

# 2018

# ACTUARIAL REPORT

*for the Bermuda Health Council*



# 2018 Actuarial Report for the Bermuda Health Council

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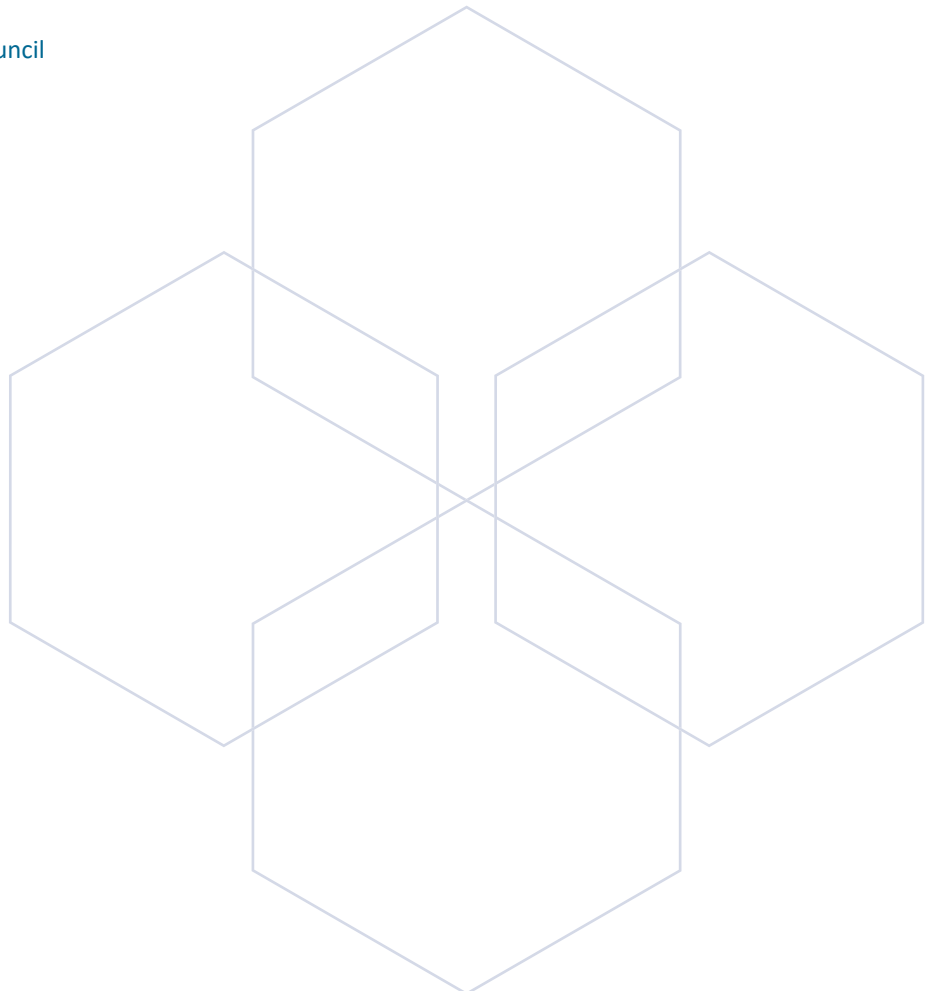
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# **2018 Actuarial Review of the Standard Health Benefit and Mutual Reinsurance Fund**

**Prepared for the Bermuda Health Council**

**Abridged Version**

May, 2019

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# Introduction

Morneau Shepell has been engaged by the Bermuda Health Council (Health Council) to present this report on the Fiscal 2018 review (i.e. the period April 1, 2017 to March 31, 2018) of the following programs:

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

The purpose of this report is:

- to review the statistical and claims information submitted by the insurers and approved schemes, as it relates to the SHB
- to comment on trends over the Fiscal 2017 / Fiscal 2018 period
- to recommend the Standard Premium Rate (SPR)<sup>1</sup> that is to take effect in Fiscal 2020<sup>2</sup>
- 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 Health Council.

This includes:

- The claims and statistical submissions from all the insurers and approved schemes
- Data from the Bermuda Hospitals Board<sup>3</sup> (the BHB)
- Various correspondence with Health Council staff

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<sup>1</sup> Standard Premium Rate refers to the sum of the premiums for the SHB and MRF.

<sup>2</sup> Note that in this report, Fiscal 2020 is referred to as the period June 1, 2019 to May 31, 2020. This is due to changes in the SHB, the MRF and the SPR that will take effect on June 1, 2019.

<sup>3</sup> BHB is inclusive of King Edward VII Memorial Hospital (KEMH), Mid-Atlantic Wellness Institute (MWI), and Lamb-Foggo Urgent Care Centre.

# Section A. Summary & Premium Recommendation

A summary of Fiscal 2018 and Fiscal 2017 insured headcount, claims and costs per-capita is tabled below:

## A.1. Standard Health Benefit Insured Headcount

	Fiscal 2018	Fiscal 2017	% Change
Grand Total	49,027	48,145	1.8%

## A.2. Standard Health Benefit Claims Data

Claim Amounts	Local		
	In-Patient	Out-Patient	Total
Fiscal 2017	\$45,360,000	\$117,854,000	\$163,214,000
Fiscal 2018	\$43,641,000	\$96,327,000	\$139,968,000
Increase	(3.8%)	(18.3%)	(14.2%)

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

Fiscal 2018		Fiscal 2017		Cost Per-Capita Increase
Local Cost Per-Capita	Loss Ratio	Local Cost Per-Capita	Loss Ratio	
\$238	96%	\$283	106%	(15.8%)

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

	Standard Health Benefit	Mutual Reinsurance Fund	Total
Fiscal 2019 Premium	\$253.34	\$101.97	\$355.31
1. Change in BHB Billing	(\$230.90)	\$231.33	\$0.43
2. Change in Utilization	\$0.90	\$0.16	\$1.06
3. Future Changes under the SHB	\$0.00	\$0.00	\$0.00
4. Future Changes under the MRF	\$0.00	(\$1.49)	(\$1.49)
<b>Recommended Fiscal 2020 SPR</b>	<b>\$23.34</b>	<b>\$331.97</b>	<b>\$355.31</b>
<b>% Change in Premium</b>	<b>(90.8%)</b>	<b>225.6%</b>	<b>0.0%</b>
<b>\$ Change in Premium</b>	<b>(\$230.00)</b>	<b>\$230.00</b>	<b>\$0.00</b>

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

Respectfully submitted,



Howard Cimring, FFA, FCIA  
Morneau Shepell

May, 2019



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# Section B. The Standard Health Benefit

## B.1. Introduction

The Standard Health Benefit (SHB), as defined by the Health Insurance (Standard Health Benefit) Regulations 1971, consists of in-patient services, out-patient services, home medical services, palliative care and other benefits. It forms part of the minimum package of benefits which must be provided within any health insurance policy sold in Bermuda, including each employer-sponsored or health insurance provider's health plan<sup>4</sup>.

A SHB premium is determined annually by the Minister of Health, after taking advice from the Health Council which commissions an actuarial review for the SPR. The SPR is the ceiling rate that an insurer or approved scheme can charge to insured persons for the combined package of SHB and MRF<sup>5</sup> benefits.

Further, it is compulsory for each employer (including self-employed individuals) to provide their employees and their non-employed spouse, with health insurance and an employee cannot be required to pay more than half of the SPR for SHB and MRF coverage. Additionally, this set of benefits are not subject to any exclusion criteria, therefore, the SPR allows all insured persons to access the same basic level of health insurance coverage for the same price regardless of their health status.

The SHB premium is set with reference to the claims experience of all the insured participants. As such, the claims experience (in respect of the SHB component only) across all the health insurance providers is pooled together and a single premium rate reflective of the pooled experience is determined.

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<sup>4</sup> Private and public health insurers and approved schemes are licensed by the Health Council.

<sup>5</sup> Details of the MRF premium review and recommendation can be found in Section C.

## B.2. Fiscal 2018 Claims and Statistical Data

We have analyzed the Fiscal 2018 and Fiscal 2017 insurer and approved scheme<sup>6</sup> submissions to the Health Council. A summary of certain data elements and our analysis is tabled below:

Table 1 - Headcount

	Average Headcount <sup>7</sup>				
	F2018	% Total	F2017	% Total	% Change
Private Plans	34,320	70%	33,505	70%	2%
Government Plans	14,707	30%	14,640	30%	0%
Grand Total	49,027	100%	48,145	100%	1.8%

In Fiscal 2018, 41% of the insured population was aged 55 and over. This figure has been steadily rising since Fiscal 2013 when it was 37%. The estimated average age of the insured population in Fiscal 2018 is 51.7 years old. This compares with an estimated average age of the insured population in Fiscal 2017 of 52.0 years old, and 51.3 years old in Fiscal 2016.

The claims are summarized below:

Table 2 - Claim Amounts

Claim Amounts	Local		
	In-Patient	Out-Patient	Total
Fiscal 2017	\$45,360,000	\$117,854,000	\$163,214,000
Fiscal 2018	\$43,641,000	\$96,327,000	\$139,968,000
Increase	(3.8%)	(18.3%)	(14.2%)

From June 1, 2017, the following changes to the SHB were effected:

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<sup>6</sup> An approved scheme is a self-funded plan established by an employer to cover its employees and retirees, and is approved by the Health Council.

<sup>7</sup> These figures represent SHB insured persons only (not including the youth that are 100% subsidized by government for SHB) and do not represent the total number of lives that are insured.

- Claims in respect of dialysis, kidney transplants and anti-rejection drugs became payable by the Mutual Reinsurance Fund.
- Certain diagnostic imaging fees were revised lower.
- The artificial limbs and devices benefit was expanded (included non-surgically implanted devices) and the lifetime maximum benefit limit increased from \$30,000 to \$100,000.
- Palliative care in the home setting and a defined list of oral chemotherapies were added to the SHB.

These changes give rise to a decline in the Fiscal 2018 out-patient expenditure. In addition, in Fiscal 2018 there were fewer in-patient admissions.

The cost per-capita and loss ratios for Fiscal 2018 and Fiscal 2017 are tabled below:

Table 3 - Cost Per-Capita and Loss Ratios

	Fiscal 2018		Fiscal 2017		Cost Per-Capita Increase
	Local Cost Per-Capita	Loss Ratio	Local Cost Per-Capita	Loss Ratio	
Private Plans	\$196	80%	\$239	89%	(18%)
Government Plans	\$335	136%	\$382	143%	(12%)
Total	\$238	96%	\$283	106%	(16%)

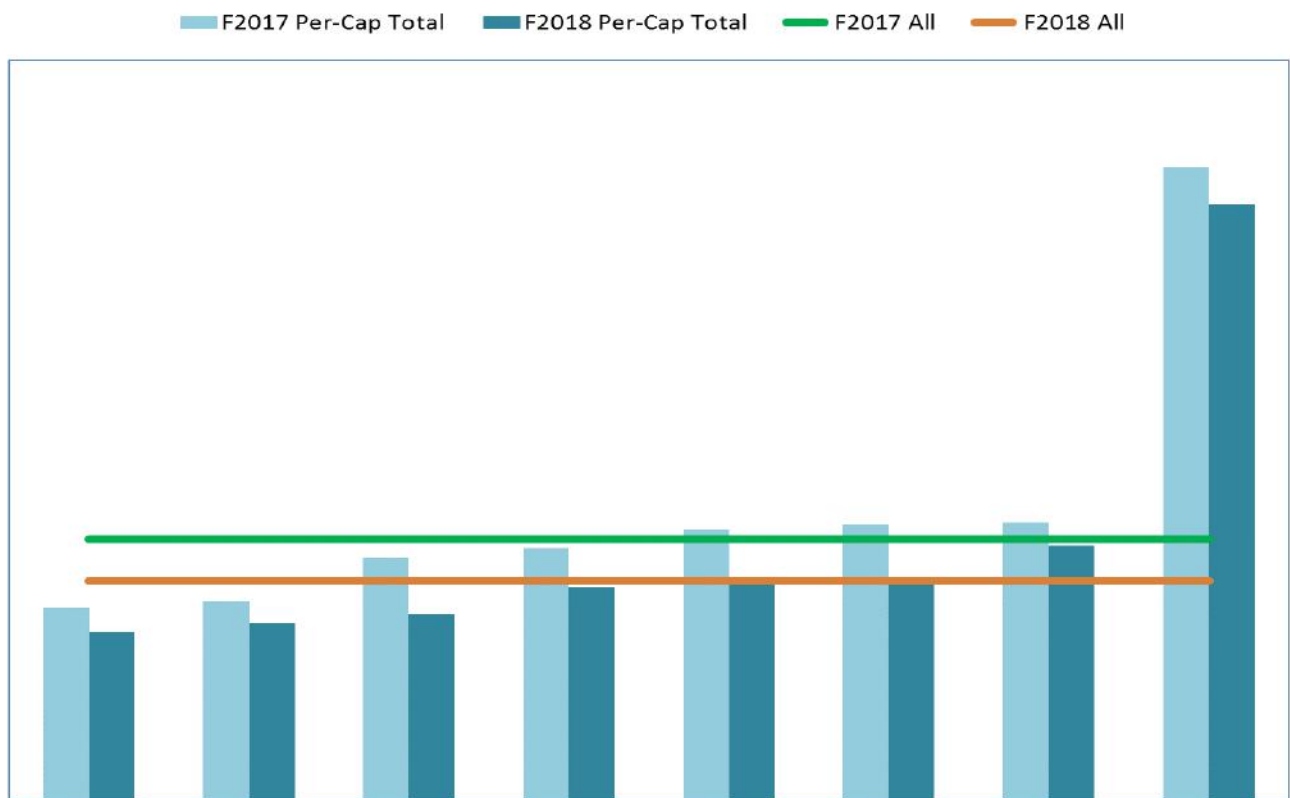
The Fiscal 2018 loss ratio is based on a Standard Health Benefit Premium of \$246.58<sup>8</sup>.

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<sup>8</sup> This is based on an average of \$267.35 from April 1, 2017 to May 31, 2017 and \$242.43 from June 1, 2017 to March 31, 2018.

The following chart shows a comparison between Fiscal 2017 and Fiscal 2018 costs per-capita as well as a comparison to the overall cost per-capita. The omission of data points on the chart is deliberate.

Chart 1 – Local Costs Per-Capita (by Insurer)



The data supplied by insurers and approved schemes also includes claims data grouped into various age bands. The data has been 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<sup>9</sup>.

We have also analyzed In-Patient data supplied by the BHB, the results of which can be found in Appendix 2.

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<sup>9</sup> For those that are age 65 and over, if they satisfy a 10 year residency requirement, the government provides a subsidy for claims under the SHB.

### B.3. Standard Health Benefit Premium History

The history of the SHB Premium and the loss ratio is as follows:

Table 4 – SHB Premium and Loss Ratio History

	SHB Premium	% Change	Loss Ratio*
Fiscal 2009	\$164.37	7.7%	109%
Fiscal 2010	\$184.01	11.9%	112%
Fiscal 2011	\$209.63	13.9%	108%
Fiscal 2012	\$225.46	7.6%	106%
Fiscal 2013	\$236.73	5.0%	105%
Fiscal 2014	\$282.27	19.2%	94%
Fiscal 2015	\$272.67	(3.4%)	90%
Fiscal 2016	\$274.33	0.6%	98%
Fiscal 2017	\$267.35	(2.5%)	106%
Fiscal 2018	\$242.43	(9.3%)	96%
Fiscal 2019	\$253.34	4.5%	To be determined next year

\* based on a comparison of the SHB Premium to the determined claims cost per-capita

### B.4. Standard Health Benefit Premium Recommendation

The recommendation for the Fiscal 2020 Standard Health Benefit Premium is as follows:

Table 5 - Standard Health Benefit Premium Recommendation

	Monthly Rate
Fiscal 2019 SHB Premium	\$253.34
1. Change in BHB Billing	(\$230.90)
2. Allowance for Change in Utilization	\$0.90
3. Changes in Benefit Provisions	\$0.00
4. Allowance for Claims Administration	\$0.00
<b>Recommended Fiscal 2020 SHB Premium</b>	<b>\$23.34</b>
<b>% Change in SHB Premium</b>	<b>(90.8%)</b>
<b>\$ Change in SHB Premium</b>	<b>(\$230.00)</b>

## Notes

1. With effect from June 1, 2019, the BHB will no longer bill the insurers on a fee-for-service basis for SHB related services. Rather these services will be funded by a transfer from the MRF.
2. The utilization represents the overall expected change in the consumption and provision of services under the Standard Health Benefit package. It may arise due to numerous factors such as ageing of the population, the introduction of new medical tests and technologies, a shifting in the case mix that requires treatment, an increase in the disease burden amongst the population, and for example, the unpredictability of possible severity due to influenza or other types of viruses and climate-related events. By its very nature, and particularly amongst small populations, healthcare expenditure can fluctuate from one period to the next and accordingly, so would the measure of utilization. Historically, the utilization under the Standard Health Benefit has ranged approximately between 4.0% per annum to 8.0% per annum, although there have been years in which it has exceeded 8.0% and likewise, years where it has been below 4.0%. From an actuarial standpoint it is appropriate to include a measure of utilization in the forecast for setting the SHB premium and we have included an allowance for an estimated 4.0% increase in utilization over Fiscal 2020 (an increase in the premium of \$0.90). This item will be monitored and if lower utilization were to materialize, the Fiscal 2020 loss ratio will be better than would otherwise have been the case.
3. Morneau Shepell has been advised that no changes or additional benefits are approved for inclusion as a traditional SHB service.

# 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 person and deposit this premium into the MRF. Like the SHB premium, the MRF premium is actuarially determined leading to a recommendation from the Health Council to the Minister of Health. The final premium is the set by legislation.

The MRF serves the following purposes:

- a) acts as a catastrophic fund<sup>10</sup> to cover certain high dollar value claims as per the Health Insurance (Standard Health Benefit) Regulations 1971 and subsequent amendments allows the introduction and assessment of new and experimental treatments and programs which have no prior established actuarial experience or pricing model<sup>11</sup>,
- b) transfers funds to the following:
  - the Health Insurance Fund managed by the Ministry of Health to sustain HIP and FutureCare's premium levels<sup>12</sup> at affordable levels and to support the various healthcare programs (e.g. the Enhanced Care Program and Personal Home Care Benefit) maintained by the Health Insurance Department (HID),
  - the Health Council so that it may continue to fulfill its mandate as it relates to the oversight of insurers, the SHB, MRF and other initiatives, and
  - the BHB to support the provision of care services.

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<sup>10</sup> From the beginning of Fiscal 2015 the fund's capacity as a catastrophic fund was adjusted, however from Fiscal 2018, it does again function in this capacity.

<sup>11</sup> Effective in Fiscal 2020, a Chronic Disease Management Innovation Fund has been established in support of this purpose.

<sup>12</sup> These plans accept high-cost participants and have open enrollment policies which impose no terms of underwriting or exclusion of pre-existing conditions.

A history of the transfers from the MRF and the total MRF premium are tabled below:

Table 6 - MRF Transfers (per each Insured Person)

	Monthly Transfer Rate
<b>Transfers to HID<sup>13</sup></b>	
Fiscal 2006	\$2.00
Fiscal 2007 – Fiscal 2012	\$4.00
Fiscal 2013 – Fiscal 2014	\$7.00
Fiscal 2015	\$28.00 <sup>14</sup>
Fiscal 2016	\$32.40
Fiscal 2017	\$39.00
Fiscal 2018	\$48.03
Fiscal 2019	\$50.35
<i>Recommended for Fiscal 2020</i>	<i>\$35.89</i>
<b>Transfers to the Health Council</b>	
Fiscal 2015	\$0.67
Fiscal 2016	\$1.00
Fiscal 2017 – Fiscal 2018	\$1.09
Fiscal 2019	\$0.55
<i>Recommended for Fiscal 2020</i>	<i>\$1.00</i>

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<sup>13</sup> Prior to Fiscal 2012, the transfers were paid to HIP. Since Fiscal 2012, they were directed to the Health Insurance Fund of the Ministry of Health to be applied to HIP and FutureCare as needed.

<sup>14</sup> In Fiscal 2015, the transfer to HIP increased to \$14.00. In addition a transfer to FutureCare of \$14.00 was introduced to mitigate the increase in claims due to the change in the government subsidies.



Table 6 - MRF Transfers (per each Insured Person) – Continued

	Monthly Transfer Rate
<b>Transfers to the BHB</b>	
Fiscal 2016	\$23.64
Fiscal 2017	\$16.40
Fiscal 2018 – Fiscal 2019	\$13.16
<i>Recommended for Fiscal 2020</i>	<i>\$231.33</i>
<b>Transfers to the Consolidated Fund</b>	
Fiscal 2017	\$7.53 <sup>15</sup>
<b>Transfers to the Enhanced Care Program</b>	
Fiscal 2016 – Fiscal 2017	\$6.19
Fiscal 2018	\$3.37
Fiscal 2019	\$0.00
<i>Recommended for Fiscal 2020</i>	<i>\$2.00</i>

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<sup>15</sup> This item was transferred to HID in Fiscal 2018 for a repayment to the Consolidated Fund.

Table 7 - MRF Premium History

	MRF Premium Rate	% Change
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%
Fiscal 2014	\$43.57	24.9%
Fiscal 2015	\$29.18	(33.0%) <sup>16</sup>
Fiscal 2016	\$63.74	118.4% <sup>17</sup>
Fiscal 2017	\$70.72	11.0%
Fiscal 2018	\$91.57	29.5% <sup>18</sup>
Fiscal 2019	\$101.97	11.4%
Fiscal 2020 <sup>19</sup>	\$331.97	225.6%

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<sup>16</sup> With effect from Fiscal 2015, Dialysis, Transplants & Anti-Rejection Drugs covered by the MRF were transferred to SHB, becoming payable by the insurers.

<sup>17</sup> The increase is largely due the initiation of the transfer to the BHB and to HID for the Enhanced Care Program.

<sup>18</sup> With effect from Fiscal 2018, the MRF absorbed claims in respect of Dialysis, Transplants & Anti-Rejection Drugs.

<sup>19</sup> The Fiscal 2020 amounts are as recommended. See Table 8 and Table 9.

## C.2. Mutual Reinsurance Fund Premium Recommendation

The recommendation for the Fiscal 2020 MRF Premium is as follows:

Table 8 - MRF Premium Recommendation

	Monthly Rate
Fiscal 2019 MRF Premium	\$101.97
Change to BHB Billing	\$218.17
Chronic Disease Innovation Fund	\$3.40
Revision to Transfers	
a) Claims in respect of Dialysis, Transplants & Anti-Rejection Drugs	\$20.44
b) Resumption of the transfer to the Enhanced Care Program	\$2.00
c) Reduction in the transfer to HIF (for HIP and FutureCare) <sup>20</sup>	(\$14.46)
d) Increase in the transfer to the Health Council	\$0.45
<b>Recommended Fiscal 2020 MRF Premium</b>	<b>\$331.97</b>
<b>% Change in MRF Premium</b>	<b>225.6%</b>
<b>\$ Change in MRF Premium</b>	<b>\$230.00</b>

### Notes

1. With effect from June 1, 2019, the MRF will provide funding to the BHB for the delivery of SHB related services. The Fiscal 2019 transfer to the BHB of \$13.16 per month for each insured person, increases by \$218.17 to a total of \$231.33 in Fiscal 2020. We recommend a multiplier of 4 for the transfer (i.e. \$925.31) for those over age 65 and not eligible for the government subsidy<sup>21</sup>.

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<sup>20</sup> Includes the Personal Home Care benefit in the amount of \$10.23

<sup>21</sup> 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

2. With effect from June 1, 2019:
  - a) A Chronic Disease Innovation Fund is to be established to assist with financing programs related to chronic disease education, management, or innovative evidence-based interventions.
  - b) The MRF will fund the Personal Home Care benefit program that is provided by HID. The program is to be means tested with the total funding available to support the program to be capped at \$6.0 million.
3. With respect to the transfers:
  - a) The transfer in respect of the Enhanced Care Program (which was suspended in Fiscal 2019) is to recommence at a rate of \$2.00 per month for each insured person.
  - b) The transfer in respect of Dialysis, Transplants & Anti-Rejection Drugs is to increase by \$20.44 in lieu of coverage by subsidy.
  - c) The transfer to HIF will decrease by \$14.46<sup>22</sup> per month for each insured person. The transfer compensates HIP and FutureCare for their higher than average cost claimants<sup>23</sup>. This reduction is in part associated with the change in funding mechanism for the BHB.
  - d) The transfer to the Health Council will increase by \$0.45 per month (this transfer was reduced from \$1.09 in Fiscal 2018, to \$0.55 in Fiscal 2019) for each insured person.
4. The Fiscal 2020 MRF funding allocations are summarized as follows:

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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).

<sup>22</sup> This is comprised of a decline in the transfer to HIP of \$22.71, a decline in the transfer to FutureCare of \$1.98, and an increase of \$10.23 for Personal Home Care services.

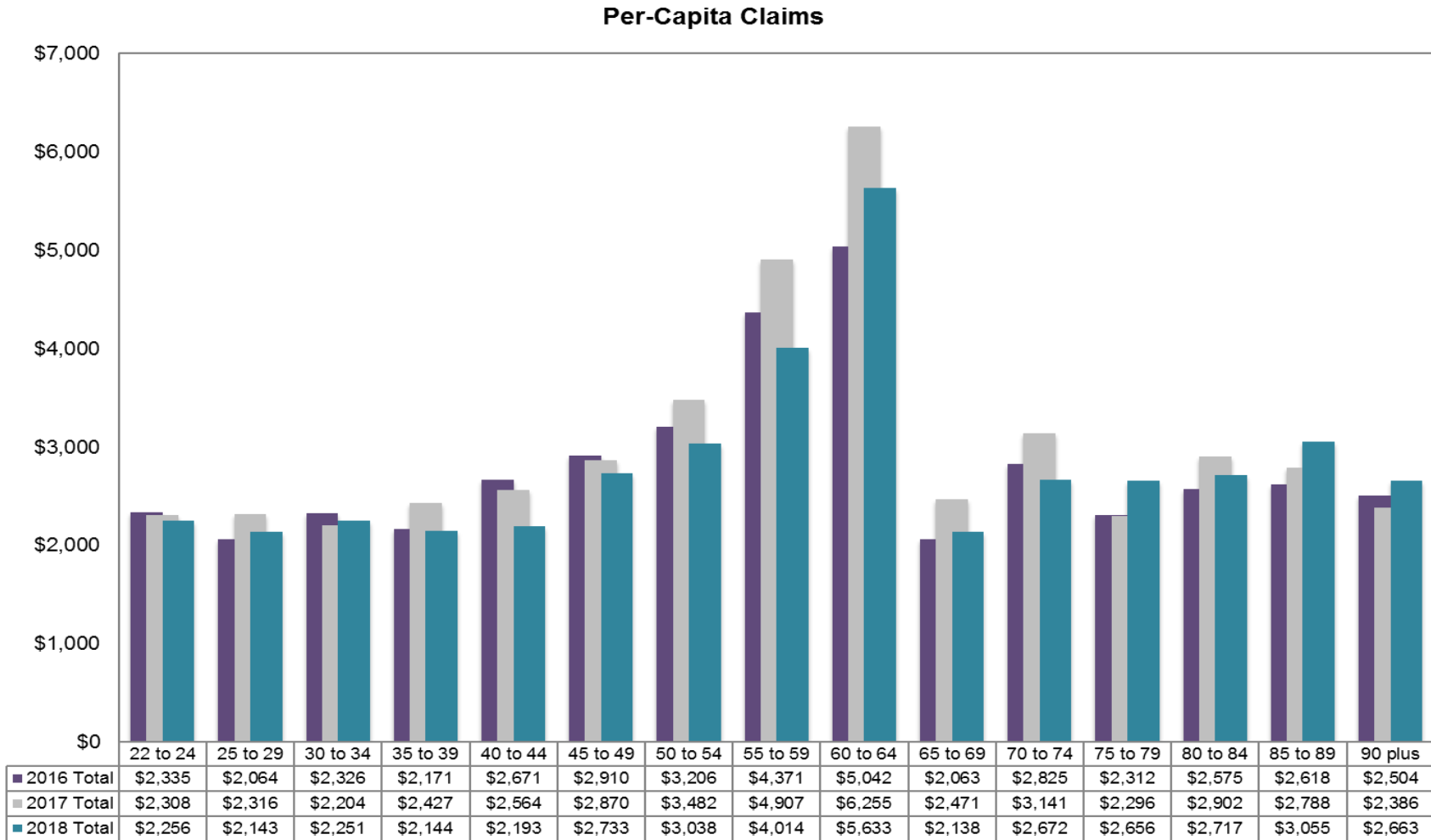
<sup>23</sup> Should HIP and FutureCare experience per-capita costs (once adjusted for the MRF transfer) in excess of the average, then either the MRF transfer will require an increase to maintain the premium levels, or the HIP and FutureCare premium rates will be required to increase (or government will be required to cover the shortfall).

Table 9 - Fiscal 2020 MRF Funding Allocations

Funding Allocation	Funding Rate (per month per member)	Estimated Amount of Funding for Fiscal 2020 (per annum)
Bermuda Hospitals Board*	\$231.33	\$136,095,000
Health Insurance Fund	\$35.89	\$21,115,000
Bermuda Health Council	\$1.00	\$588,000
Chronic Disease Innovation Fund	\$3.40	\$2,000,000
Enhanced Care Program	\$2.00	\$1,177,000
Dialysis and Transplants	\$57.84	\$34,031,000
Operational and Administrative	\$0.51	\$300,000
<b>Total</b>	<b>\$331.97</b>	<b>\$195,306,000</b>

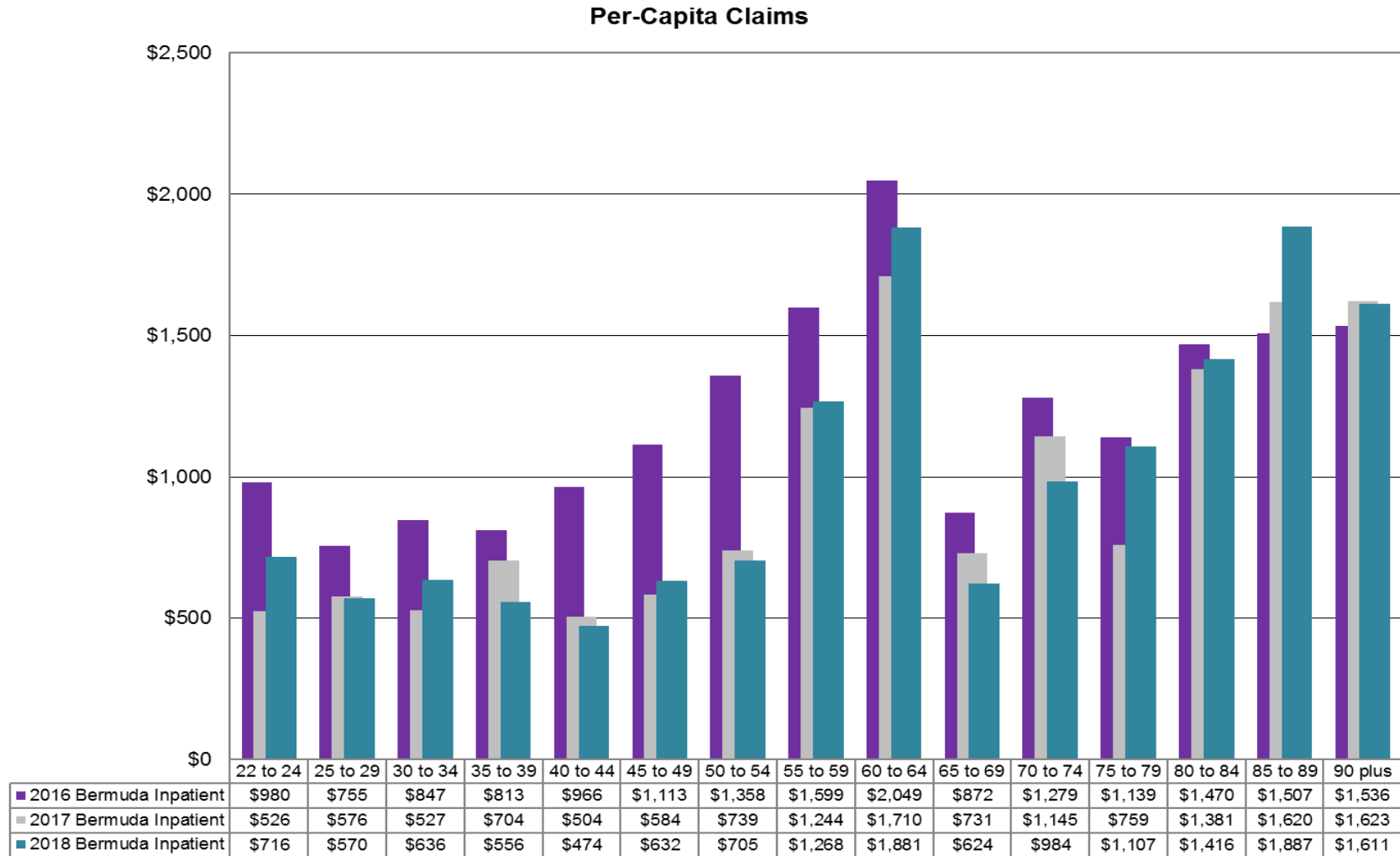
\* The multiplier for those over age 65 and not eligible for the government subsidy is 4 times the rate.

## Appendix 1 – Standard Health Benefit (Total Annual Per-Capita Claim Costs – Local Claims)

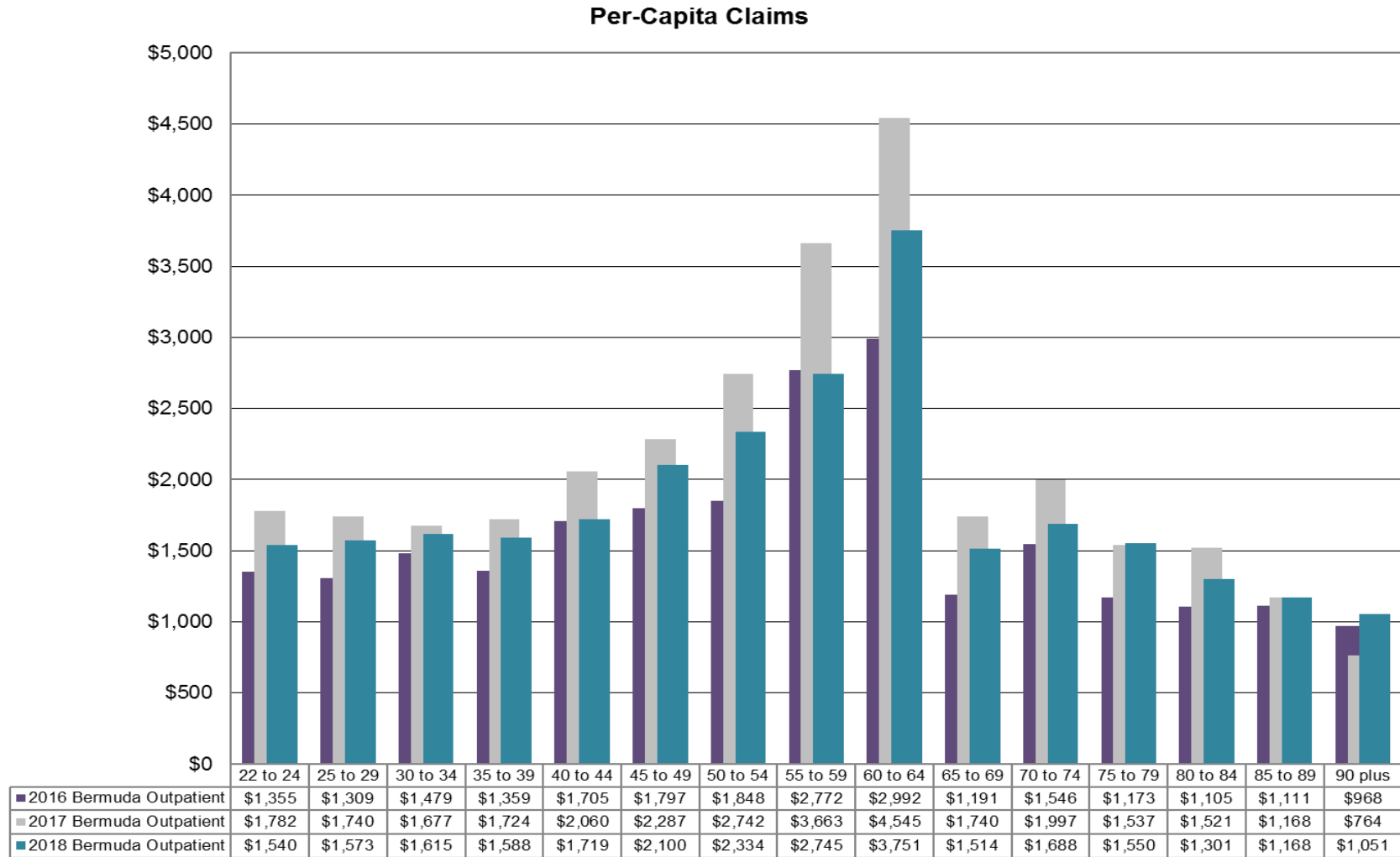


The decline in the cost per-capita at age 65 is due to the government subsidy.

## Appendix 1a – Standard Health Benefit (Bermuda In-Patient Annual Per-Capita Claim Costs)



## Appendix 1b – Standard Health Benefit (Bermuda Out-Patient Annual Per-Capita Claim Costs)





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

Age	Fiscal 2018				Fiscal 2017			
	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	702	\$3,616	12%	8%	722	\$3,957	12%	8%
5-14	114	\$748	2%	2%	119	\$761	2%	2%
15-24	246	\$1,862	4%	4%	245	\$1,916	4%	4%
25-34	583	\$3,835	10%	8%	613	\$4,001	10%	8%
35-44	539	\$3,947	9%	8%	539	\$4,179	9%	8%
45-54	489	\$4,491	9%	9%	548	\$5,173	9%	10%
55-64	807	\$8,029	14%	17%	868	\$8,910	15%	18%
65-74	747	\$7,380	13%	15%	891	\$8,906	15%	18%
75-84	859	\$8,187	15%	17%	791	\$7,445	13%	15%
85-95	557	\$5,422	10%	11%	495	\$4,379	8%	9%
>95	35	\$300	1%	1%	33	\$266	1%	1%
Total	5,678	\$47,817	100%	100%	5,864	\$49,893	100%	100%

Data Source: BHB

### Notes:

1. The total fees are the DRG charge only (prior to subsidy) and do not include the per-diem fee or any other fee charged for in-patient services.
2. The number of admissions in Fiscal 2018 has declined by 3.2% (this is mainly due to a decline in the under age 65 admissions).
3. The under 5 age group is mostly comprised of newborns.
4. The percentage of cost related to those aged 65 and over is 45% in Fiscal 2018 (which is a 3% increase over Fiscal 2017).
5. In Fiscal 2018 the change in the total cost for admissions for those under age 65/age 65 and over, is -8% and 1% respectively.

## Appendix 2a - Admissions by Major Diagnostic Categories (MDC)

Major Diagnostic Category (sorted by F2018 Fee)	Fiscal 2018				Fiscal 2017		
	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	596	-18%	\$7,506	16%	724	\$9,015	18%
Digestive System	617	-10%	\$6,023	13%	683	\$6,624	13%
Circulatory System	685	8%	\$5,781	12%	632	\$5,332	11%
Respiratory System	492	-5%	\$3,917	8%	516	\$3,993	8%
Nervous System	423	-3%	\$3,472	7%	438	\$3,537	7%
Pregnancy, Childbirth And Puerperium	644	-1%	\$3,188	7%	648	\$3,211	6%
Infectious and Parasitic DDs	229	-1%	\$2,997	6%	231	\$2,965	6%
Newborn And Other Neonates (Perinatal Period)	583	4%	\$2,933	6%	561	\$3,012	6%
Kidney And Urinary Tract	284	4%	\$2,225	5%	274	\$2,004	4%
Hepatobiliary System And Pancreas	163	-19%	\$1,487	3%	201	\$1,836	4%
Ear, Nose, Mouth And Throat	169	11%	\$1,230	3%	152	\$1,072	2%
Skin, Subcutaneous Tissue And Breast	155	-7%	\$1,229	3%	166	\$1,319	3%
Endocrine, Nutritional And Metabolic System	148	10%	\$1,045	2%	134	\$912	2%
Blood / Blood Forming Organs and Immunological Disorders	98	-20%	\$720	2%	123	\$928	2%
Pre-MDC	18	-28%	\$696	1%	25	\$696	1%
Injuries, Poison And Toxic Effect of Drugs	79	-5%	\$633	1%	83	\$662	1%
All Other	295	8%	\$2,735	6%	273	\$2,775	6%
Total	5,678	-3%	\$47,817	100%	5,864	\$49,893	100%
Change from Prior Fiscal Period	-3%		-4%		1%	1%	

Data Source: BHB

- Notes: 1. We have summarized the DRG codes into mutually exclusive diagnosis areas (referred to as Major Diagnostic Categories).  
2. In Fiscal 2018, the average DRG charge per admission has declined by 1%.

## Appendix 2b - Fiscal 2018 Admissions, Days in Hospital

Days in Hospital	Number of Admissions	% of Admissions	% of Total Cost	Average days in Hospital	DRG Fees (in '000)
0-4	3,293	58%	48%	2.4	\$22,760
5-9	1,370	24%	26%	6.3	\$12,322
10-14	423	7%	9%	10.8	\$4,419
15-19	189	3%	5%	14.7	\$2,273
20-24	112	2%	3%	18.3	\$1,445
25-29	79	1%	2%	22.0	\$1,173
30-35	55	1%	2%	27.2	\$860
>35	157	3%	5%	54.5	\$2,566
	5,678	100%	100%	6.9	\$47,817

Data Source: BHB

### Notes

1. Eighty-two percent of admissions are under 10 days, which is similar to prior fiscal periods.
2. For Fiscal 2018 admissions, the average days in hospital has increased to 6.9 days. For Fiscal 2017 admissions, it was 6.5 days and for Fiscal 2016 admissions it was 5.7 days.

### Appendix 3 – Hospital and Non-Hospital Laboratory and Diagnostic Imaging

Local Claims Fiscal 2017	Laboratory Tests	CT Scans	MRI scans	X-rays	Ultrasounds	Mammograms	Other Imaging	Total Imaging
Hospital	\$23,070,900	\$10,389,000	\$4,081,400	\$4,515,300	\$1,371,800	\$375,000	\$2,110,500	\$22,843,000
Non-Hospital Claims	-	\$1,428,000	\$4,011,800	\$376,900	\$4,103,800	\$1,228,700	\$3,111,900	\$14,261,000
Total	\$23,070,900	\$11,817,000	\$8,093,200	\$4,892,200	\$5,475,600	\$1,603,700	\$5,222,400	\$37,104,000

Local Claims Fiscal 2018	Laboratory Tests	CT Scans	MRI scans	X-rays	Ultrasounds	Mammograms	Other Imaging	Total Imaging
Hospital	\$21,135,500	\$4,958,000	\$2,182,300	\$2,566,100	\$809,800	\$301,500	\$1,737,500	\$12,555,100
Non-Hospital Claims	-	\$571,200	\$1,670,900	\$338,500	\$3,431,500	\$2,333,500	\$3,335,700	\$11,681,200
Total	\$21,135,500	\$5,529,200	\$3,853,200	\$2,904,600	\$4,241,300	\$2,635,000	\$5,073,200	\$24,236,300

% Change F18/F17	Laboratory Tests	CT Scans	MRI scans	X-rays	Ultrasounds	Mammograms	Other Imaging	Total Imaging
Total	(8.4%)	(53.2%)	(52.4%)	(40.6%)	(22.5%)	64.3%	(2.9%)	(34.7%)

## Appendix 4 – Summary of SHB and MRF Premium Recommendation

	Standard Health Benefit	Mutual Reinsurance Fund	Total
Fiscal 2019 Premium	\$253.34	\$101.97	\$355.31
1. Change in BHB Billing	(\$230.90)	\$231.33	\$0.43
2. Change in Utilization	\$0.90	\$0.16	\$1.06
3. Future Changes under the SHB	\$0.00	\$0.00	\$0.00
4. Future Changes under the MRF	\$0.00	(\$1.49)	(\$1.49)
<b>Recommended Fiscal 2020 SPR</b>	<b>\$23.34</b>	<b>\$331.97</b>	<b>\$355.31</b>
<b>% Change in Premium</b>	<b>(90.8%)</b>	<b>225.6%</b>	<b>0.0%</b>
<b>\$ Change in Premium</b>	<b>(\$230.00)</b>	<b>\$230.00</b>	<b>\$0.00</b>

## Appendix 4a – Summary of SHB and MRF Premium Recommendation – Monthly/Weekly

	Monthly Rate	Weekly Rate	50% of Monthly Rate	50% of Weekly Rate	Monthly Rate - Age 65 Subsidy Ineligible	Weekly Rate - Age 65 Subsidy Ineligible	50% of Monthly Rate - Age 65 Subsidy Ineligible	50% of Weekly Rate - Age 65 Subsidy Ineligible
<b>SHB Rate</b>	<b>\$23.34</b>	<b>\$5.39</b>	<b>\$11.67</b>	<b>\$2.69</b>	<b>\$23.34</b>	<b>\$5.39</b>	<b>\$11.67</b>	<b>\$2.69</b>
MRF - Health Insurance Department Transfer	\$35.89	\$8.28	\$17.94	\$4.14	\$35.89	\$8.28	\$17.94	\$4.14
MRF - Bermuda Health Council Transfer	\$1.00	\$0.23	\$0.50	\$0.12	\$1.00	\$0.23	\$0.50	\$0.12
MRF - Bermuda Hospitals Board Transfer	\$231.33	\$53.38	\$115.66	\$26.69	\$925.31	\$213.53	\$462.66	\$106.77
MRF - Chronic Disease Innovation Fund	\$3.40	\$0.78	\$1.70	\$0.39	\$3.40	\$0.78	\$1.70	\$0.39
MRF - Enhanced Care Program	\$2.00	\$0.46	\$1.00	\$0.23	\$2.00	\$0.46	\$1.00	\$0.23
MRF - Dialysis and Transplants	\$57.84	\$13.35	\$28.92	\$6.67	\$57.84	\$13.35	\$28.92	\$6.67
MRF - Operational and Administrative	\$0.51	\$0.12	\$0.26	\$0.06	\$0.51	\$0.12	\$0.26	\$0.06
<b>MRF - Total</b>	<b>\$331.97</b>	<b>\$76.61</b>	<b>\$165.99</b>	<b>\$38.30</b>	<b>\$1,025.96</b>	<b>\$236.76</b>	<b>\$512.98</b>	<b>\$118.38</b>
<b>Grand Total</b>	<b>\$355.31</b>	<b>\$82.00</b>	<b>\$177.66</b>	<b>\$41.00</b>	<b>\$1,049.30</b>	<b>\$242.15</b>	<b>\$524.65</b>	<b>\$121.07</b>