



Annual Report

of

**The Operations of The
Barbados Drug Service**

**For Fiscal Year
April 1, 2017- March 31, 2018**

BDS Annual Report 2017-18

Contents

1.0	Executive Summary	5
2.0	BDS Functions	7
2.0.1	Barbados National Drug Formulary	8
2.0.2	The Supply And Inventory Service	9
3.0.3	The Special Benefit Service	12
3.0.3.2	Private Participating Pharmacies (Ppp).....	13
3.0.3.3	Beneficiaries	14
2.0.4	The Bds Pharmacy Service	16
2.0.4.1	BDS Public Sector Pharmacy Service.....	16
2.0.6	The Drug Inspectorate	22
2.0.6.1	Quality Assurance	22
2.0.6.3	Therapeutic Substances.....	23
2.0.6.4	Importation And Exportation Of Narcotic Drugs.....	24
2.0.6.5	Psychotropic Substances	24
2.0.6.6	Precursor Chemicals	25
2.0.7	Drug Information Service	25
2.0.7.1	Public Education Programmes	25
2.0.8	Pharmacovigilance	27
2.0.8.1	Drug Monitoring	27
2.0.9	Resource Management	30
Appendix A - Financial Statement 2017-18		32
Appendix B - Drug Service Expenditure And Prescription Volume		33
Appendix C - Barbados Drug Service - Organisation Chart (2017-18).....		36
Appendix D - Plans For The Budget Period 2017-2018		37

BDS Annual Report 2017-18

Tables

Table 1:	Beneficiaries of the Barbados Drug Service	8
Table 2:	Number of Brand Codes awarded by Category in MPC Year 2016-18	10
Table 3:	Number of Drugs Contracted for the Seven Year period 2011-2018.....	10
Table 4:	Number and Value of Duty Free Certificates Processed in.....	11
Table 5:	Cost of Medicines Purchased from Local Suppliers in Fiscal Year 2017-18.....	12
Table 6:	Patient and Prescription Count and Expenditure for Prescriptions	12
Table 7:	Prescription Pricing Formula	13
Table 8:	SBS Percentage Changes in Prescription Volume and Expenditure	13
Table 9:	Prescription Activity by Benefit Category in the Private Sector.....	14
Table 10:	Benefit Categories as a Percentage of Total Expenditure	14
Table 11:	Top 25 Drugs Dispensed in Private Sector, by Expenditure for 2017-18	15
Table 12:	Analysis of Expenditure in BDS Pharmacies by Public (A), Private (B) and the Queen Elizabeth Hospital (Q) Prescriptions for the Fiscal Year 2017-18.....	16
Table 13:	Prescription Volume and Expenditure by Origin	18
Table 14:	Prescription Activity by Benefit Category in the Public Sector for	19
Table 15:	Benefit Categories as a Percentage of Total Benefit & Total Drug Expenditure for 2017-18	19
Table 16:	BDS Pharmacies' Percentage changes in Prescription Volume and Expenditure for Fiscal Years 2008-18	19
Table 17:	Top 25 Drugs Dispensed (by Expenditure) in the Public Sector in 2017-18	20
Table 18:	Total Number of Prescriptions Filled and Their Expenditure in the Public and Private Sectors for Fiscal Years 2008-18.....	21
Table 19:	Total Prescriptions filled and Their Expenditure for the Benefit Categories in the Public and Private Sectors for the Fiscal Years 2017-18	22
Table 20:	Therapeutic Substances Permits Issued for the Fiscal.....	24
Table 21:	Import and Export Permits Issued for Narcotic Drugs for 2017-18	24
Table 22:	Schedules II, III, and IV Psychotropic Drugs Imported and Exported during Fiscal Year 2017-18	24
Table 23:	Public Lectures Held During Fiscal Year 2017-18	25
Table 24:	SAD/Category B Expenditure versus Public Sector Drug Expenditure for the Fiscal Years 2007- 2017	26
Table 25:	Pharmacovigilance ADR Reports for the 2017-18 Fiscal Year	28
Table 26:	Top ten reported drugs for the Fiscal Year 2017-18	29
Table 27:	Adverse Reactions Reported for Valsartan in the	30
Table 28:	BDS Dispensing Service as a Percentage of the Total Health Expenditure	30
Table 29:	BDS Revised Estimates and Actual Expenditure for Fiscal Year 2017-18.....	31

BDS Annual Report 2017-18

LIST OF ABBREVIATIONS

ADR(s)	Adverse Drug Reaction(s)
AND	St. Andrew Out-Patients Clinic
BDS	Barbados Drug Service
BDSPTS	Barbados Drug Service Pharmacy Service
BLR	Branford Taitt Polyclinic
BNDF	Barbados National Drug Formulary
CARPHA	Caribbean Public Health Agency
CRS	Caribbean Regulatory System
DFC	Drug Formulary Committee
DFCs	Duty free certificates
DI	Drug Inspectorate
DIC	Drug Information Centre
D&TC	Drug and Therapeutics Committee
EDC	Edgar Cochrane Polyclinic
ESW	Electronic Single Window
FM	Financial Management
GER	Geriatric Hospital
GLE	Glebe Polyclinic
ID	Identification card
INCB	International Narcotic Control Board
JON	David Thompson Health & Social Services Centre
JOS	St. Joseph Out-Patients Clinic
MBY	Maurice Byer Polyclinic
MPC	Maximum Price Contract
NGO	Non Governmental Organisations
NRA/RR	National Regulatory Authority of Regional Reference
PPP	Private Participating Pharmacies
PSY	Psychiatric Hospital
PV	Pharmacovigilance
QEH	Queen Elizabeth Hospital
RAP	Randal Phillips Polyclinic
SADs	Specially Authorised Drugs
SBS	Special Benefit Service
SIS	Supply and Inventory Service
SIX	St. Philip Polyclinic
SPH	St. Philip District Hospital
SWS	Winston Scott Polyclinic
THO	St. Thomas Out-Patients Clinic
VAT	Value added Tax
WAR	Eunice Gibson Polyclinic
WHO	World Health Organisation

1.0 Executive Summary

1.1 HISTORIC OVERVIEW

The Barbados Drug Service (BDS), as established in 1980, is the national regulatory agency on pharmaceuticals and has responsibilities for the selection, procurement, distribution, utilization and monitoring of formulary drugs and other narcotic and control preparations.

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 providing a continuous supply of formulary drugs to all Government healthcare institutions and the Private Participating Pharmacies and rationalising their use and reducing their cost to the public whilst . improving and strengthening the inventory and general management systems of the Government pharmacies. It also includes making arrangements for the selection, procurement, distribution and utilisation of formulary drugs; as well as providing certain categories of persons with drugs free of cost at point of service in both the public and private sectors; Preparing, maintaining and updating the Barbados National Drug Formulary (BNDF); monitoring and controlling the importation, exportation and use of the narcotic and psychotropic drugs as set out under the Narcotic and Psychotropic Conventions of 1961 and 1971 respectively; and providing information on drugs and related items to all health care professionals in Barbados and the CARICOM countries.

To ensure that the pharmaceutical progress is in pace with the international developments while maintaining the mission of the organisation, the Government of Barbados has charged the BDS with the following responsibilities:

- (1) The Barbados National Drug Formulary (BNDF),
- (2) The Supply and Inventory (S&I),
- (3) The Special Benefit Service (SBS),
- (4) The Barbados Drug Service Pharmacy Service (BDSPS),
- (5) The Drug Inspectorate (DI),
- (6) The Drug Information Centre (DIC),
- (7) Pharmacovigilance (PV), and
- (8) Administration and Financial Management (AFM)

Supporting this work are 103 technical and support staff, working from the BDS headquarters in Warrens Towers II, St. Michael and 14 strategically positioned pharmacies located in ten of the eleven parishes. One year after the establishment of the BDS under the Drug Service Act 1980-58 and the Financial (Drug Service) Rules, 1980 it took on additional private sector dispensing functions to serve persons 65 years of age and over, children under 16 years of age, and person who received prescribed formulary medicines for the treatment of hypertension, diabetes, cancer, and asthma. Epilepsy and glaucoma was later added.

1.2

OVERVIEW OF THE 2017-18 FISCAL YEAR

The BDS worked towards achieving the goals as set out in the BDS Plans for Budget Year 2017-18 and fulfilling the mission: “To provide quality pharmaceuticals to all residents of Barbados at an affordable price and to serve the beneficiaries in a courteous and efficient manner.” The BDS’ goals for the 2017-18 fiscal year were primarily focused on the complex task of strengthening the Information Technology capabilities of the organisation through networking the 14 BDS public pharmacies and the Psychiatric Hospital pharmacy to the Ministry of Health’s Network, updating the dispensing software in the pharmacies through the introduction of the MedData software, and creating and updating the BDS Website.

The BDS succeeded in connecting 3 of the 15 public pharmacies to the Ministry of Health’s Network, namely the St. Philip polyclinic, Eunice Gibson polyclinic and the Psychiatric Hospital pharmacies. No progress was made in commencing the use of the MedData software and there was 75% achievement in the developing the BDS website.

In terms of strengthening the pharmaceutical selection process through evidence based guidelines, the BDS with the support of the Drug Formulary Committee successfully completed a two-day workshop to review the Barbados National Drug Formulary. Several additions and deletions were made to the formulary to allow for improved patient care through the rational use of drugs.

The continuous supply of formulary drugs was a challenge but the BDS worked with the local suppliers to minimize any critical out of stock situations. In this regard, the BDS continued its service of providing formulary pharmaceuticals in the public and private sectors. In the 2017-18 financial year, 827,067 prescriptions were dispensed by the 99 Private Participating Pharmacies (PPP) under the SBS programme at a cost of \$9,881,643.77; and the 14 public 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 regulation of pharmaceutical resources is a huge responsibility and the BDS sought to maintain the quality of formulary drugs and the overall pharmacy service, by working assiduously with stakeholders through the drug inspectorate unit. Regular inspections were carried out on all pharmacies in accordance with the Pharmacy Act, CAP 372D under the dictate of the Pharmacy Council. In addition, the Drug Inspectorate unit, manned by three Drug Inspectors was also responsible for drug testing, and the monitoring of narcotic and control drugs, including precursor chemicals as governed by the Narcotic and Psychotropic Conventions 1961 and 1971. The Pharmacovigilance unit though separate from the Drug Inspectorate section, also strengthened the quality assurance capacity of the BDS through the regional Pharmacovigilance Network, the international World Health Organisation’s (WHO) VigiLyze database, and the ongoing continuing education programmes for stakeholders.



BDS Annual Report 2017-18

The BDS is mandated to protect what matters most, the pharmaceutical care and management of the public, within the given resource base. In this regard the number one stakeholder, that is the patients, must be empowered on the importance of good pharmaceutical care and ways to be intelligent managers of their health. Quarterly public lectures are therefore hosted by the BDS where health information is provided and the public is given the opportunity to engage the presenters and other stakeholders on related health matters.

The BDS manages the financial resources in a way to best ensure that the needs of all stakeholders are met. In the 2017-18 fiscal year the BDS had an approved budget of \$27,448,509 with the actual expenditure being \$26,611,439. The short fall in expenditure was primarily due to the switch from branded to less expensive generic formulary drugs, and the out of stock situation where Local Purchase Orders could not be honored by the respective Local Distributors. Drugs not being delivered had the ripple effect of funds being tied up in the system through encumbrances. The added challenge was that of the dispensing MedData software not being approved by the technical team for purchase due to deficiencies of some critical tools in the software.

The BDS knows the resources must be effectively managed on behalf of all Barbadians, who are the owners of these resources. In this regard every effort was made to assiduously safeguard the resources by ensuring that activities with the highest risks receive the greatest attention. Hence, the BDS in trying to effectively manage resource conservation and service performance, focused on maintaining optimal stock levels through alternative sources when the need arose. Though it was a mammoth task, and given the increased risks to the public, the BDS endeavored to maintain the provision of quality pharmaceuticals and services to all.

2.0

BDS FUNCTIONS

During the 2017-18 fiscal year the BDS continued to meet its objectives and serve the beneficiaries who have diabetes, hypertension, cancer, asthma, glaucoma and epilepsy, through the following eight administrative and regulatory functions:

- (1) The Barbados National Drug (BNDF)
- (2) The Supply and Inventory Section (S&I)
- (3) The Special Benefit Service (SBS)
- (4) The Barbados Drug Service Pharmacy Service (BDSPS)
- (5) The Drug Inspectorate (DI)
- (6) The Drug Information Centre (DIC)
- (7) Pharmacovigilance (PV); and
- (8) Administration and Financial Management (A&FM)

These functions spanned the public and private sectors and provided an enabling environment for service delivery to be optimally effective and efficient.

Table 1: Beneficiaries of the Barbados Drug Service

Groups Currently Covered (Beneficiaries)	Provision of Drugs And Related Items	
	Public Sector	Private Sector
1. Persons 65 years and over	Free drug cost and no added dispensing fee	* Free drug cost and patient pays the dispensing fee
2. Children under 16 years of age	Free drug cost and no added dispensing fee	* Free drug cost and patient pays the dispensing fee
3. Persons who receive prescribed formulary drugs for the treatment of hypertension, diabetes, cancer, epilepsy, glaucoma and asthma	Free drug cost and no added dispensing fee	* Free drug cost and patient pays the dispensing fee
4. Persons between 16 and 64 who are not included in 3 above	Free drug cost and no added dispensing fee	Patient pays drug cost** + the respective pharmacy's mark-up

* A dispensing fee was charged to patients from April 1, 2011

** Patient benefits from the reduced cost of the drug which is free of duties and taxes

2.0.1 BARBADOS NATIONAL DRUG FORMULARY

The Barbados National Drug Formulary serves as the blue print for prescribing to the beneficiaries listed in Table 1 who receive formulary drugs free of cost at point of service in both the public and private pharmacies. With a two-year cycle in place for drugs contracted under the Barbados Drug Service, the drugs listed in the 35th edition of the BNDF spanned both the 2016-17 and 2017-18 fiscal years.

With this in mind, the following additions to and deletions from the BNDF as listed in the 2016-17 BDS Annual Report pertains.

Drugs Added

- Betahistine
- Indapamide/Amlodipine
- Itraconazole
- Mometasone/Formoterol
- Montelukast
- Rizatriptan
- Rosuvastatin
- Telmisartan/Amlodipine
- Valsartan/Amlodipine
- Valsartan/Amlodipine/Hydrochlorthiazide

Drug Deleted

- Naphazoline

BDS Annual Report 2017-18

In accordance with Section 5(3) and 5(A) of the Drug Service Act Cap. 40A, the Minister of Health, after consulting with the Drug Formulary Committee, approved the publication of the 35th edition of the BNDF through the Drug Service (Barbados National Drug Formulary) (Approval) Order, 2016. Upon receipt of the Approval Order, 2016, the 35th edition of the BNDF, a two-year document, was approved for printing. This was to coincide with the change of the Maximum Price Contract cycle from one to two years.

Ninety-two copies of the 35th edition of the BNDF were distributed during the 2017-18 fiscal year to new pharmacy, medical and dental practitioners and students who would not have received a copy during the 2016-17 distribution and are entitled to receive complimentary copies.

2.0.2

THE SUPPLY AND INVENTORY SERVICE

The BDS is charged with the responsibility of the procurement, availability, efficacy and quality of the formulary drugs, as well as ensuring a continuous supply to all Government healthcare institutions and the Private Participating Pharmacies. In accordance with the Financial Administration and Audit (Drug Service) Rules, 1980, the BDS invites tenders for the supply of formulary drugs, and the bids submitted are reviewed by the 8-member Drug Tenders Committee. Contracts are awarded for the supply of drugs and related items based on the outcome of the adjudication process. There is a primary and secondary tendering process which is chaired by the Director, or in her absence, the Assistant Director with responsibilities for Supplies & Inventory.

The Primary Tender consists of items in categories A, B and C of the Barbados National Formulary; whereas the supplementary tender is undertaken to invite quotations for the supply of Drugs and Related Items in any of the following situations:-

- (i) No offers to supply were received in the Primary Tender.
- (ii) Offers to supply were received but none of those offers received were recommended for the award of a contract by the Drug Tenders Committee at the Primary Tender.
- (iii) Approved generic profiles to the Barbados National Drug Formulary were added after the issue of the Primary Tender Document.
- (iv) Generic profiles were modified after the issue of the Primary Tender Document.

The year under review consists of the last half of the two-year Maximum Price Contract (MPC) which was introduced to span the period April 1, 2016 to March 31, 2018; as was the case with the first half of the contract not all of the 2,796 (3 additional BQ products were added) products contracted maintained a continuous supply throughout the 2017-18 fiscal year. The BDS therefore had to source alternative supplies to meet the local demand.

BDS Annual Report 2017-18

As seen in **Table 3** the 2,796 brand codes represent 716 chemical moieties distributed in Categories A, B, BQ and C drugs. **Table 4** gives a comparative analysis over the last seven years.

Table 2: Number of Brand Codes awarded by Category in MPC Year 2016-18

Contract Number	Count Of Brand Code	Formulary Category Code
37	1002	A
37	835	B
37	3	BQ
37	956	C
Total	2,796	

*** Legend:**

- A** - Full Formulary drugs for use in both the public and private sectors
- B** - Formulary medicines for use in the public sector only
- BQ** - Formulary medicines for use in the Queen Elizabeth Hospital only
- C** - Non-reimbursable Formulary drugs which patients will purchase in the private sector only

Before the end of the 2017-18 financial year, there were 2,436 products or 13% fewer than were originally contracted at the start of the April 1, 2016 year. Of this number there were several contractual changes mainly due to the inability of local distributors to supply the contracted items because of either manufacturing challenges from their principals or too small a quota to permit feasible supplies.

Table 3: Number of Drugs Contracted for the Seven Year period 2011-2018

Criteria	Fiscal Year						
	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Drugs contracted	2754	2709	2725	2720	2,838	2,793	2796
Drugs added to the Contract	173	71	327	88	173	119	17
Drugs deleted from the contract	165	126	98	59	260	155	16
Drugs which changed the Formulary Status	20	7	80	69	5	27	N/A
Name Change	1	12	4	2		4	N/A
Drugs with a change in the Local Agent*	N/A	N/A	N/A	14	48	0	N/A
Price Change	50	51	38	45	100	1598	264
Drugs for which the Protocol Quantity was amended	-	11	-	6	-	4	N/A
Package Size Change	7	5	3	9	19	26	N/A
Cancellation due to poor quality	N/A	N/A	N/A	N/A	N/A	N/A	2

*Information is only available from the 2014-15 fiscal years

Nine of the 16 items deleted were because the manufacturer discontinued

BDS Annual Report 2017-18

production.

Of the 17 products added to the contract, 13 of them were in Category A which were replacements for products that became unavailable. Some additions resulted from changes in package size or formulation e.g. latanoprost (Louten^(R)) to Louten^(R) emulsion eye drops.

At the end of the 2017-18 fiscal year some of the contracted items had still not been imported. The price changes were mainly a result of the imposition of the Foreign Transaction Fee (116) and National Social Responsibility Levy (138) on pharmaceuticals. The latter was removed on July 1, 2017

Despite the supply challenges in accessing contracted pharmaceuticals, the BDS was still able to satisfy some of its demands e.g. for chlorthalidone 50mg and atorvastatin 40 mg tablets, through alternative overseas sources,

Table 5 shows the number and value of the duty-free certificates processed during the 2017-18 fiscal year by local agents, but it must be noted that the duty free site was offline from November 2017 to March 2018, hence the figures given do not fully reflect the true value of the importation for the period.

The total value of the 8,700 certificates processed was \$62,328,772.12; non contract duty free certificates contributed to \$4,222,307.41 of this total. Non contract duty free items consist mainly of items used by the QEH and anti-neoplastic preparations for private use. A non-contract duty free certificate may also be issued for an item which was sourced by BDS as a replacement for a contracted item.

Table 4: Number and Value of Duty Free Certificates Processed in 2017-18

Agent	Number of Items Processed	Value of Contracted Duty Free Certificates	Value of Non Contracted Duty Free Certificates
A. A. Laquis Ltd	5	\$188,111.68	
All Health Inc	1		\$807.36
Armstrong Healthcare Inc	988	\$6,526,096.32	\$2,621,702.48
Biokal Limited	107	\$243,362.61	\$49,862.23
Bryden Stokes Ltd	2579	\$23,007,074.33	\$2,344,439.20
Collins Ltd	3589	\$25,408,272.97	\$1,294,246.04
Islands Medical Supplies Inc	2	\$71,602.66	
Massy Distribution (B'dos) Ltd	665	\$2,805,283.38	\$26,597.60
Pharmacy Sales Caribbean	571	\$2,807,555.09	\$8,195,221.96
Rx PRO Inc	134	\$1,271,413.58	\$50,317.58
Total	5413	\$39,048,693.20	\$11,238,584.84

Table 6 gives a breakdown of the BDS' expenditure by local distributor with Collins Limited and BrydenStokes Limited accounting for the largest drug purchases at 47% and 27% respectively. It must be noted that other purchases were made occasionally from overseas suppliers when the local agents were

BDS Annual Report 2017-18

unable to supply.

Table 5: Cost of Medicines Purchased from Local Suppliers in Fiscal Year 2017-18

Local Supplier	Expenditure	Percentage of the Total Expenditure
COLLINS LTD	\$5,072,300.53	49.38%
BRYDEN STOKES LTD.	\$2,975,274.42	28.96%
ARMSTRONG HEALTH CARE INC	\$533,665.08	5.20%
RX PRO INC	\$497,163.51	4.84%
PHARMACY SALES CARIBBEAN	\$423,617.13	4.12%
MASSY DISTRIBUTION (BARBADOS) LTD.	\$367,520.94	3.58%
INTERCONTINENTAL PHARMA INC	\$267,082.10	2.60%
A.A. LAQUIS (BARBADOS) LTD.	\$87,127.44	0.85%
ALL HEALTH INC	\$18,858.02	0.18%
WEST INDIES RUM DISTILLERY	\$16,590.09	0.16%
ISLAND MEDICAL SUPPLIES INC	\$10,104.86	0.10%
BIOKAL LTD	\$3,343.45	0.03%
Total	\$10,272,647.57	

3.0.3 THE SPECIAL BENEFIT SERVICE

3.0.3.1 Usage of the Special Benefit Service

During the reporting period, 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 (See Table 7). The cost paid to the private pharmacies relates only to the cost of the drug as purchased from the local suppliers. The patients (beneficiaries) were responsible for paying the dispensing fee directly to the PPP based on the formula at Table 8 as calculated on the cost price.

Table 6: Patient and Prescription Count and Expenditure for Prescriptions Dispensed to BDS Beneficiaries in the Private Participating Pharmacies

Month	2017-2018		
	Patient Count*	Rx Count	Cost
April	28,111	66,447	\$783,828.56
May	29,777	71,826	\$853,640.75
June	28,683	69,032	\$826,027.49
July	29,683	70,701	\$848,926.96
August	28,621	67,795	\$803,271.80
September	28,583	67,695	\$810,434.26
October	29,747	70,142	\$832,484.47
November	28,371	66,678	\$796,014.06
December	29,260	69,909	\$843,521.07
January	28,699	68,166	\$820,207.87

BDS Annual Report 2017-18

Month	2017-2018		
	Patient Count*	Rx Count	Cost
February	28,145	65,441	\$782,699.92
March	30,497	73,235	\$880,586.56
TOTAL		827,067	\$9,881,643.77

* 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.

Table 7: 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 9 shows that for the seven years after the 2010-11 restructuring, expenditure averaged at \$10 Million per year as compared to the 2008-2011 annual average of approximately \$37 million.

Table 8: SBS Percentage Changes in Prescription Volume and Expenditure

Year	Prescription (Rx) Volume	Expenditure (\$)	% Change in Expenditure	% Change in Rx Volume	\$/Rx
2008-09	N/A	36,633,590	0.27%	N/A	N/A
2009-10	N/A	40,561,950	10.72%	N/A	N/A
2010-11	N/A	34,574,833	-14.76%	N/A	N/A
2011-12	879,104	10,787,176	-68.80%	N/A	\$12.27
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

3.0.3.2

Private Participating Pharmacies (PPP)

Private Participating Pharmacies (PPP) are the private pharmacies who are contracted with the Director, BDS to dispense formulary drugs to the beneficiaries of the SBS programme. During the 2017-18 year under review, the number of PPP stood at ninety-nine. There was one withdrawal from the SBS, namely Pearsons Limegrove and the following nine joined:

- We Care

BDS Annual Report 2017-18

- Sparkys Drugs Inc.
- Aqua
- Advanced Care
- Jilandee Health
- Heritage
- Rx Solutions
- My Rx
- Get Well

3.0.3.3 Beneficiaries

BDS Beneficiaries include the following:

- (1) Persons 65 years of age and over;
- (2) Children under 16 years of age;
- (3) Persons, of any age, who receive prescribed formulary drugs for the treatment of hypertension, diabetes, cancer, asthma, epilepsy, and/or glaucoma.

In the benefit categories listed in **Tables 10 and 11**, hypertension accounts for the largest prescription volume and expenditure (42.5% and 47.5% respectively) followed by diabetes at 18.8% and 22.9% respectively. Glaucoma continues to be the third highest expenditure category with over \$1.0 million being reimbursed in the period under review and 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 9: Prescription Activity by Benefit Category in the Private Sector for the 2017-18 Fiscal Year

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

* Patients could be counted in more than one category e.g. a patient may be hypertensive, diabetic and asthmatic.

Table 10: Benefit Categories as a Percentage of Total Expenditure

Benefit Category	Percentage of Prescription Count	Percentage of Total Expenditure
Hypertension	42.5%	47.5%
Diabetes	18.8%	22.9%

BDS Annual Report 2017-18

Benefit Category	Percentage of Prescription Count	Percentage of Total Expenditure
Glaucoma	7.0%	10.3%
Asthma	3.1%	5.3%
Epilepsy	1.4%	2.6%
Cancer	0.6%	0.9%
All Other	26.7%	10.4%

In summary, the benefit categories, as listed above, represent 73.3% of the prescription volume submitted and 89.6% of the expenditure of SBS. The difference, 26.7% of prescription volume and 10.4% of expenditure, represents beneficiaries, 65 years and over and under 16 years, receiving formulary drugs for conditions other than the benefit categories.

Table 12 shows that the top 25 drugs dispensed in the private sector during the year under review all fell within the top three treatment categories in Table 10; that is hypertension, diabetes, and glaucoma. These drugs represent 61% of the total expenditure reimbursed to the Private Participating Pharmacies for the 2017-18 fiscal year.

Table 11: Top 25 Drugs Dispensed in Private Sector, by Expenditure for 2017-18

No.	Drug	Main Indication	Cost
1	Diamicrom MR 60mg Tab (Gliclazide)	Diabetes	\$860,305.84
2	Micardis 80mg Tab (Telmisartan)	Hypertension	\$380,309.76
3	Accu-Chek Performa (Glucose Diagnostic)	Diabetes	\$361,948.80
4	Xalatan 0.005% Eye Drops (Latanoprost)	Glaucoma	\$555,757.20
5	Concor 2.5mg Tab (Bisoprolol)	Hypertension	\$343,790.97
6	Diovan 160mg Tab (Valsartan)	Hypertension	\$311,655.82
7	Micardis Plus 80/12.5 Tab (Telmisartan)	Hypertension	\$303,390.00
8	Diovan 320mg Tab (Valsartan)	Hypertension	\$297,197.91
9	Travatan Bak Free 0.004% Eye Drops (Travaprost)	Glaucoma	\$255,596.34
10	Natrilix SR 1.5mg Tab (Indapamide)	Hypertension	\$229,025.36
11	Codiovon 160/12.5 Tab (Valsartan/HCT)	Hypertension	\$222,987.05
12	Diovan 80mg Tab (Valsartan)	Hypertension	\$207,976.69
13	Exforge 10/320 Tab (Amlodipine/ Valsartan)	Hypertension	\$190,991.90
14	Exforge HCT 10/320/25 Tab (Amlodipine)	Hypertension	\$185,161.33
15	Exforge 5/160 Tab (Amlodipine/ Valsartan)	Hypertension	\$183,376.70
16	Glyformin 500mg Tab (Metformin)	Diabetes	\$172,488.98
17	Exforge 10/160 Tab (Amlodipine/ Valsartan)	Hypertension	\$149,008.27
18	Bayer Next Ez (Glucose Blood Diagnostic)	Diabetes	\$134,769.71
19	Humulin 70/30 Inj (Biphasic Isophan)	Diabetes	\$112,366.31
20	Exforge HCT 10/160/12.5 Tab (Amlodipine/Valsartan/Hydrochlorthiazide)	Hypertension	\$108,126.42
21	Exforge HCT 5/160/12.5 Tab (Amlodipine/Valsartan/Hydrochlorthiazide)	Hypertension	\$104,084.21

BDS Annual Report 2017-18

No.	Drug	Main Indication	Cost
22	Atacand Plus 16/12.5 Tab (Candesartan/Hydrochlorothiazide)	Hypertension	\$103,151.63
23	Codiovan 80/12.5 Tab (NVS/Col) (Valsartan/ Hydrochlorothiazide)	Hypertension	\$97,609.15
24	Freestyle Optium (Glucose Blood Diagnostic)	Diabetes	\$92,641.12
25	Twynsta 80/5 Tab (Telmisartan/Amlodipine)	Hypertension	\$84,435.18

2.0.4 THE BDS PHARMACY SERVICE

2.0.4.1 BDS Public Sector Pharmacy Service

The BDS public sector pharmacy service is comprised of 14 pharmacies located in 9 polyclinics, 3 out-patient clinics and 2 district hospitals. These pharmacies are strategically located across the island to ensure easy access by all patients.

Table 12: 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	34,691	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
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	969,073	\$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
	1,024,077	\$8,589,502.15	128,353	\$1,318,706.49	17,876	\$171,820.05	1,170,306	\$10,080,028.69

Rx – Prescription

Pharmacy Codes used in Table 12 and Figure 1

Code	Pharmacy Name	Code	Pharmacy Name
AND	St. Andrew Out-Patients Clinic	PSY	Psychiatric Hospital
BLR	Branford Taitt Polyclinic	RAP	Randal Phillips Polyclinic
EDC	Edgar Cochrane Polyclinic	SIX	St. Philip Polyclinic
GER	Geriatric Hospital	SPH	St. Philip District Hospital

BDS Annual Report 2017-18

GLE	Glebe Polyclinic	SWS	Winston Scott Polyclinic
JON	David Thompson Health & Social Services Centre	THO	St. Thomas Out-Patients Clinic
JOS	St. Joseph Out-Patients Clinic	WAR	Eunice Gibson Polyclinic
MBY	Maurice Byer Polyclinic		

Of the twelve BDS pharmacies in Table 12 which provide pharmaceutical services to the general public, Winston Scott Polyclinic Pharmacy has the highest prescription volume and drug expenditure followed by Randal Phillips and Maurice Byer polyclinic pharmacies, in that order. These three pharmacies all offer extended-hour service and their 2017-18 drug expenditure was in excess of \$1 million each. The extended-hour service in these pharmacies is as follows:

- **Maurice Byer and Randal Phillips Polyclinics**
8:15 a.m. to 8:30 p.m. Mondays to Fridays
- **Winston Scott Polyclinic**
8:15 a.m. to 10:00 p.m. Mondays to Fridays and
8:15 a.m. to 4:30 p.m. on Saturdays.

The Branford Taitt polyclinic pharmacy which ranked fourth with a drug expenditure of \$944,243 for the period under review, also offered extended pharmacy service but from 8:15 a.m. until 6:30 p.m. Mondays to Fridays.

It should be noted that though the BDS does not have administrative responsibility for the pharmacy at the Psychiatric hospital, its budget for pharmaceuticals is under the BDS' line item 210 - Supplies & Material. The cost of drugs dispensed at the Psychiatric Hospital pharmacy is just over \$1 million annually.

BDS Annual Report 2017-18

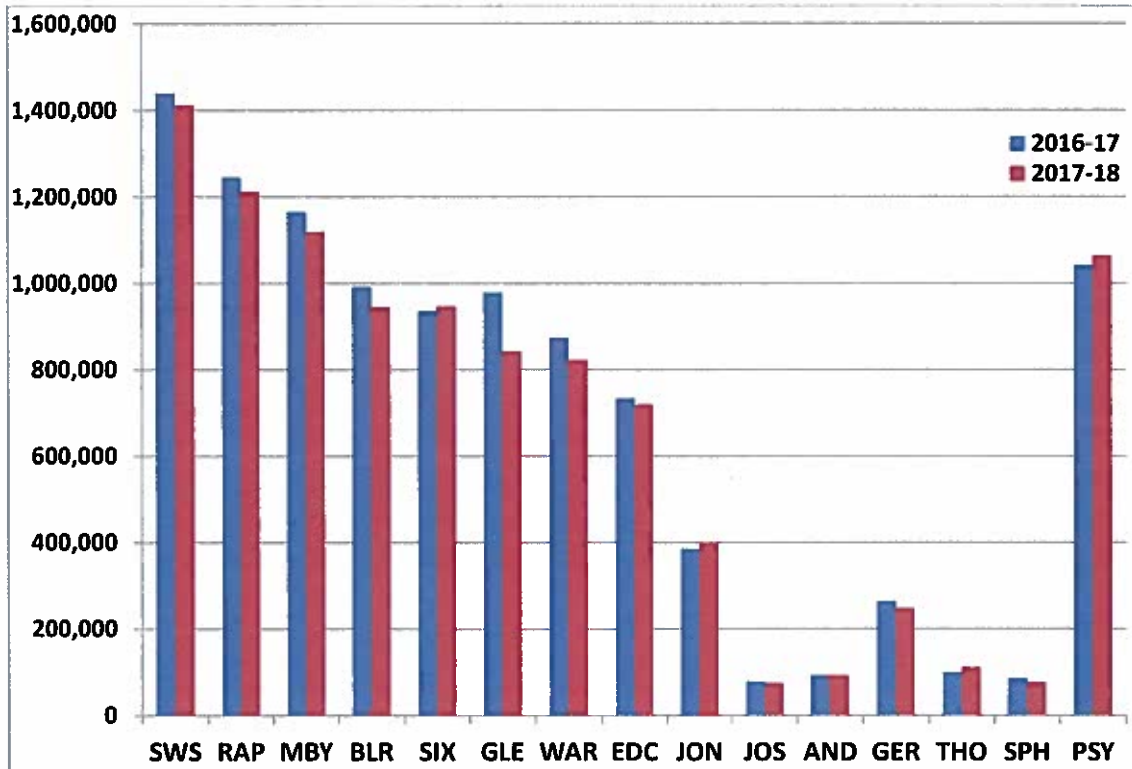


Figure 1: Graphical Representation of the Cost of Prescriptions dispensed in the BDS Pharmacies for 2016-17 and 2017-18

Table 13 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 originate in that sector, with 11.5% originating in the private sector and 1.6% in the Queen Elizabeth Hospital. The expenditure accounts for 83.5%, 14% and 1.9% respectively.

Table 13: 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 14, hypertension and diabetes follows a similar trend, as in the private sector, and in previous years, where they are positioned at one and two respectively in terms of expenditure and prescription volume among the therapeutic benefit categories.

BDS Annual Report 2017-18

Table 14: Prescription Activity by Benefit Category in the Public Sector for the 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	15,095	\$200,335.10	\$13.27
Total Benefit	567,055	\$7,025,350.81	\$12.39
Total for Year	1,170,306	\$10,080,028.69	11.95

Table 15: Benefit Categories as a Percentage of Total Benefit & Total Drug 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%
Total			52.2%	70.3%

Table 16: BDS Pharmacies' Percentage changes in Prescription Volume and Expenditure for Fiscal Years 2008-18

Year	Prescription Count	% change	Cost of Drugs Dispensed (\$)	% change	Avg. Prescription Cost (\$)
2008-09	731,639	10.4%	12,932,110	23.9%	17.68
2009-10	778,267	6.4%	12,150,516	-6.0%	15.61
2010-11	814,400	4.6%	12,451,937	2.5%	15.29
2011-12	1,083,082	33.0%	11,765,288	-5.5%	10.86
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

BDS Annual Report 2017-18

Table 15 gives a ten year analysis of the public sector's prescription volume and expenditure. After the initial increase in prescription volume in the first three years of the introduction of the payment of dispensing fee by the beneficiaries in the private sector, the exodus of private prescriptions into the public settled down, and by the 2014-16 fiscal years the influx of prescriptions into the public pharmacies subsided. There was a slight increase again in 2016-17 which was short lived and was followed in 2017-18 by another decline.

Table 16 shows that the benefit categories – diabetes, hypertension, asthma, cancer, and epilepsy, glaucoma account for 52% of the prescription volume and 70% of the expenditure for 2017-18 fiscal year in the public sector. Of the benefit categories, hypertension takes the lead in both prescription count and expenditure, followed by diabetes and asthma. Hypertension accounts for 56.5% of the overall benefit prescription count and 40.7% of the expenditure.

In 2017-18, the prescription count decreased by 4.2% while the cost of drugs dispensed decreased by only 3.16% but the average cost per prescription increased marginally to \$8.61.

Table 17: Top 25 Drugs Dispensed (by Expenditure) in the Public Sector in 2017-18

Ranking	DRUG	DRUG INDICATION	COST (\$)	PRESCRIPTION COUNT
1.	Diamicrom	Diabetes	814,723.74	44,848
2.	Diovan	Hypertension	634,344.20	30,779
3.	Accu-Chek Performa	Diabetes	631,525.50	18,427
4.	Exforge	Hypertension	436,830.40	19,503
5.	Novolin	Diabetes	258,357.93	13,343
6.	Micardis	Hypertension	242,257.06	9,426
7.	Natrilix	Diabetes	241,707.81	28,447
8.	Symbicort	Asthma	233,974.51	4,244
9.	Androcur	Cancer	211,084.68	1,736
10.	Codiovan	Hypertension	184,502.01	9,973
11.	Tegretol	Epilepsy	180,700.26	8,308
12.	Valsartan	Hypertension	167,074.25	16,945
13.	Glucobay	Diabetes	163,376.85	7,144
14.	Concor	Hypertension	160,964.99	5,871
15.	Seretide	Asthma	155,862.73	3,408
16.	Atacand	Hypertension	119,791.63	4,194
17.	Glyformin	Diabetes	115,764.93	30,371
18.	Sky Era	Diabetes	105,917.09	3,350
19.	Epilim	Epilepsy	104,690.91	4,094
20.	Bayer Next	Diabetes	101,891.71	2,975
21.	Atorec	Cholesterol	99,578.64	50,036
22.	Apo-Bisoprolol	Hypertension	95,289.44	13,273
23.	Ventolin	Asthma	95,144.49	19,413
24.	Freestyle	Diabetes	92,484.51	2,796
25.	Lifescan	Diabetes	92,383.99	2,680

BDS Annual Report 2017-18

As reflected in **Table 12**, the top 25 drugs dispensed in the public sector represent 56% of the total expenditure on drugs purchased in the public sector in the 2017-18 fiscal year. Over 81% of the top 25 drugs were for the treatment of diabetes and hypertension and only one drug in this group, used in the treatment of high cholesterol, at a cost of \$99,578.64, was for a non-benefit drug.

2.0.5 Public versus Private Sector Usage

As shown in **Tables 9, 15, and 17**, the comparison of the private and public sectors over the last two fiscal years shows an increase in the expenditure (7.9%) and prescription volume (2.2%) versus the decline in the public sector. The public sector showed a 4.2% decline in prescription volume and 3.2% decline in expenditure. The average prescription cost increased in both sectors; 3% in the private and 1 % in the public.

Table 18: Total Number of Prescriptions Filled and Their Expenditure in the Public and Private Sectors for Fiscal Years 2008-18

Year	Public Sector			Private Sector			% Difference in Rx Cost (private vs. public)
	Prescription (Rx) ^(a)	Expenditure (\$)	Cost/Rx	Rx's	Expenditure (\$)	Cost/Rx	
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%
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%

Table 18 gives the comparison of the benefit categories by therapeutic classification based on the prescription volume and expenditure for the year under review. The private sector surpassed the public sector in two of the six therapeutic categories, namely hypertension by 63% and glaucoma by 410%. The astronomical differential in the private sector's expenditure on glaucoma can be attributed to the fact that the majority of patients who accessed ophthalmology services in the private sector would have been dispensed the higher cost branded product versus the cheaper product which is available in the public sector. The overall BDS expenditure on the treatment of hypertension and diabetes accounted for 47% and 31% respectively. The third highest expenditure in the therapeutic benefit categories when compared to the overall spend was for glaucoma at 8.6%.

BDS Annual Report 2017-18

Table 19: Total Prescriptions filled and Their Expenditure for the Benefit Categories in the Public and Private Sectors for the Fiscal Years 2017-18

Benefit Category	Public		Private		Total		% of Total Expenditure spent on the Benefit Categories
	Rx Volume	Expenditure (\$)	Rx Volume	Expenditure (\$)	Rx Volume	Expenditure (\$)	
Hypertension	301,608	\$2,828,987.74	351,142	\$4,693,969.40	652,750	\$7,522,957.14	47.3%
Diabetes	185,297	\$2,687,584.66	155,408	\$2,262,273.66	340,705	\$4,949,858.32	32.4%
Asthma	39,379	\$607,931.42	25,586	\$525,315.81	64,965	\$1,133,247.23	7.4%
Cancer	4,098	\$287,817.37	58,021	\$1,021,664.37	62,119	\$1,309,481.74	1.9%
Epilepsy	21,894	\$432,703.64	11,229	\$259,721.91	33,123	\$692,425.55	4.5%
Glaucoma	15,095	\$200,335.10	4,760	\$90,953.90	19,855	\$291,289.00	8.6%
Total	567,371	\$7,045,359.93	606,146	\$8,853,899.05	1,173,517	\$15,899,258.98	

Noncommunicable diseases (NCDs), also known as chronic diseases, are the result of a combination of genetic, physiological, environmental and behaviours factors. The main types of NCDs are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes. Metabolic risk factors contribute to four key metabolic changes that increase the risk of NCDs: raised blood pressure (hypertension), overweight/obesity, hyperglycemia (high blood glucose levels/diabetes) and hyperlipidemia (high levels of fat in the blood).

In terms of attributable deaths, the leading metabolic risk factor globally is hypertension (to which 19% of global deaths are attributed), followed by overweight and obesity and raised blood glucose.¹ Barbados has therefore put the necessary treatment measures in place with regards to the risk factors that lead to the chronic illnesses. It is for this reason that the number one and two largest BDS expenditures seen in the public and private sectors is on hypertension and diabetes respectively.

2.0.6 THE DRUG INSPECTORATE

2.0.6.1 Quality Assurance

The Drug Inspectorate unit is the regulatory arm of the Barbados Drug Service which ensures that the regulations aimed at enhancing the status and practice of the pharmacy profession in the country under the Pharmacy Act, CAP 372D are upheld. During the period under review, the Barbados Drug Service, as a member of the Caribbean Regulatory System (CRS), continued to support the establishment of a regional system to strengthen the regulatory capacity in the Caribbean Community and Common Market (CARICOM/CSME) Member States. This is in support of improved access to safe, quality, efficacious and affordable medicines and health technologies on an ongoing basis, and with fewer out of stock challenges. In this regard, an analytical certificate is issued by an approved Quality Authority that confirms that a regulated product meets its product specification. They commonly contain the actual results obtained

¹ WHO, Non-Communicable Diseases June 1, 2018

BDS Annual Report 2017-18

from testing performed as part of quality control of an individual batch of a product. The number of such analytical certificates processed and approved for the 2017-18 fiscal year was 158.

In this regard, the BDS continued to support the role of the CRS in registering generic (multisource) medicines via an abbreviated dossier review process that uses reliance on designated National Regulatory Authorities (NRA) of Regional Reference (NRA/RR) to efficiently and effectively complete its work. The NRA/RR currently in use are Argentina, Brazil, Canada, Chile, Colombia, Cuba, Mexico, and the United States of America. If reviewed favorably by the NRA/RR, the product is said to be “registered” and the CRS recommends it to all CARICOM Member States for marketing authorization.

It was based on these positive benefits for Barbados and the CARICOM Member States that the BDS fully supported this initiative in recommending the signing of the Memorandum of Understanding.

In regard to Good Regulatory Practices, the BDS’ Drug Inspectorate unit sought to achieve the following goals during the year under review: (i) sustainability of resources; (ii) cooperation with all stakeholders; (iii) transparency and accountability of the decision making process; (iv) expanded competency in evaluation of drug quality, safety and efficacy through external regional and international laboratories; and (v) independency amidst a climate of harmonization and mutual recognition of regional partners. Great strides have been made in achieving regional harmonization through the Caribbean Regulatory System (CRS) operating under the umbrella of the Caribbean Regional Public Health Agency (CARPHA).

Pharmacy Council, a national regulatory body, was established under the Pharmacy Act, to ensure that the principles and standards of the Act are maintained with regards to the practice of pharmacy and in an advisory capacity to the Minister of Health on matters relating to the proper administration of the Pharmacy Act. The Director, BDS is an ex officio member on Pharmacy Council and the BDS collects the revenue for the annual certification of pharmacy premises. This is guided by sections 15 and 16 of the Pharmacy Act, CAP 362D.

2.0.6.2 Quality Assurance Linkages between the BDS and the Queen Elizabeth Hospital

There are other national drug controls in the area of procurement and drug usage which do not directly fall under the mandate of the Drug Inspectorate but serve to augment the overall quality control process as it relates to pharmaceuticals. In this regard there is representation of the Director, BDS on several committees, namely the Queen Elizabeth Hospital Drug & Therapeutics Committee, and the SAD Sub-Committee; the Pain Management Committee and the Nursing Orientation programme.

2.0.6.3 Therapeutic Substances

In accordance with the Therapeutic Substances Act 1949, there were 396

BDS Annual Report 2017-18

licenses issued to local pharmaceutical companies for the importation of antibiotics and sulphonamides into the country during the period April 1, 2017- March 31, 2018. This represented a 17% decrease over the previous year as seen in Table 21.

Table 20: Therapeutic Substances Permits Issued for the Fiscal Years 2009-18

Year	Permits Issued	% Change Over Previous Year
2009-10	465	
2010-11	652	40.2%
2011-12	523	-19.8%
2012-13	771	47.4%
2013-14	633	-17.9%
2014-15	727	14.8%
2015-16	707	-2.8%
2016-17	477	-32.5%
2017-18	396	-17.0%

2.0.6.4

Importation and Exportation of Narcotic Drugs

Import and export authorisations and certificates were issued for narcotic and controlled substances, which fell under the purview of the 1961 Convention on Narcotic Drugs. Table 20 gives the quantities of narcotics that were imported and exported during fiscal year 2017-18. Codeine shows the largest imports followed by pethidine, whereas pethidine has the highest exports followed by morphine.

Table 21: Import and Export Permits Issued for Narcotic Drugs for 2017-18

Narcotic	2016-17 Quantities		2017-18 Quantities		% Change	
	Import (gm)	Export (gm)	Import (gm)	Export (gm)	Import (gm)	Export (gm)
Pethidine	7,616.88	6,520.3	3,610.5	2,579.98425	-52.6%	-60.4%
Morphine	2,701.5	1,674.9	1547.625	42.8625	-42.7%	-97.4%
Codeine	102,800	9.33	95,887.714	1,545.8304	-6.7%	16468.4%
Fentanyl	7.653	1.048	5.2	0.65575	-32.1%	-37.4%
Methadone	0	0	63	Nil	-100%	0
Cocaine	0	0	Nil	Nil	0	0

2.0.6.5

Psychotropic Substances

With regards to the 1971 Convention on Psychotropic Substances, during fiscal year 2017-18, Table 21 gives the comparative quantities imported and exported for the Schedule II, III and IV psychotropic substances.

Table 22: Schedules II, III, and IV Psychotropic Drugs Imported and Exported during Fiscal Year 2017-18

Psychotropic Substances	Schedule	Amount Imported (gm.)	Amount exported (gm.)
Methylphenidate	II	1815.16	321.038
Clobazam	IV	1455.0	4.5

BDS Annual Report 2017-18

Psychotropic Substances	Schedule	Amount Imported (gm.)	Amount exported (gm.)
Diazepam	IV	3130.0	856.5
Clonazepam	IV	458.5	55.65
Midazolam	IV	1272.5	23.25
Bromazepam	IV	0.0	0.00
Phenobarbital	IV	6529.25	7393.5
Nitrazepam	IV	0.0	0.00
Zolpidem	IV	354.07	25
Alprazolam	IV	441.475	16.925
Pentobarbital	III	6,708.6	0.00
Chlordiazepoxide	IV	548.95	62.5
Lorazepam	IV	1,205.	132.76

2.0.6.6 Precursor Chemicals

In accordance with the International Narcotic and Control Board (INCB), permits were issued for the importation of 200 kg of **ephedrine** and 200.75 kg of **pseudoephedrine** during the 2017-18 fiscal year. There continues to be a challenge in getting the requests for the importation permits for acetone, hence this figure is grossly under reported and is not included here.

2.0.7 DRUG INFORMATION SERVICE

Nature and Scope:

2.0.7.1 Public Education Programmes

The Barbados Drug Service's Public Lecture Series consists of four annual lectures designed to raise awareness on public health issues and introduce our audience to emerging ideas and scientific investigation from leading experts in the areas of Chronic Non-Communicable Diseases (CNCs), family and child health issues, and behavioral health. **Table 22** lists the lectures hosted during the April 1, 2017- March 31, 2018 fiscal year. These lectures were aimed at empowering the public to protect and improve overall health and they were well received. Certain private sector organisations also collaborated with the BDS in hosting public lectures. During the year under review, the Barbados Pharmaceutical Society and the Wheelchair Foundation of Barbados Inc. co-hosted the June 15th and August 29th lectures respectively.

Table 23: Public Lectures Held During Fiscal Year 2017-18

Date	Topic	Speaker
June 13, 2017	"The Stigma Attached to Mental Health"	Dr. Ermine Belle
June 27, 2017	"Mission Critical: How to Prevent Antibiotic Resistance"	Presenter: Dr. Corey Forde, <i>Consultant Internist and Infectious Diseases</i> Panel: • Dr. Corey Forde, • Mr. David Elcock, <i>Manager Veterinary</i>

BDS Annual Report 2017-18

		<i>Services Laboratory</i> <ul style="list-style-type: none"> • <i>Ministry of Agriculture</i> • <i>Ms. Yvonne Martindale</i> • <i>Mrs. Cheryl Ann Yearwood, Chief Dispenser/Snr. Pharmacist, Barbados Drug Service</i>
August 29, 2017	"Patients and Wheelchairs - Rolling Towards a Brighter Future"	Presenter: <i>Dr. Harley Moseley III, Psychiatrist and Rehabilitation Specialist</i> Panel: <ul style="list-style-type: none"> • <i>Dr. Harley Moseley III</i> • <i>Dr. Shane Drakes</i> • <i>Mr. Jarrett Haynes</i> • <i>Dr. Ambrose Ramsay, Consultant Geriatric and Internal Medicine</i> • <i>Miss Janelle Skinner</i>
September 19, 2017	"No More Sugar Coating: Dispelling the Myths About Diabetes"	Multidisciplinary Presentation: <ul style="list-style-type: none"> • <i>Dr. Emile Mohammed, Nephrologist</i> • <i>Dr. Carlisle Goddard, Endocrinologist</i> • <i>Ms. Meshell Carrington, Clinical Dietician</i> • <i>Ms. Trudy Griffith, Clinical Pharmacist</i>
March 6, 2018	"Is It Truly an Allergy?"	Professor Menachem Rottem

2.0.7.2 Drug Information Service

The Drug Information Centre processes Category B applications and heightens the access to public information through on-going research in response to queries from health providers and the general public on drug related matters. A total of 265 queries were processed in the year under review.

Category B Drugs are institution specific and are listed in the BNDF accordingly. Applications with respect to these drugs must be made through the Medical Officer of Health in the polyclinic or Out-Patient clinic and the Consultant, at the Queen Elizabeth, Psychiatric, or Geriatric hospitals as indicated in the Formulary under "Category B".

During the year under review, 1,858 Category B drugs were approved at a cost of \$174,862.37 or 2% of the total BDS expenditure on pharmaceuticals. This expenditure on Category B drugs in 2016-17 fiscal year represented a 40% increase over that in the previous year.

Table 24: SAD/Category B Expenditure versus Public Sector Drug Expenditure for the Fiscal Years 2007 - 2017

BDS Annual Report 2017-18

Year	Total Drug Expenditure in Public Sector based on drugs purchased	Specially Authorised Drugs/ Category B Drugs**					
		Approvals	% Change in Approvals	Expend.	% Change in Expend.	Average Cost	Expend. % to Total
2007-08	\$10,439,220.00	715	18%	\$280,942.37	-13%	\$392.93	3%
2008-09	\$12,932,110.00	955	34%	\$299,312.72	7%	\$313.42	2%
2009-10*	\$12,150,516.00	1,426	49%	\$198,202.38	-34%	\$138.99	2%
2010-11	\$12,451,937.00	982	-31%	\$125,953.12	-36%	\$128.26	1%
2011-12	\$11,765,288.00	1,016	3%	\$123,919.64	-2%	\$121.97	1%
2012-13	\$13,481,501.00	1,183	16%	\$113,894.70	-8%	\$96.28	1%
2013-14	\$11,998,305.00	1,796	52%	\$136,233.34	20%	\$75.74	1%
2014-15	\$12,444,809.00	1,708	-5%	\$226,953.34	67%	\$132.88	2%
2015-16	\$10,357,294.00	1,424	-17%	\$124,943.90	-45%	\$87.74	1%
2016-17	\$10,408,527.00	1,858	30%	\$174,862.37	40%	\$94.11	2%
2017-18	\$10,915,702.00	1,872	1%	\$419,840.32	140%	224.27	4%

* Tamiflu[®] was purchased for the H₁N₁ treatment

** SADs were replaced with the Category B Drugs in the 2015-16 fiscal year

2.0.8 PHARMACOVIGILANCE

Nature and Scope:

2.0.8.1 Drug Monitoring

Barbados continued its collaboration regionally and internationally to monitor adverse drug reactions. Webinars were the main communication medium used for sharing information on a regional level of the Americas through its Network of Focal Points for Pharmacovigilance. These webinars provided updates on active Pharmacovigilance projects; regulatory measures; medicines withdrawn from the global market and; training meetings and courses. 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 Organisation's database.

The Barbados Drug Service hosted the following Pharmacovigilance Continuing Education training and Presentations to various health professionals during the period under review:

- **May 13, 2017** - Presentation on Pharmacovigilance by Director and Pharmacovigilance Officer delivered to BAMP Annual Conference
- **May 30-31, 2017** - CE Sessions on Pharmacovigilance by Director and Pharmacovigilance Officer to BDS Pharmacists.

BDS Annual Report 2017-18

- **January 2018** - Sensitized BCC tutor in Pharmacovigilance on the BDS ADR reporting process.
- **February 5, 2018** - Presentation on Pharmacovigilance by Director and Pharmacovigilance Officer to QEH Nurses Orientation.
- **February 10, 2018** - Informed Barbados Family Planning Officer Ms. Nicole Gollop about BDS Pharmacovigilance programme via telephone and distributed ADR forms to her organization.

Table 25: Pharmacovigilance ADR Reports for the 2017-18 Fiscal Year

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

*Information not provided

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

Figure 2: Number of Spontaneous Reports Submitted in 2017-18

BDS Annual Report 2017-18

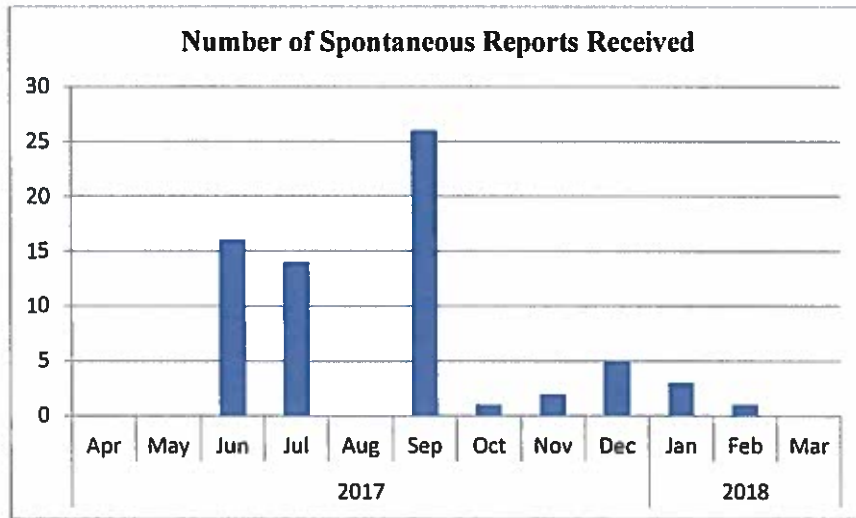


Figure 2: Number of Spontaneous Reports Submitted in 2017-18

Table 25 and Figure 2 show the reporting spurts in June, July and September, 2017, with no reports being submitted for the months of April, May and August 2017 and March 2018. **Table 26** gives the top ten drugs which were reported during this period, with the Angiotensin II Receptor Blockers (ARB), highlighted rows, accounting for 71% of the total reports submitted. This is contrasted with 41% being received in 2016-17 though the same products were available on formulary during these two fiscal years.

Table 26: Top Thirteen Reported Drugs for the Fiscal Year 2017-18

INTERNATIONAL NON-PROPRIETY NAME	Number of Reports in 2016-17	Number of Reports in 2017-18
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
Total ARB reports submitted	29	22
Total Reports Submitted	70	33
% of ARB reports to the total drug reports	41%	67%

Table 27: Adverse Reactions Reported for Valsartan in the 2017-18 Fiscal Year

Adverse Reactions Reported	Number of Occurrences	%
Oedema	3	12.5%
Ill Feeling	2	8.3%
Pain	3	12.5%
Eye Pain	2	8.3%
Breast Pain	1	4.2%
Headache	3	12.5%
Stomach Upset	2	8.3%
Drowsiness	2	8.3%
Rash/Itching	2	8.3%
Dizziness	1	4.2%
Diarrhoea	1	4.2%
Fatigue	2	8.3%
Total	24	

2.0.9 RESOURCE MANAGEMENT

The BDS Financial Statement and Special Benefit Service expenditure for the April 1, 2017- March 31, 2018 fiscal year are at **Appendix A and B** respectively.

The BDS, a department under the Ministry of Health and Wellness, aligned its efforts to ensure continued universal access of pharmaceuticals by all Barbadians through prudent resource management. Together with the recategorisation of the formulary into Categories A, B and C drugs, in order to promote rational drug use, the BDS also carried out monthly and annual audits of all the Private Participating Pharmacies together with periodic audits of the BDS public pharmacies. Stock taking was carried out in February 2018 in all 14 BDS public pharmacies.

As shown in **Table 26** there was a marginal increase in the BDS expenditure in 2017-18 over the previous year which accounted for 6.4 percent of the total health care expenditure which had reduced from the previous year. This represented a per capita public expenditure on pharmaceutical services of \$74.38 versus \$72.61 in the previous year.

Table 28: BDS Dispensing Service as a Percentage of the Total Health Expenditure

Year	Estimated End of Calendar Year Population	Total Health Expenditure	Health Expenditure vs BDS Dispensing Service		
			Amount (public and Private expenditure) (\$)	% of Total Health Expenditure	Per Capita (\$)

BDS Annual Report 2017-18

Year	Estimated End of Calendar Year Population	Total Health Expenditure	Health Expenditure vs BDS Dispensing Service		
			Amount (public and Private expenditure) (\$)	% of Total Health Expenditure	Per Capita (\$)
2006-07	273,952	350,674,341	42,991,642	12.3%	156.93
2007-08	274,688	372,853,380	46,974,994	12.6%	171.01
2008-09	275,171	381,057,823	49,565,700	13.0%	180.13
2009-10	275,848	384,096,541	52,712,466	13.7%	191.09
2010-11	276,507	355,847,415	47,026,770	13.2%	170.07
2011-12	276,781	366,985,247	22,552,464	6.1%	81.48
2012-13	277,674	347,705,764	24,118,457	6.9%	86.86
2013-14	277,515	342,381,895	22,642,080	6.6%	81.59
2014-15	274,344	337,392,974	23,134,910	6.9%	84.33
2015-16	276,633	334,849,180	20,331,725	6.1%	73.50
2016-17	284,000**	335,092,495*	20,621,420	6.2%	72.61
2017-18	286,388**	332,532,954	21,301,675	6.4%	74.38

* Revised Estimates Provided from Barbados Approved Estimates 2018/19

** Provided from Barbados Statistical Services 2018

Table 29: BDS Revised Estimates and Actual Expenditure for Fiscal Year 2017-18

Budget Heads	Revised Estimates (\$)	Actual Expenditure (\$)	Revised Estimates (\$)	Actual Expenditure (\$)	% Change in Actual Expenditure in 2017-18 vs. 2016-17
	2016-17		2017-18		
Total Personal Emoluments	5,502,323	5,212,815	5,638,970	5,252,164	0.75%
Total Goods and Services	21,496,130	21,176,717	21,747,302	21,301,675	0.72%
Total Capital	32,500	31,757	62,237	49,463	55.75%
Total Expenditure	27,030,953	26,421,289	27,448,509	26,603,302	0.73%

Table 29 shows that in the year under review, there was a very small increase in the actual expenditure in the area of personal emoluments and goods & services (0.75% and 0.63% respectively) when compared to the previous year. The 55.75% increase in the total capital in 2017-18 is as a result of the purchase of computer hardware and printers to replace non-functional and obsolete systems in the BDS pharmacies and headquarters.

BDS Annual Report 2017-18

Appendix A - Financial Statement 2017-18

**Receipts and Payments Account for Period April 1, 2017 to March 31, 2018
with comparative figures for 2016-17**

<u>Receipts</u>	2017-18	2016-17
	\$	\$
Accountant General*	27,448,509	27,030,953
Recertification of Private Pharmacies	8,700	9,900
District Pharmacies (Sale of Pharmaceuticals)	656,736	306,101
Total	28,113,945	27,346,954

<u>Payments</u>	\$	\$
Total Personal Emoluments	5,638,970	5,212,815
Travelling	59,670	57,611
Utilities	24,000	24,000
Rental of Property	22,756	22,751
Library	17,597	17,145
Supplies & Materials	11,323,880	11,591,189
Maintenance of Property	35,038	25,006
Operating Expenses	9,795,586	9,439,016
Machinery and Equipment	29,463	31,757
Furniture and Fixtures	-	-
Computer Software	-	-
Professional Services	-	-
Savings	1,166,985	925,664
Total	28,113,945	27,346,954

*Accountant General		
Personal Emoluments	\$5,638,970	\$5,502,323
Other	\$21,747,302	\$21,496,130
Capital	\$62,237	\$32,500
Total	\$27,448,509	\$27,030,953

BDS Annual Report 2017-18

Appendix A – Drug Service Expenditure and Prescription Volume

YEAR	PUBLIC EXPENDITURE	SBS EXPENDITURE	TOTAL EXPENDITURE ON MEDICINES	PUBLIC PRESCRIPTION (PRESC.)	PUBLIC PRESC. AVG. COST	PUBLIC AVG. MTHLY PRESC.	PRIVATE PRESC.	PRIVATE PRESC. AVG. COST	PRIVATE AVG. MTHLY PRESC.	PUBLIC EXP - % age of TOTAL EXP	PRIVATE EXP. % of TOTAL EXP.
1982-83	2,720,368	140,756	2,861,124	0	0	0	21,126	7	1,761	95	5
1983-84	4,291,991	207,772	4,499,763	262,287	16	21,857	26,384	8	2,199	95	5
1984-85	5,403,538	341,990	5,745,528	345,613	16	28,801	50,220	7	4,185	94	6
1985-86	7,713,963	435,745	8,149,708	501,416	15	41,785	41,390	11	3,449	95	5
1986-87	7,793,103	1,508,793	9,301,896	660,045	12	55,004	148,082	10	12,340	84	16
1987-88	8,536,816	3,346,816	11,883,632	654,679	13	54,557	300,000	11	25,000	72	28
1988-89	7,605,795	3,627,183	11,232,978	649,629	12	54,136	362,718	10	30,227	68	32
1989-90	9,269,966	4,701,687	13,971,653	859,474	11	71,623	371,327	13	30,944	66	34
1990-91	11,001,320	5,667,514	16,668,834	857,252	13	71,438	449,446	13	37,454	66	34
1991-92	9,308,874	5,896,776	15,205,650	843,450	11	70,288	425,727	14	35,477	61	39
1992-93	9,369,846	6,330,465	15,700,311	840,569	11	70,047	494,681	13	41,223	60	40
1993-94	9,440,576	7,228,270	16,668,846	844,789	11	70,399	555,000	13	46,250	57	43
1994-95	10,283,264	8,307,134	18,590,398	845,219	12	70,435	578,808	14	48,234	55	45
1995-96	9,612,632	9,979,983	19,592,615	818,927	12	68,244	692,735	14	57,728	49	51

BDS Annual Report 2017-18

YEAR	PUBLIC EXPENDITURE	SBS EXPENDITURE	TOTAL EXPENDITURE ON MEDICINES	PUBLIC PRESCRIPTION (PRESC.)	PUBLIC PRESC. AVG. COST	PUBLIC AVG. MTHLY PRESC.	PRIVATE PRESC.	PRIVATE PRESC. AVG. COST	PRIVATE AVG. MTHLY PRESC.	PUBLIC EXP - % age of TOTAL EXP	PRIVATE EXP. % of TOTAL EXP.
1996-97	10,270,825	11,923,867	22,194,692	446,987	23	37,249	743,765	16	61,980	46	54
1997-98	10,346,838	10,857,428	21,204,266	502,689	21	41,891	803,990	14	66,999	49	51
1998-99	8,763,104	9,273,790	18,036,894	504,632	17	42,053	806,950	11	67,246	49	51
1999-00	12,589,080	13,590,363	26,179,443	527,046	24	43,921	786,738	17	65,562	48	52
2000-01	14,687,363	15,798,637	30,486,000	532,363	28	44,364	833,050	19	69,421	48	52
2001-02	15,439,374	17,360,242	32,799,616	476,955	32	39,746	921,110	19	76,759	47	53
2002-03	15,966,640	20,259,106	36,225,746	519,438	31	43,287	955,000	21	79,583	44	56
2003-04	8,323,481	21,851,776	30,175,257	637,851	13	53,154	990,943	22	82,579	28	72
2004-05	8,262,528	23,115,488	31,378,016	687,578	12	57,298	1,113,093	21	92,758	26	74
2005-06	8,930,806	30,540,237	39,471,043	700,604	13	58,384	1,331,537	23	110,961	23	77
2006-07	11,403,711	31,587,931	42,991,642	659,750	17	54,979	1,846,882	17	153,907	27	73
2007-08	10,439,220	36,535,775	46,974,994	662,677	16	55,223	2,055,016	18	171,251	22	78
2008-09	12,932,110	36,633,590	49,565,700	731,639	18	60,970	N/A	N/A	0	26	74
2009-10	12,150,516	40,561,950	52,712,466	778,267	16	64,856	N/A	N/A	0	23	77

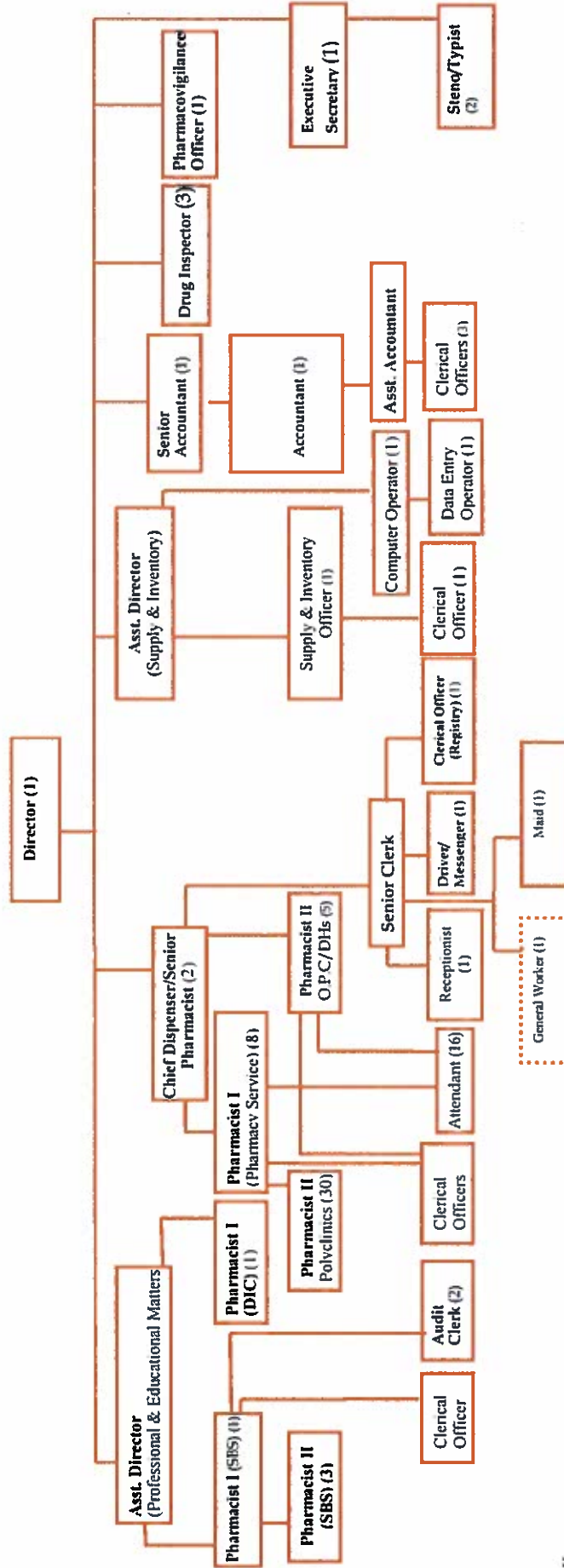
BDS Annual Report 2017-18

YEAR	PUBLIC EXPENDITURE	SBS EXPENDITURE	TOTAL EXPENDITURE ON MEDICINES	PUBLIC PRESCRIPTION (PRESC.)	PUBLIC PRESC. AVG. COST	PUBLIC AVG. MTHLY PRESC.	PRIVATE PRESC.	PRIVATE PRESC. AVG. COST	PRIVATE AVG. MTHLY PRESC.	PUBLIC EXP - % age of TOTAL EXP	PRIVATE EXP. % of TOTAL EXP.
2010-11	12,451,937	34,574,833	47,026,770	814,400	15	67,867	N/A	N/A	0	26	74
2011-12	11,765,288	10,787,176	22,552,464	1,082,101	11	90,175	879,104	12	73,937	52	48
2012-13	13,481,501	10,636,956	24,118,457	1,206,351	11	100,529	864,335	12	71,637	56	44
2013-14	11,998,305	10,643,775	22,642,080	1,244,739	10	103,728	828,328	13	69,027	53	47
2014-15	12,444,809	10,690,101	23,134,910	1,287,986	9	107,332	841,063	13	69,901	53	47
2015-16	11,662,572	8,669,153	20,331,725	1,120,971	10	93,414	827,374	10	68,948	57	43
2016-17	10,408,527	9,385,713	20,621,420	1,221,568	9	101,797	808,346	12	67,362	54	46
2017-18	10,080,029	9,881,643	19,961,672	1,170,306	9	97,526	827,067	12	68,922	50.5	49.5

* Cost of actual drugs purchased

**Cost of drugs dispensed (accrued figure since claims for drugs dispensed in the period may be submitted after March 2016

Appendix C - Barbados Drug Service - Organisation Chart (2017-18)



Key:
 DHs - District Hospitals
 DIC - Drug Information Centre
 O.P.C - Out-Patient Clinics
 SBS - Special Benefit Service

Established Post: Director (1), Asst. Director (2), Chief Dispenser/Senior Pharmacist (1), Drug Inspector (3), Executive Secretary (1), Pharmacist II (3), Supply & Inventory Officer (1), Accountant (1), Asst. Accountant (1), Senior Clerk (1), Clerical Officer (14), Steno/Typist (2), Computer Operator (1), Data Entry Operator (1), Drive/Messenger (1), Maud (1) (Post established in Ministry of Health)
 Temporary Post: Senior Accountant (1), Chief Dispenser/Senior Pharmacist, Pharmacist I (7), Pharmacist II (5), Clerical Officer (1), Audit Clerk (2), Receptionist (1), General Worker (1), Attendant (6)

APPENDIX D - PLANS FOR THE BUDGET PERIOD 2017-2018

Programme Areas	Key Performance Indicators	Target	Actual End-of-Year Review	Comments
1.0 Pharmacy Programme	1.1 Percentage of the public BDS pharmacies connected to the Ministry of Health's network.	1.1.1 Connect all 14 BDS pharmacies and Psychiatric Hospital to the Ministry of Health's network.	1.1.1 20% achieved (Psychiatric hospital, St. Phillip and Eunice Gibson polyclinic pharmacies connected).	The low achievement was due to the incompatibility of the PHARMS dispensing software with the newer operating systems used by the Ministry of Health. Work is ongoing in solving these incompatibilities.
	1.2 Percentage of the website completed.	1.2.1 The BDS website fully functional and timely updated.	1.2.1 75% achieved	The website is fully functional but the BDS is awaiting user access to facilitate the timely updates.
	1.3 Provide quality service within the BDS pharmacies.	1.3.1 100% service satisfaction by users and providers.	80% achieved	Staff shortages and drug stock-outages contributed significantly to meeting the target. Data is not collected on the prescription errors and there is no way of assessing this problem at this time.
	1.4 Percentage of Standard Operating Procedures (SOPs) completed.	1.4.1 Complete SOPs for all programme areas.	1.4.1 30 % achieved.	Staff capacity is the major limitation to achieving 100% and the BDS has requested assistance from the Pan American Health Organisation in giving a consultant.
	1.5 Percentage of audits of public pharmacies completed.	1.5.1 Audit all public and private pharmacies	1.5.1 100% private pharmacies audited and 11% (2 of the 18) public pharmacies audited.	Inadequate staff capacity was the major limitation in auditing the public pharmacies.
	1.6 Percentage of Transaction Forms approved and paid by the end of the month in which due.	1.6.1 All Private Participating Pharmacies who submitted their SBS Transaction Forms are reimbursed for the supply of formulary drugs to beneficiaries.	1.6.1 100% achieved	There is one Private Participating Pharmacy which does not submit on a monthly basis.

BDS Annual Report 2017-18

Programme Areas	Key Performance Indicators	Target	Actual End-of-Year Review	Comments
2.0 Supplies and Inventory	2.1 Percentage of contracted drugs available on a continuous basis	2.1.1 All the contracted drugs are available as needed.	2.1.1.1 31% of the drugs ordered were available 90 – 100% of the time with 69% available 0-89% of the time.	The major limitation is the inability of the local distributors to supply the 2,796 contracted drugs.
			2.1.1.2 17% of the drugs BDS ordered were not available.	
		2.1.2 The local distributors are paid for the drugs delivered to the BDS public pharmacies within the stipulated time.	2.1.2.1 100% achieved.	
3.0 Regulatory Programme	3.1 Percentage of pharmaceutical regulatory reports completed	2.1.3 All applications for duty free certificates are successfully completed electronically.	2.1.3.1 100% achieved (1125 applications for 4486 drugs)	Though 100% of the target is achieved there are sometimes delays in the release of monies from the treasury in the payment of local distributors and this can result in BDS accounts being closed by some local distributors. This occurred twice within the reporting period.
		3.1.1 All reports are completed.	3.1.1.1 100% achieved (709 reports).	
		3.1.2 Review the 20 existing pharmacy legislation.	3.1.2.1 10% achieved (2 pieces of legislation reviewed).	
		3.1.3 Initiate and/or support all drug recalls.	3.1.3.1 No activity for the reporting period.	
	3.1.4 Prepare all Import and Export authorization for narcotics.	3.1.4.1 100% achieved (128 narcotic authorizations prepared).		No drug recalls within the reporting period.
				There were manpower challenges in achieving the target.

BDS Annual Report 2017-18

Programme Areas	Key Performance Indicators	Target	Actual End-of-Year Review	Comments
4.0 Formulary Programme	4.1 Percentage of drugs selected based on critical needs of the population	3.1.5 Prepare all Import and Export authorization for psychotropics.	3.1.5.1 100% achieved (255 psychotropic authorizations prepared).	Legislation needs updating to facilitate this activity and improve collaboration with stakeholders.
		3.1.6 Prepare all Import and Export authorization for chemical precursors.	3.1.6.1 25% achieved (25 of the 100 authorisations completed)	
		3.1.7 Complete all pharmacovigilance (PV) reports on the Adverse Drug Reactions (ADRs).	3.1.7.1 50% of the PV process achieved	The ADRs are processed by the Pharmacist I in the Drug Information Centre and then forwarded to the PV Officer to complete the report. The PV Officer was however on sick leave during the reporting period.
		3.1.8 Audit of all nursing homes, private hospitals and dialysis clinic to achieve 100% compliance.	3.1.8.1 100% achieved (64 nursing homes, 2 private hospitals and the dialysis clinic)	A former BDS Drug Inspector is now contracted to carry out this inspection function.
		3.1.9 Inspect all private pharmacies by December 31 st for recertification.	3.1.9.1 100% achieved (94 PPP inspected)	
		3.1.10 Prepare all Free Sale Certificates for drugs manufactured at Carlisle Laboratories.	3.1.10.1 100% achieved (34 Free Sale Certificates prepared)	
		4.1.1 Additions to and deletions from the formulary were guided by evidence-based medicine.	4.1.1.1 100% achieved (13 drugs were added to and 4 deleted from the formulary)	
		4.1.2 Publish and distribute copies of the Barbados National Drug Formulary (BNDF) 35 th edition within the 2016-18 fiscal years.	4.1.2.1 86% (1370 of the 1600 copies of the BNDF received from the Government Printer and distributed)	The outstanding 230 copies of the BNDF 35 th edition were not received from the Government Printer and the BDS was therefore short in meeting its distribution allocation.

BDS Annual Report 2017-18

Programme Areas	Key Performance Indicators	Target	Actual End-of-Year Review	Comments
		<p>4.1.3 All Drug Formulary Committee (DFC) meetings are convened over the reporting period.</p>	<p>4.1.3.1 42% (5 out of 12) DFC meetings convened.</p>	<p>April and May, 2017 was dedicated for the Therapeutic Formulary Review process and with the instruments of appointment for all the DFC members having expired on July 14, 2017 the August, September and October meetings could not be held.</p>
5.0 Drug Information Programme	5.1 Percentage of drug information reports completed, Continuing Education and public lectures hosted	<p>5.1.1 Provide drug responses for all drug information queries received.</p> <p>5.1.2 Host 4 public lectures (1 per quarter)</p> <p>5.1.3 Host 4 Continuing Education Programmes for Staff</p>	<p>5.1.1.1 100% responses given to the 265 queries made.</p> <p>5.1.2.1 100% achieved</p> <p>5.1.3.1 75% achieved</p>	<p>Training Administration was unable to facilitate the training programme on "Effective Communication and Good Customer Relations" at that time.</p>

BDS Annual Report 2017-18



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BDS Annual Report 2017-18

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