# 2012 Actuarial Report

*for the Bermuda Health Council*

Bermuda Health Council
BHeC

# 2012 Actuarial Report for the Bermuda Health Council

**Contact us:**
If you would like any further information about the Bermuda Health Council, or if you would like to bring a healthcare matter to our attention, we look forward to hearing from you.

**Mailing Address:**
PO Box HM 3381,
Hamilton HM PX, Bermuda

**Street Address:**
Sterling House, 3rd Floor, 16 Wesley Street,
Hamilton HM11, Bermuda

**Phone:** 292-6420
**Fax:** 292-8067
**Email:** healthcouncil@bhec.bm

**Published by:**
The Bermuda Health Council (May 2013)


**Reference as:**
Morneau Sobeco (2013) 2012 Actuarial Report for the Bermuda Health Council (Abridged Version). Bermuda Health Council: Bermuda.

# 2012 Actuarial Report for the Bermuda Health Council

- The Standard Hospital Benefit (SHB)
- The Mutual Reinsurance Fund (MRF)

April 2013

Abridged Version

# Table of Contents

# Introduction

Morneau Shepell has been engaged by the Bermuda Health Council (BHeC) and we are pleased to present our report on the Fiscal 2012 review (i.e. the period April 1, 2011 to March 31, 2012) of the following programs:

- the Standard Hospital Benefit (SHB), and
- the Mutual Reinsurance Fund (MRF).

The purpose of this report is:

- to review the statistical and claims information submitted by the insurance companies and approved schemes, as it relates to the SHB
- to review the financial condition of the MRF
- to comment on trends over the Fiscal 2011 / Fiscal 2012 period
- to recommend premium rates that are to take effect from April 1, 2013 (i.e. Fiscal 2014)
- to analyze any changes in SHB and MRF benefit provisions that are under consideration

In preparing this report we relied on the documentation and information provided to us by the BHeC.

# Section A – Summary & Premium Recommendation

A summary of Fiscal 2012 and Fiscal 2011 insured headcount, claims and costs per-capita is tabled below:

### A.1. : Standard Hospital Benefit Insured Headcount

| | Fiscal 2012 | Fiscal 2011 | % Change |
|---|---|---|---|
| Grand Total | 49,163 | 50,966 | -3.5% |

### A.2. : Standard Hospital Benefit Claims Data

| Claim Amounts | Local | | | Overseas | | Overall | |
|---|---|---|---|---|---|---|---|
| (in $ '000s) | In-Patient | Out-Patient | Total | In-Patient | Out-Patient | Total | Total |
| Fiscal 2011 | $31,921 | $73,742 | $105,664 | $13,258 | $17,346 | $30,605 | $136,268 |
| Fiscal 2012 | $33,816 | $79,067 | $112,883 | $15,546 | $17,739 | $33,284 | $146,167 |
| Increase | 6% | 7% | 7% | 17% | 2% | 9% | 7% |

### A.3. : Standard Hospital Benefit Cost per-capita and Loss Ratios

| Fiscal 2012 | | Fiscal 2011 | | |
|---|---|---|---|---|
| Cost Per-Capita | Loss Ratio | Cost Per-Capita | Loss Ratio | Cost Per-Capita Increase |
| $248 | 110% | $223 | 106%[1] | 11% |

The Fiscal 2012 and Fiscal 2011 loss ratios are based on a Standard Premium Rate of $225.46 and $209.63 respectively. The total per-capita claim costs increased at a pace greater than the change in the Standard Premium Rate (11% for the claims and 7.6% for the Standard Premium Rate). This has led to a deterioration in the loss ratio from 106% to 110%.

---

[1] Due to the insurers' underestimation of the outstanding claims for the Fiscal 2011 period, the actual loss ratio should be reported as 108%.

## A.4. : Standard Premium Recommendation (including the MRF)

| | Inc. % | Standard Hospital Benefit | Mutual Reins. Fund | Total |
|---|---|---|---|---|
| Fiscal 2013 Premium | | $236.73 | $34.88 | $271.61 |
| 1. Increase in BHB Fees (for Hospital Fund) | 0.00% | $0.00 | $0.00 | $0.00 |
| 2. Increase in BHB Fees (adjustment to Fee Schedule) | 0.00% | $0.00 | $0.00 | $0.00 |
| 3. Local Change in Utilization / Inflation / Services | 21.50% | $38.17 | $7.50 | $45.67 |
| 4. Overseas Change in Fees / Utilization / Inflation | 12.50% | $7.40 | $0.00 | $7.40 |
| 5. Future Changes in Benefit Provisions | (0.02%) | ($0.03) | $0.00 | ($0.03) |
| 6. Pay down of Accumulated MRF Deficit | 3.40% | $0.00 | $1.19 | $1.19 |
| **Recommended Fiscal 2014 SPR** | | **$282.27*** | **$43.57** | **$325.84** |
| **% Change in Premium** | | **19.2%** | **24.9%** | **20.0%** |
| **$ Change in Premium** | | **$45.54** | **$8.69** | **$54.23** |

* The multiplier for those over age 65 and not eligible for the government subsidy is 4 times the Standard Premium Rate.

Please refer to the sections that follow for notes on the above recommendation.

Respectfully submitted,

Howard Cimring, FFA, FCIA

Partner

MORNEAU SHEPELL

April, 2013

# Section B – The Standard Hospital Benefit

## B.1. : Introduction

The Standard Hospital Benefit (SHB) consists of inpatient and outpatient benefits and is defined by the Standard Hospital Benefits Regulations 1971. The SHB is the minimum package of benefits which must be provided within each employer sponsored or health insurance provider's health plan. Further, it is compulsory for each employed (including self-employed) person to have health insurance.

A Standard Premium Rate (SPR) for the Standard Hospital Benefits is determined annually by the Ministry of Health, after taking advice from the Bermuda Health Council, which commissions an actuarial review for the SPR. The SPR is the ceiling rate that can be charged to insured persons for the Standard Hospital Benefits. The SPR is set with reference to the claims experience of all the insured participants. As such, the claims experience across all the health insurance providers is pooled together and a single premium rate reflective of the pooled experience is determined.

## B.2. : Fiscal 2012 Claims and Statistical Data

We have analyzed the Fiscal 2012 and Fiscal 2011 insurance company and approved scheme[2] submissions to the BHeC. A summary of certain data elements and our analysis is tabled below:

**Table 1: Headcount**

| | Average Headcount | | | | |
|---|---|---|---|---|---|
| | 2012 | % Total | 2011 | % Total | % Change |
| Insurers | 38,787 | 79% | 40,336 | 79% | -4% |
| Approved Schemes | 10,376 | 21% | 10,630 | 21% | -2% |
| **Grand Total** | **49,163** | **100%** | **50,966** | **100%** | **-4%** |

There are six insurers and three approved schemes.

[2] An approved scheme is a scheme established by an employer to cover its employees and retirees.

The claims are summarized below:

**Table 2: Claims**

| (in $ '000s) | Local | | | Overseas | | | Overall |
|---|---|---|---|---|---|---|---|
| | In-Patient | Out-Patient | Total | In-Patient | Out-Patient | Total | Total |
| Fiscal 2011 | $31,921 | $73,742 | $105,664 | $13,258 | $17,346 | $30,605 | $136,268 |
| Fiscal 2012 | $33,816 | $79,067 | $112,883 | $15,546 | $17,739 | $33,284 | $146,167 |
| Increase | 6% | 7% | 7% | 17% | 2% | 9% | 7% |
| | | | | | | | |
| Increase in utilization | 8% | 10% | 9% | 18% | 3% | 9% | 9% |
| | | | | | | | |
| Percentage 2012 Local Claims | | | | | | | 77% |
| Percentage 2012 Overseas Claims | | | | | | | 23% |

The increase in utilization represents the increase in the incidence of claims and the use of services (new or otherwise – see next paragraph). It has been derived by adjusting the increase in claims by the change in the average headcount and an estimated increase in the cost of services (i.e. the change in the provider fees) of 1.5% for local fees and 3.0% for overseas fees. The overall increase in utilization is 9%. The Overseas in-patient expenditure has increased significantly; the Fiscal 2011 – 2012 total increase in claims is 17% and this compares with a Fiscal 2010 – 2011 increase in claims of 15%[3]. The Fiscal 2012 split between local claims and overseas claims (i.e. 77% and 23% respectively) is similar to the split for Fiscal 2011.

When compared with Fiscal 2011, the Fiscal 2012 Bermuda Hospital's Board (BHB) in-patient admissions (see Appendix 2) have declined by 13% and the Diagnostic Related Group (DRG) fee revenue has declined by 12%. Despite the decline in in-patient admissions, the total claims

[3] Since the BHB has transitioned away from per-diem based billing to DRG based billing, it is perhaps possible that this item is reported inconsistently (both amongst insurers and with prior periods) as the portability provisions of the SHB may not be well understood.

expenditure has increased by 6%. It is estimated that the BHB's DRG related revenue constitutes 45% - 50% of the in-patient revenues. The increase in in-patient revenue would therefore be attributable to the increase in additional fees (i.e. fees beyond the DRG fees) and services that are provided by the BHB (particularly relating to specialists that are employed by the BHB[4]). The SHB includes "services rendered by persons who receive remuneration for that service from the hospital". Accordingly, as these specialists become employees of the BHB, the scope of coverage under the SHB expands.

The cost per-capita and loss ratios for Fiscal 2012 and Fiscal 2011 are tabled below:

**Table 3: Costs Per-Capita and Loss Ratio**

| Fiscal 2012 | | Fiscal 2011 | | |
|---|---|---|---|---|
| **Cost Per-Capita** | **Loss Ratio** | **Cost Per-Capita** | **Loss Ratio** | **Cost Per-Capita Increase** |
| $248 | 110% | $223 | 106%[5] | 11% |

The Fiscal 2012 and Fiscal 2011 loss ratios are based on a Standard Premium Rate of $225.46 and $209.63 respectively. The total per-capita claim costs increased at a pace greater than the change in the Standard Premium Rate (11% for the claims and 7.6% for the Standard Premium Rate). This has led to a deterioration in the loss ratio from 106% to 110%.

Since 2010, the data supplied by insurers and approved schemes has included claims data grouped into various age bands. Where such data was provided, the data was analyzed and the charts in Appendix 1 present the average per-capita claims by age band. As expected, the charts show an increasing cost per-capita leading up to age 65 (i.e. healthcare costs on average increase with age). At age 65 a decline is expected due to the government subsidy. The following table comments on the trends over Fiscal 2011 to Fiscal 2012:

---

[4] The BHB has employed various specialists such as hospitalists, anesthetists, obstetricians (full time since April 1, 2012 – beforehand it was after 24 weeks of gestation) and cardiologists. We understand that with effect from April 1, 2013, obstetricians will no longer be employed by the BHB.

[5] Due to the insurers' underestimation of the outstanding claims for the Fiscal 2011 period, the actual loss ratio should be reported as 108%.

**Table 4: Costs Per-Capita Trends**

| Claims Per-Capita | Trends Fiscal 2011 to Fiscal 2012 (ages 20-79) |
|---|---|
| Total Claims | 2012 is higher across almost all age bands |
| Local In-Patient Claims | 2012 is a mix of increases in some age bands and declines in others<br>Age band 40-44 increased significantly (by 46%) |
| Local Out-Patient Claims | 2012 is higher across almost all age bands<br>The age bands mostly indicate a similar level of increase |
| Overseas In-Patient Claims | 2012 indicates declines in age bands 30-44<br>and significant increases from age 45 onwards |
| Overseas Out-Patient Claims | 2012 is a volatile mix of increases in some age bands<br>and declines in others |

We have also analyzed In-Patient data supplied by the Bermuda Hospitals Board and In-Patient and Out-Patient data supplied by the insurers. The results of this analysis can be found in Appendix 2 and Appendix 3.

### B.3. : The Standard Premium Rate History

The history of the SPR is as follows:

**Table 5: SPR and Loss Ratio History**

| | Standard Premium Rate | % Change | Loss Ratio* |
|---|---|---|---|
| Fiscal 2004 | $91.90 | 5.0% | 101% |
| Fiscal 2005 | $102.95 | 12.0% | 103% |
| Fiscal 2006 | $119.49 | 16.1% | 101% |
| Fiscal 2007 | $140.92 | 17.9% | 93% |
| Fiscal 2008 | $152.59 | 8.3% | 100% |
| Fiscal 2009 | $164.37 | 7.7% | 109% |
| Fiscal 2010 | $184.01 | 11.9% | 112% |
| Fiscal 2011 | $209.63 | 13.9% | 108% (revised) |
| Fiscal 2012 | $225.46 | 7.6% | 110% |
| Fiscal 2013 | $236.73 | 5.0% | To be determined next year |

* based on a comparison of the SPR to the determined claims cost per-capita

### B.4. : Memorandums of Understanding with the BHB

The SPR for Fiscal 2012 and Fiscal 2013 had been set on the expectation that a Memorandum of Understanding (MoU) between the BHB and each insurer (or approved scheme) would establish a threshold for the total fees that can be billed by the BHB. We understand that for Fiscal 2012, a MoU had been effected with only three of the insurers. At the present time, the MoU's have not been renewed for Fiscal 2013. The SPR recommendation in this report takes no account of any MoU that may possibly be in effect over Fiscal 2014. Our approach applies a "catch up" to the SPR to take into account what has actually transpired since the beginning of Fiscal 2012 – a higher utilization than originally assumed and the additional services provided by the BHB.

## B.5. : The Standard Premium Rate Recommendation

Based on discussions and directions from the BHeC and the Ministry of Health regarding the Bermuda Hospitals Board fees, the utilization, and overseas costs projections, our recommendation for the Fiscal 2014 SPR is as follows:

### Table 6: SPR Recommendation

| | | Increase % | |
|---|---|---|---|
| Fiscal 2013 SPR | | | $236.73 |
| 1. | Increase in BHB Fees (for Hospital Fund) | 0.00% | $0.00 |
| 2. | Increase in BHB Fees (adjustment to Fee Schedule) | 0.00% | $0.00 |
| 3. | Allowance for Change in Local Utilization / Inflation / Services | 21.50% | $38.17 |
| 4. | Allowance for Change in Overseas Fees / Utilization / Inflation | 12.50% | $7.40 |
| 5. | Future Changes in Benefit Provisions | (0.02%) | ($0.03) |
| **Recommended Fiscal 2014 SPR** | | | **$282.27** |
| **% Change in SPR** | | | **19.2%** |
| **$ Change in SPR** | | | **$45.54** |

### Notes

1. According to the Ministry of Health, the Bermuda Hospital's Board fees are not to increase.
2. For local claims, the allowance for utilization reflects an environment whereby a threshold under a MoU does not apply and a catch up is applied for the Fiscal 2012 and Fiscal 2013 period (as described in Section B.4.). Over the 3 years ending Fiscal 2012, the local utilization has increased by 7.5% per annum. In Fiscal 2012 the local utilization increased by 9%. The recommendation above assumes utilization increasing by 8.5% per annum.
3. We have included an allowance for an overall increase of 12.5% in overseas claims (this being a combination of overseas fee increases and overseas utilization; the latter having increased by 9.5% per annum over the 3 years ending Fiscal 2012).

4. We understand that with effect from April 1, 2013, obstetricians will no longer be employed by the BHB and diagnostic imaging services provided outside of the BHB will not be eligible for government subsidy (however these services will still remain covered under the SHB). The SPR has been adjusted accordingly to account for the changes in provisions. We understand that aside from the aforementioned, no additional changes or benefits are to be approved for inclusion in the SHB or the MRF.
5. We recommend maintaining the multiplier at 4 times the SPR for those over age 65 and not eligible for the government subsidy (to be eligible for the government subsidy one has to have been resident for a continuous period of not less than 10 years during the period of 20 years immediately preceding the application for payment of the subsidy). The cost (without subsidies) for persons aged 65 and over is estimated to be approximately four times the population as a whole (and the SPR is representative of the cost of the population as a whole).

# Section C – Mutual Reinsurance Fund

### C.1. : Introduction

The Mutual Reinsurance Fund (MRF) is funded by a premium which is added onto each health insurance contract. The insurance providers collect a premium from each insured participant and deposit this premium with the MRF. The determination of the premium rate of the MRF rests with the Ministry of Health, under advisement of the Bermuda Health Council. The MRF currently serves the following purposes:

a) it acts as a catastrophic fund to cover certain high dollar value claims which are included as benefits under the SHB,

b) it allows the introduction and assessment of new and experimental treatments which have no prior established actuarial experience or pricing model,

c) it transfers funds to the Health Insurance Department of the Ministry of Health (due to HID's role as insurer of last resort with their acceptance of high-cost participants and open enrollment policies which impose no terms of underwriting or exclusion of pre-existing conditions).

The SHB procedures that are currently paid from the MRF are as follows:

1) Haemodialysis
2) Kidney Transplant (up to $30,000)
3) Anti-rejection drugs
4) Long-term stay (in hospital)
5) Home Health care (up to March 31, 2011)

As the name suggests the MRF acts as a reinsurance facility for all the insurance providers. The risks relating to the above mentioned items can be significant and could be too onerous for any one insurance provider (especially a small one) to bear. This is particularly relevant given that the SPR sets the ceiling price for the SHB. The MRF provides an element of stability to the financing of the SHB.

## C.2. : Claims and Financial Information

A history of claims under the MRF is as follows:

**Table 7: Claims History**

| Fiscal Year | Claims Paid | % Change |
|---|---|---|
| 2006 | $8,069,000 | 13% |
| 2007 | $8,805,000 | 9% |
| 2008 | $10,195,000 | 16% |
| 2009 | $11,577,000 | 14% |
| 2010 | $15,744,000 | 36% |
| 2011 | $15,859,000 | 1% |
| 2012 | $17,137,000 | 8% |

The history of the MRF Premium is as follows:

**Table 8: Premium History**

| | MRF Premium Rate | % Change |
|---|---|---|
| Fiscal 2004 | $16.40 | |
| Fiscal 2005 | $17.05 | 4.0% |
| Fiscal 2006 | $16.75 | -1.8% |
| Fiscal 2007 | $19.77 | 18.0% |
| Fiscal 2008 | $21.25 | 7.5% |
| Fiscal 2009 | $22.84 | 7.5% |
| Fiscal 2010 | $24.43 | 7.0% |
| Fiscal 2011 | $26.51 | 8.5% |
| Fiscal 2012 | $26.81 | 1.1% |
| Fiscal 2013 | $34.88 | 30.1% |

## C.3. : The Mutual Reinsurance Fund Premium Recommendation

Based on discussions and directions from the BHeC and the Ministry of Health regarding the Bermuda Hospitals Board fees, the utilization, and MRF financial position, our recommendation for the Fiscal 2014 MRF Premium is as follows:

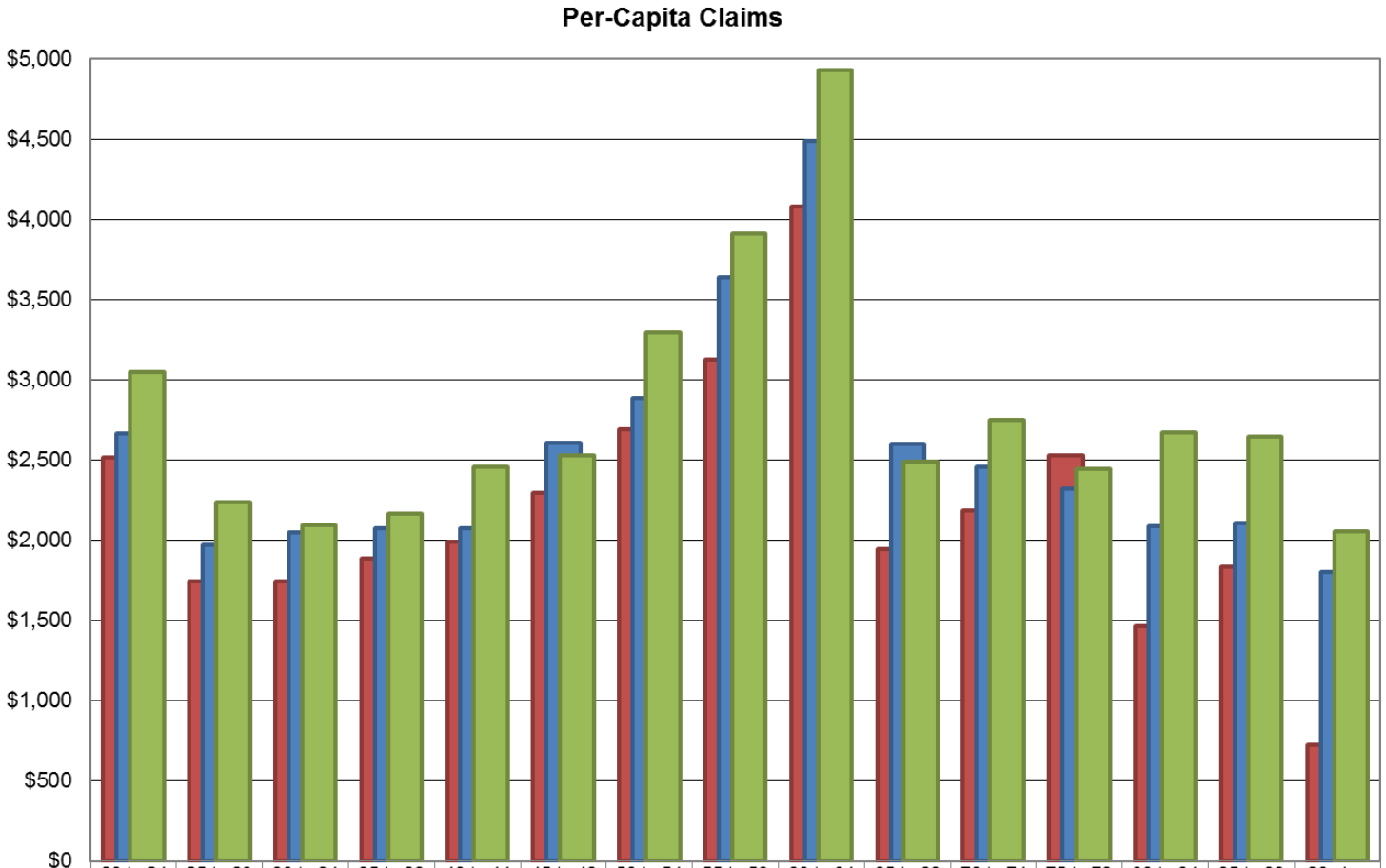
**Table 9: MRF Recommendation**

| | | Increase % | |
|---|---|---|---|
| Fiscal 2013 MRF Premium | | | $34.88 |
| | | | |
| 1. | Increase in BHB Fees (for Hospital Fund) | 0.00% | $0.00 |
| 2. | Increase in BHB Fees (adjustment to Fee Schedule) | 0.00% | $0.00 |
| 3. | Allowance for Change in Local Utilization / Inflation | 21.50% | $7.50 |
| 4. | Changes in Benefit Provisions | 0.00% | $0.00 |
| 5. | Pay down of Accumulated Deficit | 3.40% | $1.19 |
| | | | |
| **Recommended Fiscal 2014 MRF Premium** | | | **$43.57** |
| | | | |
| **% Change in MRF Premium** | | | **24.9%** |
| **$ Change in MRF Premium** | | | **$8.69** |

### Notes

1. Based on the estimated financial performance of the MRF over the course of Fiscal 2012 and Fiscal 2013, the financial position of the MRF is expected to indicate a deficit as at March 31, 2013. The item "Pay down of Accumulated Deficit" is expected (over Fiscal 2014) to address the deficit in the MRF.
2. For additional notes on the recommendation, please refer to Section B.5.

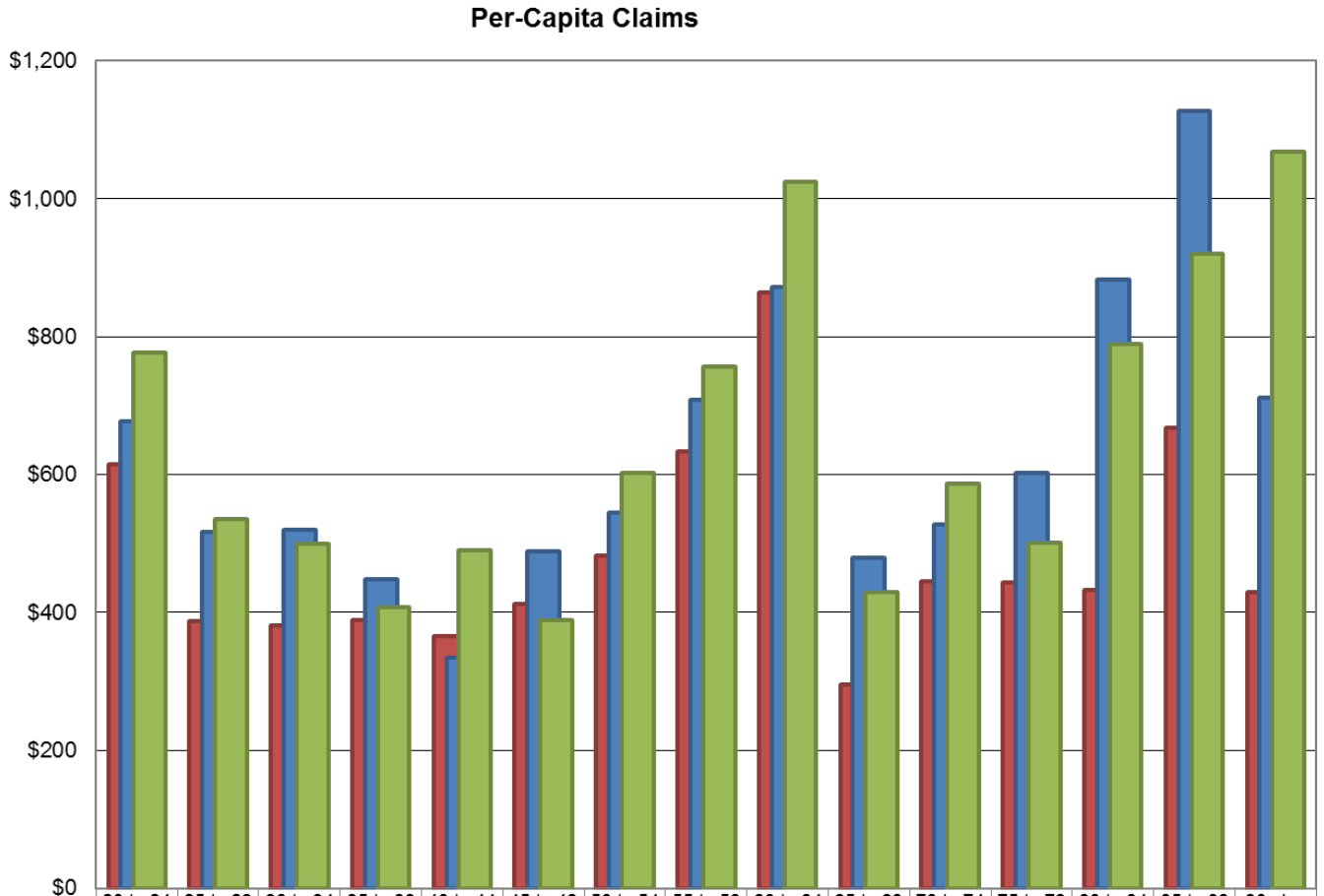
**Appendix 1 – Standard Hospital Benefits (Total Per-Capita Claim Costs)**




| | 20 to 24 | 25 to 29 | 30 to 34 | 35 to 39 | 40 to 44 | 45 to 49 | 50 to 54 | 55 to 59 | 60 to 64 | 65 to 69 | 70 to 74 | 75 to 79 | 80 to 84 | 85 to 89 | 90 plus |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2010 Total | $2,518 | $1,741 | $1,743 | $1,890 | $1,989 | $2,296 | $2,689 | $3,127 | $4,083 | $1,947 | $2,182 | $2,526 | $1,465 | $1,832 | $722 |
| 2011 Total | $2,663 | $1,974 | $2,046 | $2,077 | $2,072 | $2,607 | $2,889 | $3,639 | $4,487 | $2,597 | $2,457 | $2,320 | $2,090 | $2,105 | $1,804 |
| 2012 Total | $3,047 | $2,240 | $2,094 | $2,168 | $2,455 | $2,527 | $3,293 | $3,910 | $4,932 | $2,488 | $2,749 | $2,447 | $2,673 | $2,648 | $2,054 |

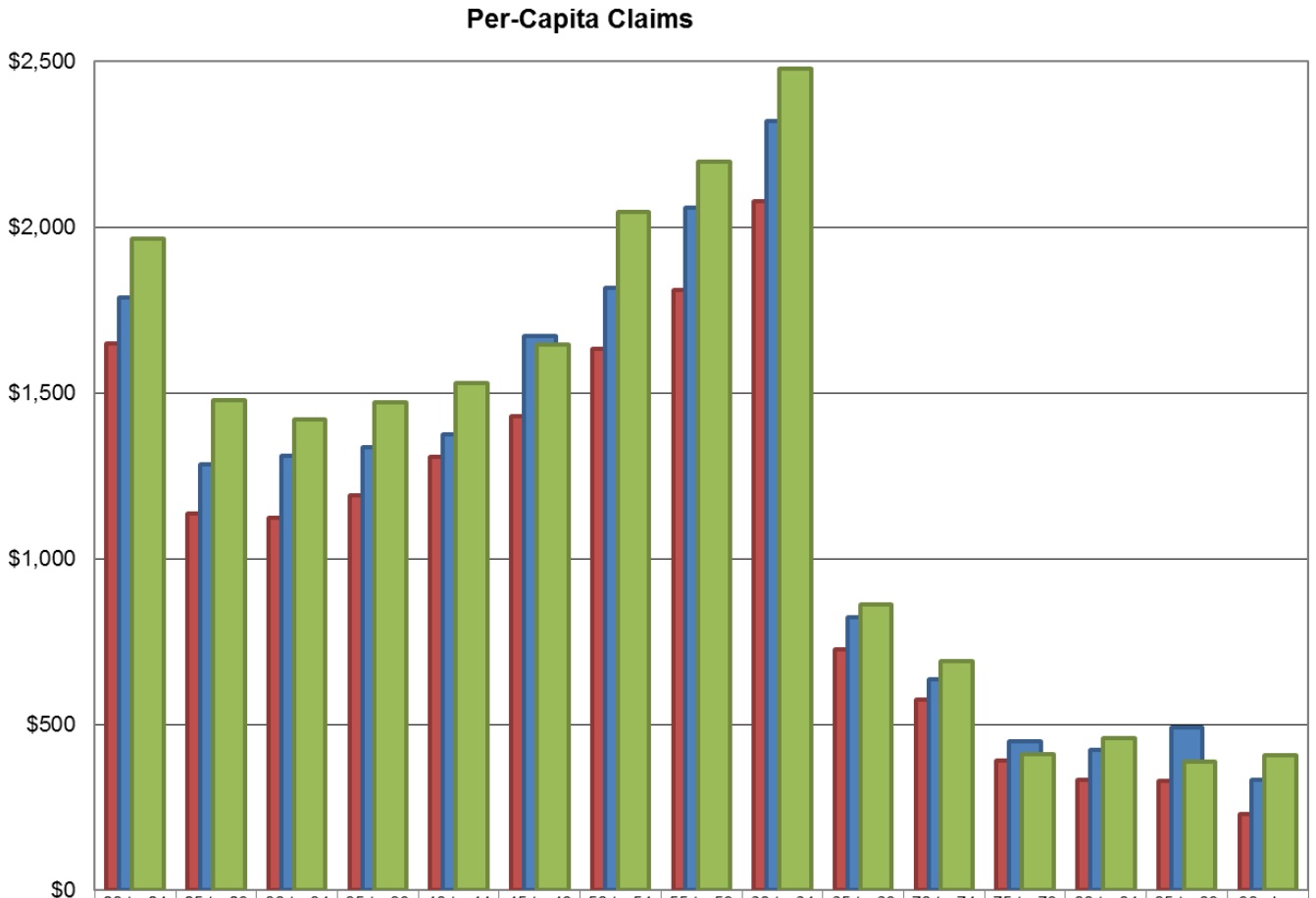
The decline in the cost per-capita at age 65 is due to the government subsidy.

**Appendix 1a – Standard Hospital Benefits (Bermuda In-Patient Per-Capita Claim Costs)**



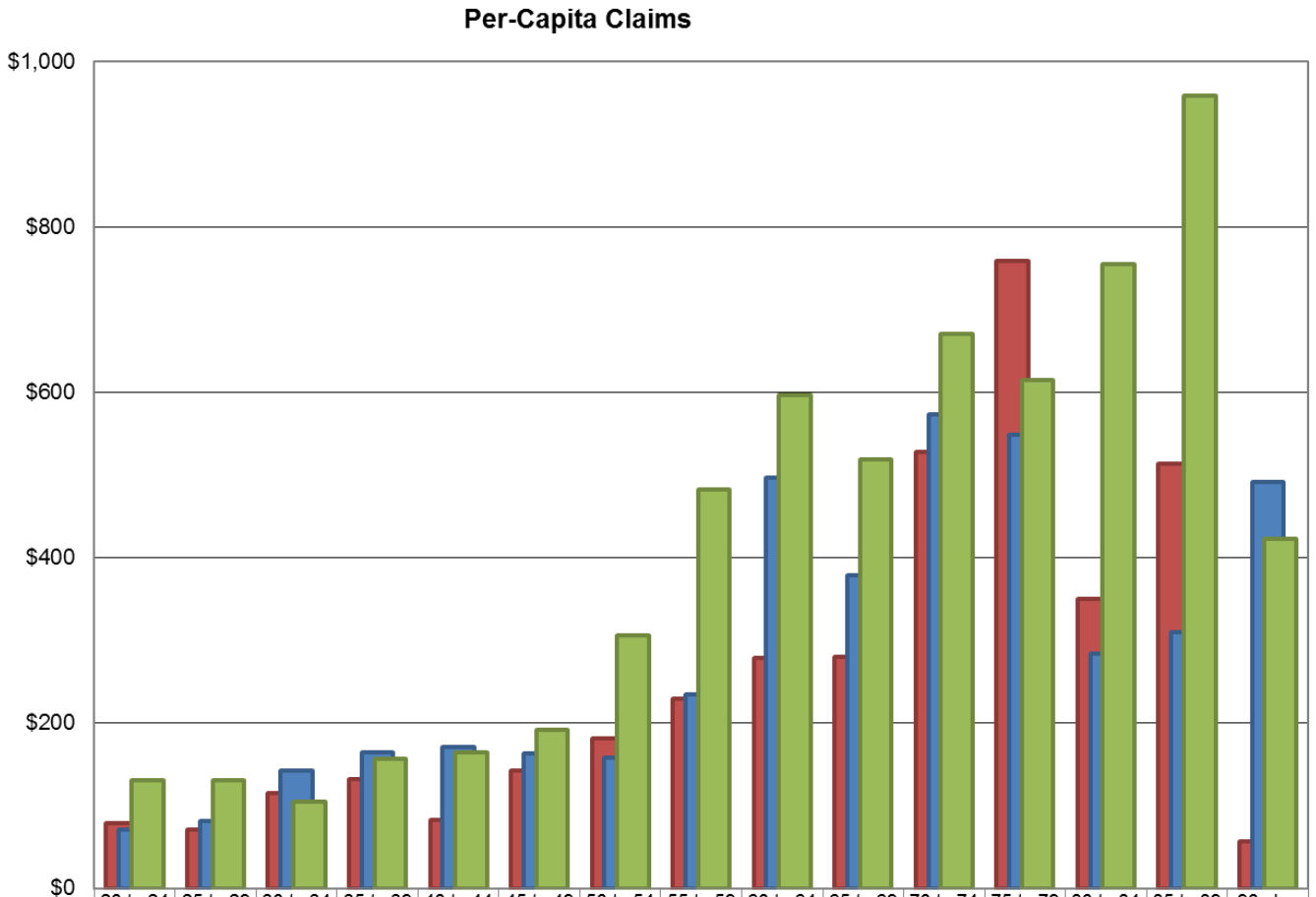

| | 20 to 24 | 25 to 29 | 30 to 34 | 35 to 39 | 40 to 44 | 45 to 49 | 50 to 54 | 55 to 59 | 60 to 64 | 65 to 69 | 70 to 74 | 75 to 79 | 80 to 84 | 85 to 89 | 90 plus |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2010 Bermuda Inpatient | $615 | $388 | $381 | $389 | $366 | $412 | $482 | $633 | $864 | $295 | $444 | $443 | $433 | $668 | $430 |
| 2011 Bermuda Inpatient | $676 | $516 | $520 | $447 | $335 | $489 | $545 | $709 | $873 | $479 | $527 | $603 | $883 | $1,127 | $712 |
| 2012 Bermuda Inpatient | $777 | $535 | $499 | $408 | $489 | $389 | $602 | $756 | $1,025 | $430 | $587 | $501 | $789 | $920 | $1,069 |

**Appendix 1b – Standard Hospital Benefits (Bermuda Out-Patient Per-Capita Claim Costs)**



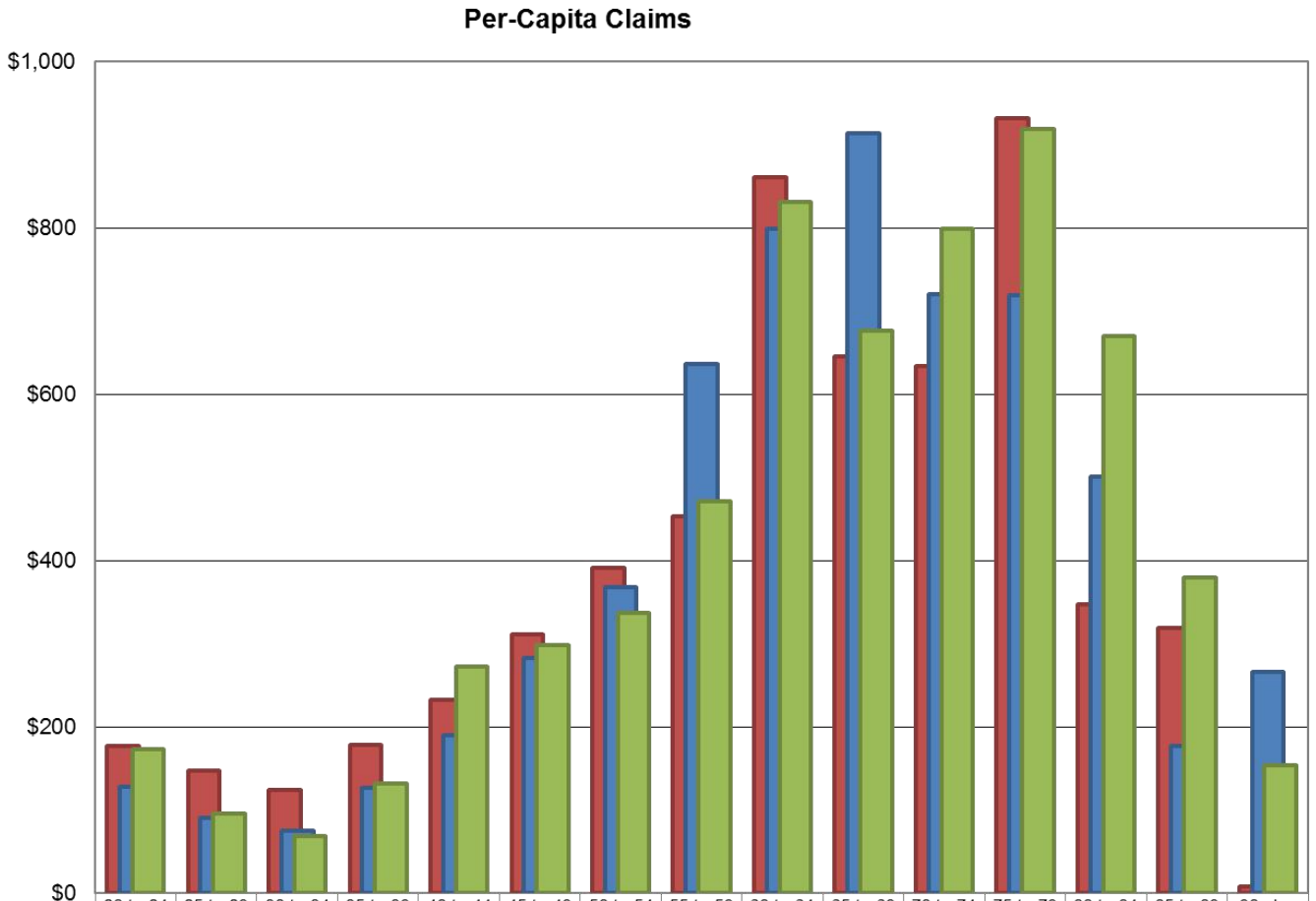

| | 20 to 24 | 25 to 29 | 30 to 34 | 35 to 39 | 40 to 44 | 45 to 49 | 50 to 54 | 55 to 59 | 60 to 64 | 65 to 69 | 70 to 74 | 75 to 79 | 80 to 84 | 85 to 89 | 90 plus |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2010 Bermuda Outpatient | $1,648 | $1,135 | $1,122 | $1,191 | $1,308 | $1,431 | $1,635 | $1,810 | $2,080 | $726 | $577 | $392 | $334 | $331 | $229 |
| 2011 Bermuda Outpatient | $1,788 | $1,285 | $1,309 | $1,338 | $1,376 | $1,671 | $1,817 | $2,060 | $2,319 | $825 | $636 | $450 | $423 | $491 | $334 |
| 2012 Bermuda Outpatient | $1,966 | $1,477 | $1,421 | $1,471 | $1,530 | $1,648 | $2,047 | $2,199 | $2,478 | $863 | $691 | $411 | $458 | $390 | $409 |

**Appendix 1c – Standard Hospital Benefits (Overseas In-Patient Per-Capita Claim Costs)**




| | 20 to 24 | 25 to 29 | 30 to 34 | 35 to 39 | 40 to 44 | 45 to 49 | 50 to 54 | 55 to 59 | 60 to 64 | 65 to 69 | 70 to 74 | 75 to 79 | 80 to 84 | 85 to 89 | 90 plus |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2010 Overseas Inpatient | $79 | $71 | $115 | $132 | $83 | $143 | $181 | $229 | $279 | $280 | $528 | $760 | $350 | $513 | $56 |
| 2011 Overseas Inpatient | $70 | $82 | $142 | $165 | $171 | $164 | $158 | $234 | $496 | $379 | $573 | $548 | $284 | $310 | $492 |
| 2012 Overseas Inpatient | $131 | $131 | $105 | $157 | $164 | $192 | $306 | $483 | $597 | $519 | $671 | $615 | $755 | $959 | $423 |

**Appendix 1d – Standard Hospital Benefits (Overseas Out-Patient Per-Capita Claim Costs)**




| | 20 to 24 | 25 to 29 | 30 to 34 | 35 to 39 | 40 to 44 | 45 to 49 | 50 to 54 | 55 to 59 | 60 to 64 | 65 to 69 | 70 to 74 | 75 to 79 | 80 to 84 | 85 to 89 | 90 plus |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2010 Overseas Outpatient | $177 | $147 | $124 | $179 | $232 | $311 | $391 | $454 | $861 | $646 | $634 | $932 | $348 | $320 | $7 |
| 2011 Overseas Outpatient | $129 | $91 | $75 | $127 | $191 | $283 | $368 | $636 | $799 | $914 | $721 | $719 | $501 | $177 | $266 |
| 2012 Overseas Outpatient | $174 | $96 | $68 | $132 | $272 | $298 | $337 | $472 | $832 | $677 | $800 | $920 | $671 | $380 | $153 |

## Appendix 2 – Bermuda Hospitals Board In-Patient Analysis - Admissions by Age

| | Fiscal 2012 | | | | Fiscal 2011 | | | |
|---|---|---|---|---|---|---|---|---|
| Age | Number of Admissions | Total DRG Fee (in '000) | % of Admissions | % of Total Cost | Number of Admissions | Total DRG Fee (in '000) | % of Admissions | % of Total Cost |
| <5 | 845 | $4,110 | 16% | 10% | 1,044 | $5,972 | 17% | 13% |
| 5-14 | 130 | $657 | 2% | 2% | 133 | $589 | 2% | 1% |
| 15-24 | 356 | $2,320 | 7% | 6% | 386 | $2,226 | 6% | 5% |
| 25-34 | 682 | $3,983 | 13% | 10% | 795 | $4,327 | 13% | 10% |
| 35-44 | 531 | $3,637 | 10% | 9% | 591 | $3,968 | 10% | 9% |
| 45-54 | 562 | $4,680 | 11% | 12% | 653 | $5,423 | 11% | 12% |
| 55-64 | 616 | $5,895 | 12% | 15% | 709 | $6,524 | 12% | 14% |
| 65-74 | 650 | $6,033 | 12% | 15% | 667 | $6,367 | 11% | 14% |
| 75-84 | 623 | $5,697 | 12% | 14% | 731 | $6,429 | 12% | 14% |
| 85-95 | 296 | $2,617 | 6% | 7% | 364 | $3,089 | 6% | 7% |
| >95 | 20 | $151 | 0% | 0% | 24 | $208 | 0% | 0% |
| Total | 5,311 | $39,781 | 100% | 100% | 6,097 | $45,120 | 100% | 100% |

Data Source : BHB

### Notes

1. The total fees are the DRG charge only and do not include the per-diem fee or any other fee charged for in-patient services.
2. The under 5 age group is mostly comprised of newborns.

## Appendix 2a - Admissions by Major Diagnostic Categories

| | Fiscal 2012 | | | | Fiscal 2011 | | |
|---|---|---|---|---|---|---|---|
| **Major Diagnostic Category (sorted by F2012 Fee)** | **Number of Admissions** | **Change in Admissions** | **Total DRG Fee (in '000)** | **% of Total Cost** | **Number of Admissions** | **Total DRG Fee (in '000)** | **% of Total Cost** |
| Musculoskeletal System And Connective Tissue | 620 | -9% | $6,449 | 16% | 682 | $6,681 | 15% |
| Digestive System | 498 | -5% | $5,032 | 13% | 524 | $5,137 | 11% |
| Circulatory System | 492 | -24% | $3,957 | 10% | 646 | $4,912 | 11% |
| Newborn And Other Neonates (Perinatal Period) | 627 | -20% | $3,194 | 8% | 781 | $4,757 | 11% |
| Respiratory System | 467 | -14% | $3,420 | 9% | 546 | $3,814 | 8% |
| Nervous System | 345 | -11% | $2,678 | 7% | 388 | $2,990 | 7% |
| Pregnancy, Childbirth And Puerperium | 693 | -19% | $2,453 | 6% | 851 | $2,860 | 6% |
| Not Classified | 24 | -51% | $808 | 2% | 49 | $1,832 | 4% |
| Hepatobiliary System And Pancreas | 143 | -19% | $1,323 | 3% | 177 | $1,634 | 4% |
| Skin, Subcutaneous Tissue And Breast | 184 | 6% | $1,328 | 3% | 173 | $1,182 | 3% |
| Infectious and Parasitic DDs | 141 | 38% | $1,755 | 4% | 102 | $1,205 | 3% |
| Kidney And Urinary Tract | 211 | 0% | $1,544 | 4% | 210 | $1,555 | 3% |
| Ear, Nose, Mouth And Throat | 245 | -5% | $1,175 | 3% | 259 | $1,299 | 3% |
| Endocrine, Nutritional And Metabolic System | 163 | -26% | $967 | 2% | 221 | $1,308 | 3% |
| Female Reproductive System | 120 | 22% | $809 | 2% | 98 | $638 | 1% |
| Multiple Significant Trauma | 27 | -23% | $616 | 2% | 35 | $773 | 2% |
| All Other | 311 | -14% | $2,274 | 6% | 355 | $2,543 | 6% |
| **Total** | **5,311** | **-13%** | **$39,781** | **100%** | **6,097** | **$45,120** | **100%** |
| **Change over Year** | **-13%** | | **-12%** | | | | |

Data Source : BHB

**Notes:** 1. We have summarized the DRG codes into mutually exclusive diagnosis areas (referred to as Major Diagnostic Categories).
2. The data indicates a significant decline in admissions during F2012 except in the category “Infectious and Parasitic DDs”
3. The figures for Fiscal 2011 have been revised from those tabled in our 2011 report.

## Appendix 2b - Fiscal 2012 Days in Hospital

| Days in Hospital | Number of Admissions | % of Admissions | % of Total Cost | Average days in Hospital | DRG Fees (in '000) |
|---|---|---|---|---|---|
| 0-4 | 3,489 | 66% | 52% | 2.3 | $20,868 |
| 5-9 | 1,036 | 20% | 24% | 6.5 | $9,589 |
| 10-14 | 316 | 6% | 8% | 11.8 | $3,240 |
| 15-19 | 151 | 3% | 4% | 16.8 | $1,677 |
| 20-24 | 86 | 2% | 3% | 21.8 | $1,188 |
| 25-29 | 55 | 1% | 2% | 27.2 | $681 |
| 30-35 | 46 | 1% | 2% | 32.3 | $608 |
| >35 | 132 | 2% | 5% | 74.0 | $1,931 |
| | 5,311 | 100% | 100% | 6.7 | $39,781 |

Data Source : BHB

### Notes

1. Eighty-six percent of admissions are under 10 days. In Fiscal 2011, this figure was 85%.
2. The average days in hospital during Fiscal 2011 was 8.5 days (revised).

**Appendix 3 – Split of Local Out-Patient data and Overseas In-Patient and Out-Patient data**

| Claims in $'000 | 1. Diag. Imaging (outpatient) | 2. Diag. Imaging (appr.facility) | 3. Labs | 4. Surgery | 5. Anesthetic | 6. Prescription | 7. Other outpatient claims | Total |
|---|---|---|---|---|---|---|---|---|
| **Local Out-Patient Claims F2011** | $14,730 | $6,460 | $18,940 | $6,470 | $2,010 | $1,720 | $24,480 | $74,810 |
| **Local Out-Patient Claims F2012** | $18,600 | $7,310 | $24,080 | $5,650 | $3,620 | $2,080 | $18,830 | $80,170 |
| **% Increase** | 26% | 13% | 27% | -13% | 80% | 21% | -23% | 7% |
| | | | | | | | | |
| **Overseas Out & In-Patient Claims F2011** | $4,860 | | $3,250 | $3,750 | $800 | $1,300 | $14,350 | $28,310 |
| **Overseas Out & In-Patient Claims F2012** | $5,330 | | $2,820 | $4,880 | $900 | $990 | $21,230 | $36,140 |
| **% Increase** | 17% | | 11% | 13% | 3% | 5% | 51% | 100% |
| | | | | | | | | |
| **Total Claims F2011** | $26,050 | | $22,190 | $10,230 | $2,810 | $3,020 | $38,820 | $103,110 |
| **Total Claims F2012** | $31,240 | | $26,900 | $10,530 | $4,520 | $3,070 | $40,060 | $116,310 |
| **% Increase** | 20% | | 21% | 3% | 61% | 2% | 3% | 13% |

Data Source : Insurers

**Notes**

1. Local Diagnostics, Labs and Anesthetics have increased significantly over the prior period. Local Diagnostics and Labs constitute 62% of Fiscal 2012 local out-patient spending. The category "Other" contains 23% of the Fiscal 2012 local out-patient spending.
2. For overseas claims (which shows a large increase over the prior period), the "Other" category contains 59% of the Fiscal 2012 in-patient and out-patient spending.
3. In the local context, item 1 and 3-6, are services provided by the BHB. Item 7 is in respect of all other services (e.g. emergency room services, oncology and cardiology services). In the overseas context item 7 is similarly in respect of all other outpatient services.

**About Morneau Shepell**

Morneau Shepell is Canada's largest human resource consulting and outsourcing firm focused on pensions, healthcare, and workplace health management and productivity solutions.

We offer consulting and administrative services for the full range of retirement, healthcare, and employee benefits programs, as well as absence and disability management, workplace training and education, and employee assistance program. This suite of services allows us to offer solutions that help improve the financial security, health and productivity of organizations and their people around the globe.

Morneau Shepell has approximately 2,700 employees in 70 locations across Canada and the United States. We provide services across Canada, the United States, Bermuda, the Caribbean and around the globe. Our clients range from government entities, associations, large corporations and small businesses. The origins of our company trace back to 1962.