



# **Annual Report**

**of**

**The Operations of The  
Barbados Drug Service**

**For Fiscal Year  
April 1, 2016- March 31, 2017**

# BDS Annual Report 2016-17

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## LIST OF ABBREVIATIONS

ADR(s)	Adverse drug reaction(s)
AND	St. Andrew Out-Patients Clinic
BDS	Barbados Drug Service
BDSPS	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

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During the 2016-17 financial year the Barbados Drug Service (BDS) remained resolute in its focus to maintain equity of service and to allow universal access of quality pharmaceuticals to all beneficiaries, irrespective of whether service was delivered in the public or private sector. This report gives a summary of the achievements and challenges experienced during the reporting period.

The one hundred and three (103) employees of the BDS who provided administrative, regulatory, dispensing and support services ensured that all beneficiaries were recipients of free formulary medication at point of service. The beneficiaries served included persons 65 years and over, children under 16 years and persons living with diabetes, hypertension, cancer, asthma, epilepsy, and or glaucoma

The demand on the service from beneficiaries living with hypertension, diabetes, asthma, glaucoma, epilepsy and cancer, ranked within the top ten therapeutic categories when compared with the overall drug usage. Hypertension and diabetes maintained their high demand at positions 1 and 2 respectively in terms of the overall expenditure in both the public and private sectors. With the disaggregation of the BDS expenditure in the six therapeutic benefit categories, expenditure on hypertension was \$7.4 million or 48% of the total drug expenditure; diabetes followed in second position with \$ 4.7 million (30% of the total expenditure on drugs) being spent on the anti-diabetic medication on formulary. Overall, the treatment of hypertension and diabetes combined accounted for 59% of the BDS drug expenditure. It is also noted that 75% of the total BDS drug expenditure went towards prescriptions in the six disease-related benefit categories.

The Drug Formulary Committee continued to make recommendations to the Minister of Health with respect to the composition of the formulary through ongoing scientific reviews. The approval by the Minister of Health of these recommendations enables Barbadians to benefit from evidence-based medicines which are then purchased under the Drug Tenders Committee's adjudication process. During the period under review the Drug Tenders Committee's 5-day adjudication resulted in 2,793 contracts being awarded to ten local distributors for the supply of drugs and related items. The contracts were awarded for two fiscal years, April 1, 2016 – March 31, 2018. This is the first time that a two ears contract was awarded

as an initiative to improve the overall drug supply process. The results of the Drug Tender's Committee adjudication process fed into the preparation and subsequent publishing of the two year 35th edition (April 1, 2016 – March 31, 2018) of the Barbados National Drug Formulary (BNDF).

The BDS worked together with the Ministry of Health to ensure that the practice of pharmacy in Barbados operated in adherence to the legislative and policy regulations. The fourteen BDS public pharmacies and 90 Private Participating Pharmacies maintained quality and compliance under the BDS regulatory and administrative functions. Ongoing communication with stakeholders was also maintained under the pharmacovigilance programmes, in order to achieve drug safety monitoring which is integral to effective clinical practice. The regulatory functions and services offered by

the BDS were delivered through the Drug Inspectorate unit. The three Drug Inspectors processed applications for the importation and exportation of narcotics, therapeutic substances, psychotropic drugs and precursor chemicals. These were followed up with approvals being issued by the relevant authority. In addition to the processing of import and export authorizations by the Drug Inspectors, they also carried out inspection on the lone drug manufacturing facility, Carlisle Laboratory, public and private pharmacies, nursing homes and pharmaceutical warehouses. This ongoing monitoring is all in an effort to ensure that quality and good standards were maintained within the pharmaceutical sectors in Barbados.

The BDS was allocated \$27,030,953 for the 2016-17 fiscal year with an actual expenditure of \$26,434,256. This represented a 1.60% increase over the actual expenditure in the previous year. Of this amount a combined total of \$20.6 million was spent under item 210, Supplies and Material, in purchasing drugs in the public sector and item 212, Operating Expenses, in reimbursing Private Participating Pharmacies in the private sector for the dispensing services rendered. The BDS dispensed over 2 million prescriptions during this period, 808,000 in the private sector and 1.2 million in the public sector. This gave an average prescription cost of \$9 in the public sector and \$12 in the private. The dispensing services therefore accounted for 78% of the BDS actual expenditure for the year, with personal emoluments accounting for 20% and the additional 2% being spread over the other sub-items.

The BDS' commitment to empowering the public in taking control of their health, and making positive and informed pharmaceutical choices through the rational use of medicines was achieved in the four public lectures hosted in the year under review. Other stakeholders and Non Governmental Organisations (NGOs) also requested to partner with the BDS to strengthen this product offering and provide focused and balanced information to the public. The feedback received from the public via questionnaires and face-to-face interaction indicated that the lectures were well received and provided valuable information in assisting in the overall health care development.

Healthcare providers, the general public and other stakeholders continued to utilise the services of the Drug Information Centre in requesting information on health related matters.

## 2.0

### The Barbados Drug Service at a Glance

#### About the BDS

The Barbados Drug Service is a department of the Ministry of Health with responsibility for the pharmaceutical delivery programme. It carries out regulatory and operational functions and partners with stakeholders to maintain a well managed pharmaceutical delivery environment in Barbados. The service and product solutions are focused on drug selection, procurement, quality assurance, dispensing, rational use of medicines, surveillance of drug usage, pharmaceutical education and financial management. The BDS with its 103-member staff complement is comprised of professional and support staff across the administrative headquarters and 14 district pharmacies.

### **The Mission**

The mission of the BDS is, "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 Vision**

To strengthen the operational capabilities through staff empowerment, public participation and cost sharing; and to lend support to the pharmaceutical services in the rest of the Caribbean region.

### **The Objectives**

1. To provide a continuous supply of formulary drugs to all Government healthcare institutions and the private sector.
2. To rationalise the use of formulary drugs and reduce their cost to the public.
3. To make arrangements for the selection, procurement, distribution and utilisation of formulary drugs.
4. To provide certain categories of persons with drugs free of cost at point of service in both the public and private sectors.
5. To improve and strengthen the inventory and general management systems of the Government pharmacies.
6. To prepare, maintain and up-date the Barbados National Drug Formulary (BNDF).
7. To monitor and control 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.
8. To provide information on drugs and related items to all health care professionals in Barbados and the CARICOM countries.

### **Areas of 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 (A&FM)

## 3.0

### **Historical Information**

The Barbados Drug Service was established in April 1980 with a staff complement of 23 officers after Cabinet's approval of the 1979 Kaiser Report. The original study carried out by the Kaiser Foundation International looked at centralising drug procurement in the public sectors with the added tenets of achieving storage, packaging, distribution and sale facilities; and producing a drug formulary for use in all public institutions. The study was in accordance with Government's objective of reducing the cost of prescribed drugs while ensuring the continuous availability of quality products of known therapeutic effectiveness. In May 1980 a temporary Drug Formulary Committee was appointed and began a detailed review of the Barbados National Drug Formulary (BNDF) 'Interim Edition'. The first edition of the BNDF was published and distributed during the first week of September 1980.

The operations were governed by the Drug Service Act 1980-58 and the Financial Administration and Audit (Drug Service) Rules, 1980 which removed the responsibility of purchasing drugs and related items from the Central Purchasing department to the BDS. Also, separate drug budgets of health care institutions e.g. hospitals, polyclinics, district hospitals and health centers were centralised and allocated to the BDS.

The Drug Service (Special Benefit Service) Regulations, 1986 was later added with the establishment of the Special Benefit Service in 1981. The Special Benefit Service started out to provide pharmaceutical drugs to persons 65 years of age and over, children under six year and those who received prescribed formulary drugs for the treatment of hypertension, diabetes and cancer.

The BDS' mandate was shaped by the fundamental philosophy of the World Health Organisation (WHO) which states that "Essential medicines save lives, reduce suffering and improve health, but only if they are of good quality and safe, available, affordable and properly used."<sup>1</sup>

The BDS has maintained its operations by developing cost effective, sustainable and efficient financing mechanisms which are essential for successful access to formulary drugs. "It is a core principle of pharmaceutical financing that medicines should be available at all times in adequate amounts, in the appropriate dosage and at a price that individuals and the community can afford."<sup>2</sup>

Historical evidence has shown that in sticking to its mandate over the years, the BDS was able to achieve operational excellence and improved service delivery with the assurance that past lessons and milestones can only serve to strengthen its tomorrow.

## 3.1

### **MILESTONES**

- April 1980 - BDS established under the Drug Service Act

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1. Baghdadi, G. et al WHO Medicines Strategy: countries at the core 2004-2007. WHO, Geneva 2004

2. Beaver C. and Yoshida J. Consultation on Financing of Essential Medicines. (Unpublished report.) Manila, WHO Regional Office for the Western Pacific, 2006.



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- April 1981 - Special Benefit Service established with co-payment in the private sector; persons over 65 years paid \$5.00 per prescription and persons in other benefit categories paid 50% of the cost of the prescription.
- 1983-2013 - BDS designated as a World Health Organisation collaborating centre in Drug Supply Management.
- April 1986 - Co-payment was removed and beneficiary's age for children changed from under 6 years to under 16 years of age.
- May 1986 - Pharmacy Act replaced the 1894 Druggist Act which was repealed.
- 1990 - Commencement of BDS Public Lecture series and the formation of the Asthma Association of Barbados
- 1999 - Re-development of BDS Strategic Plan
- 2001 - Upgrade of BDS Software
- 2002 - Revision of the BDS Strategic Plan
- 2004 - Introduction of duplicate prescriptions
- 2008 - Introduction of Pharmacovigilance
- April 2010 - Beneficiaries limited to Barbados citizens and Permanent Residents Only
- April 2011 - Formulary Review
- April 2011 - Introduction of a dispensing fee in the private sector
- April 2011 - Mandatory electronic reimbursement submission by Private participating Pharmacies (PPP)
- April 2012 - Glaucoma added to the list of beneficiaries
- April 2015 - Recategorisation of the formulary – Categories A, B and C
- April 2016 – Maximum Price Contract changed from a one to two year cycle.

With the sequential achievement of milestones, the BDS' beneficiaries as listed in **Table 1** now includes persons suffering from diabetes, hypertension, cancer, asthma, glaucoma and epilepsy. The Barbados National Drug Formulary serves as the blue print for prescribing to these patients who receives formulary drugs free of cost at

point of service in both the public and private pharmacies. The BDS reimburse the Private Participating Pharmacies (PPP) for the costs of prescriptions filled in the private sector but the patients pay the dispensing fee which is calculated on the drug cost. No dispensing fee is charged to patients accessing service in the public sector.

**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 pays a reduced cost free of duties and taxes

**4.0**

**FUNCTIONS**

During the 2016-17 fiscal year the BDS continued to meet its strategic objectives through its eight administrative and regulatory functions. The activities spanned the public and private sectors and provided an enabling environment for service delivery to be optimally effective and efficient.

**BDS FUNCTIONS**

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

**4.1**

**ACTIVITY 1: BARBADOS NATIONAL DRUG FORMULARY**

The 35<sup>th</sup> edition of the Barbados National Drug Formulary (BNDF) was separated from the 17<sup>th</sup> edition of the Barbados Drug Service Supply Protocols in order to detach the authorship of the Barbados Drug Service Supply Protocols from the Drug Formulary Committee. The two separate books however were collapsed under one

cover entitled, “Barbados National Drug Formulary & Barbados Drug Service Supply Protocols” but with two distinct authorships, that being the DFC and the BDS respectively.

During the year under review the Minister of Health approved the following recommendations submitted by the Drug Formulary Committee with respect to drugs added to, and deleted from the BNDF.

### **Drugs Added**

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

### **Drug Deleted**

Naphazoline

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 35<sup>th</sup> edition of the BNDF through the Drug Service (Barbados National Drug Formulary) (Approval) Order, 2016.

Upon receipt of the Drug Service (Barbados National Drug Formulary) (Approval) Order, 2016 the 35<sup>th</sup> edition of the BNDF, now a two-year document, was approved for printing. This was to coincide with the change of the Maximum Price Contract from one to two years.

Sixteen hundred copies of the BNDF were printed versus the customary 1500. The additional copies were reserved for new recipients who are entitled to receive complimentary copies during the 2017-18 fiscal year. Recipients of the complimentary copies were pharmacy, medical, and dental practitioners; the Chief Executive Officer, Queen Elizabeth Hospital for placement on each ward; and pharmacy, medical and nursing students at the Barbados Community College.

#### **4.1.2**

#### **CATEGORY B DRUGS**

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

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	\$11,662,572.00	1,424	-17%	\$124,943.90	-45%	\$87.74	1%
2016-17	\$11,235,707.00	1,858	30%	\$174,862.37	40%	\$94.11	2%

\* Tamiflu<sup>®</sup> was purchased for the H<sub>1</sub>N<sub>1</sub> treatment

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

4.2

**ACTIVITY 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 the 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.

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(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.

In 2016-17 fiscal year a two-year Maximum Price Contract (MPC) was introduced to span the period April 1, 2016 to March 31, 2018. As with previous contracts though not all of the 2,793 products contracted maintained a continuous supply throughout the 2016-17 fiscal year, the BDS sourced alternative supplies to meet the local demand. As seen in **Table 3** the 2,793 brand codes represents 695 chemical moieties distributed in Categories A, B and C drugs. **Table 4** gives a comparative analysis over the last seven years.

**Table 3: 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	956	C
<b>Total</b>	<b>2,793</b>	

Before the end of the 2016-17 financial year, there were 2,746 products or 2% 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 4: Number of Drugs Contracted for the Seven Year period 2010-2017**

Criteria	Fiscal Year						
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Drugs contracted	2736	2754	2709	2725	2720	2,838	2,793
Drugs added to the Contract	186	173	71	327	88	173	119
Drugs deleted from the contract	122	165	126	98	59	260	155
Drugs which changed the Formulary Status	34	20	7	80	69	5	27
Name Change	8	1	12	4	2		4
Drugs with a change in the Local Agent*	N/A	N/A	N/A	N/A	14	48	0
Price Change	26	50	51	38	45	100	1598
Drugs for which the Protocol Quantity was amended	13	-	11	-	6	-	4
Package Size Change	3	7	5	3	9	19	26

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

Of the 119 products added to the contract during the year under review, 57 of them were in Category A which were replacements for previously contracted products that became unavailable while others were added at the approved recommendation of the Drug Formulary Committee e.g. amlodipine/valsartan/HCTZ fixed dose combinations. Some changes in formulary status also resulted from the approved recommendation of the Drug Formulary Committee e.g. Montelukast while others were as replacements for category A products which were unavailable.

The 155 deletions were as a result of items being awarded but for which no duty free certificates were processed within 3 months of the contract; that is, the supplier did not fulfil the contract. The significantly high number of price changes resulted from the implementation of the Social Responsibility Levy instituted in September 2016. This Levy added an additional 2% to the cost of all formulary drugs during the last half to the period under review. The price increase was applied at the time the supplier requested the duty free certificates. At the end of the 2016-17 fiscal year some of the contracted items had still not been imported.

Despite the supply challenges in accessing contracted pharmaceuticals, the BDS was still able to satisfy some of its demands through alternative overseas sources.

**Table 5** shows the number and value of the duty free certificates processed during the 2016-17 fiscal year by local agents. The total value of the 8700 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 certificates may also be issued for an item which was sourced by BDS as a replacement for a contracted item.

**Table 5: Number and Value of Duty Free Certificates Processed in 2016-17**

Agent	Number of duty free certificates' 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 (Bdos) 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
<b>Total</b>	<b>8641</b>	<b>\$62,328,772.62</b>	<b>14,583,194.45</b>

**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

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from overseas suppliers when the local agents were unable to supply.

**Table 6: Cost of Medicines Purchased from Local Suppliers in Fiscal Year 2016-17**

Local Supplier	Expenditure	Percentage of the Total Expenditure
COLLINS LTD	\$5,192,275.14	47.20%
BRYDEN STOKES LTD.	\$2,965,509.98	26.96%
ARMSTRONG HEALTH CARE INC	\$1,070,259.65	9.73%
RX PRO INC	\$678,517.87	6.17%
PHARMACY SALES CARIBBEAN	\$393,004.29	3.57%
MASSY TRADING LTD	\$340,453.53	3.09%
A.A. LAQUIS (BARBADOS) LTD.	\$98,264.33	0.89%
MASSY DISTRIBUTION (BARBADOS) LTD.	\$84,984.02	0.77%
INTERCONTINENTAL PHARMA INC	\$75,802.60	0.69%
BARBADOS FAMILY PLANNING ASSOCIATION	\$36,200.00	0.33%
BIOKAL LTD	\$22,837.47	0.21%
ALL HEALTH INC	\$19,927.54	0.18%
WEST INDIES RUM DISTILLERY	\$11,127.09	0.10%
BW (2011) LIMITED	\$4,228.46	0.04%
PHARMACY WORLD INC	\$4,074.02	0.04%
ISLAND MEDICAL SUPPLIES INC	\$2,161.04	0.02%
HEADLEY'S CUSTOMS BROKERS	\$1,104.76	0.01%
<b>Total</b>	<b>\$11,000,731.79</b>	

### 4.3 4.3.1

#### ACTIVITY 3: THE SPECIAL BENEFIT SERVICE

##### Usage of the Special Benefit Service

During the reporting period, 808,346 prescriptions were dispensed by the Private Participating Pharmacies (PPP) under the Special Benefit Service (SBS) programme at a cost of \$9,385,713 (See Table 7). The cost paid to the private pharmacies after the 2011-12 fiscal year relates only to the drug cost as purchased from the local suppliers. This is because after this period, patients paid the dispensing fee, as calculated on the prescription pricing formula in Table 8.

**Table 7: Prescription Count and Expenditure for Prescriptions Dispensed in**

Month	Rx Count	Cost
April	70,941	800,293.92
May	66,240	703,200.94
June	66,812	719,102.69
July	68,142	750,097.49
August	65,603	729,772.38
September	65,634	735,359.58
October	68,996	774,665.45
November	67,080	753,573.14
December	69,213	799,142.75

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Month	Rx Count	Cost
January	67,010	776,192.71
February	63,329	735,311.86
March	69,346	819,366.61
<b>Total</b>	<b>808,346</b>	<b>\$9,385,713.00</b>

**Table 8: 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%

With the restructuring of the BDS, including the implementation of a dispensing fee, the SBS expenditure continued to decline. Table 9 shows that for the first four years after the restructuring, expenditure stood at approximately \$11 Million and in the year under review it reached approximately \$9 million.

**Table 9: SBS Percentage Changes in Prescription Volume and Expenditure**

Year	Prescription (Rx) Volume	Expenditure (\$)	% Change in Expenditure	% Change in Rx Volume	\$/Rx
2006-07	1,846,882	31,587,931	3.43%	38.7%	\$17.10
2007-08	* 2,055,016	36,535,775	15.66%	11.3%	\$17.78
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

\* Estimated Value

### 4.3.2

#### **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 year under review, the number of PPP stood at ninety-two,



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three over the previous year. There were no withdrawals from the SBS and the following three joined:

- The Medicine Cabinet
- Strathclyde Pharmacy
- Avida Pharmacy

Though the PPP count stood at 92 it must be noted that only ninety submitted claims during this period with respect to services rendered to the SBS beneficiaries.

### 4.3.3

#### **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 (44.0% and 48.0% respectively) followed by diabetes at 17.6% and 21.7% respectively. Glaucoma continues to be a high expenditure category with over \$1.0 million being reimbursed in the period under review and at an average prescription cost of \$18.53 against \$12.66 and \$14.28 for hypertension and diabetes respectively. Though there is a low demand for drugs used in the treatment of epilepsy, it accounts for a high dollar value of approximately \$24.00 per prescription.

**Table 10: Prescription Activity by Benefit Category in the Private Sector for the**

Benefit Categories	Number of Patients	Prescription Volume	Expenditure	Avg. Cost/ Prescription	Avg. Cost/Patient
Hypertension	33,332	355,984	\$4,508,098.74	\$12.66	\$131.18
Diabetes	13,725	142,594	\$2,035,556.72	\$14.28	\$143.85
Glaucoma	6,319	54,066	\$1,002,023.80	\$18.53	\$153.80
Asthma	9,789	26,314	\$539,278.86	\$20.49	\$53.43
Epilepsy	2,120	10,172	\$243,480.57	\$23.94	\$111.39
Cancer	768	4,203	\$69,672.69	\$16.58	\$87.99
Others	37,370	215,013	\$987,601.62	\$4.59	\$25.63
Total	N/A*	808,346	\$9,385,713.00	\$11.61	N/A

\* 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.

**Table 11: Benefit Categories as a Percentage of Total Expenditure**

Benefit Category	Percentage of Prescription Count	Percentage of Total Expenditure
Hypertension	44.0%	48.0%
Diabetes	17.6%	21.7%
Glaucoma	6.7%	10.7%

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Benefit Category	Percentage of Prescription Count	Percentage of Total Expenditure
Asthma	3.3%	5.8%
Cancer	0.5%	0.7%
Epilepsy	1.3%	2.6%
All Other	26.6%	10.5%

In summary, the benefit categories (by therapeutic conditions) represent only 73.4% of the prescription volume submitted to SBS but account for 89.5% of the SBS expenditure. The additional 26.6% with respect to prescription volume and 10.5% with respect to expenditure would be accounted to the beneficiaries who are 65 years and over and those under 16 years and receiving formulary drugs which are not categorised as 'benefit'.

Table 12 shows that the top 25 drugs dispensed in the private sector during the year under review all fall within the top four treatment categories in Table 10; that is hypertension, diabetes, glaucoma and asthma. These drugs represent 60% of the total expenditure to the reimbursed to the Private Participating Pharmacies for the 2016-17 fiscal year.

**Table 12: Top 25 Drugs Dispensed in Private Sector, by Expenditure for 2016-17**

No.	Drug	Main Indication	Rx Count	Cost
1	Diamicrom MR 60mg Tablet	Diabetes	45,521	\$820,631.12
2	Xalatan 0.005% Eye Drop	Glaucoma	25,057	\$505,962.00
3	Micardis 80mg Tablet	Hypertension	15,410	\$409,723.30
4	Diovan 320mg Tablet	Hypertension	16,713	\$395,801.29
5	Diovan 160mg Tablet	Hypertension	19,521	\$377,472.96
6	Accu-Chek Performa Diagnostic Test Strips	Diabetes	8,153	\$323,149.96
7	Micardis Plus 80/12.5 Tablet	Hypertension	11,835	\$316,119.55
8	Natrilix SR 1.5mg Tablet	Hypertension	30,799	\$266,922.60
9	Codiovan 160/12.5 Tablet	Hypertension	13,368	\$258,842.82
10	Travatan Bak Free 0.004% Eye Drop	Glaucoma	10,393	\$239,398.52
11	Concor 2.5mg Tablet	Hypertension	8,351	\$238,023.39
12	Diovan 80mg Tablet	Hypertension	11,536	\$220,337.77
13	Atacand Plus 16/12.5 Tablet	Hypertension	3,983	\$104,975.84
14	Humulin 70/30 Inj.	Hypertension	4,088	\$102,141.84
15	Exforge 10mg A/320mg V Tablet	Hypertension	3,919	\$97,319.80
16	Glyformin 500mg Tablet	Diabetes	26,713	\$95,336.49
17	Codiovan 80/12.5 Tablet	Hypertension	4,861	\$93,906.18
18	Exforge 5mg A/160mg V Tablet	Hypertension	3,657	\$90,104.23
19	Exforge HCT 10/320/25 Tablet	Hypertension	3,623	\$89,481.67
20	Symbicort Turbuhaler 160/4.5 Inhr	Asthma	2,048	\$83,537.29
21	Symbicort Turbuhaler 160/4.5 Inhr	Asthma	1,299	\$76,201.34
22	Exforge 10mg A/160mg V Tablet	Hypertension	2,986	\$73,582.33
23	Novolin 70/30 Inj	Hypertension	2,953	\$69,006.55
24	Bayer Contour TS Diagnostic Test Strips	Diabetes	1,747	\$68,947.94

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No.	Drug	Main Indication	Rx Count	Cost
25	Atacand Plus 32/12.5 Tablet	Hypertension	2,166	\$67,777.82

### 4.4 ACTIVITY 4: THE BDS PHARMACY SERVICE

#### 4.4.1 BDS Public Sector Pharmacy Service

The BDS public sector pharmacy service is comprised of 14 pharmacies 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 13: Analysis of Expenditure in BDS Pharmacies by Public (A), Private (B) and the Queen Elizabeth Hospital (Q) Prescriptions for the Fiscal Year 2016-17**

	A Rx	A COST	B Rx	B COST	Q Rx	Q COST	TOTAL Rx	TOTAL COST
AND	10,870	85,755.24	480	5,010.23	246	1,849.07	11,596	\$92,614.54
BLR	118,085	852,501.29	13,427	121,052.03	1,749	17,594.98	133,261	\$991,148.30
EDC	87,270	686,986.99	3,576	40,284.11	669	6,071.01	91,515	\$733,342.12
GER	35,373	260,653.61	291	2,864.55	59	837.30	35,723	\$264,355.46
GLE	99,073	864,574.80	9,434	100,361.62	1,224	14,196.56	109,731	\$979,132.98
JON	47,827	344,448.42	3,616	34,164.09	600	6,263.42	52,043	\$384,875.93
JOS	8,249	62,841.87	1,470	13,897.12	126	1,497.37	9,845	\$78,236.36
MBY	123,365	981,105.73	13,125	153,460.63	2,644	30,910.47	139,134	\$1,165,476.83
PSY	50,160	1,040,946.93	3	14.32	0	0.00	50,163	\$1,040,961.25
RAP	118,583	960,265.12	24,113	250,637.30	3,539	34,567.73	146,235	\$1,245,470.15
SIX	95,393	679,544.71	22,849	229,020.85	2,676	26,915.18	120,918	\$935,480.74
SPH	12,876	83,793.26	158	1,419.95	3	20.61	13,037	\$85,233.82
SWS	155,649	1,105,108.29	26,987	285,194.30	4,277	49,347.55	186,913	\$1,439,650.14
THO	11,183	82,800.30	1,127	12,636.91	206	3,369.65	12,516	\$98,806.86
WAR	97,257	749,960.33	10,368	108,787.79	1,313	14,993.05	108,938	\$873,741.17
<b>TOTAL</b>	<b>1,071,213</b>	<b>\$8,841,286.90</b>	<b>131,024</b>	<b>\$1,358,805.80</b>	<b>19,331</b>	<b>\$208,433.95</b>	<b>1,221,568</b>	<b>\$10,408,526.65</b>

Rx – Prescription

#### Pharmacy Codes used in Table 13 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
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		

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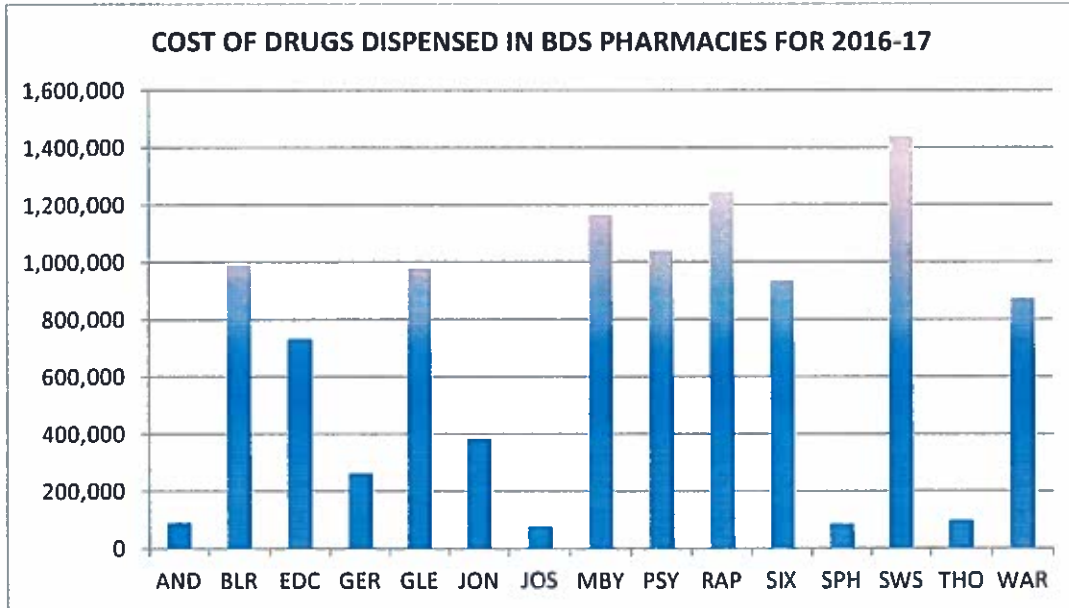
Of the twelve BDS pharmacies in **Table 13** which provide pharmaceutical services to the general public, Winston Scott Polyclinic Pharmacy has the highest prescription volume and drug expenditure followed by Randal Phillips and Maurice Byer polyclinic pharmacies, in that order. These three pharmacies all offer extended-hour service and their 2016-17 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 ranks fourth with a drug expenditure of \$990,000 for the period under review, also offers 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.

**Figure 1: Graphical Representation of the Cost of Prescriptions dispensed in the BDS Pharmacies**



**Table 14: Analysis of Expenditure in BDS Pharmacies by Public (A), Private (B) and the Queen Elizabeth Hospital (Q) Prescriptions (Rx), by month**

2016-17	A- Rx	A -COST	B- Rx	B -COST	Q -RX	Q- COST	Total Rx	Total Cost
April	87,706	711,134.67	10,937	105,749.82	1,739	23,269.63	100,382	840,254.12
May	89,003	725,790.23	10,915	105,498.33	1,668	18,465.14	101,586	850,753.70

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June	93,150	776,986.50	11.091	114,857.69	1.793	20,534.03	106.034	912,378.22
July	88,995	720,505.90	11.008	111,391.59	1.548	18,055.00	101.551	849,952.49
August	90,809	759,404.04	11.023	115,566.30	1.582	17,371.87	103.414	892,342.21
September	88,447	726,449.52	10.884	113,896.05	1.468	15,160.75	100.799	855,506.35
October	89,959	725,630.64	10.556	107,965.40	1.638	15,570.72	102.153	849,166.76
November	89,349	690,658.79	10.399	104,926.74	1.425	15,058.82	101.173	810,644.35
December	85,083	725,490.32	10.808	116,644.48	1.576	15,439.12	97.467	857,543.92
January	89,597	755,599.65	11.159	117,433.18	1.679	16,931.49	102.435	889,964.32
February	83,385	702,489.01	10.367	111,459.81	1.497	14,955.97	95.249	828,904.79
March	95,730	821,147.65	11.877	132,446.38	1.718	17,521.41	109.325	971,115.44
<b>Total</b>	<b>1,071,213</b>	<b>\$8,841,286.90</b>	<b>131,024</b>	<b>\$1,358,805.80</b>	<b>19,331</b>	<b>\$208,433.25</b>	<b>1,221,568</b>	<b>\$10,408,526.65</b>

**Legend:** A, B and Q represent the letter on the Duplicate Prescription Form as per the following key:

<b>A</b>	Prescriptions originating in the public sector
<b>B</b>	Prescriptions originating in the private sector
<b>Q</b>	Prescriptions originating in the Queen Elizabeth Hospital

Table 14 gives a breakdown of the prescriptions dispensed by origin; that is, those written in the polyclinics, the private sector and the Queen Elizabeth Hospital. The majority (87.7%) of the prescriptions dispensed in the polyclinics originate in that sector, with 10.7 originating in the private sector and 1.6 in the Queen Elizabeth Hospital. The expenditure accounts for 85%, 13% and 2% respectively.

**Table 15: Prescription Activity by Benefit Category in the Public Sector for the Fiscal Year 2016-17**

Benefit Category	Rx count	Cost	Cost/ Prescription
<b>Asthma</b>	40,907	\$627,162.14	\$15.33
<b>Cancer</b>	2,496	\$213,467.10	\$85.52
<b>Diabetes</b>	185,976	\$2,681,227.21	\$14.42
<b>Epilepsy</b>	20,831	\$433,560.72	\$20.81
<b>Glaucoma</b>	15,756	\$285,004.46	\$18.09
<b>Hypertension</b>	355,865	\$3,050,195.08	\$8.57
<b>Total Benefit</b>	<b>621,831</b>	<b>\$7,290,616.71</b>	<b>\$11.72</b>
<b>Total for Year</b>	<b>1,221,568</b>	<b>\$10,408,526.65</b>	<b>\$8.52</b>

**Table 16: Benefit Categories as a Percentage of Total Benefit & Total for 2016-17**

Benefit Category	Percentage of Total Benefit		Percentage of Total for 2016-17 Fiscal Year	
	Rx Count	Cost	Rx Count	Cost
<b>Asthma</b>	6.6%	8.6%	3.3%	6.0%
<b>Cancer</b>	0.4%	2.9%	0.2%	2.1%
<b>Diabetes</b>	29.9%	36.8%	15.2%	25.8%
<b>Epilepsy</b>	3.3%	5.9%	1.7%	4.2%
<b>Glaucoma</b>	2.5%	3.9%	1.3%	2.7%

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<b>Hypertension</b>	57.2%	41.8%	29.1%	29.3%
<b>Total</b>			50.80%	70.10%

Tables 15 and 16 show that the benefit categories - asthma, cancer, diabetes, epilepsy, glaucoma and hypertension - account for 51% of the prescription volume and 70% of the expenditure for 2016-17 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 57.2% of the overall benefit prescription count and 41.8% of the expenditure. Hypertension also leads at 29% in both prescription count and expenditure when compared with all therapeutic categories offered under the BDS programme.

**Table 17: BDS Pharmacies' Percentage changes in Prescription Volume and Expenditure for Fiscal Years 2007-16**

Year	Prescription Count	% change	Cost of Drugs Dispensed (\$)	% change	Avg. Prescription Cost (\$)
2007-08	662,677	0.4%	10,439,220	-8.5%	15.75
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

It must be noted in Table 17 that the prescription count increased in 2016-17, by 9.0% whilst the cost of drugs dispensed by only 0.5% with the average cost per prescription being \$8.52.

**Table 18: Top 25 Drugs Dispensed (by Expenditure) in the Public Sector in 2016-17**

	Drug	Drug Indication	Cost (\$)	Rx Count
1.	Diamicrom	Diabetes	415,078.42	25,125
2.	Diovan	Hypertension	402,832.69	20,724
3.	Micardis	Hypertension	336,228.72	13,928
4.	Accu-Chek Performa	Diabetes	294,124.74	9,727
5.	Valsartan	Hypertension	200,130.18	19,114
6.	Androcur	Cancer	170,705.74	1,483
7.	Humulin	Diabetes	162,997.10	7,613
8.	Novolin	Diabetes	136,914.10	7,565
9.	Natrilix	Hypertension	132,807.79	16,822
10.	Codiovan	Hypertension	112,302.33	6,556

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	Drug	Drug Indication	Cost (\$)	Rx Count
11.	Tegretol	Epilepsy	109,900.92	5,225
12.	Glucobay	Diabetes	102,043.76	4,647
13.	Seretide	Asthma	95,105.96	2,221
14.	Glyformin	Diabetes	80,514.16	22,439
15.	Atacand	Hypertension	74,080.46	2,628
16.	Bayer Contour	Diabetes	62,767.76	1,423
17.	Epilim	Epilepsy	59,932.88	2,300
18.	Sky Era	Diabetes	57,709.08	1,945
19.	Dilantin	Epilepsy	57,361.69	1,907
20.	Ventolin	Asthma	56,056.86	12,251
21.	Lifescan	Diabetes	53,266.68	1,657
22.	Alphagan	Glaucoma	52,117.67	1,374
23.	Exforge	Hypertension	50,970.95	1,728
24.	Concor	Hypertension	47,380.95	1,961
25.	Freestyle	Diabetes	46,846.98	1,722

As reflected in Table 18, the top 25 drugs dispensed in the public sector represent 30% of the total expenditure on drugs purchased in the public in the 2016-17 fiscal year. Of those 25 drugs 40% were for diabetes, and 32% for hypertension.

### 4.4.2 Public versus Private Sector Usage

The performance of the BDS dispensing service as given in Table 19 has been relatively constant from the 2011-12 period to coincide with the post-restructuring of the BDS. Overall, in the last five years, public sector expenditure averaged at approximately \$12 million or \$1 million per month whilst the private sector averaged at \$10 million over the post- restructuring period. This can be compared with the last ten year cycle where public expenditure averaged at the same \$12M and private at \$23M. This change as seen in the public versus the private sector can be attributed to the exodus of prescriptions from the private to the public sector and without the additional dispensing fee which no longer is borne by the BDS, but by the patients.

**Table 19: Total Number of Prescriptions Filled and Their Expenditure in the Public and Private Sectors for Ten Fiscal Years 2007 - 2017**

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%
2014-15	1,198,187	12,444,809	\$13.64	841,063	10,619,933	\$12.71	7%

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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	
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	32%

\* Estimated value

**Table 20** 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 30% and glaucoma by 71%. The astronomical differential in the private sector's expenditure on glaucoma can be attributed to the fact that the majority of patients access ophthalmology services in the private sector. Specialised ophthalmology service is offered only at the Winston Scott polyclinic and for children only. The choice of branded versus generic preparations stocked in the private sector may also contribute to the high price difference in the glaucoma category since clients are very guarded in changing from their customary branded eye preparations.

**Table 20: Total Prescriptions filled and Their Expenditure for the Benefit Categories in the Public and Private Sectors for the Fiscal Year 2016-17**

Benefit Category	Public		Private		Total		% of Total Expenditure spent on the Benefit Categories
	Rx Volume	Expenditure (\$)	Rx Volume	Expenditure (\$)	Rx Volume	Expenditure (\$)	
<b>Hypertension</b>	355,865	\$3,050,195.08	356,268	\$4,372,504.98	712,133	\$7,422,700.06	48.1%
<b>Diabetes</b>	185,976	\$2,681,227.21	142,708	\$1,974,331.62	328,684	\$4,655,558.83	30.2%
<b>Asthma</b>	40,907	\$627,162.14	26,335	\$523,058.53	67,242	\$1,150,220.67	7.5%
<b>Epilepsy</b>	20,831	\$433,560.72	10,180	\$236,157.21	31,011	\$669,717.93	4.3%
<b>Glaucoma</b>	15,756	\$285,004.46	54,109	\$971,885.11	69,865	\$1,256,889.57	8.1%
<b>Cancer</b>	2,496	\$213,467.10	4,206	\$67,577.09	6,702	\$281,044.19	1.8%
<b>Total</b>	621,831	7,290,616.71	593,806	8,145,514.54	1,215,637	15,436,131.25	100%

### 4.5 ACTIVITY 5: THE DRUG INSPECTORATE

#### 4.5.1 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, the BDS supported 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 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.

**4.5.1.2 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 related 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.

**4.5.2 Therapeutic Substances**  
In accordance with the Therapeutic Substances Act 1949, there were 477 licenses issued to local pharmaceutical companies for the importation of antibiotics and sulphonamides into the country during the period April 1, 2016- March 31, 2017. This represented a 32.5 percent decrease over the previous year as seen in **Table 21**.

**Table 21: Therapeutic Substances Permits Issued for the Fiscal Years 2009-17**

Year	Permits Issued	% Change Over Previous Year
2009-10	465	
2010-11	652	40.2%

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Year	Permits Issued	% Change Over Previous Year
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%

### 4.5.3 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 22 gives the quantities of narcotics that were imported and exported during fiscal year 2016-17. Codeine shows the largest imports followed by pethidine, whereas pethidine has the highest exports followed by morphine.

**Table 22: Import and Export Permits Issued for Narcotic Drugs for 2016-17**

Narcotic	Quantities	
	Import (gm.)	Export(gm.)
Pethidine	7,616.85	4,112.9715
Morphine	2,911.878	1,909.052
Codeine	140,546.422	1,851.93
Fentanyl	8.64675	1.148
Methadone	28.89	Nil
Cocaine	174.05	485

### 4.5.4 Psychotropic Substances

With regards to the 1971 Convention on Psychotropic Substances, during fiscal year 2016-17, Table 23 gives the comparative quantities imported and exported for the Schedule II, III and IV psychotropic substances.

**Table 23: Schedules II, III, and IV Psychotropic Drugs Imported and Exported during Fiscal Year 2016-17**

Psychotropic Substances	Schedule	Amount Imported (gm.)	Amount exported (gm.)
Methylphenidate	II	2,750.7	191.08
Clobazam	IV	1,215	8.6
Diazepam	IV	6,243.5	1,908.4
Clonazepam	IV	435	312.85
Midazolam	IV	1,527.5	469.5
Bromazepam	IV	32.4	0.00
Phenobarbital	IV	12,441	5,666.1
Nitrazepam	IV	0.00	0.00
Zolpidem	IV	732.4	19.53
Alprazolam	IV	661	29.7
Pentobarbital	III	6,708.6	0.00
Chlordiazepoxide	IV	529.55	53.4
Lorazepam	IV	1,287	309.4

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Psychotropic Substances	Schedule	Amount Imported (gm.)	Amount exported (gm.)
Dexamphetamine	II	0.00	0.00

### 4.5.5 Precursor Chemicals

In accordance with the International Narcotic and Control Board (INCB), permits were issued for the importation of 255.2kg of **ephedrine** and 57.641kg of **pseudoephedrine** during the 2016-17 fiscal year.

### 4.6 ACTIVITY 6: DRUG INFORMATION SERVICE

#### *Nature and Scope:*

#### 4.6.1 Public Education Programmes

The Barbados Drug Service's Public Lecture Series consists of four annual lectures designed to raise awareness to public health issues and introduce our audience to emerging ideas and scientific investigation from leading experts in the areas of Chronic Non-Communicable Diseases (CNCDS), family and child health issues, and behavioral health. **Table 24** list the lectures hosted during the April 1, 2016- March 31, 2017 fiscal year. These lectures were aimed at empowering the public to protect and improve overall health.

**Table 24: Public Lectures Held During Fiscal Year 2016-17**

Date	Topic	Speaker
May 5, 2016  (follow up lectures were held on May 12, 19, 26 and June 2 and 9, 2016 at different locations for some of the class 4 primary- school children)	Reversing Childhood Obesity in Barbados	Dr. Kenneth George  Personnel from the Health Promotion Unit and National Nutrition Centre led out in these mini-lectures which targeted the class 4 children
September 13, 2016	The Management of Glaucoma in Barbados	Dr. Dawn Grosvenor
November 15, 2016	Independence and Health – These Fields and Hills	Professor Sir Errol Walrond
January 25, 2017	Understanding Diabetes: Saving Lives & Saving Limbs	Multidisciplinary Presentation: Dr. Stephen Wells Mr. Selwyn Ferdinand Dr. Diane Brathwaite Mrs. Kevamae Sobers

The Drug Information Centre 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 322 queries were processed in the year under review.

4.7 ACTIVITY 7: PHARMACOVIGILANCE

*Nature and Scope:*

4.7.1 Drug Monitoring

The BDS continued networking regionally and internationally via the World Health Organisation (WHO) platform in an effort to monitor adverse drug reactions, and take timely remedial measures if and where necessary. This resulted in the sharing of information across borders, and with the timely submission of adverse reports to the World Health Organisation (WHO) database, VigiFlow. **Table 25** lists the top ten (10) reported drugs in terms for adverse reports which were entered into VigiFlow during the period under review. To strengthen the pharmacovigilance efficiencies in Barbados, the BDS hosted two (2) Continuing Education (CE) sessions on Pharmacovigilance for the BDS pharmacists during the period under review. Previous training sessions had been held for doctors, and nurses to also sensitise them to the importance and relevance of accurate and timely adverse reporting. These training sessions were followed up with the information collecting instruments, namely the 'Adverse Reporting Forms', being circulated to the relevant health professionals and also included in the 35<sup>th</sup> edition of the Barbados National Drug Formulary. Every opportunity was used to encourage timely and improved reporting of adverse drug reactions by health professionals.

**Table 25: Top ten (10) reported drugs for the Fiscal Year 2016-17**

Preferred name	Product name	Suspected	Unlikely	Unknown
Indapamide	Indapamide	8	0	0
Diclofenac	Diclofenac	1	0	0
Diclofenac sodium	Apo-diclofenac	1	0	0
Atenolol	Atenolol	3	0	0
Amlodipine	Amlodipine	13	0	0
Risperidone	Risperidone	5	0	0
Quetiapine fumarate	Quetidn	5	0	0
Valsartan	Valsartan	26	1	0
Brimonidine	Brimonidine	5	0	0
Telmisartan	Micardis	3	0	0

Regional information sharing is achieved through the monthly webinars facilitated by the Regional Network of Focal Points for Pharmacovigilance in The Americas. These webinar meetings highlighted fifty years of pharmacovigilance-medicines' safety and public health; provided updates on active pharmacovigilance projects; discussed regulatory measures, problematic medicines, medicines withdrawn from the global market; and provided information on relevant pharmacovigilance meetings and courses.

4.8 ACTIVITY 8: RESOURCE MANAGEMENT

The BDS Financial Statement and Special Benefit Service expenditure for the April 1, 2016- March 31, 2017 fiscal year are at **Appendix A and B** respectively.

**Table 26: 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 (\$)
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

\* Revised Estimates Provided from Barbados Approved Estimates 2017/18

\*\* Provided from Barbados Statistical Services

The BDS, a department under the Ministry of Health, 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 in all 14 BDS public pharmacies was carried out from January 31 – February 20, 2017.

As shown in Tables 26 there was a marginal increase in the BDS expenditure in 2016-17 over the previous year which accounted for 6.2 percent of the total health care expenditure. This represented a per capita public expenditure on pharmaceutical services of \$72.61 versus \$73.50 in the previous year.

**Table 27: BDS Revised Estimates and Actual Expenditure for Fiscal Year 2016-17**

Budget Heads	Revised Estimates	Actual Expenditure	Revised Estimates	Actual Expenditure	% Change in Actual
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	(\$)	(\$)	(\$)	(\$)	Expenditure in 2016-17 vs. 2015-16
	2015-16		2016-17		
<b>Total Personal Emoluments</b>	5,002,161	5,129,711	5,502,323	5,212,815	1.62%
<b>Total Goods and Services</b>	21,215,330	20,850,349	21,496,130	21,176,717	1.57%
<b>Total Capital</b>	32,500	25,609	32,500	31,757	24.01%
<b>Total Expenditure</b>	26,249,991	26,005,670	27,030,953	26,421,289	1.60%

The 24% increase in the total capital in 2016-17 is as a result of the purchase of computer hardware and printers to replace non-functional and obsolete systems.

**Appendix A - Financial Statement 2016-17**

**Receipts and Payments Account for Period April 1, 2016 to March 31, 2017**  
**with comparative figures for 2015-16**

<b><u>Receipts</u></b>	2016-17	2015-16
	\$	\$
Accountant General*	27,030,953	26,249,991
Recertification of Private Pharmacies	9,900	11,338
District Pharmacies (Sale of Pharmaceuticals)	306,101	410,604
<b>Total</b>	<b>27,346,954 ✓</b>	<b>26,671,933 ✓</b>

<b><u>Payments</u></b>	\$	\$
Total Personal Emoluments	5,212,815	5,129,712
Travelling	57,611	62,385
Utilities	24,000	9,251
Rental of Property	22,751	22,746
Library	17,145	8,923
Supplies & Materials	11,591,189	12,011,713
Maintenance of Property	25,006	24,491
Operating Expenses	9,439,016	8,710,840
Machinery and Equipment	31,757	25,609
Furniture and Fixtures	-	-
Professional Services	-	-
Savings	925,664	666,263
<b>Total</b>	<b>27,346,954 ✓</b>	<b>26,671,933 ✓</b>

<b>*Accountant General</b>		
Personal Emoluments	\$5,502,323	\$5,002,161
Other	\$21,496,130	\$21,215,330
Capital	\$32,500	\$32,500
<b>Total</b>	<b>\$27,030,953</b>	<b>\$26,249,991</b>

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**Appendix B - Drug Service Expenditure and Prescription Volume**

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	
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



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Appendix B Cont'd - Drug Service Expenditure and Prescription Volume

YEAR	DRUG SERVICE EXPENDITURE AND PRESCRIPTION VOLUME										PRIVATE PRESC. AVG. COST (\$)	PRIVATE AVG. MTHLY PRESC.	PUBLIC EXP % age of TOTAL EXP	PRIVATE EXP. % of TOTAL EXP.
	PUBLIC EXPENDI- TURE (\$)	SBS EXPENDI- TURE (\$)	TOTAL EXPENDI- TURE ON MEDICINES (\$)	PUBLIC PRE- SCRIPTION (PRESC.)	PUBLIC PRESC. AVG. COST (\$)	PUBLIC AVG. MTHLY PRESC.	PRIVATE PRESC.	PRIVATE PRESC. AVG. COST (\$)	PRIVATE AVG. MTHLY PRESC.					
1995-96	9,612,632	9,979,983	19,592,615	818,927	12	68,244	692,735	14	57,728	49	51			
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			

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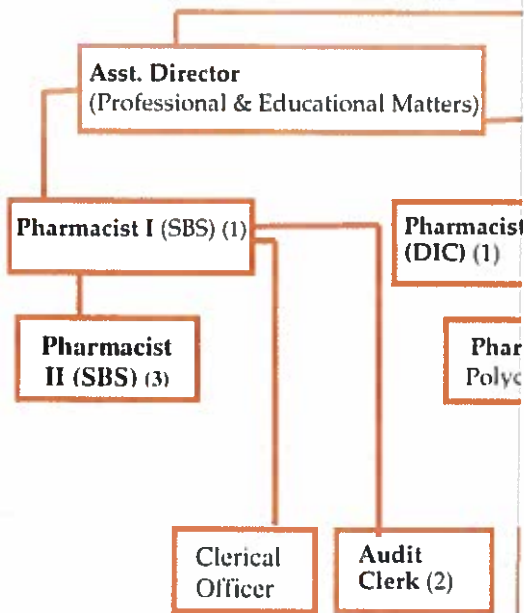
Appendix B Cont'd - Drug Service Expenditure and Prescription Volume

YEAR	DRUG SERVICE EXPENDITURE AND PRESCRIPTION VOLUME											PUBLIC EXP. % of TOTAL EXP.	PRIVATE EXP. % of TOTAL EXP.
	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 % of TOTAL EXP	PRIVATE EXP % of TOTAL EXP		
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		
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		

\* 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)

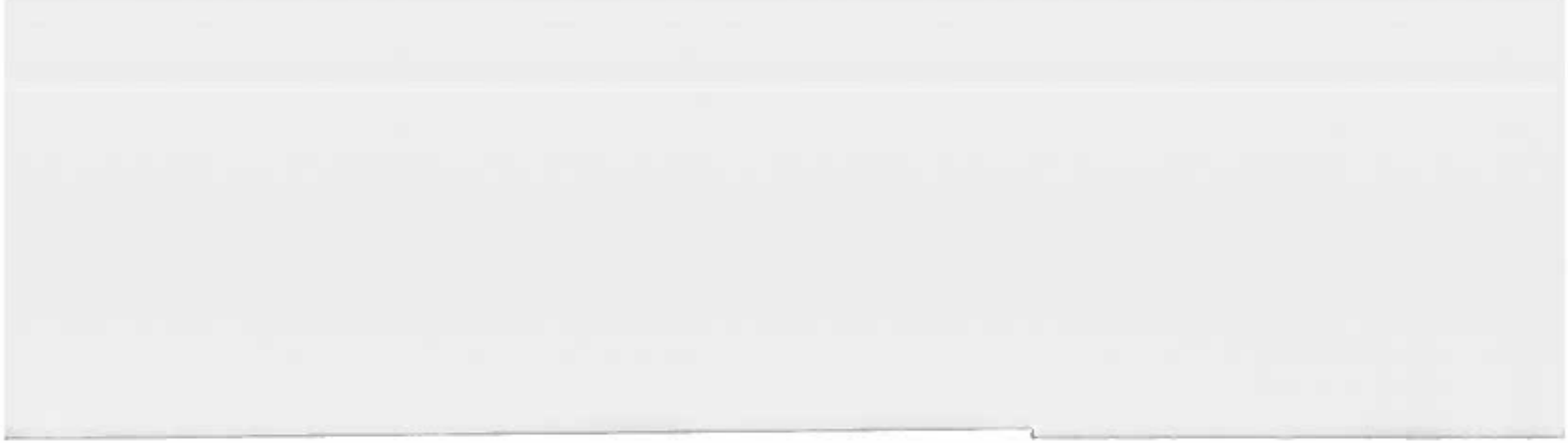
## Appendix C - Barbados D



**Key:**

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

Established Post: Director (1); Assistant Director (2); Chief (2); Computer Operator (1); Data Entry Operator (1); Driver (2); Temporary Post: Senior Accountant (1); Chief Dispenser/Se





**Barbados Drug Service**  
**Levels 6 & 7**  
**Warrens Towers II**  
**Warrens**  
**St. Michael**

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**Website:               <http://drugservice.health.gov.bb/>**

