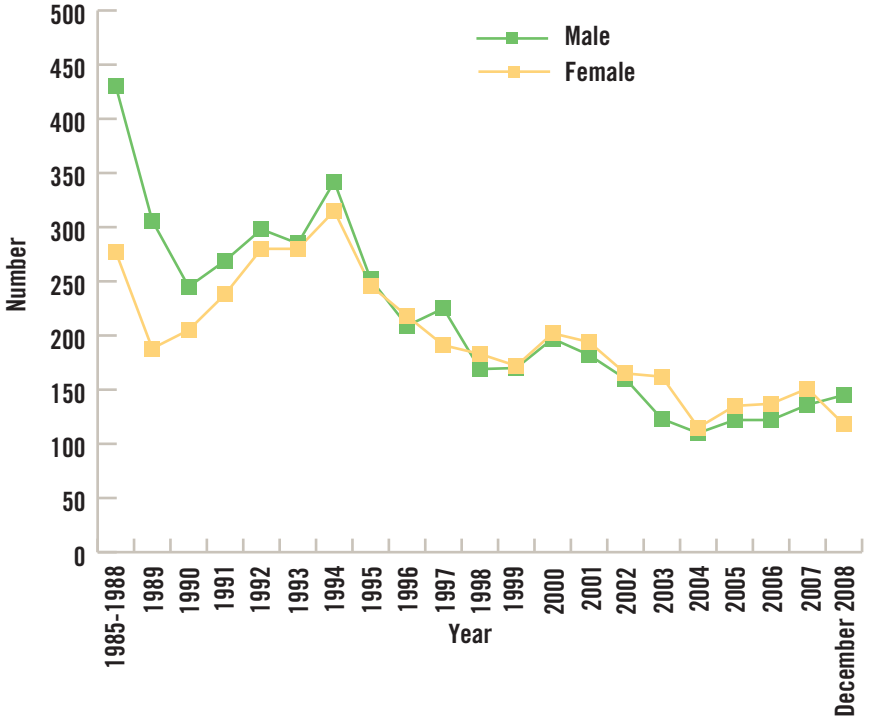
From 1997, AIDS incidence has shown an overall decline, while at the same time the gender differential is decreasing towards a more even distribution of cases between the sexes (from a male to female ratio of 1.7 in 1988, to 1.9 in 1998 and 1.4 in 2007 and 1.6 in 2008), **(Fig. 16).** Nevertheless, AIDS continued to predominate among males as seen in **Fig. 17** while a more even gender distribution is seen among the non-AIDS cases. This was not always the case, for at the start of the epidemic there were more male non-AIDS cases than female but by 1993, the gap had closed **(Fig. 18).** The distribution of cases by age and sex revealed a gender ratio that was more inclined to females in the lower age-groups **(Fig. 19).**

Fig.17. Cumulative Number of Reported HIV Infections, by Sex as of December 31. 2008, Bahamas



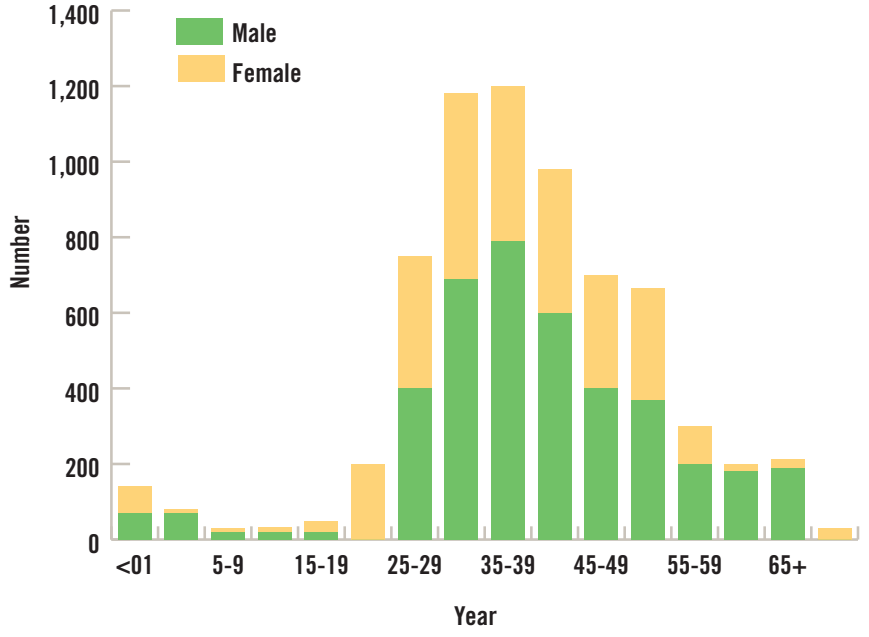
Sources: Infectious Diseases Division, Public Health Dept. and HIRU.

Fig. 18. Current Non-AIDS HIV Infections, by Sex and Reported Year, Bahamas, 1985-2008



Source: Department of Public Health – Infectious Disease Department & HIRU

Fig. 19. Cumulative cases by age-group & Sex as at 31 December 2008



Sources: Department of Public Health – Infectious Disease Department & HIRU

10.6 TUBERCULOSIS

Table 24. Status of Tuberculosis cases, BAHAMAS, 2004 – 2008

Characteristics	2004		2005		2006		2007		2008	
	#	%	#	%	#	%	#	%	#	%
Male	36	76.7	34	70.8	39	60.9	28	58.3	36	73.5
Female	11	23.3	14	29.8	25	39.1	20	41.7	13	26.5
Bahamian	32	68.1	32	68.1	48	75.0	26	54.2	32	65.3
Non-Bahamian	15	31.9	16	33.3	16	25.0	22	45.8	11	34.7
Culture +ve	39	83.0	41	85.4	60	93.8	40	83.3	47	95.9
Culture -ve	1	2.2	0	0	0	0	0	0	2	4.1
Culture Unk	7	14.9	7	14.6	4	6.2	8	16.7	0	0
Ex-Pulmonary	6	12.8	5	10.4	7	11.3	6	12.5	5	11.1
Pulmonary	41	87.2	43	89.6	57	89.1	42	87.5	44	89.8
Smear +ve	34	82.9	33	76.7	47	82.4	34	81.0	34	77.3
Smear –ve	6	14.6	9	20.9	10	17.5	5	11.9	9	20.4
Smear Unk.	1	2.4	1	2.3	0	0.0	3	7.1	1	2.3
Dead	8	17.0	13	25.0	17	26.6	7	14.6	7	8.2
Total		47		48		64		48		49
New TB cases		47		45		60		45		46

Source: Department of Public Health

The Tuberculosis (TB) incidence rate hovered around 15 per 100,000 population for the period under review; prevalence was estimated at between 3-8 per 100,000 population **(Fig. 20).** TB cases were more likely to be male and Bahamian **(Table 24).** Direct Observed Therapy Short-Course(DOTs) coverage in 2007 was 100%. On average, 18.7% of the new smear positive cases died and 25% defaulted, so that the success rate was only 63%. Of those smear-positive patients who were re-treated, the success rate increased to 71% but the death rate also increased to 21%.

There was one multi-drug-resistant case during the period 2004-08. HIV prevalence in the TB population was at least 10 times higher than in the general population **(Fig. 20).** During 2008, the HIV co-morbidity rate in female TB cases was less than 25%, but during the remainder of the time period co-morbid rates between the sexes differed little, ranging over the review period from 25% to 55% **(Table 25).**

Fig. 20. Incidence and prevalence of TB and co-morbid HIV, Bahamas, 1990-2008 Source: WHO Country TB database

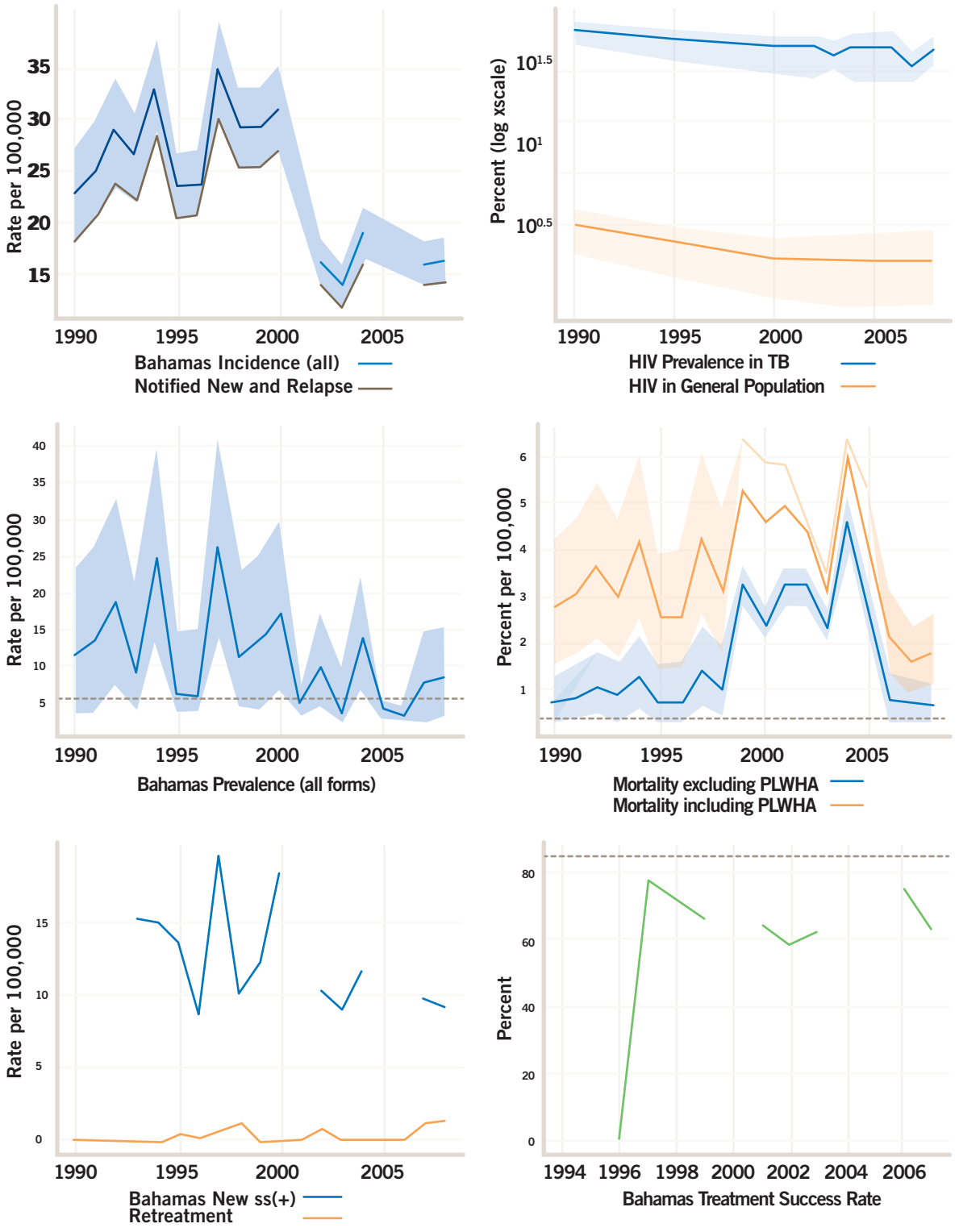


Table 25. Distribution of Tuberculosis cases by co-morbidity with HIV and sex, Bahamas, 2004 – 2008

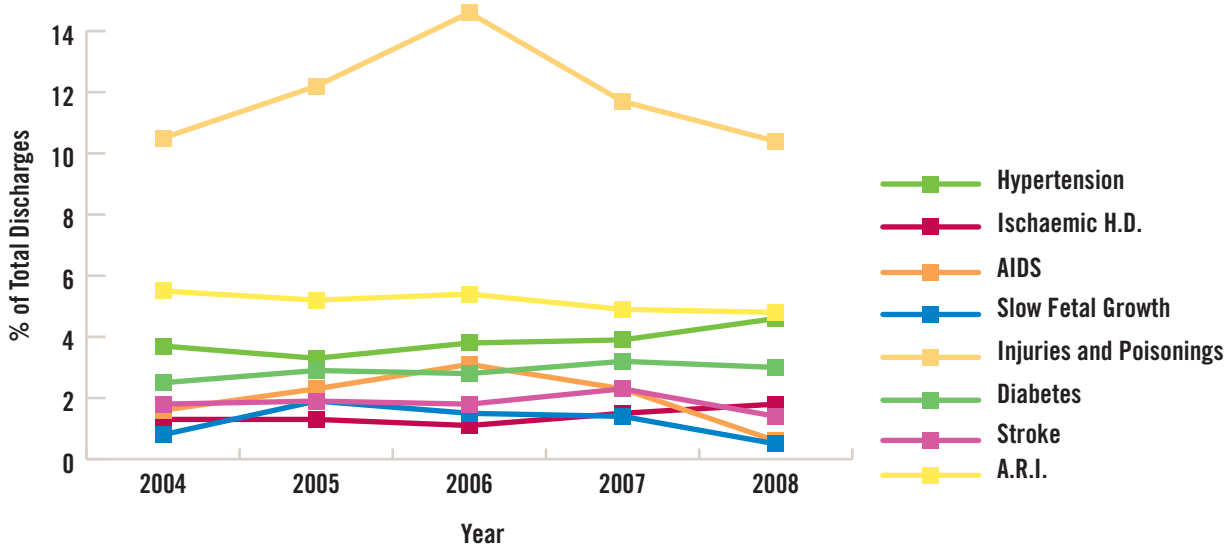
Year	2004			2005			2006			2007			2008		
Morbid State	All TB	TB/HIV		All TB	TB/HIV		All TB	TB/HIV		All TB	TB/HIV		All TB	TB/HIV	
Male	36	15	42%	34	14	41%	39	21	54%	28	8	29%	36	14	39%
Female	11	5	45%	14	6	43%	25	11	44%	20	5	25%	13	3	23%
TOTAL	**47**	**20**	**43%**	**48**	**20**	**42%**	**64**	**32**	**50%**	**48**	**13**	**27%**	**49**	**17**	**35%**

Source: Surveillance Unit, Department of Public Health

10.7 NON-COMMUNICABLE DISEASES & INJURIES

Of all non-communicable diseases, hypertension may be the most prevalent and the condition generating the greatest need for health care. Not only is hypertension the leading cause of mortality, it is, after injuries, also the next leading non-infectious condition responsible for hospital discharges followed by diabetes, with which it is frequently a co-morbid condition, especially among the elderly **(Fig. 21).**

Fig. 21. Selected conditions as percentages of total discharges (excluding deliveries) from Princess Margaret and Rand Memorial hospitals, 2004 – 2008



Sources: Health Information & Research Unit; Statistics Unit, Public Hospitals Authority

The register of 65+ year olds with hypertension and/or diabetes yielded prevalence rates of 620 and 252 per 10,000, respectively, for these two medical conditions in this age set.

Hypertension is the principal reason for a majority of new clients seeking care at health centres **(Table 26).** Diabetes was the second leading diagnosis among new clients. Significant numbers of new clients also attended the health centres for treatment of injuries, either road traffic injuries (RTI) or industrial accidents, and mental health conditions, as well as for arthritis.

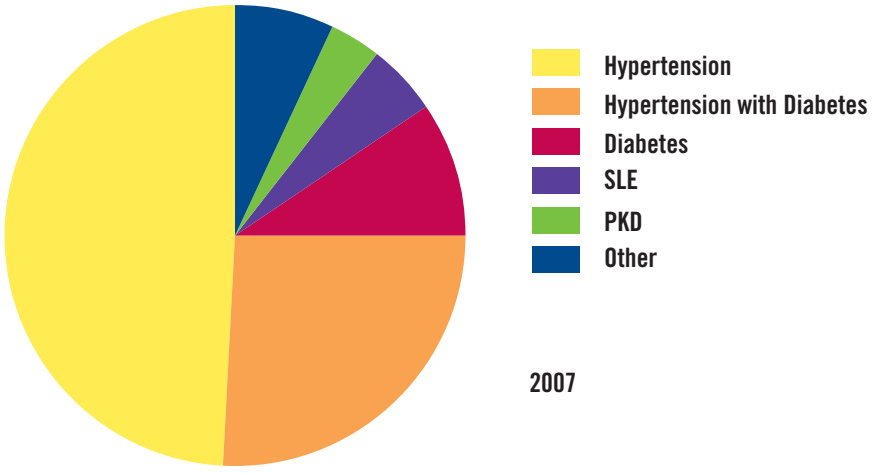
Table 26. New cases attending Primary Health Clinics for selected non- communicable conditions

Condition	2004	2005	2006	2007	2008
Hypertension	1094	792	1443	1384	1505
Diabetes Mellitus	856	530	334	815	702
Arthritis	367	308	468	647	504
RTIs	384	405	445	486	486
Industrial Accidents	198	205	212	282	213
Schizophrenia	127	120	132	121	115
Epilepsy	86	91	90	116	78
Sickle Cell Anaemia	43	55	89	47	62
Alcohol Dependence	52	46	31	64	49
Mental Retardation	22	7	17	3	8

Source: Public Health Department

The need for dialysis as a result of the complications associated with hypertension and diabetes is another major component of the utilization of health services. There were 139 persons on dialysis at the Princess Margaret Hospital in 2007, the vast majority of whom were hypertensive, with and without diabetes **(Fig. 22).** The other conditions present in dialysis patients were diabetes only, systemic lupus erythematous (SLE) and polycystic kidney disease (PKD).

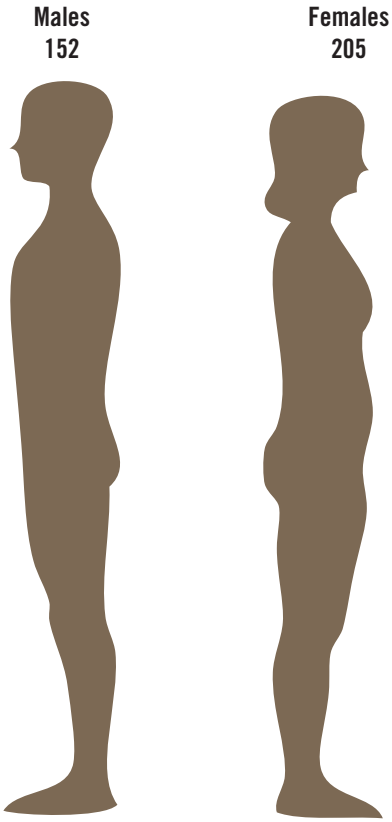
Fig. 22. Patients on dialysis at Princess Margarget Hospital by underlying condition, 2007



Source: Dialysis Unit, Princess Margaret Hospital

Although not reflected in hospital discharge statistics, cancers are a major cause of ill-health. As seen earlier **(Page 13)**, neoplasms of the prostate and breast rank among the top ten causes of mortality in males and females, respectively. Data from the Princess Margaret Hospital show that the most common sites are indeed breast and prostate, followed by colon/rectum and uterus/ovary **(Fig. 23).**

Fig. 23. Summary of cancer sites by gender, Princess Margaret Hospital, 2008



Oral Cavity & Pharynx-7	5%	Thyroid-4	2%
Lung & Bronchus-8	5%	Lung & Bronchus-3	1%
Pancreas-2	1%	Breast-92	45%
Kidney & Renal Pelvis-1	1%	Kidney & Renal Pelvis-3	1%
Urinary Bladder-1	1%	Ovary-3	1%
Colon % Rectum-18	12%	Uterine Corpus-12	6%
Prostate-64	42%	Colon & Rectum-20	10%
Non-Hodgkin Lymphonia-6	4%	Non-Hodgkin Lymphonia-5	2%
Melanoma of the Skin-2	1%	Melanoma of the Skin-0	0%
Leukemia-1	1%	Leukemia-0	0%
All Other Sites-42	28%	All Other Sites-63	31%

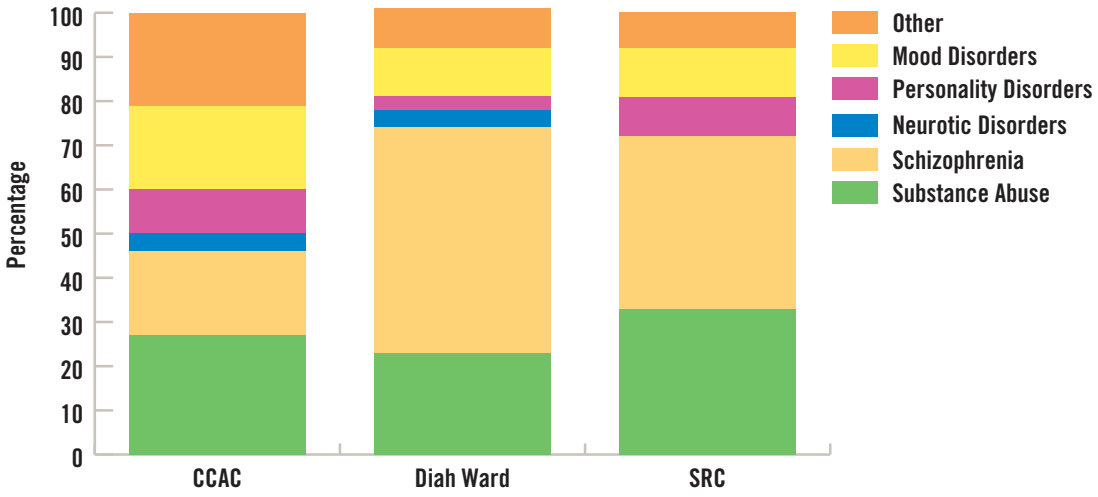
Source: Princess Margaret Hospital, New Providence

10.8 MENTAL HEALTH SERVICES

Mental health services are provided under the umbrella of the Ministry of Health through both the Department of Public Health and the Public Hospitals Authority. The Sandilands Rehabilitation Centre (SRC) provides in-patient psychiatric and mental health care, including a three hundred and sixty-seven bed inpatient unit in New Providence. Off-site, SRC has one out-patient facility, the Community Counseling and Assessment Centre (CCAC). The Rand Memorial Hospital in Grand Bahama also provides inpatient mental health services through the Diah Ward. Additional programmes for mental health services in the Department of Public Health include adolescent services, the male health initiative, community health clinics, and psychiatric services offered through the Family Islands' Community Clinics.

Discharges from the Sandilands Rehabilitation Centre and the Diah Ward of the Rand Memorial Hospital indicate a rate of 414.3 discharges per 100,000 population for mental illness, with an average length of stay of more than 90 days, varying between 92.5 days in 2004 and 95.3 days in 2008. The most common conditions presenting for treatment were schizophrenia and disorders due to psychoactive substance abuse **(Fig. 24)**. Males were three times more likely than females to be hospitalized for mental health conditions.

Fig. 24. Patients treated in mental health facilities by diagnosis



10.9 ORAL HEALTH SERVICES

The Oral Health Services Unit within the Department of Public Health provides services through regular clinics at some community health facilities, Her Majesty's Prison and Sandilands Rehabilitation Centre, as well as through visits to schools and some Family Islands. The thrust of the programme is to move away from extractions and towards preventive and restorative care, especially for children.

From 2002 to 2006, there was a small but steady improvement in the percentage of children who were caries-free in Grades 1 and 6, with a concomitant reduction in the decayed, missing and filled permanent teeth (DMFT) score **(Tables 27, 28).**

Table 27. Grade 1 Caries Prevalence Trends, 2002 - 2006

Year	# students Screened	% caries- free	# person with decayed teeth	# decayed teeth	dmft
2002/3	1693	51.03	829	3012	3.60
2003/4	2120	53.87	952	3505	3.58
2004/5	2106	55.60	935	3251	3.48
2005/6	2197	56.16	838	3368	3.49

Table 28. Grade 6 Caries Prevalence Trends, 2002 -2006

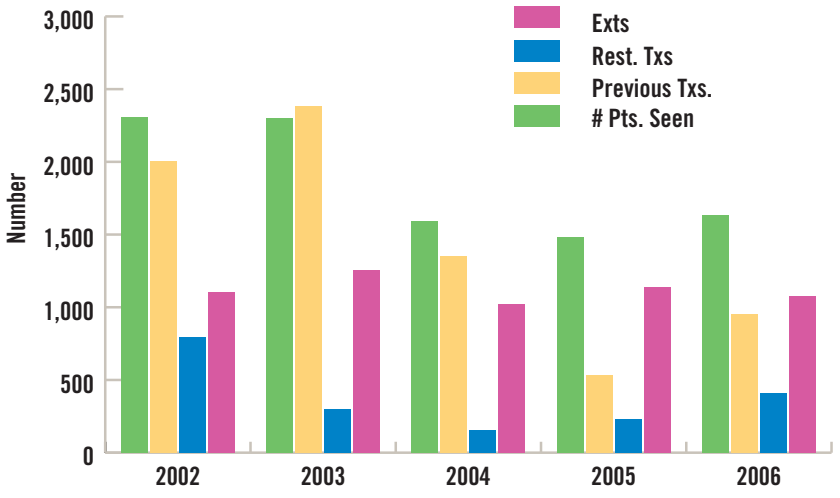
Year	# students Screened	% caries-free	# persons with decayed permanent teeth	# decayed permanent teeth	DMFT
2002/3	1864	77.20	389	708	1.70
2003/4	2579	77.08	591	932	1.67
2004/5	2565	81.95	462	709	1.54
2005/6	2071	80.61	498	780	1.56

Source: Oral Health Services, Department of Public Health

Each year, among Grade 1 students, as many as 4 children may have 10 or more decayed primary teeth. The high percentage of children in Grade 1 with dental caries highlights the need for increased attention to preventive oral health efforts and greater use of sealants in children. Among older children, the decayed permanent teeth score (D), consistently contributed 97% to the DMFT score.

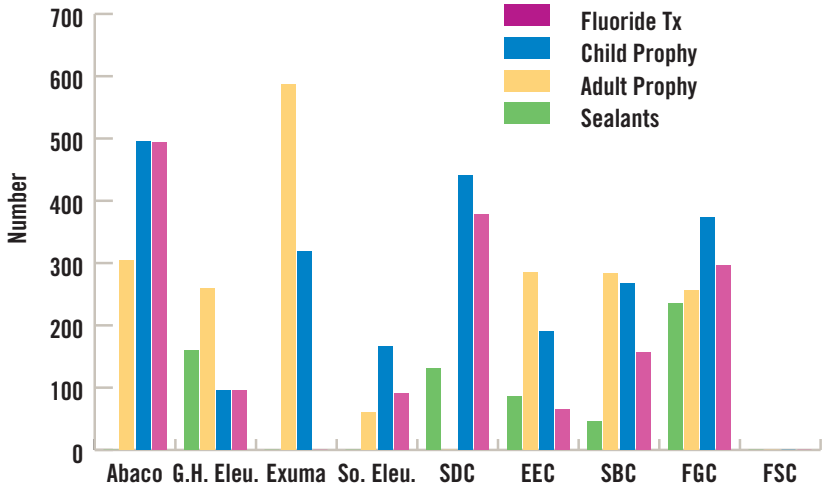
Internationally established goals indicate that at least 50% of 5-6 year olds should be caries-free, and that the average DMFT for 11-12 year olds should be less than 3. The Bahamas has achieved the first goal and aims to better it, while working toward the second goal.

Fig. 25. School Dental Services-Clinical Activity Trends 2002-2006



As can be seen from **Fig. 25,** there has been a decrease in the number of patients seen by the school dental services. This may be due to the increased number of dental clinics at community centres whose proximity to home or work may make them more convenient for parents. Nevertheless, the marked increase in preventive and restorative treatments among children from 2005-06 also has been a result of greater efforts at prevention and restoration with the operation of the several dental clinics and introduction of a surveillance programme within the school dental service. However, medical and dental officers express concern that the clinics' goals are not being met, due to human as well as equipment constraints. **Fig. 26** shows a breakdown of preventive care at selected dental clinics throughout The Bahamas.

Fig. 26 Preventive Dental Treatments Rendered by Clinic-New Providence & Family Islands-2006



10.10 NUTRITION

As noted earlier, the currently small but rising percentage of overweight Bahamian children is a cause for alarm. Diabetes is a disabling medical condition and a costly one for society. Low breast-feeding rates may be a contributing factor to increasing obesity among children, since breast-feeding often is replaced with high but "empty" caloric food choices.

School screening data **(Tables 17 - 19)** revealed increasing rates of obesity across the spectrum of childhood. These data demonstrated that in Grade 1, obesity ranged from 4.8% to 9.2% of children screened. This rate increased for Grade 6, which had fluctuating rates (low of 9.5% in 2005 to a high of 18.3% in 2007) and was demonstrated in 16.6% of the children screened in 2008. Grade 10 screening indicated an even greater percentage of children who were overweight—as much as 23.7% of screened individuals in 2007 (range 12.5-23.7%).

Additionally, anaemia in children and pregnant women (about 5% each in the two groups), is also an indicator of food choices lacking in nutritional value. The Nutrition Department offers counseling to those referred from clinics. These are usually extreme cases. The Department has taken a proactive approach, initiating a garden-based learning project that complements the education of vendors and the setting of standards for school tuck shops, while supporting the activities of other departments such as the Healthy Lifestyle Initiative and the Health-Promoting Schools Initiative.

10.11 HEALTH PROMOTION & EDUCATION

Efforts are underway to build a national policy on health promotion. The Department also has launched a Health-Promoting Schools Initiative, with a sensitization workshop and identifying school focal points as the basis of school-based health promotion committees. The Department does not have in-house recording and reporting capability and utilizes resources to support their services. This does not allow for a strategic and systematic approach to the optimal development of these services.

The Department has produced the following media presentations – "Joining Hands for Health", "My Life, My Future", and "Foundations for Healthy Living", as well as a segment in the Ministry of Education's Learning Resource Section, "A Time for Education". The Department also has introduced a system of identifying educational needs for wellness promotion in fundamental health priority areas of concern.

10.12 HEALTHY LIFESTYLES INITIATIVE

The Healthy Lifestyles Initiative was launched in October 2005 with the goal of reducing the levels of morbidity, disability and premature deaths associated with lifestyle-related diseases (CNCD)—diabetes, hypertension, chronic respiratory disease, heart disease, and cancer. The Healthy Lifestyles Initiative was designed to reduce the prevalence of risk factors that lead to CNCDs, specifically: smoking, physical inactivity, an unhealthy diet, and poor nutrition. Using a population health approach and collaborative efforts with government agencies, private services, churches, schools, and other NGO's, the Healthy Lifestyles Initiative has sought to promote health and prevent disease. The initiative focuses on physical activity and healthy eating, and on the relationship of these activities to healthy weights. This initiative also incorporates risk factor screening, including glucose and cholesterol screening and body mass index determinations and documentation in Healthy Lifestyle Passports.

In 2006, Healthy Lifestyles screened 5,000 persons. That number increased to 8,360 people who were screened and counselled at 119 locations during 2007. The Healthy Lifestyles Initiative conducted 116 health fairs or screening sessions in 2007, an increase from the 70 that were conducted in 2006.

10.13 PRISON HEALTH SERVICES

The Prison Health Initiative provides access to comprehensive health services for inmates of Her Majesty's Prison (HMP). These services include: routine medical evaluations, managing chronic non-communicable diseases, acute minor medical emergencies, infectious disease management, drug demand reduction, and routine dental care. Mental and psychological health care continue to be provided by personnel from the government owned psychiatric hospital at Sandilands Rehabilitation Centre. Daily dental care is provided by a Dentist.

HMP's clinic is a collaborative effort staffed by people from both the Department of Public Health and National Security. It is staffed by two full-time physicians, three part-time senior physicians, two registered nurses (one of whom is a Public Health Nurse Coordinator for Prison Health Services), as well as two trained clinical nurses (one trained in psychiatry), four trained clinical nurses (who are also Prison Officers), a part-time pharmacist, and a phlebotomist-aide.

Upon admission, all inmates are tested for the presence of communicable diseases. On average, 2,458 persons are admitted to HMP annually; of these, 13.8% are infected with tuberculosis, 2.0% are infected with HIV, 1.8% are infected with syphilis, and 1.7% are infected with Hepatitis B.

Table 29. Prison Health Screening, 2004-2008

INDICATORS	2004	2005	2006	2007	2008
Total admissions	2549	2633	2356	2284	2469
Male	2447	2471	1774	2146	2290
Female	102	162	166	138	179
Average number of admissions per month	212	...	196	190	206
Total persons <35 years of age	1701	1813	1658	1604	1792
Total persons 35+ years of age	848	820	698	680	677
Total return visits	1017	1158	1124	822	1266
Return visits within one year	206	201	141	135	157
Total number persons with positive Mantoux skin test	381	362	267	338	343
Number released before Mantoux skin test read	...	369	...	...	190
Return visits with previously known positive Mantoux skin test	394	383	275	...	398
Total chest X-rays completed	312	229	129	188	233
Number of persons released before chest X-ray completed	73	71	138	150	110
Total HIV positive	58	61	46	43	36
Total Hepatitis B positive	53	46	47	34	30
Total VDRL (Syphilis) Positive	54	58	50	29	30
Total General Complaints seen	3288	4009	4227	2952	4227

Source: Prison Health Services

11 ENVIRONMENTAL HEALTH SERVICES

11.1 WATER AND SEWERAGE MANAGEMENT

Sewerage disposal continues to pose a challenge in the Family Islands. Although most premises are connected to a septic tank, roughly 40% have no effluent system attached (e.g., soak away). Pump-out systems are limited or in many instances not available, and any final sewage disposal infrastructure is practically non-existent. The Department of Environmental Health Services (DEHS) continues to advocate for change in this regard, taking opportunities to advise owners and in a few instances to initiate legal actions. The various responsible agencies for providing infrastructure are aware of these needs, but have indicated a financial inability to act. Monitoring and evaluating systems are implemented for the few wastewater treatment plants that exist, which are primarily associated with hotels and related establishments.

Water quality remains a challenge and DEHS routinely tests water samples to ensure the health and safety of water for the people of The Bahamas. One hundred and thirty-three (133) of five hundred and nineteen (519) water samples taken were found to be fully satisfactory, however, of these, 97 (18.7%) had no chlorine present.

11.2 SOLID WASTE MANAGEMENT

There has been an improvement in the management of solid waste since the introduction of modified landfills. Transfer stations and barging now are available for the disposal of waste in some islands and settlements. However, these resources are incomplete and still many open dumps continue to be used.

The component of waste collection and recycling has lagged behind and as a result indiscriminate dumping continues to be a problem. While the legal framework has assigned components of general sanitation, derelict vehicle disposal, and the management of open dump sites to local government councils in the Family Islands, often financial resources are reportedly inadequate to fully implement these decisions. One result has been that DEHS often has only partially funded work for these items.

11.3 FOOD SAFETY – ESTABLISHMENTS INSPECTED AND PASSED; TRAINING OF FOOD HANDLERS

825 of 917 (93.5%) of food handlers were approved for vending permits.

The Health Inspectorate Division of DEHS is responsible for monitoring all food establishments and itinerant vendors. This division is present in all the major Family islands. The division is also involved in training food handlers. Imported meats and meat products are inspected upon entry to ensure they meet all requirements. The Port Health Officer in New Providence conducted the inspections. All imported meats and meat products were deemed satisfactory.

Table 30. Annual Meat Statistics, New Providence, 2004-2008

Year	Weight	Number of cases
2004	399,537,198.8	2,319,168.2
2005	165,556,404.7	11,648,929.5
2006	134,996,778.0	2,492,223.3
2007	156,481,148.3	2,690,142
2008	45,787,931	1,035,877

Source: Department of Environmental Health Services

Inspections are also conducted at food stores and warehouses to ensure proper storage and refrigeration. Challenging situations have arisen, with expired food items being offered for sale. Five food establishments were closed temporarily due to their ineffective compliance with environmental standards.

In 2004, the Ministry of Health assumed sole responsibility for issuing food handlers' certificates. This was initiated in conjunction with a mandatory 4-hour safe food course for all food handlers. The mandatory safe food course began in New Providence and by 2005 had been expanded to include Long Island, Eleuthera, Andros, Cat Island, Abaco and Exuma and the Cays. Islands without resident trainers were supported from the Central programme in New Providence. The training programme trained an average of three hundred (300) persons weekly and included five (5) international Serve-Safe instructors capable of training other instructors across The Bahamas. Training for Serve-Safe instructors was expanded to Grand Bahama in 2006, when sixteen (16) trained instructors were introduced, enabling Grand Bahama to provide more consistent Serve-Safe food safety training to food handlers on that island.

In 2006, the Health Services Act, Chapter 216, Rule 77 was amended to facilitate a new legislative requirement for the certification of all food handlers, including all persons connected with the production, storage, transportation, or care of food stuffs. It was the responsibility of the owners and operators of food establishments to ensure that all their workers had current, valid food handlers' certificates, which must be made available upon request by an authorized Health Officer.

Food safety training is now available in most of the larger inhabited Family Islands. Support from the Central Programme continues to provide services when any gaps in the system are recognized.

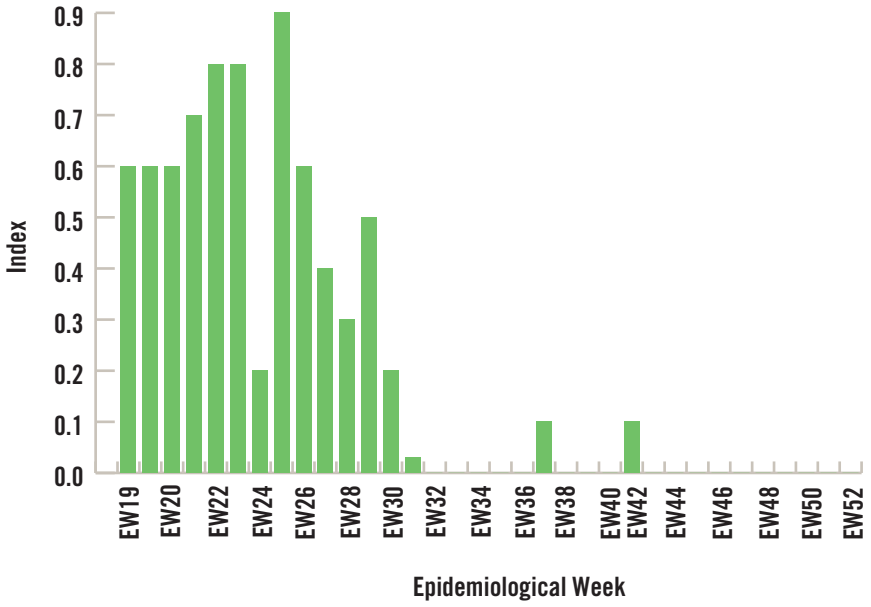
Table 31. Food Handlers Training Sessions

Fiscal Year	2004	2005	2006	2007	2008
Number of Food Handlers Trained	12,042	18,771	19,481	21,243	21,670
Number of International Safe Serve Instructors	...	...	19	21	21

11.4 VECTOR CONTROL – AEDES AEGYPTI INDICES; RODENT CONTROL ACTIVITIES

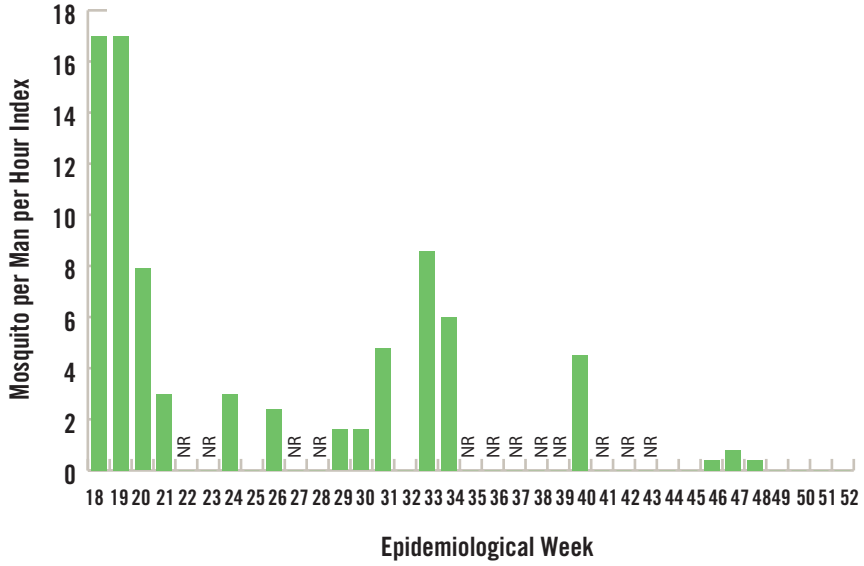
To increase Anopheles larval control efficiency in Exuma, DEHS implemented an aquatic weed control programme to limit or eliminate growth of aquatic weeds that provide harborage for larvae and create a physical barrier to the larvicide. While the initial application of herbicides via airboats has been successful, the maintenance phase—with its introduction of sterilized grass carp—has suffered a setback. This was due largely to the increased average salinity levels in the ponds, resulting in fish mortality. The airboat has served to increase coverage of larvicidal applications and considerably reduce the time needed for chemical application.

Fig. 27. 2008 Exuma Anopheles Larval Total Average



Source: DEHS

Fig. 28. Exuma Human Bait Collection Total Average, 2008



Source: Department of Environmental Health Services

Many cleanup initiatives in New Providence and the Family Islands have resulted in a cleaner environment and in reducing the sources for breeding Aedes aegypti mosquitos. Other efforts to be proactive include providing information to the news media, advising the public of the availability of assistance, ensuring their premises are kept free of any man-made water holding containers. Where these containers are needed, they are managed so that they do not collect water. Relevant educational activities such as lectures and displays have been conducted in many schools and at numerous health and career fairs.

Rodent control operations were conducted extensively in New Providence, Grand Bahama and in island settlements requiring treatment. Surveillance measures and the application of treatment involving the placement of bait stations containing anti-coagulant rodenticide have been the method of choice.

Of special note was a rodent control and conch shell cleanup conducted on Bayshore Road and the settlement of West End, Grand Bahama. This project offered an excellent example of a public-private partnership effort in addressing the need for remedial action. As a result of this coalition and collaboration, rodent infestation was reduced considerably, the shoreline was cleared of piles of conch shells, and derelict boats and other debris were removed.

11.5 PORT HEALTH – INSPECTIONS AND RESULTS

In compliance with the International Health Regulations (2005), port health has responsibility for the inspection and issuance of ship sanitation certificates and ship sanitation exemption certificates for all international vessels. During the period January 2004 through December 2008, the Port Health Officer in New Providence inspected a total of 133 vessels (75 cruise ships, 53 freight vessels and 5 pleasure craft) and issued ship sanitation exemption certificates. No sanitation measures were required.

12 HOSPITAL SERVICES

12.1 IN-PATIENT

Table 32. Hospital utilization by service, PMH and RMH, 2008

Service	Discharges		Patient Days		Ave. length of stay		No. of beds	
	PMH	RMH	PMH	RMH	PMH	RMH	PMH	RMH
Intensive Care Unit	115	88	2895	804	25.2	9.1	9	4
Medical/Surgery	8,690	2,662	69,329	8,436	8.0	3.2	229	33
Obstetrics/Gynaecology	5,671	1,645	14,222	3,750	2.5	2.3	50	19
Paediatrics	1,619	620	21,017	1,752	13.0	2.8	68	12
Neonatal ICU	537	35	11,485	390	21.4	11.1		5
Psychiatry	-	224	-	1,841	-	8.2	-	12

Source: Kurt , Salmon & Associates

Average length of stay was consistently longer at Princess Margaret Hospital than at Rand Memorial Hospital, for all units with the exception of Obstetrics and Gynaecology which were similar in length **(Table 32).**

12.2 LABORATORY

Table 33. Laboratory tests at Princess Margaret Hospital by type of test, 2004-2008

Department	2004	2005	2006	2007	2008
Haematology - # Tests:	...	61,194	74,785	76,090	70,715
Microbiology:					
# Tests	94,982	...	...	...	...
# Specimens	31,834	32,079	32,264	37,367	42,233
Blood Bank - # Tests:	40,354	32,643	39,806	42,580	48,599
Transfusion Medicine - # Tests:	58,745	57,748	55,006	63,064	70,848
Cytology:					
# Non-Gynae	364	269	297	350	295
# Papsmear slides	6,888	7,888	7,663	7,629	8,249
Histology - # Slides:	22,903	26,607	29,196	28,491	27,515
Chemistry:	...	...	...	...	...
Serology:	...	...	...	...	...
Stat Lab - # Tests	...	...	...	...	514,274

Blood Bank tests include: Cross-match, Patient blood group, Direct coombs test, Indirect coombs test

Transfusion medicine tests include: HIV, HBsAg, Corzyme,Anti HBS, HepB Conf (began February 2008), RPR, CMV (began June 2007), HTLV1/2, HCV, HAV

Stat Lab tests include: WBC (Haematology), Chemistry, UA (Microbiology), UHCG (Microbiology), ABG (Chemistry), CSF (Microbiology and Chemistry)

The reporting of laboratory statistics has been challenged by an inadequate Laboratory Information System, which was not capable of providing statistical reports (**Table 34**). Within those Departments able to provide statistics, the increasing volume of tests also reflects the increasing number of discharges seen in Princess Margaret Hospital (**Table 8A**).

12.2.1 EMERGENCY RESPONSE

Table 34. Accident & Emergency Department – contacts by age, sex, 2004 - 2008

FACILITY	2004	2005	2006	2007	2008
PRINCESS MARGARET HOSPITAL (PMH):					
1) # Visits	47,263	48,947	50,920	52,114	51,746
2) # Registered	57,695	59,832	60,285	61,936	66,649
- Gender:					
Male	28,224	29,496	29,682	30,407	32,629
Female	29,469	30,334	30,601	31,528	34,018
- Age Groups:					
<1	2,292	2,645	2,447	2,740	2,862
1-4	6,395	6,002	5,874	5,964	6,413
5-14	7,564	7,418	7,501	7,422	9,549
15-24	9,627	9,770	10,394	10,818	11,530
25-44	18,649	19,135	19,259	19,261	20,810
45-64	8,275	9,829	9,954	10,623	11,738
65+	4,893	5,033	4,856	5,108	5,746
RAND MEMORIAL HOSPITAL (RMH):					
1) # Visits	4,886	4,541	4,303	4,162	4,209
2) # Registered	...	...	...	...	...

Source: Keane System, Public Hospitals Authority
Definition:
1) Visits - INDICATE patients seen and treated by medical staff in the A&E department.
2) Registered - INDICATE persons registered in A&E for medical care, but DOES NOT INDICATE the actual persons seen and treated by medical staff as patients may leave the department before receiving medical attention.

The volume of visits to the Accident and Emergency Department has been increasing over the previous five years. Data from 2004-08 (**Table 34**) demonstrates a roughly equal distribution of males and females. Children 0-4 years of age now account for approximately 9% of the Bahamian population, however, this age group accounts for about 15% of the Accident and Emergency population.

Table 35 – New Providence emergency Response Data, 2004 – 2008.

Call Type	2004		2005		2006		2007		2008	
	# calls	Ave. Response Time	# calls	Ave. Response Time	# calls	Ave. Response Time	# calls	Ave. Response Time	# calls	Ave. Response Time
TRAUMA Calls;	**2853**		**3011**		**3210**		**3641**		**3745**	
Airplane Crash	4		1		7		8		5	
Assaults/Rape	405	0:21:05	419	0:23:31	423	0:22:23	614	0:20:15	726	0:19:56
Bomb/explosion/Major disaster	4		10	0:17:56	2		1		2	
Burn victims/Explosion	42	0:14:00	44	0:14:13	30	0:14:47	31	0:17:35	27	0:24:05
Electrocution	7		6	0:16:54	6	0:15:00	6	0:10:54	3	
Falls/Back Injuries (Traumatic)	421	0:23:28	407	0:25:14	514	0:20:55	560	0:19:59	573	0:20:56
Gunshot Wound	132	0:12:35	121	0:12:46	146	0:12:38	193	0:13:56	204	0:13:38
RTA, Traumatic Injuries (specify)	1601	0:16:38	1699	0:17:19	1781	0:17:32	1911	0:17:52	1897	0:17:05
Stabbing	237	0:19:04	304	0:16:28	301	0:19:29	317	0:19:48	308	0:15:46
Medical Calls:	**2330**		**2352**		**2401**		**2805**		**2993**	
Carbon Monoxide/Inhalation Hazmat	0		2		1		2		3	0:10:58
Cardiac/Respiratory Arrest/Death	581	0:21:45	606	0:20:59	612	0:22:28	688	0:19:47	723	0:21:17
Near Drowning/Diving Incident	33	0:18:27	52	0:15:50	41	0:16:09	46	0:13:20	40	0:18:11
Poisoning/Overdose/Ingestion	91	0:19:55	78	0:32:07	79	0:22:59	85	0:18:19	99	0:23:22
Stroke/CVA	198	0:22:00	201	0:25:07	200	0:22:24	239	0:22:38	243	0:24:22
Unconscious/Breathing Problem	1427	0:19:27	1414	0:21:07	1468	0:20:12	1745	0:19:21	1885	0:20:11
Ordinary Problem Calls:	6469		7264		7041		7074		7298	
Abdominal Pains/Problem	509	0:27:38	478	0:31:40	431	0:28:41	491	0:26:28	548	0:27:44
Allergies/Hives/Med-Reactions	14	0:21:30	23	0:19:54	35	0:18:07	25	0:12:31	46	0:17:56
Animal Bite(s)/Attack(s)	13	0:14:40	11	0:21:11	13	0:14:11	8	0:20:28	15	0:26:01
Asthmatic	306	0:19:49	401	0:19:46	286	0:20:11	327	0:17:52	390	0:21:35
Choking	10	0:16:23	9	0:14:55	11	0:14:58	10	0:10:46	14	0:19:41
Diabetic Problem(s)	377	0:19:16	469	0:21:41	450	0:22:31	445	0:21:34	856	0:22:49
Eye Problem(s)/Injuries	6	0:05:41	11	0:16:33	6	0:16:10	7	0:28:49	15	0:28:10
Fainting/Fits/Convulsions	1363	0:19:06	1646	0:19:30	1576	0:18:49	1585	0:18:35	1688	0:18:28
Fracture(s)-Lower	125	0:25:11	126	0:28:27	107	0:23:53	99	0:26:30	117	0:26:58
Fracture(s)-Upper	49	0:25:49	66	0:26:30	52	0:18:56	40	0:24:29	42	0:22:29
Lacerations/Haemorrhage	564	0:21:13	698	0:22:38	590	0:23:17	490	0:22:20	421	0:24:17
Maternity/childbirth/BBA	1012	0:20:49	1039	0:22:47	1037	0:23:00	1098	0:21:56	1037	0:23:42
Ordinary Sickness/Sick Call	1097	0:30:32	1149	0:33:14	1173	0:32:43	1207	0:29:25	1151	0:34:10
Psychiatric/Suicide Attempt	584	0:46:37	656	0:53:17	750	0:48:39	725	0:54:35	745	0:43:19
Unknown Problem (Person Down)	111	0:15:32	139	0:15:43	112	0:21:00	110	0:18:32	120	0:18:59
Vomiting/diarrhea	329	0:27:47	343	0:32:25	412	0:26:53	407	0:23:13	393	0:30:34
Transfer Patient	**2563**	**0:47:38**	**2157**	**1:02:01**	**2172**	**0:51:30**	**2266**	**0:44:49**	**2640**	**0:49:16**
Brought in Dead	**218**	**0:15:32**	**281**	**0:17:46**	**284**	**0:19:10**	**247**	**0:18:53**	**301**	**0:16:49**

Road traffic injuries, loss of consciousness, convulsions and childbirth are the major defined reasons for use of emergency services in New Providence **(Table 35).** The volume of calls handled through the EMS system has increased on an annual basis. Response time, however, has not increased to any great extent, when compared over time.

Table 36 – Abaco Emergency Response Data, 2006-2008

Call Type	2006 (10 Months)		2007		2008	
	# calls	Ave. Response Time	# calls	Ave. Response Time	# calls	Ave. Response Time
TRAUMA Calls;	39		52		72	
1p1.302	1	0:05:00				
Assaults/Rape	5	0:03:00	1	0:02:00	2	0:05:00
Bomb/explosion/Major disaster					1	
Burn victims/Explosion			1	0:03:00	2	0:05:00
Electrocution			1	0:02:00		
Falls/Back Injuries (Traumatic)	2	0:04:00			13	0:11:00
Gunshot Wound			2	0:19:00	3	0:05:00
RTA, Traumatic Injuries (specify)	31	0:12:00	47	0:07:00	46	0:10:00
Stabbing					5	0:04:00
Medical Calls:	12		26		38	
Carbon Monoxide/Inhalation Hazmat						
Cardiac/Respiratory Arrest/Death	3	0:05:00	7	0:04:00	11	0:06:00
Near Drowning/Diving Incident			3	0:05:00	3	0:04:00
Poisoning/Overdose/Ingestion					3	0:04:00
Stroke/CVA	1	0:17:00	2	0:03:00	2	0:03:00
Unconscious/Breathing Problem	8	0:05:00	14	0:06:00	19	0:06:00
Ordinary Problem Calls:	43		56		73	
Abdominal Pains/Problem	1	0:06:00	5	0:06:00		
Allergies/Hives/Med-Reactions			1	0:24:00		
Animal Bite(s)/Attack(s)			1	0:07:00		
Asthmatic					1	0:04:00
Choking						
Diabetic Problem(s)			2	0:04:00	4	0:05:00
Eye Problem(s)/Injuries						
Fainting/Fits/Convulsions	11	0:05:00	11	0:04:00	15	0:03:00
Fracture(s)-Lower	2	0:11:00	5	0:05:00	6	0:06:00
Fracture(s)-Upper			2	0:07:00	1	0:08:00
Lacerations/Haemorrhage	9	0:06:00	7	0:04:00	8	0:07:00
Maternity/childbirth/BBA	2	0:03:00	2	0:04:00	7	0:03:00
Ordinary Sickness/Sick Call	13	0:08:00	8	0:05:00	7	0:04:00
Psychiatric/Suicide Attempt			1	0:06:00	5	0:04:00
Unknown Problem (Person Down)	5	0:04:00	9	0:05:00	16	
Vomiting/diarrhea			2	0:05:00	3	0:07:00
Transfer Patient	71		96	0:06:00	120	0:06:00
Brought in Dead			1	0:04:00	1	0:04:00

The Public Hospitals Authority/Emergency Medical Services (EMS) assumed responsibility for emergency medical service in Abaco in 2006. Road traffic injuries, loss of consciousness, and convulsions are the major defined reasons for use of emergency services in Abaco (**Table 36).**

12.2.2 OUTPATIENT SERVICES

Table 37. Outpatient attendances by institution, type of service and year.

FACILITY / AREA	2004	2005	2006	2007	2008
PRINCESS MARGARET HOSPITAL (PMH):					
Accident & Emergency	47,263	48,947	50,920	52,114	51,746
General Primary Care Clinics:	40,043	42,624	35,589	32,150	28,598
General Practice Clinic	36,910	39,629	32,362	29,471	26,063
Civil Servants Clinic	3,133	2,995	3,227	2,679	2,535
Specialty Clinics(a):	32,316	54,208	55,600	57,808	61,903
Asthma Clinic	618	559	611	643	467
Comprehensive Clinic	1,847	1,544	1,382	1,416	1,337
Dental Clinic	-	5,626	5,397	4,598	4,568
Dialysis Clinic	-	1,367	1,503	1,399	1,711
ENT Clinic	-	2,734	2,741	2,677	3,029
Eye Clinic	-	4,500	4,645	5,399	6,023
Medical Clinic	8,663	8,642	8,998	9,306	9,983
OB High Risk Clinic	1,414	-	-	-	-
Obstetric Clinic (includes OB High Risk & GYNAE clients)	-	4,315	4,733	4,907	5,233
Oncology Clinic	-	1,019	1,241	1,473	1,879
Orthopaedic Clinic	-	9,829	8,700	10,420	11,090
Paediatric Clinic	6,300	3,286	3,427	3,169	3,902
Skin Clinic	3,975	3,374	4,042	3,954	3,724
Surgical Clinic	9,499	5,894	6,534	6,802	7,310
Urology Clinic	-	1,519	1,646	1,645	1,647
Total Outpatient Attendances (PMH)	**119,622**	**145,779**	**142,109**	**142,072**	**142,247**
RAND MEMORIAL HOSPITAL (RMH):					
Accident & Emergency	4,886	4,541	4,303	4,162	4,209
General Practice Clinic	34,439	36,773	37,892	41,321	44,011
Specialty Clinics:	16,732	19,513	18,653	19,135	19,976
Surgical Clinic	2,989	3,547	2,907	3,563	3,785
Medical Clinic	4,619	5,553	4,777	5,457	5,433
Antenatal Clinic	2,937	3,432	3,394	3,374	3,102
Gynae Clinic	814	849	941	994	1,025
ENT Clinic	214	247	256	258	238
Pediatric Clinic	900	999	997	1,132	1,106

FACILITY / AREA	2004	2005	2006	2007	2008
Postnatal Clinic	413	539	524	607	624
Psychiatric Clinic	1,021	1,013	1,239	1,299	1,490
Chest Clinic	248	244	257	309	450
Orthopedic Clinic	399	407	996	579	864
Ophthalmology Clinic	2,133	2,683	2,365	1,563	1,859
Oncology Clinic	45	-	-	-	-
Total Outpatient Attendances (RMH)	**56,057**	**60,827**	**60,848**	**64,618**	**68,196**
SANDILANDS REHABILITATION CENTRE (SRC):					
Community Counselling & Assessment Centre (CCAC) - contacts	...	21,474	20,660	...	...
Psychiatric Clinic	1,864	1,898	2,042	2,807	2,520
Ann's Town Geriatrics Clinic	908	930	978	809	794
Total Outpatient Attendances (SRC)(b)	**...**	**24,302**	**23,680**	**...**	**...**

Source: Medical Records Departments - PMH, RMH and SRC, Public Hospitals Authority

(a) Specialty clinic visits (PMH): In 2005, seven additional clinics began reporting: Dental, ENT, Eye, Urology, Dialysis, Oncology and Orthopaedics.

(b) Total outpatient attendances (SRC) excludes: Podlewski psychiatric visits, day program attendances by adults & adolescents and outpatient child & adolescents visits.

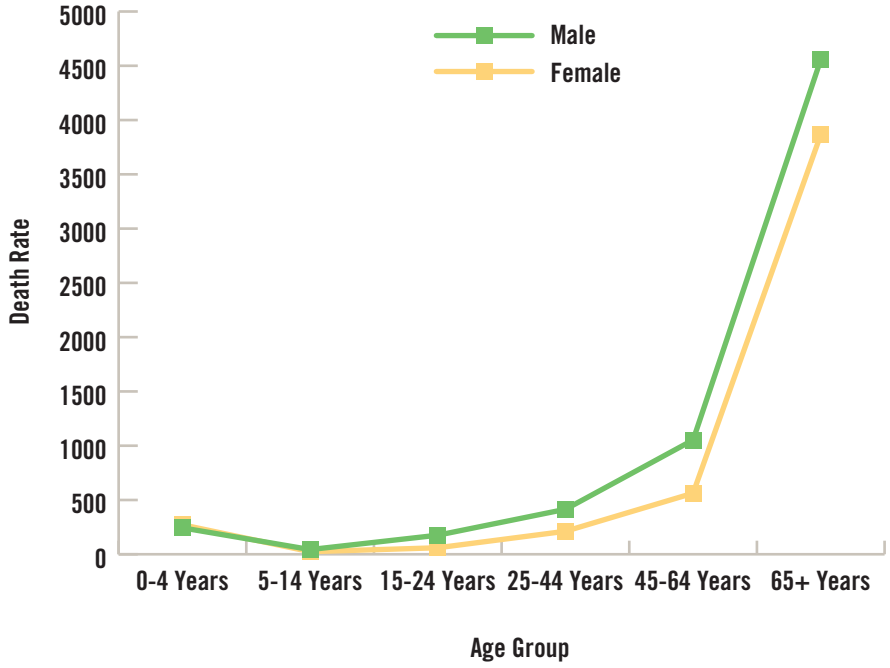
Use of clinic facilities in all three government hospitals indicates an increasing reliance on government-sponsored services. Of note, at the Princess Margaret Hospital services have increased significantly in the Medical, Obstetrical High Risk, Oncology and Orthopaedic Specialty Clinics; at Rand Memorial, services have increased significantly in the Gynaecology, Psychiatric, Paediatric and Orthopaedic Specialty Clinics (**Table 37**). The number of attendees at the General Practice Clinic (GPC) and the Civil Servants Clinic at PMH has been decreasing while the number of GPC attendees has been increasing at the Rand Memorial Hospital.

13 HEALTH SITUATION

13.1 GENERAL POPULATION

After allowing for infant mortality, it is to be expected that mortality rates for the elderly are far higher than those for younger age groups (**Fig. 29**). But fewer deaths and lower mortality rates in those age groups still represent a substantial loss of potential life. The gender differential rates, especially between 15 and 44 years, are significant and may be attributable to vehicular and work-related injuries and HIV/AIDS.

Fig. 29. Age-specific death rates, per 100,000 popn. by gender, 2007



Approximately half of all mortality was due to chronic non-communicable diseases, as well as to HIV/AIDS (which has been decreasing), cancers of the breast and prostate, injuries, and especially homicides, which have been increasing. The disparity between the population's mortality profile and that of morbidity, if measured by hospitalizations, is telling **(Table 38).** Whereas many hospitalizations are due to acute respiratory infections and appendicitis, hernia and intestinal obstruction, relatively fewer deaths have resulted. This stands in stark contrast to cancers of the breast and prostate, which accounted for 0.6% and 0.2% of all discharges, excluding deliveries, but which are responsible for 2-3% of deaths.

Table 38. Percentage distribution of discharge diagnoses, 2004-2007, excluding deliveries

Discharge diagnosis	2004		2005		2006		2007	
	PMH	RMH	PMH	RMH	PMH	RMH	PMH	RMH
ARI	6.9	4.2	6.4	4.8	7.6	5.2	5.9	4.7
Hypertensive disease	4.3	3.5	4.0	3.3	3.9	5.3	4.2	5.4
Ischaemic heart disease	0.9	2.9	1.1	2.4	1.1	1.8	1.3	3.2
Intestinal infectious diseases	3.0	3.9	1.2	2.1	2.0	2.5	1.8	1.3
Diabetes mellitus	2.8	2.6	3.6	2.6	3.3	2.3	3.8	3.1
Appendicitis, hernia, intestinal obstruction	2.7	2.4	2.9	2.1	3.0	2.1	2.8	3.4
HIV/AIDS	2.3	0.5	3.5	0.4	4.3	0.7	3.3	0.7
Cerebrovascular diseases	2.2	1.4	2.3	1.6	2.0	2.1	2.8	2.2
Slow fetal growth	1.0	0.6	2.6	0.9	2.0	0.7	1.8	1.1
Respiratory disorders, perinatal	0.7	0.9	1.6	2.2	1.3	1.6	1.0	1.4
Injuries, poisonings and other external causes*	15.8	14.4	14.0	13.6	14.8	10.7	14.2	10.8
Mental and behavioural disorders+	1.0	6.2	1.0	7.7	1.0	6.5	1.0	7.0

* *This is a group and therefore not strictly comparable with the other conditions, but the data does not permit further breakdown into individual external causes*

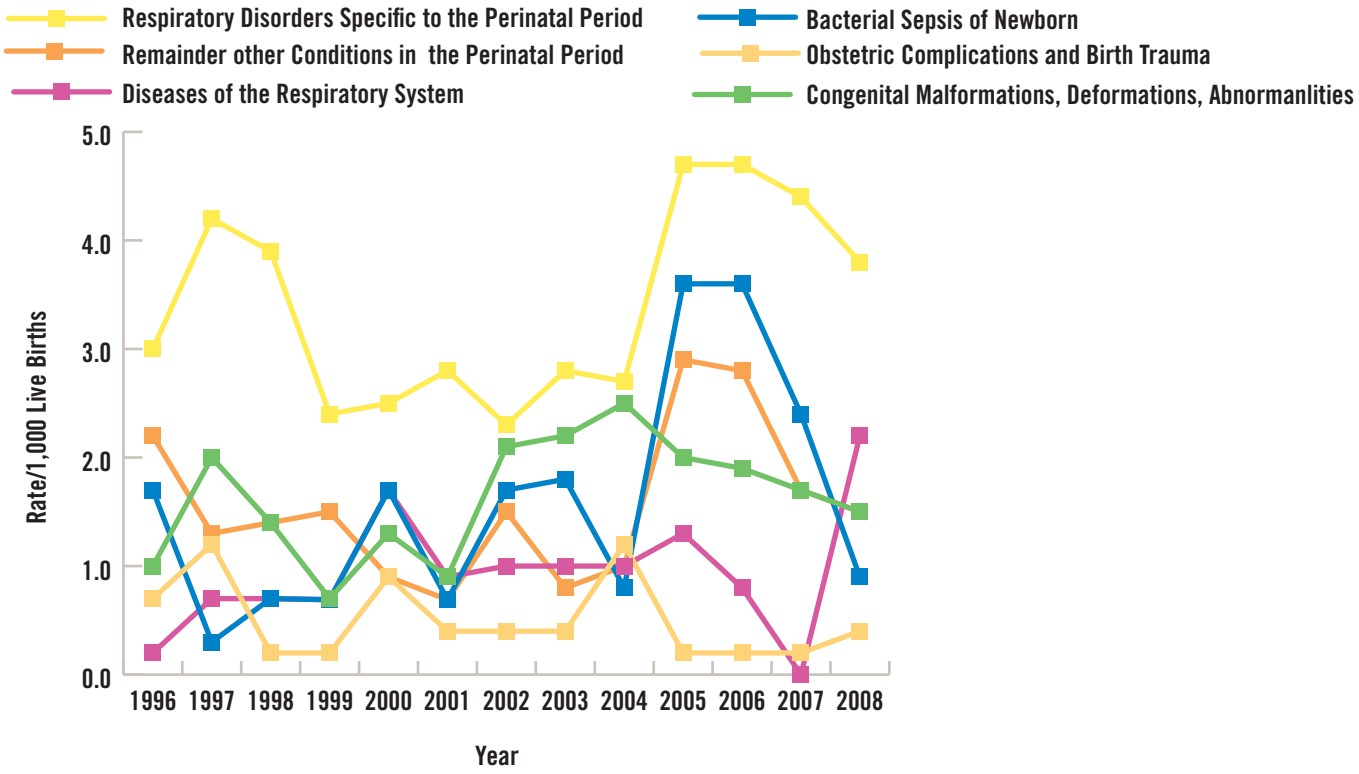
\+ *Unlike RMH, there is no psychiatric ward at PMH.*

13.2 POPULATION SUB-GROUPS

131.21 INFANTS

Respiratory disorders specific to the perinatal period were a leading cause of infant mortality, with cause-specific death rates at their highest for the decade. Also at their highest point for the decade were death rates for bacterial sepsis of the newborn **(Fig. 30).**

Fig. 30. Mortality rates per 1,000 livebirths, of leading causes of infant mortality, 1996 – 2008, Bahamas

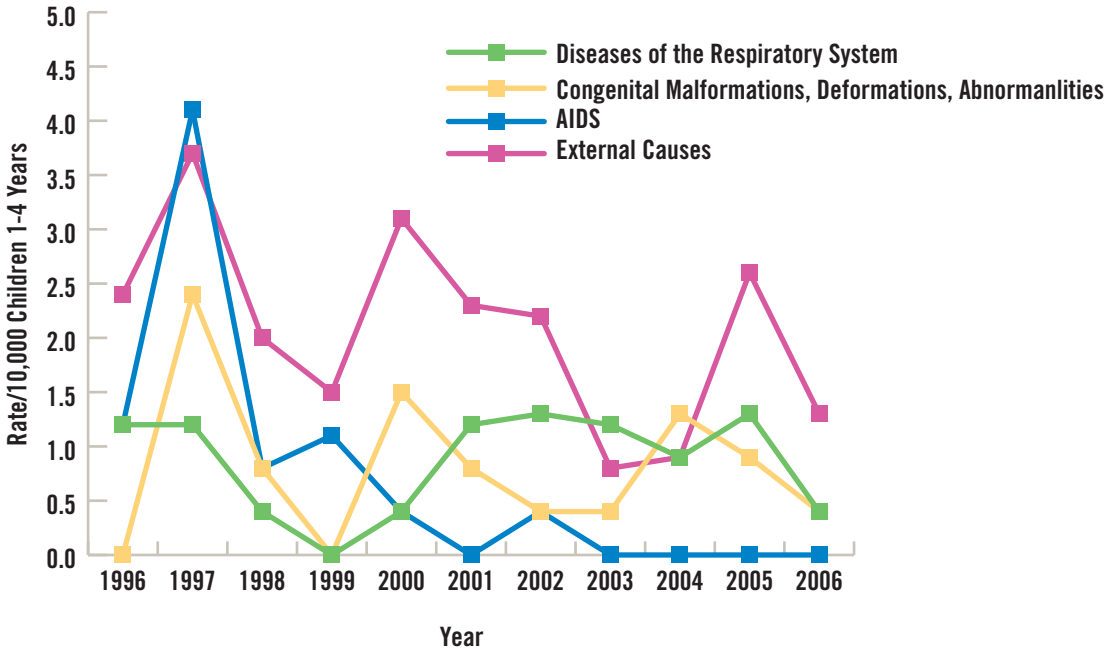


Hospital discharge data integrates infants into a 0-4 year old age group, so it is not possible to identify morbid conditions that relate specifically to infants.

13.2.2 CHILDREN AGED 1-4 YEARS

For the past two years of available mortality data, injuries constituted the leading cause of death among 1-4 year olds, although there seems to be a general downward trend **(Fig. 31).** It is heartening to note that since 2000, AIDS-related deaths among children under 5 have been near zero. Except for one infant death in 2005 and one death in the 1-4 year old group in 2000 and again in 2002, there were no AIDS deaths in this age group up until 2006.

Fig. 31. Age-specific mortality rates per 10,000 population of the leading causes of death in children aged 1-4 years, 1996-2006, Bahamas



Morbidity in under-5 year-olds was due mainly to respiratory infections, followed by intestinal infectious diseases and injuries (**Table 39**). This agrees with data from community health services. Discharges for slow foetal growth and perinatal respiratory disorders were of infants. Disparities between PMH and RMH for perinatal respiratory disorders may be related to the transfer of high risk neonates to PMH because of the availability of specialized services (i.e. NICU/SCBU) at PMH.

Table 39. Percentage distribution of hospital discharges in children aged 0-4 years by condition, 2004 – 2007, Princess Margaret Hospital and Rand Memorial Hospital, Bahamas

Discharge diagnosis	2004		2005		2006		2007	
	PMH	RMH	PMH	RMH	PMH	RMH	PMH	RMH
ARI	17.0	11/0	16.0	16.0	20.5	16.8	17.2	16.1
Intestinal infectious diseases	10.5	9.8	3.4	7.6	10.7	10.4	6.8	3.6
Slow fetal growth	5.7	11.0	13.1	6.9	10.4	6.0	10.9	9.7
Respiratory disorders, perinatal	3.6	17.2	8.1	16.9	6.8	12.7	6.1	12.5
Chronic lower respiratory disorders	3.6	3.7	2.7	5.4	1.5	...	1.7	4.0
Injuries, poisonings and other external causes	8.2	1.8	6.0	4.2	6.4	3.8	5.8	5.6
Congenital malformations	3.6	4.9	4.2	3.0	3.4	5.6	4.2	3.2

13.2.3 CHILDREN, AGED 5-14 YEARS

Although mortality in this age group is the lowest in the population (33.5 per 100,000 population), data show that those few deaths that do occur are mainly due to external causes. In 2007, of 20 deaths in that age group, nine (9) were the result of injuries, five of them road traffic injuries (RTIs), and two drownings.

With respect to hospitalizations, injuries accounted for 15.2% - 22.3% of all discharges at PMH and RMH during the years 2004-07. Respiratory conditions, both acute and chronic, followed in importance.

We point with concern to 20-25 discharges for diabetes each year from hospitals, to the 1-4 hospitalizations each year for hypertension in this age group, to290 children with abnormally high blood pressures, and 38 children with hyperglycaemia screened by school health services during 2008.

13.2.4 ADOLESCENTS AGED 15-24 YEARS

Injuries were the main cause of morbidity and mortality in this age group. Strikingly, the most common cause of mortality was assaults. In 2007, 39 of the 49 male deaths were due to injuries—and of these, 24 were homicides. There were 17 deaths among the females, four (4) of which were injuries, two (2) RTIs, and two (2) homicides.

Approximately 2 of 5 discharges, excluding those related to pregnancy, are due to injuries **(Table 40).** The high percentage of pregnancy-related discharges speaks to the need to assess the Family Planning process in both urban areas. Among this group of adolescents, mental and behavioural disorders seen at RMH are mainly due to psychoactive substance abuse (including alcohol). This is also seen among males in the 25-44 age group.

Table 40. Percentage distribution of discharges in adolescents aged 15-24 years, 2004-2007.

Discharge diagnosis	2004		2005		2006		2007	
	PMH	RMH	PMH	RMH	PMH	RMH	PMH	RMH
Pregnancy, childbirth and the puerperium	75.4	43.5	70.7	57.0	62.3	64.8	75.6	67.4
Injuries	9.7	14.4	10.7	9.7	15.3	9.8	9.2	8.8
Mental and behavioural disorders	0.4	4.0	...	7.8	...	3.6	...	5.4
Appendicitis, hernia, intestinal obstruction	1.2	1.8	1.9	1.6	2.2	1.2	<1.0	<1.0

This discharge information highlights the need to disaggregate data in order to evaluate the needs of the community. The lack of HIV/AIDS discharges in this age group reiterates the importance of evaluating the data for these patients in order to identify programmatic benefits such as the effectiveness of identifying cases early and the use of ART with this population.

13.2.5 PERSONS AGED 25-44 YEARS

Injuries and HIV/AIDS accounted for 84 and 45 deaths respectively among the 212 males who died in 2007. Of the 84 fatal injuries, 33 were homicides and 22 were RTIs. Injuries also accounted for a significant proportion of hospital discharges, followed by mental disorders, especially those resulting from psychoactive substance abuse **(Table 41).**

Table 41. Percentage distribution of discharges in persons aged 25-44 years, 2004 - 2007

Discharge diagnosis	2004		2005		2006		2007	
	PMH	RMH	PMH	RMH	PMH	RMH	PMH	RMH
Pregnancy, childbirth and the puerperium	75.4	43.5	70.7	57.0	62.3	64.8	75.6	67.4
Injuries	9.7	14.4	10.7	9.7	15.3	9.8	9.2	8.8
Mental and behavioural disorders	0.6	8.3	...	7.8	...	3.6	...	5.4

13.2.6 PERSONS AGED 45-64 YEARS

Chronic diseases (hypertension, ischaemic heart disease, cerebrovascular disease, diabetes and cancer) and HIV/AIDS are the leading causes of mortality and morbidity in this age group **(Table 42).** The presence of HIV/AIDS as a cause of death in this age group may be reflective of deferred death due to the effectiveness of antiretroviral therapy (ART) in earlier years resulting in increased survival rates.

Table 42. Proportionate mortality of leading causes of death in persons aged 45-64 years, 2007-2008.

Cause of death	2007		2008	
	#	%	#	%
HIV/AIDS	50	9.8	52	10.3
Hypertension	41	8.1	46	9.1
Ischaemic heart disease	38	7.5	40	7.9
Cerebrovascular disease	34	6.7	40	7.9
Diabetes	28	5.5	22	4.4
Cancer of the breast	23	4.5	17	3.4
TOTAL	**509**	**100%**	**217**	**100%**

A similar profile is seen when hospital discharges are considered **(Table 43).**

Table 43. Percentage distribution of discharges of persons aged 45 – 64 years from PMH and RMH, 2004 – 2007.

Discharge diagnosis	2004		2005		2006		2007	
	PMH	RMH	PMH	RMH	PMH	RMH	PMH	RMH
Hypertension	7.7	7.7	7.3	7.5	7.4	8.6	6.8	8.8
Diabetes mellitus	4.5	4.5	6.6	4.7	4.7	3.5	5.4	4.6
HIV/AIDS	3.0	<1.0	5.0	<1.0	6.7	<1.0	4.4	1.2
Cerebrovascular disease	3.0	2.9	3.4	2.9	3.5	3.2	5.1	2.9
ARI	3.3	2.8	2.4	3.3	2.8	3.7	2.6	3.8
Ischaemic heart disease	1.7	6.4	2.2	5.3	2.1	3.2	2.8	5.6
Cancer of the breast	1.4	2.0	1.5	...	...	...	1.8	<1.0
Injuries	10.8	10.6	9.7	8.8	11.0	9.8	8.3	6.7
Mental disorders	...	4.9	1.9	5.2	1.3	5.3	1.9	5.2

14 CONCLUSIONS

14.1 SUMMARY OF ACHIEVEMENTS

The Bahamas is advancing well towards achieving some of the Millennium Development Goals (MDG) health-related targets. EPI coverage is near 100% and continues to expand, controlling more conditions. All births are attended by skilled personnel. Antenatal care coverage is now over 80%. Maternal mortality, for the most part, varied between 0-2 deaths during the last five years. The MCH programme continues to be a success, despite severe staffing limits and other challenges.

Other effective programmes include the HIV/AIDS programme, which has succeeded in changing AIDS mortality and reducing MTCT to near zero. The national TB Programme has intensified the surveillance and management of TB, so that DOTS coverage remains 100%. The Infectious Disease Surveillance Programme has demonstrated effective surveillance and prompt control measures that have contained malaria and dengue outbreaks. Much of the work of the public health services has been provided effectively, in a strategically focused manner. The Government of The Bahamas has provided invaluable support for persons with chronic diseases, as evidenced by the provision of free medications for HIV/AIDS (antiretroviral therapy) and CNCD's (antihypertensives, chemotherapy, insulin and other anti-diabetic agents, etc.).

Statistics from school health clinics, with their Grades 1 and 6 entry screenings, have been able to identify and address early health problems including vision and hearing loss, abnormal weights, hypertension and oral health abnormalities. Although the latter has achieved the minimum standards set for oral health status of children, there is room for improvement.

14.2 FUTURE STRATEGIC FOCI

Despite these achievements, challenges remain. Every one in 12 admissions of children under age five is for an injury. RTIs and other unintentional injuries tend to afflict those in the lower age groups; assaults, homicides, and industrial accidents prevail in our older youth. Data from the Emergency Medical Service requires analysis to determine where response times in New Providence can be improved. No new antigens were added to the paediatric immunization schedule despite recent advances in vaccine-preventable diseases.

In addressing the social determinants of health, issues such as single parent and teenage pregnancies, the impacts of urbanization and overcrowding in New Providence as people move toward commerce centers in search of employment, and other social determinants of health—all play a significant role in the health and longevity of Bahamians. Safety and injury prevention are priority areas to be addressed.

The prevalence of chronic non-communicable diseases, and the appearance of risk factors such as obesity and elevated blood pressure early in life—all speak to the need for the early inculcation of healthy lifestyle habits. Proper nutrition from birth, including exclusive breastfeeding for at least the first 12 weeks, and regular exercise—all must be promoted.

Reproductive health is another area of concern. Teen pregnancies are not insignificant. Neither is the incidence of STIs such as gonorrhea. Both indicate the need for continued promotion of the practices of safe sex or abstinence. The prominence of breast and prostate cancer as causes of mortality argues for aggressive screening for these increasingly common types of cancer.

Finally, the data in this report point to persons at increased risk for the use and misuse of psychoactive substances, including alcohol, as a major factor negatively affecting mental health—mainly among young males. This issue, like the other health issues mentioned above, may be addressed by the promotion of healthy lifestyle habits. Indeed, the Healthy Lifestyle Initiative launched by the Ministry of Health, is a central key to strengthening the health of the people of the Commonwealth of The Bahamas.

Underpinning these recommendations should be a strong information system to guide decision-making and to assess the effectiveness and efficient focus of programmes and interventions as they are executed. The iPHIS holds the potential to do this when completed. We believe its completion is imminent and that MOH staff will be able and enthusiastic to explore its potentials.

14.3 RECOMMENDATIONS AND PROPOSALS/PLANS FOR THE FUTURE

This report highlights the need for the continued, timely collection and analysis of data, in order to document the health status of the nation and to focus health policy and programmes. Gaps identified in this report underscore the need to conduct more surveys and intensive studies, including those that monitor the attainment of the Millennium Development Goals.

The Ministry of Health must work toward costing the programmes that are currently in place and to insist on doing this in any future programmes. The MOH needs to build its capacity—to act and respond, to assess and refine—especially in the area of project management skills. We have studied the health patterns of Bahamians. We know much of what needs to be done to foster our people's health and longevity. The ability of MOH to significantly bring down the rates of HIV/AIDS and its mortality has been a major achievement, one not achieved by many larger nations.

We know our people. We have studied their patterns—both those that lead to health and those that lead toward illness and early death. As noted earlier, for a nation as for an individual, health is largely a matter of making and maintaining the right choices. At the Ministry of Health, we believe our choices are fundamentally already defined. We need to keep getting better at managing the challenges we have examined and outlined in this report. We do not need to re-invent the wheel. We need to put axles between those we already have.

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16 TABLES AND FIGURES

16.1 TABLES

16.2 FIGURES

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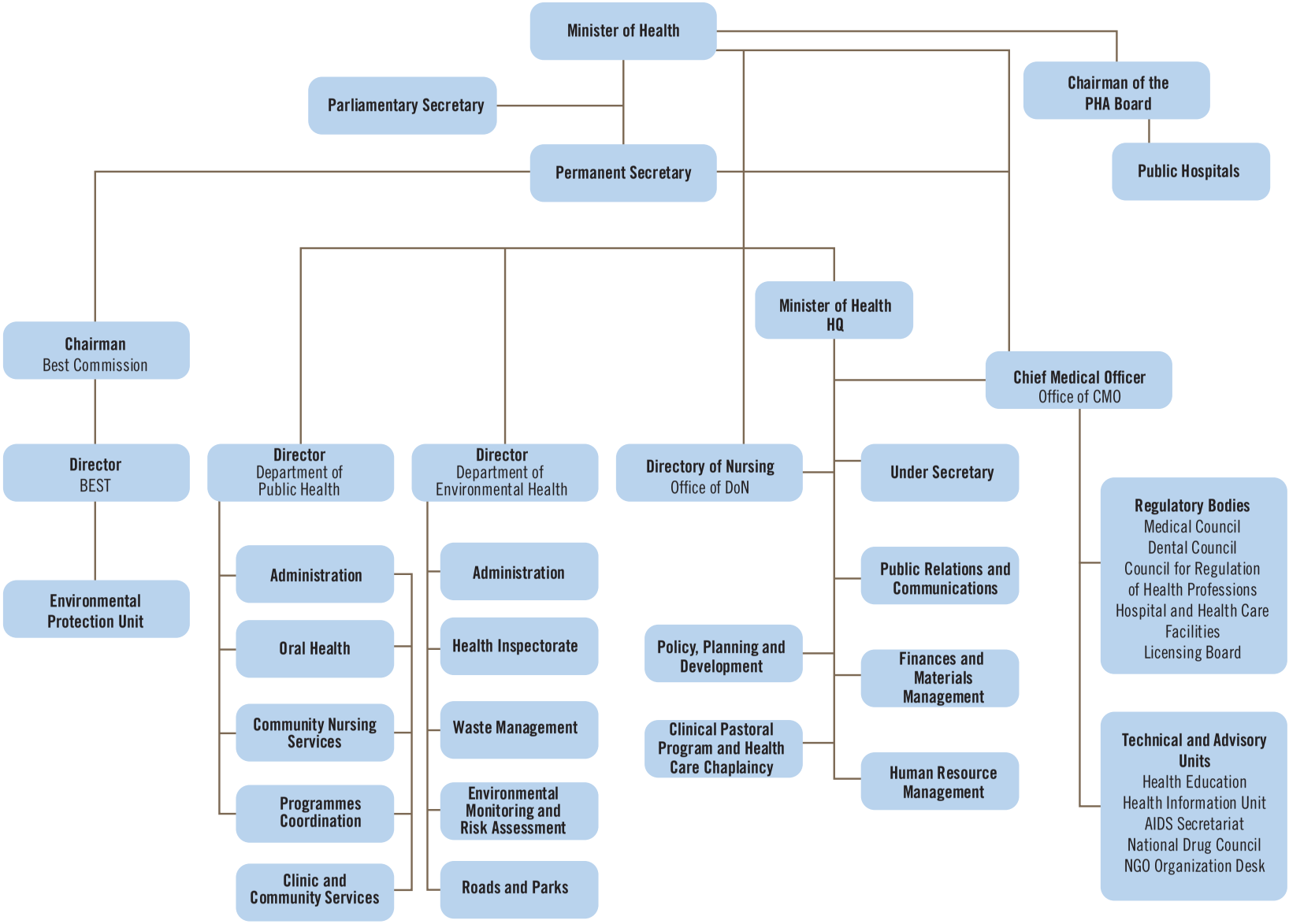
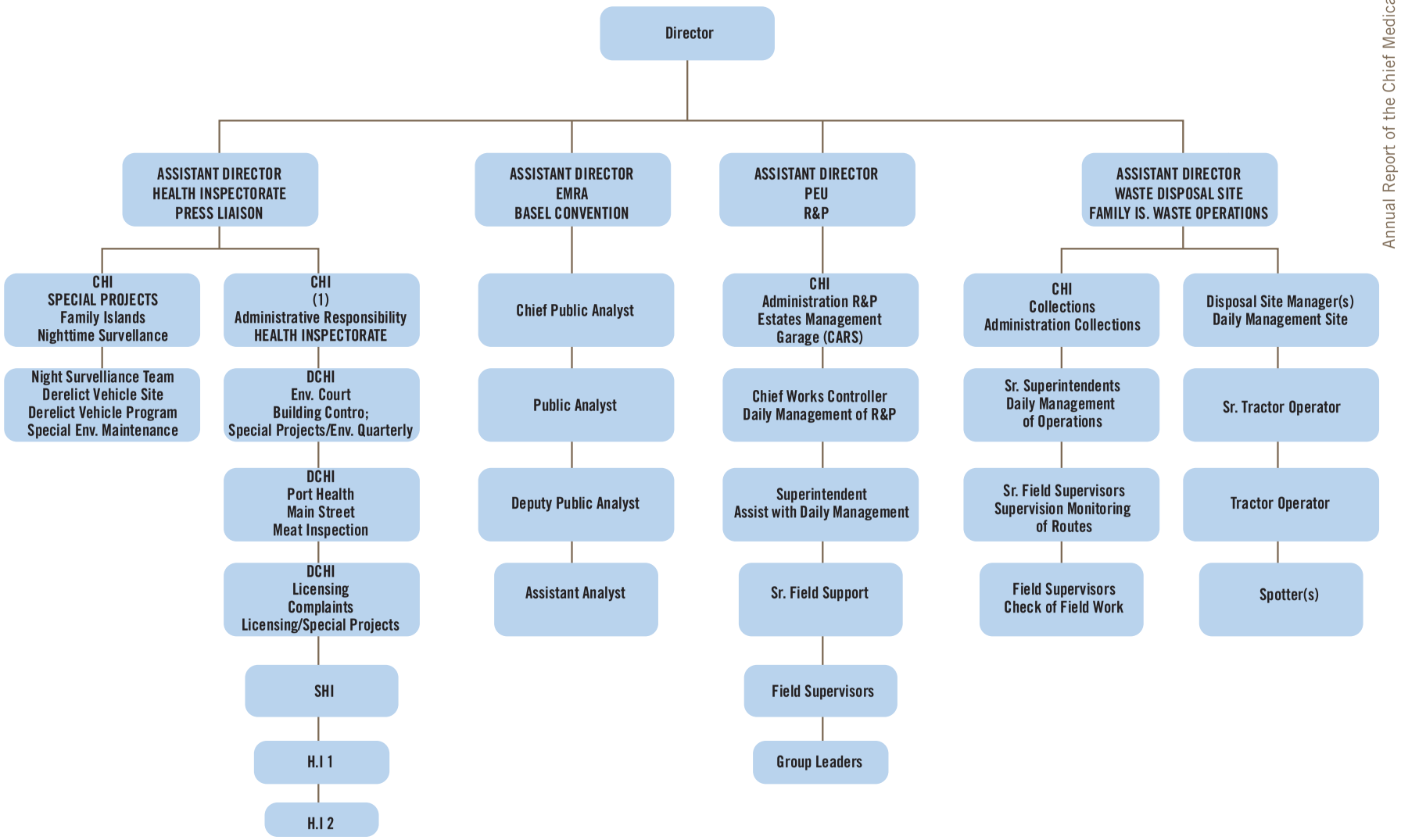
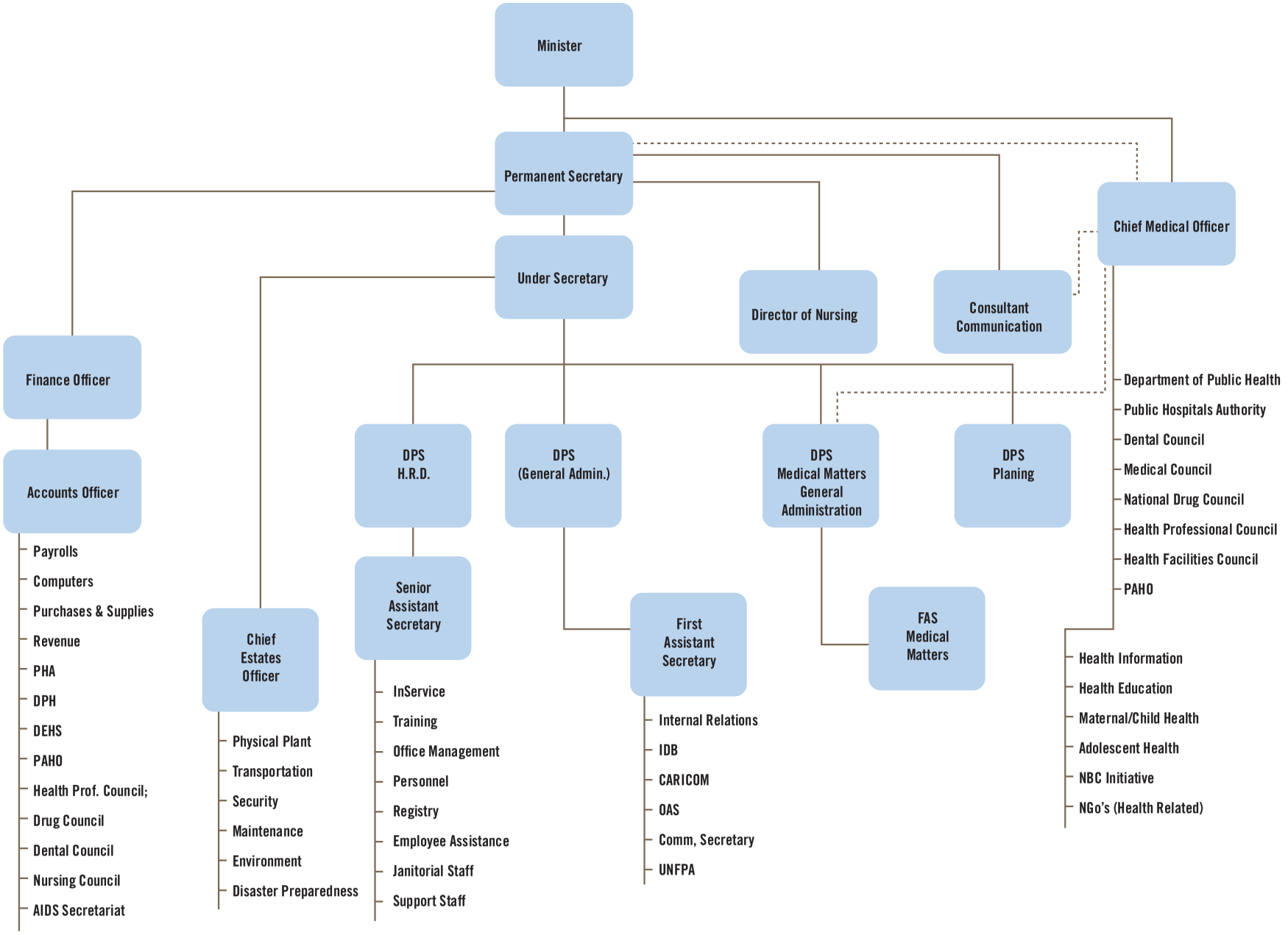


ANNEXES

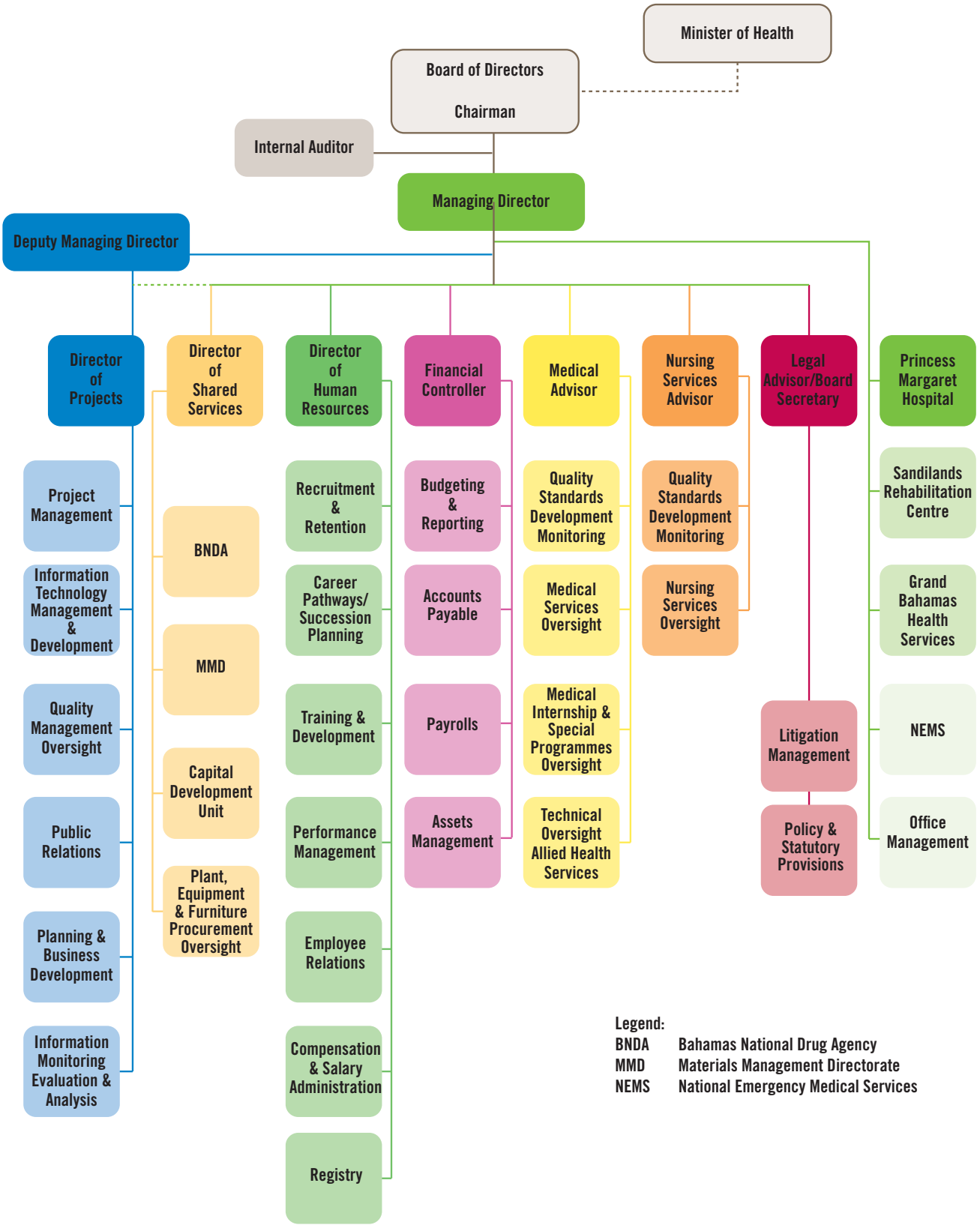
Department of Environmental Health Services under the Ministry of Health May 2007 – September 2008



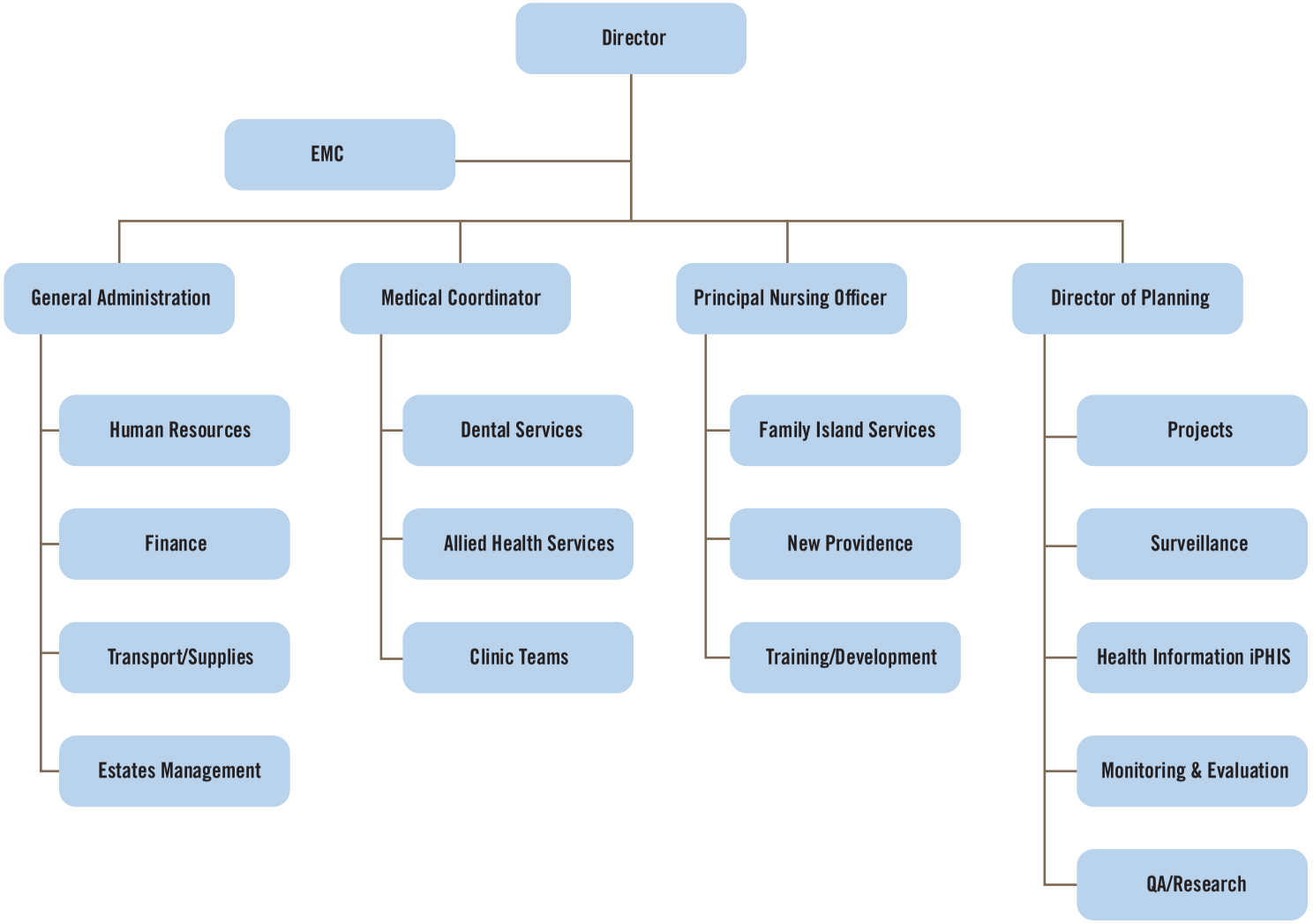
Ministry of Health and Social Development June 2007 – July 2008



Functional Organizational Chart—Public Hospitals Authority



Department of Public Health Proposed Organizational Structure – 2005



Ministry of Health
The Government of the Bahamas
Meeting and Delancy
Nassau, Bahamas