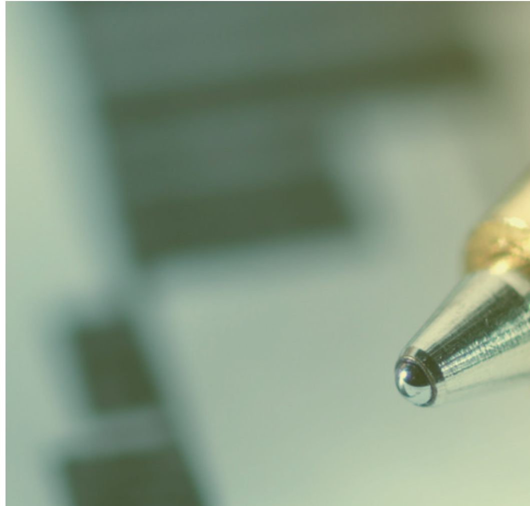
2010 Actuarial Report

for the
Bermuda Health Council



April 2011
(Abridged Version)

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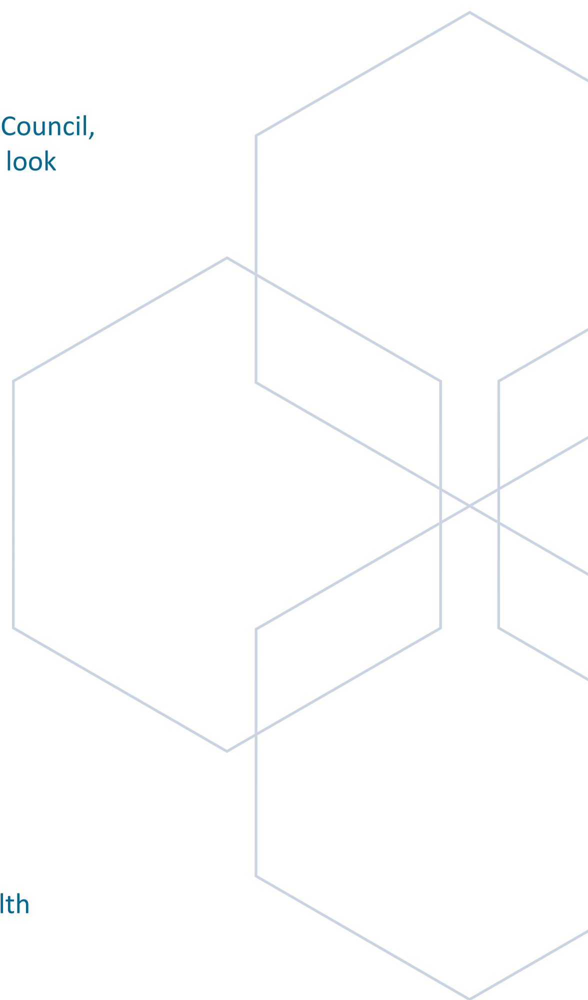

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Published by:
The Bermuda Health Council (May 2011)
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Reference as:
Morneau Sobeco (2011) 2010 Actuarial Report for the Bermuda Health Council (Abridged Version). Bermuda Health Council: Bermuda.

2010 Actuarial Report for the Bermuda Health Council

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

April 2011

Abridged Version

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Introduction

Morneau Shepell has been engaged by the Bermuda Health Council (BHeC) and we are pleased to present our report on the 2010 review 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 2009 / 2010 period
- to recommend premium rates that are to take effect from April 1, 2011
- 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 Bermuda Health Council (BHeC).

Section A – Summary & Premium Recommendation

A summary of Fiscal 2010 and Fiscal 2009 insured headcount, claims and costs per-capita is tabled below:

A.1. : Standard Hospital Benefit Insured Headcount

	Fiscal 2010	Fiscal 2009	% Change
Grand Total	50,893	53,837	(5.5%)

A.2. : Standard Hospital Benefit Claims Data

Claims (in '000s)	Local			Overseas			Overall
	In-Patient	Out-Patient	Total	In-Patient	Out-Patient	Total	Total
Fiscal 2009	23,567	66,487	90,054	9,771	15,669	25,440	115,494
Fiscal 2010	27,260	69,602	96,862	11,527	17,514	29,041	125,903
Increase	16%	5%	8%	18%	12%	14%	9%

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

Fiscal 2010		Fiscal 2009		
Cost Per-Capita	Loss Ratio	Cost Per-Capita	Loss Ratio	Cost Per-Capita Change
206	112%	179	109%	15%

The Fiscal 2010 and Fiscal 2009 loss ratios are based on a Standard Premium Rate of $184.01 and $164.37 respectively. The total per-capita claim costs increased at a pace greater than the change in the Standard Premium Rate (15% for claims and 12% for the Standard Premium Rate). This has led to a deterioration in the loss ratio from 109% to 112%.

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

	Increase %	Standard Hospital Benefit	Mutual Reins. Fund	Total
2010 – 2011 Premium		$209.63	$26.51	$236.14
1. Increase in BHB Fees	1.50%	$2.36	$0.40	$2.76
2. Local Change in Utilization / Inflation	3.00%	$4.72	$0.80	$5.52
3. Overseas Change in Fees / Utilization / Inflation	15.00%	$7.86	$0.00	$7.86
4. Future Changes in Benefit Provisions	0.43% & (3.40%)	$0.90	($0.90)	$0.00
Recommended 2011 – 2012 SPR		$225.46*	$26.81	$252.27
% Change in Premium		7.6%	1.1%	6.8%
$ Change in Premium		$15.83	$0.30	$16.13

* 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, 2011

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 forms the basis of 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 recommended annually by the Bermuda Health Council. The SPR sets the ceiling rate 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 2010 Claims and Statistical Data

We have analyzed the Fiscal 2010 and Fiscal 2009 insurance company and approved scheme[1] submissions to the BHeC. A summary of certain data elements and our analysis is tabled below:

	Average Headcount			
	2010	**% Total**	**2009**	**% Total**
Insurers	40,096	79%	42,903	80%
Approved Schemes	10,798	21%	10,934	20%
Total	**50,893**	**100%**	**53,837**	**100%**

The year-over-year decline in the average headcount is 5.5%.

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

The claims are summarized below:

Claims (in '000s)	Local			Overseas			Overall
	In-Patient	Out-Patient	Total	In-Patient	Out-Patient	Total	Total
Fiscal 2009	23,567	66,487	90,054	9,771	15,669	25,440	115,494
Fiscal 2010	27,260	69,602	96,862	11,527	17,514	29,041	125,903
Increase	16%	5%	8%	18%	12%	14%	9%
Increase in utilization	15%	4%	7%	17%	11%	13%	8%
Percentage 2010 Local Claims							77%
Percentage 2010 Overseas Claims							23%

The change in utilization represents the increase in the incidence of claims and use of hospital services. It has been derived by adjusting the increase in claims by the change in the average headcount and an assumed increase in the cost of services (i.e. the change in the provider fees) of 6.5%. While the overall increase in utilization is 8%, the increase in local utilization is 7% and the increase for overseas utilization is 13%. The Local in-patient and Overseas in-patient and out-patient expenditure has increased significantly. The Fiscal 2009 – 2010 total increase in claims is 9% and this compares with a Fiscal 2008 – 2009 increase in claims of 21%[2]. The 2010 split between local claim and overseas claims (i.e. 77% and 23% respectively) is similar to the split for 2009.

The cost per-capita and loss ratio (i.e. the cost per-capita divided by the Standard Premium Rate) for Fiscal 2010 and Fiscal 2009 is tabled below:

Fiscal 2010		Fiscal 2009		
Cost Per-Capita	Loss Ratio	Cost Per-Capita	Loss Ratio	Cost Per-Capita Change
206	112%	179	109%	15%

[2] Morneau Sobeco (2010) 2009 Actuarial Report for the Bermuda Health Council (Abridged Version). Bermuda Health Council: Bermuda.

The Fiscal 2010 and Fiscal 2009 loss ratios are based on a Standard Premium Rate of $184.01 and $164.37 respectively. The total per-capita claim costs increased at a pace greater than the change in the Standard Premium Rate (15% for claims and 12% for the Standard Premium Rate). This has led to a deterioration in the loss ratio from 109% to 112%.

Since 2009, 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 decline at age 65 is more pronounced in 2010 than it was in 2009. The following table comments on the trends over 2009 to 2010:

Claims Per-Capita	Trends 2009 to 2010 (ages 20-79)
Total Claims	2010 is higher in age bands 20-64 and lower between 65-74
Local In-Patient Claims	2010 is significantly higher in age bands 20-64 and 75-79
Local Out-Patient Claims	2010 is mostly similar to 2009
Overseas In-Patient Claims	2010 is significantly higher in age bands 20-59 and lower between 65-74
Overseas Out-Patient Claims	2010 is significantly higher in age bands 20-64 and lower between 65-74

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:

	Standard Premium Rate	% Change	Loss Ratio*
2005 - 2006	119.49	16.1%	101%
2006 - 2007	140.92	17.9%	93%
2007 - 2008	152.59	8.3%	100%
2008 - 2009	164.37	7.7%	109%
2009 - 2010	184.01	11.9%	112%
2010 - 2011	209.63	13.9%	To be determined next year

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

B.4. : The Standard Premium Rate Recommendation

Based on discussions and directions from the BHeC and following agreement with the Bermuda Hospitals Board on cost-containment mechanisms for local utilization[3], our recommendation for the 2011 – 2012 Standard Premium Rate is as follows:

	Increase %	
2010 – 2011 SPR		$209.63
1. Increase in BHB Local Fees	1.50%	$2.36
2. Allowance for Change in Local Utilization / Inflation	3.00%	$4.72
3. Allowance for Change in Overseas Fees / Utilization / Inflation	15.00%	$7.86
4. Future Changes in Benefit Provisions	0.43%	$0.90
Recommended 2011 - 2012 SPR		**$225.46**
% Change in SPR		**7.6%**
$ Change in SPR		**$15.83**

[3] Prior to these events, we had tabled a premium recommendation which can be found in Appendix 4.

Notes

1. The increase in the Bermuda Hospitals Board general fees has been provided by the Ministry of Health.
2. The increase for local utilization reflects the proposal that the total fees that can be billed by the Bermuda Hospitals Board will be limited to a 3.0% increase (after the fee schedule adjustment) over the 2010 – 2011 level. (See B.5. below)
3. We have included an allowance for an overall increase of 15.0% in overseas claims (this being a combination of overseas fee increases and overseas utilization; the latter having increased in the range of 10.0% - 15.0% per annum since Fiscal 2006).
4. We understand that effective Fiscal 2011, the home healthcare benefit which is currently paid by the Mutual Reinsurance Fund will become payable by insurance companies and approved schemes and hence the cost for home healthcare will form part of the Standard Premium Rate. The increase in the 2011 – 2012 SPR for this item is $0.90 per month. The MRF premium reduces by a corresponding amount. Other than this, we understand that no additional changes or benefits are to be approved for inclusion in the Standard Hospital Benefit or the MRF.
5. We recommend maintaining the multiplier at 4 times the Standard Premium Rate for those over age 65 and not eligible for the government subsidy.

B.5. BHB Fee Cap Proposal

Over the last four to five years, the per-capita claim costs under the SHB have been escalating at significant rates. The compounded increase over the period Fiscal 2006 – Fiscal 2010 is 16.0% per annum which is significantly in excess of Bermuda's consumer price inflation (which was approximately 3.4% per annum compounded over the same period[4]).

The BHeC has recently been working with the Bermuda Hospitals Board and other insurers and approved schemes to introduce measures which have the goal of containing the rate of escalation of Bermuda related claim costs.

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[4] Based on data from the Department of Statistics.

Currently it is proposed that from the beginning of Fiscal 2012, a limit apply on the total fees that can be billed by the BHB. We understand that the limit will be a 3.0% increase in total fees (after the fee schedule adjustment) over the Fiscal 2011 level.

Based on our discussions with the BHB, we understand that under such an arrangement the BHB would still be able to manage itself in a fiscally viable manner without compromising on the delivery of services or other long-term capital programs and technology funding needs. For the insurers, approved schemes and other payers, an element of certainty is provided as they can expect their expenditure with the BHB not to exceed the cap. This should translate into lower insurance premiums as the down-side risk from this element (i.e. claims exceeding the cap) has effectively been transferred to the BHB.

We understand that the BHeC will oversee monitoring of the BHB and the Health Insurers Association of Bermuda (HIAB) to ensure that the arrangement achieves a fair balance between the funding needs of the BHB and the interests of an insured population who desire reasonable premium rates and access to high quality care.

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 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 Government low-cost health insurance plans run by the Health Insurance Department.

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

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 (in '000s) under the MRF is as follows:

Fiscal Year	Claims Paid	% Change
2003	7,268	35%
2004	7,498	3%
2005	7,151	-5%
2006	8,069	13%
2007	8,805	9%
2008	10,195	16%
2009	11,577	14%
2010	15,744	36%

Despite a large increase in claims during Fiscal 2010, the MRF ended Fiscal 2010 with a surplus of $0.6 million (based on draft financial statements).

The history of the MRF Premium is as follows:

	MRF Premium Rate	% Change
2003 - 2004	16.40	
2004 - 2005	17.05	4.0%
2005 - 2006	16.75	-1.8%
2006 - 2007	19.77	18.0%
2007 - 2008	21.25	7.5%
2008 - 2009	22.84	7.5%
2009 - 2010	24.43	7.0%
2010 - 2011	26.51	8.5%

C.3. : The Mutual Reinsurance Fund Premium Recommendation

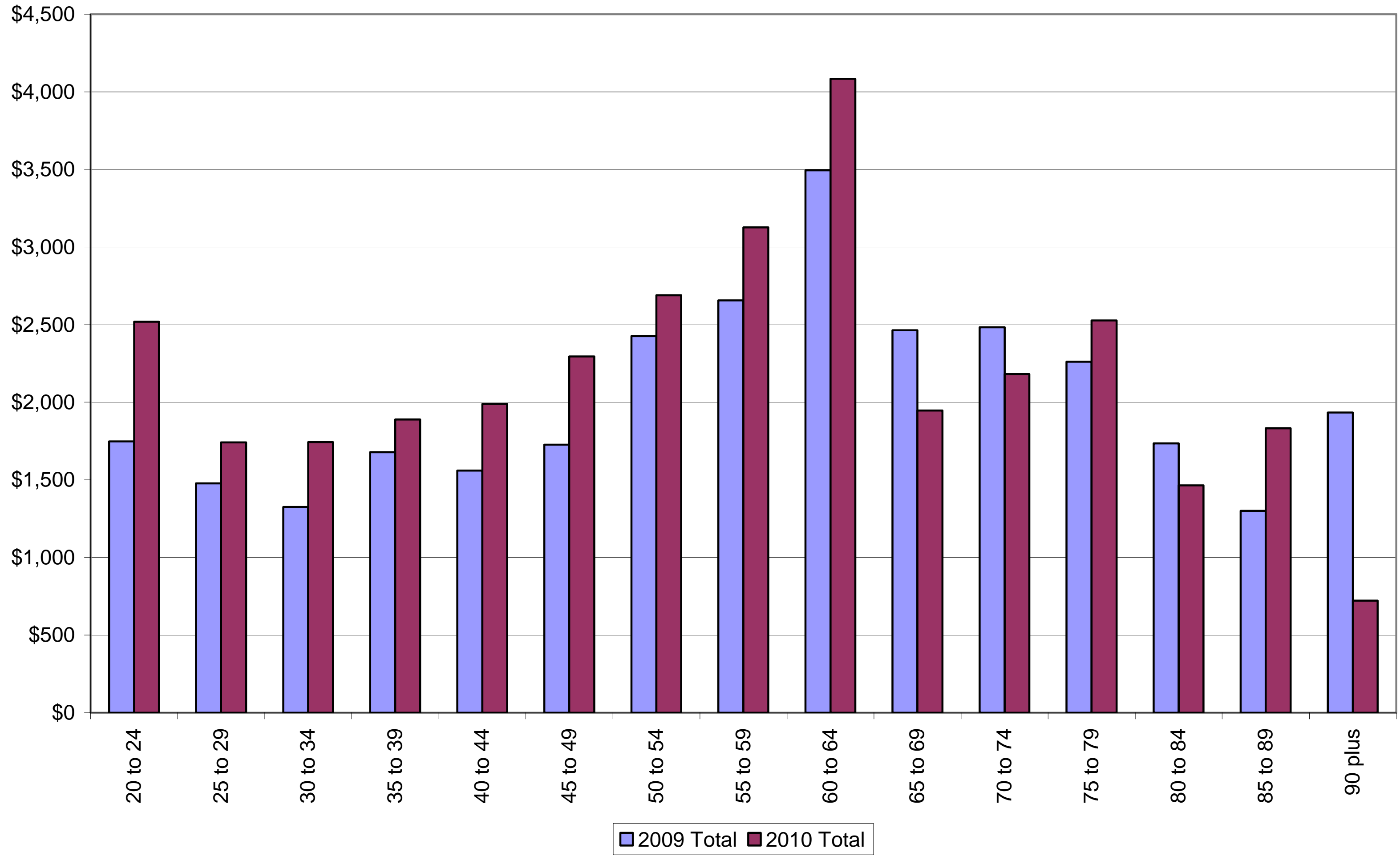
Based on discussions and directions from the BHeC and following agreement with the Bermuda Hospitals Board on cost-containment mechanisms for local utilization[5], our recommendation for the 2011 – 2012 MRF Premium is as follows:

	Increase %	
2010 – 2011 MRF Premium		$26.51
1. Increase in BHB Fees	1.50%	$0.40
2. Allowance for Change in Utilization	3.00%	$0.80
3. Changes in Benefit Provisions	(3.40%)	($0.90)
Recommended 2011 - 2012 MRF Premium		**$26.81**
% Change in MRF Premium		**1.1%**
$ Change in MRF Premium		**$0.30**

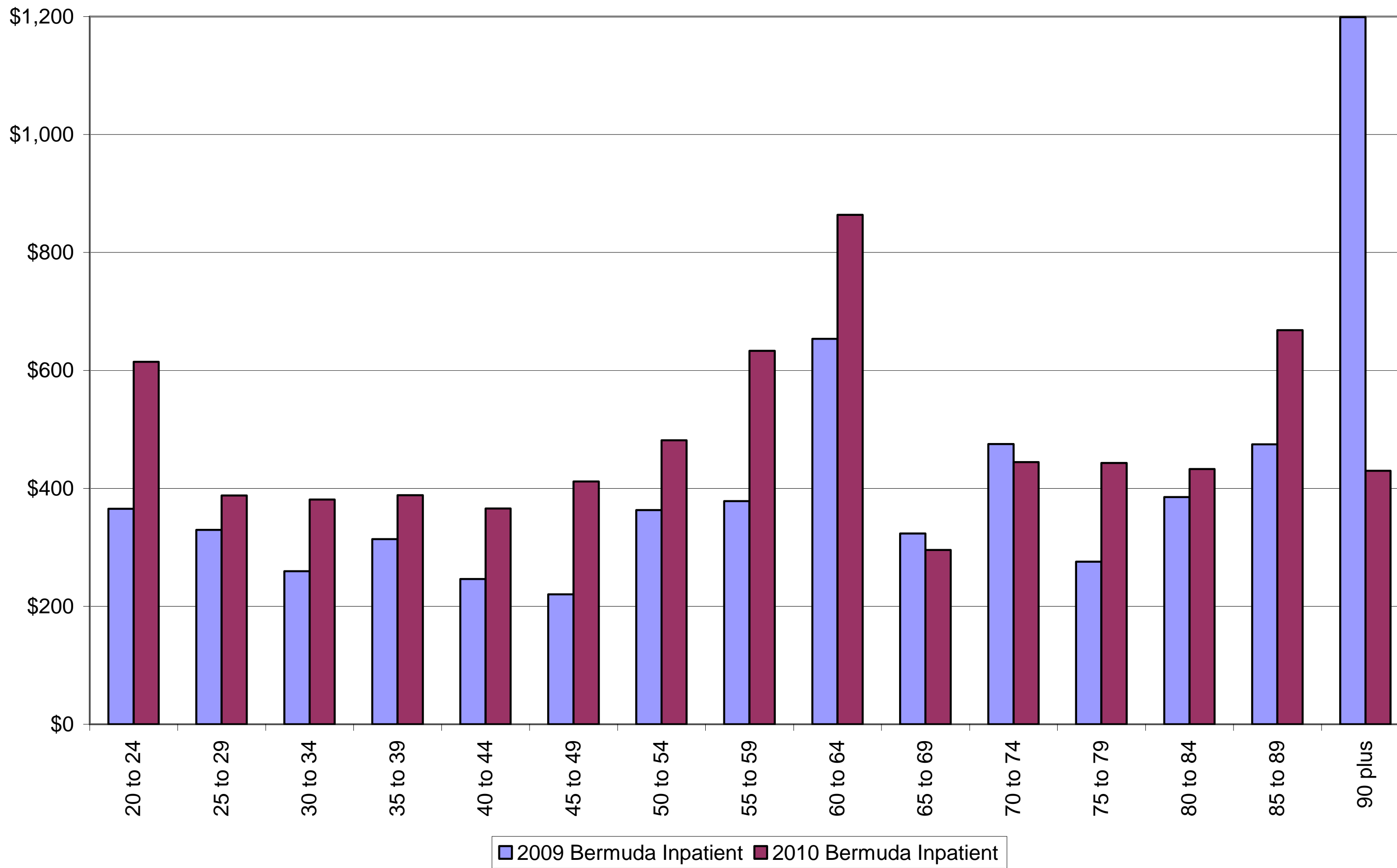
For notes on the recommendation, please refer to Section B.4.

[5] Prior to these events, we had tabled a premium recommendation which can be found in Appendix 4.

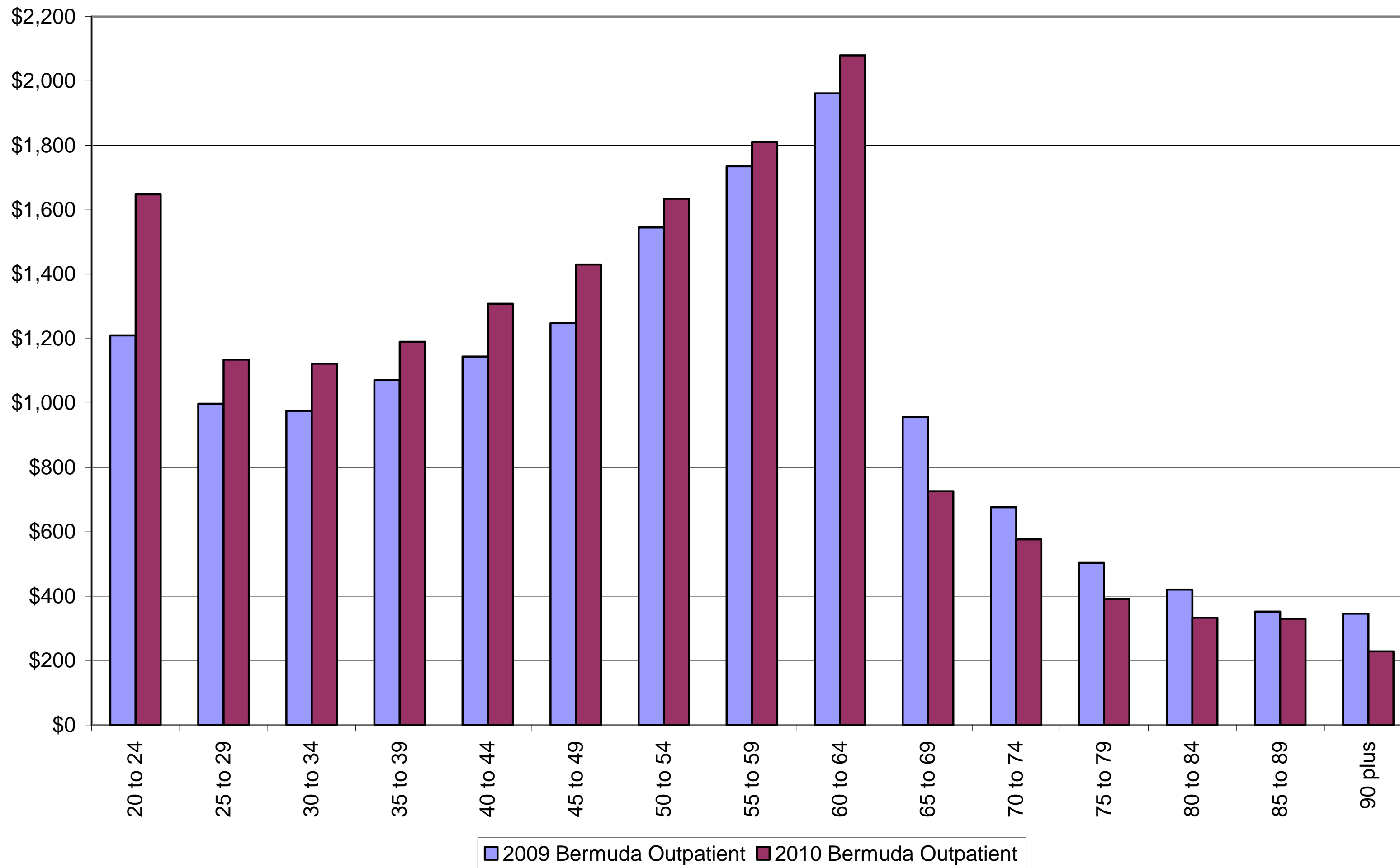
Appendix 1 – Standard Hospital Benefits (Total Claim Costs by Age Group)



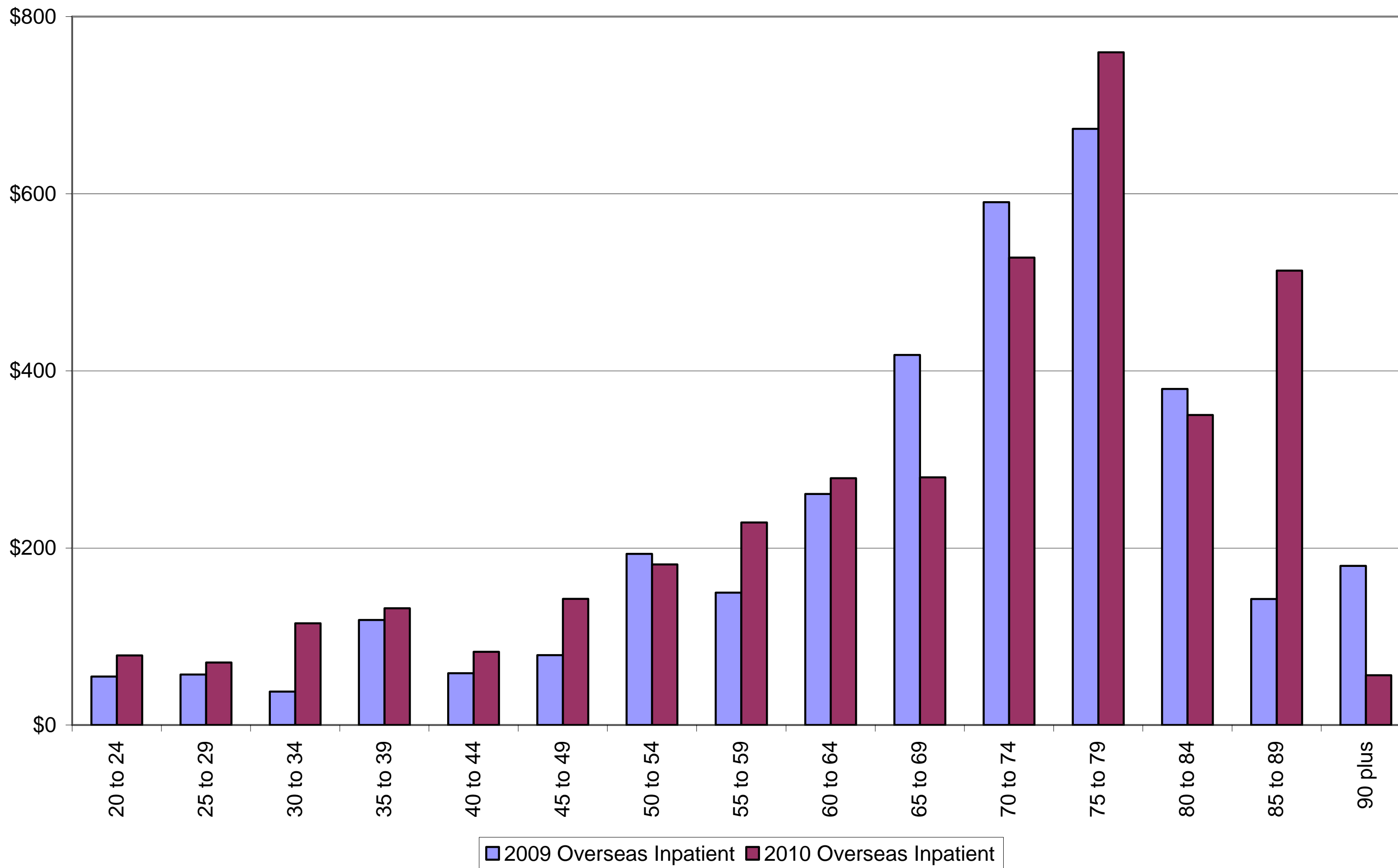
Appendix 1a – Standard Hospital Benefits (Bermuda In-Patient Claim Costs by Age Group)



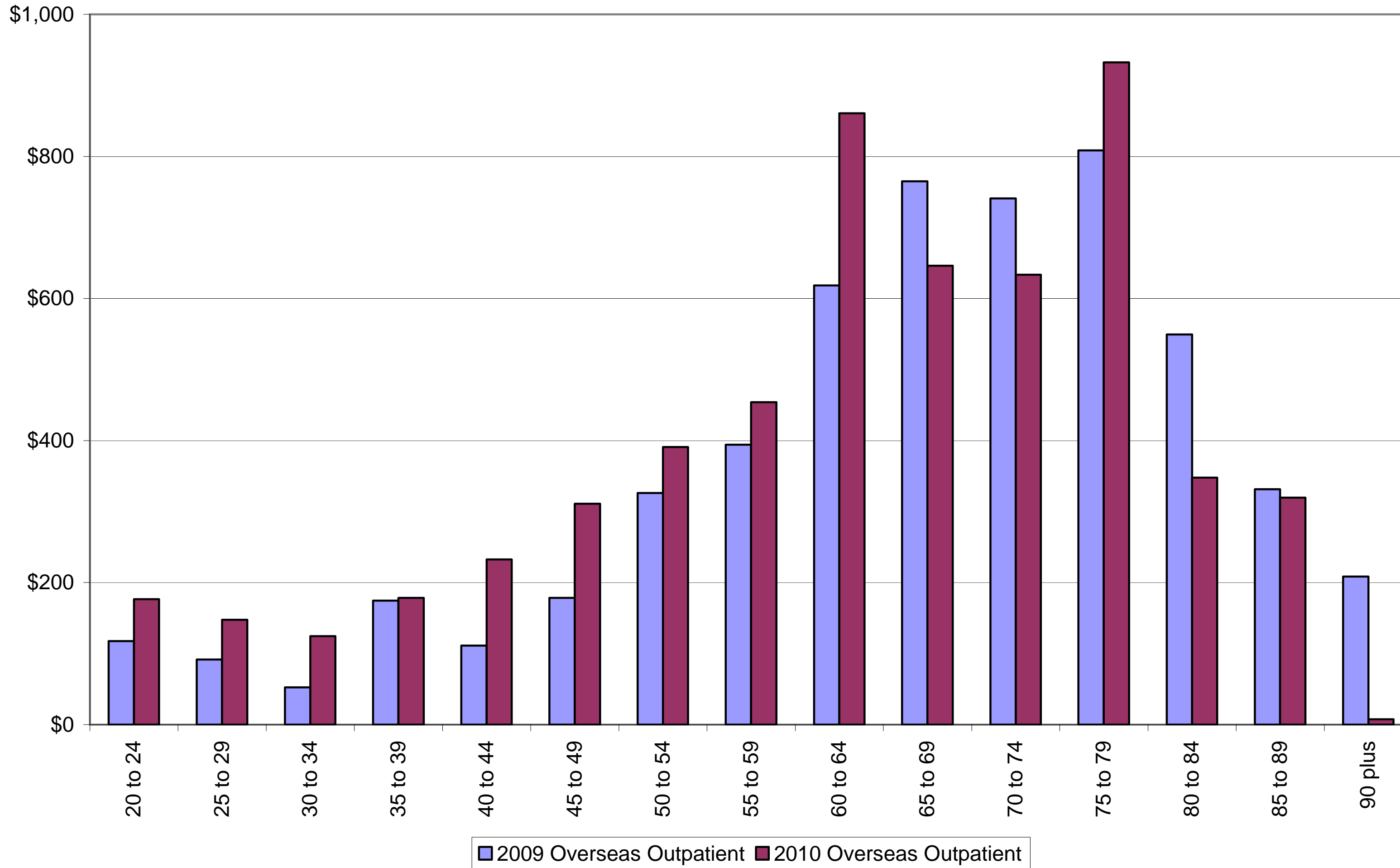
Appendix 1b – Standard Hospital Benefits (Bermuda Out-Patient Claim Costs by Age Group)



Appendix 1c – Standard Hospital Benefits (Overseas In-Patient Claim Costs by Age Group)



Appendix 1d – Standard Hospital Benefits (Overseas Out-Patient Claim Costs by Age Group)



Appendix 2 – Bermuda Hospitals Board In-Patient Analysis

Admissions by Age (Data Source: BHB)

Age	Number of Admissions	Total Fee (in '000)	% of Admissions	% of Total Cost
<5	1,014	$5,680	15%	7%
5-14	177	$990	3%	1%
15-24	479	$3,280	7%	4%
25-34	844	$5,850	13%	7%
35-44	796	$7,770	12%	10%
45-54	753	$9,380	11%	12%
55-64	744	$11,090	11%	14%
65-74	663	$11,020	10%	14%
75-84	756	$14,720	11%	19%
85-95	378	$8,070	6%	10%
>95	32	$740	0%	1%
Total	6,636	$78,590	100%	100%

Notes

1. The admissions data is over the period April 1, 2009 to March 31, 2010 (i.e. Fiscal 2010).
2. The total fee includes the portion of the fee paid by the government subsidy and the Mutual Reinsurance Fund.
3. The percentage of admissions is relatively uniform over the age groups 25 to 84. It is likely that more treatment is sought overseas by seniors as suggested by the chart in Appendix 1c.
4. The under 5 age group is mostly comprised of newborns.

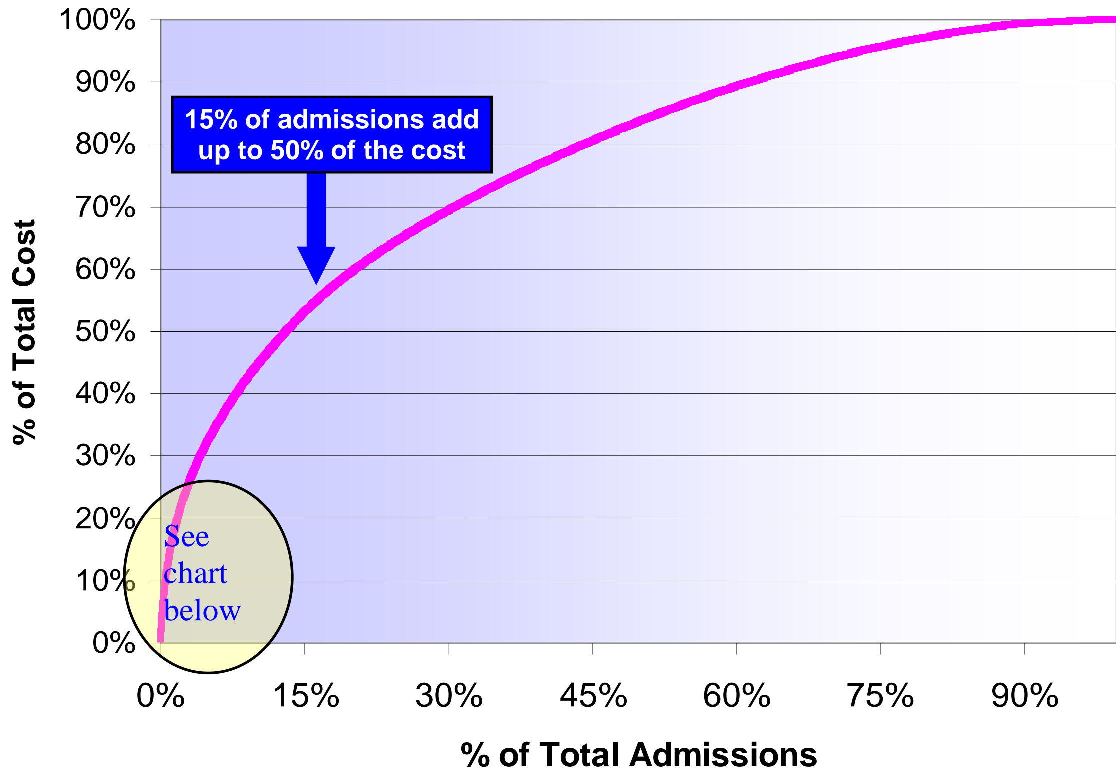
Appendix 2a - Fiscal 2010 Admissions by Major Diagnostic Categories (Data Source: BHB)

Major Diagnostic Category	Number of Admissions	Total Fee (in '000)	% of Total Cost
Musculoskeletal System And Connective Tissue	679	$10,830	14%
Circulatory System	569	$8,900	11%
Nervous System	404	$8,580	11%
Respiratory System	591	$7,600	10%
Digestive System	534	$6,880	9%
Newborn And Other Neonates (Perinatal Period)	807	$4,600	6%
Pregnancy, Childbirth And Puerperium	885	$3,790	5%
Skin, Subcutaneous Tissue And Breast	203	$3,030	4%
Infectious and Parasitic DDs	100	$3,010	4%
Kidney And Urinary Tract	189	$2,450	3%
Mental Diseases and Disorders	249	$2,290	3%
Endocrine, Nutritional And Metabolic System	183	$2,160	3%
Hepatobiliary System And Pancreas	181	$2,140	3%
Ear, Nose, Mouth And Throat	252	$1,390	2%
Alcohol/Drug Use or Induced Mental Disorders	156	$1,340	2%
Pre-MDC	38	$1,270	2%
Multiple Significant Trauma	35	$1,160	1%
Factors Influencing Health Status	67	$1,150	1%
Female Reproductive System	136	$1,020	1%
Blood and Blood Forming Organs and Immunological Disorders	108	$890	1%
Injuries, Poison And Toxic Effect of Drugs	84	$870	1%
Human Immunodeficiency Virus Infection	35	$840	1%
Male Reproductive System	45	$440	1%
Myeloproliferative DDs (Poorly Differentiated Neoplasms)	19	$350	0%
Eye	21	$190	0%
Burns	10	$110	0%
Not Classified	56	$1,290	2%
Total	6,636	$78,570	100%

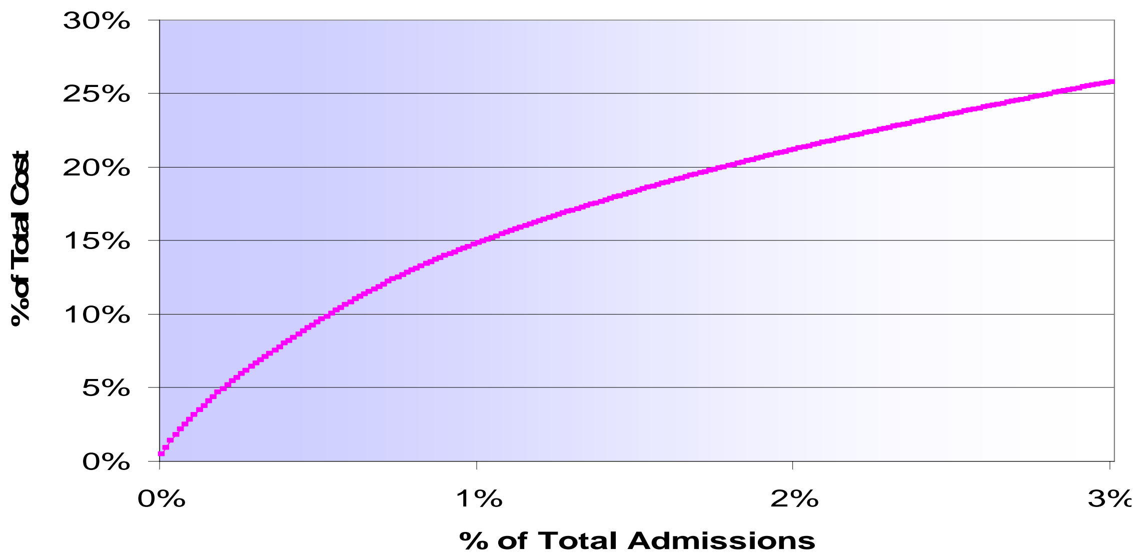
Notes

We have summarized the DRG codes into mutually exclusive diagnosis areas (referred to as Major Diagnostic Categories).

Appendix 2b - Fiscal 2010 BHB Cumulative Admissions versus Cumulative Costs (Data Source: BHB)



3% of admissions constitute 25% of all costs



Appendix 2c - Fiscal 2010 Days in Hospital (Data Source: BHB)

Days in Hospital	Number of Admissions	% of Admissions	% of Total Cost	Average days in Hospital	DRG Fees (in '000)	Per Diem and Other Fees (in '000)
0-4	3,991	60%	31%	2.3	$21,269	$3,421
5-9	1,342	20%	19%	6.5	$10,712	$3,828
10-14	449	7%	7%	11.7	$4,026	$1,843
15-19	231	3%	5%	16.8	$2,216	$1,599
20-24	145	2%	4%	21.9	$1,413	$1,693
25-29	114	2%	4%	26.8	$1,224	$1,777
30-35	72	1%	2%	32.4	$621	$1,336
>35	292	4%	27%	84.2	$3,372	$18,216
	6,636	100%	100%	9.1	$44,854	$33,713

Notes

1. Eighty percent of admissions are under 10 days.
2. Four percent of admissions are more than 35 days and they constitute 27% of the total cost.

Appendix 3 – Split of Local Out-Patient data and Overseas In-Patient and Out-Patient data (Data Source: Insurers)

Claims in $'000	1. Diagnostic Imaging (outpatient)	2. Diagnostic Imaging (approved facility)	3. Labs	4. Surgery	5. Anesthetics	6. Prescriptions	7. Other outpatient claims	Total
Local Out-Patient Claims	14,090	7,130	21,110	5,270	1,720	1,600	22,370	73,290
% of Local Claims	19%	10%	29%	7%	2%	2%	31%	100%
Overseas Out & In-Patient Claims	3,380		2,250	2,820	670	1,080	15,760	25,950
% of Overseas Claims	13%		9%	11%	3%	4%	61%	100%
Total Claims	24,590		23,360	8,090	2,390	2,680	38,130	99,250
	25%		24%	8%	2%	3%	38%	100%

Notes

1. If an insurer was unable to separate their data into the above respective components, their data was excluded.
2. Diagnostics and Labs constitute 58% of local out-patient spending. The category "Other" contains 31% of the local out-patient spending.
3. For overseas claims, the "Other" category contains 61% of the in-patient and out-patient spending.

Appendix 4 – Summary of Recommendations

Prior to discussions and directions from the BHeC and prior to agreement with the Bermuda Hospitals Board on cost-containment mechanisms for local utilization, we had tabled a recommendation for 2011 – 2012 as follows:

Original Recommendation

	Increase %	SHB	MRF	Total
2010 – 2011 Premium		$209.63	$26.51	$236.14
1. Increase in BHB Fees	3.50%	$5.51	$0.93	$6.44
2. Local Change in Utilization / Inflation	5.50% & 7.00%	$8.65	$1.86	$10.51
3. Overseas Change in Fees / Utilization / Inflation	15.00%	$7.86	$0.00	$7.86
4. Future Changes in Benefit Provisions	0.74% & (3.40%)	$1.56	($0.90)	$0.66
5. Provision for Reserves	14.11%	$0.00	$3.74	$3.74
6. Transfer to the Health Insurance Department	15.09%	$0.00	$4.00	$4.00
Recommended 2011 – 2012 SPR		$233.20*	$36.14	$269.34
% Change in Premium		11.2%	36.3%	14.1%
$ Change in Premium		$23.57	$9.63	$33.20

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

In the derivation of the final recommendation, the following adjustments were made:

> The agreement with the Bermuda Hospitals Board on cost-containment mechanisms was reflected,

> The Standard Hospital Benefit provisions were left unchanged, and

> Additional funding for the MRF and transfers to the Health Insurance Department were not included.

The final recommendation is tabled on the next page.

Final Recommendation

		Increase %	SHB	MRF	Total
2010 – 2011 Premium			$209.63	$26.51	$236.14
1.	Increase in BHB Fees	1.50%	$2.36	$0.40	$2.76
2.	Local Change in Utilization / Inflation	3.00%	$4.72	$0.80	$5.52
3.	Overseas Change in Fees / Utilization / Inflation	15.00%	$7.86	$0.00	$7.86
4.	Future Changes in Benefit Provisions	0.43% & (3.40%)	$0.90	($0.90)	$0.00
5.	Provision for Reserves	None	$0.00	$0.00	$0.00
6.	Transfer to the Health Insurance Department	None	$0.00	$0.00	$0.00
Recommended 2011 – 2012 SPR			$225.46*	$26.81	$252.27
% Change in Premium			7.6%	1.1%	6.8%
$ Change in Premium			$15.83	$0.30	$16.13

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

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 the Shepell•fgi 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.