



Annual Report

of

**The Operations of The
Barbados Drug Service**

**For Fiscal Years
April 1, 2013 - March 31, 2014**

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1.0 Executive Summary

Despite the economic challenges and the resulting 12% cut in its revised budget, the Barbados Drug Service needed to maintain achievements in its three strategic objectives, namely (i) to ensure access of affordable, safe, and quality drugs to all government health care institutions and the private sector pharmacies, (ii) to maintain and update the Barbados National Drug Formulary through the rational use of medications, and (iii) to ensure quality and safety of drugs through appropriate regulatory frameworks including testing, inspection, monitoring and surveillance.

The three strategic objectives were supported by six strategic activities all linked to achieving the organisation's mission, despite the structural adjustment policies that had to be implemented.

The six strategic activities included (i) the Barbados National Drug Formulary (BNDF), (ii) the Supply and Inventory Service, (iii) the Special Benefit Service (SBS), (iv) the Barbados Drug Service Pharmacy Service, (v) the Drug Inspectorate, (vi) and the Drug Information Centre (DIC). This multifunctional cross-cutting approach provided an enabling environment for service delivery to be optimally effective and efficient. These activities all sought to strengthen and improve the three strategic objectives and at a reduced cost. The BDS was successful in achieving this goal: the 2012-13 revised budget (actual expenditure was \$24,121,457) was \$25,200,000 whereas that for 2013-14 (actual expenditure was \$22,642,080) was \$22,118,487.

1.1 Activity Highlights - April 2013- March 2014

Following are the highlights as detailed in this report under the respective six strategic activities.

1.1.1 Barbados National Drug Formulary

– In the selection and rationalization of formulary drugs, nine drug moieties were deleted from formulary and one added. An updated copy of the BNDF 32nd edition (April 1, 2013 – March 31, 2014) was distributed to health care providers as their guide to rational prescribing.

1.1.2 Supply & Inventory Service

– In order to ensure the continuous supply of formulary drugs to all government health care institutions and the private sector, The Drug Tenders Committee under the chairmanship of the Director, Barbados Drug Service met in formal sessions to consider the offers to supply in response to an invitation to tender for the supply of Drugs and Related Items for Maximum Price Contract (M.P.C.) # 34 Primary Tender, which covers the period April 01, 2013 through March 31, 2014. It was noted that 2,725 contracts were awarded with respect to the adjudication process.

1.1.3 SBS

– 828,328 prescriptions (equaling 4.4% decline over 2012-13) were dispensed in the private sector at a cost of \$10,643,775. Out of this expenditure the 65 and over age category accounted for the highest proportion. This benefit category was followed in decreasing order by hypertension, diabetes, glaucoma, under 16, asthma, epilepsy and finally cancer.

1.1.4 BDS Pharmacy Service

– BDS spent \$11,998,305.00 in dispensing 1,244,739 prescriptions in the period under review in the public sector. This relate to an average cost per prescription of \$9.64. The benefit categories in the public sector were ranked with hypertension topping the list followed by those 65 and over, diabetes, under 16 year olds, asthma, epilepsy, and cancer. Glaucoma is not represented here since data was not collected at that time.

In comparing the private versus the public sector usage of the Special Benefit Service, there was a 25% difference in the cost per prescription in favour of the private sector.

1.1.5 Drug Inspectorate – Tight controls were maintained on the narcotic, psychotropic, and precursor chemicals, with annual reports being submitted to the relevant authorities through the Chief Medical Officer.

1.1.6 DIC – The public was empowered on various chronic and acute illnesses and treatment options, in addition to being kept abreast of the BDS operations. These achievements were realised primarily through the BDS Public lecture series.

1.2 Overall Performance

In its new location on the 6th and 7th floors at the Warrens Towers II, the BDS realized the six strategic activities at a total of \$22,642,080 (6.6%) of the total health expenditure of 342,381,895. This represents a per capita expenditure \$81.59.

It must be noted that though the tenet of the mission and vision of the BDS was realized in 2013-14 fiscal year with a staff complement of 104, there were challenges to be addressed and ongoing programmes to be completed. Those programmes not completed included the networking of pharmacies to the Ministry of Health network, the implementation of the Supply Chain Management module of the Health Information System software, and the implementation of the Barbados National Pharmaceutical Policy.

Introduction

This 2013-14 Barbados Drug Service Annual report gives the status of achievement of the three strategic objectives despite its economic challenges. Fiscal year 2013-14 was another challenging economic period for the Barbados Drug Service but we were pleased to have delivered on our mission; that 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.” In achieving its mission, the Barbados Drug Service (BDS) embraced three main strategic objectives as determined under the Barbados National pharmaceutical policy, namely (i) to ensure access of affordable, safe, and quality drugs to all government health care institutions and the private sector pharmacies, (ii) to maintain and update the Barbados National Drug Formulary through the rational use of medications, and (iii) to ensure quality and safety of drugs through appropriate regulatory frameworks including testing, inspection, monitoring and surveillance.

The 2013-14 Annual report highlights the continued effectiveness of the restructuring strategies from previous years and the strong execution of effective and efficient service delivery. The BDS consistently delivered on the commitment to stakeholders and its objectives were realized. There was steady focus on prioritizing and standardising the business operations in both meeting the delivery of services and regulating its quality. The continued high service demand was demonstrated in the dispensing service offered through the 14 public pharmacies and 85 Private Participating Pharmacies. In addition, the quality and continuous supply of pharmaceuticals was maintained through the Drug Inspectorate and Supply and Inventory service respectively. The overall operations of the department were realized with a staff complement of 104 and at a cost of \$28,602,628.

The BDS continued to recognize that the success or failure of its programmes depended heavily on its stakeholders. It is for this reason that the Management Team sought to engage in ongoing dialogue with all its stakeholders. The patient, being the primary stakeholder, was empowered through quarterly public lectures in the prevention and control of illnesses, rational use of medicines, and overall improved health care.

Historical Information

The establishment of the Barbados Drug Service (BDS) in 1980 was guided by the fundamental philosophy of the World Health Organisation (WHO) which states that "if essential drugs are not available or if people do not have access to them, health care systems and primary health care cannot function properly and have no credibility, since all aspects of health care and disease control are affected by essential drugs".

The BDS was established under the Drug Service Act 1980-58 to provide residents of Barbados with quality pharmaceuticals at an affordable price. In addition, the services offered by the BDS were designed to develop equity among all Barbadians and allow patients who use either the public or private sector to receive the same quality pharmaceuticals. The Drug Service Act CAP 40A and its Regulations and the Financial Administration and Audit (Drug Service) Rules, 1980 govern the operations of the Barbados Drug Service.

In 1981 the Special Benefit Service was established, and beneficiaries in both the public and private sectors obtained formulary drugs upon presentation of a prescription, and the appropriate co-payment. In 1986 co-payment was removed and

the beneficiary's age for children expanded from under 6 years to under 16 years of age. The current beneficiaries as listed in **Table 1** includes persons suffering from diabetes, hypertension, cancer, asthma, glaucoma and epilepsy who receives formulary drugs used in these illnesses free of cost in both the public and private pharmacies. The drug cost for prescriptions filled in private pharmacies for all BDS beneficiaries are paid in full by the BDS whereas the dispensing fee is paid by the patient in the private 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** + pharmacy 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

Activities

The strategic objectives of the Barbados Drug Service are met through six key multifunctional activities. These are cross-cutting and provide an enabling environment for service delivery to be optimally effective and efficient.

BDS Activities

- (1) Formulary selection - The Barbados National Drug (BNDF)
- (2) Procurement - The Supply and Inventory Service
- (3) Third Party Dispensing - The Special Benefit Service (SBS)
- (4) Public Dispensing - The Barbados Drug Service Pharmacy Service
- (5) Regulating pharmaceuticals - The Drug Inspectorate; and
- (6) Responding to drug queries - The Drug Information Centre (DIC)

4.1

ACTIVITY 1: BARBADOS NATIONAL DRUG FORMULARY

Fifteen hundred (1500) copies of the 32nd edition of the Barbados National Drug Formulary (BNDF) were published and distributed during the 2013-14 fiscal year.

This publication was printed by the Government Printer and distributed to medical, dental and pharmacy practitioners; medical and pharmacy students, and the Chief Executive Officer, Queen Elizabeth Hospital for placement on each ward.

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 preparation of the 32nd edition of the BNDF through the Drug Service (Barbados National Drug Formulary) (Approval) Order, 2013 on August 3, 2013.

During the year under review the Minister of Health approved the following recommendations from the Drug Formulary Committee with respect to addition to, and deletion from the Barbados National Drug Formulary.

Drugs Added

- Co-Trimoxazole 160mg/800mgTablet

Drugs Deleted

- Topiramate (B)
- Dihydroergotamine/Propyphenazine/Caffeine
- Pizotifen (Pizotyline)
- Butylbromide - Paracetamol
- Propantheline Bromide
- Menopausal Preparations
- Doxapram Hydrochloride
- Nortriptyline HCl- Fluphenazine HCl
- Sodium Aurothiomaleate

4.1.2

SPECIALLY AUTHORISED DRUGS

Specially Authorised Drugs (SADS) are not found in the Barbados National Drug Formulary but made available to a physician for a specific patient for a specific period of time. SADS were introduced in the early days of the BDS to cater to those patients who could not afford to purchase non-Formulary drugs, which were considered essential for the management of the medical conditions diagnosed. Such drugs may also be made available to an institution or department to be used by patients who attend a particular clinic or unit. However, since SADS, unlike formulary drugs, do not fall under the Drug Service Act, CAP 40A, they can only be provided as funds are available. SADS accounted for just over 1% or \$136,233.34 of the BDS' budget during the reporting year. This represented 1,796 approvals to all BDS Pharmacies and some requests from the Psychiatric Hospital (prior to September 2014 the Psychiatric Hospital did not submit all SAD requests). Table 2 shows that the BDS expenditure on funding SADS declined over the ten year period 2004-14. This was primarily due to the fact that generic alternatives became available.

Table 2: SAD Expenditure versus Public sector Drug Expenditure for The 2004-05 to 2013-14 fiscal Years

Year	Total Drug Expenditure in Public Sector	Specially Authorised Drugs					
		Approvals	% Change in Approvals	Expend.	% Change in Expend.	Average Cost/ SAD	Expend. % to Total
2004-05	\$8,262,528.00	751	34%	\$257,847.50	193%	\$343.34	3.0%
2005-06	\$8,930,806.00	784	4%	\$231,595.53	-10%	\$295.40	3.0%
Year	Total Drug Expenditure in Public Sector	Specially Authorised Drugs					
		Approvals	% Change in Approvals	Expend.	% Change in Expend.	Average Cost/ SAD	Expend. % to Total
2006-07	\$11,403,711.00	608	-22%	\$322,594.94	39%	\$530.58	3.0%
2007-08	\$10,439,220.00	715	18%	\$280,942.37	-13%	\$392.93	3.0%
2008-09	\$12,932,110.00	955	25%	\$299,312.72	6%	\$313.42	2.0%
2009-10*	\$12,150,516.00	1,426	33%	\$198,202.38	-51%	\$138.99	2.0%
2010-11	\$12,451,937.00	982	-45%	\$125,953.12	-57%	\$128.26	1.0%
2011-12	\$11,765,288.00	1,016	3%	\$123,919.64	-2%	\$121.97	1.0%
2012-13	\$13,481,501.00	1,183	14%	\$113,894.70	-9%	\$96.28	1.0%
2013-14	\$11,998,305.00	1796	34%	\$136,233.34	16%	\$75.74	1.1%

* Tamiflu[®] was purchased for the H₁N₁ treatment

The Drug Formulary Committee recommended the approval of the following six (6) Specially Authorised Drugs to the Minister of Health during the 2013-14 fiscal year. These drugs were given duty free status to make them more affordable to patients.

Specially Authorised Drugs

- Telmisartan/amlodipine tablet e.g. Twynsta[®]
- Strontium ranelate granules e.g. Protelose[®]
- Carbetocin Inj. e.g. Duratocin[®]
- Vildagliptin tablet e.g. Galvus[®]
- Vildagliptin/metformin tablet e.g. Galvusmet[®]
- Linagliptin tablet e.g. Tajenta[®]

4.2 ACTIVITY 2: THE SUPPLY AND INVENTORY SERVICE

The 2013-14 fiscal year was a challenging one in terms of maintaining a continuous supply of all 2,725 chemical moieties that were contracted (**Table 3**). 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 for feasible supplies. During this period the BDS therefore experienced the cancellation and subsequent awarding of three hundred and twenty-seven (327) new contracts (some of these were due to a change in distributor), 98 deletions, 38 price changes and the removal of two drugs from the market due to quality issues.

Table 3: Number of Drugs Contracted for the Period 2010-11 to 2013-14

Criteria	Fiscal Year			
	2010-11	2011-12	2012-13	2013-14
Drugs contracted	2736	2754	2709	2725
Add to Contract*	186	173	71	327
Delete from contract	122	165	126	98
Change Formulary Status	34	20	7	80
Name Change	8	1	12	4
Price Change	26	50	51	38
Amend Protocol Quantity	13		11	
Package Size Change	3	7	5	3
Product Quality			3	2

*That high number of add to contracts was a change from distributor

Despite the supply challenges in accessing contracted pharmaceuticals, the BDS was generally still able to meet its demand through alternative sources.

A software application was developed to process Duty Free Certificates. This application offered three main advantages, (i) to reduce the number of ineligible drug products from receiving duty free certificates, (ii) to improve the overall monitoring of the contracted drugs on island by the BDS, and (iii) to reduce the processing time over the manual system.

4.3 ACTIVITY 3: THE SPECIAL BENEFIT SERVICE

4.3.1 Beneficiaries

Beneficiaries who fill prescriptions in the 85 Private Participating Pharmacies under the Special Benefit Service include the following:

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

Table 4: Prescription Activity by Benefit Category in Private Sector, 2013-14

Benefit Category	Number of Patients	Prescription Volume	Expenditure	Avg. Price
65 and over	24,883	527,821	\$6,255,202.43	\$11.85
Hypertension	32,169	370,066	\$4,070,098.01	\$11.00
16-64	25,457	273,518	\$3,990,129.96	\$14.59
Diabetes	13,812	149,666	\$2,204,088.52	\$14.73
Glaucoma	5,989	66,571	\$1,925,441.93	\$28.92
Under 16	18,523	60,176	\$468,139.08	\$7.78
Asthma	9,434	27,941	\$641,040.08	\$22.94
Epilepsy	1,996	9,914	\$234,665.86	\$23.67
Cancer	884	4,570	\$188,386.67	\$41.22

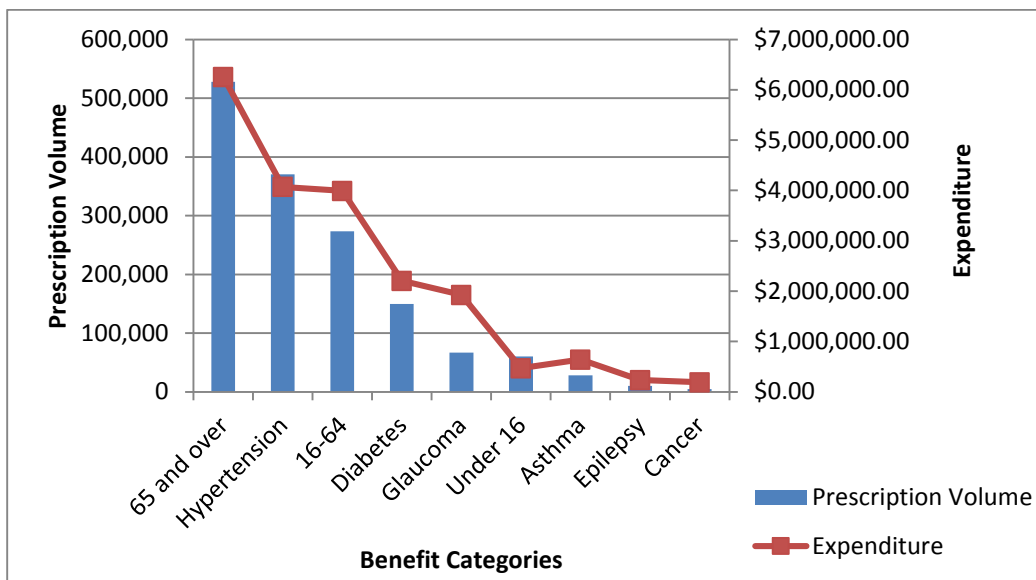


Figure to accompany Table 4

It should be noted that in **Table 4** and the supporting figure, there is overlapping of data in the age specific and therapeutic specific categories, hence the final counts will be inflated for those 65 and over and under 16 age groups who also receive medication in one of the six disease specific benefit categories.

Notwithstanding this anomaly in the duplication of data across age specific and therapeutic specific categories, the basic usage trend remains unchanged. The 65 and over age group accounted for the highest prescription volume and expenditure whereas the 16 – 64 age category had the highest patient volume (**Table 4**). The 16 – 64 age group, though not a benefit category showed the highest patient count and second highest expenditure since the patients suffering with one or more of the disease related benefit categories fall within this age range.

The patient volume detailed under the individual disease categories list hypertension, diabetes, asthma, glaucoma, epilepsy, and cancer in that order of ranking from high to low. It must be highlighted that this disease ranking of hypertensive and diabetes at positions 1 and 2 respectively, correlated with the 2012-13 Annual Report of the Barbados National Registry which listed hypertension and diabetes as the two top CVD risk factors for both acute Myocardial Infarction and Stroke.¹

Cancer with a total of 4,569 prescriptions, the lowest ranking in prescription volume and patient count, had the highest overall average price per prescription. This can be attributed to the high cost of drugs used in the treatment of cancer. Glaucoma had a lower patient count than asthma by about 37% but its prescription volume and expenditure exceeded asthma by 138% and 213% respectively. This can be further supported by Table 8 which shows that four of these anti-glaucoma drugs are within the top 10 of the top 25 drugs dispensed by expenditure; they are Xalatan[®], Alphagan[®], Travatan[®] and Cosopt[®] which rank at positions 4, 5, 8, and 9 respectively.

Table 5 shows that, as would be expected, all six benefit categories under the SBS programme in the private sector are listed in the top 10 therapeutic categories for the year under review.

1. Barbados National Registry, 2012-13 Annual Report; 2011, Rose AMC, Martelly TN, Craig LS, Blackman T, Maul L, Hambleton IR, Hennis AJM, and the BNRCVD Surveillance Team

Table 5: Top Ten therapeutic Categories in Private Sector for 2013-14 fiscal Year

Therapeutic Class	Number of Patients	Number of Prescriptions	Expenditure
Hypertension	32,169	370,066	\$4,070,098.01
Diabetes	13,812	149,666	\$2,204,088.52
Glaucoma	5,989	66,571	\$1,925,441.93
Asthma	9,434	27,941	\$641,040.08
Epilepsy	1,996	9,914	\$234,665.86
Cancer	884	4,570	\$188,386.67
EENT Anti-Inflammatory Agents	4,032	5,070	\$111,697.14
Other Nonsteroidal Anti-Inflammatory Agents	17,416	52,842	\$107,252.25
Selective Alpha 1 Adrenergic Blocking Agent	1,454	3,541	\$91,948.91
Anti - Lipemic Agents	5,234	33,002	\$72,205.63

4.3.2**Private Participating Pharmacies (PPPs)**

An average of eighty-five (85) Private Participating Pharmacies (PPP) provided pharmacy service on a monthly basis to BDS beneficiaries. There was one cancellation and seven new pharmacies contracted to become PPPs with the Director, Barbados Drug Service:

PPPs that cancelled during the reporting Period 2013-14

- Riverside Pharmacy, River Road, St. Michael

PPPs that were contracted during the reporting Period 2013-14

- Morrisfield Enterprises & Pharmacy, Marhill Street, Bridgetown
- Niki's Pharmacy, Suite 9B Impulse Mall, Wildey, St Michael
- Blades Hill Pharmacy, Blades Hill #3, St. Philip
- Imart Inc., Sheraton Mall, Sargeant's Village, Christ Church
- Rosegate Medical Centre, Rosegate, St. John
- The Turning Pharmacy, Brownes Gap, Hothersal Turning, St. Michael
- Imart Convenience Store & Pharmacy, Shop 11, Welches Plaza, St. Michael

4.3.3**Usage of the Special Benefit Service**

During the reporting period, a total of 828,328 prescriptions for 68,863 patients were dispensed in the Private Participating Pharmacies under the SBS programme at a cost of \$10,643,775.00 (**Table 6**). The expenditure relates only to the drug cost since the patient pays the dispensing fee as is given in **Table 7**. Of this total patient count, 64,284 were in the Chronic Non-communicable disease categories of cancer, hypertension, diabetes, glaucoma, asthma and epilepsy.

There was a 0.06% rise in expenditure and a 4.35 drop in prescription volume over the previous year. When a ten-year comparison was made on expenditure in the private sector, there was an average of \$33,364,258 over the first seven years, and \$10,689,302 for the last three. This average annual drop is due to the restructuring strategies implemented in the 2010-11 fiscal year.

Table 6: SBS Percentage Changes in Prescription Volume and Expenditure

Year	Prescription (R _x)	Reimbursement (\$)	%Change in Expenditure	% Change in R _x Volume	\$/R _x
2004-05	1,113,093	23,115,488.00	5.8%	12.3%	\$20.77
2005-06	1,331,537	30,540,237.00	32.1%	19.6%	\$22.94
2006-07	1,846,882	31,587,931.00	3.4%	38.7%	\$17.10
2007-08	2,055,016*	36,535,775.00	15.7%	11.3%	\$17.78
2008-09	N/A	36,633,590.00	0.3%	N/A	N/A
2009-10	N/A	40,561,950.00	10.7%	N/A	N/A
2010-11	N/A	34,574,833.00	-14.8%	N/A	N/A
2011-12	879,104	10,787,176.00	-68.8%	N/A	\$12.27
2012-13	864,335	10,639,956.00	-1.4%	-1.71%	\$12.31
2013-14	828,328	10,643,775.00	0.06%	-4.35%	\$12.85

* Estimated Value

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 8: Comparative List of the Top 25 Drugs Dispensed (by Expenditure) in the Private Sector during the 2013-14 fiscal year

Rank	Drug	Main Indication	Volume	Expenditure
1	DIAMICROM MR 60MG TAB (SER/STO) GLICLAZIDE	Diabetes	1,883,169	\$807,396.81
2	MICARDIS 80MG TAB (BOE/STO) TELMISARTAN	Hypertension	649,329	\$574,580.72
3	DIOVAN 320MG TAB (NVS/COL) VALSARTAN	Hypertension	513,358	\$456,874.73
4	XALATAN 0.005% EYE DR (PFI/SBI) LATANOPROST	Glaucoma	12,283	\$367,502.46
5	ALPHAGAN P 0.1% EYE DR (ALL/COL) BRIMONIDINE	Glaucoma	8,948	\$360,261.88
6	DIOVAN 160MG TAB (NVS/COL) VALSARTAN	Hypertension	472,035	\$336,625.66
7	ACCU-CHEK PERFORMA GLUC (PRI/STO) DIAGNOSTIC	Diabetes	6,528	\$328,527.21
8	TRAVATAN BAK FREE 0.004% EYE DR (ALC/STO) TRA	Glaucoma	9,165	\$294,936.86
9	COSOPT EYE DR (MSD/STO) DORZOLAMIDE/TIMOLOL	Glaucoma	10,870	\$282,256.26
10	DIOVAN 160MG TAB (NVS/COL) VALSARTAN	Hypertension	376,556	\$268,229.49

Rank	Drug	Main Indication	Volume	Expenditure
11	MICARDIS PLUS 80/12.5 TAB (BOE/STO) TELMISART	Hypertension	302,905	\$268,151.38
12	XALATAN 0.005% EYE DR (PFI/STO) LATANOPROST	Glaucoma	8,997	\$268,022.55
13	DIOVAN 80MG TAB (NVS/COL) VALSARTAN	Hypertension	371,290	\$264,738.01
14	BAYER CONTOUR TS GLUC (BYC/AHI)	Diabetes	4,552	\$240,966.18
15	NATRILIX SR 1.5MG TAB (SER/STO) INDAPAMIDE	Hypertension	817,322	\$216,988.53
16	CONCOR 5MG TAB (MEK/COL) BISOPROLOL	Hypertension	140,569	\$172,668.00
17	DIOVAN 320MG TAB (NVS/COL) VALSARTAN	Hypertension	184,481	\$163,672.63
18	CODIOVAN 160/12.5 TAB (NVS/COL) VALSARTAN/HCT	Hypertension	229,735	\$163,456.91
19	SYMBICORT TURBU 160/4.5 INH (AZN/STO) BUDESON	Asthma	3,512	\$154,105.00
20	HUMULIN 70/30 (LIL/STO)	Diabetes	9,528	\$125,287.92
21	CONCOR 2.5MG TAB (MEK/COL) BISOPROLOL	Hypertension	126,566	\$122,979.09
22	LUMIGAN 0.01% EYE DR (ALL/COL) BIMATOPROST	Glaucoma	3,651	\$110,509.94
23	GLYFORMIN 500MG TAB (REM/SBI) METFORMIN	Diabetes	2,761,873	\$108,111.94
24	FREESTYLE LITE GLUC (ABD/SBI) DIAGNOSTIC BLO	Diabetes	2,138	\$106,386.00
25	LIFESCAN ONE TOUCH ULTRA GLUC (JOH/AAL) DIAG	Diabetes	2,030	\$100,648.32

The top twenty-five drugs dispensed in the private sector in 2013-14 are ranked by expenditure in **Table 8** with the comparative prescription volume. Diamicrom MR[®] 60mg tablet and Micardis[®] 80mg tablet, an anti-diabetic and anti-hypertensive drug respectively, ranked at number 1 and 2 in expenditure whereas Glyformin[®] 500mg tablet was the highest ranking in terms of volume. This was followed by Diamicrom MR[®] 60mg tablet at position 2 in the overall prescription volume.

4.4 ACTIVITY 4: THE BDS PHARMACY SERVICE

Nature and Scope:

4.4.1 BDS/ Public Sector Pharmacy Service

In 2013-14 fiscal year, the BDS pharmacy service comprised of 14 pharmacies located in almost every parish across Barbados with the exception of St. Lucy and St. James. These two parishes were serviced from Maurice Byer and Branford Taitt Polyclinic pharmacies respectively. In the period under review the 14 pharmacies were staffed with eight Pharmacists I (one at each polyclinic), 38 Pharmacists II, 10 Clerical Officers, and 16 Attendants.

As seen in **Table 9**, the majority of public patients are hypertensives and in the 65 and over age category. Diabetes also account for a significant amount of patients. The ranking in the disease specific categories was similar to that seen in the private sector, with the exception to glaucoma for which data was not available.

Table 9: Number of Patients by Benefit Category Seen in the Public Sector in 2013-14 Fiscal Year

Benefit Category	Patients
Hypertension	171,233
65 yrs & Over	120,425
Diabetes	104,323
Under 16 yrs	71,686
Asthma	24,391
Epilepsy	10,265
Cancer	3,137

The prescription activity (**Table 11**) at these pharmacies showed the following ranking with the highest demand at Winston Scott polyclinic and the lowest at St. Philip District Hospital.

1. Winston Scott Polyclinic
2. Randal Philips Polyclinic
3. Branford Taitt Polyclinic
4. Maurice Byer Polyclinic
5. Six Roads Polyclinic
6. Eunice Gibson Polyclinic
7. Glebe Polyclinic
8. Edgar Cochrane Polyclinic
9. St. John Out-Patient Clinic
10. Geriatric District Hospital
11. St. Thomas Out-Patient Clinic
12. St. Joseph Out-Patient Clinic
13. St. Andrew Out-Patient Clinic
14. St. Philip District Hospital

Pharmacies at the Geriatric and St. Philip District Hospitals, record relatively low prescription counts when compared with other BDS pharmacies since these two pharmacies are set up specifically for dispensing in-patient and staff prescriptions only.

The monies collected at the BDS pharmacies are from non-beneficiaries whose prescriptions originate in either the public or private sector. The pricing formula was the same fixed cost + mark-up as pertains in the private sector (Table 7).

It must be noted that though the budget for pharmaceuticals for the Psychiatric hospital was under the BDS' item 210 Supplies & Material, it is not a BDS pharmacy and the prescription volume was not collected during the period under review.

Collection of Revenue and Overall Expenditure

Prescriptions originating from private physicians written for non-beneficiaries were also dispensed at the BDS public pharmacies at a fixed cost plus (+) mark-up as pertained in the private sector. This policy was in place in all BDS pharmacies except those at the two district hospitals, namely the Geriatric and St. Philip district hospitals. Non-beneficiaries were those persons between the ages of 16 and 64 who saw a physician in the private sector and received a prescription for formulary drugs except those used in the treatment of diabetes, hypertension, cancer, asthma, glaucoma and epilepsy. The dispensing fee assigned to these prescriptions is as given in Table 7.

The revenue collected at the BDS Pharmacies with respect to prescriptions for non-beneficiaries is given at **Table 10**. It must be noted that though Psychiatric Hospital is not one of the BDS pharmacies, and does not collect revenue for pharmaceuticals, it was reported here with an expenditure of \$1,629,934.84. This represents the second largest expenditure (13.6%), which is surpassed only by Winston Scott polyclinic with an expenditure of \$1,732,294.39 or 14.5%. The budget for the Psychiatric hospital is included under the BDS budget, item 210 Supplies & Material.

Table 10: Revenue Collected by Pharmacy for Fiscal Year 2013-14

Name of Polyclinic/Out-Patient Clinic Pharmacy	Revenue Collected for fiscal Year 2013-14 (\$)	Expenditure (\$)	% of Total BDS Expenditure
Branford Taitt	\$21,131.48	\$1,148,388.90	9.6%
Edgar Cochrane	\$15,836.05	\$733,602.99	6.1%
Eunice Gibson	\$18,114.44	\$969,121.99	8.1%
BDS	-	\$501,608.75 ¹	3.8%
Geriatric Hospital	-	\$231,561.63	1.9%
Glebe	\$19,745.88	\$1,027,951.70	8.6%
Maurice Byer	\$28,669.76	\$1,075,706.56	9.0%
Psychiatric Hospital	-	\$1,629,934.84	13.6%
Randal Phillips	\$26,867.69	\$1,319,766.85	11.0%
St. Andrew	\$1,118.78	\$90,084.45	0.8%
St. John	\$9,210.00	\$328,280.93	2.7%
St. Joseph	\$2,481.13	\$121,487.13	1.0%
St. Philip District Hospital	-	\$84,329.20	0.7%
Six Roads	\$28,372.58	\$934,964.76	7.8%
St. Thomas	\$354.62	\$69,219.93	0.6%
Winston Scott	\$48,203.02	\$1,732,294.39	14.5%
Total	\$218,767.48	\$11,998,305.00	

1. \$459,950.24 is with respect to Drug Service Purchase Order (DRSP) billed by the local distributors; \$21,374.17 on the settlement of an invoice from the Barbados Family Planning and the remaining \$20,284.34 with respect to invoices from overseas suppliers when supplies could not be sourced in the local market.

The line item under 'BDS' of \$501,608.75 represents drug purchases made by the BDS head-office to ensure a continuous supply of drugs in the BDS pharmacies in extenuating circumstances.

Table 11: Prescription Activities at the BDS Pharmacy Service for the Period April 1, 2013 to March 31, 2014

Criteria	BDS PHARMACIES														
	Branford Taitt	Edgar Cochrane	Geriatric	Winston Scott	Maurice Byer	Randal Philips	St. Andrew	Glebe	St. John	St. Joseph	St. Thomas	St. Philip Polyclinic	Eunice Gibson	St. Philip Dist Hosp	TOTAL
1. Prescriptions Filled (original & refills)															
1. SBS	68,764	47,529	4,587	111,141	64,862	70,289	4,885	59,687	22,638	7,913	4,027	57,291	55,012	2,292	580,917
2. FPS	338	387	0	1,018	359	324	0	283	176	6	1	156	217	0	3,265
3. PRIV	2,248	1,617	0	3,162	2,964	2,718	130	2,055	1,036	338	3,923	2,843	1,827	0	24,861
4. OTHER	69,262	51,371	24,689	113,668	71,566	76,574	6,866	53,333	22,643	6,796	7,328	60,879	63,337	8,370	636,682
5. DIST HOSPITAL	0	0	0	0	0	0.00	0.00	0.00	1,832.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	140,612	100,904	29,276	228,989	139,751	149,905	11,881	115,358	46,493	15,053	15,279	121,169	120,393	10,662	1,245,725
1. Number of Special Benefit Service Patients															
1. 65 yrs & Over	14,348	9,411	1,806	19,288	14,788	16,471	1,053	10,814	4,813	1,824	724	12,774	11,724	587	120,425
2. Under 16 yrs	4,362	35,105	1,471	9,965	3,470	4,670	361	3,462	1,377	331	577	3,103	2,759	673	71,686
3. Cancer	527	166	50	645	318	303	16	307	79	38	17	311	315	45	3,137
4. Diabetes	12,136	8,787	920	17,561	13,146	12,372	1,056	9,361	4,250	1,432	875	10,353	11,617	457	104,323
5. Hypertension	21,665	14,877	1,385	28,174	20,333	21,102	1,450	17,216	7,237	2,292	1,205	17,587	16,186	524	171,233
6. National Assistance	21	3	46	171	50	108	2	219	0	2	14	41	42	23	742
9. Asthma	3,144	2,691	170	4,758	2,410	3,088	246	2,175	854	151	179	2,277	2,203	45	24,391
10. Epilepsy	1,295	571	476	2,360	1,130	1,086	58	570	314	137	63	875	842	488	10,265
TOTAL	57,498	71,611	6,324	82,922	55,645	59,200	4,242	44,124	18,924	6,207	3,654	47,321	45,688	2,842	506,202
3. Payment to Treasury	\$21,131.48	\$17,781.36	\$0.00	\$38,665.66	\$28,669.76	\$26,631.70	\$1,118.78	\$19,785.36	\$9,210.00	\$2,312.51	\$354.62	\$28,243.30	\$15,438.54	\$0.00	\$210,959.12
Total receipts for the month	\$21,131.48	\$15,836.05	\$0.00	\$48,203.02	\$28,669.76	\$26,867.69	\$1,118.78	\$19,745.88	\$9,210.00	\$2,481.13	\$354.62	\$28,372.58	\$18,114.44	\$0.00	\$218,767.48

Table 12 shows that 1,244,739 prescriptions were dispensed in 2013-14 at a cost of \$11,998,305.00. This represented a 12.4% decrease in expenditure and a 3.1% increase in prescription volume over the 2012-13 fiscal year. The average cost per prescription of \$9.64 was the lowest it has been over this ten year period.

Table 12: BDS Prescription volume and Expenditure for ten Fiscal Years: 2004-05 to 2013-14

Year	Rx's	% change of Rx's Over previous Year	Expenditure (\$)	% change in Expenditure Over previous Year	\$/Rx	% change in Rx cost Over previous Year
2004-05	687,579	8%	8,262,528.00	-1%	\$12.02	-8%
2005-06	700,604	2%	8,930,806.00	8%	\$12.75	6%
2006-07	659,750	-6%	11,403,711.00	28%	\$17.28	36%
2007-08	662,677	0%	10,439,220.00	-8%	\$15.75	-9%
2008-09	731,639	10.4%	12,932,110.00	24%	\$17.68	12%
2009-10	778,267	6.4%	12,150,516.00	-6%	\$15.61	-12%
2010-11	814,400	4.6%	12,451,937.00	2%	\$15.29	-2%
2011-12	1,083,082	32.9%	11,765,288.00	-6%	\$10.86	-29%
2012-13	1,206,351	10%	13,481,501.00	13%	\$11.18	3%
2013-14	1,244,739	3.1%	11,998,305.00	-12.4%	\$9.64	-16%

Drugs used in the treatment of hypertension (40%) and diabetes (28%) (**Table 13**) are listed among the top 25 drugs dispensed in 2013-14 in the public sector. This is further supported in **Table 14** which list hypertension (34.1%) and diabetes (29.2%) at positions 1 and 2 in the top 10 therapeutic categories in the public sector.

Table 13: Top 25 Drugs by Expenditure in the Public Sector in 2013-14

Rank	Drug	Main Indication	Total Drug Volume	Total Expenditure
1.	DIAMICROM MR 60MG TAB (SER/STO) GLICLAZIDE	Diabetes	1,576,641	\$1,010,872.83
2.	DIOVAN 320MG TAB (NVS/COL) VALSARTAN	Hypertension	650,007	\$844,369.30
3.	ACCU-CHEK PERFORMA GLUC (PRI/STO) DIAGNOSTIC	Diabetes	11,260	\$758,159.66
4.	MICARDIS 80MG TAB (BOE/STO) TELMISARTAN	Hypertension	560,963	\$729,835.01
5.	DIOVAN 160MG TAB (NVS/COL) VALSARTAN	Hypertension	538,596	\$601,301.35
6.	HUMULIN 70/30 (LIL/STO)	Diabetes	22,246	\$421,491.55
7.	INDAPAMIDE 1.5MG TAB (HEA/RXP)	Hypertension	1,003,900	\$330,702.58
8.	ASPIRIN E.C. 81MG TAB (RIM/PHA)	Myocardial Infarction/Stroke	1,989,397	\$329,035.13
9.	GLYFORMIN 500MG TAB (REM/SBI) METFORMIN	Diabetes	3,466,476	\$310,354.95

Rank	Drug	Main Indication	Total Drug Volume	Total Expenditure
10.	ANDROCUR 100MG TAB (BSP/COL) CYPROTERONE	Prostate Cancer	126,329	\$302,186.28
11.	NASONEX 50MCG N SP (SCA/STO) MOMETASONE	Allergic Rhinitis	8,711	\$301,243.91
12.	DIOVAN 80MG TAB (NVS/COL) VALSARTAN	Hypertension	254,073	\$284,796.73
13.	SYMBICORT TURBU 160/4.5 INH (AZN/STO) BUDESON	Asthma	3,562	\$283,597.66
14.	NATRILIX SR 1.5MG TAB (SER/STO) INDAPAMIDE	Hypertension	638,552	\$277,420.97
15.	BAYER CONTOUR TS GLUC (BYC/AHI)	Diabetes	3,826	\$273,377.61
16.	DIOVAN 160MG TAB (NVS/COL) VALSARTAN	Hypertension	229,781	\$259,489.66
17.	CONCOR 5MG TAB (MEK/COL) BISOPROLOL	Hypertension	146,372	\$239,899.31
18.	NOVOLIN 70/30 (NOV/COL)	Diabetes	11,981	\$228,934.02
19.	DIOVAN 320MG TAB (NVS/COL) VALSARTAN	Hypertension	175,279	\$226,864.67
20.	VENTOLIN 100MCG INHR (GSK/COL) SALBUTAMOL CFC	Asthma	19,839	\$196,709.63
21.	XALATAN 0.005% EYE DR (PFI/STO) LATANOPROST	Glaucoma	4,649	\$195,222.06
22.	ACCU-CHEK ACTIVE GLUC (PRI/STO) DIAGNOSTIC B	Diabetes	2,876	\$186,098.31
23.	RISPERDAL 3MG TAB (JAC/STO) RISPERIDONE	Schizophrenia	30,444	\$182,605.24
24.	PARACETAMOL 500MG TAB (HEA/RXP)	Pain	1,699,053	\$174,011.87
25.	CONCOR 10MG TAB (MEK/COL) BISOPROLOL	Hypertension	90,439	\$171,368.54

Table 14: Top Ten Therapeutic Categories (by Expenditure) in the Public Sector in 2013-14 Fiscal Year

Therapeutic Category	Rank	Rx Vol.	Expenditure (\$)	Patient Count	% of Total Expenditure
Hypotensive Agents	1	9,620,372	\$5,401,764.35	24,259	34.1%
Anti-diabetic Agents	2	8,432,857	\$4,623,586.98	26,612	29.2%
Antipsychotic Agents	3	1,020,199	\$1,318,107.10	2,373	8.3%
Anti-asthmatic Agents	4	179,138	\$1,181,813.12	16,079	7.5%
Other NSAIDS	5	6,332,339	\$925,063.04	61,271	5.8%
Anti-glaucoma Agents	6	15,937	\$650,011.25	2,506	4.1%
Anticonvulsant Agents	7	1,087,303	\$540,472.81	2,465	3.4%
EENT Anti-Inflammatory Agents	8	16,670	\$442,795.76	8,753	2.8%
Anti-lipemic Agents	9	1,995,564	\$409,712.56	11,061	2.6%
Anti-Neoplastic Agents	10	156,897	\$350,411.45	465	2.2%
Total		28,857,276	\$15,843,738.42	155,844	

4.4.2

Public versus Private Sector Usage

Table 15 provides comparative prescription volumes and corresponding expenditures in the public and private sectors for the period under review. Public sector prescription volume showed a 33.5% increase over the private sector. Similarly, there was 11.3 % increase in expenditure for that same period. The average cost of prescriptions filled in the public was \$9.64 as compared to \$12.85 in the private. It must be noted however that the prescription volume and prescription cost will be slightly distorted due to the fact that data on the prescription volume at the Psychiatric hospital is not available for this period. Over the ten year period for which data was available, the prescription cost in the public sector was lower than that in the private; 2006-07 fiscal year was the only exception and the difference was only \$0.18.

Table 15: Total Number of Prescriptions filled and Their Expenditure in the Public and Private Sectors for Ten Fiscal Years 2004-05 to 2013-14

Year	Public Sector			Private Sector			% Difference in Rx Cost (private vs. public)
	Prescription (Rx) ^(a)	Expenditure (\$)	Cost/Rx	Rx's	Expenditure (\$)	Cost/Rx	
2004-05	687,579	8,262,528.00	\$12.02	1,113,093	23,115,488.00	\$20.77	42%
2005-06	700,604	8,930,806.00	\$12.75	1,331,537	30,540,237.00	\$22.94	44%
2006-07	659,750	11,403,711.00	\$17.28	1,846,882	31,587,931.00	\$17.10	-1%
2007-08	662,677	10,439,220.00	\$15.75	2,055,016*	36,535,775.00	\$17.78	11%
2008-09	731,639	12,932,110.00	\$17.68	N/A	36,633,590.00	N/A	N/A
2009-10	778,267	12,150,516.00	\$15.61	N/A	40,561,950.00	N/A	N/A
2010-11	814,400	12,451,937.00	\$15.29	N/A	34,574,833.00	N/A	N/A
2011-12	1,083,082	11,765,288.00	\$10.86	887,249	10,787,176.00	\$12.20	11%
2012-13	1,206,351	13,481,501.00	\$11.18	864,335	10,639,956.00	\$12.31	9%
2013-14	1,244,739	11,998,305.00	\$9.64	828,328	10,643,775	\$12.85	25%

* Estimated values

4.5

ACTIVITY 5: THE DRUG INSPECTORATE

4.5.1

Quality Assurance

Continuous efforts were made to ensure that drugs imported and sold in Barbados were manufactured in accordance with the United States Pharmacopoeia and the British Pharmacopoeia standards. During the period under review it was however difficult to receive analytical results in a timely manner on the samples submitted for testing. This was mainly due to the merge of the Caribbean Regional Drug Testing Laboratory and four other individual agencies in the region to form the Caribbean Public Health Agency (CARPHA). The logistical and other administrative resettlement issues led to bottlenecks in the processing of analytical reports. In emergency situations the analytical services of Neopharm, and Experchem Laboratories Inc., both out of Canada, had to be utilised but at a much higher cost. In 2013-14 fiscal year, 179 drug samples were tested.

4.5.4

Therapeutic Substances

In accordance with the Therapeutic Substances Act 1949, 633 licenses were issued to local pharmaceutical companies to allow them to import antibiotics and sulphonamides into the country. This was an 18% decline over 2012-13(**Table 16**).

Table 16: Therapeutic Substances Permits Issued for 2009-10 to 2013-14

Year	Permits Issued
2009-10	465
2010-11	652
2011-12	523
2012-13	771
2013-14	633

4.5.5 Importation and Exportation of Narcotic Drugs

Import and export Authorisations and Certificates were issued for the importation and exportation of narcotic and controlled substances, which fell under the purview of the 1961 Convention on Narcotic Drugs. **Table 17** gives the quantities of narcotics that were imported and exported during fiscal year 2013-14 with codeine showing the largest import followed by pethidine. In terms of quantities exported, pethidine ranks at number 1 followed by codeine.

Table 17: Import and Export Permits Issued for Narcotic Drugs for 2013-14

Narcotic	Quantities		
	Import	Export	Imported for OECS
Pethidine	5302.55 g.	5127.83 g.	1990.12g.
Morphine	2235.7 g.	442.88 g.	162.0 g.
Codeine	81143.3 g.	2581.03 g.	3376.96 g.
Fentanyl	11.822 g.	1549.5g.	
Methadone	90mgs.		
Cocaine	110mgs.		

4.5.6 Psychotropic Substances

With regards to the 1971 Convention on Psychotropic Substances during fiscal year 2013-14, **Table 18** gives the comparative quantities imported and exported for these Schedule II, III and IV Psychotropic Substances.

Table 18: Schedules II, III, and IV Psychotropic Drugs Imported and Exported

Psychotropic Substances	Schedule	Amount Imported (gm.)	Amount Re-exported(gm.)	Amount Imported for Re-export (gm.)
Methylphenidate	II	2801	682.06	87
Clobazam	IV	555	101.76	-
Diazepam	IV	2328.13	1660.34	-
Clonazepam	IV	474	35	-
Midazolam	IV	383.21	31	-
Bromazepam	IV	58.32	-	-
Phenobarbital	IV	29487.51	19195.83	-
Nitrazepam	IV	1000	16.5	-
Zolpidem	IV	612.8	60.25	-
Alprazolam	IV	231.75	37.86	-
Pentobarbital	III	4440	1010	-
Chlordiazepoxide	IV	22.25	33.82	-
Lorazepam	IV	1351	245.8	150
Dexamphetamine	II	0	0	-

4.5.7

Precursor Chemicals

The International Narcotic and Control Board (INCB) placed tighter controls on the importation and exportation of precursor chemicals. In this regard, reports were prepared and sent to the INCB on both single entity and combination precursor chemical preparations.

4.6

ACTIVITY 6: DRUG INFORMATION SERVICE

Nature and Scope:

4.6.1

Public Education Programmes

The Barbados Drug Service sponsored four public lectures (see Table 19) during the 2013-14 fiscal year. These lectures empowered the public on chronic illness and their preventative and treatment options.

Table 19: Public Lectures Held During Fiscal Year 2013-14

Date	Topic	Speaker
April 9, 2013	Prevention and Reversal of Chronic Illnesses in Barbados	Dr. Hans Diehl
August 27, 2013	Sickle Cell Disease: Complications and Their Treatment	Dr. Theresa Laurent
November 26, 2013	The Treatment of Eczema and Allergies in Barbados	Dr. Suleman Bhamjee
March 25, 2014	Chikungunya – An Emerging Disease in the Caribbean	Dr. Hanson Cummings

5.0

Resource Management

The BDS Financial Statement and Special Benefit Service expenditure for the 2013-14 fiscal year are at **Appendix A and B** respectively.

Table 20: Health Expenditure on the BDS Over Ten Years: 2004 to 2014

Year	Estimated End of Calendar Year Population**	Total Health Expenditure	Health Expenditure on BDS		
			Amount (\$)	% of Total Health Expenditure	Per Capita (\$)
2004-05	272,690	306,704,609	31,378,016	10.2%	115.07
2005-06	273,442	310,079,126	39,471,043	12.7%	144.35
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

* Provided from Draft Estimates 2012-13 fiscal year

** Provided by Barbados Statistical Services

With the continued use of the restructuring strategies which were implemented in fiscal year 2010-11, the BDS was successful in containing its expenditure at 6.6% of the total health expenditure (**Table 20**). This represented a per capita public expenditure on pharmaceutical services of \$81.59, the second lowest per capita expenditure over the ten year period.

Table 21: BDS Revised Estimates and Actual Expenditure for Fiscal Year 2012-13 and 2013-14

Budget Heads	Revised Estimates (\$)	Actual Expenditure (\$)	Revised Estimates (\$)	Actual Expenditure (\$)	% Change in Actual Expenditure
	2012-13		2013-14		
Total Personal Emoluments	5,338,429	5,282,822	5,378,072	5,184,292	-1.9
Total Goods and Services	26,362,067	25,459,511	24,232,160	23,393,782	-8.1
Total Capital	62,700	16,736	78,500	24,553	46.7
Total Expenditure	31,763,196	30,759,069	29,688,732	28,602,627	-7.0

The BDS was successful in reducing expenditure in 2013-14 fiscal year in all its budget heads except that of total capital where a 46.7% increase was seen over the 2012-13 year (**Table 21**). This increase was due to the purchase of computer equipment and furniture for the move of the BDS office to the Warrens Towers II. It must be noted however that the total expenditure was reduced by 7.0% over the previous year.

6.0 Institutional Strengthening in 2013-14 Fiscal Year

6.1 IT Strengthening through the Wide Area Network and Health Information System - The BDS continued discussions with the Director of Information Technology, Ministry of Health to bring all government pharmacies onto the Ministry of Health network. The pharmacies are not linked, each pharmacy carries its own individual system hence there is no cross checking and this can result in patients going from pharmacy to pharmacy and duplicating medication, once a valid prescription can be obtained. An online connected system would cut down on the money spent on drugs. The lack of on-line connection also means that if one pharmacy cannot supply the medication, unless they can be contacted by phone it is not always possible to know whether or not another accessible pharmacy is able to supply the same drug to the patient. This can sometimes result in patients going from pharmacy to pharmacy fruitlessly. A networked system would save both the patients time and transportation costs.

The Supply Chain Management module was purchased by the Ministry of Health as part of the Health Information System. Preliminary discussions and group meetings were convened with the vendors and IT personnel from the Ministry of Health and the BDS, to finalise the requirements and implementation logistics. It is hoped that with the implementation of this software that the BDS will be able to achieve real time dispensing in its pharmacies and that pharmacy hopping and overuse of medication

would be greatly reduced. The Wide Area Network is therefore the prerequisite for the implementation of the Supply Chain Management Module.

- 6.2 Audits** – Of the \$11,998,305 paid to local suppliers with respect to drugs and related items for the public pharmacies and \$10,643,775 paid to Private Participating Pharmacies for pharmaceutical services rendered to beneficiaries, controls and safeguards were required to ensure the maximum use of the BDS' budget.

Monthly and annual audits were carried out in both the public and private pharmacies with the necessary corrective or disciplinary action carried out with regards to reported irregularities.

- 6.2 Pharmacovigilance** - Barbados collaborated with Countries in the Region and Internationally to continue to monitor adverse drug reactions. There was sharing of information at a regional level of the Americas. The BDS continued to monitor the adverse reports and took remedial measures if and where necessary. The adverse reports received were submitted to the WHO database. Pharmacovigilance workshops were also hosted to sensitise doctors in the public and private sectors on the programme and their role in reporting on adverse drug reactions.

- 6.3 Barbados National Pharmaceutical Policy** – Meetings commenced with the Steering Committee, headed by the Chief Medical Officer, to develop action plans for the implementation of the BNPP as approved by Cabinet on November 22, 2012. The BNPP, when fully implemented will add an extra layer to the institutional strengthening platform.

Appendix A - Financial Statement 2013-14

Receipts and Payments Account for Period April 1, 2013 to March 31, 2014

<u>Receipts</u>	\$
Accountant General*	28,673,453
Recertification of Pharmacies (Private Pharmacies)	8,700
District Pharmacies (Sale of Pharmaceuticals)	230,424
Total	28,912,577

<u>Payments</u>	\$
Total Personal Emoluments	5,184,292
Travelling	53,300
Utilities	102,019
Rental of Property	31,458
Library	8,419
Supplies & Materials	12,347,042
Maintenance of Property	28,849
Operating Expenses	10,759,758
Machinery and Equipment	24,553
Furniture and Fixtures	-
Professional Services	62,938
Savings	309,949
Total	28,912,577

***Accountant General**

Personal Emoluments -	\$5,184,292
Other -	\$23,444,161
Capital -	\$45,000
Total -	\$28,673,453

Appendix B - Drug Service Expenditure and Prescription Volume

DRUG SERVICE EXPENDITURE AND PRESCRIPTION VOLUME											
YEAR	PUBLIC EXPENDITURE	SBS EXPENDITURE	TOTAL EXPENDITURE	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

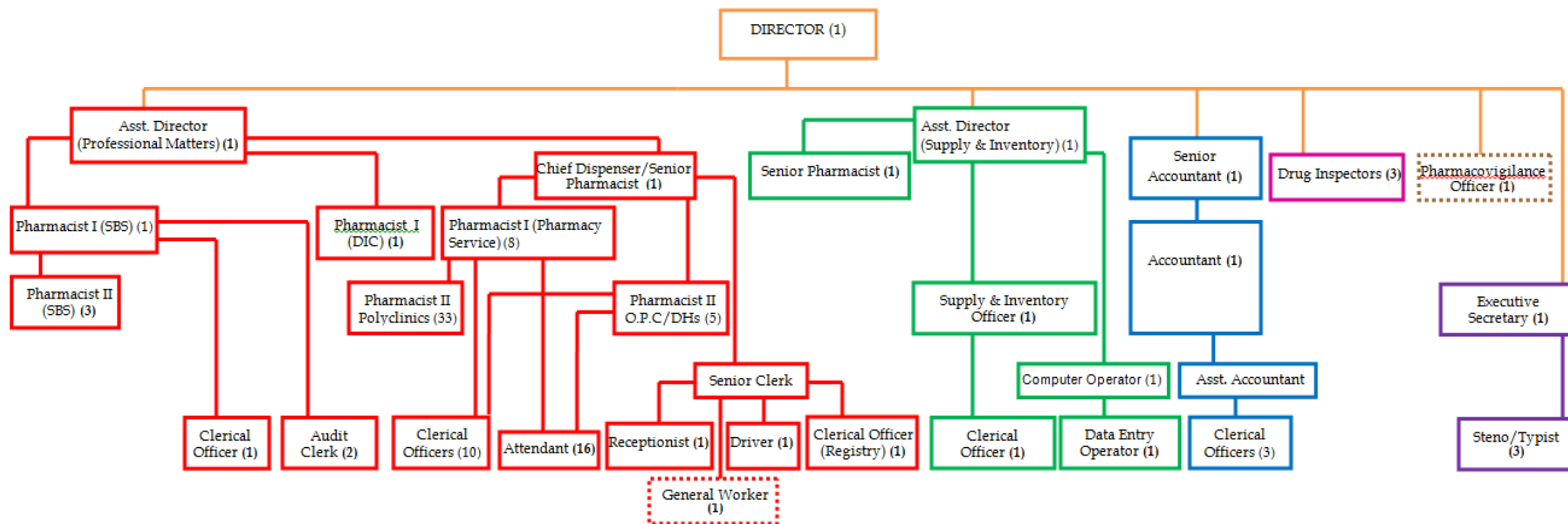
Appendix B Cont'd - Drug Service Expenditure and Prescription Volume

DRUG SERVICE EXPENDITURE AND PRESCRIPTION VOLUME											
YEAR	PUBLIC EXPENDITURE	SBS EXPENDITURE	TOTAL EXPENDITURE	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.
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

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

DRUG SERVICE EXPENDITURE AND PRESCRIPTION VOLUME											
YEAR	PUBLIC EXPENDI-TURE	SBS EXPENDI-TURE	TOTAL EXPENDI-TURE	PUBLIC PRE-SCRIPTION (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.
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
<i>Total</i>	322,554,679	444,253,536	766,808,214	21,699,416	15	1,808,288	20,280,942	22	1,690,078	42	58

Appendix C - Barbados Drug Service - Organisation Chart



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

Notes: 1. Only those posts that appear in the Civil Establishment order under the Barbados Drug Service are indicated in the Organisation Chart
 2. There are some administrative anomalies in the organization chart which are currently under review.



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Drug Information Centre - [druginfo@ drugservice.gov.bb](mailto:druginfo@drugservice.gov.bb)**

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