

# THE BARBADOS HEALTH REPORT

‘Healthy, productive people and communities’



Prepared by The  
Planning and Research Unit

2019

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## **ACKNOWLEDGEMENTS**

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## FOREWORD

It is a pleasure to present this first *Barbados Health Report 2019* of the Ministry of Health and Wellness, which covers the period, 2017-2018. It is a diversion from the traditional Chief Medical Officer's Report that you have been accustomed to receiving. The "Barbados Health Report" aims to provide a picture of our health status in a reader friendly format that will be accessible to both health care practitioners, partners within and outside of Government and members of the general public.

This reflects the multi-disciplinary approach to planning in health and seeks to engage all of our partners at every step of the process of health care delivery in Barbados. This *Barbados Health Report* is therefore a signal of our commitment to a more dynamic process of engagement.

The Barbados Health Report provides timely and relevant information on the health situation in the country. Indicators for the Sustainable Development Goals (SDGs), as well as information on major activities, initiatives, strategies and projects undertaken during the reporting period are included. The report also presents an analysis of data and challenges to the provision of services. It is in keeping with Barbados' commitment to the provision of universal health, which was the major theme of the 2019 World Health Assembly. Universal health strongly points to the value of having a sound primary health care system as the foundational approach for promoting well-being among the population, and one that is rooted in the needs of individuals, families and communities, meeting them where they live, work, learn and play.

Since May 24, 2018, the Ministry of Health and Wellness has taken steps to align its policies and programmes with the values and concepts of "wellness", to reflect the new designation of the Ministry. The Ministry of Health and Wellness will ensure that the health care system places greater emphasis on promoting wellness and well-being through the creation of a vibrant, sustainable behaviour change model that will effectively tackle the risk factors associated with the development of NCDs, new and re-emerging diseases, as well as our response to disease outbreak. My vision for health in Barbados is to significantly reduce the impact of NCDs by promoting and providing the type of enabling environment where wellness activities will become part of the daily experiences of all Barbadians.

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It is my hope that this report will become a primary resource for information on health in Barbados, providing greater insight into the health status of our country. Furthermore, it is my expectation that all health care practitioners in the private and public sectors, NGO partners and the general public of Barbados will be motivated to join in the march towards wellness to create a healthier and more productive nation.

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## ACRONYMS

A&E	Accident & Emergency
AGE	Acute gastroenteritis
AIDS	Acquired immune Deficiency Syndrome
SAOPC	St. Andrew Out-Patients Polyclinic
ART	Antiretroviral Therapy
BDS	Barbados Drug Service
BTPC	Branford Taitt Polyclinic
BNPP	Barbados National Pharmaceutical Policy
BNR	Barbados National Registry
BSPH	Barbados Strategic Plan for Health
BSS	Barbados Surveillance Survey
CAREC	Caribbean Epidemiological Centre
CBC-TV	Caribbean Broadcasting Corporation - Television
CBO	Community Based Organization
CD4	Cluster of Differentiation 4
CDC	Centers for Disease Control and Prevention
COFOG	Classification of Function of Government
CT	Chlamydia
ECPC	Edgar Cochrane Polyclinic
EGPC	Eunice Gibson Polyclinic
GDP	Gross Domestic Product
GH	Geriatric Hospital
GPC	Glebe Polyclinic
GSHS	Global School-based Student Health Survey
H1N1	Influenza Swine Flu/ Hemagglutinin 1 Neuraminidase 1
HAART	Highly active antiretroviral Therapy
HIV	Human immunodeficiency Virus
HRH	Human Resources for Health
IAEA	International atomic Energy agency



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<b>INN</b>	<b>International Non-proprietary Name</b>
<b>IMR</b>	<b>Infant Mortality Rate</b>
<b>DTHSSC</b>	<b>David Thompson Health &amp; Social Services Centre</b>
<b>SJOPC</b>	<b>St. Joseph Out-Patients Polyclinic</b>
<b>LRU</b>	<b>Ladymeade Reference Unit</b>
<b>MARPS</b>	<b>Most-at-Risk-Populations</b>
<b>MBPC</b>	<b>Maurice Byer Polyclinic</b>
<b>MRSA</b>	<b>Methicillin-Resistant Staphylococcus Aureus</b>
<b>MHW</b>	<b>Ministry of Health and Wellness</b>
<b>MMR1</b>	<b>Measles, Mumps, Rubella Vaccine</b>
<b>MSM</b>	<b>Men who have Sex with Men</b>
<b>NCDS</b>	<b>Non-Communicable Diseases</b>
<b>NG</b>	<b>Gonorrhoea</b>
<b>NGO</b>	<b>Non-Governmental Organization</b>
<b>PAHO</b>	<b>Pan American Health Organization</b>
<b>PEFAR</b>	<b>President's Emergency Plan for AIDS Relief</b>
<b>PH</b>	<b>Psychiatric Hospital</b>
<b>QEH</b>	<b>Queen Elizabeth Hospital</b>
<b>RPPC</b>	<b>Randal Phillips Polyclinic</b>
<b>SPPC</b>	<b>St. Philip Polyclinic</b>
<b>SMOH</b>	<b>Senior Medical Officer of Health</b>
<b>SPDH</b>	<b>St. Philip District Hospital</b>
<b>STI</b>	<b>Sexually Transmitted infection</b>
<b>WSPC</b>	<b>Winston Scott Polyclinic</b>
<b>TB</b>	<b>Tuberculosis</b>
<b>STOPC</b>	<b>St. Thomas Out-Patients Clinic</b>
<b>UHC</b>	<b>Universal Health Coverage</b>
<b>UN</b>	<b>United Nations</b>
<b>UNDP</b>	<b>United Nation Development Program</b>
<b>UNHLM</b>	<b>United Nations' High-Level Meeting</b>
<b>UNICEF</b>	<b>United Nations Children's Fund</b>

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UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development
UWI	University of the West Indies
WHO	World Health Organization

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## INTRODUCTION

The Barbados Health Report, formerly known as the Chief Medical Officer's Report gives a comprehensive overview of the health status of Barbados through programmatic and policy-based approaches. The report is descriptive in nature and provides a situation analysis of the health of the Barbadian population for the period 2016 to 2018.

The health care system in Barbados is dynamic with service being interlinked and consisting of many moving parts. Over the last five decades the health profile of Barbados has significantly changed from diseases related to malnutrition, poor sanitation and infections to one that reflects non-communicable diseases, new and emerging communicable diseases, a rapidly aging population and climate change. The health care system is based on a holistic life-course approach that embraces health care from the unborn infant through early childhood, adolescence, maturity, the elderly and the disabled.

Over the period under review we have maintained and sometimes exceeded partnerships with the private sector and civil society who both complement the national health care programme. These sectors not only support the work of the Ministry of Health and Wellness in service provision but provide health education and advocacy for the population.

With the cost of health care becoming very costly, we have endeavoured to maintain a motivated and well-trained workforce both in primary and tertiary care. However, it is recognized that migration of health care professionals remains a threat. Other areas that remain a threat to our vision of achieving Universal Health Care include the need for continuous investment in our aged health care infrastructure and our ability to be up to date with new technologies and pharmaceutical advances in health care. It must also be recognized that during 2017-2018, the Government of Barbados has been able to maintain its financial obligations to the Ministry of Health and Wellness. In addition, we managed to preserve our public health indicators such as maternal mortality rate and infant mortality rate.

Over the period under review we have still managed to have several successes. These include:

- The opening of the Best Dos Santos Public Health Laboratory
- The opening of the David Thompson Health and Social Services Complex
- The declaration of no further active transmission of the Zika Virus in 2018
- The development of a National Cancer Action Plan

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- The development of new and efficacious methods in the treatment of hypertension and diabetes
  - Building core capacities through the International Health Regulations particularly with the International Atomic Energy Agency
  - The improvement and refurbishment of inpatient wards at the Psychiatric Hospital
  - The implementation of the 'treat all' policy for HIV/AIDS as we move towards the 90-90-90 target
  - The completion of the second National Health Accounts Study
  - The training of health care professionals in responding to infectious disease outbreaks
  - The celebration of 50 years of partnership and cooperation with the Pan American Health Organization

As the Ministry of Health and Wellness continues to provide and regulate health care our challenge is to have the appropriate mix of skills and services to do so. We continue to deepen our relationships with local, regional and international partners and we remain committed to seek a newer financing of health care model that embraces less reliance on out-of-pocket spending and one that supports national health insurance.

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## **BACKGROUND**

In 2018, The Ministry of Health was renamed the Ministry of Health and Wellness (MHW). The MHW remains resolute in its mission to the achievement of Universal Health Coverage (UHC) and the attainment of the United Nations Sustainable Development Goal three, which is to: Ensure healthy lives and promote well-being for all at all ages. The MHW continues to prioritize the development of an equitable, efficient and accessible health care system with emphasis on wellness of the individual.

In respect of these initiatives the MHW has also established national targets which are aimed towards the achievement of UHC. The Barbados National Strategic Plan (2018) for Health outlines a vision for a “healthy, productive people and communities through excellent care for everyone, everywhere, every time”. At the core of this plan are the principles of equity and equality, emphasising the importance of health for the social and economic welfare of the country. The strategic goals outlined in the plan are: to promote and protect the health of the population; provide safe quality centred services; improve the performance of the health system; engage and mobilize partners in health.

Additionally, the MHW has embraced the World Health Organization's model for health care delivery, which states that the critical functions of a health system are: stewardship, policy and strategy formulation and regulation, financing and purchasing, provision of health care services, and resource generation. The reform process continued to be articulated in the Barbados Economic Recovery and Transformation Plan (BERT). The mission critical actions for the MHW are the expansion of Accident and Emergency at the Queen Elizabeth Hospital and the extension of 24 hours' polyclinic services at two polyclinics.

## SOCIAL, POLITICAL AND ECONOMIC DETERMINANTS

**Table 1. Selected economic and demographic indicators, Barbados, 2017-2018.**

Indicator	2017	2018
Real growth (%)	0.8	-0.4
Inflation (%)	4.4	3.7
Unemployment (%)	10.0	9.7
Life expectancy (years)	75.5	75.6
Expenditure on health as % of country total	13.12	7.54
Nominal GDP(BBD)	9,956.31	10,173.39
Per Capita GDP(BBD)	30, 800	31,400

Barbados is considered to be a high-income country. The economy is service-based with tourism being the main driver of economic activity. The nominal GDP in 2017 was US\$ 9,956.31 million and increased marginally to US \$10,173.39 million by 2018. Per capita GDP in 2018 was BBD \$31,400. The average rate of inflation decreased from 4.4% in 2017 to 3.7 % in 2018 see Table 1. The unemployment rate was 10% in 2010 and had decreased to 9.7% by 2018. The expenditure on health as a percentage of the total country is on a decline from 13.12 in the actual expenditure in 2017 to 7.54 in 2018.

Barbados' second National Health Accounts Study in 2018 found that 51% of current health expenditure was paid from government tax revenue, 43% from out-of-pocket sources by households, and approximately 5.8% from private health insurance. Due to the rising costs of health care and the current economic situation of the country, the Ministry of Health and Wellness has been examining methods and policy options that would lead to sustainable financing of public health services while ensuring universal health coverage.

One method introduced in October 1st 2018, was the increase in employers' and employees' NIS contributions by 1.5% and 1.0% respectively. This represents a new Health Service

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Contribution which will raise \$45 million per annum. Furthermore, the National Insurance (NIS) will transfer this money directly to the Queen Elizabeth Hospital.

## **DEMOGRAPHICS, MORTALITY AND MORBIDITY**

In 2017, Barbados' total population estimate was approximately 274, 853 as shown in Figure 1. National population estimates for the years between 2015 and 2017 have decreased by almost 2000 as shown in Table 2. The table shows that females accounted for 52% of the total population in 2017 and males, for 48%; the population younger than 15 years old represented 19.72% of the total. In 2017, the crude birth rate was 9.2 per 1,000 populations and the crude death rate, 9.2 per 1,000. That same year, women of childbearing age (15–49 years old) represented 49% of the total female population, with a total fertility rate of 1.4 children per woman, a reduction from 2015, 1.6. Life expectancy at birth was 73.1 years for men and 78 years for women, with an overall life expectancy rate at birth of 75.6 in 2018. The infant mortality rate was 13.9 in 2017. Most of the population lives in the parishes of Saint Michael, Christ Church, and Saint Philip parishes.

The natural increase rate identifies the rate at which a population is increasing or decreasing. For the second straight year the natural increase rate has been negative. In 2015 the natural increase rate was 380 per 1000 population, however in 2017 the natural increase rate is -21. This indicates that the rate of deaths is increasing at a faster rate than the rate of births which is cause for a concern. As this indicates that the population is decreasing at an exponential rate. Of more significance in 2010 (Chief Medical Officer report, 2015) the rate of natural increase was 1,158. This represents a substantial decline in nine years.

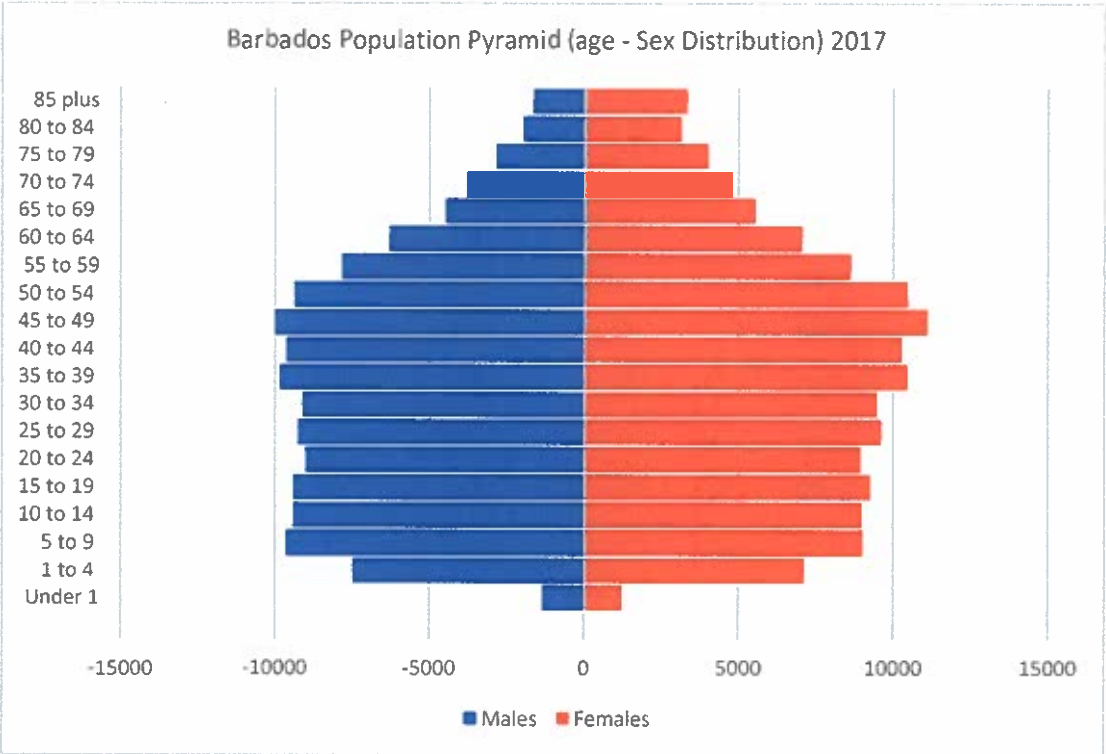
**Table 2: Basic Demographic Information 2015-2017**

Indicator			
	2017	2016	2015
Total estimated mid-year population <sup>(1)</sup>	274,853	275,895	276,633
Population under 1 year	2,574	2,541	2,876
1 – 4 years	14,600	14,698	14,402
5 – 14 years	34,432	37,160	37,245
15 – 19 years	18,670	18,744	18,789
20 – 44 years	95,638	96,011	96,258
45 – 64 years	70,790	71,051	71,248
65 years and over	35,591	35,691	38,815
Women 15 – 44 years	59,200	58,273	58,482
Live births	2,520	2,611	2871
Births rate (per 1,000 population)	9.2	9.5	10.4
Total Fertility rate (women 15-44 years)	1.4	1.5	1.6
Deaths occurring during the year	2,541	2,682	2491
Crude Death rate (per 1,000 population)	9.2	9.7	9.0
Stillbirths	22	21	21
Stillbirth rate (per 1,000 total births)	8.6	8.0	7.3
Natural increase	-21	-71	380
Natural increase rate (per 1,000 population)	-0.076	0.33	1.4
Infant deaths	35	37	37
Infant deaths rate (per 1,000 live births)	13.9	14.2	12.9
Perinatal deaths	42	38	39
Perinatal death rate (per 1,000 total births)	16.5	16.9	13.5
Neonatal deaths	27	23	23
Neonatal death rate (per 1,000 live births)	10.7	8.8	8.0
Deaths in children 1-4 years	3	2	4
Age specific death rate in children 1-4 years (per 1000p)	0.2	0.1	0.3
Deaths in children Under 5 years	38	39	42
Age Specific Mortality rate in children Under 5 years	2.2	2.3	2.4
No. Maternal deaths	0	3	1
Maternal Mortality Ratio (per 1,000 live births)	0	1.1	0.3

**Notes:** (1) Population statistics supplied by the Barbados Statistical Services



**Figure 1 Barbados Population Pyramid 2017**



Source: Barbados Statistical Service as shown in Table 3, in 2017 children under the age of 15 accounted for 19.7 per cent of the population; 67.3 per cent was between the ages of 15 to 65 years while the elderly defined as person 65 years and over, was 12.9 per cent. Females represented 52.3 per cent of the population outnumbering males in every age cohort over the 25 -29 age group.

**Table 3 Age and Gender Population Distribution**

Age	Total	%	Male	%	Female	%
Under 1	2,574	0.94	1352	0.49	1222	0.44
1 to 4	14,600	5.31	7,487	2.72	7,113	2.59
5 to 9	18,645	6.78	9,646	3.51	9,000	3.27
10 to 14	18,376	6.69	9,409	3.42	8,967	3.26
15 to 19	18,674	6.79	9,416	3.43	9,258	3.37
20 to 24	17,980	6.54	9,026	3.28	8,953	3.26
25 to 29	18,886	6.87	9,277	3.38	9,609	3.50
30 to 34	18,586	6.76	9,115	3.32	9,471	3.45
35 to 39	20,298	7.38	9,846	3.58	10,452	3.80
40 to 44	19,899	7.24	9,626	3.50	10,273	3.74
45 to 49	21,135	7.69	10,023	3.65	11,111	4.04
50 to 54	19,833	7.22	9,375	3.41	10,458	3.81
55 to 59	16,474	5.99	7,841	2.85	8,633	3.14
60 to 64	13,340	4.85	6,302	2.29	7,038	2.56
65 to 69	10,038	3.65	4,494	1.63	5,544	2.02
70 to 74	8,583	3.12	3,789	1.38	4,793	1.74
75 to 79	6,857	2.49	2,852	1.04	4,005	1.46
80 to 84	5,092	1.85	1,978	0.72	3,113	1.13
85 plus	4,984	1.81	1,654	0.60	3,330	1.21
<b>TOTAL</b>	<b>274,853</b>	<b>100.00</b>	<b>132,508</b>	<b>48.21</b>	<b>142,345</b>	<b>51.79</b>

Source: Barbados Statistical Service

Barbados is one of the most densely populated countries in the world, with a density of 1,627 inhabitants per square mile (639 per km<sup>2</sup>). The 2010 population census estimated that the parishes of St. Michael and Christ Church accounted for 51.4 per cent of the population, and approximately 88.7 per cent of the population resided in the urban corridor, stretching from St. James in the north, through St. Michael, Christ Church and St. Philip.

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## **ORGANIZATION OF THE HEALTH SYSTEM**

The Ministry of Health and Wellness is the executing agency for the delivery of health care in the public sector. The Ministry is headed by a Minister whose authority is vested in the Health Services Act Cap 44 of the Laws of Barbados. The Minister has overall responsibility for formulating health policies, setting strategic directions, norms and standards, enforcing regulations, as well as providing the political leadership for the sector. Decision-making is centralized and there are no local health authorities.

The Permanent Secretary is the administrative head of the Ministry, functioning as the Chief Executive and Accounting officer, and is responsible for the proper functioning of all sections of the Ministry. The Chief Medical Officer is responsible for all technical and professional functions of the health sector. In this regard, the Chief Medical Officer has statutory responsibilities which are wide ranging and include oversight of the practice of health care professionals, as well as the standards of clinical practice throughout the sector.

The overarching objectives of the Ministry of Health and Wellness are to promote health, provide comprehensive health care and to ensure that environmental concerns are considered in all aspects of national development. In addition to these objectives, the Barbados Strategic Plan for Health (BSPH) 2002 -2012 and the United Nations Millennium Development Goals have provided strategic directions and programme areas for the promotion of health and the delivery of health services. The health services are organized into the following programme areas:

**Primary Health Care** - delivered from the nine polyclinics and three satellite clinics that are strategically located along the major road networks within each catchment area. The polyclinic model is based on the primary health care approach and therefore provides a wide range of preventive and curative services, including maternal and child care services, immunization, family planning, dental care, general practice (GP) services, nutrition counselling and environmental health services.

Acute, Secondary, Tertiary and Emergency Care are provided at the Queen Elizabeth Hospital with support through the Medical Aid Scheme for services that are not available at the QEH.

**Mental Health** - provided at the Psychiatric Hospital.

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Care of the Elderly - provided through the Geriatric Hospital and three District Hospitals that provide in-patient long-term care for the elderly. This programme also includes the Alternative Care of the Elderly Programme, which is a partnership arrangement between the MHW and private sector providers of long-term care for the elderly.

Care of Persons with Disabilities - provides for the assessment and rehabilitation services for children with disabilities at the Albert Cecil Graham Development Centre and Elayne Scantlebury Centre.

Pharmaceutical Services - provided by the Barbados Drug Service, which is responsible for the annual production of the Barbados National Drug Formulary, and for the procurement and distribution of the drugs listed in the formulary.

Laboratory Services- provided by the Best-Dos Santos Public Health Laboratory, which was officially opened in January 2018. The facility is an amalgamation of the Public Health Laboratory, the Leptospira Laboratory and the Ladymeade Reference Unit Laboratory, with bio-safety level three capacity, improved lab safety and the capability for an enhanced range and quality of tests.

#### Inspection and Licensing Programmes:

The Ministry of Health and Wellness continued to perform the dual role of provider of health care services and regulator of the sector. The Medical Council, the Nursing Council, the Pharmacy Council, the Dental Council and the Paramedical Professional Council were each responsible for setting the standards for professional conduct and for registration of physicians, dentists, nurses, pharmacists, and allied health professionals respectively.

During the period, the Drug inspectorate maintained the inspection and licensing programme for pharmacies (public and private) and drug manufacturing plants in keeping with the requirements of the Health Services act. Similarly, the Environmental Health Officers maintained the inspection and licensing programme for hotels, restaurants, bakeries, supermarkets and hairdressers, in keeping with the requirements set out in the respective regulations of the Health Services act.

The Advisory and Inspection Committee comprising a Public Health Nurse, an Environmental Health Officer, a Nutrition Officer, and a Drug Inspector was responsible for the inspection,

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licensing and periodic monitoring of the operations of nursing homes and senior citizens' homes. The Senior Laboratory Technologist similarly headed a team responsible for licensing and providing oversight of the operations of private and public medical laboratories.

## **HEALTH POLICIES AND PLANS**

The Ministry of Health and Wellness remains committed to creating a transparent and accountable approach to health service delivery, improved health service performance, and enhanced system capacity within the current fiscal environment. The Ministry is also committed to improving access to services in line with the health reform agenda. The Ministry's draft Strategic Plan will serve to guide interventions in health over the next five years. The plan places emphasis on strategic themes such as governance, cost containment, sustainability, access to care and quality improvements in health. The MHW has also placed emphasis on the introduction of a number of efficiency measures, projects and programmes over the next three (3) financial periods to improve the delivery and management of the Health Sector.

The Ministry of Health and Wellness is committed to the development of a new sustainable health financing framework. The framework will be underpinned by a health system approach and gives consideration to alternative models of accumulating funds, paying hospitals and health care providers, and establishing a system of accountability that enhances the performance of the health care system. This embraces modern approaches to the governance and management of health services, and to ensure that the accountability framework and incentive schemes that have become standard practice in many industrialised countries be applied to the health sector in Barbados when applicable.

Two main recommendations emerging from extensive health financing consultations were to make the health system more efficient and implement a system of financing that guarantees a pool of earmarked funds for the health services. Major activities will include undertaking an actuarial study which determines: the population base which can contribute to such a fund and how much. Another critical component of the proposed study will be to determine the essential basket of services from the primary, secondary and tertiary care levels, to be covered by these funds.

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The Ministry will continue to place emphasis on the formulation of a policy and strategy to guide the reorganization of primary health care services. Priority will be placed on the full integration of mental health and HIV services into the polyclinic system.

Further priorities include:

1. Collaboration with the Pan American Health Organization to conduct a full assessment of the Primary Care management structure with a view to strengthening Primary Care Services through improved management systems and structures hence improving accountability and service provision throughout the Polyclinics; and
2. Completion of the National Adolescent Health Strategic Plan and Adolescent Health Social Media Campaign promoting health and wellness in the areas of mental and sexual and reproductive health.

The Ministry of Health and Wellness in collaboration with the Pan American Health Organization developed the draft Barbados Adolescent Health Strategy 2019-2029. This strategy was developed using a participatory process involving stakeholders from several sectors and agencies in Barbados. The Ministry built on the momentum created by the 2030 agenda and the recognition that the Sustainable Development Goals cannot be achieved without investment in adolescent health. The strategy was developed using WHO's Global Adolescent Action for the Health of Adolescents (AA-HA!) guidance which has been proven to respond more effectively to the health and wellness needs of adolescents.

The Strategy proposes a 10-year plan that aims to engage and respond to the needs of adolescents (10-19 years) living in Barbados. This will be accomplished by developing and strengthening the health sector's integrated response and targeting those adolescents that are most at risk. The Strategy seeks to improve the health of adolescents in Barbados and to respond to the changing context- demographic transition, globalization, environmental changes and new communication technologies. This initiative cannot be achieved by the health sector alone. The integration and coordination of actions of all stakeholders is a must in order to minimize the duplication of efforts and maximize the impact of investments made. The draft Barbados Adolescent Health Strategy 2019-2029 has been finalized and is awaiting approval and launch in 2019.

The MHW will continue to advance work to combat NCD risk factors and to develop a new plan that will address NCDs through the application of the wellness approach. Work has commenced to create a new plan that integrates NCDs with wellness. The wellness approach is a more holistic model which combines emphasis on physical, mental, social, environmental,

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spiritual, intellectual, creative, occupational and financial dimensions. The MHW intends to expand its work with community groups including faith-based organisations.

Future plans will include:

- Re-evaluation of sweeten-beverage tax;
- More aggressive front of package labelling of food products; and
- Standardise the treatment of hypertension

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## **HEALTH OF POPULATION GROUPS**

### **Maternal and Child Health Programme 0 -4 years**

Infants and children 0–4 years represented 6.25% of the estimated total population in 2017 as shown in Table 3. In 2017, there were 38 deaths in children under 5 years; 35 deaths were in infants, a notable reduction from 42 in 2015 as shown in Table 2. The estimated infant mortality rate was 13.9 per 1,000 live births; the corresponding age-specific death rate in children 1–4 years old was less than one death per 1,000 populations in 2017. The perinatal mortality rate in 2017 was 16.5 deaths per 1,000 live births, an increase from 2015 while this is an increase from 2015 at 13.5 but rates fluctuated over the period.

In 2017, the rate of disease in this age group ranged from acute respiratory infection, cerebrovascular disease, bacterial sepsis of new-born, other perinatal disorders. Children seen in the government clinics are routinely monitored for growth and development.

The health of future generations is to a great extent determined by a baby's growth and development within the womb. The success of foetal life determines not only the health of the new-born, but also has a major impact on adult health and disease risk. Good perinatal health is therefore important to individuals, to society and to future generations (Barker et al., 2013). To this end the Ministry of Health and Wellness designed and printed an antenatal booklet to inform pregnant women about what to expect during pregnancy and when to access medical care. This booklet is given to each pregnant woman at their first antenatal visit at the Polyclinic. When women are well informed about pregnancy and what to expect, they make better decisions about their health and this leads to improved health outcomes for both mother and baby.

### **Children 5-14 years**

In 2017, the age group 5–14 years represented 13.47% of the total population; males represented 6.93% of the population and females, 6.53%. In 2017, there were eight deaths in this age group, two of those due to land transport accidents, one to leukaemia, one due to appendicitis, three to malignant neoplasm of unspecified sites and one due to events of undetermined intent as shown in Table 52. The number of deliveries among women younger than 15 years declined from 7 in 2015 to 2 in 2017. The number of terminations of pregnancy increased from 1 in 2015 to 3 in 2017. At age 11 years, children are given a booster of



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diphtheria, tetanus, and polio vaccines as part of the entry requirement into secondary school. The overall health status of this group is good. There were no deaths in this age group from HIV/AIDS in 2017.

### **Adolescent Health 15-24 years**

In 2017, persons aged 15–24 years represented 13.33% of the total population; males represented 6.71% and females, 6.6%. There were 31 deaths in this age group in 2017, due to leukaemia (1), malignant neoplasm of other genitourinary organs (1), other malignant neoplasm (2), land transport accidents (6), congenital malformations (1), falls (1), meningitis (2), asthma (1), respiratory disease (1), appendicitis (1), and events of undetermined intent (14). In 2017, there were 869 deliveries to females 15–24 years, a significant decrease from 2015 of 1335 deliveries. In 2017, there were 149 terminations of pregnancy to women 15–24, compared to 249 in 2015.

There were no deaths in this age group from HIV in 2017. In 2015, births to teenagers were 327 (12.2%) of all births; in 2017 there were 269 (11.2%). Of the total number of abortions in 2015, 10% (49) were in teenage women; they decreased to 12.9% (48) in 2017.

### **Adults 25-64 years**

In 2017, adults 25–64 years represented 54% of the total population, with males accounting for 54% and females for 54%. The total fertility ratio in 2017 was 1.4 children per woman 15–44 years old, a decrease of 1.6 from 2015. Data from the Barbados Family Planning Association (BFPA) indicated that in 2017 there was an increase of services being accessed by clients all service in 2017 compared to other areas as shown in Table 75. In 2017, the family planning methods preferred by adults were short acting reversible contraceptive (pills, injections...) and emergency contraceptive as seen in Table 75. With the promotion of early registration for prenatal services, women were seen by the 12th week of gestation and regularly thereafter for monitoring maternal health and foetal growth, as well as to prevent medical complications for both mother and baby during pregnancy. There was one maternal death in 2015, three in 2016, and none in 2017.

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In 2017, there were 118 deaths among 25–44-years. The leading causes of death in this group were other infectious and parasitic disease (8), malignant neoplasm of female breast (6), pulmonary heart disease (11), land transport accidents (7) and events of undetermined intent (19). In 2017, there were 498 deaths among persons 45–64 years, and the leading causes were malignant neoplasm of female breast (32), ischemic heart disease (39), pulmonary heart disease (36), cerebrovascular diseases (32) and malignant neoplasm of digestive organs and peritoneum, except stomach and colon (28).

### **65 Years and older**

In 2017, the population 65 years and older represented 12.92% of the general population; males accounted for 5.37 % and females for 7.56%. In 2017, there were 1842 deaths among persons 65years and older, and the leading causes were diabetes mellitus (162), cerebrovascular diseases (176), malignant neoplasm of prostate (117), pulmonary heart disease (112) and acute respiratory infection (105). With an increasingly aging population, there were major challenges for the provision of health care and other social services, especially for persons 75 years and older.

The increasing incidence of NCDs in the general population calls for greater emphasis to be placed on promoting wellness and maintaining functionality in this vulnerable population group. For older persons to realise good health it is essential for them to maintain mobility and functionality; decrease risk factors for complications of existing medical conditions; maintain active social life through recreational activities; and continue to play an active role in the family and community.

Having access to comprehensive rehabilitation services is mandatory, especially during and immediately after hospitalization, to mitigate disability. Comprehensive after care plans for continuation of medical care in the community with adequate support in the home is also necessary.

Alternative institutional care in the community is required to meet the needs of the growing elderly population. Promoting non-institutionalized care coupled with efforts to remove barriers to independent living and preventing disability would make it possible for more seniors to remain in their homes or in homelike communities.

## PERSONS WITH DISABILITIES

### Elayne Scantlebury Centre

The Elayne Scantlebury Centre continued to perform an important role in the provision of care for the disabled, who required long term nursing services. However, the facility remained unable to fully satisfy the demand for long term care beds and the annual requests for entrance remained unfulfilled.

**Table 4: Number of patients referred to Specialized Care Services 2017 to 2018.**

SPECIALTY	2017	2018
Ear, Nose, Throat	3	3
Dermatology	3	3
Dental	3	2
Rehabilitation	Service not available	Service not available
Podiatry	Service not available	Service not available
Nutrition	18	5
Urology	Nil	1
Cardiology	2	nil
Ophthalmology	2	nil

The Centre faced certain challenges in 2017 which remained in 2018. Specialized services such as rehabilitation, podiatry, dental and other such services were lacking due to human resource constraints.

**Table 5: Elayne Scantlebury Centre Bed Capacity and Admissions 2017 to 2018.**

YEARS	2017	2018
Admissions	Nil	Nil
Re-Admissions	7	8
Bed Capacity	27	26
Deaths	1	Nil
Discharges	Nil	Nil
Transfer to QEH	1	1
Transfer to Mental Health	4	1
Transfer to Home Care	7	6

YEARS	2017	2018
Referral to A&E	3	3
Referral to Mental Health	6	13
Infections	66	37
Falls	6	8
Ulcers	27	5
Diabetics	2	2
Hypertension	2	3
Cerebral Palsy	1	1
Down Syndrome	3	3
Autism	2	2
Hydrocephalus	1	1
Mentally Disabled	17	17
Talipes Equinovarus	1	1
Epilepsy	3	3
Psychoses	3	3
Lower Limb Paralysis	2	2

The residents experienced a high number of infections and ulcers. Upper respiratory tract infections, viral conjunctivitis ear infections and skin infections were common as seen in Table 5. There were also a number of MRSA related ulcers and infections.

The Centre faced challenges in 2018. Some were:

- The relocation to the St. Lucy District Hospital posed some challenges due to the mobility and the space requirements for this special population.

### **Albert Cecil Graham Development Centre**

Albert Cecil Graham Development Centre caters to children and young adults with developmental disabilities. A wide range of services are offered at the Centre namely: physiotherapy ,medical services, occupational therapy, speech, psychological services, neurology, orthopaedics, day care, special education, social work and counselling services, medical services for persons over 21 years of age, hydrotherapy (water), early stimulation

multi-sensory stimulation, audio logical services: hearing aids, ear moulds and workshop training for persons 16 years and over, where they are prepared for the world of work.

Problems with programmes

- I. Inadequate support staff.
- II. The department has a high no show for therapies and medical appointments due to
  - i. Difficulties in reminding clients of their appointments
  - ii. Inadequate transport system, the buses often have mechanical issues.
  - iii. Inadequate space for therapy.
  - iv. The psychology space is inadequate for floor activity.
  - v. Building disrepair, there is leakage and mould, maintenance is inadequate.
- III. Inadequate therapy staff.
  - i. There is 1 speech therapist who also supervises some polyclinics resulting in a waiting list of 2 years.
  - ii. The services of a psychiatrist and orthopaedist have been suspended due to unavailability of physicians to facilitate these services.
  - iii. Children needing orthotics have to be referred to the QEH for this service.

**Table 6 Patient profile shows the number of new referrals seen and number of persons medically reviewed.**

	2017
Total No. of Persons seen for the first time	141
No. of Persons Medically Reviewed	1065
No. of No shows	268
No. of Recorded Deaths	7
Overall No. of Active Persons registered at the Centre as of 31 <sup>st</sup> December, 2017	2694
Overall No. of Persons Registered at The Centre as of 31 <sup>st</sup> December, 2017	4589

There was a decline in new referrals by 28 children when compared to in 2016 which was 169. However, there was an increase in persons being medically reviewed.

**Table 7: AGE DISTRIBUTION OF NEW EVALUATION-2017**

AGE	M	F	TOTAL	%
0 – 4 yrs	32	28	60	42.6
5 – 8 yrs	42	9	51	36.2
9-12 yrs	16	10	26	18.4
13-16 yrs	2	1	3	2.1
>17 yrs	1	0	1	0.7
25 yrs and over	0	0	0	0
<b>TOTAL</b>	<b>93</b>	<b>48</b>	<b>141</b>	<b>100</b>

Table 7: The highest number of new referrals was in the 0-4 years' age group at 60 persons followed by the 5 – 8 age group at 51 persons. Males were the highest number referred in both age grouping.

**Table 8: Number of patients seen in the individual departments**

UNIT	NO. OF PATIENT SEEN
Audiology	407
Physiotherapy	1894
Occupational Therapy	221
Speech therapy	1030
Psychology	188

## MAJOR INITIATIVES

### During the period under review:

- Two Cochlear Implant Clinics were conducted at the ACGDC in the Audiology Department.
- Two new programmes were successfully initiated in the Physiotherapy Department:
  - Increased group sessions to cater for various age-groups and challenges to enhance motor skills for inclusion;

- 
- “Back to School” clinic to ensure that adjustments of special equipment are completed before or within first month of the new school year.

## **HEALTH CONDITIONS & PROBLEMS**

### **COMMUNICABLE DISEASES**

#### **New and Emerging Communicable Diseases**

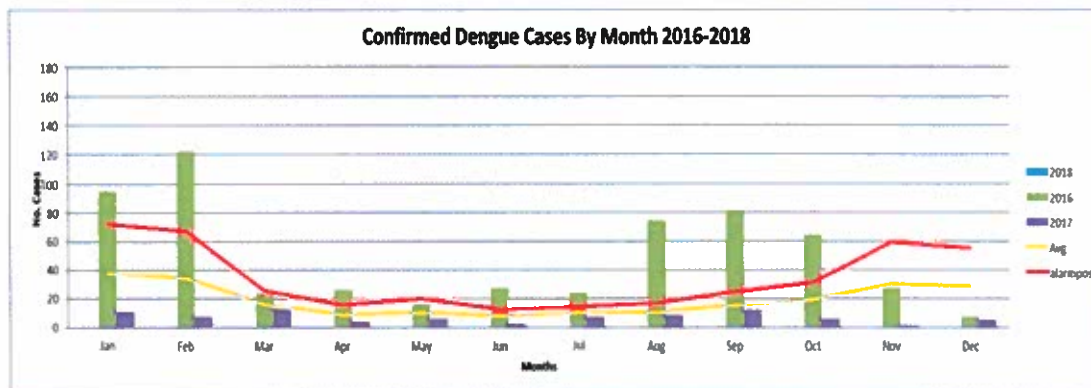
Along with other CARPHA member states, Barbados was considered to have interrupted Zika virus transmission in 2018 having had no new confirmed cases since March 2017 despite testing of suspected cases. Zika virus disease is with congenital malformations and increased occurrences of Guillain Barre Syndrome in the Brazil outbreak in 2014; three cases were confirmed in Barbados in late 2015. Cases continued to be diagnosed in Barbados in 2016 and early 2017 with total numbers for the year 2016 set at six hundred and eighty-eight (688) suspected cases and one hundred and forty-four (144) laboratory confirmed cases. Three confirmed cases were diagnosed in 2017.

Specific guidelines have been developed and updated for testing and careful monitoring of the health of: pregnant women, children born to mothers with Zika and children with anomalies. The Ministry of Health and Wellness (MHW) will continue to monitor for Zika locally and internationally.

Dengue Fever is endemic to Barbados. The last outbreak year recorded was 2016. At the end of December 2016, there were five hundred and eighty-seven (587) confirmed cases of Dengue Fever, as shown in Figure 2, compared to the seventy-six (76) cases that were confirmed in 2017. Five hundred and seventy-one (571) cases of Dengue fever were suspected to have occurred in 2017. There were no confirmed cases of dengue in 2018 although sixty-six (66) probable and suspected cases were recorded.

There were twenty-seven (27) confirmed cases of Chikungunya in 2018. After one hundred and twenty (120) suspected and four (4) confirmed cases in 2016, there was only one (1) confirmed case recorded in 2017.

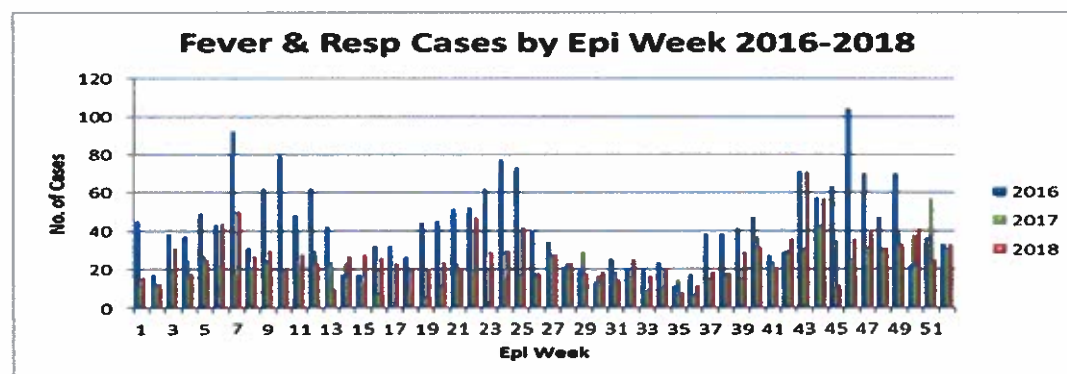
**Figure 2: Confirmed Dengue Cases 2016-2018**



Source: Ministry of Health, 2019

Syndromic surveillance also continued for respiratory disease, syndromes indicating other vector borne diseases and injuries during the year under review. Respiratory infection tended to follow a fifteen -week cycle with three (3) main peaks throughout the year as shown in Figure 3. Influenza was the second most common respiratory virus isolated after the common cold virus, with seventeen (17) confirmed cases in three distinct virus types- H1N1, H3N2 and Influenza B. Three (3) cases of Tuberculosis were confirmed by laboratory testing in 2016. In addition, two other persons were clinically diagnosed and treated. Only one (1) case of Tuberculosis was confirmed in 2017 and in 2018. All these cases were domiciled in Barbados and none of these cases were drug resistant.

**Figure 3: Fever and Respiratory cases 2016-2018**



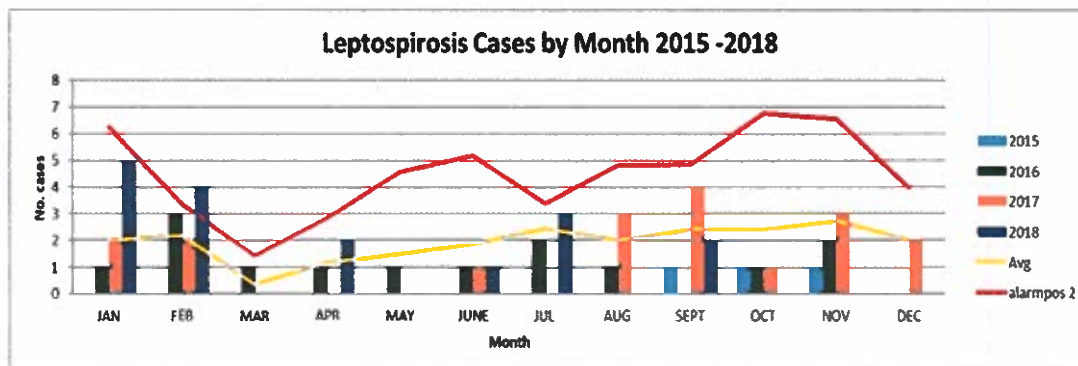
Source: Ministry of Health and Wellness, 2019

Leptospirosis is a vector-borne disease of rodents, which most often occurs in the rainy seasons and may present as fever with jaundice. As shown in Figure 4, there were three (3) confirmed cases in 2015, fifteen (15) confirmed cases in 2016 with one death, twenty-two confirmed (22)



cases with one death in 2017 and seventeen (17) confirmed cases with one death in 2018. Public education was focused on helping persons to discourage rodent proliferation by decreasing breeding sites and food sources as well as a reduction of exposure to rodent dropping by the use of appropriate personal protective equipment while gardening or cleaning animal houses.

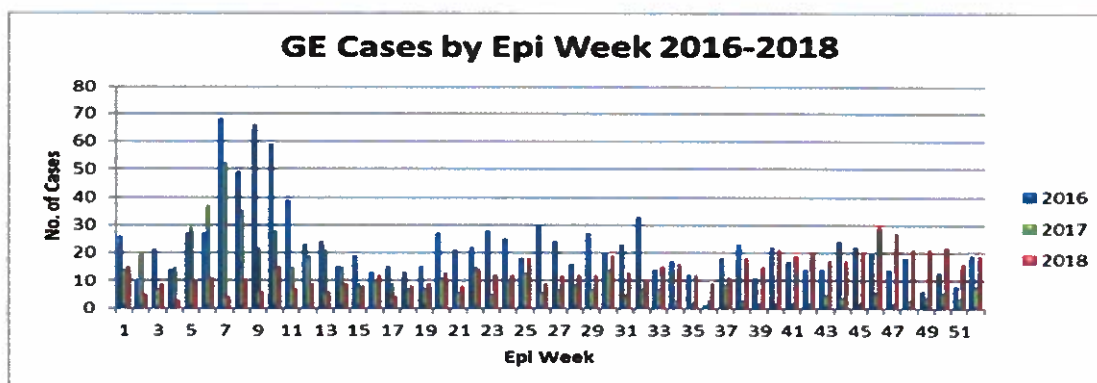
**Figure 4: Leptospirosis Cases 2015-2018**



Source: Ministry of Health and Wellness 2019

Vomiting and diarrhoea occurred throughout the year and is associated with bacterial or viral agents. Gastroenteritis outbreaks, in Barbados, tend to be viral in nature, or may be associated with contamination of foodstuff. The organisms identified were: Salmonella or Campylobacter bacteria. Viruses causing gastroenteritis were infrequently identified, and were mostly rotavirus or norovirus. For example, in 2017 twelve (12) cases of rotavirus and eleven (11) cases of norovirus were diagnosed for the entire year, while in 2016 these numbers were thirteen (13) and eight (8) respectively. In 2018 seven (7) cases of rotavirus and 8 cases of norovirus were diagnosed. Reports of gastroenteritis were generally lower in early 2018 compared to 2016 and 2017 as shown in Figure 5.

**Figure 5: Gastroenteritis Cases 2016-2018**



Source: Ministry of Health and Wellness, 2019

In a broader developmental context, the MHW has key roles to fulfil in ensuring the sustained development of Barbados' tourism industry and continues to support the thrust of a regional CARPHA Tourism and Health project, encouraging local hotels to report the numbers of clients displaying syndromes representing gastrointestinal and respiratory illness.

Fortunately, with the new integrated public health lab we have significant capacity for testing. However, challenges to monitoring of illness and diseases are: the inability to access timely laboratory reports associated with periodic stock-outs of testing supplies and reagents at the Best Dos Santos Public Health Laboratory and tardy (or absent) notification of illness by practitioners.

The MHW continued to invest in strong infection prevention control at the QEH, Psychiatric Hospital and all other institutions. The MHW developed an Anti-Microbial Plan to support these initiatives.

### **HIV & Other Sexually Transmitted Infections**

HIV is a significant public health problem in Barbados with an estimated 1.6% of adults in Barbados living with this chronic disease at the end of 2017. The epidemic started in 1984 and from the start there was an immediate response by health authorities to prevent HIV transmission, identify new HIV/ AIDS cases and to manage those who were ill due to HIV.

**Table 9: Cumulative Number of HIV cases, AIDS cases and HIV deaths by sex 1984 – 2017**

<i>Sex</i>	<i>HIV Cases</i>	<i>AIDS Cases</i>	<i>HIV Deaths</i>
<i>Male</i>	2,668 (63.3%)	1,835 (67.0%)	1,366 (71.2%)
<i>Female</i>	1,548 (36.7%)	903 (33.0%)	552 (28.8%)
<b><i>Total</i></b>	<b>4,216</b>	<b>2,738</b>	<b>1,918</b>

Modes of HIV transmission in Barbados

HIV transmission is almost exclusively sexual in Barbados. Blood donations and blood products are universally screened for HIV along with other blood borne pathogens, and vertical transmission has been virtually eliminated. There has never been a known case of HIV transmission through the sharing of needles among injecting drug users. The HIV prevalence among female sex workers is also believed to be higher than in the general population.

*Elimination of the Mother-to-Child Transmission of HIV and Syphilis (EMTCT)*

Two critical facets of the Prevention of Mother to Child Transmission of HIV (PMTCT) programme are identification of mothers who are HIV positive (HIV+) and administration of anti-retroviral therapy (ART). Currently all pregnant women who access antenatal services in the public and private sectors are offered tests for HIV and syphilis. Due to the current PMTCT interventions, HIV transmission rates have been reduced to as low as 1.3%.

**Table 10: Select features of the HIV and STIs Epidemics in Barbados**

	<b>HIV</b>	<b>STIs</b>
<b>1.</b>	The HIV epidemic in Barbados started in 1984 and is “mixed”: a) HIV prevalence in 15-49-year olds in Barbados (2017) = 1.6% b) HIV prevalence among MSM = 11.8% (2017).	The main STIs of interest are Chlamydia, Gonorrhoea and Syphilis (including congenital syphilis).
	Men have historically been disproportionately affected by HIV;	The prevalence of Chlamydia: • Adams study in 2007 = <b>11.3%</b> • 2018 est. = <b>12.4%</b>
<b>2.</b>	The peak incidence of HIV occurred around 1999/ 2000;	The prevalence of Gonorrhoea: • Adams study in 2007 = <b>1.8%</b>

		<ul style="list-style-type: none"> <li>• 2018 est. = 3.3%</li> </ul>
3.	Dramatic decline in HIV mortality after 2001;	<p>An outbreak of Syphilis in Barbados started between 2011 and 2012;</p> <p>a) This syphilis outbreak was predominated by men (72% of new syphilis cases);</p> <p>b) A disproportionate number of males diagnosed with syphilis were MSM (39%);</p> <p>c) 72% of acute syphilis cases were between the ages of 15 and 49 years old;</p>
4.	HIV incidence is gradually declining (due to use of ART);	
5.	<p>A significant proportion of new PLHIV are diagnosed late. In 2017:</p> <p>a) 36% of people newly diagnosed with HIV also had AIDS;</p> <p>b) The median CD4 count of PLHIV diagnosed in 2017 = 238 cells/mm<sup>3</sup>;</p>	
6.	The MTCT of HIV rate = 1.2% (2007-2017).	

According to the WHO, combating HIV requires a multi-sectoral approach; however, the health sector must spearhead the response. Significant progress has been made in recent years in preventing and treating AIDS and opportunistic infections. As a result, HIV is now regarded as a manageable chronic disease where morbidity and mortality can be reduced and life expectancy and quality of life have improved significantly.

*Implementation of the WHO "Treat All" Guideline*

In a Sept. 2015 press statement, the WHO stated "Anyone infected with HIV should begin ART as soon after diagnosis as possible". With this new "Treat All" recommendation, WHO

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removes all limitations on eligibility for antiretroviral therapy (ART) among people living with HIV; all populations and age groups are now eligible for treatment.

In January 2016, the MHW formally adopted the new WHO recommendations that all persons with HIV (PLHIV) are eligible for Anti-Retroviral Therapy (ART) irrespective of their CD4 count.

### The UNAIDS 90-90-90 HIV Targets

#### *Achieving 90-90-90 in Barbados*

Barbados has been tasked with the challenge of achieving the ambitious UNAIDS 90-90-90 targets by 2020:

- *By 2020, 90% of all people living with HIV will know their HIV status.*
- *By 2020, 90% of all people with diagnosed HIV infection will receive sustained ART.*
- *By 2020, 90% of all people receiving ART will have viral suppression.*

Analysis of the Continuum of HIV care cascade for Barbados at the end of 2017 reveals that 82% of all estimated PLHIV have been diagnosed with the disease. 59% of all persons diagnosed with HIV are on ART. 71% of all of those on treatment are virally suppressed. Thus, there are significant gaps that need to be addressed so that Barbados can achieve the 90-90-90 treatment targets by 2020.

### Overview of the Barbados STI Programme

The STI Programme in Barbados was revamped and incorporated into the expanded National HIV Programme in 2006. This included renewed efforts to prevent and control the spread of STIs in Barbados. The following are the key components of the STI programme in Barbados:

1. Clinical management of patients who attend the STI specialty clinic at the WSPC;
2. Development and oversight of national clinical guidelines and protocols for the treatment of persons with STIs;
3. Training in the diagnosis and clinical management of STIs in Barbados;
4. Surveillance of STIs in Barbados with specific focus on:
  - a. Case-based surveillance for Syphilis and Congenital syphilis;
  - b. Surveillance of Chlamydia, Gonorrhoea, Hepatitis B&C and other STIs;
  - c. Surveillance for microbial resistance of Gonorrhoea;

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d. Surveillance for HIV and STIs amongst antenatal clients.

*Strategy for the Prevention and Control of STIs in Barbados*

At this juncture, the majority of HIV care is delivered on an outpatient basis at this facility. However, in an effort to achieve Universal Access to HIV diagnosis, treatment and care, HIV care is being implemented through a Shared HIV Care approach at polyclinics and private clinics.

With this model of HIV services, the LRU is essential for the monitoring of the delivery of HIV services since certain minimum standards must be maintained. The LRU therefore provides support for other healthcare providers and institutions involved in HIV care in Barbados.

**Epidemiology of STIs**

STIs are a major public health concern in Barbados as they have a significant disease burden especially among young persons. The main STIs of interest, from the point of view of disease surveillance, are Chlamydia, Gonorrhoea and Syphilis (including congenital syphilis).

*Chlamydia and Gonorrhoea*

Chlamydia is a common STI caused by infection with *Chlamydia trachomatis*. The prevalence of *C. trachomatis* urogenital infection was **11.3%** (95% CI  $\pm 2.9$ ) and N gonorrhoea **1.8%** (95% CI  $\pm 1.2$ ) with **12.6%** (95% CI  $\pm 3.1$ ) having either or both infections in 2018. The difference in prevalence by gender was not significant.

In 2018 the BDSPHL performed CT and NG testing on 6,372 urine samples. 213 were positive for NG yielding a positivity rate of **3.3%** while 790 were positive for CT yielding a positivity rate of **12.4%**. These positivity rates (proportion of samples which tested positive) are similar to the prevalence figures determined from the Adams study.

In 2018, the median age of NG cases was 23 with the majority of cases between the ages of 15 and 29 years (54%). The sex distribution of cases was 50% female, 42% male and 8% sex not stated. The median age of CT cases was 23 with the majority of cases between the ages of 15 and 29 years (54%). The sex distribution of cases was 67% female, 28% male and 6% sex not stated.

## Syphilis in Barbados

In March 2013, the Ministry of Health and Wellness was alerted to a possible increase in the number of Syphilis cases in Barbados. 72% of acute syphilis cases were between the ages of 15 and 49 years old; median age of persons with syphilis was 34. This syphilis outbreak was predominated by men (72% of new syphilis cases).

### *Congenital Syphilis (CS)*

**Table 11: Congenital Syphilis (CS) Surveillance in Barbados 2011-2017**

Year	Total no. of live births	No. of pregnant women with syphilis who delivered	No. of Probable CS cases
2011	3322	1	0
2012	3263	2	0
2013	2965	2	0
2014	2916	2	1
2015	2864	7	1
2016	2632	17	4
2017	2327 <sup>+</sup>	11	1

<sup>+</sup>Number of live births for QEH only, does not include private sector

*Source: HIV/STI Surveillance Unit, 2019*

In 2016 there was an abnormally high number of pregnant women who delivered with syphilis as shown in Table 11. This is due to the syphilis outbreak which was described in a **Special Surveillance Report on Syphilis Surveillance in Barbados; 2011-2014** (March 2017). As a consequence, there was an increase in the number of children born in 2016 who met the criteria for CS.

### *Retention in HIV Care / Loss to Follow-Up*

According to the WHO, poor patient retention undermines programme and patient outcomes, including achieving sustained viral suppression. Multiple factors may play a role in loss to follow-up; including distance to health facilities, lack of transport or inability to cover travel expenses, stigma and disclosure-related issues, being too sick and lack of understanding of the need for lifelong care. A priority of the Barbados HIV Programme is to identify patients who lost to follow-up (LTFU), return them to care, and facilitate their adherence ART.

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## **NON-COMMUNICABLE DISEASES**

During the period Barbados continued to lead in implementation of the regional goals for combatting NCDs and even received international recognition for the effort. Barbados received an award for work in NCDs from the UN Interagency Task Force on NCDs. NCDs still account for eight of the top ten causes of death locally. One in four Barbadian adults has at least one chronic disease and this is expected to increase to one in three by 2025. With the causes of NCDs being many and complex it is clear that urgent actions taken need to be coordinated and strategic. Progress continues to be made in addressing the four common modifiable risk factors, namely: inadequate physical activity, poor nutrition, use of tobacco products, and the harmful use of alcohol.

The determinants of NCDs are significantly influenced by factors across all sectors of government and the wider society including the built environment, economics, education, legislation, and marketing. As a result, it is crucial that the coordinated efforts include representation from varying stakeholders. While the past two years there have been strategic commitments and progress there is need for higher levels of individual responsibility as well as achieving policy action for the creation of a more supportive environment for prevention and control of NCDs.

The highlight of the period was the attendance in September 2018, at the United Nations General Assembly High Level Meeting on NCDs by the Prime Minister and a range of senior officials. Among the issues discussed were childhood obesity, best buys for prevention and control of NCDs and commercial determinants of health. Barbados was one of two countries from the Caribbean to be awarded for efforts to combat NCDs. The work of the National NCD Commission has continued and the National Task Force on Wellness was established in 2018, while a Cabinet Subcommittee on NCDs was established.

Partnership continued to be an important theme, with international agencies, health-related NGOs, allied Ministries and academia. The processes and outputs included the purchase of specialist services from Heart and Stroke Foundation of Barbados, and the Barbados Diabetes Foundation. The Barbados National Registry for Non-Communicable Diseases is an international best practice provided in partnership with the University of the West Indies and facilitates data collection and analysis to support knowledge and decision making providing national statistics on the epidemic as well as information for decision making on NCD care



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The National NCD Commission conducted coordination and stakeholder mobilisation. These bodies have been raising public awareness and advising the Minister on Health and Wellness on strategies for prevention and control on addressing the biggest burden of preventable illness. The Launch of Barbados Moves saw the presence of the Minister of Health of Jamaica, the Honourable Christopher Tufton joining forces with his local colleague in raising NCD awareness. Barbados Moves is modelled on the Jamaica Moves/ Caribbean Moves initiative which aims to motivate Caribbean people towards significant behaviour change through healthy habits in relation to diet, physical activity and age- appropriate health checks. The NCD Unit in collaboration with the Planning and Research Unit consulted with stakeholders to draft the Cancer Action Plan.

Despite the progress there is still need for population awareness and behavioural change as well as policy level awareness and creation of supportive environments for healthy living. There is need for the public to take more responsibility for managing the NCD risks. These include getting adequate levels of physical activity, engaging in good nutrition, and avoiding tobacco, and reducing harmful use of alcohol.

On the government side there is need for enforcement of legislation for graphic labelling of tobacco products. There is also need to further improve the school environment by addressing food and physical activity, and improving the understanding of NCDs in Health and Family Life Education and Schools Positive Behaviour Change Programme.

The NCD Strategic Plan ends in December 2019 and there is need to further build on the strategic framework for addressing wellness. Efforts will continue to address public awareness and stakeholder engagement. The issues of individual responsibility as well as policy for supporting action will be advanced.

### **Burden of Illness during the period**

For 2017 non communicable diseases continued to dominate the top 10 causes of death and disability. Other than Pneumonia and Dementia the top causes of death in Barbados are NCDs.

1. Cerebrovascular disease
2. Diabetes Mellitus
3. Cancer of the Prostate
4. Disease of Pulmonary circulation and other forms of Heart Disease
5. Pneumonia

- 
6. Ischemic Heart Disease
  7. Cancer of the Breast
  8. Essential Hypertension
  9. Cancer of the Colon
  10. Dementia

### Malignant Neoplasms

The cancers of public health significance and concern remain cancer of the breast, colon and prostate. With this in mind this has influenced a multi-sectoral cancer plan. The four priority areas are: prevention, early detection, diagnosis and treatment, and palliative care.

### Cardiovascular Diseases

Stroke and heart disease occurred in the older age groups (55 years and older) with a predominance for females especially persons with a diagnosis of stroke. There were 467 heart attacks (46% female and 54% male) and sudden cardiac deaths recorded in 2017. These numbers imply that for every 100,000 persons in our population, there were approximately 168 heart attacks. Higher incidence rates in men vs women aged 35–74 years were observed. There were 653 stroke events, 54% of which occurred in females and 46% males. Thus, for every 100,000 persons in our population there were 235 stroke events. The risk factors for heart attacks in descending order of occurrence are: hypertension, previous ischaemic heart disease, hyperlipidaemia, diabetes, obesity and smoking.

Case-fatality rates (CFR) are the proportion of deaths occurring of all the cases registered to that disease. Our case fatality rate for cardiovascular diseases (33% when compared to the international CFR rate of 17%. These proportions are greater than those seen in 2015 and 2016 (28% for both). However, looking at earlier years the current rates suggest an improvement on earlier years (37% in 2014; 35% in 2011–2013; 48% in 2010). The overall QEH in-hospital case fatality rate (CFR) for stroke in 2017 is 31% (172/546 with known outcomes) as seen in Table 12.

**Table 12: Summary statistics for the Barbados National Registry for Chronic Non- Communicable Disease (the BNR) in 2017**

	Heart Attack	Stroke (all)	Stroke (first-ever)
Hospital admissions	301	579	226
No. registrations	467	653	226
Rate per population <sup>1</sup>	0.17%	0.24%	0.08%
Deaths	246	279	64
% of cases admitted <sup>2</sup>	65%	89%	100%
% cases who died <sup>3</sup>	53%	43%	28%
Median (range) length of hospital stay <sup>4</sup> (days)	6 (1 - 397)	6 (1 - 315)	6 (1 - 315)

(1) Total number of registrations as a proportion of the population; (2) Total number of hospital admissions as a proportion of registrations; (3) Total number of deaths as a proportion of registrations; (4) Median and range of length of hospital stay (in days).

In the last national NCD risk factor survey (2012) Diabetes was estimated to affect 25% of adults. In Barbados persons have access for early detection, treatment, and rehabilitation. In the Government operated primary care facilities there is management of diabetes. Additionally, those who are at high risk or have complications can be referred for specialist care at QEH. There is also provision for persons to receive multidisciplinary team care purchased by the Government from the Maria Holder Diabetes Centre.

For 2017 the average age of clients seen was 59 years, of whom 70% were female and 20% were newly diagnosed with diabetes (Category A). Approximately 80% of clients also had hypertension and 60% had elevated cholesterol levels. Clients took an average of 9.23 weeks from referral date to being seen at the centre (77% of clients were seen within 12 weeks of referral). Just under 10% of clients were re-referrals.

Resource mobilization will be a key issue given the burden of NCDs and the current national financial situation. The levels of sin taxes locally are below what is recommended by WHO and academia. There is certainly scope to increase these and influence behaviour, particularly in vulnerable groups, while creating revenue, some of which can be directed to strategic health initiatives including education, and supporting healthy choices. In the case of the Sugar Sweetened Beverages (SSB) tax, recently released local evidence on the SSB tax indicates that the tax was associated with increased prices of SSBs by (5.9%), decreased sales of SSBs by (4.3%) and increased sales of bottled water (7.3%). In short, the tax is working but as

international and local research indicates it needs to cover more items and to be at a higher rate (30%),

Collaborative efforts across government and society. There is a need for access to data in usable formats for both public and private sectors. There is also need to further improve the school environment to promote physical activity and healthy nutrition to promote health as well as academic excellence.

## MENTAL HEALTH

The Psychiatric Hospital recorded a total of 1253 admissions for the year 2018 a slight decline from the year 2017 with a total of 1270 as shown in Table 15. First admission for the two years total 550 patients; 66% of whom were males and 34% females as shown in Table 13. There was a 4% increase in voluntary admissions for the year 2018, while involuntary admissions decline by 1% within the same year. The bed occupancy rate ranged from 93% to 95%, for the years 2017 and 2018.

Over 1200 patients were discharged from the institution annually: 1265 persons in 2017 and 1247 within the year 2018 as shown in Table 14. The number of deaths in 2018 compared to 2017 decreased by 2 with 10 persons dying. Less persons were recorded as being discharged during the year 2018, with the exception of the 65+ age group which showed an 8% increase in the number of patients discharged.

**Table 13: Number of Admissions by Classification**

Category	2017			2018		
	Male	Female	TOTAL	Male	Female	TOTAL
<b>Total Admissions</b>	942	328	1270	924	329	1253
First Admissions	187	105	292	178	80	258
Re-admissions	755	223	978	746	249	995
<b>Type of Admission:</b>						
Voluntary	571	165	736	605	166	771
Medical Recommended	231	147	378	185	142	327
Certified	0	1	1	0	1	1
Hospital Order	106	8	114	109	11	120
Other	34	7	41	25	9	34

**Table 14: Number of Patients Discharged by Sex and Age**

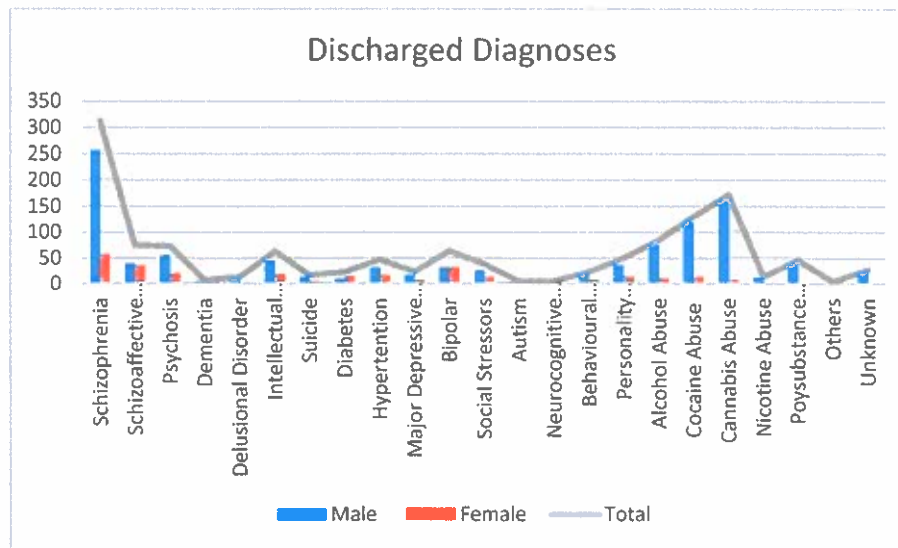
Categories	2017			2018		
	Male	Female	Total	Male	Female	Total
<20	51	29	80	42	31	73
20 – 34	308	88	396	303	85	388
35 – 44	223	60	283	204	58	262
45 – 64	288	115	403	311	91	402
65 +	63	40	103	58	62	120
Not Stated	0	0	0	1	1	2
<b>Total</b>	<b>933</b>	<b>332</b>	<b>1265</b>	<b>919</b>	<b>328</b>	<b>1247</b>

**Table 15: Number of Admissions**

Category	2017			2018		
	Male	Female	TOTAL	Male	Female	TOTAL
<b>Total Admissions</b>	942	328	1270	924	329	1253
First Admissions	187	105	292	178	80	258
Re-admissions	755	223	978	746	249	995
<b>Type of Admission:</b>						
Voluntary	571	165	736	605	166	771
Medical Recommended	231	147	378	185	142	327
Certified	0	1	1	0	1	1
Hospital Order	106	8	114	109	11	120
Emergency Order	34	7	41	25	9	34

The primary data analysed is a tabulation of the number of patients admitted and discharged from the Psychiatric Hospital over a two-year period. The patients admitted are classified into first-admissions and re-admissions. First-admissions are those patients being admitted as an in-patient to the institution for the first time; and re-admissions are patients who has been admitted to hospital on more than one occasion.

**Figure 6: Discharge Diagnoses**



Schizophrenia was the most common diagnosis, with 24% of the total and the second highest was drug abuse as shown in Figure 6. Other leading diagnoses were schizoaffective disorder, psychosis, bipolar and intellectual disability. With the exception of bipolar and schizoaffective disorder, most of these disorders showed a much higher percentage in males. The figure also reveals that cannabis abuse accounted for 13% of the total and it was the most common drug abused by males. Cocaine represented 10% which was the second highest drug abused and also the most popular drug used by females. Alcohol was the next drug of choice for the females and cannabis was the third. The ratio of males to females using Nicotine was 12:1 and only 3 women were polysubstance users as compared to 42 men. Unknown substances were used by 26 patients and other drugs used were opioids and narcotics. It was also noted that 4% of the patients had a diagnosis of hypertension and another 2% had been diagnosed with diabetes.

**Thrive Family Centre**

*The construction of the Child and Adolescent Unit (Thrive Family Centre) by the Sandy Lane Charitable Trust commenced in September, 2017. This project has been undertaken to address a critical deficit within the delivery of services of the Psychiatric Hospital in relation to child and adolescent in-patient mental health care. The facility will be a sixteen (16) bed unit, which will provide specialize psychiatric care in an environment conducive to timely recuperation and rehabilitation.*

The Thrive Family Centre was formally opened in November 2018 by the Prime Minister of Barbados. The Thrive Family Centre had a total of 11 patients for the months of February and March 2018 as shown in Table 16. Two males were transferred from other wards and 9 of these patients were direct admissions to that unit. There was a total of 4 first-admission males and 2 first-admission females. The ages ranged from 15 to 17 years and comprised of over half the total admissions to the ward. The youngest person admitted for the period was 10 years. The number of patients discharged from the unit were 3 males between the ages of 15 and 16 years old.

**Table 16: represents the diagnosis of patients on the Unit during February and March 2019**

<b>Thrive Family Centre</b>			
	<b>MALE</b>	<b>FEMALE</b>	<b>TOTAL</b>
<b>Diagnosis</b>			
Marijuana Induced Disorder	2		2
Conduct disorder	2	1	3
Autism Spectrum	1		1
Major Depression	2	2	4
Bipolar		1	1
Sever Conduct Disorder	1		1

## **RESPONSE OF THE HEALTH SECTOR**

### **PUBLIC HEALTH SERVICES**

#### **Best-Dos Santos Public Health Laboratory**

The Best Dos-Santos Public Health Laboratory (BDSPHL) was officially opened on January 5<sup>th</sup> 2018. The laboratory is the amalgamation of three former public health laboratories: The Ladymeade Reference Unit Laboratory, Leptospira Laboratory and the Public Health Laboratory.

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The laboratory serves as the island's major public health laboratory providing routine testing services to all of the island's polyclinics and some private clinics. Along with this, the laboratory offers reference laboratory services to private laboratories, as well as services for other regional laboratories, clinics and programmes.

The BDSPHL supported several programmes and departments in the Ministry of Health and Wellness (MHW) in disease prevention monitoring and surveillance, such as the Maternal and Child Health Programme, the HIV/AIDS Programme, Global Salmonella Surveillance Programme and food safety and outbreak investigations. Support was also provided to the Ministry of Labour, the Ministry of Environment and National Beautification (Environmental Protection Department) and the Ministry of Energy and Water Resources (Barbados Water Authority).

For the year 2018, the BDSPHL screened all of the pregnant mothers who attended the Maternal and Child Health clinics. Testing included STI's (HIV, VDRL, Chlamydia & Gonorrhoea), and other screening tests such as streptococcus B screening. These conditions if present could be transmitted to babies and cause complications during pregnancy. Through the measurement of HBA1C, the laboratory continued its monitoring system for NCDs in collaboration with the polyclinics.

The laboratory continues to play a major role in the testing of potable, marine, recreational and waste water across the island to ensure the drinking and bathing waters are safe for residents and visitors. The laboratory also supports other sectors including hotels with water testing for compliance.

The laboratory has collaborations with several regional and international organizations including CARPHA, Caribbean Med Labs Foundation, PAHO/WHO and CDC. Several programmes were initiated and strengthened including testing for HIV, Dengue, Zika, Chikungunya, Malaria, Tuberculosis, Influenza and Antimicrobial Susceptibility. The laboratory supported the Canadian Farm Labour Program by providing annual blood screening of individuals travel to Canada.

For the national HIV/AIDS Treatment and Care Program several monitoring tests were performed including CD4, HIV Viral load and HIV drug resistance testing.



**Table 17: Number of tests performed**

<b>SEROLOGY DEPARTMENT</b>	<b>No. of Tests</b>
Syphilis (VDRL, RPR, TPPA)	14,486
HBA1C	7362
HPV	2031
OTHER	259
Total	24,138

**Table 18: Number of tests performed**

<b>MICROBIOLOGY DEPARTMENT</b>	
Swabs (genital, wounds, ear nose and throat)	34,528
Stools (Faecal Occult blood, Ova Cysts, Parasites, Rota virus)	1,705
Influenza IFA	486
TB	48
Total	36,767

**Table 19: Number of tests performed**

<b>MOLECULAR DIAGNOSTICS DEPARTMENT</b>	
CT/NG	12,666
HIV Viral Load	3,905
HPV	2,031
Influenza	1,180
HIV Drug Resistance	23
Total	19,805

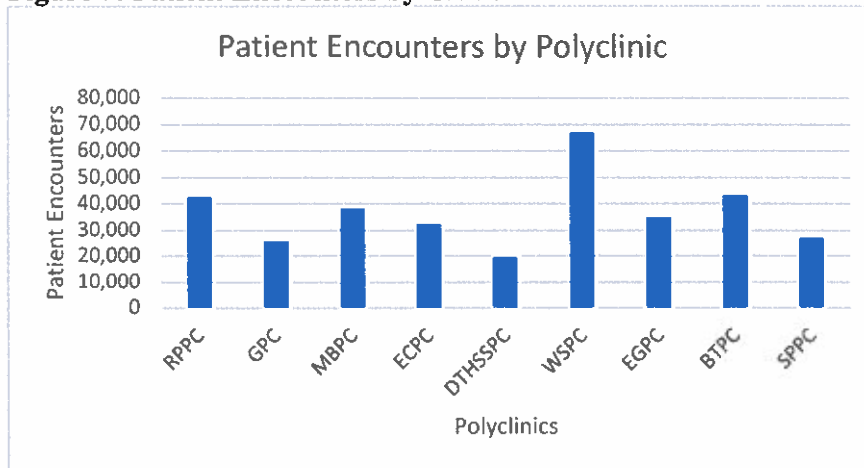
**Table 20: Number of tests performed**

ENVIRONMENTAL DEPARTMENT	
Water	21212
Air Quality	705
Food	1,127
Legionella	444
Total	23,488

**Polyclinics - Family Health**

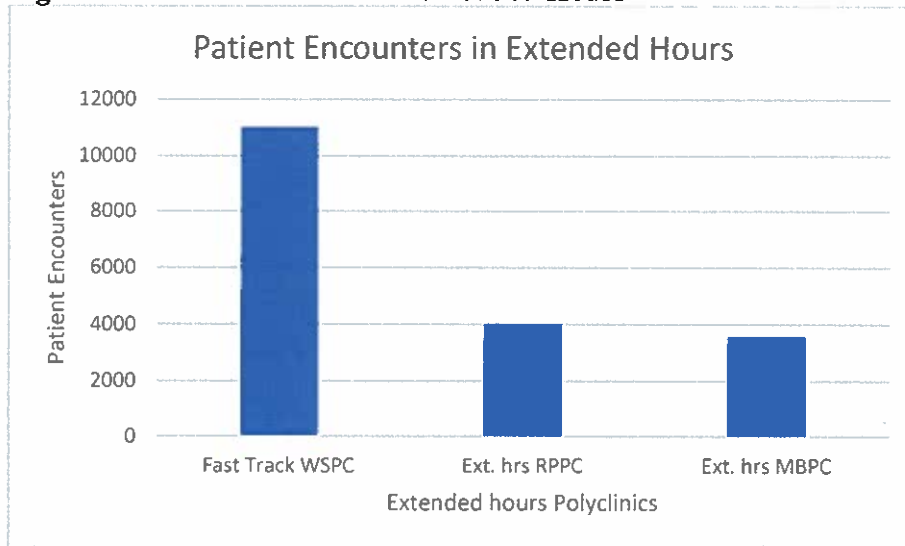
The public of Barbados may access primary health care services at nine (9) polyclinics across the island. The polyclinics serviced a total of 329,886 encounters(visits) for the year 2018.

**Figure 7: Patient Encounters by Clinic**



The Extended Hours Services at the Maurice Byer and Randal Phillips polyclinics and the Fast Track at Winston Scott Polyclinic serviced a total of 18,580 patient visits in 2018 as shown in Figure 7.

**Figure 8: Patient Encounters n Extended Hours**



The polyclinics offered services inclusive of general practice, reproductive health, child health, dressings, women’s health, podiatry, physiotherapy, dental health and nutrition counselling.

### **General Practice Service**

The General Practice (GP) service catered to the clinical management of persons needing medical care. Services ranged from management of persons with non-communicable diseases to the issuing of back to school certificates for children. Of the 260,966 visits made to the GP clinics in the Polyclinics, 13,898 (5%) were persons who visited the Polyclinic for the first time.

Most of the Polyclinics are old with aging infrastructure, furniture and fixtures. This has been unfortunately compounded by a lack of regularly scheduled maintenance and has led to challenges in providing services to the public. These challenges have resulted in reduced service provision in specific areas and polyclinic closures due to water and power outages.

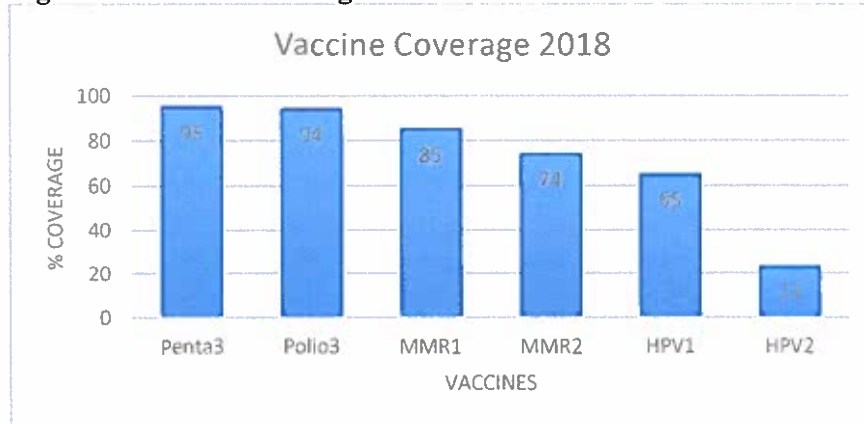
The year 2018 saw an upsurge in the number of violent incidents occurring in the polyclinics. This increase was of significance at the Branford Taitt Polyclinic where patients’ abuse of the staff had reached an untenable level. This prompted a review of the polyclinic processes and the following draft documents were developed and approved:

- a. Code of Conduct for Patients
- b. The Rights and Responsibilities of Clients
- c. Violence Policy for Government Primary Care Facilities
- d. Procedure for Managing Violent or Abusive Clients

## EXPANDED PROGRAMME ON IMMUNIZATION

The Ministry of Health and Wellness continued to offer immunizations against vaccine preventable diseases to both children and adults in Barbados. No confirmed cases of measles, mumps, rubella, polio, tetanus or pertussis were recorded for 2018.

**Figure 9: Vaccine Coverage 2018**



Penta – diphtheria, tetanus, pertussis, hepatitis B, haemophilus influenza type B

MMR – measles, mumps, rubella

The coverage of the primary vaccines continued to be high with coverage of pentavalent and polio vaccines at 95% and 94% respectively as shown in Figure 9. The first dosage coverage of Human Papillomavirus (HPV) vaccine improved, but unfortunately the return of the 11-year olds for the second dose continued to be a challenge, resulting in only one quarter of the cohort receiving the full course of vaccine.

### Measles

A stock out of MMR vaccines in 2018 caused a reduced number of children to be immunized against measles, mumps and rubella as is shown by the low coverage of 85% and 74% for MMR1 and MMR2 respectively.

The Region of the Americas lost its Measles free certification in 2018 due to the circulation of measles in Venezuela. Barbados still holds its certification as a measles-free country and has ensured the sustainability of this certification by implementing interventions to:

1. Maintain high quality, elimination-standard surveillance and ensure timely and effective outbreak response measures to any measles or rubella virus importation.

2. Achieve high population immunization coverage against measles and rubella ( $\geq 95\%$ ) in all municipalities.
3. Improve the quality of vaccination data collection and analysis.

The year 2018 saw the introduction of the Child Health module of the electronic patient record at all polyclinics. Public Health Nurses used the electronic record to document all aspects of visits made to the “Well Baby” clinics. These include parameters such as; growth and development, immunization, nutrition and referrals. This introduction has enabled improved monitoring of child health visits with regards to quantity and quality.

### **Oral Health**

Oral health is fundamental and significant to general health and requires more than having good teeth. It means being free from diseases and disorders that affect the oral cavity, teeth and associated structures. As oral diseases are, for the most part preventable, our priority is to advocate for effective preventative measure, along with oral health promotion, in order to increase early detection, hence reducing the burden of oral diseases.

Currently, the number of schools serviced are: 160 public and private primary, secondary and tertiary institutions for children up to 18 years.

**Table 21: Services provided and the Annual Number**

	2017	2018
<b>Attendances</b>	16,967	15,183
<b>Extractions</b>	5,206	5,632
<b>Fillings</b>	4,726	4,068
<b>Prophylaxes</b>	7,382	5,975
<b>Root Canals</b>	11	13

**Table 22: Services offered by the Dental Programme**

<b>Patients</b>	<b>Services</b>
Persons up to 18 years of age	Basic dental health is provided. This includes fillings, preventative treatments, root canal therapy and limited orthodontic care
Adults	Extractions
Antenatal patients	Assessment and extractions
Physically or mentally challenged patients	Basic dental health care

Secondary Schools Oral Health Education Programme

This programme was conceptualised to honour a pledge by the Massy Foundation to assist the Ministry of Health and Wellness in areas where there was significant need. The Dental Health Services was offered the opportunity to create and implement an initiative of their choice, which would benefit their primary client population—school children. Since dental health education in the primary school is part of the day-to-day activities of the service, it was decided that this special programme should offer oral health education in the secondary schools. After negotiations and planning between the Ministry of Health and Wellness and the Ministry of Education, Technological and Vocational Training, the third forms of the public secondary schools were selected and the programme of oral health education, oral examinations, and distribution of oral hygiene kits, commenced during the first term of the 2018-2019 school year. During this term eight schools were visited, 1214 third form students were examined, and about 1300 oral hygiene kits were distributed to the students and their teachers. The programme will continue during the second term.

Current Challenges

**Inadequate Staff**

1. Dental Auxiliaries
  - The number of Auxiliary Dental Officers (ADO) has decreased from 14 to 7 due to death and retirement.

- 
- There are no training programmes available regionally or internationally to train more Dental Auxiliaries.

The MHW is currently working on several strategies including a public/private sector partnership to re-structure the Dental Programme and hence improve the dental service currently being offered to the public.

### **National Nutrition Centre (NNC)**

In 2017 the NNC received its full complement of eight (8) Community Nutrition Officers (CNOs) to provide nutrition counselling to patients who presented at the nine polyclinics with chronic non-communicable diseases (NCDs) viz. diabetes, hypertension, overweight and hypercholesterolemia (high serum cholesterol). Children under the age of sixty months receive nutrition intervention mainly for malnutrition. Daily nutrition counselling is provided to patients at seven (7) polyclinics by seven (7) CNOs while one (1) CNO provides counselling at the Edgar Cochrane Polyclinic (ECPC) and the David Thompson Health and Social Services Complex (DTHSSC) three (3) and two (2) days per week, respectively. In an effort to maximize the counselling opportunities at the polyclinics, the Acting Nutrition Officer proposed and presented 'New Guidelines for Nutrition Counselling in the Polyclinics' whereby CNOs would counsel at least eight (8) patients per day while on duty at the polyclinics. In an ideal week, at least sixteen (16) patients would receive counselling at the DTHSSC, twenty-four (24) patients at the ECPC and forty (40) patients would be counselled at each of the other seven polyclinics. Thus, at least three hundred and twenty (320) patients could receive counselling during this week at the nine institutions. In an ideal year (without holidays) 16,600 patients could receive counselling.

This analysis looks at the aggregated number of patients receiving counselling at the nine (9) polyclinics during the period 2017-2018. Data are presented for the number of patients who visit the CNO for their First Visit and those who return for their follow-up visit as Revisit. Hypercholesterolemia is represented as Cholesterol. Other health issues presented are classified as Other. The status of malnutrition of the children is represented as Overweight and Underweight.

The individual cases of diabetes, hypertension, overweight and hypercholesterolemia (high serum cholesterol) in adults seen by the Community Nutrition Officers (CNOs) at the nine (9)

are enumerated. In many cases there is overlap since a patient may present with more than one NCD. The total number of patients seen by the CNOs at the polyclinics is also presented. The number of overweight (obese) and underweight (failing to thrive) children are also presented.

In every instance there are more female clients than male clients presenting with a condition. This is most evident in the cases of diabetes and overweight which represent the most prevalent NCDs in the tables. Although not evident from the figures there is a major problem with patients attending scheduled return visits. Patients are usually advised to return for counselling every three months and many disregards this aspect of their healthcare regimen.

There is a slight increase in the number of cases and number of patients seen in 2018 compared to 2017 as shown in Table 23. 8.5% more adults and 22.6% more children, as shown in Table 24, were counselled in 2018 and this may be attributed, in part, to a slight adherence to the recommendations in the document 'New Guidelines for Nutrition Counselling in the Polyclinics'. These aimed to improve the quality and quantity of nutrition counselling in the polyclinics.

**Table 23: Nutrition Counselling at the Nine Polyclinics: Adults**

ADULTS	First Visit		Revisit		Total Visits	
	2017	2018	2017	2018	2017	2018
<b>Diabetes: M</b>	500	540	540	530	1040	1070
<b>Diabetes: F</b>	1130	1180	1250	1280	2380	2460
<b>Hypertension: M</b>	401	411	209	229	610	640
<b>Hypertension: F</b>	804	855	1002	1145	1806	2000
<b>Overweight: M</b>	206	260	302	320	508	580
<b>Overweight: F</b>	1217	1266	1417	1504	2634	2770
<b>Cholesterol: M</b>	217	229	221	239	438	468
<b>Cholesterol: F</b>	757	700	666	702	1423	1402
<b>Other*: M</b>	151	170	122	126	273	296
<b>Other*: F</b>	482	491	534	519	1016	1010
<b>Total Visits</b>	<b>5865</b>	<b>6102</b>	<b>6263</b>	<b>6594</b>	<b>12128</b>	<b>12696</b>



**Table 24: Nutrition Counselling at the Nine Polyclinics: Children**

CHILDREN 0-60 MONTHS	First Visit		Revisit		Total Visits	
	2017	2018	2017	2018	2017	2018
Overweight: M	64	68	24	33	88	101
Overweight: F	72	79	70	80	142	159
Underweight: M	56	65	21	31	77	96
Underweight: F	65	75	25	33	90	108
<b>Total Visits</b>	<b>257</b>	<b>287</b>	<b>140</b>	<b>177</b>	<b>397</b>	<b>464</b>

**Table 25: Summary of adults who received Nutrition Counselling at the nine Polyclinics 2017-2018**

	2017	2018
<b>ADULTS SEEN:</b>		
M:	918	988
F:	2032	2213
<b>Total</b>	<b>2950</b>	<b>3201</b>

**Table 26: Summary of adults who received Nutrition Counselling at the nine Polyclinics 2017-2018**

	2017	2018
<b>CHILDREN SEEN:</b>		
M:	120	134
F:	137	169
<b>Total</b>	<b>257</b>	<b>303</b>

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### **Community and other Nutrition Outreach activities:**

In 2017 sixty-three (63) requests for nutrition-related presentations from various organizations were made to the NNC. Schools and churches made most of these requests for assistance at their health fairs or for presentations to their staff, congregations or students. Other organizations which benefitted from the nutritional outreach participation were Rubis, Barbados Association of Guidance Counsellors, Kiwanis, Barbados Workers' Union, Barbados National Oil Company Ltd., Diabetes Association of Barbados, Agrofest among others.

In 2018 fifty-nine (59) requests were made. These, along with the requests from schools and churches, included UWI Career Showcase, Parish Constituency Councils, Heart and Stroke Foundation of Barbados, Barbados National Standards Institute, Barbados Postal Services, Barbados Drug Service, FAO School Feeding Programmes, PAREDOS Parenting Classes, Teachers' Professional Day and the Ministry of Creative Economy, Culture and Sports *inter alia*.

### **Current Research Projects:**

- 1) Preparation of Guidelines for Secondary School Canteen Operators
- 2) Food Basket study incorporating Food Labelling Investigation
- 3) Proposed Anthropometric Study on students at selected Primary Schools
- 4) Improving the delivery of counselling at the nine polyclinics and
- 5) Training aimed at improving the Food-Preparation skills of food handlers at the Geriatric and District Hospitals

## **ENVIRONMENTAL HEALTH DEPARTMENT**

The primary mandate of the Environmental Health Department is to ensure that actions to mitigate environmental health risks are undertaken expeditiously, thus securing a healthy living environment for the population. During the period under review, the operational framework of the Department involved the execution of programs in the sub-areas of food safety, vector control, water quality, port health, health education and climate change.

### **Food Safety**

Food safety continues as a national priority in Barbados with the continued growth of the food service industry and the involvement of the tourism industry in strengthening food safety

programmes. The Environmental Health Departments comprehensive food safety programme includes the inspection and monitoring of food service establishments according to the Health Services Act 1969. In addition, the application of the principles of good manufacturing practices, Hazard Analysis Critical Control Point (HACCP) practices, and an appropriate level of food safety training for food service managers and food service employees are also required.

The Environmental Health Department continued to strengthen its collaboration with the Ministry of Agriculture and Food Security regarding the National Agriculture, Health and Food Control Program. A Poultry Committee was established headed by the Food Hygiene Specialist. The mandate of this committee was to improve sanitation at the farms embracing the concept of safety from ‘farm to fork’.

The Food Safety Specialist in conjunction with veterinary personnel visited dairy farms across the island ensuring that milk produced at these locations was wholesome and that existing environmental conditions at the plants were satisfactory. Training was conducted in food hygiene at various food establishments, as well as within the Ministry of Health and Wellness Training Unit. Three hundred and forty-six (346) persons were trained.

The Department continued the inspection, licensing and monitoring of food services and other business establishments under the Health Services Act 1969. Food service establishments are inspected and monitored to ensure that food served to the general public is wholesome and fit for human consumption. During the period under review there was an increase in applications for all businesses. Food service establishments accounted for 75% of the businesses registered with the department. These included: restaurants, supermarkets, minimarts, bars, community shops, stalls and street food vendors. The other businesses inspected were hairdressing salons, lodging houses and barracks, funeral establishments, hotels and recreational water establishments. Table 27 shows the percentage of licences issued by the Department.

**Table 27: No. of Business Applications and Licences Issued**

<b>Businesses</b>	<b>2017</b>	<b>2018</b>
No. of Applications Received	6935	7784
No Licences Issued	5122	6032
Percentage of Licences Issued	74	77

During the period under review the Environmental Health Department continued to ensure that wholesome foods were served at national events such as the Oistins Fish Festival, the Holetown Festival, and during the Crop-Over season through education, licensing and their physical presence at events to conduct inspections.

The Department is facing a challenge to inspect and monitor businesses due to an increase in application with an increase between 2017 and 2018. Coupled with this the department staff has been reduced by at least 25% due to attrition and retirement. In an effort to ensure good practices are maintained, the department engages in team work to provide coverage in all areas.

**Vector Control**

The control and prevention of arbovirus diseases such as Dengue Fever, Zika and Chikungunya continued with the adaptation of an Integrated Mosquito Vector Management Programme. There were increased inspections of premises, increased community outreach and educational programmes. Emphasis was placed on source reduction by removing containers that had the potential to breed mosquitoes, fogging to destroy adult mosquitoes, and the use of alternative compounds for the treatment of larvae. The programme continues to involve other government agencies, the private sector, civil society and communities to effectively manage the environment to break the transmission of vector-borne diseases. The Ovitrap programme continued to provide monitoring at the ports of entry to detect the presence of the *Aedes aegypti* mosquito. The objective behind these activities was to reduce the mosquito house index to less than five percent during the wet season.

As indicated in Table 28, the mosquito house index remained below five. The mosquito house index is calculated as the percentage of the houses inspected in a defined area which are found with aquatic stages of mosquitoes. It is used as a measure for establishing the possibility of disease outbreak.

**Table 28: Mosquito Indices: 2017 to 2018**

	2017	2018
Mosquito House Index	3.1	0.4
Breteau Index	5.2	6.4

The Vector Control Unit has a structured inspection and rodent-baiting plan at all government buildings, health care institutions, schools and farms, as well as at the sea and airport. During the period, the Ministry intensified rodent baiting activities targeting specifically Bridgetown and its environs, and recreational areas across the island. Acute and anticoagulant bait is used to reduce the rodent population.

The Ministry of Health and Wellness continued a distribution service for rodenticide from the Vector Control Unit and the Environmental Health Offices in the polyclinics and will continue to enhance public awareness in high risk areas. The following table shows the quantities distributed annually to the public on request.

**Table 29: Number of packages delivered to the public**

Quantity	2017	2018
No. of 100g packages	31,680	33,680

In addition, fish were provided from the Graeme Hall Fish Rearing Facility as a biological control measure. Training in fish rearing management was facilitated by the Pan American Health Organization for two (2) members of the Vector Control Unit, in February 2017. The Ministry of Health and Wellness also collaborated with meteorological stakeholders locally and regionally to develop a spatio-temporal model for the proliferation of the *Aedes aegypti* mosquito. The model will support risk forecasting for the viruses spread by the *Aedes aegypti* mosquito: Dengue Fever, Zika and Chikungunya. The MHW continued to have a relationship with USAID in several aspects of Zika prevention and control.

The MHW uses the Geographical Information System (GIS) in its mosquito and rodent control programmes. Mapping of the areas where mosquito-borne diseases and mosquito larvae breeding sites are identified is done and the information is used to determine areas to be fogged and any other intervention that is needed. The GIS is also used to map the location of ovitraps which are used for monitoring the *Aedes* mosquito population. Ovitrap are mainly used at the points of entry. The GIS is also used to map the areas where rodent bait stations are placed, such as identified wetlands and the location of MHW staff in the event of a disaster. In addition, data can be compared over a defined period to determine if an increase in cases is real or if it is as a result of a number of events occurring.

The Ministry of Health and Wellness conducted a de-bushing programme with the purpose of reducing overgrown vegetation across the island and by extension the proliferation of disease vectors such as rodents which spread leptospirosis. The programme is usually challenged by human resource issues which curtail the level of productivity in relation to the number of persons assigned to the programme. Table 30 indicated the lots de-bushed during 2017-2018.

**Table 30: Lots De-bushed and Debris Removed**

Activity	2017	2018
Lots De-bushed	604	706
# loads of Debris Removed	5481	6428

#### International Health Regulations

The Ministry of Health and Wellness continued to strengthen the Port Health programme to ensure that Barbados complied with the International Health Regulations, 2005, in an effort to protect the local population and visitors from diseases or health risks associated with travel and trade. In addition to the training of local staff, the Ministry of Health and Wellness through technical cooperation with the Pan American Health Organization facilitated the training of points of entry personnel from other regional countries.

The International Atomic Energy Agency (IAEA) sponsored a number of capacity building workshops in radiation and atomic energy at the local, regional and international levels. The Ministry of Health and Wellness continued to work on a national programme with the IAEA and an inventory of all sealed radiation sources was conducted in May 2017.

#### Water Quality

The Ministry of Health and Wellness monitors potable water to identify and manage water borne disease hazards and risks, to protect the public's health. Water is sampled for testing for chlorine residual and the presence of pathogenic bacteria. The World Health Organization's (WHO) guideline for potable water quality is used to determine that Barbados' water is in compliance. The WHO guideline for drinking water indicates that the main parameters, pseudomonas, total coliform, enterococci and faecal coliform must all be detectable at <1 mg/l

for the sample to be deemed satisfactory or potable. A residual concentration of free chlorine of greater than or equal to 0.5 mg/litre is satisfactory.

The Ministry of Health and Wellness conducts water sampling on a weekly basis throughout the island. Laboratory analysis of water samples taken throughout the country's distribution system are conducted at the Best Dos Santos Public Health Laboratory. The malfunctioning of the South Coast Sewage Plant resulted in sewage overflows along the roadway from Hastings to Worthing, Christ Church area. Although the potable water lines and the sewerage system are not connected, the Ministry of Health and Wellness increased its sampling frequency in the area of concern with both chlorine residual and bacteriological samples being done on a weekly basis. These samples to date are in compliance with the World Health Organization's guideline. In 2017, one thousand one hundred and seventy-one samples and in 2018 one thousand four hundred potable water samples were submitted for laboratory analysis.

### **Port Health Services**

Environmental Health Officers stationed at the points of entry continued to inspect foods imported into Barbados. Foods which were fit for human consumption were released, while foods which were unfit for human consumption were destroyed. The marked increase in condemned foods in 2018, as shown in Table 31, was due to two events, namely to different product recalls for romaine lettuce from the USA and the malfunctioning of a cargo vessel which resulted in refrigerated and frozen foods being condemned and destroyed.

**Table 31: Quantity of Imported Food Inspected and Condemned at Points of Entry**

<b>Food Inspected</b>	<b>2017</b>	<b>2018</b>
Wholesome Food Released (Kg)	114,558,387	126,493,478
Food Condemned (kg)	86,385	438,886
<b>Total Food Imported Inspected (kg)</b>	<b>114,644,772</b>	<b>126,932,364</b>



### Boarding of Vessels and Disease Surveillance

The boarding and clearance of vessels arriving at the points of entry continue to be a significant aspect of the Port Health service in regards to disease surveillance. An increase in cruise vessels was observed in 2017 due to a number of storms which impacted the northern Caribbean and resulted in the repositioning of several cruise vessels to the southern Caribbean. Table 32 identifies the vessels which were granted free pratique for the years 2017 and 2018.

**Table 32: Type of Vessels granted Free Pratique 2017-2018**

	2017	2018
Cruise Vessels	503	436
Cargo	516	497
Oil & Gas Tankers	572	500
Yachts (Bridgetown)	316	245
Yachts (Port St. Charles)	243	258
Totals	2150	1936

### Ship Sanitation Inspection

The Ship Sanitation Control/Exemption Certificate Inspection Programme continued with the inspection of vessels requiring the certification. This programme audits conditions on board ships in relation to food safety, medical facilities, integrated pest management and hospitality services to ensure compliance with international standards. The table below summarizes the activities of this inspection programme.

**Table 33: Ship Sanitation Inspection**

YEAR	Cargo	Cruise Vessels	Yacht	Oil & Gas Tankers	Other Vessels	Total No. Vessels
2017	13	18	-	9	2	52
2018	11	18	-	16	7	42



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### **Solid Waste Management**

Illegal dumping of waste was a major challenge with an increase in illegal dumping sites being identified or in some instances the creation of temporary sites, due to the non-collection of refuse within a specified time. This issue impacted communities with an increase in rodent and mosquito infestation. The Environmental Sanitation Unit provided units for seventy-seven (77) households to prevent the possibility of indiscriminate disposal of human waste.

In addition to the illegal dump sites located within communities, two commercial activities operating without the permission of the Town and Country Planning Development Office were identified. These operations had the ability to impact on the potable water supply although there were not located in the Zone 1 designated area. Both businesses were located in disused quarries and excavation was at a depth which reduced the time for contaminants to reach the aquifers. The only recourse in these situations was to institute legal proceedings against the entities. One case was successfully concluded. The other case however, has the potential to significantly impact on the health of persons in the environs of the operation when internal combustion takes place. The only solution is the removal of all materials that were buried to prevent the environmental issues that occur.

The disposal of coconut shells is another issue that was of concern to the MHW. The MHW partnered with the Ministry of Agriculture and Food Security and facilitated training sessions for coconut vendors. These sessions sought to educate the vendors on best practices in the handling of coconuts as a food product, as well as the procedure for the disposal of the coconut shell. The MHW will continue to collaborate with the MAFS to regulate this sector.

### **Climate Change**

The Climate Change and Disaster Preparedness programmes of the MHW are continuously working together to develop appropriate adaption plans, as it relates to the physical capacity to provide health care in the face of climate driven threats. The SMART hospitals toolkit developed by the Pan American Health Organization and WHO has been chosen by the MHW's Climate Change Programme to guide efforts to assess needs and enhance the sustainability and climate resiliency of health care facilities in Barbados.

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The development of climate and disaster resilience at health care facilities is a critical component of the development of the Ministry's National Adaptation Plans (NAPs) for the health sector. The overall goal is to make health care facilities capable of delivering an effective standard of health care to residents during and after disaster events or major climate driven phenomena.

With respect to inter-sectoral collaboration, the MHW maintains a priority presence on two national committees which were created to address climate change and natural disaster threats to the country. The MHW's presence on the National Climate Change and the National Hazard Mitigation Committees are critical to ensuring that the specific needs of Barbados' health sector are effectively addressed relative to existing and emerging climate change risks.

In terms of current technical capacity of the MHW the following strategies are considered as implementable in the short term:

1. The development of an Early Warning and Communication System (EWCS) for water quality.
2. Adaption of international guidelines for safe reuse of wastewater in Barbados for the augmentation of scarce fresh water resources.
3. Development of guidelines for safe storage of rain water.
4. Development of an effective water quality surveillance systems and wastewater reuse licensing and monitoring programme.
5. The upgrade of the Environmental Health Department to mainstream climate change adaption and resilience building into its work plans and strategic goals.
6. The continuation of mosquito species monitoring in the Graeme Hall swamp and development of policies and programs to promote the ecological protection of the site in compliance with the Ramsar agreement signed in 2006.

### **Indoor Air Quality**

During the period under review the Ministry of Health and Wellness was required to address a number of indoor air quality matters within the work place. The Ministry is challenged for human and equipment resources to address these types of issues. The Ministry, however has been able to have remedial action taken to improve the health and wellbeing of persons within the work space.

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The MHW responds to indoor air quality issues by carrying out an inspection of the premises and taking environmental (swabs) and physical parameter (Carbon dioxide, temperature, relative humidity) samples. In addition, persons occupying the space are interviewed to determine the impact of the reported conditions on them. The samples are analysed at the Best Dos Santos Laboratory and remedial action recommended based on the results. The main issues identified relates to relative humidity, ventilation and misuse of the space by occupants.

### **South Coast Intervention**

The South Coast of Barbados was faced with challenges manifested through overflowing sewerage systems, this situation presented significant public health risks to the locals and visitors. The Ministry of Health and Wellness was consequently tasked with developing and collaborating with stakeholders to assist with managing the problem in the best interest of protecting the public's health.

The main public health interventions were:

1. Enhanced chlorine residual testing and water sampling at strategically chosen locations along the South coast;
2. Enhanced food handling, hygiene and disinfection training for food businesses on the South coast;
3. Increased food business inspections;
4. Epidemiological investigations of reports of relevant notifiable illnesses on the South coast;
5. Increased mosquito surveillance and treatment;
6. Collaboration with the Environmental Protection Department (EPD) to monitor and issue notices relating to the nearshore bathing water at affected beaches and issue beach closure notices;
7. Collaboration with BWA and other stakeholders to develop effective interventions necessary to contain or resolve the overall problem.
8. Implementation of the risk communications programme.

In 2018, The Ministry of Health and Wellness (MHW) implemented a strategy to retain sewage in a controlled section of the Graeme Hall swamp. This strategy which improved the effluent quality reaching the disposal drain at Worthing Beach through increased retention time and phytoremediation action within the engineered section of the swamp. The MHW also cleaned

and remediated other sections of the swamp (Buffer zones) which restored the health of the ecosystem and reduced mosquito breeding.

### **The Animal Control Centre**

The Animal Control Centre seeks to promote and maintain the health and welfare of the canine species. Through education and enforcement, the Centre sought to reduce the spread of canine related zoonotic diseases. In addition, the department promoted responsible canine ownership through compliance with the licensing regulations.

## **INDIVIDUAL CARE SERVICES**

### **Queen Elizabeth Hospital**

The Queen Elizabeth Hospital (QEH) is the country's primary acute care medical facility (536 bed capacity) providing 94% of all hospital beds. The QEH is also an accredited teaching hospital affiliated with the University of the West Indies, Cave Hill Campus.

During the financial year 2018-2019, the leading in-patient services for admissions were Medicine, Obstetrics & Gynaecology, Surgery and Paediatrics. The average length of stay for January to September 2018 (including ICUs) was 5.2 days while the total number of admissions for the same period was 13, 255. For the same January – September 2018, there were 57,572 out-patient visits (old and new cases) and out-patient activity continued to be centred around Medicine, Obstetrics and Gynaecology, Ophthalmology, Surgery, Orthopaedics and ENT services as shown in Table 34.

**Table 34: Average Bed Utilization rates 2004- 2018**

<b>YEAR</b>	<b>Admissions</b>	<b>Patient Days</b>	<b>Average Length of Stay (ALOS) days</b>	<b>Bed Occupancy Rate (%)</b>
2014	18,845	121,705	6.4	59.5
2015	18,245	111,056	6.2	54.5
2016	18,546	122,451	6.5	61.7
2017	17,155	110,966	6.0	58.2
2018	15,694*	116,698*	7.2*	67.4*

\*Provisional

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The QEH continued to reduce the institution-wide bottlenecks within the system that can keep the Average Length of Stay above industry standards and hinder patient flow. Minimizing waiting times, maximizing productivity and improving the patient experience is a critical imperative for the QEH. Technological advancement utilised within the QEH can also contribute to increased efficiency and in time, a shift to more ambulatory services.

Scheduled procedures during 2017-2018 were cancelled due to the following reasons. The main reasons listed below:

1. Patient non-compliance.
2. Shortage of medical supplies.
3. Shortage of nursing coverage.
4. Shortage of available theatre time.
5. Cancellations due to medical reasons.
6. Shortage of medical equipment.
7. The demand for recovery beds outstrip the availability.
8. Patients opted for private services.

### ***Kidney Transplantation***

A kidney transplant programme was revived at the Queen Elizabeth Hospital (QEH). This positive development for the approximately 1000 Barbadians suffering renal failure, and the additional hundreds needing dialysis treatments has come thanks to the work of Transplant Links Community (TLC), a UK registered charity, and sponsors, Republic Bank.

The programme began in late November 2016, when surgeons completed two successful kidney transplants at the QEH. The QEH and TLC continued to work together over the next couple of years to continue the skills transfer and teamwork necessary to ensure sustainability of this project and ensure that it is available to all patients in Barbados with kidney failure.

Three live donor transplantations were done in 2016-2017 and two in 2018.

An initial draft policy and legislative framework on organ transplantation was prepared and will give support to further initiatives in other areas of transplantation.

## SURGICAL CASES FOR JANUARY 2018 TO DECEMBER 2018

**Table 35: PUBLIC CASES BOOKED**

SPECIALTY	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Orthopedics	59	94	95	74	81	64	56	47	70	98	72	96	906
General Surgery	83	83	90	75	87	70	86	76	86	97	76	83	992
Urology	17	21	17	12	23	9	12	5	14	22	14	14	148
ENT	46	61	49	40	58	56	68	55	33	67	58	37	583
Plastic	12	9	12	12	8	9	12	20	9	11	11	4	115
Obs/Gyn	64	68	62	48	69	59	68	48	47	54	67	42	655
Ophthalmology	97	124	95	79	63	100	99	98	110	126	115	63	1102
Neurosurgery	15	9	17	2	10	5	6	2	8	9	6	7	82
Dentals	4	5	4	2	0	0	0	7	4	4	3	0	36
Cardio/Thoracic/Vascular	18	32	29	13	15	18	13	10	26	17	16	24	209
<b>Total</b>	<b>415</b>	<b>506</b>	<b>470</b>	<b>357</b>	<b>414</b>	<b>390</b>	<b>420</b>	<b>368</b>	<b>407</b>	<b>505</b>	<b>438</b>	<b>370</b>	<b>2930</b>

Table 36: PRIVATE CASES  
BOOKED

SPECIALTY	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Orthopaedics	2	2	1	2	0	1	0	0	0	0	1	0	9
General Surgery	3	3	1	1	13	2	4	13	6	2	10	2	60
Urology	5	6	5	3	2	8	4	2	6	2	9	5	52
ENT	7	11	9	12	8	8	7	8	2	7	11	5	90
Plastic	0	0	3	0	1	1	0	1	1	2	2	0	11
Obs/Gyn	8	10	15	12	13	16	18	13	15	17	17	16	154
Ophthalmology	24	31	31	35	21	39	35	21	22	26	15	15	300
Neurosurgery	1	0	2	2	0	2	2	0	2	5	5	1	21
Dentals	0	0	0	0	0	0	0	0	0	0	0	0	0
Cardio/Thoracic/Vascular	3	3	3	2	0	0	1	0	4	2	3	3	21
Total	53	66	70	69	58	77	71	58	58	63	73	47	649

**Table 37: PUBLIC CASES  
DONE**

SPECIALTY	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Orthopaedics	40	50	51	47	57	27	36	30	32	53	42	50	515
General Surgery	70	57	76	60	61	45	64	61	64	73	58	67	756
Urology	12	17	14	10	21	6	9	2	11	20	11	13	104
ENT	34	48	36	27	41	26	41	35	25	52	35	27	380
Plastic	11	9	12	12	8	8	11	20	9	10	9	3	130
Obs/Gyn	49	49	45	34	52	37	50	34	36	33	52	29	453
Ophthalmology	75	102	73	62	56	86	79	90	82	102	91	54	905
Neurosurgery	6	4	9	2	8	3	4	2	5	5	3	7	42
Dentals	4	4	4	2	0	0	0	5	3	2	3	0	27
Cardio/Thoracic/Vascular	15	29	19	8	15	13	10	8	19	11	13	22	139
Total	316	369	339	264	319	251	304	287	286	361	317	272	2180

**Table 38: PRIVATE CASES  
DONE**



SPECIALTY	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Orthopaedics	1	1	1	2	0	0	0	0	0	0	1	0	6
General Surgery	2	2	1	1	13	2	2	13	6	2	10	2	56
Urology	4	4	5	3	2	5	4	2	6	2	8	5	45
ENT	6	11	8	8	7	6	7	7	2	15	11	3	52
Plastic	0	0	3	0	1	1	0	1	1	1	2	0	10
Obs/Gyn	7	9	13	12	12	12	17	12	15	21	17	13	147
Ophthalmology	22	26	30	30	21	36	33	21	21	24	14	14	278
Neurosurgery	1	0	2	2	0	1	2	0	3	5	4	1	20
Dentals	0	0	0	0	0	0	0	0	0	0	0	0	0
Cardio/Thoracic/Vascular	3	3	3	2	0	0	1	0	4	2	3	2	21
<b>Total</b>	<b>46</b>	<b>56</b>	<b>66</b>	<b>60</b>	<b>56</b>	<b>63</b>	<b>66</b>	<b>56</b>	<b>58</b>	<b>72</b>	<b>70</b>	<b>40</b>	<b>476</b>

**Table 39: PUBLIC CASES  
CANCELLED**

SPECIALTY	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Orthopaedics	19	44	44	27	24	37	20	17	38	45	30	46	391
General Surgery	13	26	14	15	13	25	22	15	22	24	18	16	223
Urology	5	4	3	2	2	3	3	3	3	2	3	1	34
ENT	12	13	13	13	17	30	27	20	8	15	23	10	201
Plastic	1	0	0	0	0	1	1	0	0	1	2	1	7
Obs/Gyn	15	19	17	14	17	22	18	14	11	21	15	13	196
Ophthalmology	22	22	22	17	7	14	20	8	28	24	24	9	217
Neurosurgery	9	5	8	0	2	2	2	0	3	4	3	0	38
Dentals	0	1	0	0	0	0	0	2	1	2	0	0	6
Cardio/Thoracic/Vascular	3	3	10	5	0	5	3	2	7	6	3	2	49
<b>Total</b>	<b>99</b>	<b>137</b>	<b>131</b>	<b>93</b>	<b>82</b>	<b>139</b>	<b>116</b>	<b>81</b>	<b>121</b>	<b>144</b>	<b>121</b>	<b>98</b>	<b>1362</b>

**Table 40: PRIVATE CASES CANCELLED**

SPECIALTY	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Orthopaedics	1	1	0	0	0	1	0	0	0	0	0	0	3
General Surgery	1	1	0	0	0	0	2	0	0	0	0	0	4
Urology	1	2	0	0	0	3	0	0	0	0	1	0	7
ENT	1	0	1	4	1	2	0	1	0	1	0	2	13
Plastic	0	0	0	0	0	0	0	0	0	0	0	0	0
Obs/Gyn	1	1	2	0	0	4	1	1	0	3	0	3	13
Ophthalmology	2	5	1	5	0	3	2	0	1	2	1	1	23
Neurosurgery	0	0	0	0	1	1	0	0	0	0	1	0	3
Dentals	0	0	0	0	0	0	0	0	0	0	0	0	0
Cardio/Thoracic/Vascular	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>7</b>	<b>10</b>	<b>4</b>	<b>9</b>	<b>2</b>	<b>14</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>6</b>	<b>3</b>	<b>6</b>	<b>66</b>

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## C. ACCIDENT & EMERGENCY IMPROVEMENT PROJECT

The AED continues to see an average of 40,000 to 44,000 patients a year. There were 38,991 patients seen in 2018. Under the Canadian Triage Acuity Scale (CTAS 1-5), patients were triaged and categorised as represented in the following table:

**Table 41: Canadian Triage Acuity Scale**

Category	Description	Details	2018
1	Patients with life-threatening conditions	Priority patients requiring emergency intervention	1.3%
2	Patients with urgent, but not life-threatening conditions	These patients require urgent care and treatment. May often require hospitalization. They are a cause for concern as they can become category 1 if not seen in a timely manner	11.0%
3	Patients with non-urgent conditions but require treatment at the hospital	Require diagnostics/services not provided at other public facilities	57.0%
4	Patients with non-urgent conditions who can be seen elsewhere	Not considered high priority and therefore may have to wait for extended periods for service	24.1%
5	Patients seen previously and have scheduled reviews	Not necessarily high priority but require follow up	6.6%

Unavailability of beds on the wards and ICUs are reasons that there were bottlenecks in patients' throughput and overcrowding conditions within the AED. The department admits an average of twenty-three patients daily, therefore, if beds are not made available in equal numbers then these patients are housed in the emergency department until the appropriate physical space is made available. These (admitted) patients needing inpatient care oftentimes

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are managed by the nurses and occasionally doctors of the AED who then are delayed in providing care to new AED patients.

In addition to delayed admissions, there are a small number of Elderly for care (EFCs) patients (an average of two per day), who remain within the AED awaiting placement in assisted living facilities such as district hospitals and nursing homes, some for several weeks. These delays also impacted on the resources of Emergency Ambulance Service. It was very common for patients to remain on the ambulance trolleys because of the unavailability of beds in the department. In some cases, the evidence indicated that patients spent 3 – 4 days waiting in A&E for beds on the wards to become available.

By the first quarter of the reporting period, the upgrade of the AED was identified as a mission critical project. The QEH Board undertook the planning and implementation of the A&E Upgrade Project, whose main components were: Phase 1 which is immediate changes in processes and systems to increase operational efficiency and reduce waiting times; and Phase 2 which is capital works to improve the facilities for staff and patients. Both components are sequenced to ensure that the inherent inefficiencies around patient triage, timeliness of clinical referrals and diagnostics, and the dispatch of patients presenting with non-emergency conditions were addressed. This approach to project implementation ensures that any bottlenecks in the existing system will be removed while allowing for faster processing of patients presenting for urgent and life-threatening conditions.

The hospital has already attained international accreditation status at the Gold level with Accreditation Canada International and has a number of other international accreditations (laboratory, baby-friendly, HACCP) which are expected to significantly bring practice to within international standards.

*The Queen Elizabeth Hospital (QEH) was awarded 'Gold' level accreditation by Accreditation Canada in March 2018. Becoming an accredited organization demonstrates the QEH's commitment to providing the safest care possible by institutionalizing healthcare quality practices and principles. The hospital's accreditation process required the implementation of a quality management framework that embraced the quality dimensions of: population focus, accessibility, safety, work-life, client-centred services, continuity of services, effectiveness, and efficiency.*

#### Medical Aid Scheme

The Medical Aid Scheme provides access to medical treatment for Barbadians when the service is not available in Barbados. Between the periods of 2016-2018, the Social Services Department recorded a total of 57 referrals for medical treatment abroad from various specialities. Despite these numbers, statistics recorded from the Medical Aid Scheme as shown in Table, have shown a decrease in the number of patients who were approved for funding to proceed overseas.

This decline can be attributed to new public-private partnerships and intergovernmental exchanges of resourced medical teams who have brought new skills and expertise. Unfortunately, some patients deteriorated and died prior to transfer while others benefitted from charitable funding and access to specialist care otherwise not accessible. Thus, this reduced the numbers being transferred to facilities abroad via the Medical Aid Scheme.

#### District Hospitals

Long term care is delivered through in-patient hospital services at the four (4) district hospitals which are: St. Michael District (Geriatric) Hospital, St. Philip District Hospital, St. Lucy District Hospital and the Gordon Cummins Hospital. A rehabilitation programme and day care services are provided by the St. Michael District Hospital.

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The district hospitals operate at full capacity of 533 beds. While there were 293 referrals for admissions in 2018, as seen in Table 42 only 129 clients were admitted. Transfers totalled 32 and these were all from the St. Michael District Hospital. Clients are usually transferred to one of the other district hospitals, or transferred to the Alternative Care of the Elderly Programme (ACEP). The (ACEP) was developed to meet the growing demand for institutionalized care. Through this model, government provides for the cost of caring for elderly persons who are transferred by the Ministry to private nursing homes. This programme has a capacity for approximately 135 persons with 26 out of a total of 56 private nursing homes participating.



**Table 42: District Hospitals**

	<b>St. Michael District Hospital</b>	<b>St. Philip District Hospital</b>	<b>St. Lucy District Hospital</b>	<b>Gordon Cummings District Hospital</b>	<b>Total</b>
Number of Beds	286	171	26	50	533
Number of Admissions	130	24	3	13	170
In Patient Service Days	51,148	39,917	8,640	17,540	117,245
Percentage Occupancy	100%	63.9 %	91.0%	96.1%	87.7%
Bed Turn Over Rates	0.4	0.1	0	0.2	0.7
Number of Deaths	81	23	2	11	117
Number of Transfers To QEH	54	31	3	11	99
Number of Discharges	32	NIL	NIL	NIL	32
Number of Referrals to A & E	50	NIL	4	4	58
Number of Persons Under 65	19	25	1	2	94

The high number of clients with non-communicable diseases is a reflection of the prevalence of these diseases in the wider society. While 29 percent of clients were diabetics, as seen in Table 43, 38 per cent or 204 were hypertensive. This reinforces the need for greater focus to be placed on preventative services since the presence of NCDs in this population group results in complications that can be debilitating and have a negative impact on their quality of life. It should be noted that despite the high rate of NCDs, centenarians account for 2.2% of the hospitals' population.

**Table 43: District Hospitals**

Item	St. Michael District Hospital	St. Philip District Hospital	St. Lucy District Hospital	Gordon Cummings District Hospital	Total
Number of Diabetics	95	26	10	25	156
Number of Hypertensive	121	50	11	22	204
Number Ulcers	34	14	2	3	55
Number of Falls	16	17	9	14	56
Number of Infections	455	135	28	64	682

During 2018 the geriatric services of the Ministry of Health & Wellness experienced the following challenges:

- Human resource constraints
- Security was a major concern. Staff felt unsecured at St. Lucy and St. Philip District Hospitals.
- Poor bus service to St Lucy and St Philip District Hospitals.
- Need to enhance provision for on-call services.
- Need to upgrade equipment at all the institutions i.e. beds.

### **Health Promotion**

The Health Promotion Programme focuses on the reduction of health risks throughout the life cycle and the promotion of healthy lifestyles and wellness, especially in relation to the burden of NCDs and risks from vector borne and infectious diseases. Strategies include community mobilisation and engagement, and strengthening health seeking behaviour through health education, including the use of social media and training.

During 2017-2018, work continued to address the risk factors associated with NCDs through the development and dissemination of public service announcements which were addressing the dangers of consumption foods with high levels of salt, sugar and fat.

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The Health Promotion Unit in collaboration with the Barbados Workers Union designed and implemented programmes for its Seniors Division which included physical activity, nutrition education and social support to encourage behaviour change. Elements also included behaviour modification tools and a “buddy system” for social support.

The National NCD Commission held a one-day consultation to discuss “healthy foods for Barbadians”. The consultation concluded that marketing and advertising of unhealthy foods to children and other vulnerable populations should be discouraged.

The National NCD Commission also convened a consultation to discuss approaches to the harmful use of alcohol, especially during the Crop Over season and other national events. The stakeholders included: the RBPF, Substance Abuse Foundation, Cultural Industries (Crop Over Band Leaders), Mixologists, BCC-Hospitality Institute, Psychiatric Hospital, Mount Gay Distilleries and the Ministry of Health and Wellness. Issues discussed included training of bartenders and mixologists, enforcement and public education. The National NCD Commission continued to focus on advocacy in support of product reformulation, especially in relation to the reduction of sugar in sugar sweetened beverages

Mosquito Awareness Week 2017 highlighted the importance of vector control to public health. Public education activities were conducted in collaboration with the Barbados Red Cross which carried out a Zika awareness project in collaboration with the US Centers for Disease Prevention and Control (CDC).

Legislation requiring picture-based warnings on tobacco packaging was passed in the Parliament and Gazetted in April 2017. Work is on-going to implement the provisions of the legislation.

Efforts to expand the “Get Women Moving” programme were continued with the support of additional fitness instructors. Programmes in Speightstown, St. Peter and Belleplaine, St. Andrew continued and were well attended. However, during the year, challenges were experienced with the identification of low-cost venues for programmes, and the unavailability of trained personnel.

One of the hallmarks of the year was the production of Series 6 of the “Get Healthy Barbados” television programme. The series consisted of 13 half hour programmes that focussed on NCD risk factor reduction, as well as the promotion of the Ministry’s policies and programmes. A special focus was on measures to address childhood obesity and children were prominently

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featured in the series. “Get Healthy Barbados was broadcast on CBC-TV on Tuesday evenings at 8:30pm, from June to October 2017.

A shift in policy emphasis towards an enhanced focus on wellness and prevention was highlighted when the Ministry was redesignated the Ministry of Health and Wellness following the General Election on May 24 2018. The newly established National Task Force on Wellness, mounted its first major outreach to the community, on Caribbean Wellness Day, Saturday, 8 September. This event was staged in Bridgetown, involved the closure of Broad Street to facilitate mounting information booths, promoting the dimensions of wellness. In addition, physical activity sessions, road races and quizzes were included to further educate the public on wellness and to motivate them to become involved in the activities. The celebration of wellness was continued during the week of September 10-15, with the polyclinics mounting displays and conducting education sessions for clients. The week concluded with a hike which started and ended at Bath, St. John. Monthly hikes were continued to the end of 2018 and were well received.

A number of activities were organised in observance of Barbados’ 50<sup>th</sup> Year as a member of the Pan American Health Organization. These included a tree planting exercise; and an Awards Ceremony during which eight local health care practitioners were recognised for their work. These events coincided with a visit by the Director, Dr. Carissa Etienne, on October 25, 2017. A framed citation recognising the relationship between Barbados and PAHO was presented to the Director during the Awards Ceremony.

## HUMAN RESOURCES FOR HEALTH

**Table 44: Human Resources for Health in Barbados per 10,000 population-2017**

CATEGORY	Number of Workers	Density per 10,000 population (Ratio)	Population per worker
Doctors	642	23.36	428.12
Registered Nurse	1178	42.86	233.32
Midwife	134	4.88	2,051.14
Psychiatric Nurse	255	9.28	1,077.85
Nursing Assistant	395	14.37	695.83
Nursing Auxiliary	613	22.30	448.37
Occupational Therapist	11	0.40	24,986.64
Dental Technician	9	0.33	30,539.22
Dental Practitioner	79	2.87	3,479.15
Dental Auxiliary	6	0.22	45,808.83
Diagnostic Radiographer	34	1.24	8,083.91
Dietitian	11	0.40	24,986.64
Nutritionist	6	0.22	45,808.83
Emergency Medical Dispatcher	6	0.22	45,808.83
Emergency Medical Technician	80	2.91	3,435.66
Medical laboratory Technologist	31	1.13	8,866.23
Environmental Health Assistant	75	2.73	3,664.71
Environmental Health Officer	99	3.60	2,776.29
Social Workers	16	0.58	17,178.31
Veterinarians	41	1.49	6,703.73
Hospital Administrators	10	0.4	27,766.8

The health workforce will be critical to achieving health and wider development objectives in the next decades (WHO,2015). The effective management of human resources in the health sector is essential to the delivery of quality health care. Ensuring the right combination of health workers is key to Barbados achieving its health goals.

Currently, The Ministry of Health and Wellness with technical assistance from Pan American Health Organisation (PAHO) is developing a strategy and action plan to improve the management of Human Resources for Health. A component of this is the development of a broad situational analysis on the state of human resources for health in Barbados.

Barbados has largely become self-sufficient in meeting its demand for human resources for health. Doctors are primarily trained at The University of the West Indies (UWI), while nurses and other health care professionals are trained at the Barbados Community College (BCC). All medical personnel must be registered with the Barbados Medical Council which has statutory

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responsibility for the regulation of all medical practitioners. The Nursing Council of Barbados, Dental Council, Pharmacy Council, and the Paramedical Professionals Council hold similar responsibility for their respective professions.

In 2017 there were 24 doctors per 10,000 populations (1 doctor per 429) and 43 registered nurses per 10,000 populations, or one nurse for every 234 Barbadians (see Table 42). This equates to an average of 1.8 nurses per doctor, achieving the Human Resources for Health Goal 4 that requires a ratio of qualified nurses to physicians of at least 1:1. For the Human Resources for Health Goal 1, WHO has suggested that countries require a minimum of 25 professionals (doctors, nurses, and midwives) per 10,000 populations, and Barbados has exceeded that standard for the year 2017.

### **Barbados Drug Service**

To ensure that pharmaceutical development is safe, and closely managed, the Government of Barbados has mandated the BDS to undertake the following responsibilities:

- (1) The Barbados National Drug Formulary
- (2) The Supply and Inventory Service
- (3) The Special Benefit Service
- (4) The Barbados Drug Service Pharmacy Service
- (5) The Drug Inspectorate
- (6) The Drug Information Centre
- (7) Pharmacovigilance; and
- (8) Administration and Financial Management

In the 2017-18 financial year, **827,067** prescriptions were dispensed by the Private Participating Pharmacies (PPP) under the Special Benefit Service (SBS) programme at a cost of **\$9,881,643.77**. During the same period, the BDS public pharmacy service, comprising of 14 pharmacies located in 9 polyclinics, 3 out-patient clinics and 2 district hospitals, dispensed **1,170,306** prescriptions at a cost of **\$10, 080,029**.

The comparisons of expenditure and prescription volume in the private and public sectors in the 2017-18 fiscal year versus the 2016-17 fiscal year shows a 7.9% increase in expenditure and 2.2% increase in prescription volume in the private sector. This is compared to the 3.2% decline in expenditure and 4.2% decline in prescription volume in the public sector. In the private sector the average prescription cost increased from \$11.61 to \$11.95 and in the public sector the average cost increased from \$8.52 to \$8.61.

The public and private pharmacies are strategically located across the island to ensure easy access by all patients; furthermore, patients have the choice of where to access the service. In the data from the 2017-18 fiscal year, the breakdown of the prescriptions dispensed by origin in the BDS pharmacies showed that the majority (87.9%) of the prescriptions dispensed in the BDS pharmacies originated in that sector, with 11.5% originating in the private sector and 1.6% from the Queen Elizabeth Hospital. The expenditure accounted for 83.5%, 14% and 1.9% respectively (see Table 45).

The BDS seeks to ensure that the practice of pharmacy in Barbados is maintained in a safe, efficient, accessible, and well-regulated environment to achieve optimum patient care and service at all times. This includes the following:

1. Rationalising and providing a continuous supply of formulary drugs at affordable prices to all Government healthcare institutions and the Private Participating Pharmacies;
2. Making arrangements for the selection, procurement, distribution and utilisation of formulary drugs;
3. Providing certain categories of persons with drugs free of cost at point of service in both the public and private sectors;
4. Providing information on drugs and related items to all health care professionals in Barbados and the CARICOM countries.

#### The Special Benefit Service (SBS)

In the 2017-18 financial year, 827,067 prescriptions were dispensed by the Private Participating Pharmacies (PPPs) under the SBS programme at a cost of \$9,881,643.77 (in Table 45). The PPPs are the private pharmacies who are contracted by the BDS to dispense formulary drugs to the beneficiaries of the SBS programme. The BDS beneficiaries include the following: persons 65 years of age and over, children under 16 years of age, and persons, of any age, who

receive prescribed formulary drugs for the treatment of hypertension, diabetes, cancer, asthma, epilepsy, and/or glaucoma.

The cost paid to the PPPs relates only to the cost of drug as purchased from the local suppliers. The patients pay the dispensing fee directly to the PPP based on a formula which is calculated on the cost price (see Table 45).

**Table 45: Patient Prescription Count and Expenditure for Prescriptions Dispensed to BDS Beneficiaries in the Private Participating Pharmacies 2017-2018**

<b>Month</b>	<b>Patient Count*</b>	<b>Rx Count</b>	<b>Cost</b>
<b>April</b>	28,111	66,447	\$783,828.56
<b>May</b>	29,777	71,826	\$853,640.75
<b>June</b>	28,683	69,032	\$826,027.49
<b>July</b>	29,683	70,701	\$848,926.96
<b>August</b>	28,621	67,795	\$803,271.80
<b>September</b>	28,583	67,695	\$810,434.26
<b>October</b>	29,747	70,142	\$832,484.47
<b>November</b>	28,371	66,678	\$796,014.06
<b>December</b>	29,260	69,909	\$843,521.07
<b>January (2018)</b>	28,699	68,166	\$820,207.87
<b>February (2018)</b>	28,145	65,441	\$782,699.92
<b>March (2018)</b>	30,497	73,235	\$880,586.56
<b>TOTAL</b>		<b><u>827,067</u></b>	<b><u>\$9,881,643.77</u></b>

\* Patients could be counted in more than one category because a patient may be hypertensive, diabetic and receiving non-benefit medication if over 65 years old.



The benefit categories listed in Tables 46 and 47, showed that hypertension accounted for the largest prescription volume and expenditure (42.5% and 47.5% respectively) followed by diabetes at 18.8% and 22.9% respectively. Glaucoma is the third highest expenditure category with over \$1.0 million being reimbursed at an average prescription cost of \$17.61 versus \$13.37 and \$14.56 for hypertension and diabetes respectively. Though there is a low demand for drugs used in the treatment of epilepsy, it accounts for the highest average prescription cost of \$23.13 per prescription.

**Table 46: Prescription Activity by Benefit Category in the Private Sector:**

<b>Benefit Categories</b>	<b>Prescription Volume</b>	<b>Expenditure</b>	<b>Avg. Cost/ Prescription</b>
<b>Hypertension</b>	351,142	\$4,693,969.40	\$13.37
<b>Diabetes</b>	155,408	\$2,262,273.66	\$14.56
<b>Glaucoma</b>	58,021	\$1,021,664.37	\$17.61
<b>Asthma</b>	25,586	\$525,315.81	\$20.53
<b>Epilepsy</b>	11,229	\$259,721.91	\$23.13
<b>Cancer</b>	4,760	\$90,953.90	\$19.11
<b>Others</b>	220,921	\$1,027,744.72	\$4.65
<b>TOTAL</b>	<b>827,067</b>	<b>\$9,881,643.77</b>	<b>\$11.95</b>

**Table 47: Benefit Categories as a Percentage of Total Expenditure**

<b>Benefit Category</b>	<b>Percentage of Prescription Count</b>	<b>Percentage of Total Expenditure</b>
<b>Hypertension</b>	42.5%	47.5%
<b>Diabetes</b>	18.8%	22.9%
<b>Glaucoma</b>	7.0%	10.3%
<b>Asthma</b>	3.1%	5.3%
<b>Epilepsy</b>	1.4%	2.6%
<b>Cancer</b>	0.6%	0.9%
<b>All Other</b>	26.7%	10.4%

In summary, the benefit categories, represented 73.3% of the prescription volume submitted and 89.6% of the expenditure in the private sector. The difference of 26.7% in prescription volume and 10.4% of expenditure represented beneficiaries, 65 years and over and under 16 years, receiving formulary drugs for conditions other than the benefit categories.

#### The BDS Pharmacy Service

The BDS Public Sector Service was supplied through 14 pharmacies located in 9 polyclinics, 3 out-patient clinics and 2 district hospitals. The pharmacy at the Psychiatric Hospital is also included here, since the drugs are purchased under the BDS vote.

Of the twelve BDS pharmacies (see Table 64) which provided pharmaceutical services to the general public, Winston Scott Polyclinic Pharmacy had the highest prescription volume and drug expenditure followed by Randal Phillips and Maurice Byer polyclinics, respectively. These three pharmacies also offered Extended-Hour Service and their 2017-18 drug expenditure was in excess of \$1 million each. The Branford Taitt Polyclinic Pharmacy, which ranked fourth with a drug expenditure of \$944,243, also offered Extended-Hour Services.

It should be noted that though the BDS does not have administrative responsibility for the pharmacy at the Psychiatric hospital the cost of drugs dispensed at the Psychiatric Hospital was just over \$1 million.

Table 65 gives a breakdown of the prescriptions dispensed by origin in the BDS district pharmacies; that is, those written in the polyclinics, the private sector and the Queen Elizabeth Hospital. The majority (87.9%) of the prescriptions dispensed in the district clinics originated in that sector, with 11.5% originating in the private sector and 1.6% in the Queen Elizabeth Hospital. The expenditure accounted for 83.5%, 14% and 1.9% respectively.

**Table 48: Prescription Volume and Expenditure by Origin**

Prescription Origin	Prescription Volume		Expenditure	
	Total	% of Total	Total	% of Total
Polyclinic/O.P.C	969,073	86.9%	\$7,525,911.79	83.5%
Private	128,349	11.5%	\$1,318,398.12	14.6%
Q.E.H	17,875	1.6%	\$171,798.09	1.9%
Grand Total	1,115,297		\$9,016,108.00	

As shown in Tables 49 and 50 hypertension and diabetes followed a similar trend where they were ranked at positions 1 and 2 respectively in terms of expenditure and prescription volume.

**Table 49: Prescription Activity by Benefit Category in the Public Sector  
for 2017-18 Fiscal Year**

Benefit Category	Rx count	Cost	Cost/Rx
Hypertension	301,608	\$2,828,987.74	\$9.38
Diabetes	184,981	\$2,667,575.54	\$14.42
Asthma	39,379	\$607,931.42	\$15.44
Epilepsy	21,894	\$432,703.64	\$19.76
Cancer	4,098	\$287,817.37	\$70.23
Glaucoma	<u>15,095</u>	<u>\$200,335.10</u>	\$13.27
<b>Total Benefit</b>	<b><u>567,055</u></b>	<b><u>\$7,025,350.81</u></b>	\$12.39
<b>Total for Year</b>	<b><u>1,170,306</u></b>	<b><u>\$10,080,028.69</u></b>	11.95

**Table 50: Benefit Categories as a Percentage of Total Benefit & Total Expenditure for 2017-18**

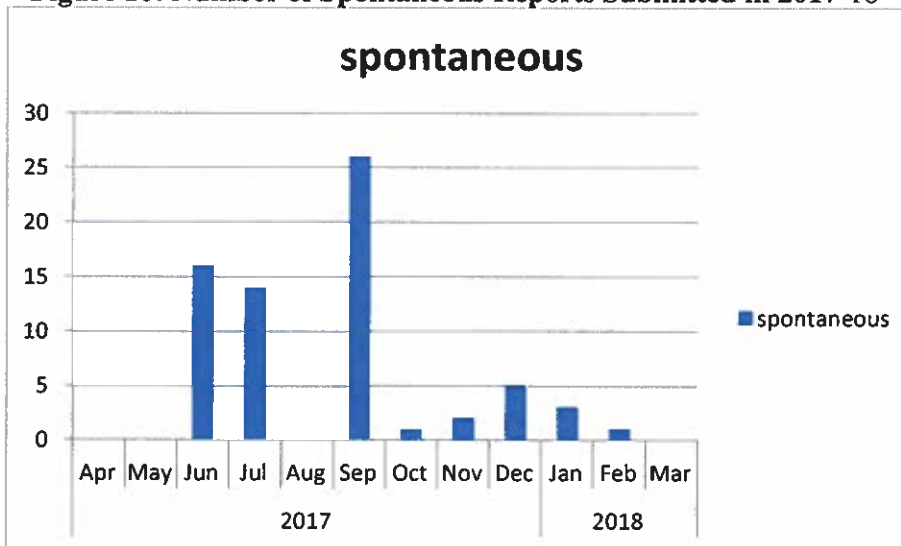
Benefit Category	Percentage of Total Expenditure on Benefit Drugs		Percentage of Total Drug Expenditure for 2017-18 Fiscal Year	
	Rx Count	Cost	Rx Count	Cost
Hypertension	56.5%	40.7%	29.5%	28.6%
Diabetes	30.3%	37.7%	15.8%	26.5%
Asthma	6.5%	8.6%	3.4%	6.0%
Epilepsy	3.6%	6.1%	1.9%	4.3%
Glaucoma	2.5%	2.8%	1.3%	2.0%
Cancer	0.7%	4.1%	0.4%	2.9%
<b>Total</b>			<b>52.2%</b>	<b>70.3%</b>

## Pharmacovigilance

Because of Pharmacovigilance, the BDS continued to monitor adverse drug reactions in collaboration with its regional and international partners. Webinars were the main communication medium used for sharing information through the regional Network of Focal Points. These webinars provided updates on: active Pharmacovigilance projects, regulatory measures, medicines withdrawn from the global market and, and training. The BDS continued to monitor the adverse reports and took remedial measures if and when necessary. The adverse reports received were submitted to the World Health Organization.

The Barbados Drug Service hosted several Pharmacovigilance Continuing Education training workshops and presentations to various healthcare professionals and organisations including doctors, pharmacists, nurses, and the Barbados Community College and Family Planning Association.

**Figure 10: Number of Spontaneous Reports Submitted in 2017-18**



Of the top thirteen drugs which were reported in the Pharmacovigilance programme during April 1, 2017 – March 31, 2018, Angiotensin II Receptor Blockers (ARB) accounted for 71% of the total reports submitted. This contrasted with 41% of the total reports received in 2016-17 (see Figure 10). It should be noted that all hydrochlorothiazide (HCTZ) preparations, namely the Telmisartan/HCTZ and Valsartan/HCTZ were removed from formulary from April 1, 2018 and Valsartan was recalled in January 2019.

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## **PUBLIC/PRIVATE SECTOR COLLABORATION**

Public Sector health facilities have continued to benefit from generous donations in cash and kind from both local and overseas sources. The MHW received a donation of eleven (11) Vascular Doppler Scanners from the Maria Holder Memorial Trust and the Maria Holder Diabetes Centre, on March 6, 2017. Given the high prevalence of diabetes in the population, the diabetic foot is one of the major life-threatening complications of the disease and is now one of the major public health burdens. Currently, there are approximately 200 amputations annually with no significant reduction. Of concern is the higher proportion of major amputations. It is anticipated that the use of these machines will reduce the loss of limbs and lives of persons living with diabetes through earlier referrals and management.

The Ministry of Health and Wellness, through its Diabetes Foot Care Committee, continued to improve diabetic foot care through client education, improved surveillance and training of health-care professionals. In addition, the Ministry continued to scale-up its diabetes prevention clinics and Non-Communicable Disease (NCD) clinics within primary care settings.

Barbados International Business Association (BIBA) also committed to donating US\$82,415.37 in equipment for the Eunice Gibson Polyclinic. Already the association purchased two autoclaves valued at US\$21,234.20. The first autoclave was received in December. It was commissioned in February 2017 and is currently in use at the polyclinic.

The MHW remains committed to the strengthening of its Primary Health Care services and with the assistance and continued partnerships with the private sector and NGOs used these philanthropic donations to support the inadequately addressing the varying health needs of citizens.

### **Public/Private Sector Collaboration and Philanthropy**

Public private partnerships are conventional public sector procurement and financing mechanisms utilised by the Ministry of Health and Wellness to guarantee both universal coverage and access to high quality health services. Public private partnerships allow government to build strategic alliances with the private sector and received full commitment from private companies for providing goods, services and/or facilities. The Ministry of Health and Wellness' public private sector partnerships are:

1. Contract with the *Barbados Diabetes Foundation* for the provision of care for 220 persons per year. For 6 months each client receives a tailored package of services including visits with a diabetologist, nutritionist, psychologist, diabetes specialist nurse, and podiatrist.
2. Contract with the *Heart and Stroke Foundation of Barbados* to provide services to persons referred with or at risk for heart attacks and strokes for a programme of support and rehabilitation.
3. *Barbados National Chronic Disease Registry* which is managed by the University of the West Indies and which incorporates the two cardiovascular disease registries: heart attack and stroke; and the cancer registry.
4. Service level agreement with *Diagnostic Radiology Services to provide \$75,000.00 worth of radiology and other imaging services to primary health care institutions and the Ladymeade Reference Unit* for a period of 15 years, commencing in 2013 and ending in 2027. Services provided include MRI, CT scans, ultrasounds, x-rays, barium studies and mammograms.
5. Contract between *SILS Dialysis Barbados* and the Queen Elizabeth Hospital for the provision of dialysis services.

In a manner similar to that of kidney transplantation, at the QEH, a number of surgeries were performed on children with scoliosis through visiting arrangements by a surgical team from *World Paediatric Project (WPP)* from the USA, in collaboration with our local surgeons.

The fields of health and health philanthropy have seen dramatic changes in recent years. Government's commitment to health care delivery along with philanthropic contributions is emerging as a significant means by which the health systems can enhance financial resources. Many charities and donor agents continue to demonstrate their corporate social responsibility to the strengthening of the health care system. These include but are not limited to the following:

1. Over the past 6 years **BIBA Charity** has donated over **\$350,000.00** in equipment and health literature to the polyclinics and in 2016 BIBA pledged approximately **\$168,200.00** to the Eunice Gibson Polyclinic. In 2017 two autoclaves valued over **\$43,000.00** were donated, and the charity is continuing its fund-raising efforts to reach

- its remaining target of approximately **\$133,600.00** for the purchase of vital signs monitors, a complete dental suite, OB/GYN equipment and instruments in 2018.
2. **Massy Foundation** donated approximately **\$22,900.00** for the execution of a Dental Health Promotion project in secondary schools.
  3. The **Sandy Lane Charitable Trust** provided funding for the construction of Adolescent Health Facility at the Psychiatric hospital.
  4. The Geriatric hospital has also benefitted tremendously from the benevolence of several donors namely:

- i. **Massy Stores**
- ii. **Barbados Port Inc.**
- iii. **St. Paul's Anglican Church**
- iv. **Terra Caribbean**
- v. **American Airlines**
- vi. **Sagicor Life Inc.**
- vii. **Manufacturers P&C Ltd.**
- viii. **Abeds**
- ix. **West India Coffee Co.**
- x. **Central Bank of Barbados**
- xi. **St. Michael Secondary School**
- xii. **People's Cathedral**

5. Hospital Philanthropy was yet another noteworthy programme introduced at QEH as an innovative approach for generating capital revenues to support technology replacement. Accumulated funds generated from individuals, religious organizations, the private sector, NGO's and the diaspora have surpassed the \$12.M milestone.

## **HEALTH SECTOR EXPENDITURES AND FINANCING**

The allocation to the Ministry of Health and Wellness for the fiscal year 2018-2019 was \$319,299,339 which represents 7.2 per cent of Government's projected total expenditure for the period. As indicated in Table 51, Hospital Services, which include emergency, acute and secondary and tertiary care, at the QEH as well as mental health services at the Psychiatric



Hospital, received approximately 56.7 per cent of total allocation to the Ministry of Health and Wellness. The second largest allocation has been assigned to the Primary Health Care Programme, which received 12.1 per cent and the third largest allocation 10.8 per cent, was allocated to the Care of the Elderly Programme.

**Table 51: Ministry of Health and Wellness Budgetary Allocations for Financial Periods 2017-2020 Approved Estimates**

<b>Budgetary Allocation Figures</b>						
<b>Programme Area</b>	<b>2017-2018</b>	<b>%</b>	<b>2018-2019</b>	<b>%</b>	<b>2019-2020</b>	<b>%</b>
<b>Direction &amp; Policy Formulation Services</b>	18,554,938	5.6%	17,844,426	5.4%	17,873,291	4.8%
<b>Primary Health Care</b>	31,652,353	9.7%	39,953,226	12.1%	34,736,260	9.5%
<b>Hospital Services</b>	185,044,189	56.5%	187,152,033	56.7%	222,193,799	60.9%
<b>Care of the Disabled</b>	2,933,274	0.9%	3,062,833	0.9%	3,010,598	0.8%
<b>Pharmaceutical Programme (BDS)</b>	27,448,509	8.4%	27,593,591	8.4%	27,418,908	7.5%
<b>Care of the Elderly</b>	35,575,685	10.9%	35,563,605	10.8%	36,454,310	10%
<b>HIV/AIDS Prevention and Control Project</b>	10,746,115	3.3%	6,745,480	2%	6,772,158	1.9%
<b>Environmental Health Services</b>	15,671,731	4.8%	16,712,345	5.1%	16,583,073	4.5%
<b>Poverty Alleviation and Reduction Programme</b>	67,575	0.02%	67,575	0.02%	67,575	0.02%
<b>TOTAL</b>	<b>327,694,369</b>	<b>100</b>	<b>329,695,114</b>	<b>100</b>	<b>365,109,972</b>	<b>100</b>

Source: Planning and Research Unit, Ministry of Health and Wellness, 2018

Further budgetary allocations were as follows: Direction and Policy Formulation Services \$17.8 million or 5.4 per cent; Care of the Disabled received \$3 million or 0.9 per cent; the Pharmaceutical Programme received \$27.5 million or 8.4 per cent; HIV/AIDS Prevention and Control Project received \$6 million or 2 per cent; and Environmental Health Services received \$16.7 million or 5.1 per cent of the budget.

*The Ministry of Health and Wellness with technical assistance from HFG Governance conducted its second Health Accounts Study in 2018. The 2016-17 study showed that:*

- *Current Health Expenditure (THE) = 627.9M. This represents 7% of Barbados gross domestic product. The expenditure is equivalent to BBD \$1116 per capita. Barbados has to reduce the per capita expenditure.*
- *Public Health Expenditure = 50.9%, these represent funds allocated to the Ministry of Health voted by Parliament.*
- *Out-of-Pocket Expenditure = 43%, represents the second biggest contributor to the Total Health Expenditure. World Health Organization suggested an upper limit for the share of out-of-pocket expenditure to THE of 20% to minimise the impact of financial catastrophe for households. This figure raises a level of concern especially as it relates to the progress towards Universal Health coverage, and the ability to not only access health care but for citizens to access without due financial hardship.*
- *Private Health Expenditure (private health insurance) = 5.8%. The Health of the Nation Study estimated that 1/3 of people employed have health insurance.*
- *Non-Governmental Organisations and Donors = 0.4%*

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## **TECHNICAL COOPERATION AND EXTERNAL FINANCING**

With respect to the execution of the Pan American Health Organization Biennial Work Programme (PAHO BWP), the Ministry of Health and Wellness (MHW) continued to collaborate with PAHO in an effort to address the challenges facing the health sector and address the health needs of the population. The initiative is a two-year programme whereby technical assistance is received from PAHO under five broad programme areas. These include: Health Systems, Health Emergencies, Communicable Diseases, Non-Communicable Diseases, and Determinants of Health and Promoting Health throughout the Life Course. The budget for the programme is approximately US\$400,000 dollars.

During the period 2017-2018 emphasis continued to be placed on the strengthening of the Family Health Programme. The outcomes of this activity were to: reduce new born morbidity and mortality through printing and dissemination of guidelines; reduce morbidity associated with mental illness and barriers to reproductive health services in adolescents; improve maternal care through printing and dissemination of the guidelines.

In addition, the Ministry also developed an Adolescent Health Strategy which was developed using a participatory process with active participation from multi-sectoral stakeholders and proposes a 10-year strategy that aims to engage and respond to the needs of adolescents (10-19 years) of both genders living in Barbados. It aims to accomplish this by developing and strengthening the health sector's integrated response and targeting those most at risk adolescents.

A Food Safety Gap Audit was conducted at the Geriatric Hospital in September, 2018. The objective of the audit was to assess adherence to standardized food safety practices and develop a plan of action for a fully functioning food safety system. A report has been prepared by the consultant along with a proposal to support the Hospital's dietary service to achieve Good Hygiene practices (GHP)/Pre-Requisite Programme (PRP) Compliance, and Certification.

Additionally, the MHW in collaboration with PAHO continued to introduce the Global HEARTS approach to Cardio Vascular Disease (CVD) Management in Barbados. Training workshops were conducted throughout 2018. The aim of the training has been to empower health professionals to become champions for the Global HEARTS approach and to improve

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the management of CVD in the polyclinic setting. Particular attention has been placed on the control of blood pressures in patients, as well as salt reduction and tobacco cessation.

#### United States Agency for International Development (USAID) Collaboration

USAID's flagship Maternal and Child Survival Program (MCSP) worked with the Ministry of Health and Wellness to support Zika-affected parents and children. The collaboration included training of healthcare providers on:

- a. The use of quality improvement methods to strengthen postnatal care services
- b. Essential new-born care components
- c. Therapeutic early stimulation activities for children with developmental delays
- d. Support for parents and caregivers

Healthcare clinical staff were introduced to the tools and processes involved in developing and implementing a quality improvement plan so they could identify indicators that their institutions needed to improve, and – based on the analysis of the uptake of services – identify how to improve the quality of those services in a way that is accessible to their patients. The training in early therapeutic stimulation equipped health workers and other service providers with the latest science and evidence on brain development in the early years as well as best practices from paediatric therapies, including occupational, physical, and speech language therapies. Staff learned how to incorporate therapeutic interventions into routine activities as well as how to empower parents to support their children's development at home, potentially mitigating the long-term effects of disabilities. Health workers and other service providers learned how to facilitate psychosocial support group sessions for caregivers of children with disabilities of any age, including children under three years of age and the special care needed for small or premature babies.

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# APPENDIX

MORTALITY REPORT

Table 52: MORTALITY REPORT

	<1 years	1-4 years	5-14 years	15-24 years	25-44 years	45-64 years	65+	Unknown	Total
Symptoms, signs and ill defined-conditions	2	0	0	0	2	6	23	0	33
Intestinal infectious diseases	0	0	0	0	2	0	5	0	7
Meningitis	0	0	0	0	1	5	3	0	9
Septicaemia, except neonatal	0	0	0	0	5	6	35	0	46
HIV disease (AIDS)	0	0	0	0	2	0	0	0	2
Acute respiratory infection	1	0	0	0	2	17	105	1	126
Other infectious and parasitic diseases	0	0	0	0	8	9	16	0	33
Malignant neoplasm of stomach	0	0	0	0	0	5	10	0	15
Malignant neoplasm of colon and recto sigmoid junction	0	0	0	0	0	18	45	0	63
Malignant neoplasm of digestive organics and peritoneum, except stomach and colon	0	0	0	0	2	28	53	0	83
Malignant neoplasm of trachea, bronchus and lung	0	0	0	0	1	8	15	0	24
Malignant neoplasm of respiratory and intrathoracic organs, bronchus and lung	0	0	0	0	0	1	2	0	3
Malignant neoplasm of female breast	0	0	0	0	6	32	25	0	63
Malignant neoplasm of cervix uteri	0	0	0	0	2	6	5	0	13
Malignant neoplasm of corpus uteri	0	0	0	0	1	7	12	0	20
Malignant neoplasm of prostate	0	0	0	0	0	15	117	0	132
Malignant neoplasm of other genitourinary organs	0	0	0	1	2	10	24	0	37
Leukaemia	0	0	1	1	0	2	9	0	13
Malignant neoplasm of lymphoid, other hematopoietic and related tissue	0	0	0	0	0	15	21	0	36
Malignant neoplasm of other and unspecified sites	0	0	3	2	4	23	59	0	91
Carcinoma in situ, benign neoplasms and unknown behaviour	1	0	0	0	0	2	9	0	12
Acute rheumatic fever and chronic rheumatic heart diseases	0	0	0	0	1	1	1	0	3

	<1 years	1-4 years	5-14 years	15-24 years	25-44 years	45-64 years	65+	Unknown	Total
Hypertensive diseases	0	0	0	0	3	23	100	0	126
Ischemic heart diseases	0	0	0	0	1	39	156	0	196
Pulmonary heart disease, diseases of pulmonary circulation and other forms	1	0	0	0	11	36	112	0	160
Cerebrovascular diseases	0	1	0	0	5	32	176	0	214
Atherosclerosis	0	0	0	0	0	0	4	0	4
All other diseases of the circulatory system	0	0	0	0	1	2	28	0	31
Foetus and new-born affected by obstetric complications, birth trauma	3	0	0	0	0	0	0	0	3
Slow foetal growth, foetal malnutrition, short gestation, low birth weight-do narrative	3	0	0	0	0	0	0	0	3
Respiratory disorders specific to the perinatal period	6	0	0	0	0	0	0	0	6
Bacterial sepsis of new-born	7	0	0	0	0	0	0	0	7
Remainder of certain conditions originating in the perinatal period	4	0	0	0	0	0	0	0	4
Land transport accidents	0	0	2	6	7	8	5	0	28
Falls	0	0	0	1	1	2	5	0	9
Accidental drowning and submersion	0	0	0	0	1	0	0	0	1
Accidental threats to breathing	1	0	0	0	0	3	1	0	5
Exposure to smoke, fire and flames	0	0	0	0	1	0	0	0	1
Accidental poisoning by and exposure to noxious substances	0	0	0	0	0	0	1	0	1
All other accidents	0	0	0	0	2	8	30	0	40
Events of undetermined intent	0	2	1	14	19	17	15	0	68
Diabetes mellitus	0	0	0	0	4	21	162	0	187
Nutritional deficiencies	0	0	0	0	0	0	1	0	1
Mental and behavioural disorders	0	0	0	0	0	3	53	0	56
Diseases of the nervous system, except meningitis	0	0	0	2	6	17	64	0	89
Chronic lower respiratory diseases except Asthma	0	0	0	0	0	0	15	0	15
Asthma	0	0	0	1	1	2	4	5	13

	<1 years	1-4 years	5-14 years	15-24 years	25-44 years	45-64 years	65+	Unknown	Total
Remainder of diseases of the respiratory system	0	0	0	1	3	8	49	0	61
Appendicitis, hernia of abdominal cavity and intestinal obstruction	0	0	1	0	1	1	8	0	11
Cirrhosis and certain other chronic diseases of liver	0	0	0	0	0	10	11	0	21
All other diseases of the digestive system	0	0	0	1	0	15	57	0	73
Diseases of the urinary system	0	0	0	0	3	12	68	0	83
Hyperplasia of prostate	0	0	0	0	0	0	8	0	8
Congenital malformations, deformations and chromosomal abnormalities	6	0	0	1	0	5	2	0	14
Remainder of all other diseases	0	0	0	0	7	18	113	0	138
	<b>35</b>	<b>3</b>	<b>8</b>	<b>31</b>	<b>118</b>	<b>498</b>	<b>1842</b>	<b>6</b>	<b>2541</b>



## QUEEN ELIZABETH HOSPITAL

**Table 53: OUT PATIENT CLINIC ATTENDANCES BY SERVICE-2017**

CLINIC	NEW CASES	OLD CASES	TOTAL
NURSERY	0	754	754
PAEDIATRICS	114	1884	1998
PSYCHOLOGY	58	185	243
OBSTETRICS ANC/PNC (PUBLIC)	2098	9383	11481
ANC (PUBLIC)	2083	8879	10962
PNC (PUBLIC)	15	504	519
GYNAECOLOGY/COLPOSCOPY (PUBLIC)	1560	6217	7777
GENERAL MEDICINE (PUBLIC) *	2218	13981	16199
HAEMATOLOGY (PRIVATE)	0	0	0
MEDICINE (PRIVATE)	0	0	0
PSYCHIATRY (PUBLIC)	90	2104	2194
PAIN (PRIVATE)	0	0	0
GENERAL SURGERY (PUBLIC)	1613	7626	9239
GENERAL SURGERY (PRIVATE)	0	0	0
CARDIAC SURGERY (PUBLIC)	113	537	650
CARDIAC SURGERY (PRIVATE)	0	0	0
ORTHOPAEDICS	1570	5481	7051
EAR, NOSE, THROAT	970	5011	5981
OPHTHALMOLOGY	1001	15361	16362
CARDIOVASCULAR (ADULT)	298	1497	1795
CARDIOVASCULAR (PAEDIATRIC)	103	490	593
RADIOTHERAPY	187	4678	4865
<b>TOTAL</b>	<b>11993</b>	<b>75189</b>	<b>87182</b>

**Table 54: No. Deliveries at the Queen Elizabeth Hospital  
2015-2017**

Years	No. Teenage Deliveries (%)	Total Deliveries
2015	327 (12.2)	2678
2016	273 (11.0)	2475
2017	269 (11.2)	2389

**Table 55: No. Termination of Pregnancies at the Queen Elizabeth Hospital  
2015 – 2017**

Years	No. Teenage Abortions (%)	Total Abortions
2015	49 (10.0)	492
2016	63 (13.8)	455
2017	48 (12.9)	373

**Table 56: Number of Deliveries by Age of Mother  
At the Queen Elizabeth Hospital 2015 – 2017**

Age Group In Years	Number of Deliveries		
	2015	2016	2017
< 15	7	2	2
15 – 19	322	271	267
20 – 24	714	611	569
25 – 29	621	625	619
30 – 34	557	508	529
35 – 39	344	330	301
40 +	113	128	102
<b>Total</b>	2678	2475	2389

**Table 57: Number of Termination of Pregnancies by Age of Mother  
At Queen Elizabeth Hospital  
2015—2017**

Age Group In Years	Number of Terminations		
	2015	2016	2017
< 15	1	4	3
15 – 19	48	58	45
20 – 24	120	113	104

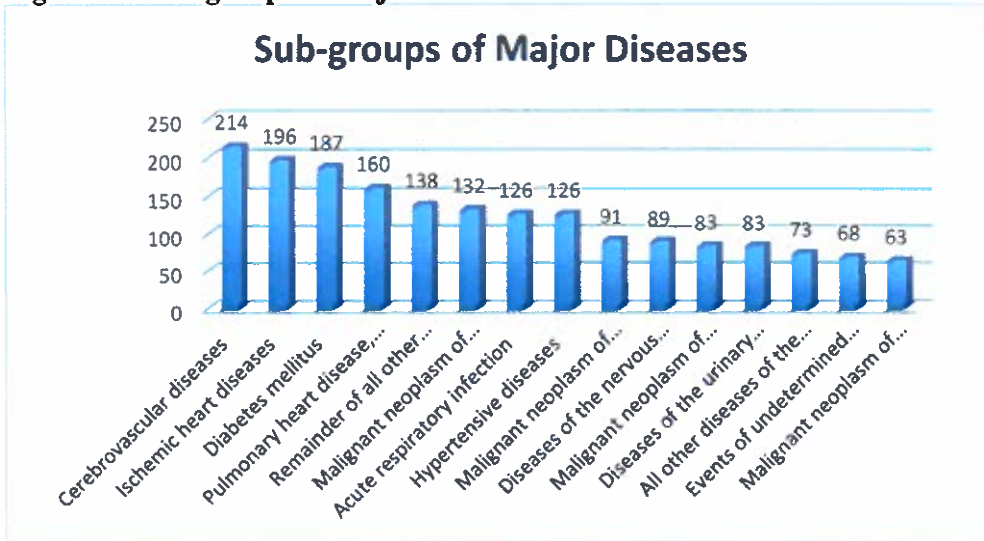
<b>25 – 29</b>	129	119	69
<b>30 – 34</b>	92	71	80
<b>35 – 39</b>	65	66	49
<b>40 +</b>	37	23	23
<b>Total</b>	492	455	373

**Table 58: Number of Discharge Diagnoses for NCDs by Age Group and Sex at the QEH 2017**

Diagnosis	Sex	Age Groups									Total
		0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+	
Cancer of Prostate	M	0	0	0	0	1	5	17	29	20	<b>72</b>
Cancer of Breast	M	0	0	0	0	0	0	0	0	0	<b>0</b>
	F	0	1	0	0	8	12	39	25	15	<b>100</b>
Cancer of cervix	F	0	0	0	0	1	4	5	2	4	<b>16</b>
Cancer of Colon/ Rectosigmoid	M	0	0	0	0	2	11	34	28	11	<b>86</b>
	F	0	0	0	2	1	9	36	21	8	<b>77</b>
Diabetes	M	4	10	5	3	9	11	19	27	15	<b>103</b>
	F	0	10	5	7	8	12	13	11	16	<b>82</b>
Asthma	M	38	112	12	13	7	9	9	4	2	<b>206</b>
	F	37	58	18	17	12	20	16	6	5	<b>189</b>
Ischaemic Heart Disease	M	0	0	0	0	0	13	25	29	15	<b>82</b>
	F	0	0	1	1	0	33	20	34	25	<b>114</b>
Stroke	M	0	0	0	1	1	4	16	23	17	<b>62</b>
	F	0	1	0	1	1	6	7	24	48	<b>88</b>
Hypertension	M	0	0	0	0	4	6	6	10	2	<b>28</b>
	F	0	1	2	1	4	8	6	9	3	<b>34</b>
Bronchitis/ Emphysema, Other COPDs	M	28	0	1	1	0	5	3	8	10	<b>56</b>
	F	18	0	1	0	0	1	2	5	5	<b>32</b>
<b>Totals</b>		<b>125</b>	<b>193</b>	<b>45</b>	<b>47</b>	<b>59</b>	<b>169</b>	<b>273</b>	<b>295</b>	<b>221</b>	<b>1427</b>

Source: Records Department, Queen Elizabeth Hospital

**Figure 11: Sub-groups of Major Diseases-2017**



**Table 59: Deaths by Service-2017**

MONTH	MEDICINE	SURGERY	E.N.T.	ORTHOPAEDIC	GYNAECOLOGY	RADIOTHERAPY	PAEDIATRIC MEDICAL	PAEDIATRIC SURGICAL	NURSERY (N)	NURSERY (S)	TOTAL DEATHS	STILL BIRTHS	NEONATALS	INFANTS	POST OPERATIVE	UNDER 24 HRS	HOSPITAL DAYS	AVERAGE STAY
JAN	72	20			2	11			1		106	1	1	1		14	1135	10.7
FEB	49	14				7			1		71	2	1	1		11	805	11.3
MAR	76	18	1	1		13	1			2	112	1		3		14	1651	14.7
APRIL	56	16	1	3	1	17	2		1		97	2	1	1		11	1757	18.1
MAY	69	18	1		1	7			2		98		2	2		14	1315	13.4
JUNE	61	13		4	1	14			1		94		1	1		9	1641	17.5
JULY	69	19	1	1		6			2		98	3	2	2		11	1183	12.1
AUG	70	20	1			8			5		104	2	5	5		17	1784	17.2
SEP	66	18	5	1		8			3		101	2	3	3		16	1450	14.4
OCT	62	19		1		14	1	1			98	4				16	1407	14.4
NOV	53	26	1	1	4	6			2		93	1	2	2	1	17	1188	12.8
DEC	51	15	1	3		11	4		5		90	2	4	6		10	1079	12.0
TOTAL	754	216	12	15	9	122	8	1	23	2	1162	20	22	27	1	160	16395	14.1

N - NORMAL  
S - SPECIAL CASES ADMITTED TO NICU

## **BAYVIEW HOSPITAL**

**Table 60: Number of Deliveries**

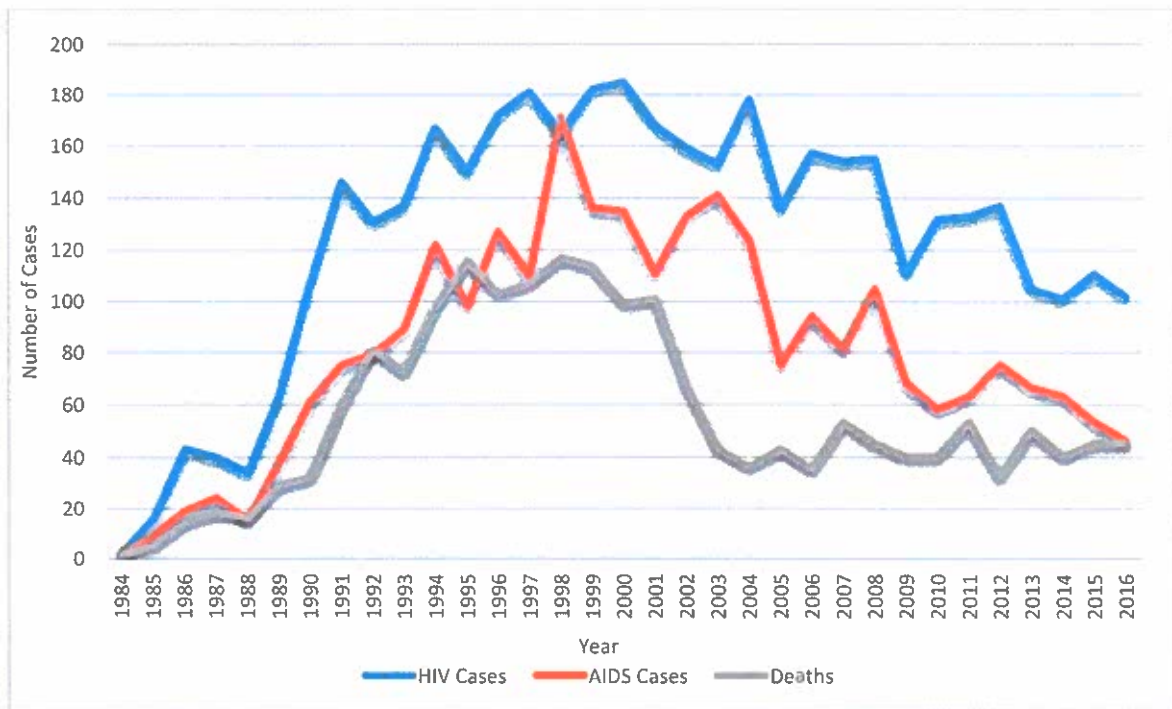
Age Group in Years	Number of Deliveries		
	2016	2017	2018
< 15	00	00	00
15 – 19	00	01	00
20 – 24	12	10	06
25 – 29	37	26	15
30 – 34	57	42	36
35 – 39	40	35	31
40+	12	15	11
<b>Total</b>	<b>158</b>	<b>129</b>	<b>99</b>

**Table 61: Bed Utilisation 2017**

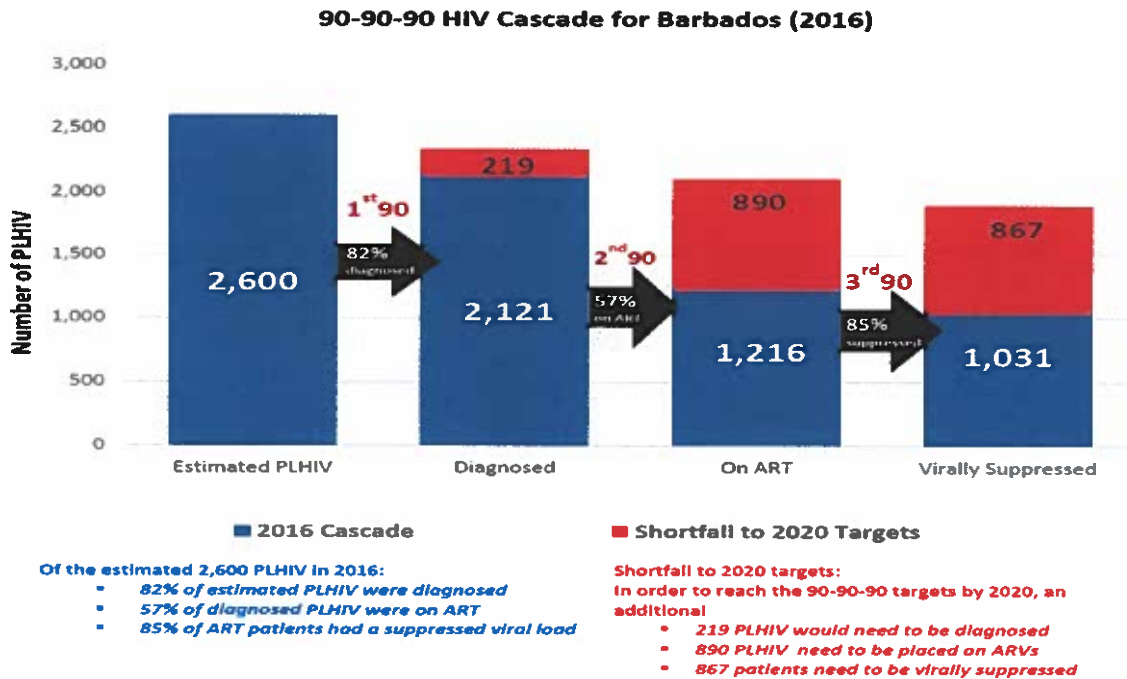
Bed Utilisation	2017
Total admissions:	766
Total admissions (day cases)	734
Total discharges (including deaths):	907
In-patient service days:	2982
Average daily number of patients:	7
Average length of stay:	3

## HIV

**Figure 12: Annual trends of new reported HIV cases, new AIDS cases and deaths among people with HIV, 1984 – 2016**



**Figure 13: 90-90-90 HIV Cascade for Barbados**



**BARBADOS DRUG SERVICE**

**Table 62: Prescription Pricing Formula: Prescription Pricing Formula**

Cost of Drug to Pharmacy	Dispensing Fee to be Paid by the Beneficiary
\$0 - \$2.00	\$5.00 minus Drug Cost
\$2.01 - \$10.00	Cost plus \$5.00
\$10.01 - \$20.00	Cost plus \$7.00
\$20.01 - \$40.00	Cost plus \$12.00
Over \$40.00	Cost plus 30%

**Table 63: SBS Percentage Changes in Prescription Volume and Expenditure**

Year	Prescription (Rx) Volume	Expenditure (\$)	% Change in Exp	% Change in Rx Volume	\$/Rx
2012-13	864,335	10,639,956	-1.36%	-1.71%	\$12.31
2013-14	828,328	10,643,775	0.04%	-4.35%	\$12.85
2014-15	841,221	10,619,933	0.44%	1.54%	\$12.71
2015-16	827,374	9,394,511	-13.04%	-1.67%	\$11.35
2016-17	808,991	9,103,411	-3.10%	-2.22%	\$11.25
2017-18	827,067	9,881,644	7.88%	2.19%	\$11.95



**Table 64: Analysis of Expenditure in BDS Pharmacies by Public (A), Private (B) and the Queen Elizabeth Hospital (Q) Prescriptions for the Fiscal Year 2017-18**

Pharmacy	A RX	A COST	B RX	B COST	Q RX	Q COST	TOTAL RX	TOTAL COST
AND	10,559	84,023.33	633	6,495.97	172	1,550.59	11,364	92,069.89
BLR	106,363	813,511.21	11,943	117,269.77	1,507	13,461.82	119,813	944,242.80
EDC	83,167	664,902.71	4,222	48,226.62	746	5,716.71	88,135	718,846.04
GER	84,691	243,849.32	280	2,683.71	58	986.75	35,029	247,519.78
GLE	82,493	721,391.55	10,280	108,419.85	1,316	12,916.80	94,089	842,728.20
JON	49,741	362,224.69	3,672	31,413.82	495	3,824.29	53,908	397,462.80
JOS	7,951	60,821.87	1,153	12,082.47	175	1,286.68	9,279	74,191.02
MBY	120,225	949,685.76	13,212	139,774.55	2,618	30,029.31	136,055	1,119,489.62
PSY	55,004	1,063,590.36	4	308.37	1	21.96	55,009	1,063,920.69
RAP	115,125	950,163.46	22,953	234,317.38	2,760	26,946.32	140,838	1,211,427.16
SIX	89,754	686,400.16	23,203	234,859.83	2,649	24,793.06	115,606	946,053.05
SPH	12,408	75,982.09	53	404.12	10	67.76	12,471	76,453.97

Pharmacy	A RX	A COST	B RX	B COST	Q RX	Q COST	TOTAL RX	TOTAL COST
SWS	151,711	1,106,794.86	26,556	271,790.71	3,747	33,753.01	182,014	1,412,338.58
THO	12,768	95,824.87	1,027	12,520.15	212	2,809.54	14,007	111,154.56
TOTAL	164,479	\$7,525,911.79	128,349	\$1,318,398.12	17,875	\$171,798.09	1,115,297	\$9,016,108.00
WAR	92,117	710,335.91	9,162	98,139.17	1,410	13,655.45	102,689	822,130.53
	<u>1,024,077</u>	<u>\$8,589,502.15</u>	<u>128,353</u>	<u>\$1,318,706.49</u>	<u>17,876</u>	<u>\$171,820.05</u>	<u>1,170,306</u>	<u>\$10,080,028.69</u>

Rx - Prescription

**Table 65: BDS Pharmacies' Percentage changes in Prescription Volume and Expenditure for Fiscal Years 2008-17**

Year	Prescription Count	% change	Cost of Drugs Dispensed (\$)	% change	Avg. Prescription Cost (\$)
2012-13	1,206,351	11.4%	13,481,501	14.6%	11.18
2013-14	1,244,739	3.2%	11,998,305	-11.0%	9.64
2014-15	1,198,187	-3.7%	12,444,809	3.7%	10.39
2015-16	1,120,971	-6.4%	10,357,294	-16.8%	9.24
2016-17	1,221,568	9.0%	10,408,527	0.5%	8.52
2017-18	1,170,306	-4.2%	10,080,029	-3.16%	8.61

**Table 66: Total Number of Prescriptions Filled and Their Expenditure in the Public and Private Sectors Over the 2007-17 Fiscal Years**

Year	Public Sector			Private Sector			% Difference in Rx Cost (private vs. public)
	Prescription (Rx) <sup>(a)</sup>	Expenditure (\$)	Cost/Rx	Rx's	Expenditure (\$)	Cost/Rx	
2007-08	662,677	10,439,220	\$15.75	2,055,016*	36,535,775	\$17.78	11%
2008-09	731,639	12,932,110	\$17.68	N/A	36,633,590	N/A	N/A
2009-10	778,267	12,150,516	\$15.61	N/A	40,561,950	N/A	N/A
2010-11	814,400	12,451,937	\$15.29	N/A	34,574,833	N/A	N/A
2011-12	1,083,082	11,765,288	\$10.86	887,249	10,787,176	\$12.20	12%
2012-13	1,206,351	13,481,501	\$11.18	864,335	10,639,956	\$12.31	10%
2013-14	1,244,739	11,998,305	\$9.64	828,328	10,643,775	\$12.85	33%

Year	Public Sector			Private Sector			% Difference in Rx Cost (private vs. public)
	Prescription (Rx) <sup>(a)</sup>	Expenditure (\$)	Cost/Rx	Rx's	Expenditure (\$)	Cost/Rx	
2014-15	1,198,187	12,444,809	\$13.64	841,063	10,619,933	\$12.71	-7%
2015-16	1,120,971	10,357,294	\$9.24	827,374	9,394,511	\$11.35	23%
2016-17	1,221,568	10,408,527	\$8.52	808,346	9,385,713	\$11.61	36%
2017-18	1,170,306	10,080,029	\$8.61	827,067	9,881,643	\$11.95	39%

\* Estimated value

**Table 67: Total Prescriptions filled and Their Expenditure for the Benefit Categories in the Public and Private Sectors for the Fiscal Year 2017-18**

Benefit Category	Public		Private		Total		% of Total Exp spent on SBS
	Rx Volume	Expenditure (\$)	Rx Volume	Expenditure (\$)	Rx Volume	Expenditure (\$)	
<b>Hypertension</b>	344,510	\$2,879,75	351,142	\$4,693,969.	695,652	7,573,721.4	49.8%
<b>Diabetes</b>	184,981	\$2,667,57	155,408	\$2,262,273.	340,389	4,929,849.2	32.4%
<b>Asthma</b>	39,379	\$607,931.	25,586	\$525,315.8	64,965	1,133,247.2	7.4%
<b>Epilepsy</b>	21,894	\$432,703.	11,229	\$259,721.9	33,123	692,425.55	4.5%
<b>Glaucoma</b>	4,098	\$287,817.	58,021	\$1,021,664.	62,119	1,309,481.7	8.6%
<b>Cancer</b>	<u>15,138</u>	<u>\$201,236.</u>	<u>4,760</u>	<u>\$90,953.90</u>	<u>19,898</u>	<u>292,190.16</u>	1.9%

<b>Total</b>	<u><b>610,000</b></u>	<u><b>\$7,077.01</b></u> <u><b>6.28</b></u>	<u><b>606,146</b></u>	<u><b>8,853,899.0</b></u> <u><b>5</b></u>	<u><b>1,216.14</b></u> <u><b>6</b></u>	<u><b>15,930.915</b></u> <u><b>33</b></u>
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**Table 68: Pharmacovigilance ADR for the 2017-18 Fiscal Year**

<b>Reporter Status</b>	<b>2017</b>							<b>2018</b>		
<b>Qualification</b>	<b>Jun</b>	<b>Jul</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Total</b>	<b>Jan</b>	<b>Feb</b>	<b>Total</b>
Physician	7	1	9		2	4	<b>23</b>	2	1	<b>3</b>
Pharmacist	5	10	5	1			<b>21</b>	1		<b>1</b>
Other Health Professional	2	2	3				<b>7</b>			<b>0</b>
Consumer or Other Non-Health Professional	2		6			1	<b>9</b>			<b>0</b>
Value not Set*		1	3				<b>4</b>			<b>0</b>
<b>Age group</b>										
Adult (17-69)	13	12	20	1	2	3	<b>51</b>	3	1	<b>4</b>
Elderly (Over)	3	2	6			2	<b>13</b>			<b>0</b>
<b>Serious</b>										
No	16	14	24	1	2	4	<b>61</b>	2	1	<b>3</b>
Value not Set			2			1	<b>3</b>	1		<b>1</b>
<b>Type of Report</b>										
Spontaneous**	16	14	26	1	2	5	<b>64</b>	3	1	<b>4</b>
<b>Gender</b>										
Unknown	2	9	2				<b>13</b>			<b>0</b>
Male	2	1	4			1	<b>8</b>			<b>0</b>
Female	11	4	20	1	2	4	<b>42</b>	3	1	<b>4</b>
Value not Set	1						<b>1</b>			<b>0</b>

<b>Total Number of reports</b>	<b>16</b>	<b>14</b>	<b>26</b>	<b>1</b>	<b>2</b>	<b>5</b>	<b>64</b>	<b>3</b>	<b>1</b>	<b>4</b>
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\*Information not provided

\*\*Reports from local practitioners that are submitted on a regular basis

**Table 69: Top Thirteen reported drugs for the Fiscal Year 2017-18**

<b>INTERNATIONAL NAME</b>	<b>NON-PROPRIETY</b>	<b>Number of Reports in 2016-17</b>	<b>Number of Reports in 2017-18</b>
AMLODIPINE TAB		13	2
ATENOLOL TAB		3	
BRIMONIDINE EYE DROPS		5	
CHLORTHALIDONE TAB			2
DICLOFENAC TAB		2	
GALVUSMET TAB			2
INDAPAMIDE TAB		8	3
QUETIAPINE TAB		5	2
RISPERIDONE TAB		5	
TELMISARTAN TAB		3	5
TELMISARTAN/HCTZ TAB			4
VALSARTAN TAB		26	7
VALSARTAN/HCTZ			6
<b>Total ARB reports submitted</b>		<b>29</b>	<b>27</b>
<b>Total Reports Submitted</b>		<b>70</b>	<b>38</b>
<b>% of ARB reports to the total drug reports</b>		<b>41 %</b>	<b>71 %</b>

**Table 70: Formulary items changing from Category A to B**

<b>Formulary Change</b>	<b>Category</b>	<b>Name</b>



A to B	CIPROFLOXACIN 250 & 500MG TAB
A to B	PRAZOSIN 1, 2 & 5MG TAB
A to B	TERAZOSIN 1, 2, 5 & 10MG TAB 5753
A to BQ	DICLOFENAC POTASSIUM 1.5% DROPS 6671
A to BQ	DICLOFENAC POTASSIUM 1.8MG/ML SUSP

Change from Category A to C

**Table 71:** Formulary items changing from Category A to C

Formulary Category Change	Name
A to C	ACARBOSE 50MG & 100MG TAB 5882
A to C	AMOXICILLIN/CLAV 642.9MG/5ML SUSP
A to C	CANDESARTAN ALL STRENGTHS
A to C	CLOXACILLIN 250MG CAP 0221
A to C	GEMFIBROZIL 600MG TAB
A to C	METOPROLOL 50, 100MG & 200MG TAB
A to C	SIMVASTATIN 10, 20 & 40MG TAB
A to C	TELMISARTAN/HCTZ ALL STRENGTH COMBINATIONS
A to C	TETRACYCLINE 250MG CAP

**Table 72:** Formulary items changing from Category B

Formulary Category Change	Name
B to BQ	IMIPENEM/CILASTIN 500MG INJ
B to BQ	NIMODIPINE 30MG TAB

B to BQ	NIMODIPINE 0.2MG/ML INJ
B to BQ	PIPERACILLIN/TAZOBACTAM 4.5G INJ
B to C	AMOXICILLIN/CLAV 642.9MG/5ML SUSP

**Table 73: Formulary items changing from Category C**

Formulary Category Change	Name
C to A	BUDESONIDE 0.5MG/ML RESP SOL
C to A	EZETIMIBE 10MG TAB
C to B	BICALUTAMIDE 50MG TAB 7151
C to B	CEFTRIAZONE 500MG/ML INJ
C to B	FENOFIBRATE 67MG, 100MG & 200MG CAP
C to B	INSULIN LEVEMIR PEN
C to B	INSULIN GLULISINE PEN
C to B	INSULIN PREMIXED CARTRIDGE
C to B	RISPERIDONE 1 & 2MG DISPERSIBLE TAB
C to B	SITAGLIPTIN 50MG TAB
C to B	SITAGLIPTIN/METFORMIN 50/1G TAB
C to B	TAFLUPROST 0.015% EYE DR A531
C to BQ	DIPYRIDAMOLE 25, 50 & 75MG
C to BQ	DOCETAXEL 80MG INJ 1612
C to BQ	ERTAPENEM 1G INJ
C to BQ	GLYCERYL TRINITRATE 50MG PATCH
C to BQ	GOSERELIN 3.6MG & 10.8MG INJ 6581
C to BQ	IMATINIB 100MG CAP 4331



C to BQ	MOXIFLOXACIN 0.5% EYE DR 5281
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**Table 74: Products deleted from formulary**

Formulary Cat. Change	Name
Deleted	AMILORIDE/HCTZ 5MG A/50MG H TAB 4011
Deleted	AMLODIPINE/VALSARTAN/HCTZ ALL STRENGTH COMBINATIONS
Deleted	AMLODIPINE/ATORVASTATIN ALL STRENGTH COMBINATIONS
Deleted	ATENOLOL 50 & 100MG TAB 1182
Deleted	AZITHROMYCIN 250MG TAB
Deleted	BETAXOLOL 0.25% EYE DROPS
Deleted	BISOPROLOL/HCTZ 2.5/6.25, 5/6.25 & 10/6.25 TAB
Deleted	CANDESARTAN/HCTZ ALL STRENGTH COMBINATIONS
Deleted	CHLORPROMAZINE 25MG/ML INJ
Deleted	ENALAPRIL/HCTZ 20/12.5 TAB
Deleted	EZETIMIBE/SIMVASTATIN ALL STRENGTH COMBINATIONS
Deleted	FOSINOPRIL 10 & 20MG TAB
Deleted	FRAMYCETIN/DEXAMETHASONE EYE DROPS
Deleted	GLIMEPIRIDE 2 & 4MG TAB
Deleted	INDAPAMIDE 2.5MG TAB 6651
Deleted	IPRATROPIUM BROMIDE 20MCG INHR 3654
Deleted	IRBESARTAN 150/12.5, 300/12.5, 300/25 TAB
Deleted	LACIDIPINE 4MG TAB
Deleted	LISINOPRIL/HCTZ 20/12.5 TAB 7921
Deleted	LOSARTAN/HCTZ 50/12.5 & 100/12.5 TAB 7921
Deleted	METOPROLOL SUCCINATE 50 & 100MG TAB

<b>Formulary Cat. Change</b>	<b>Name</b>
Deleted	NIFEDIPINE/ATENOLOL 20/50MG TAB
Deleted	PAPAVERINE 30MG/ML INJ
Deleted	PILOCARPINE 4% EYE DR 2332
Deleted	PRAVASTATIN 20MG & 40MG TAB
Deleted	QUINAPRIL 5, 10 & 20MG TAB
Deleted	QUINAPRIL/HCTZ 10/12.5 & 20/12.5 TAB
Deleted	RAMIPRIL/HCTZ 2.5/12.5 TAB
Deleted	RILMENIDINE 1MG TAB A981
Deleted	SIMVASTATIN 10, 20 & 40MG TAB
Deleted	SIMVASTATIN/EZETIMIBE ALL STRENGTH COMBINATIONS
Deleted	SODIUM CROMOGLYCATE 4% EYE DR 3655
Deleted	TELMISARTAN/HCTZ 80/12.5 & 80/25 TAB
Deleted	TIMOLOL 0.5% EYE DROPS
Deleted	VALSARTAN/HCTZ ALL STRENGTH COMBINATIONS

## BARBADOS FAMILY PLANNING ASSOCIATION

**Table 75: Barbados Service Statistics Matrix 2015-2017**

	2015	2016	2017
<b>Sexual and Reproductive Health Contraception Services</b>	7,489	7,373	8,190
Sexual and Reproductive Health Contraceptive – Counselling	3,565	3,751	3,856
Contraceptive – Modern Methods – Short Acting Reversible Contraceptive	3,059	2,884	3,051
Contraceptive – Modern Methods – Long Acting Reversible Contraceptive Services	101	142	138
Contraceptive – Modern Methods – Long Acting Permanent Contraceptive	73	63	57
Contraceptive – Modern Methods – Emergency Contraceptive	691	578	1088
<b>Sexual and Reproductive Health Non-Contraception – Services</b>	48,170	50,635	61,113
Special Voluntary Services and Related Care Services	1,451	1,200	1,369
HIV and AIDS	6,087	6,615	8,370
Sexual Transmitted Infections Associated Services	17,303	17,107	22,005
Gynaecology	10,240	12,610	11,599
Obstetrics	3,905	3,028	3,281
Urology	629	647	690
Sub Fertility	45	53	47
Specialised Sexual and Reproductive Health Services and Other Services	8,510	9,375	13,752
<b>Non-Sexual and Reproductive Health Medical Services</b>	8,487	7,038	7,041
<b>Total Services</b>	<b>64,146</b>	<b>65,089</b>	<b>76,344</b>

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## **GLOSSARY/DEFINITIONS**

### **Crude Birth Rate**

The number of live births per year per 1,000 mid-year population. Crude birth rate indicates the magnitude of the fertility level.

### **Total Fertility Rate**

The expected average number of children that would be born to a woman in her life time, if she were to pass through her child bearing years experiencing the age specific fertility rates prevailing in a given year/period for a given country. It is calculated as the sum of age – specific fertility rates (referring to women ages 15-49 years) or five times the sum if data are given in five-year age groups.

### **Life expectancy at Birth**

The number of years a new born baby is expected to live, given the prevailing mortality conditions in the population.

### **Crude Death Rate**

The total number of deaths due to all causes occurring in a year per 1,000 mid-year population. Crude death rate is a measure of the frequency at which deaths from all causes are occurring in the population during a specific period.

### **Still Birth Rate**

The number of stillbirths occurring in a year per total number of live births and stillbirths occurring in the same year. A stillbirth is a foetal death that occurs after the 28th week of gestation.

### **Perinatal death Rate**

The number of perinatal deaths occurring in a year per total number of live births and stillbirths occurring in the same year. The number of perinatal deaths is equal to the sum of the stillbirths and the number of infant deaths that occur under one week of age. The perinatal death rate is a measure of the risk of death occurring either during pregnancy after the 28th week of gestation, or within one week after delivery.

### **Neonatal Death Rate**

The number of infant deaths occurring before the 28th day of life per total live birth occurring during a given year. The neonatal death rate measures the risk of an infant dying within 28 days of birth.

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**Infant Mortality Rate**

The infant mortality rate measures the risk of death occurring during infancy. i.e. The probability.

**Maternal Mortality Ratio**

The total number of females' deaths due to complications of pregnancy, childbirth and the puerperium in a year per total number of live births in the same year. The maternal mortality ratio measures the risk of women dying from maternal causes.

**Age-specific death Rate**

The total number of deaths occurring in a specific age group of the population in a year per estimated population of the same age group in the same year. The age-specific death rate measures the risk of death among persons in a specific age group.

**Years of Productive life lost (YPLL)**

Provides an estimate of the number of years of lives lost prematurely. it is the number of years of life lost by persons who die prior to 65 years of age.

**Natural Increase Rate**

The rate of natural increase refers to the difference between the number of live births and the number of deaths occurring in a year, divided by the mid-year population of that year, multiple by 1000.

