Annual Report

of

The Operations of The Barbados Drug Service

For Fiscal Year
April 1, 2015- March 31, 2016
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<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR(s)</td>
<td>Adverse drug reaction(s)</td>
</tr>
<tr>
<td>BDS</td>
<td>Barbados Drug Service</td>
</tr>
<tr>
<td>BNDF</td>
<td>Barbados National Drug Formulary</td>
</tr>
<tr>
<td>CARPHA</td>
<td>Caribbean Public Health Agency</td>
</tr>
<tr>
<td>CRS</td>
<td>Caribbean Regulatory System</td>
</tr>
<tr>
<td>DFC</td>
<td>Drug Formulary Committee</td>
</tr>
<tr>
<td>DFCs</td>
<td>Duty free certificates</td>
</tr>
<tr>
<td>DIC</td>
<td>Drug Information Centre</td>
</tr>
<tr>
<td>D&amp;TC</td>
<td>Drug and Therapeutics Committee</td>
</tr>
<tr>
<td>ESW</td>
<td>Electronic Single Window</td>
</tr>
<tr>
<td>ID</td>
<td>Identification card</td>
</tr>
<tr>
<td>INCB</td>
<td>International Narcotic Control Board</td>
</tr>
<tr>
<td>PV</td>
<td>Pharmacovigilance</td>
</tr>
<tr>
<td>QEH</td>
<td>Queen Elizabeth Hospital</td>
</tr>
<tr>
<td>SBS</td>
<td>Special Benefit Service</td>
</tr>
<tr>
<td>VAT</td>
<td>Value added tax</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organisation</td>
</tr>
</tbody>
</table>
The annual report of the Barbados Drug Service’s (BDS) performance during fiscal year 2015-16 is set in the context of Barbados’ national commitment to the pharmaceutical programme, being driven by its mission and vision. 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”, and its vision is, “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 region”. The efficiencies of the pharmaceutical service continues to be a national imperative driven by the multiple challenges of the increased demand, financial constraints and stock outages due to the inability of local suppliers to meet their contracted obligations. Despite these prevailing challenges the BDS maintained its efficiencies in medication success due to quality drugs, alternate drug sources and prudent financial management.

Public pharmacies are required to report monthly data on the number of prescriptions dispensed, revenue collected and drugs which are out of stock by suppliers. With respect to stock outages the local distributors are required to inform the Barbados Drug Service as soon as this information is made available to them. This would allow the BDS to put the necessary corrective measures in place in a timely manner to avoid critical stock outages. The functions of the Barbados Drug Service are broad and includes the Barbados National Drug Formulary (BNDF), the Special Benefit Service (SBS), the Barbados Drug Service Pharmacy Service, the Drug Inspectorate, Pharmacovigilance and the Drug Information Centre (DIC).

During the 2015-16 fiscal year, the BDS spent a total of approximately $20.3 million on the combined public and private drug expenditure. This was a 12% decrease over the previous fiscal year. The public service’s arm of the BDS managed 14 pharmacies, a significant portfolio that included 104 professional and support staff, at an approximate personal emoluments cost of $5.1 million. Conversely, the private sector’s portfolio incorporated 89 private pharmacies which are contracted to provide dispensing services to the BDS’ beneficiaries. This service accounted for approximately $8.7 million in expenditure.

Approximately 69,211 patients accessed care in the public sector in the period under review versus 67,040 in the private sector. These pharmaceutical services were made affordable to all Barbadians through the Maximum Price Contract tenders system and beneficiaries were given the option in their choice of accessing service in the public or private pharmacy. The key findings for fiscal year 2015-16 show an overall improvement in expenditure: 6% decline in the public sector and 19 % decline in the private sector.

**Operational Excellence**

The overall BDS expenditure decreased by 6% in 2015-16 ($26.7 million) over 2014-15 ($28.3 million). The Stakeholders’ continued support, dedication, and commitment to the BDS was met with successes in our operations. Overall the public sector spent $11.7 million on 1.1 million prescriptions which represented a 6% decrease in
expenditure and a 6% decrease in the prescription volume. Similarly, in the private sector 827,374 prescriptions were filled at a cost of $8.7 million. This was a 2% decrease in prescription volume and 19% decrease in expenditure. The 67,040 patients in the private and 69,211 patients in the public can all boast of the equity in service across both sectors and fairness to all in receiving quality drugs.

The BDS also empowered the public in good medication management through its Drug Information Centre and quarterly public lectures.

During the 2015-16 fiscal year the formulary was re-categorised into Category A, B and C drugs. Category A drugs were free of cost to all beneficiaries at point of service, Category B drugs were free at point of service to beneficiaries accessing service in the public sector only and with a prescription from a consultant or Medical Officer of Health. Category C drugs were approved for use in the private sector only, whereby patients would pay the duty free and zero rated prices. In an effort to ensure prudent management, all requests for Category B drugs within the public sector require prior approval by the Director, BDS upon submission of a Category B application form. Our focus on operational efficiencies in this regard will be compared with the non-formulary Specially Authorized Drugs (SADs) in the previous year. The approvals in 2015-16 fiscal year for the Category B drugs showed a 17% decrease when compared with the SAD approvals in 2014-15. The expenditure similarly decreased by 45% with the average cost of a Category B drug dropping to $88 when compared to the average SAD cost at $133 in 2014-15.

The overall BDS financial management was successful in reducing expenditure by 6% in the year under review versus the previous 2014-15 fiscal year.

The positive results seen in the BDS are credited to the performance of outstanding staff and other stakeholders alike. Staff was willing to go the extra mile, to ensure that the mission was realized. The BDS seeks to further enhance its service delivery environment to all its customers through staff training, and an overhaul of the selection and procurement systems.

Delivering On Our Promise
The 2015-16 fiscal report showed that the BDS continued to uphold its promise to beneficiaries in “delivering quality pharmaceuticals at an affordable price”. Of the six benefit categories, the ranking in order of prevalence in the public sector was, hypertension, diabetes, asthma, cancer, epilepsy and glaucoma. These six disease benefit categories all ranked within the top ten therapeutic categories. The ranking in the private sector was slightly different as follows: hypertension, diabetes, glaucoma, asthma, cancer, and epilepsy. Hypertension and diabetes maintained their ranking at position 1 and 2 respectively which correlates with the prevalence of the 2012-13 co-morbidity risk factors among stroke and acute Myocardial Infarction patients for the January 2012 to December 2013 Barbados National Registry Report.¹

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The Drug Formulary Committee (DFC) carried out literature reviews during their drug selection meetings and made their decisions on evidence based medicine. This resulted in the publishing of the 34th edition (April 1, 2015 – March 31, 2016) of the Barbados National Drug Formulary which listed the deletion of three drugs and addition of four.

The Supply and Inventory arm of the BDS had a challenging year in terms of maintaining continuous supplies of the 2,385 contracted drugs, but the BDS was able to meet its demands through alternative sources within accepted practices of the BDS.

The quality of the services and products offered by the BDS was maintained under the vigilant eye of the three Drug Inspectors. The 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 processing these import and export authorizations, they inspected drug manufacturing facilities, public and private pharmacies, nursing homes and pharmaceutical warehouses; all in an effort to ensure that quality is preserved within the pharmaceutical environment in Barbados.

*The Evolution Continues*

Despite the achievements and successes made in 2014-15 and the struggle to operate against a strong current of global economic pressures that put strain on how healthcare dollars are allocated and spent, the BDS continued its quest to ensure that it maintained a competitive edge in its operational and regulatory functions. It therefore sought to develop its technological infrastructure and embrace innovative data-driven decisions. Its modus operandi was to guarantee decision making based on facts and information, and that stakeholders were provided the highest level of service. The BDS was therefore committed to achieve improved efficiencies and reduced duplications in assisting in the MedData project under the Health Information System. This was to accomplish networking at all government pharmacies through the Ministry of Health network. The department also continued its assistance in the development of the Electronic Single window for Barbados under the Ministry of Finance. Though these projects were not completed in the reporting year, the process was begun, and the end in sight was the impetus to propel the process forward.

2.0

*Introduction*

The Barbados Drug Service is a department within the Ministry of Health with the responsibility for the pharmaceutical programme. It carries out regulatory and operational functions in pharmaceutical delivery service in Barbados. It partners with patients and other stakeholders to attain many of Barbados’ most pressing and evolving pharmaceutical needs. The service and product solutions are focused on drug selection, procurement, quality assurance, rational use of medicines, surveillance of drug use and pharmaceutical education. The BDS with 104-member staff complement comprised of professional and support staff spans across the administrative headquarters and 14 district pharmacies. The BDS fulfilled its mission, “to provide quality pharmaceuticals to all residents of Barbados at an affordable price and to serve the beneficiaries in a courteous and efficient manner” by advancing the quality, accessibility, safety and affordability of pharmaceutical care in Barbados.

The BDS maintained its operations with a resulting 6% savings due to operational efficiencies in the 2015-16 Revised Estimates versus the 2014-15 Actual Expenditure, it was essential that the Barbados Drug Service maintained achievements under three
strategic objectives, namely:

(i) to ensure access of affordable, safe, and quality drugs in all government healthcare institutions and the private participating pharmacies;

(ii) to maintain and update the Barbados National Drug Formulary through ongoing formulary reviews and the rational us of medicines; and

(iii) to ensure quality and safety of drugs through pharmacovigilance and appropriate regulatory frameworks such as testing, inspection, monitoring, and surveillance.

The BDS provides a wide selection of pharmaceuticals that are used in treating the most common disease conditions in Barbados under the Supply and Inventory Service. Additionally, it offers other services that lend to the total improved pharmaceutical environment. The services offered by the BDS are as follows

(i) the Barbados National Drug Formulary (BNDF),
(ii) the Supply & Inventory Service,
(iii) the Special Benefit Service (SBS),
(iv) the Barbados Drug Service Pharmacy Service,
(v) the Drug Inspectorate,
(vi) the Drug Information Centre (DIC), and
(vii) Pharmacovigilance

3.0 Historical Information

The Barbados Drug Service was established in April 1980 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. Its operations were governed by the Drug Service Act 1980-58 and the Financial Administration and Audit (Drug Service) Rules, 1980. The Drug Service (Special Benefit Service) Regulations, 1986 was later added with the establishment of the Special Benefit Service in 1981. The BDS’ tenets were 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.”

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.”

Historical evidence has shown that in sticking to our mandate over the years, we were able to achieve operational excellence and deliver on our promises. Our past lessons and milestones can only serve to strengthen our tomorrow.


3.1 MILESTONES

- **April 1980** - BDS established under the Drug Service Act
- **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.
- **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

The category of BDS beneficiaries evolved over the years. The current BDS’ beneficiaries as listed in Table 1 include persons living with diabetes, hypertension, cancer, asthma, glaucoma and epilepsy who receive formulary drugs used in the treatment of these illnesses free of cost at point of service in both the public and private pharmacies. The drug costs for prescriptions filled in private pharmacies are reimbursed to the Private Participating Pharmacies (PPP) by the BDS but the patients pay the dispensing fee which is calculated on the cost of the drug. No dispensing fee is charged to patients in the public sector.
Table 1: Beneficiaries of the Barbados Drug Service

<table>
<thead>
<tr>
<th>Groups Currently Covered (Beneficiaries)</th>
<th>Provision of Drugs And Related Items</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public Sector</td>
</tr>
<tr>
<td>1. Persons 65 years and over</td>
<td>Free drug cost and no added</td>
</tr>
<tr>
<td></td>
<td>added dispensing fee</td>
</tr>
<tr>
<td>2. Children under 16 years of age</td>
<td>Free drug cost and no added</td>
</tr>
<tr>
<td></td>
<td>added dispensing fee</td>
</tr>
<tr>
<td>3. Persons who receive prescribed</td>
<td>Free drug cost and no added</td>
</tr>
<tr>
<td>formulary drugs for the treatment of</td>
<td>added dispensing fee</td>
</tr>
<tr>
<td>Hypertension, Diabetes, Cancer,</td>
<td></td>
</tr>
<tr>
<td>Epilepsy, Glaucoma and Asthma</td>
<td></td>
</tr>
<tr>
<td>4. Persons between 16 and 64 who</td>
<td>Free drug cost and no added</td>
</tr>
<tr>
<td>are not included in 3 above</td>
<td>added dispensing fee</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* A dispensing fee was charged to patients from April 1, 2011
** Patient pays a reduced cost free of duties and taxes

4.0 ACTIVITIES
During the 2015-16 fiscal year, the Barbados Drug Service continued to meet its strategic objectives through seven operational and regulatory activities. The activities spanned the public and private sectors and provided an enabling environment for service delivery to be optimally effective and efficient.

BDS ACTIVITIES
(1) The Barbados National Drug (BNDF)
(2) The Supply and Inventory Service
(3) The Special Benefit Service (SBS)
(4) The Barbados Drug Service Pharmacy Service
(5) The Drug Inspectorate; and
(6) The Drug Information Centre (DIC)
(7) Pharmacovigilance

4.1 ACTIVITY 1: BARBADOS NATIONAL DRUG FORMULARY
The Drug Formulary Committee made recommendations to the Minister of Health for the introduction of Categories A, B and C drugs into the 34th edition of the Barbados National Drug Formulary. The chemical moieties recommended are as follows:
- Category A drugs: 943
- Category B drugs: 866 and
- Category C drugs: 1,029.

Approval was given for the formulary to be recategorised as follows:

Category A Drugs: Drugs are made available “free of cost” at point of service to all beneficiaries (Barbadian Citizens and Permanent Residents) upon presentation of the approved identification.

Category B Drugs: Drugs are made available to all Barbadian Citizens and Permanent Residents “free of cost” at the point of service in
the public sector, with an approved Category B application form, and will be paid for in the private sector.

Category C Drugs: Drugs in this category are purchased by all patients in the private sector at subsidized cost through the VAT free and duty free concessions. These drugs are not stocked in the public sector.

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 34th edition of the BNDF through the Drug Service (Barbados National Drug Formulary) (Approval) Order, 2015.

During the year under review the Minister of Health approved the following recommendations submitted by the Drug Formulary Committee with respect to four (4) additions to, and three (3) deletions from the Barbados National Drug Formulary.

**Drugs Added**
- Avamys 27.5 mcg nasal Inhaler
- Brinzolamide 1% Eye drop
- Dorzolamide 2% Eye drop
- Zopiclone 7.5mg Tablet

**Drugs Deleted**
- Ketoconazole oral
- Salmeterol Xinafoate inhaler
- Nasonex nasal spray

The BDS printed and distributed fifteen hundred copies of the 34th edition of the BNDF. Complimentary copies were given to medical, dental and pharmacy practitioners; medical and pharmacy students; and the Chief Executive Officer, Queen Elizabeth Hospital for placement on each ward.

4.1.2 **CATEGORY B DRUGS**

1. Patients can only benefit from these drugs after the Medical Officer of Health in the respective polyclinic or outpatient clinic or Consultant in the Queen Elizabeth Hospital, Geriatric and District Hospitals, or Psychiatric Hospital request the drug through the Chairman, Drug & Therapeutics Committee, QEH or Director, BDS. Once approval is given the Category B drug is dispensed.

2. Category B drugs will be made available to all Barbadian Citizens and Permanent Residents “free of cost” at the point of service in the public sector and will be paid for in the private sector.

3. Public sector patients will be able to access Category B drugs by presenting a prescription signed or countersigned by a Consultant or Medical Officer of Health and approval from the D&TC, QEH or DBDS. Beneficiaries must also
present one of the approved forms of identification:

(i) Barbados Identification Card (ID) which identifies the bearer as “Barbadian”;
(ii) Barbados Passport with the Barbados National Registration number;
(iii) Barbados Identification Card plus a passport of citizenship with the stamp from the Barbados Immigration Department that reads: "I hereby certify that the holder is a Permanent Resident of Barbados”, or;
(iv) Barbados Identification Card plus a Permanent Resident's certificate issued by the Immigration Department."

The Specially Authorised Drugs were replaced with the Category B drugs in the year under review and they accounted for 1% or $124,943.90 of the BDS’ budget during this period. This amount spent on these Category B drugs represented a 45% reduction over the amount spent on supplying SADs in the previous year.

Table 2: SAD Expenditure versus Public Sector Drug Expenditure for the 2006 - 2016 Fiscal Years

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Drug Expenditure in Public Sector based on drugs purchased</th>
<th>Specially Authorised Drugs/ Category B Drugs**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year</td>
<td>Approvals</td>
</tr>
<tr>
<td>2006-07</td>
<td>$11,403,711.00</td>
<td>608</td>
</tr>
<tr>
<td>2007-08</td>
<td>$10,439,220.00</td>
<td>715</td>
</tr>
<tr>
<td>2008-09</td>
<td>$12,932,110.00</td>
<td>955</td>
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<tr>
<td>2009-10*</td>
<td>$12,150,516.00</td>
<td>1,426</td>
</tr>
<tr>
<td>2010-11</td>
<td>$12,451,937.00</td>
<td>982</td>
</tr>
<tr>
<td>2011-12</td>
<td>$11,765,288.00</td>
<td>1,016</td>
</tr>
<tr>
<td>2012-13</td>
<td>$13,481,501.00</td>
<td>1,183</td>
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<td>2013-14</td>
<td>$11,998,305.00</td>
<td>1,796</td>
</tr>
<tr>
<td>2014-15</td>
<td>$12,444,809.00</td>
<td>1,708</td>
</tr>
<tr>
<td>2015-16</td>
<td>$11,662,572.00</td>
<td>1,424</td>
</tr>
</tbody>
</table>

* Tamiflu® was purchased for the H1N1 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 2015-16 fiscal year continued to be a challenging one in terms of maintaining a continuous supply of all 2,838 products which were contracted (Table 3). This represents 717 chemical moieties distributed in 1,436 drug profiles. The distribution of the products into the formulary Categories A, B and C is as recommended above by the Drug Formulary Committee. At the end of the contract period there were only 2,465 products contracted, due to several contractual changes including the inability of local distributors to supply the contracted items. This was either due to manufacturing challenges from principals or too small a quota for feasible supplies.

Table 3: Number of Drugs Contracted for the Five Year period 2010-2016

12
The 173 products added to the contract represent items that were already contracted but which the manufacturers opted to share the distributorship with additional local agents. The 260 deletions were a result of items being awarded but for which no Duty Free Certificates were processed within 6 months of the contract i.e. the supplier did not fulfill the contract.

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

Table 4 shows the number and value of the DFCs processed in the 2015-16 fiscal year by local agents. The total value of the 8,700 certificates processed was $63,453,382; non contract DFCs contributed $10,298,972 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 DFC may also be issued for an item which was sourced by BDS as a replacement for a contracted item.

Table 4: Number and Value of Duty Free Certificates Processed in 2015-16 vs. 2014-15
Local Agent | Number of DFC Items Processed | Value of Contracted DFCs ($) | Value of Non Contracted DFCs ($) |
--- | --- | --- | --- |
LAIN TRADING | 4 | 13,040.67 | N/A | 7,869.77 | N/A |
MASSY DISTRIBUTION (BDOS) LTD | 845 | 3,272,532.52 | 2,093,874 | 29,372.00 | 22,223 |
PHARMACY SALES CARIBBEAN | 484 | 3,472,184.40 | 1,400,365 | 4,885,065.64 | 4,470,466 |
RX PRO INC | 120 | 1,412,936.92 | 757,257 | N/A | N/A |
**Total** | **8,700** | **68,453,382.12** | **51,050,612** | **10,298,971.64** | **8,069,725** |

The total cost of medicines purchased in the public sector in the period under review was $10,996,658. The highest expenditure went to Collins Limited at $5.2 Million, followed by BrydenStokes Ltd. at $3 Million and then Armstrong Health Care Inc. at $1 Million. Island Medical Supplies Inc. was the lowest at $2,161 in BDS sales.

**Table 5: Cost of Medicines Purchased from Supplier in Fiscal Year 2015-16**

<table>
<thead>
<tr>
<th>Local Supplier</th>
<th>Total Amount Purchased</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.A. Laquis (Barbados) Ltd.</td>
<td>$98,264.33</td>
</tr>
<tr>
<td>All Health Inc.</td>
<td>$19,927.54</td>
</tr>
<tr>
<td>Armstrong Health Care Inc</td>
<td>$1,070,259.65</td>
</tr>
<tr>
<td>Barbados Family Planning Association</td>
<td>$36,200.00</td>
</tr>
<tr>
<td>Biokal Ltd.</td>
<td>$22,837.47</td>
</tr>
<tr>
<td>Bryden Stokes Ltd.</td>
<td>$2,965,509.98</td>
</tr>
<tr>
<td>BW (2011) Limited</td>
<td>$4,228.46</td>
</tr>
<tr>
<td>Collins Ltd</td>
<td>$5,192,275.14</td>
</tr>
<tr>
<td>Headley's Customs Brokers</td>
<td>$1,104.76*</td>
</tr>
<tr>
<td>Intercontinental Pharma Inc.</td>
<td>$75,802.60</td>
</tr>
<tr>
<td>Island Medical Supplies Inc.</td>
<td>$2,161.04</td>
</tr>
<tr>
<td>Massy Distribution (Barbados) Ltd.</td>
<td>$425,437.55</td>
</tr>
<tr>
<td>Pharmacy Sales Caribbean</td>
<td>$393,004.29</td>
</tr>
<tr>
<td>Rx Pro Inc.</td>
<td>$678,517.87</td>
</tr>
<tr>
<td>West Indies Rum Distillery</td>
<td>$11,127.09</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$10,996,657.77</strong></td>
</tr>
</tbody>
</table>

* Fee paid to the Barbados Family Planning for the clearing of imported contraceptives on behalf of the BDS

### 4.3 Activity 3: The Special Benefit Service

#### 4.3.1 Beneficiaries

Approximately 67,000 beneficiaries filled 830,000 prescriptions at 89 Private Participating Pharmacies for a reimbursable value of $8.7 million through the Special Benefit Service for the year April 1, 2015 to March 31, 2016. Beneficiaries include the following:

1. Persons 65 years of age and over;
2. Children under 16 years of age;
3. Beneficiaries, of any age, who receive prescribed Formulary Drugs for the treatment of hypertension, diabetes, cancer, asthma, epilepsy, and/or glaucoma.
Table 6: Prescription Activity by Age Category in the Private Sector for the 2015-16 Fiscal Year

<table>
<thead>
<tr>
<th>Age Category</th>
<th>Number of Patients</th>
<th>Prescription Volume</th>
<th>Expenditure ($)</th>
<th>Avg. Cost/Prescription ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 years and over</td>
<td>25,007</td>
<td>511,478</td>
<td>5,287,270</td>
<td>10.34</td>
</tr>
<tr>
<td>16-64 years*</td>
<td>24,617</td>
<td>261,587</td>
<td>2,977,791</td>
<td>11.38</td>
</tr>
<tr>
<td>Under 16 years</td>
<td>17,416</td>
<td>54,309</td>
<td>404,092</td>
<td>7.44</td>
</tr>
<tr>
<td>Total SBS Patients</td>
<td>67,040</td>
<td>827,374</td>
<td>8,669,153</td>
<td>11.35</td>
</tr>
</tbody>
</table>

* Estimated data for the patients who received drugs in the disease-related benefit categories

Tables 6 and 7 shows that the highest expenditure, prescription volume and patient count was in the 65 years and over benefit category. In the reporting period, approximately $5.3 million was reimbursed to the Private Participating Pharmacies for dispensing 511,478 prescriptions to twenty five thousand and seven patients in this age category. As to be expected, this age group has been consistent in having the highest prescription volume and expenditure over the years. The 16-64 age group follows closely in patient count with just under twenty five thousand patients. The prescription volume for this age category was however 50% of that recorded in the higher age category; with approximately two hundred and sixty-two thousand prescriptions (32% of the total prescription count) dispensed for a cost of $3 million giving this group a higher average prescription cost of $11.38 as against $10.34 in the 65 years and over bracket.

Table 7: Analysis of Age Categories in SBS

<table>
<thead>
<tr>
<th>Age Category</th>
<th>Percentage of Total Patients</th>
<th>Percentage of Total Prescriptions</th>
<th>Percentage of Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 years and over</td>
<td>37%</td>
<td>62%</td>
<td>61%</td>
</tr>
<tr>
<td>16-64 years*</td>
<td>37%</td>
<td>32%</td>
<td>34%</td>
</tr>
<tr>
<td>Under 16 years</td>
<td>26%</td>
<td>7%</td>
<td>5%</td>
</tr>
</tbody>
</table>

* Estimated data for the patients who received drugs in the disease-related benefit categories

In the benefit categories listed in Tables 8 and 9, hypertension accounts for the largest prescription volume and expenditure (44% and 45% respectively) as well as the highest patient count; diabetes is in second place in prescription volume and expenditure (17% and 24% respectively). Glaucoma continues to be a high expenditure category with $1.5 million being reimbursed in the period under review and at an average prescription cost of $22.35 against $10.75 and $14.33 for hypertension and diabetes respectively. Similarly, due to the high-priced drugs used in the treatment of cancer, it has the highest average prescription price of $49.00.

In summary, the benefit categories represent only 74% of the prescription volume submitted to SBS but account for 98% of the SBS expenditure.

Table 8: Prescription Activity by Benefit Category in the Private Sector for the 2015-16 Fiscal Year


<table>
<thead>
<tr>
<th>Benefit Category</th>
<th>Number of Patients</th>
<th>Prescription Volume</th>
<th>Expenditure ($)</th>
<th>Average Cost per Prescription</th>
<th>Average Cost per Patient per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>32,276</td>
<td>363,615</td>
<td>3,909,386</td>
<td>$10.75</td>
<td>$121.12</td>
</tr>
<tr>
<td>Diabetes</td>
<td>14,190</td>
<td>143,949</td>
<td>2,063,369</td>
<td>$14.33</td>
<td>$145.41</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>6,543</td>
<td>66,737</td>
<td>1,491,619</td>
<td>$22.35</td>
<td>$227.97</td>
</tr>
<tr>
<td>Asthma</td>
<td>9,000</td>
<td>24,831</td>
<td>513,129</td>
<td>$20.66</td>
<td>$57.01</td>
</tr>
<tr>
<td>Cancer</td>
<td>1,040</td>
<td>5,837</td>
<td>286,025</td>
<td>$49.00</td>
<td>$275.02</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>2,107</td>
<td>10,403</td>
<td>270,775</td>
<td>$26.03</td>
<td>$128.51</td>
</tr>
<tr>
<td>All Other</td>
<td>37,130</td>
<td>212,003</td>
<td>134,850</td>
<td>$0.64</td>
<td>$3.63</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>67,040</strong></td>
<td><strong>827,374</strong></td>
<td><strong>8,669,153</strong></td>
<td><strong>$11.35</strong></td>
<td><strong>$140.13</strong></td>
</tr>
</tbody>
</table>

N.B. Patients could be counted in more than one category because a patient may be hypertensive and diabetic as well as a 65 or over and a under 16 receiving non-benefit medication.

Table 9: Benefit Categories as a Percentage of Total Expenditure & Prescription Count

<table>
<thead>
<tr>
<th>Benefit Category</th>
<th>Percentage of Prescriptions</th>
<th>Percentage of Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>44%</td>
<td>45%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>17%</td>
<td>24%</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>8%</td>
<td>17%</td>
</tr>
<tr>
<td>Asthma</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td>Cancer</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>All Other</td>
<td>26%</td>
<td>2%</td>
</tr>
</tbody>
</table>

4.3.2 Private Participating Pharmacies (PPP)
Eighty-nine (89) Private Participating Pharmacies (PPP) were contracted to provide Special Benefit Service to the BDS’ beneficiaries in the private sector during the year under review.

PPP which withdrew from the SBS during the reporting period 2015-16
- Friendship pharmacy
- K.E. Prescriptions Services
- Genucare pharmacy
- Multimed pharmacy

PPP which joined the SBS during the reporting Period 2015-16
- Unique pharmacy
- Total Care pharmacy
- Medshop pharmacy
- Neighbourhood Care pharmacy
- Jillandee HLP
- Roundhay pharmacy

4.3.3 Usage of the Special Benefit Service
During the reporting period, a total of 67,040 patients received 827,374 prescriptions from the Private Participating Pharmacies (PPP) through the SBS programme at a cost of $8,669,153 (See Table 8). The cost paid to the private pharmacies relates only to the
drug cost because from the 2011-12 fiscal year patients paid the dispensing fee, as calculated on the prescription pricing formula in Table 10.

Table 10: Prescription Pricing Formula

<table>
<thead>
<tr>
<th>Cost of Drug to Pharmacy</th>
<th>Dispensing Fee to be Paid by the Beneficiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0 - $2.00</td>
<td>$5.00 minus Drug Cost</td>
</tr>
<tr>
<td>$2.01 - $10.00</td>
<td>Cost plus $5.00</td>
</tr>
<tr>
<td>$10.01 - $20.00</td>
<td>Cost plus $7.00</td>
</tr>
<tr>
<td>$20.01 - $40.00</td>
<td>Cost plus $12.00</td>
</tr>
<tr>
<td>Over $40.00</td>
<td>Cost plus 30%</td>
</tr>
</tbody>
</table>

The Special Benefit Service expenditure continues to decline since the restructuring in 2011. The first 4 years after the restructuring it stood at approximately $11 Million and in the year under review it is at approximately $9 million as shown in Table 11.

Table 11: SBS Percentage Changes in Prescription Volume and Expenditure

<table>
<thead>
<tr>
<th>Year</th>
<th>Prescription (Rx) Volume</th>
<th>Expenditure ($)</th>
<th>% Change in Expenditure</th>
<th>% Change in Rx Volume</th>
<th>$/Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-07</td>
<td>1,846,882</td>
<td>31,587,931</td>
<td>3.43%</td>
<td>38.7%</td>
<td>$17.10</td>
</tr>
<tr>
<td>2007-08</td>
<td>2,055,016</td>
<td>36,535,775</td>
<td>15.66%</td>
<td>11.27%</td>
<td>$17.78</td>
</tr>
<tr>
<td>2008-09</td>
<td>N/A</td>
<td>36,633,590</td>
<td>0.27%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2009-10</td>
<td>N/A</td>
<td>40,561,950</td>
<td>10.72%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2010-11</td>
<td>N/A</td>
<td>34,574,833</td>
<td>-14.76%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2011-12</td>
<td>879,104</td>
<td>10,787,176</td>
<td>-68.80%</td>
<td>N/A</td>
<td>$12.27</td>
</tr>
<tr>
<td>2012-13</td>
<td>864,335</td>
<td>10,639,956</td>
<td>-1.36%</td>
<td>N/A</td>
<td>$12.31</td>
</tr>
<tr>
<td>2013-14</td>
<td>828,328</td>
<td>10,643,775</td>
<td>0.04%</td>
<td>-1.17%</td>
<td>$12.85</td>
</tr>
<tr>
<td>2014-15</td>
<td>841,221</td>
<td>10,619,933</td>
<td>-0.22%</td>
<td>1.56%</td>
<td>$12.62</td>
</tr>
<tr>
<td>2015-16</td>
<td>827,374</td>
<td>8,669,153</td>
<td>-18.37%</td>
<td>-1.65%</td>
<td>$10.48</td>
</tr>
</tbody>
</table>

* Estimated Value

Table 12: Top 25 Drugs Dispensed in the Private Sector

<table>
<thead>
<tr>
<th>RANK</th>
<th>ACTIVE INGREDIENT</th>
<th>MAIN INDICATION</th>
<th>TOTAL COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Valsartan</td>
<td>Hypertension</td>
<td>$1,193,782.24</td>
</tr>
<tr>
<td>2.</td>
<td>Blood Glucose Test</td>
<td>Diabetes</td>
<td>$886,561.26</td>
</tr>
<tr>
<td>3.</td>
<td>Gliclazide</td>
<td>Diabetes</td>
<td>$841,925.07</td>
</tr>
<tr>
<td>4.</td>
<td>Latanoprost</td>
<td>Glaucoma</td>
<td>$746,545.59</td>
</tr>
<tr>
<td>5.</td>
<td>Cyproterone</td>
<td>Antineoplastic</td>
<td>$487,636.03</td>
</tr>
<tr>
<td>6.</td>
<td>Telmisartan</td>
<td>Hypertension</td>
<td>$474,606.44</td>
</tr>
<tr>
<td>7.</td>
<td>Valsartan/HCTZ</td>
<td>Hypertension</td>
<td>$412,260.56</td>
</tr>
<tr>
<td>8.</td>
<td>Brimonidine</td>
<td>Glaucoma</td>
<td>$399,725.50</td>
</tr>
<tr>
<td>9.</td>
<td>Telmisartan/HCTZ</td>
<td>Hypertension</td>
<td>$392,561.90</td>
</tr>
<tr>
<td>10.</td>
<td>Indapamide</td>
<td>Hypertension</td>
<td>$355,975.97</td>
</tr>
<tr>
<td>11.</td>
<td>Dorzolamide/Timolol</td>
<td>Glaucoma</td>
<td>$310,529.00</td>
</tr>
<tr>
<td>12.</td>
<td>Travoprost</td>
<td>Glaucoma</td>
<td>$301,797.97</td>
</tr>
</tbody>
</table>
Table 12 shows the Top 25 drugs, by expenditure, reimbursed by BDS to the private participating pharmacies. These drugs represent 98.54% of the total expenditure paid to the private participating pharmacies for 2015-16 fiscal year and they are all from the benefit categories, with the exception of atorvastatin, for the treatment of cholesterol, which falls at position 25.

### Activity 4: The BDS Pharmacy Service

#### BDS Public Sector Pharmacy Service

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

#### Table 13: Analysis of Public Sector Prescriptions by Age for 2015-16

<table>
<thead>
<tr>
<th>Age Category</th>
<th>Patients*</th>
<th>Prescription Volume*</th>
<th>Expenditure*</th>
<th>Avg. Cost/Prescription</th>
<th>Average Cost /Patient/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 years &amp; Over</td>
<td>15,776</td>
<td>527,464</td>
<td>$4,533,352</td>
<td>$8.59</td>
<td>$287.36</td>
</tr>
<tr>
<td>Under 16 years</td>
<td>12,542</td>
<td>55,786</td>
<td>$327,331</td>
<td>$5.87</td>
<td>$26.10</td>
</tr>
<tr>
<td>16-64 years</td>
<td>37,075</td>
<td>475,936</td>
<td>$4,181,318</td>
<td>$8.79</td>
<td>$112.78</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>69,211</strong></td>
<td><strong>1,120,971</strong></td>
<td><strong>$11,662,572</strong></td>
<td><strong>$910.40</strong></td>
<td><strong>$168.51</strong></td>
</tr>
</tbody>
</table>

* The difference (3,818 patients, 61,785 prescriptions and $2,620,571) represents those patients for whom there is no recorded date of birth e.g., patients in the District Hospitals, children under 6 weeks old and non-nationals for whom system-generated temporary registrations are created.

#### Table 14: Analysis of Age Categories in Public Sector Patients

<table>
<thead>
<tr>
<th>Age Category</th>
<th>Percentage of Patients</th>
<th>Percentage of Prescriptions</th>
<th>Percentage of Cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 years and over</td>
<td>23%</td>
<td>47%</td>
<td>39%</td>
<td></td>
</tr>
</tbody>
</table>
As can be seen in Tables 13 and 14 the largest expenditure within the public sector for fiscal year 2015-16 is in the over 65 year group at 39%, followed closely by the 16-64 year group at 36%. However, the majority of patients (54%) are within the 16-64 age group, compared to 23% in the 65 years and over group. The under 16 years group represents only 18% of the patients seen in the public sector.

Table 15: Prescription Activity by Benefit Category in Public Sector

<table>
<thead>
<tr>
<th>Disease Category</th>
<th>Patient count</th>
<th>Rx count</th>
<th>Cost</th>
<th>Cost/Prescription</th>
<th>Cost per patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer</td>
<td>522</td>
<td>4,965</td>
<td>495,610.79</td>
<td>99.82</td>
<td>949.45</td>
</tr>
<tr>
<td>Diabetes</td>
<td>12,409</td>
<td>167,492</td>
<td>2,357,608.32</td>
<td>14.08</td>
<td>189.99</td>
</tr>
<tr>
<td>Hypertension</td>
<td>24,305</td>
<td>352,491</td>
<td>3,201,551.71</td>
<td>9.08</td>
<td>131.72</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>1,783</td>
<td>14,872</td>
<td>289,632.23</td>
<td>19.48</td>
<td>162.44</td>
</tr>
<tr>
<td>Asthma</td>
<td>8,701</td>
<td>37,412</td>
<td>576,982.41</td>
<td>15.42</td>
<td>66.31</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>2,501</td>
<td>19,084</td>
<td>444,206.16</td>
<td>23.28</td>
<td>177.61</td>
</tr>
</tbody>
</table>

Tables 15 and 16 show that hypertension has the greatest patient count, prescription count and expenditure in the benefit categories. These represent 35.1%, 31.5% and 30.9% of the totals respectively. Despite the fact that it has the largest numbers, the cost per prescription for hypertension is the lowest at $9.08, compared to $14.08 for diabetes. The highest medication cost per patient is that used in the treatment of cancer at $99.82 per prescription. This is due to the high unit costs for these anti-neoplastic medicines.

Table 16: Benefit Categories as a Percentage of Total Expenditure

<table>
<thead>
<tr>
<th>Disease Category</th>
<th>Percentage by Patient Count</th>
<th>Percentage of Prescriptions</th>
<th>Percentage of Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer</td>
<td>0.8%</td>
<td>0.4%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>17.9%</td>
<td>14.9%</td>
<td>22.8%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>35.1%</td>
<td>31.5%</td>
<td>30.9%</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>2.6%</td>
<td>1.3%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Asthma</td>
<td>12.6%</td>
<td>3.3%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>3.6%</td>
<td>1.7%</td>
<td>4.3%</td>
</tr>
</tbody>
</table>

Table 17: Prescription Count at BDS Pharmacies in 2015-16

<table>
<thead>
<tr>
<th>PHARMACY NAME</th>
<th>PRESCRIPTION COUNT</th>
<th>COST OF DRUGS DISPENSED ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Branford Taitt Polyclinic</td>
<td>127,843</td>
<td>$1,161,098.98</td>
</tr>
<tr>
<td>2. David Thompson Health &amp; Social Services Complex</td>
<td>42,051</td>
<td>$381,046.12</td>
</tr>
<tr>
<td>3. Edgar Cochrane Polyclinic</td>
<td>84,645</td>
<td>$750,015.23</td>
</tr>
<tr>
<td>4. Eunice Gibson Polyclinic</td>
<td>94,568</td>
<td>$986,541.24</td>
</tr>
<tr>
<td>5. Geriatric Hospital</td>
<td>31,204</td>
<td>$265,387.28</td>
</tr>
<tr>
<td>6. Glebe Polyclinic</td>
<td>101,637</td>
<td>$1,005,463.56</td>
</tr>
<tr>
<td>7. Maurice Byer Polyclinic</td>
<td>122,822</td>
<td>$1,228,169.49</td>
</tr>
<tr>
<td>8. Randal Phillips Polyclinic</td>
<td>140,525</td>
<td>$1,336,361.59</td>
</tr>
<tr>
<td>9. St. Andrew Out-Patient Clinic</td>
<td>11,250</td>
<td>$104,730.83</td>
</tr>
<tr>
<td>PHARMACY NAME</td>
<td>PRESCRIPTION COUNT</td>
<td>COST OF DRUGS DISPENSED ($)</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>--------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>10. St. Joseph Out-Patient Clinic</td>
<td>10,327</td>
<td>$100,733.69</td>
</tr>
<tr>
<td>11. St. Philip District Hospital</td>
<td>10,974</td>
<td>$95,807.34</td>
</tr>
<tr>
<td>12. St. Philip Polyclinic</td>
<td>115,906</td>
<td>$1,039,042.65</td>
</tr>
<tr>
<td>13. St. Thomas Out-Patient Clinic</td>
<td>11,020</td>
<td>$108,278.70</td>
</tr>
<tr>
<td>14. Winston Scott Polyclinic</td>
<td>173,523</td>
<td>$1,609,353.14</td>
</tr>
<tr>
<td>15. Psychiatric Hospital</td>
<td>42,676</td>
<td>$1,490,542.15</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,120,971</td>
<td>$11,662,572.00</td>
</tr>
</tbody>
</table>

Of the twelve BDS pharmacies which provide pharmaceutical service to the general public, Winston Scott Polyclinic Pharmacy had the highest prescription volume and drug expenditure followed by Randal Phillips, Branford Taitt and Maurice Byer polyclinic pharmacies, in declining order. These drug expenditures were all in excess of $1 million for the 2015-16 financial year. These four pharmacies all offer extended-hour service ranging from 6:30 p.m. at Branford Taitt, 8:30 p.m. at Maurice Byer and Randal Phillips and 10:00 p.m. at Winston Scott Polyclinic. The pharmacies at the St. Andrew and St. Thomas Out-Patient clinics which provide 2-day & 3-day service respectively have the lowest ranking as detailed in Table 17. The pharmacies at the Geriatric and St. Philip District Hospitals cater to in-patient and staff prescriptions only.

It should be noted that the cost of drugs for the Psychiatric Hospital is included here because their budget for pharmaceuticals remains under the BDS’ item 210 - Supplies & Material even though BDS does not have administrative responsibility for that pharmacy. The cost of drugs dispensed at the Psychiatric Hospital pharmacy is over $1 million annually with the prescription count under 43,000. This compares to the prescription volume at the David Thompson Health & Social Services Complex but with an expenditure of about $1 million less. This anomaly can be attributed to one of two main factors, either (i) the majority of the medication distributed from the pharmacy is bulk stock to the nurses who in turn dispense it in the community patients and without the level of accountability of stock as would be used in the dispensing pharmacy module; and (ii) many of the newer anti-psychotic preparations are costlier than other formulation preparations listed in the Barbados National Drug Formulary. Table 18 bears out this position whereby anti-psychotic drugs occupy 4 of the top 25 places with a total cost of approximately $850,300 even though it is not one of the benefit categories.

**Collection of Revenue and Overall Expenditure**

The revenue outlined in Table 18 is collected at the 12 BDS public pharmacies as explained above.

<table>
<thead>
<tr>
<th>Pharmacy</th>
<th>Revenue Collected 2015-16 ($)</th>
<th>Cost of Drugs Dispensed ($)</th>
<th>% Revenue Collected vs. Total Cost of Drugs Dispensed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branford Taitt Polyclinic</td>
<td>18,740</td>
<td>$1,161,098.98</td>
<td>1.80%</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>Revenue Collected 2015-16 ($)</td>
<td>Cost of Drugs Dispensed ($)</td>
<td>% Revenue Collected vs. Total Cost of Drugs Dispensed</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>------------------------------</td>
<td>-----------------------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>David Thompson Health &amp; Social Services Complex</td>
<td>6,993</td>
<td>$381,046.12</td>
<td>2.10%</td>
</tr>
<tr>
<td>Edgar Cochrane Polyclinic</td>
<td>9,315</td>
<td>$750,015.23</td>
<td>1.40%</td>
</tr>
<tr>
<td>Eunice Gibson Polyclinic</td>
<td>11,073</td>
<td>$986,541.24</td>
<td>1.30%</td>
</tr>
<tr>
<td>Geriatric Hospital</td>
<td>0</td>
<td>$265,387.28</td>
<td>0.00%</td>
</tr>
<tr>
<td>Glebe Polyclinic</td>
<td>17,250</td>
<td>$1,005,463.56</td>
<td>1.90%</td>
</tr>
<tr>
<td>Maurice Byer Polyclinic</td>
<td>22,632</td>
<td>$1,228,169.49</td>
<td>2.10%</td>
</tr>
<tr>
<td>Randal Phillips Polyclinic</td>
<td>23,926</td>
<td>$1,336,361.59</td>
<td>2.00%</td>
</tr>
<tr>
<td>St. Andrew Out-Patient Clinic</td>
<td>857</td>
<td>$104,730.83</td>
<td>0.90%</td>
</tr>
<tr>
<td>St. Joseph Out-Patient Clinic</td>
<td>2,058</td>
<td>$100,733.69</td>
<td>2.30%</td>
</tr>
<tr>
<td>St. Philip District Hospital</td>
<td>0</td>
<td>$95,807.34</td>
<td>0.00%</td>
</tr>
<tr>
<td>St. Philip Polyclinic</td>
<td>19,053</td>
<td>$1,039,042.65</td>
<td>2.10%</td>
</tr>
<tr>
<td>St. Thomas Out-Patient Clinic</td>
<td>811</td>
<td>$108,278.70</td>
<td>0.80%</td>
</tr>
<tr>
<td>Winston Scott Polyclinic</td>
<td>25,152</td>
<td>$1,609,353.14</td>
<td>1.80%</td>
</tr>
<tr>
<td>Psychiatric Hospital</td>
<td>0</td>
<td>$1,490,542.15</td>
<td>0.00%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>157,861</strong></td>
<td><strong>$11,662,572.00</strong></td>
<td></td>
</tr>
</tbody>
</table>

The monies collected are primarily from non-beneficiaries i.e. persons who are not citizens or permanent residents. Other categories of persons, who are required to pay for medication, include the following:

- Persons without a National Registration Number
- Persons whose prescriptions originate in the private sector but are not beneficiaries i.e. patients 16-64 whose prescriptions are for medication other than those for the treatment of asthma, cancer, diabetes, epilepsy, glaucoma or hypertension.
- Persons with prescriptions, originating from the public sector clinic, for family planning products i.e. oral contraceptives and intra-uterine devices.
- Persons who require medication outside of the BDS protocols i.e. for quantities greater than the BDS monthly maximum allowable quantities or combinations of medication not allowed by BDS.

The pricing formula for medication in the public sector is the same fixed cost + mark-up as in the private sector (Table 10).

Table 19 shows that 1,120,971 prescriptions were dispensed in 2015-16 at a cost of $11,662,572. This represented a 6.3% decrease in expenditure and a 6.4% decrease in prescription volume over the previous year. The average cost per prescription over this ten year period was $13.41.

Table 19: BDS Pharmacies’ Percentage changes in Prescription
<table>
<thead>
<tr>
<th>Year</th>
<th>Prescription Count</th>
<th>% change</th>
<th>Cost of Drugs Dispensed ($)</th>
<th>% change</th>
<th>$/Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-07</td>
<td>659,750</td>
<td>-6%</td>
<td>$11,403,711</td>
<td>28%</td>
<td>$17.28</td>
</tr>
<tr>
<td>2007-08</td>
<td>662,677</td>
<td>0.4%</td>
<td>$10,439,220</td>
<td>-8.5%</td>
<td>15.75</td>
</tr>
<tr>
<td>2008-09</td>
<td>731,639</td>
<td>10.4%</td>
<td>$12,932,110</td>
<td>23.9%</td>
<td>17.68</td>
</tr>
<tr>
<td>2009-10</td>
<td>778,267</td>
<td>6.4%</td>
<td>$12,150,516</td>
<td>-6.0%</td>
<td>15.61</td>
</tr>
<tr>
<td>2010-11</td>
<td>814,400</td>
<td>4.6%</td>
<td>$12,451,937</td>
<td>2.5%</td>
<td>15.29</td>
</tr>
<tr>
<td>2011-12</td>
<td>1,083,082</td>
<td>33.0%</td>
<td>$11,765,288</td>
<td>-5.5%</td>
<td>10.86</td>
</tr>
<tr>
<td>2012-13</td>
<td>1,206,351</td>
<td>11.4%</td>
<td>$13,481,501</td>
<td>14.6%</td>
<td>11.18</td>
</tr>
<tr>
<td>2013-14</td>
<td>1,244,739</td>
<td>3.2%</td>
<td>$11,998,305</td>
<td>-11.0%</td>
<td>9.64</td>
</tr>
<tr>
<td>2014-15</td>
<td>1,198,187</td>
<td>-3.7%</td>
<td>$12,444,809</td>
<td>3.7%</td>
<td>10.39</td>
</tr>
<tr>
<td>2015-16</td>
<td>1,120,971</td>
<td>-6.4%</td>
<td>$11,662,572</td>
<td>6.3%</td>
<td>10.40</td>
</tr>
</tbody>
</table>

Table 20: Top 25 Drugs Dispensed (by Expenditure) in the Public Sector in 2015-16

<table>
<thead>
<tr>
<th>Rank</th>
<th>Active Ingredient</th>
<th>Main Indication</th>
<th>TOTAL COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Blood Glucose Strips</td>
<td>Diabetes</td>
<td>$1,082,949.13</td>
</tr>
<tr>
<td>2.</td>
<td>Valsartan</td>
<td>Hypertension</td>
<td>$1,056,606.96</td>
</tr>
<tr>
<td>3.</td>
<td>Gliclazide</td>
<td>Diabetes</td>
<td>$723,851.86</td>
</tr>
<tr>
<td>4.</td>
<td>Cyproterone</td>
<td>Prostate Cancer</td>
<td>$489,460.89</td>
</tr>
<tr>
<td>5.</td>
<td>Biphasic Isophane Insulin</td>
<td>Diabetes</td>
<td>$409,850.92</td>
</tr>
<tr>
<td>6.</td>
<td>Quetiapine</td>
<td>Antipsychotic</td>
<td>$395,888.49</td>
</tr>
<tr>
<td>7.</td>
<td>Telmisartan</td>
<td>Hypertension</td>
<td>$311,150.40</td>
</tr>
<tr>
<td>8.</td>
<td>Indapamide</td>
<td>Hypertension</td>
<td>$302,930.22</td>
</tr>
<tr>
<td>9.</td>
<td>Valsartan/HCTZ</td>
<td>Hypertension</td>
<td>$261,285.48</td>
</tr>
<tr>
<td>10.</td>
<td>Telmisartan/HCTZ</td>
<td>Hypertension</td>
<td>$236,440.62</td>
</tr>
<tr>
<td>11.</td>
<td>Metformin</td>
<td>Diabetes</td>
<td>$223,730.70</td>
</tr>
<tr>
<td>12.</td>
<td>Budesonide/Formoterol</td>
<td>Asthma</td>
<td>$219,310.30</td>
</tr>
<tr>
<td>13.</td>
<td>Risperidone</td>
<td>Antipsychotic</td>
<td>$165,289.56</td>
</tr>
<tr>
<td>14.</td>
<td>Fluticasone/Salmeterol</td>
<td>Asthma</td>
<td>$144,703.60</td>
</tr>
<tr>
<td>15.</td>
<td>Flupenthixol</td>
<td>Antipsychotic</td>
<td>$144,604.01</td>
</tr>
<tr>
<td>16.</td>
<td>Fluphenazine</td>
<td>Antipsychotic</td>
<td>$144,514.09</td>
</tr>
<tr>
<td>17.</td>
<td>Atorvastatin</td>
<td>Cholesterol</td>
<td>$135,370.73</td>
</tr>
<tr>
<td>18.</td>
<td>Bisoprolol</td>
<td>Hypertension</td>
<td>$131,938.84</td>
</tr>
<tr>
<td>19.</td>
<td>Acarbose</td>
<td>Diabetes</td>
<td>$127,920.37</td>
</tr>
<tr>
<td>20.</td>
<td>Phenytoin</td>
<td>Seizures</td>
<td>$113,505.21</td>
</tr>
<tr>
<td>21.</td>
<td>Amlodipine</td>
<td>Hypertension</td>
<td>$108,957.25</td>
</tr>
<tr>
<td>22.</td>
<td>Carbamazepine</td>
<td>Anticonvulsant</td>
<td>$106,608.46</td>
</tr>
<tr>
<td>23.</td>
<td>Salbutamol CFC Free</td>
<td>Asthma</td>
<td>$92,115.06</td>
</tr>
<tr>
<td>24.</td>
<td>Latanoprost</td>
<td>Glaucoma</td>
<td>$84,008.76</td>
</tr>
<tr>
<td>25.</td>
<td>Brimonidine</td>
<td>Glaucoma</td>
<td>$73,682.32</td>
</tr>
</tbody>
</table>

Table 21: Categorisation of Top 25 drugs Dispensed in the Public
As reflected in Tables 20 and 21, the top 25 drugs dispensed in the public sector represent 62.5% of the total expenditure on drugs purchased in the public sector. Of those 25 drugs, 35.2% were for the treatment of diabetes, 33.1% for the treatment of hypertension, and 13.2% were for the treatment of psychiatric illnesses. This differs from that seen in the private sector, where hypertension and diabetes ranked at positions 1 and 2 respectively in terms of expenditure. However, when the top ten therapeutic categories were compared by expenditure in the public sector (Table 22), hypertension topped the list followed by diabetes, and thirdly antipsychotics.

Table 22: Top Ten Therapeutic Categories (by Expenditure) in the Public Sector in 2015-16 Fiscal Year

<table>
<thead>
<tr>
<th>Therapeutic Description</th>
<th>Prescription Count</th>
<th>COST ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>277,617</td>
<td>2,614,617</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>185,770</td>
<td>2,769,648</td>
</tr>
<tr>
<td>Antipsychotics</td>
<td>15,978</td>
<td>947,277</td>
</tr>
<tr>
<td>Antineoplastic</td>
<td>4,971</td>
<td>496,389</td>
</tr>
<tr>
<td>Respiratory Agents</td>
<td>37,094</td>
<td>573,977</td>
</tr>
<tr>
<td>Anticonvulsants</td>
<td>17,789</td>
<td>5,979,144</td>
</tr>
<tr>
<td>Lipid Lowering</td>
<td>70,354</td>
<td>166,267</td>
</tr>
<tr>
<td>Antiglaucoma Agents</td>
<td>12,298</td>
<td>234,945</td>
</tr>
<tr>
<td>Antiallergic EENT</td>
<td>12,949</td>
<td>171,422</td>
</tr>
<tr>
<td>Analgesic Agents</td>
<td>58,111</td>
<td>91,391</td>
</tr>
</tbody>
</table>

As reflected in Tables 20 and 21, the top 25 drugs dispensed in the public sector represent 62.5% of the total expenditure on drugs purchased in the public sector. Of those 25 drugs, 35.2% were for the treatment of diabetes, 33.1% for the treatment of hypertension, and 13.2% were for the treatment of psychiatric illnesses. This differs from that seen in the private sector, where hypertension and diabetes ranked at positions 1 and 2 respectively in terms of expenditure. However, when the top ten therapeutic categories were compared by expenditure in the public sector (Table 22), hypertension topped the list followed by diabetes, and thirdly antipsychotics.

4.4.2 Public versus Private Sector Usage

The performance of the BDS dispensing service as shown at Table 23 was relatively constant from the 2011-12 period to coincide with the post-restructuring phase. 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. Also during this period the beneficiaries accessing the Special Benefit Service was limited to citizens and permanent residents only.

Table 23: Total Number of Prescriptions filled and Their Expenditure in the Public
### Table 24: Therapeutic Substances Permits Issued for 2009-15 Fiscal Years

<table>
<thead>
<tr>
<th>Year</th>
<th>Permits Issued</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-10</td>
<td>465</td>
</tr>
<tr>
<td>2010-11</td>
<td>652</td>
</tr>
<tr>
<td>2011-12</td>
<td>523</td>
</tr>
<tr>
<td>2012-13</td>
<td>771</td>
</tr>
<tr>
<td>2013-14</td>
<td>633</td>
</tr>
<tr>
<td>2014-15</td>
<td>727</td>
</tr>
</tbody>
</table>

* Estimated values

### 4.5 Activity 5: The Drug Inspectorate

#### 4.5.1 Quality Assurance

The Barbados Drug Service is the National Regulatory Authority that performs several functions under the Drug Inspectorate. In regard to the Good Regulatory Practices the Drug Inspectorate addressed the following aspects: (i) sustainability of resources; (ii) cooperation with all stakeholders; (iii) transparency and accountability of the decision making process; (iv) competency in evaluation of drug quality, safety and efficacy; 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).

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. However, with the embryonic establishment of the CARPHA through the merge of the Caribbean Regional Drug Testing Laboratory and four other individual agencies in the region, the analytical activities have been riddled with challenges and delays. During the period under review it was difficult to receive analytical results on the samples submitted for testing and no drug samples were therefore sent to CARPHA.

#### 4.5.2 Therapeutic Substances

In accordance with the Therapeutic Substances Act 1949, there were 707 licenses issued in 2015-16 to local pharmaceutical companies to allow them to import antibiotics and sulphonamides into the country. This represented a 3 percent decrease over the previous year (See Table 24).
4.5.3 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 25 gives the quantities of narcotics that were imported and exported during fiscal year 2015-16 with pethidine showing the largest import and export followed by morphine.

Table 25: Import and Export Permits Issued for Narcotic Drugs for 2015-16

<table>
<thead>
<tr>
<th>Narcotic</th>
<th>Import (gm.)</th>
<th>Export (gm.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pethidine</td>
<td>7311.47</td>
<td>2483.00</td>
</tr>
<tr>
<td>Morphine</td>
<td>1293.98</td>
<td>2202.00</td>
</tr>
<tr>
<td>Codeine</td>
<td>938.00</td>
<td>53.875</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>6.876</td>
<td>0.00</td>
</tr>
<tr>
<td>Methadone</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Cocaine</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

4.5.4 Psychotropic Substances

With regards to the 1971 Convention on Psychotropic Substances, during fiscal year 2015-16, Table 26 gives the comparative quantities imported and exported for these Schedule II, III and IV Psychotropic Substances.

Table 26: Schedules II, III, and IV Psychotropic Drugs Imported and Exported during Fiscal Year 2015-16

<table>
<thead>
<tr>
<th>Psychotropic Substances</th>
<th>Schedule</th>
<th>Amount Imported (gms.)</th>
<th>Import Amount (gms.)</th>
<th>Exported Amount (gms.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylphenidate</td>
<td>II</td>
<td>1172.65</td>
<td>1194.60</td>
<td></td>
</tr>
<tr>
<td>Clobazam</td>
<td>IV</td>
<td>870.00</td>
<td>7.00</td>
<td></td>
</tr>
<tr>
<td>Diazepam</td>
<td>IV</td>
<td>2407.50</td>
<td>15.60</td>
<td></td>
</tr>
<tr>
<td>Clonazepam</td>
<td>IV</td>
<td>375.00</td>
<td>118.50</td>
<td></td>
</tr>
<tr>
<td>Midazolam</td>
<td>IV</td>
<td>552.20</td>
<td>116.00</td>
<td></td>
</tr>
<tr>
<td>Bromazepam</td>
<td>IV</td>
<td>31.50</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Phenobarbital</td>
<td>IV</td>
<td>2653.10</td>
<td>5904.50</td>
<td></td>
</tr>
<tr>
<td>Nitrazepam</td>
<td>IV</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Zolpidem</td>
<td>IV</td>
<td>252.00</td>
<td>21.50</td>
<td></td>
</tr>
<tr>
<td>Alprazolam</td>
<td>IV</td>
<td>331.10</td>
<td>12.60</td>
<td></td>
</tr>
<tr>
<td>Pentobarbital</td>
<td>III</td>
<td>6654.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Chlordiazepoxide</td>
<td>IV</td>
<td>111.30</td>
<td>15.20</td>
<td></td>
</tr>
<tr>
<td>Lorazepam</td>
<td>IV</td>
<td>1337.00</td>
<td>211.20</td>
<td></td>
</tr>
<tr>
<td>Dexamphetamine</td>
<td>II</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

4.5.5 Precursor Chemicals

In accordance with the International Narcotic and Control Board (INCB) permits were issued for the importation of 200.3gm of ephedrine and 400.5gm of pseudoephedrine during the 2015-16 fiscal year. It must be noted that there was a 672% increase in the reported importation of pseudoephedrine since it became mandatory by the INCB during the year under review for all products, including cough syrups, to be reported.

4.6 ACTIVITY 6: DRUG INFORMATION SERVICE

Nature and Scope:
4.6.1 Public Education Programmes

The Barbados Drug Service Public Lecture Series consists of four annual lectures designed to raise awareness of public health issues and introduce our audience to emerging ideas from leading experts in the areas of public health practice, scientific investigation, family and child health, and behavioral health. Table 27 lists the lectures hosted during the 2015-16 fiscal year. These lectures empowered the public to achieve excellence in their medication regimen and overall health care.

Table 27: Public Lectures Held During Fiscal Year 2015-16

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 14, 2015</td>
<td>The Prevention and Treatment of Sports Injuries</td>
<td>Dr. Rene Best</td>
</tr>
<tr>
<td>July 28, 2015</td>
<td>The Management of Pancreatic Cancer in Barbados</td>
<td>Mr. Selwyn Ferdinand</td>
</tr>
<tr>
<td>October 27, 2015</td>
<td>The Management of Glaucoma in Barbados</td>
<td>Dr. Grosvenor</td>
</tr>
<tr>
<td>March 15, 2016</td>
<td>Is Men’s Health in Crisis? – Exploring Causes and Solutions</td>
<td>Panel: Mr. Anderson Kellman, Psychologist, Dr. Omar Edwards, MOH, Rev. Solomon Odoom, Mr. Saul Leacock, Counsellor, Mr. Wayne Greaves, President of Winston Scott Polyclinic’s Men’s Health Group</td>
</tr>
</tbody>
</table>

4.7 ACTIVITY 7: PHARMACOVIGILANCE

Nature and Scope:

4.7.1 Drug Monitoring

The World Health Organisation (WHO) established its Programme for International Drug Monitoring in response to the thalidomide disaster detected in 1961. Together with the WHO Collaborating Centre for International Drug Monitoring, Uppsala, WHO promotes pharmacovigilance (PV) at the country level. At the end of 2010, 134 countries were part of the WHO PV Programme. PV monitoring was established at the Barbados Drug Service in 2011 with an aim to enhance patient care and patient safety in relation to the use of medicines; and to support public health programmes by providing reliable, balanced information for the effective assessment of the risk-benefit profile of medicines. This aim is achieved through the detection, assessment, understanding and prevention of adverse effects or any other drug-related problem. During the 2015-16 fiscal year, a total of 124 PV reports were submitted (see Table 28), 59% relating to female patients, 25% male and the additional 14% of unknown gender.

Table 28: Statistics showing persons who report ADRs

<table>
<thead>
<tr>
<th>Persons Submitting Reports</th>
<th># of Reports Submitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td>17</td>
</tr>
<tr>
<td>Doctors-Polyclinics</td>
<td>68</td>
</tr>
<tr>
<td>Doctors-Private</td>
<td>0</td>
</tr>
<tr>
<td>Queen Elizabeth Hospital</td>
<td>0</td>
</tr>
<tr>
<td>Pharmacists-Polyclinics</td>
<td>27</td>
</tr>
<tr>
<td>Others</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>124</td>
</tr>
</tbody>
</table>

Table 28 above shows the type of persons that report adverse drug reactions (ADRs), while Figure 1 below shows that almost 60% of ADRs...
are reported by females while less than 30% are reported by men. There were 14% of reporters that their gender was not reported.

Figure 1: Gender Distribution of ADR Reports

Figure 2 below shows that the top 20 reported substances in Barbados which mirrors the international reports in the WHO global database. Examples of the top global reported drugs include acetylsalicylic acid, omeprazole, paracetamol, atorvastatin, metformin, amlodipine, and diphtheria/pertussis vaccine.
Figure 2: Top 23 reported ADRs in Barbados

5.0 Resource Management

The BDS drug expenditure in the both the Public and in the Private Sectors for the 2015-16 fiscal year are presented at Appendix A (financial statement) and Appendix B (Statistics showing drug expenditure and prescription volume between 1982/83 and 2015/16 financial years).
### Table 29: Health Expenditure on the BDS Dispensing Service Over Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimated End of Calendar Year Population*</th>
<th>Total Health Expenditure*</th>
<th>Health Expenditure on BDS Dispensing Service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Amount (public and Private) ($)</td>
</tr>
<tr>
<td>2006-07</td>
<td>273,952</td>
<td>350,674,341</td>
<td>42,991,642</td>
</tr>
<tr>
<td>2007-08</td>
<td>274,688</td>
<td>372,853,380</td>
<td>46,974,994</td>
</tr>
<tr>
<td>2008-09</td>
<td>275,171</td>
<td>381,057,823</td>
<td>49,565,700</td>
</tr>
<tr>
<td>2009-10</td>
<td>275,848</td>
<td>384,096,541</td>
<td>52,712,466</td>
</tr>
<tr>
<td>2010-11</td>
<td>276,507</td>
<td>355,847,415</td>
<td>47,026,770</td>
</tr>
<tr>
<td>2011-12</td>
<td>276,781</td>
<td>366,985,247</td>
<td>22,552,464</td>
</tr>
<tr>
<td>2012-13</td>
<td>277,674</td>
<td>347,705,764</td>
<td>24,118,457</td>
</tr>
<tr>
<td>2013-14</td>
<td>277,515</td>
<td>342,381,895</td>
<td>22,642,080</td>
</tr>
<tr>
<td>2014-15</td>
<td>274,344</td>
<td>337,392,974</td>
<td>23,134,910</td>
</tr>
<tr>
<td>2015-16</td>
<td>276,633</td>
<td>334,849,180</td>
<td>20,331,725</td>
</tr>
</tbody>
</table>

* Provided from Draft Estimates
** Provided from Barbados Statistical Services

The BDS has performed creditably as it relates to the provision and accessibility of pharmaceutical service. The BDS’ model of free pharmaceuticals at point of service has resulted in continued indicators of well-being, which include a high average life expectancy at birth, good maternal and child health survival rates, declining prevalence of infectious diseases and access to essential medicines as is reported in the 2014 Economic and Social Report.

Though there was a marginal increase in the BDS expenditure as a percentage of the total health expenditure in 2015-16, due to the overall costs increase of pharmaceuticals on the global market, the BDS still maintained its expenditure at 7.76 percent that of the total health care (Table 29), which is still below the 10% benchmark. This represented a per capita public expenditure on pharmaceutical services of $93.92. This success can be attributed to its overall stewardship in maintaining the restructuring strategic measures which were implemented in the 2010-11 fiscal year.

### Table 30: BDS Revised Estimates and Actual Expenditure for Fiscal Year

<table>
<thead>
<tr>
<th>Budget Heads</th>
<th>Revised Estimates ($)</th>
<th>Actual Expenditure ($)</th>
<th>Revised Estimates ($)</th>
<th>Actual Expenditure ($)</th>
<th>% Change in Actual Expenditure 2015-16 vs. 2014-15</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2014-15</td>
<td>2015-16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Personal Emoluments</td>
<td>5,234,377</td>
<td>5,103,074</td>
<td>5,002,161</td>
<td>5,129,712</td>
<td>0.5%</td>
</tr>
<tr>
<td>Total Goods and Services</td>
<td>22,743,680</td>
<td>22,634,088</td>
<td>21,215,330</td>
<td>20,850,349</td>
<td>-7.9%</td>
</tr>
<tr>
<td>Total Capital</td>
<td>26,000</td>
<td>9,956</td>
<td>32,500</td>
<td>25,609</td>
<td>157.2%</td>
</tr>
<tr>
<td>Total Expenditure</td>
<td>28,004,057</td>
<td>27,747,118</td>
<td>26,249,991</td>
<td>26,005,670</td>
<td>-6.3%</td>
</tr>
</tbody>
</table>

The BDS was successful in reducing its total expenditure in 2015-16 fiscal year...
compared to 2014-15 (Table 30).

6.0 **Evolving Solutions in 2015-16 Fiscal Year**

6.0.1 **Wide Area Network and Health Information System**
Work continued on developing the software to facilitate the networking of all government pharmacies onto the Ministry of Health network. During the year under review, the pharmacy at the Psychiatric Hospital was added to the Ministry of Health’s Wide Area Network:

6.0.2 **Electronic Single Window (ESW)**
The BDS after being introduced to the ESW concept as a means to lower operating costs, stimulate innovation, promote research and development, encourage training, and facilitate market penetration and economy-wide competitiveness and growth. The main benefit to the BDS was to improve all interconnected businesses, suppliers, service providers and associated institutions in the form of a cluster model. Unfortunately, however, the BDS was unable to use the software for purposes of importing pharmaceuticals. This was due to a lack of funding to achieve a seamless and smooth implementation of the ESW.

6.0.3 **Audits**
Monthly and annual audits were carried out on 96 private participating pharmacies and three separate audits on one public pharmacy. Reports of these audits highlighted some anomalies and the necessary remedial action was implemented.

6.0.4 **Duty Free Module**
The electronic processing of Duty Free Certificates (DFC) submitted by local agents for all pharmaceuticals awarded contracts with the BDS during the year under review continues to operate efficiently. This software application allows the BDS to (i) process only eligible Duty Free Certificates; (ii) improve the overall monitoring of the contracted drugs on island, and (iii) reduce the processing time when compared to a manual system.
Appendix A - Financial Statement 2015-16

Receipts and Payments Account for Period April 1, 2015 to March 31, 2016
with comparative figures for 2014-15

<table>
<thead>
<tr>
<th></th>
<th>2015-16</th>
<th>2014-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receipts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accountant General*</td>
<td>26,249,991</td>
<td>28,004,057</td>
</tr>
<tr>
<td>Recertification of Private Pharmacies</td>
<td>11,338</td>
<td>7,700</td>
</tr>
<tr>
<td>District Pharmacies (Sale of Pharmaceuticals)</td>
<td>410,604</td>
<td>245,173</td>
</tr>
<tr>
<td>Total</td>
<td>26,671,933</td>
<td>28,256,930</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2015-16</th>
<th>2014-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Personal Emoluments</td>
<td>5,129,712</td>
<td>5,103,074</td>
</tr>
<tr>
<td>Travelling</td>
<td>62,385</td>
<td>57,950</td>
</tr>
<tr>
<td>Utilities</td>
<td>9,251</td>
<td>17,142</td>
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<tr>
<td>Rental of Property</td>
<td>22,746</td>
<td>27,612</td>
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<tr>
<td>Library</td>
<td>8,923</td>
<td>8,604</td>
</tr>
<tr>
<td>Supplies &amp; Materials</td>
<td>12,011,713</td>
<td>12,278,532</td>
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<tr>
<td>Maintenance of Property</td>
<td>24,491</td>
<td>25,763</td>
</tr>
<tr>
<td>Operating Expenses</td>
<td>8,710,840</td>
<td>10,218,484</td>
</tr>
<tr>
<td>Machinery and Equipment</td>
<td>25,609</td>
<td>-</td>
</tr>
<tr>
<td>Furniture and Fixtures</td>
<td>-</td>
<td>9,956</td>
</tr>
<tr>
<td>Professional Services</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Savings</td>
<td>666,263</td>
<td>509,813</td>
</tr>
<tr>
<td>Total</td>
<td>26,671,933</td>
<td>28,256,930</td>
</tr>
</tbody>
</table>

*Accountant General

<table>
<thead>
<tr>
<th></th>
<th>2015-16</th>
<th>2014-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Emoluments</td>
<td>$5,002,161</td>
<td>5,234,377</td>
</tr>
<tr>
<td>Other</td>
<td>$21,215,330</td>
<td>22,743,680</td>
</tr>
<tr>
<td>Capital</td>
<td>$32,500</td>
<td>26,000</td>
</tr>
<tr>
<td>Total</td>
<td>$26,249,991</td>
<td>28,004,057</td>
</tr>
</tbody>
</table>
## Appendix B - Drug Service Expenditure and Prescription Volume

<table>
<thead>
<tr>
<th>YEAR</th>
<th>PUBLIC EXPENDITURE*</th>
<th>SBS EXPENDITURE**</th>
<th>TOTAL EXPENDITURE ON MEDICINES</th>
<th>PUBLIC PRESCRIPTION (PRESC.)</th>
<th>PUBLIC PRESC. AVG. COST</th>
<th>PUBLIC AVG. MTHLY PRESC.</th>
<th>PRIVATE PRESC.</th>
<th>PRIVATE PRESC. AVG. COST</th>
<th>PRIVATE AVG. MTHLY PRESC.</th>
<th>PUBLIC EXP % age of TOTAL EXP</th>
<th>PRIVATE EXP. % of TOTAL EXP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982-83</td>
<td>2,720,368</td>
<td>140,756</td>
<td>2,861,124</td>
<td>0</td>
<td>0</td>
<td>21,126</td>
<td>7</td>
<td>1,761</td>
<td>95</td>
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<tr>
<td>1983-84</td>
<td>4,291,991</td>
<td>207,772</td>
<td>4,499,763</td>
<td>262,287</td>
<td>16</td>
<td>21,857</td>
<td>8</td>
<td>2,199</td>
<td>95</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>1984-85</td>
<td>5,403,538</td>
<td>341,990</td>
<td>5,745,528</td>
<td>345,613</td>
<td>16</td>
<td>28,801</td>
<td>7</td>
<td>4,185</td>
<td>94</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>1985-86</td>
<td>7,713,963</td>
<td>435,745</td>
<td>8,149,708</td>
<td>501,416</td>
<td>15</td>
<td>41,785</td>
<td>11</td>
<td>3,449</td>
<td>95</td>
<td>5</td>
<td></td>
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<tr>
<td>1986-87</td>
<td>7,793,103</td>
<td>1,508,793</td>
<td>9,301,896</td>
<td>660,045</td>
<td>12</td>
<td>55,004</td>
<td>10</td>
<td>12,340</td>
<td>84</td>
<td>16</td>
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<tr>
<td>1987-88</td>
<td>8,356,816</td>
<td>3,346,816</td>
<td>11,883,632</td>
<td>654,679</td>
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<td>54,557</td>
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<td>25,000</td>
<td>72</td>
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<tr>
<td>1989-90</td>
<td>9,269,966</td>
<td>4,701,687</td>
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<td>71,623</td>
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<td>30,944</td>
<td>66</td>
<td>34</td>
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<tr>
<td>1990-91</td>
<td>11,001,320</td>
<td>5,667,514</td>
<td>16,668,834</td>
<td>857,252</td>
<td>13</td>
<td>71,438</td>
<td>13</td>
<td>37,454</td>
<td>66</td>
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<tr>
<td>1992-93</td>
<td>9,369,846</td>
<td>6,330,465</td>
<td>15,700,311</td>
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<td>70,047</td>
<td>13</td>
<td>41,223</td>
<td>60</td>
<td>40</td>
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</tr>
<tr>
<td>1993-94</td>
<td>9,440,576</td>
<td>7,228,270</td>
<td>16,668,846</td>
<td>844,789</td>
<td>11</td>
<td>70,399</td>
<td>13</td>
<td>46,250</td>
<td>57</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>1994-95</td>
<td>10,283,264</td>
<td>8,307,134</td>
<td>18,590,398</td>
<td>845,219</td>
<td>12</td>
<td>70,435</td>
<td>14</td>
<td>48,234</td>
<td>55</td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>
## Appendix B Cont’d - Drug Service Expenditure and Prescription Volume

<table>
<thead>
<tr>
<th>YEAR</th>
<th>PUBLIC EXPENDITURE ($)</th>
<th>SBS EXPENDITURE ($)</th>
<th>TOTAL EXPENDITURE ON MEDICINES ($)</th>
<th>PUBLIC PRESCRIPTION (PRESC.)</th>
<th>PUBLIC PRESC. AVG. COST ($)</th>
<th>PUBLIC AVG. MTHLY PRESC.</th>
<th>PRIVATE PRESC. AVG. COST ($)</th>
<th>PRIVATE AVG. MTHLY PRESC.</th>
<th>PUBLIC EXP % age of TOTAL EXP</th>
<th>PRIVATE EXP. % of TOTAL EXP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995-96</td>
<td>9,612,632</td>
<td>9,979,983</td>
<td>19,592,615</td>
<td>818,927</td>
<td>12</td>
<td>68,244</td>
<td>692,735</td>
<td>14</td>
<td>57,728</td>
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<tr>
<td>1996-97</td>
<td>10,270,825</td>
<td>11,923,867</td>
<td>22,194,692</td>
<td>446,987</td>
<td>23</td>
<td>37,249</td>
<td>743,765</td>
<td>16</td>
<td>61,980</td>
<td>46</td>
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<tr>
<td>1997-98</td>
<td>10,346,838</td>
<td>10,857,428</td>
<td>21,204,266</td>
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<td>41,891</td>
<td>803,990</td>
<td>14</td>
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<tr>
<td>1998-99</td>
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<td>18,036,894</td>
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<td>17</td>
<td>42,053</td>
<td>806,950</td>
<td>11</td>
<td>67,246</td>
<td>49</td>
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<tr>
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<td>12,589,080</td>
<td>13,590,363</td>
<td>26,179,443</td>
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<td>24</td>
<td>43,921</td>
<td>786,738</td>
<td>17</td>
<td>65,562</td>
<td>48</td>
</tr>
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<td>2000-01</td>
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<td>28</td>
<td>44,364</td>
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<td>19</td>
<td>69,421</td>
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<td>39,746</td>
<td>921,110</td>
<td>19</td>
<td>76,759</td>
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<td>31</td>
<td>43,287</td>
<td>955,000</td>
<td>21</td>
<td>79,583</td>
<td>44</td>
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<tr>
<td>2003-04</td>
<td>8,323,481</td>
<td>21,851,776</td>
<td>30,175,257</td>
<td>637,851</td>
<td>13</td>
<td>53,154</td>
<td>990,943</td>
<td>22</td>
<td>82,579</td>
<td>28</td>
</tr>
<tr>
<td>2004-05</td>
<td>8,262,528</td>
<td>23,115,488</td>
<td>31,378,016</td>
<td>687,578</td>
<td>12</td>
<td>57,298</td>
<td>1,113,093</td>
<td>21</td>
<td>92,758</td>
<td>26</td>
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<tr>
<td>2005-06</td>
<td>8,930,806</td>
<td>30,540,237</td>
<td>39,471,043</td>
<td>700,604</td>
<td>13</td>
<td>58,384</td>
<td>1,331,537</td>
<td>23</td>
<td>110,961</td>
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</tr>
<tr>
<td>2006-07</td>
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<td>42,991,642</td>
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<td>17</td>
<td>54,979</td>
<td>1,846,882</td>
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<td>153,907</td>
<td>27</td>
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<tr>
<td>2007-08</td>
<td>10,439,220</td>
<td>36,535,775</td>
<td>46,974,994</td>
<td>662,677</td>
<td>16</td>
<td>55,223</td>
<td>2,055,016</td>
<td>18</td>
<td>171,251</td>
<td>22</td>
</tr>
</tbody>
</table>
## Appendix B Cont’d - Drug Service Expenditure and Prescription Volume

<table>
<thead>
<tr>
<th>YEAR</th>
<th>PUBLIC EXPENDITURE ($)</th>
<th>SBS EXPENDITURE ($)</th>
<th>TOTAL EXPENDITURE ON MEDICINES ($)</th>
<th>PUBLIC PRESCRIPTION (PRES.)</th>
<th>PUBLIC AVG. COST</th>
<th>PUBLIC AVG. MTHLY PRESC.</th>
<th>PRIVATE PRESC.</th>
<th>PRIVATE AVG. MTHLY PRESC.</th>
<th>PRIVATE AVG. COST</th>
<th>PRIVATE EXP. % of TOTAL EXP.</th>
<th>PUBLIC EXP. % age of TOTAL EXP.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-09</td>
<td>12,932,110</td>
<td>36,633,590</td>
<td>49,565,700</td>
<td>731,639</td>
<td>18</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td>2009-10</td>
<td>12,150,516</td>
<td>40,561,950</td>
<td>52,712,466</td>
<td>778,267</td>
<td>16</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>2010-11</td>
<td>12,451,937</td>
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<td>47,026,770</td>
<td>814,400</td>
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<td>2011-12</td>
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<td>1,082,101</td>
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<td>879,104</td>
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<td>2012-13</td>
<td>13,481,501</td>
<td>10,636,956</td>
<td>24,118,457</td>
<td>1,206,351</td>
<td>11</td>
<td>100,529</td>
<td>864,335</td>
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<td>2013-14</td>
<td>11,998,305</td>
<td>10,643,775</td>
<td>22,642,080</td>
<td>1,244,739</td>
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<td>103,728</td>
<td>828,328</td>
<td>13</td>
<td>69,027</td>
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<td>2014-15</td>
<td>12,444,809</td>
<td>10,690,101</td>
<td>23,134,910</td>
<td>1,287,986</td>
<td>9</td>
<td>107,332</td>
<td>841,063</td>
<td>13</td>
<td>69,901</td>
<td>53</td>
<td>47</td>
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<td>2015-16</td>
<td>11,662,572</td>
<td>8,669,153</td>
<td>20,331,725</td>
<td>1,120,971</td>
<td>10</td>
<td>93,414</td>
<td>827,374</td>
<td>10</td>
<td>68,948</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>345,356,782</strong></td>
<td><strong>464,338,416</strong></td>
<td><strong>809,695,197</strong></td>
<td><strong>24,108,373</strong></td>
<td><strong>14.32518</strong></td>
<td><strong>2,009,031</strong></td>
<td><strong>21,945,922</strong></td>
<td><strong>21.15830066</strong></td>
<td><strong>1,828,827</strong></td>
<td><strong>43</strong></td>
<td><strong>57</strong></td>
</tr>
</tbody>
</table>

* Cost of drug purchases

**Cost of drugs dispensed
Appendix C - Barbados Drug Service - Organisation Chart (2015-16)

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 Dispenser/Senior Pharmacist (1); Drug Inspector (3); Executive Secretary (1); Pharmacist I (3); Pharmacist II (33); Supply & Inventory Officer (1); Accountant (1); Assistant Accountant (1); Senior Clerk (1); Clerical Officer (14); Steno/Typist (2); Computer Operator (1); Data Entry Operator (1); Driver/Messenger (1); Maid (1) (Post established in Ministry of Health)
Temporary Post: Senior Accountant (1); Chief Dispenser/Senior Pharmacist; Pharmacist I (7); Pharmacovigilance Officer (1); Pharmacist II (5); Clerical Officer (1); Audit Clerk (2); Receptionist (1); General Worker (1); Attendant (6)
Barbados Drug Service
Levels 6 & 7
Warrens Towers II
Warrens
St. Michael

Telephone: (246) 535-4300
Fax.: (246) 535-4342
Email Addresses: Special Benefit Service - specialbenefits@drugservice.gov.bb
Drug Information Centre - druginfo@drugservice.gov.bb
Website: http://drugservice.health.gov.bb/