Health Market Inquiry

Promoting Healthy Competition

REPORT ON ANALYSIS OF MEDICAL SCHEMES CLAIMS DATA: A FOCUS ON FUNDERS

VERSION: 15 DECEMBER 2017

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This report relies upon the information supplied to the HMI by various stakeholders and this report takes no account of subsequent developments after the date of the submission of that data. The HMI Panel with the assistance of WTW has exercised reasonable professional skill and care in evaluating the information and data provided by the stakeholders accurately, nevertheless WTW and its directors, officers, employees, sub-contractors and affiliates accept no responsibility and will not be held liable for any errors, omissions or misrepresentations made by stakeholders and/or any other third party, or for any resulting errors or misrepresentations in the work undertaken. The HMI has ultimate responsibility for any findings it makes regarding the subject matter of this report.

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ABBEVIATIONS

CMS	Council for Medical Schemes
DHMS	Discovery Health Medical Scheme
Discovery Health	Discovery Health (Pty) Ltd
GEMS	Government Employees Medical Scheme
HMI	Health Market Inquiry
Medscheme	Medscheme Holdings (Pty) Ltd
Metropolitan Health	Metropolitan Health (Pty) Ltd
PMB	Prescribed Minimum Benefit
WTW	Willis Towers Watson

INTRODUCTION

1. This report, which is the fourth in a series of results reports from Willis Towers Watson (WTW) analysis process, is intended to provide results of a number of analyses which have been undertaken in respect of healthcare funders, specifically medical schemes and their administrators.

2. This report is also indented to provide insight into claims and membership trends across the medical schemes industry over the analysis period. This report should be read in conjunction with the previous analysis reports published, which dealt in detail with the dataset being used for analysis conducted for the Health Market Inquiry (HMI), the methodology used to build analysis dataset and the overall industry cost trends over the analysis period.

DATA AND METHODOLOGIES

Data Used

3. For the funder analyses outlined in the later sections of this report, the analysis datasets which have been built by WTW for the HMI and described in the **Report on Analysis of Medical Schemes Claims Data – Descriptive Statistics** (the Descriptive Statistics Report) have been used. The process of building these datasets was outlined in detail in the Descriptive Statistics Report. The datasets were built using the detailed claims and membership data which was requested by the HMI from the medical schemes and their administrators.

Attribution Analyses

4. The attribution analyses outlined in this report use individual medical scheme beneficiaries as the base unit of the statistical analyses. These analyses therefore use the beneficiary file built by WTW for the HMI analysis as a base. This file is structured at an individual beneficiary level and contains demographic information about each beneficiary in each year analysed, summary details of their claims for that year and some other usage indicators which have been built off the claims and membership databases. Of specific interest for the attribution analyses are:

    4.1. The demographic information about each beneficiary, specifically age and gender;

    4.2. The clinical profile and reporting status indicators, which are built using claims and utilisation data with the associated medicines and diagnoses and aim to build two different pictures of the disease burden within the industry;

    4.3. The member movement indicator (joiner, stayer, leaver, switcher) which was built to assess how benefit option selections by members impact healthcare costs; and

    4.4. The medical scheme and medical scheme plan selected, which have been grouped using the methodology described in the **Report on Analysis of Claims Data – Initial Cost Attribution Analysis** (the Cost Attribution Report) and used as analysis variables.

Other Analyses

5. The other funder analyses are descriptive in nature, and use the various indicators built into the analysis data files created by WTW for the HMI analyses. As a result no new analysis data or variables need to be defined for these analyses. These were run using the beneficiary, admission and discipline files created for the WTW analyses as outlined in Descriptive Statistics Report.

Methodologies

6. For this funder report, no new methodologies have been defined. The methodologies used in the first two analysis reports produced are applied to specific aspects of medical scheme claims. However, additional specific variables of interest to the funder analysis have been defined as follows:

   6.1. Analyses have been summarised by the benefit option groups as defined in the Cost Attribution Report specifically differentiating benefit plans by their out-of-hospital benefit design characteristics;

   6.2. A 'duration of membership' variable has been created using the year of joining and the analysis year, and grouped into six bands: new joiners (joined in the current year), 1-2 years (joined in the prior year), 2-3 years (joined two years prior), 3-4 years (joined three years prior), 4-5 years (joined four years prior) and 5+ years (all other lives) membership from date of joining;

   6.3. The administrators have been grouped into the three largest administrators (Discovery Health (Pty) Ltd (Discovery Health), Metropolitan Health (Pty) Ltd (Metropolitan Health) and Medscheme Holdings (Pty) Ltd (Medscheme)) covering over 80% of the industry , all other third party administrators and the self-administered schemes; and

   6.4. The medical schemes have been further grouped within the 'Open' and 'Restricted' scheme categories by size as follows:

      6.4.1. Since Discovery Health Medical Scheme (DHMS) constitutes over 50% of the open scheme markets, open schemes have been grouped into 'DHMS' and 'Other Open Schemes';

      6.4.2. Restricted schemes have been grouped into the Government Employees Medical Scheme (GEMS), the Discovery Health administered restricted

schemes, other large restricted schemes with more than 100 000 beneficiaries, and other smaller restricted schemes.

Some Methodological Considerations

7. When calculating the figures contained in this report, the following further definitions have been applied:

    7.1. When the report refers to members or beneficiaries, it counts total covered lives on any scheme in a given year, as opposed to the average exposed membership used in financial reporting.

    7.2. Claim or 'cost' figures are calculated using fees charged as opposed to benefits paid. Thus claim estimates will include claims rejected and paid out of pocket by beneficiaries as well as those paid from medical savings accounts. We note that true out of pocket expenditure will still be understated in our estimates since claims not submitted to medical schemes and paid out of pocket will still be excluded.

    7.3. 'Open' and 'Restricted' schemes are defined as in the Council for Medical Schemes (CMS) annual reports.

    7.4. All calculated inflation figures are annualised, i.e. when an inflation figure from 2010 to 2014 is quoted as x%, it should be read as x% per year. This will be consistent throughout all of the reports produced as part of the expenditure analysis, and any exceptions will be noted accordingly.

    7.5. Where claims figures are summarised by an analysis variable, the definition will correspond to those used in the Descriptive Statistics Report.

FUNDER ANALYSES

8. This section outlines five analyses which have been performed in respect of funders. These are:

    8.1. An analysis of payment patterns to determine the extent of cover enjoyed by medical scheme members;

    8.2. An analysis of claims by duration of membership, looking for potentially anti-selective member movements;

    8.3. An analysis of member and risk profile movements between different option types to assess the 'plan mix' effect found in the Cost Attribution Report;

    8.4. A comparison of claims trends across different administrators; and

    8.5. An analysis of the effect of scheme type and size on claims trends.

PAYMENT PATTERNS ANALYSIS

9. The objective of this analysis is to assess whether medical scheme beneficiaries have experienced greater or lesser cover in terms of how claims are paid relative to the amount claimed. The intention is to test how this varies across various funding dimensions. We note here that only claims submitted to the medical scheme can be included in the analysis, and it is likely that some claims paid out of pocket by members will therefore not be recorded.

10. For the purposes of this sub-section, claim payment sources are defined as follows:

    10.1. A payment from 'Risk' is any amount paid from the schemes' funds, including from hospital benefits or major medical benefits, any insured benefit limits in traditional type options and above threshold benefits;

    10.2. A payment from 'Savings' is any amount paid from the personal medical savings account of a member; and

    10.3. An 'Unpaid' claim amount is an amount which was claimed by a service provider, but was not paid by the scheme.

In-Hospital Claims

11. Table 1 below shows the proportion of in-hospital claims submitted to schemes which were paid from risk or savings and unpaid over the five years of data supplied.

TABLE 1: IN-HOSPITAL PAYMENT SOURCES, ALL SCHEMES 2010-2014

All Schemes, IH Claims	% Paid from Risk	% Paid from Savings	% Unpaid
2010	94.96%	1.07%	3.98%
2011	95.32%	0.96%	3.73%
2012	95.36%	0.92%	3.72%
2013	95.29%	0.92%	3.79%
2014	95.25%	0.93%	3.83%

12. Table 1 shows that around 95% of in-hospital claims were paid from risk in each of the years, and this figure has not changed substantially over the period analysed. Similarly, around 1% of in-hospital claims were paid from savings and around 4% of claims were unpaid. These figures have also not moved substantially over the period.

13. Table 2 and Table 3 show the figures for open and restricted schemes respectively. The proportions are stable in both groups, and do not differ markedly.

TABLE 2: IN-HOSPITAL PAYMENT SOURCES, OPEN SCHEMES 2010-2014

Open Schemes, IH Claims	% Paid from Risk	% Paid from Savings	% Unpaid
2010	94.83%	1.52%	3.66%
2011	95.16%	1.39%	3.44%
2012	94.92%	1.32%	3.75%
2013	94.84%	1.33%	3.83%
2014	94.94%	1.33%	3.73%

TABLE 3: IN-HOSPITAL PAYMENT SOURCES, RESTRICTED SCHEMES 2010-2014

Restricted Schemes, IH Claims	% Paid from Risk	% Paid from Savings	% Unpaid
2010	95.13%	0.44%	4.43%
2011	95.52%	0.38%	4.10%
2012	95.96%	0.36%	3.67%
2013	95.91%	0.35%	3.74%
2014	95.68%	0.35%	3.97%

14. In order to assess whether payment patterns vary systematically between schemes, the proportion paid from risk is analysed individually for each of the ten largest schemes in the dataset. The results are shown in Table 4.

TABLE 4: PROPORTION OF IN-HOSPITAL CLAIM AMOUNTS PAID FROM RISK BY SCHEME, 2010-2014

% of Claimed Amount paid from Risk, In-Hospital						
Medical Scheme	**2010**	**2011**	**2012**	**2013**	**2014**	**Trend**
Discovery Health Medical Scheme	94.39%	94.81%	94.70%	94.66%	94.58%	0.19%
Government Employees Medical Scheme (GEMS)	97.80%	97.45%	97.31%	97.09%	96.86%	-0.94%
Bonitas Medical Fund	96.50%	96.78%	96.87%	96.39%	96.66%	0.15%
SA Police Services Medical Scheme	93.13%	94.05%	95.12%	94.42%	92.60%	-0.53%
Bestmed Medical Scheme	96.19%	95.82%	95.38%	95.75%	96.33%	0.14%
Medihelp			95.72%	95.58%	95.97%	0.25%
Bankmed	91.28%	93.13%	93.78%	93.78%	94.09%	2.81%
Fedhealth	94.76%	95.31%	93.29%	94.00%	94.27%	-0.48%
Medshield	94.06%	95.12%	93.92%	93.42%	94.10%	0.04%
Momentum Health	94.04%	93.29%	92.62%	92.16%	92.01%	-2.03%
Other Schemes	94.10%	94.95%	94.91%	95.06%	95.27%	1.17%
All Schemes	**94.96%**	**95.32%**	**95.36%**	**95.29%**	**95.25%**	**0.29%**

15. Table 4 shows that the schemes fall mostly into a narrow band in terms of proportion paid from risk, and that very few significant trends are evident. Bankmed shows an increasing proportion of risk payments, while Momentum Health shows a declining proportion. This is an expected result given the nature of medical scheme cover and the regulations under which schemes operate. This demonstrates the uniformity of benefit design in respect of in-hospital claims.

Out-of-hospital Claims

16. Table 5 below shows the proportion of out-of-hospital claims submitted to schemes which were paid from risk or savings and unpaid over the five years of data supplied.

TABLE 5: OUT-OF-HOSPITAL PAYMENT SOURCES, ALL SCHEMES 2010-2014

All Schemes, OH Claims	% Paid from Risk	% Paid from Savings	% Unpaid
2010	70.51%	22.34%	7.14%
2011	70.86%	22.18%	6.96%
2012	71.09%	21.89%	7.02%
2013	70.89%	22.23%	6.88%
2014	70.74%	22.66%	6.60%

17. Table 5 shows that around 70% of out-of-hospital claims were paid from risk in each of the years. Around 22% of out-of-hospital claims were paid from savings and around 7% of claims were unpaid. These figures have not moved substantially over the period.

18. Table 6 and Table 7 show the figures for open and restricted schemes respectively.

TABLE 6: OUT-OF--HOSPITAL PAYMENT SOURCES, OPEN SCHEMES 2010-2014

Open Schemes, OH Claims	% Paid from Risk	% Paid from Savings	% Unpaid
2010	57.88%	34.48%	7.64%
2011	57.38%	35.06%	7.56%
2012	57.47%	34.74%	7.79%
2013	57.78%	34.70%	7.51%
2014	57.50%	35.18%	7.33%

TABLE 7: OUT-OF-HOSPITAL PAYMENT SOURCES, RESTRICTED SCHEMES 2010-2014

Restricted Schemes, OH Claims	% Paid from Risk	% Paid from Savings	% Unpaid
2010	84.99%	8.43%	6.57%
2011	85.63%	8.07%	6.30%
2012	86.01%	7.81%	6.18%
2013	86.04%	7.81%	6.15%
2014	86.22%	8.03%	5.75%

19. It is noticeable that open schemes, in comparison to restricted schemes, have a much smaller proportion of risk payments and a much larger proportion of savings payments. Open schemes also have more unpaid claims, but the difference is relatively small. For out-of-hospital claims, open schemes show marginal declines in the proportion of claims paid from risk and unpaid, and marginal increases in claims paid from savings, while restricted schemes show increased proportions of claims paid from risk and reductions in claims paid from savings and unpaid.

20. In order to assess whether payment patterns vary systematically between schemes, the proportion paid from risk is analysed individually for each of the ten largest schemes in the dataset. The results are shown in Table 8.

TABLE 8: PROPORTION OF OUT-OF-HOSPITAL CLAIM AMOUNTS PAID FROM RISK BY SCHEME, 2010-2014

% of Claimed Amount paid from Risk, Out-of-hospital						
Medical Scheme	**2010**	**2011**	**2012**	**2013**	**2014**	**Trend**
Discovery Health Medical Scheme	46.66%	46.56%	45.19%	45.20%	45.36%	-1.30%
Government Employees Medical Scheme (GEMS)	92.01%	91.76%	91.93%	91.90%	92.06%	0.05%
Bonitas Medical Fund	89.14%	88.36%	89.44%	87.63%	87.79%	-1.35%
SA Police Services Medical Scheme	92.52%	93.92%	94.22%	94.58%	94.96%	2.44%
Bestmed Medical Scheme	67.94%	66.28%	63.38%	58.84%	56.80%	-11.14%
Medihelp			82.11%	81.56%	80.12%	-1.99%
Bankmed	64.74%	66.30%	66.71%	64.08%	66.02%	1.28%
Fedhealth	73.44%	74.40%	76.08%	77.41%	78.03%	4.59%
Medshield	82.95%	82.57%	81.75%	82.35%	83.59%	0.64%
Momentum Health	87.39%	86.88%	86.38%	85.52%	85.56%	-1.83%
Other Schemes	76.33%	77.07%	75.69%	76.99%	76.59%	0.27%
All Schemes	**70.51%**	**70.86%**	**71.09%**	**70.89%**	**70.74%**	**0.22%**

21. Table 8 shows a much larger variation across the schemes, indicating the impact of benefit designs on out-of-hospital claims. Bestmed and to a lesser extent Medihelp and Momentum Health show reductions in payments from risk, while Fedhealth and the SA Police Services Medical Scheme show increased payment from risk.

22. Table 9 shows the corresponding trends for payments from savings.

TABLE 9: PROPORTION OF OUT-OF-HOSPITAL CLAIM AMOUNTS PAID FROM SAVINGS BY SCHEME, 2010-2014

% of Claimed Amount paid from Savings, Out-of-hospital						
Medical Scheme	**2010**	**2011**	**2012**	**2013**	**2014**	**Trend**
Discovery Health Medical Scheme	45.39%	45.73%	46.87%	47.44%	47.34%	1.95%
Government Employees Medical Scheme (GEMS)	2.77%	2.67%	2.47%	2.92%	3.29%	0.53%
Bonitas Medical Fund	4.60%	5.23%	5.65%	7.13%	7.62%	3.02%
SA Police Services Medical Scheme	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Bestmed Medical Scheme	25.01%	26.51%	30.71%	34.77%	37.12%	12.11%
Medihelp			5.43%	6.82%	8.33%	2.90%
Bankmed	29.69%	28.26%	27.41%	28.88%	27.39%	-2.30%
Fedhealth	20.27%	18.98%	17.72%	16.01%	15.27%	-5.00%
Medshield	8.94%	9.32%	10.34%	9.71%	9.11%	0.16%
Momentum Health	4.27%	3.95%	4.19%	4.04%	3.90%	-0.38%
Other Schemes	15.68%	15.33%	16.72%	14.83%	15.39%	-0.29%
All Schemes	**22.34%**	**22.18%**	**21.89%**	**22.23%**	**22.66%**	**0.32%**

23. The out-of-hospital claims paid from savings trends again vary by scheme, reflecting different benefit designs. Only one of the top ten schemes (SA Police Services Medical Scheme) does not offer any medical savings options.

24. The last table in this section, Table 10 below, shows the trends in the proportion of claims which are unpaid.

Table 10: Proportions of Out-of-hospital Claims Unpaid by Scheme, 2010-2014

% of Claimed Amount Unpaid, Out-of-hospital						
Scheme	**2010**	**2011**	**2012**	**2013**	**2014**	**Trend**
Discovery Health Medical Scheme	7.95%	7.71%	7.94%	7.35%	7.30%	-0.65%
Government Employees Medical Scheme (GEMS)	5.22%	5.57%	5.60%	5.18%	4.64%	-0.58%
Bonitas Medical Fund	6.26%	6.41%	4.91%	5.24%	4.60%	-1.67%
SA Police Services Medical Scheme	7.48%	6.08%	5.78%	5.42%	5.04%	-2.44%
Bestmed Medical Scheme	7.05%	7.21%	5.90%	6.39%	6.08%	-0.97%
Medihelp			12.46%	11.61%	11.55%	-0.91%
Bankmed	5.57%	5.45%	5.88%	7.04%	6.58%	1.02%
Fedhealth	6.29%	6.62%	6.20%	6.57%	6.70%	0.41%
Medshield	8.11%	8.11%	7.91%	7.94%	7.30%	-0.80%
Momentum Health	8.34%	9.16%	9.43%	10.44%	10.54%	2.20%
Other Schemes	7.99%	7.61%	7.60%	8.18%	8.02%	0.03%
All Schemes	**7.14%**	**6.96%**	**7.02%**	**6.88%**	**6.60%**	**-0.54%**

25. Table 10 shows some variation in the proportion of unpaid claims by scheme, with Momentum Health and Medihelp having rates of unpaid claims of over 10% by 2014. GEMS, Bonitas and SA Police Services Medical Scheme show the lowest rates, which are also declining over time.

DURIATION OF MEMBERSHIP AND MEMBERSHIP MOVEMENT ANALYSIS

26. The objective of the duration of membership analysis is to firstly assess whether there is a systemic anti-selection against medical schemes i.e. whether beneficiaries join or change medical schemes when they are in need of care, posing an immediate risk to schemes. Secondly, whether this phenomenon (to the extent it exists) is becoming systemically more problematic over time i.e. contributing to higher annual increases as well as higher base claims. It also aims to assess how long the 'selection' effect lasts once a member has been on their scheme for a period of time.

27. This analysis is conducted in two sections: firstly a sequence of descriptive statistics illustrating trends in the number of beneficiaries, as well as average age and total claims, by duration of membership and secondly a statistical analysis of the changes in risk profile of each group by duration of membership.

28. Table 11 shows the proportion of beneficiaries falling into each of the membership duration bands outlined in the Methodologies section above. It shows that the proportion of membership made up by new joiners has decreased over the period of the data, and the proportion made up by beneficiaries who have been on their scheme for five years or longer is increasing.

TABLE 11: PROPORTION OF BENEFICIARIES BY DURATION OF MEMBERSHIP, 2010-14, ALL SCHEMES

All Schemes	2010	2011	2012	2013	2014	Trend
New Joiner	18.47%	14.85%	13.81%	13.61%	12.45%	-6.02%
1-2 Years	16.16%	15.79%	12.84%	11.83%	11.86%	-4.30%
2-3 Years	12.32%	13.10%	12.91%	10.34%	9.68%	-2.63%
3-4 Years	11.66%	10.30%	10.89%	10.81%	8.74%	-2.92%
4-5 Years	7.44%	9.85%	8.65%	9.30%	9.40%	1.96%
5+ Years	33.95%	36.12%	40.89%	44.12%	47.86%	13.91%

29. The next two tables show the same trends for open and restricted schemes respectively. Open schemes have higher proportion of longer-term beneficiaries on their schemes than

restricted medical schemes. This is likely because GEMS started in 2006 and has taken on a large number of new members in the last 10 years. Restricted schemes appear to be closing the gap fairly rapidly over time. Table 14, which shows all restricted schemes excluding GEMS, confirms this.

TABLE 12: PROPORTION OF BENEFICIARIES BY DURATION OF MEMBERSHIP, 2010-14 OPEN SCHEMES

Open Schemes	2010	2011	2012	2013	2014	Trend
New Joiner	17.32%	14.29%	13.99%	15.30%	13.32%	-4.00%
1-2 Years	14.01%	14.85%	12.37%	11.69%	13.04%	-0.96%
2-3 Years	10.58%	11.01%	11.66%	9.47%	9.20%	-1.38%
3-4 Years	8.87%	8.68%	9.06%	9.43%	7.77%	-1.10%
4-5 Years	8.16%	7.50%	7.17%	7.51%	8.07%	-0.09%
5+ Years	41.06%	43.68%	45.74%	46.61%	48.59%	7.54%

TABLE 13: PROPORTION OF BENEFICIARIES BY DURATION OF MEMBERSHIP, 2010-14 RESTRICTED SCHEMES

Restricted Schemes	2010	2011	2012	2013	2014	Trend
New Joiner	19.91%	15.50%	13.59%	11.50%	11.35%	-8.56%
1-2 Years	18.87%	16.89%	13.43%	12.01%	10.35%	-8.51%
2-3 Years	14.50%	15.54%	14.47%	11.42%	10.30%	-4.20%
3-4 Years	15.17%	12.19%	13.16%	12.52%	9.99%	-5.18%
4-5 Years	6.53%	12.58%	10.50%	11.53%	11.09%	4.56%
5+ Years	25.03%	27.31%	34.85%	41.01%	46.93%	21.90%

Table 14: Proportion of Beneficiaries by Duration of Membership, 2010-14 Restricted Schemes excl. GEMS

Restricted Schemes excl. GEMS	2010	2011	2012	2013	2014	Trend
New Joiner	13.99%	12.18%	11.56%	11.21%	11.85%	-2.13%
1-2 Years	14.03%	12.25%	10.75%	10.21%	10.12%	-3.91%
2-3 Years	9.87%	11.54%	10.65%	8.92%	8.53%	-1.33%
3-4 Years	9.19%	8.54%	9.75%	9.06%	7.70%	-1.49%
4-5 Years	7.28%	7.33%	7.40%	8.40%	7.75%	0.47%
5+ Years	45.65%	48.16%	49.88%	52.19%	54.04%	8.39%

30. Tables 15 to 18 show the average age of each group by duration of membership, for the same beneficiaries as outlined above. Table 15 is for all schemes, and shows that the average age of new joiners has actually fallen by 1.5 years over the period analysed.

Table 15: Average Age (Years) Trends By Duration Of Membership, 2010-14 All Schemes

All Schemes	2010	2011	2012	2013	2014	Trend
New Joiner	26.28	24.96	25.55	25.73	24.78	-1.51
1-2 Years	26.71	27.35	26.13	26.55	26.72	0.00
2-3 Years	27.35	27.74	28.76	27.17	27.73	0.38
3-4 Years	29.45	28.35	29.20	29.92	28.24	-1.21
4-5 Years	30.94	30.25	29.61	30.33	31.09	0.15
5+ Years	38.25	38.27	38.31	38.04	37.94	-0.31

31. Tables 16 to18 show the average age trends by duration of membership for open and restricted schemes, as well as restricted schemes excluding GEMS. The trends are similar for new joiners, but open schemes have also shown ageing of the population who have been

on their scheme for five or more years. It is also noticeable that the average age of new joiners has not decreased markedly for the restricted scheme group once GEMS is excluded. This would be expected given the compulsory membership provisions often applied to the participating employers in restricted schemes, meaning new joiners should equal new employees plus new dependents of existing members.

TABLE 16: AVERAGE AGE TRENDS BY DURATION OF MEMBERSHIP, 2010-14 OPEN SCHEMES

Open Schemes	2010	2011	2012	2013	2014	Trend
New Joiner	26.93	25.37	25.45	27.18	25.34	-1.58
1-2 Years	27.27	28.13	26.70	26.53	28.30	1.03
2-3 Years	28.40	28.58	29.76	27.87	27.81	-0.59
3-4 Years	29.84	29.58	30.59	31.09	28.99	-0.85
4-5 Years	31.43	31.03	31.11	31.96	32.44	1.01
5+ Years	37.93	38.28	39.29	39.41	39.67	1.74

TABLE 17: AVERAGE AGE TRENDS BY DURATION OF MEMBERSHIP, 2010-14 RESTRICTED SCHEMES

Restricted Schemes	2010	2011	2012	2013	2014	Trend
New Joiner	25.58	24.52	25.69	23.32	23.93	-1.65
1-2 Years	26.19	26.55	25.49	26.57	24.16	-2.03
2-3 Years	26.39	27.05	27.75	26.45	27.64	1.25
3-4 Years	29.17	27.32	28.00	28.82	27.50	-1.66
4-5 Years	30.18	29.71	28.33	29.01	29.84	-0.33
5+ Years	38.90	38.26	36.72	36.10	35.64	-3.26

TABLE 18: AVERAGE AGE TRENDS BY DURATION OF MEMBERSHIP, 2010-14 RESTRICTED SCHEMES EXCL. GEMS

Restricted Schemes excl. GEMS	2010	2011	2012	2013	2014	Trend
New Joiner	23.83	22.72	21.71	22.07	23.61	-0.23
1-2 Years	26.03	24.65	23.58	22.61	22.87	-3.16
2-3 Years	24.43	26.79	26.13	24.58	23.47	-0.96
3-4 Years	28.02	25.24	27.77	27.25	25.62	-2.40
4-5 Years	28.94	27.10	26.08	28.79	27.86	-1.08
5+ Years	38.90	38.69	38.33	38.13	37.97	-0.93

32. Tables 19 to 22 show claims per beneficiary by duration of membership. We note that the claims figure presented here are unadjusted for risk profile. Table 19 shows the figures for all schemes. It shows that claims are higher for longer-term members and lower for new joiners, and that claim inflation rates fall within a reasonably narrow band for all of the groups.

33. The 7.67% increase for new joiners is noticeable compared to overall claims inflation of 9.24%. This, combined with a reducing proportion of new joiners, suggests that systemic anti-selection is unlikely to be a cause of the high claims increases experienced by schemes. It is more likely the slowdown in new joiners has accelerated claims inflation, because more beneficiaries are falling into the higher cost longer term membership bands over time.

TABLE 19: CLAIM COST (R PER LIFE) TRENDS BY DURATION OF MEMBERSHIP, 2010-14 ALL SCHEMES

All Schemes	2010	2011	2012	2013	2014	Trend
New Joiner	6 390.04	6 183.28	7 167.01	7 981.87	8 589.35	7.67%
1-2 Years	8 192.72	9 522.03	9 444.57	10 656.56	11 455.58	8.74%
2-3 Years	8 379.92	9 015.39	10 508.60	10 275.31	11 763.38	8.85%
3-4 Years	9 115.19	9 349.57	10 259.44	11 658.10	11 557.63	6.11%
4-5 Years	9 201.88	10 065.83	10 480.80	11 248.36	13 127.27	9.29%
5+ Years	13 137.90	14 034.58	14 562.07	15 608.03	16 859.88	6.43%

34. Tables 20 to 22 show the figures for open schemes, restricted schemes and restricted schemes excluding GEMS. It is noticeable that new joiner claims inflation is higher for restricted than open schemes, even after GEMS is excluded.

TABLE 20: CLAIM COST (R PER LIFE) TRENDS BY DURATION OF MEMBERSHIP, 2010-14 OPEN SCHEMES

Open Schemes	2010	2011	2012	2013	2014	Trend
New Joiner	6 027.58	5 829.10	6 225.00	7 648.79	7 379.51	5.19%
1-2 Years	8 326.51	9 381.14	9 035.87	9 947.25	11 716.36	8.91%
2-3 Years	8 644.41	9 399.91	10 628.02	10 461.78	11 394.56	7.15%
3-4 Years	8 974.51	9 800.19	10 710.53	12 286.48	11 883.89	7.27%
4-5 Years	9 220.94	10 105.62	10 858.60	12 414.43	13 996.35	11.00%
5+ Years	13 249.67	14 320.89	14 902.46	16 548.42	18 117.22	8.14%

TABLE 21: CLAIM COST (R PER LIFE) TRENDS BY DURATION OF MEMBERSHIP, 2010-14 RESTRICTED SCHEMES

Restricted Schemes	2010	2011	2012	2013	2014	Trend
New Joiner	6 786.27	6 563.49	8 375.12	8 533.50	10 403.80	11.27%
1-2 Years	8 067.95	9 666.24	9 913.67	11 515.61	11 035.84	8.15%
2-3 Years	8 137.49	8 698.13	10 388.69	10 082.94	12 184.52	10.62%
3-4 Years	9 218.51	8 975.97	9 872.84	11 068.77	11 233.67	5.07%
4-5 Years	9 171.92	10 038.20	10 159.44	10 303.27	12 318.67	7.65%
5+ Years	12 907.57	13 501.21	14 005.45	14 277.36	15 196.37	4.17%

TABLE 22: CLAIM COST (R PER LIFE) TRENDS BY DURATION OF MEMBERSHIP, 2010-14 RESTRICTED SCHEMES EXCL. GEMS

Restricted Schemes excl. GEMS	2010	2011	2012	2013	2014	Trend
New Joiner	6 712.59	6 072.26	6 632.71	7 204.25	9 575.59	9.29%
1-2 Years	7 114.77	8 885.34	8 648.08	9 116.31	9 606.15	7.79%
2-3 Years	7 310.66	7 931.22	9 338.12	9 224.64	9 815.64	7.64%
3-4 Years	8 487.98	8 082.17	9 022.20	10 139.76	10 178.14	4.64%
4-5 Years	8 271.59	8 782.92	8 926.55	9 569.22	10 927.49	7.21%
5+ Years	12 907.57	13 658.50	14 688.19	15 464.83	16 661.34	6.59%

35. The descriptive analysis above suggests that to the extent significant member anti-selection is occurring, it is not contributing to annual claims increases. However, this does not mean that selection effects have no impact on individual medical schemes' claims experience. In order to test for selection effects, it is necessary to make a risk-adjusted comparison between members by their year of joining.

36. The next set of figures outline the results of repeating the modelling process used to produce the overall beneficiary model and summarising the results by year of joining. In this analysis, the actual claims for each group was compared to the claims estimates produced by the statistical model. To the extent actual claims exceed the predictions for any group, the group has claimed above what their risk profile would suggest they should. Conversely actual claims below predicted claims would indicate the group has claimed less than expected.

37. Figure 1 and 2 show (separately for the two disease burden models) the actual and expected claims by duration of membership for the 2014 population analysed. It shows that new joiners have actually claimed less than would be expected, while those in the second to fifth years of membership claim marginally more than expected. There are two possible reasons for lower claims by new joiners: firstly the impact of the underwriting process and the waiting periods schemes are allowed to apply, and secondly the fact that new joiners often join part way through a year and hence are not covered for a full 12 months.

FIGURE 1: ACTUAL AND PREDICTED CLAIMS BY DURATION OF MEMBERSHIP, ALL SCHEMES 2014 (NARROW DISEASE BURDEN)

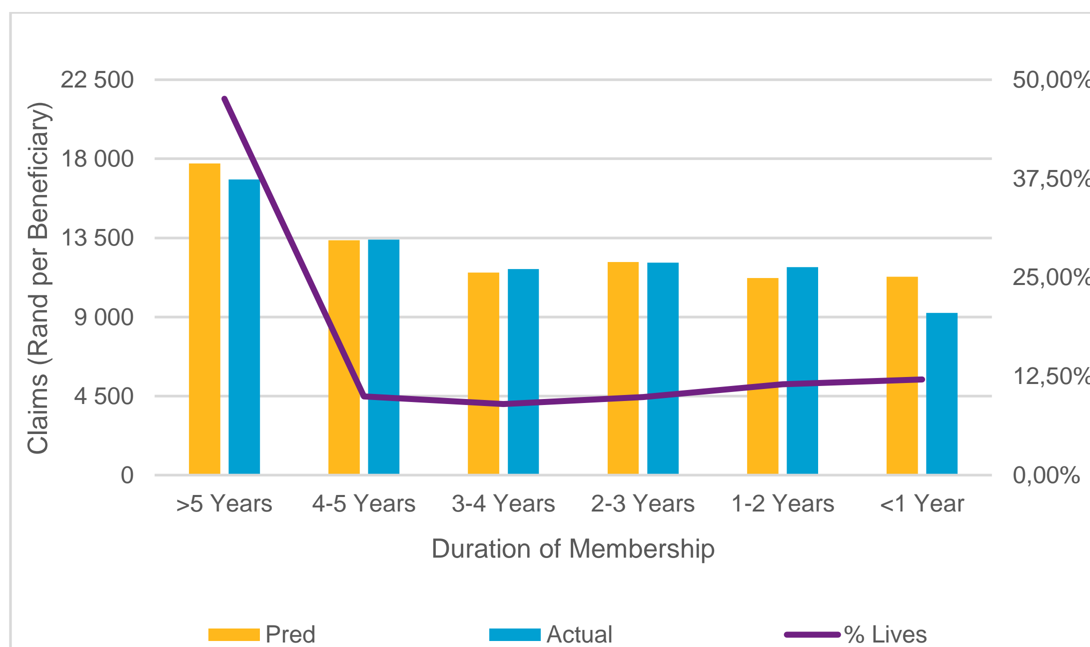
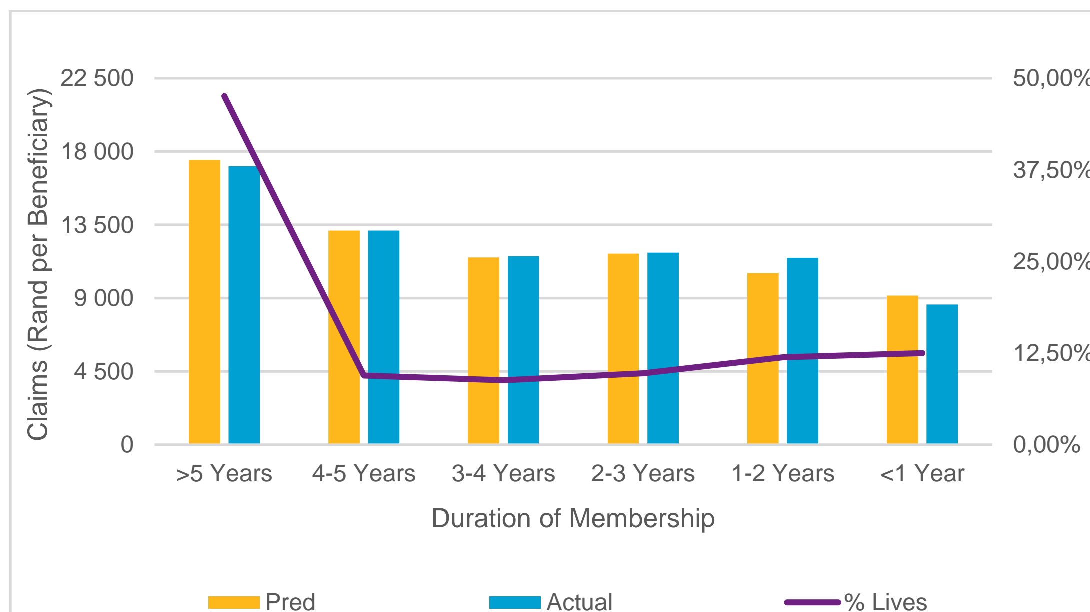


FIGURE 2: ACTUAL AND PREDICTED CLAIMS BY DURATION OF MEMBERSHIP, ALL SCHEMES 2014 (BROAD DISEASE BURDEN)



38. The next four figures show the corresponding figures for open and restricted schemes. Since restricted schemes, which often have compulsory membership and do not often apply waiting periods, show a smaller 'gap' for new joiners, it may be that the underwriting effect is contributing at least partially to the lower new joiner claims.

FIGURE 3: ACTUAL AND PREDICTED CLAIMS BY DURATION OF MEMBERSHIP, OPEN SCHEMES 2014 (NARROW DISEASE BURDEN)

FIGURE 4: ACTUAL AND PREDICTED CLAIMS BY DURATION OF MEMBERSHIP, OPEN SCHEMES 2014 (BROAD DISEASE BURDEN)

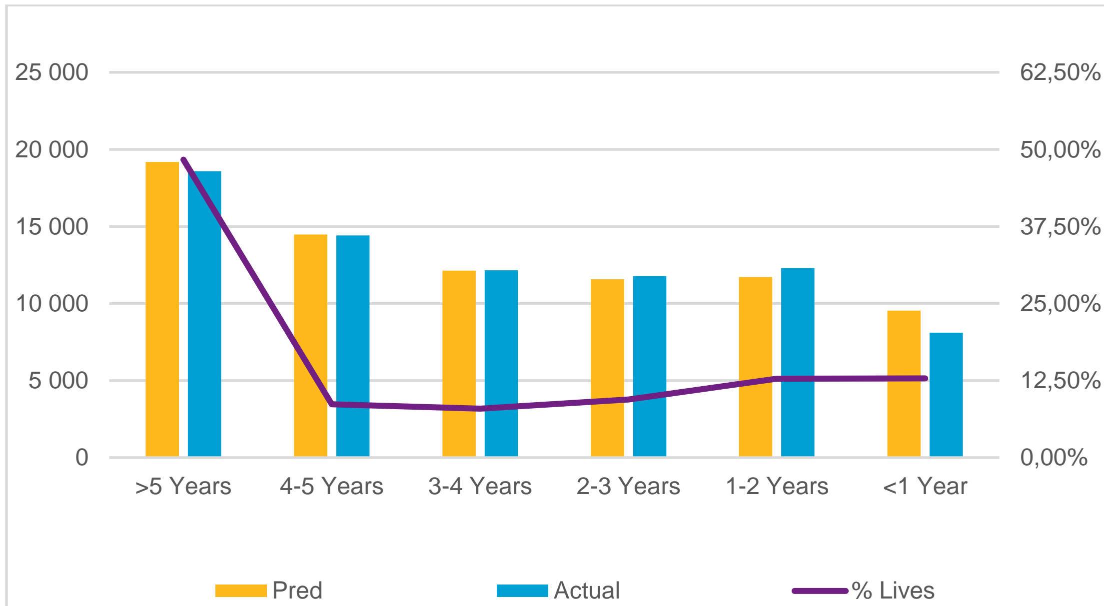


FIGURE 5: ACTUAL AND PREDICTED CLAIMS BY DURATION OF MEMBERSHIP, RESTRICTED SCHEMES 2014 (NARROW DISEASE BURDEN)

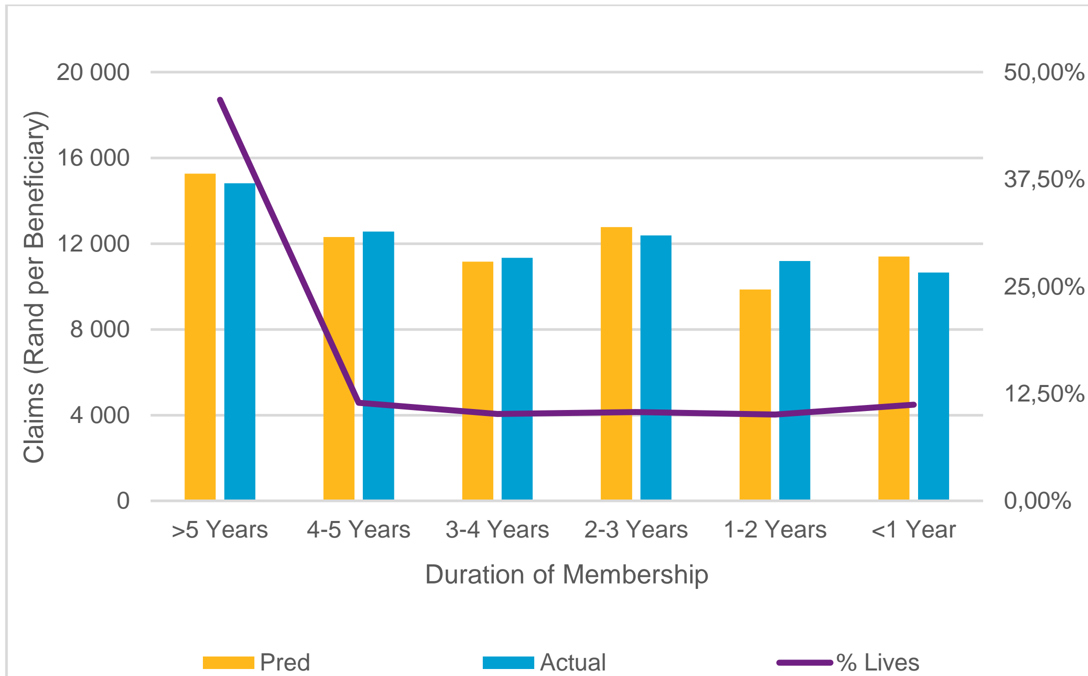
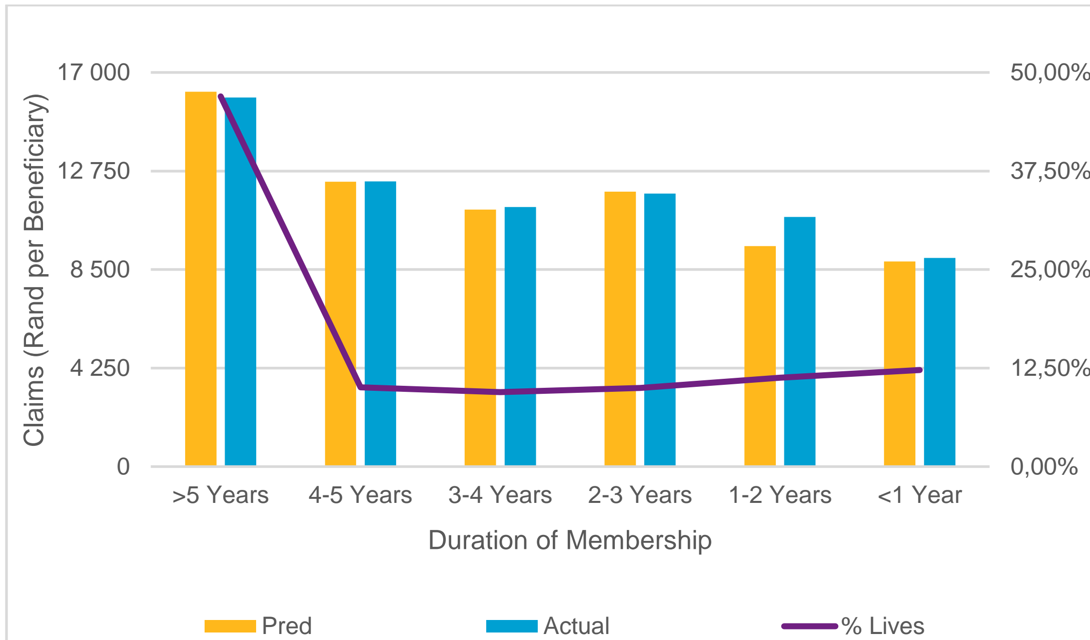


FIGURE 6: ACTUAL AND PREDICTED CLAIMS BY DURATION OF MEMBERSHIP, RESTRICTED SCHEMES 2014 (BROAD DISEASE BURDEN)



39. The differences between actual and expected claims by scheme type and duration of membership are shown in Table 23 and Table 24. A column has been added for DHMS because a specific submission around this effect was made on behalf of DHMS. The table shows the percentage difference between the pairs of bars in the graphs above. It shows that actual claims are below predicted claims for beneficiaries who have been on the scheme longer than five years as well as new joiners, and above for the majority of the other groups, across both scheme types.

Table 23: Difference between Actual and Predicted Claims by Duration, 2014 (Narrow Disease Burden)

	Scheme Type			
Membership Duration	**Open**	**Restricted**	**All**	**DHMS only**
>5 Years	-6.71%	-2.86%	-5.16%	-3.96%
4-5 Years	-1.43%	2.10%	0.35%	0.21%
3-4 Years	1.58%	1.66%	1.62%	4.05%
2-3 Years	2.68%	-3.03%	-0.32%	5.75%
1-2 Years	0.81%	13.53%	5.47%	6.11%
<1 Year	-27.68%	-6.48%	-18.22%	-27.29%

Table 24: Difference between Actual and Predicted Claims by Duration, 2014 (Broad Disease Burden)

	Scheme Type			
Membership Duration	**Open**	**Restricted**	**All**	**DHMS only**
>5 Years	-3.08%	-1.56%	-2.29%	-4.50%
4-5 Years	-0.32%	0.16%	-0.05%	-3.13%
3-4 Years	0.25%	1.06%	0.73%	-1.37%
2-3 Years	1.81%	-0.65%	0.36%	0.44%
1-2 Years	4.88%	13.15%	8.89%	3.05%
<1 Year	-15.00%	1.76%	-6.00%	-19.26%

40. Since even restricted schemes show a considerable gap between actual and predicted claims for new joiners it is likely that partial exposure i.e. beneficiaries joining mid-way through the year is playing a role in this differential. The overall average beneficiary is covered for 10.8 months of the year, while the average new beneficiary is only covered for 6.7 months of the year. This is a gap of around 38%, whereas the claims gap is around 20% for all schemes and 13% for restricted schemes where underwriting is less common.

41. This suggests that there may be increased claims associated with new joiners relative to the cover they enjoy and hence the contributions they pay. Members are likely to make decisions based on what is optimal for them, and hence seeking medical scheme cover at a time of need is a rational decision to make. This effect appears to be stable and present for a long time in the medical scheme industry and is therefore contributing to the average costs of members' contribution, but not contributing materially to the claims increases experienced over the period analysed.

PLAN MIX ANALYSIS

42. The overall claims attribution analysis in the Cost Attribution Report suggested that the schemes analysed experienced a net movement from the more benefit-rich and more costly benefit options to the lower cost, less benefit-rich options. Table 25 and Table 26, reproduced from the Cost Attribution Report show that this effect was quantified at an average of -0.80% in the narrow disease burden model and -0.56% in the broad disease burden model. This negative figure results from the average member choosing less cover as time progresses, i.e. more beneficiaries are on the options offering lower levels of cover and fewer on those offering higher levels of cover.

Table 25: All Claims Cost Trends 2010-14: All Schemes (Narrow Disease Burden)

All Schemes, All Claims	2011	2012	2013	2014	Average
Total Increase	9.02%	8.58%	9.19%	10.16%	9.24%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	2.11%	0.64%	1.81%	1.35%	1.48%
Age	0.57%	2.81%	1.01%	0.87%	1.32%
Gender	-0.03%	-0.04%	0.05%	0.02%	0.00%
Disease Profile	0.99%	-0.53%	0.79%	0.32%	0.39%
Member Profile	1.86%	0.03%	0.07%	0.31%	0.57%
Plan Mix	-1.28%	-1.63%	-0.12%	-0.18%	-0.80%
Unexplained Factors	1.90%	2.34%	1.68%	2.71%	2.16%

TABLE 26: ALL CLAIMS COST TRENDS 2010-14: ALL SCHEMES (BROAD DISEASE BURDEN)

All Schemes, All Claims	2011	2012	2013	2014	Average
Total Increase	9.02%	8.58%	9.19%	10.16%	9.24%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	4.40%	2.15%	2.61%	2.72%	2.97%
Age	0.57%	2.81%	1.01%	0.87%	1.32%
Gender	-0.03%	-0.04%	0.05%	0.02%	0.00%
Disease Profile	2.78%	0.46%	1.64%	1.58%	1.61%
Member Profile	2.25%	-0.15%	-0.03%	0.31%	0.60%
Plan Mix	-1.17%	-0.93%	-0.07%	-0.06%	-0.56%
Unexplained Factors	-0.38%	0.83%	0.88%	1.33%	0.67%

43. The objective of this section is to attempt to understand the source of this effect, as well as to assess how the risk profile of the population within each of the option groups has moved over time. Table 27 shows the proportion of the population analysed falling into each of the option groups by year, as well as the movement over time in each group. The option groups are defined according to out-of-hospital characteristics as follows:

43.1. Some options offer no non-PMB out-of-hospital benefits (so-called hospital plans) and these have been grouped together in the 'None' category;

43.2. PMB exempt schemes and benefit options (the former bargaining council schemes) are placed in their own group;

43.3. Benefit options which offer out-of-hospital benefits through a network arrangement, usually involving general practitioners, are grouped as 'Network' plans;

43.4. Benefit options which offer a limited savings allocation and minimal other benefits are grouped as 'Savings' plans;

43.5. Benefit options offering traditional block benefits with limits at a reasonably low level, are grouped as 'Traditional';

43.6. Benefit options which offer extensive benefits out-of-hospital (either traditional benefit limit structures with very high limits or large savings allocations and above threshold benefits) are grouped together, since logically very few members on either type of plan will experience benefit limitation, as 'Comprehensive'; and

43.7. There are a group of benefit options for which no information is publicly available, and these have been placed together in the 'Unknown' group.

TABLE 27: PROPORTION OF TOTAL BENEFICIARIES BY OPTION GROUP, ALL SCHEMES 2010-14

	Comprehensive	Traditional	Savings	Network	Hospital	PMB Exempt	Unknown
2010	28.76%	30.13%	19.97%	11.22%	6.74%	0.87%	2.31%
2011	26.77%	31.80%	20.59%	12.10%	6.72%	0.84%	1.19%
2012	24.38%	33.18%	21.20%	12.57%	6.93%	0.76%	0.98%
2013	24.16%	32.58%	21.81%	12.36%	7.50%	0.75%	0.83%
2014	23.35%	32.02%	23.42%	12.00%	7.83%	0.72%	0.66%
Trend	**-5.40%**	**1.89%**	**3.45%**	**0.78%**	**1.09%**	**-0.15%**	**-1.65%**

44. Table 27 shows that the proportion of beneficiaries registered on Comprehensive options has shown a marked decrease over the period analysed, with corresponding growth seen on Traditional and Savings options, with Savings options showing the highest growth rate over the period. The Network and Hospital option groups are small, and have not increased as much as the other groups, while PMB Exempt and Unknown options are very small groups.

45. Since by the design of the option grouping the Comprehensive options are the highest cover, most expensive options, this suggests that the hypothesis of beneficiaries moving to cheaper options over time is likely to be correct. We note that this data cannot provide the reason for these movements, as such a movement could result from affordability constraints, but could equally result from healthier members choosing less cover as less is required.

46. Table 28 shows the average age of the beneficiaries in each option group, as well as the changes in that average over time. The Descriptive Statistics Report showed that, in the period analysed, the average age of the beneficiaries in the dataset has increased by 1.23 years.

TABLE 28: AVERAGE BENEFICIARY AGE TRENDS BY OPTION GROUP, ALL SCHEMES 2010-14

	Comprehensive	Traditional	Savings	Network	Hospital	PMB Exempt	Unknown
2010	34.10	28.76	30.69	29.05	34.96	29.18	34.14
2011	34.54	29.02	30.87	29.24	35.22	29.59	33.63
2012	35.48	30.21	31.25	29.40	35.48	29.66	33.37
2013	36.35	30.30	31.30	29.47	35.56	29.77	32.66
2014	36.79	30.55	31.46	29.48	35.81	29.67	29.36
Trend	**2.69**	**1.78**	**0.76**	**0.43**	**0.85**	**0.49**	**-4.78**

47. The table shows that the average age of beneficiaries on Comprehensive and Traditional options has increased by more than the overall figure of 1.23 years, while the other option groups appear to have aged by less. Of particular note is the increase of 2.69 years in respect of Comprehensive options, which suggests that the decrease in membership of these options has been as a result of a net loss of younger beneficiaries over time.

48. Table 29 and Table 30 show the proportion of beneficiaries by option group who have been flagged with one of the disease burden indicators i.e. those not in the ‘Healthy’ group, and the trend in this over time, using the narrow and broad approaches respectively. The Descriptive Statistics Report showed that, over time, the proportion of beneficiaries falling outside of the ‘Healthy’ group had increased by 1.4% using the narrow approach and 3.5% using the broad approach.

Table 29: Disease Burden Trends by Option Group, 2010-2014 (Narrow Grouping)

	Comprehensive	Traditional	Savings	Network	Hospital	PMB Exempt	Unknown
2010	46.46%	42.29%	28.21%	22.86%	4.25%	6.43%	23.43%
2011	47.60%	44.29%	29.91%	23.50%	4.39%	5.91%	31.77%
2012	47.36%	43.38%	28.85%	23.18%	4.50%	5.97%	23.31%
2013	48.54%	43.61%	29.85%	24.93%	4.73%	6.60%	19.77%
2014	49.20%	44.44%	30.97%	25.90%	5.22%	7.16%	13.12%
Trend	**2.74%**	**2.15%**	**2.75%**	**3.04%**	**0.97%**	**0.74%**	**-10.31%**

Table 30: Disease Burden Trends by Option Group, 2010-14 Broad Grouping

	Comprehensive	Traditional	Savings	Network	Hospital	PMB Exempt	Unknown
2010	64.01%	54.76%	46.82%	19.68%	18.31%	7.63%	38.47%
2011	65.85%	57.05%	49.05%	19.94%	19.01%	7.93%	47.32%
2012	67.29%	58.18%	50.06%	19.96%	18.89%	7.72%	37.61%
2013	68.74%	58.51%	51.81%	21.07%	19.41%	8.16%	33.10%
2014	69.67%	59.44%	53.42%	21.71%	20.15%	8.96%	22.66%
Trend	**5.66%**	**4.68%**	**6.60%**	**2.03%**	**1.84%**	**1.33%**	**-15.81%**

49. Table 29 and Table 30 show that, as would be expected, Comprehensive and Traditional options have the highest proportion of beneficiaries with one of the clinical profile flags, with Savings, Network and Hospital options showing lower rates. The trends show that, apart from Hospital options, the option groups all show higher rates of growth in clinical profile flags than those recorded for the whole dataset. This is possible because of the movement between the groups i.e. the net movement from Comprehensive to Savings options partially offsets the growth within the option groups.

50. This evidence supports the submissions received by the HMI which suggest that membership and claims trends outlined at an industry level potentially understate the worsening risk and claims profile of the industry. However, as outlined above this effect only reduces the estimated component of the total claims increases by 0.80% i.e. the net movement between option groups has the effect of reducing claims increases by 0.80%. The impact on contributions is likely to be larger since contributions are community rated whereas claims are risk-profile dependent.

51. To illustrate this point, the next set of tables show the same attribution results individually for each of the option groups. The overall results are shown in Table 25 and Table 26 above, and show an average annual claims increase of 9.24%, of which 5.60% is made up of changes in the Consumer Price Index (CPI), 1.50% by the various explanatory factors, and the remaining 2.14% by other unexplained factors. Table 31 and Table 32 show the attribution for the Comprehensive options (we note that the plan mix factor is omitted since the results are summarised by the option groups).

Table 31: All Claims Cost Trends 2010-14, Comprehensive Options (Narrow Disease Burden)

Comprehensive Options, All Claims	2011	2012	2013	2014	Average
Total Increase	11.39%	10.07%	11.28%	10.66%	10.85%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	4.41%	3.88%	4.45%	2.76%	3.88%
Age	1.81%	4.11%	3.18%	1.66%	2.69%
Gender	-0.03%	-0.12%	0.00%	0.02%	-0.03%
Disease Profile	0.80%	0.44%	1.44%	0.26%	0.74%
Member Profile	1.83%	-0.56%	-0.17%	0.82%	0.48%
Unexplained Factors	1.97%	0.59%	1.13%	1.80%	1.37%

Table 32: All Claims Cost Trends 2010-14, Comprehensive Options (Broad Disease Burden)

Comprehensive Options, All Claims	2011	2012	2013	2014	Average
Total Increase	11.39%	10.07%	11.28%	10.66%	10.85%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	6.67%	5.07%	4.77%	4.05%	5.14%
Age	1.81%	4.11%	3.18%	1.66%	2.69%
Gender	-0.03%	-0.12%	0.00%	0.02%	-0.03%
Disease Profile	2.59%	1.85%	1.92%	1.48%	1.96%
Member Profile	2.30%	-0.77%	-0.33%	0.89%	0.52%
Unexplained Factors	-0.29%	-0.60%	0.80%	0.51%	0.11%

52. The tables show that the Comprehensive options have experienced increases of 10.85% a year on average, compared to the overall increase of 9.24% a year on average. The amount contributed by the explanatory factors is in both disease burden scenarios markedly higher than the overall figure. This is likely a result of the accelerated ageing and disease burden effects outlined above. The unexplained increase is lower for these options than the overall figures.

53. Table 33 and Table 34 show the attribution results for Traditional options. Traditional options are defined as options which provide insured, as opposed to savings, benefits outside of hospitals, but have lower benefit limits which many families are likely to reach.

TABLE 33: ALL CLAIMS COST TRENDS 2010-14, TRADITIONAL OPTIONS (NARROW DISEASE BURDEN)

Traditional Options, All Claims	2011	2012	2013	2014	Average
Total Increase	10.86%	13.76%	7.85%	10.93%	10.85%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	4.66%	5.74%	0.55%	1.45%	3.10%
Age	1.00%	5.30%	-0.08%	0.86%	1.77%
Gender	0.04%	-0.13%	0.11%	-0.01%	0.00%
Disease Profile	1.75%	-0.09%	0.29%	0.41%	0.59%
Member Profile	1.87%	0.66%	0.22%	0.19%	0.74%
Unexplained Factors	1.20%	2.42%	1.61%	3.38%	2.15%

TABLE 34: ALL CLAIMS COST TRENDS 2010-14, TRADITIONAL OPTIONS (BROAD DISEASE BURDEN)

Traditional Options, All Claims	2011	2012	2013	2014	Average
Total Increase	10.86%	13.76%	7.85%	10.93%	10.85%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	7.40%	6.48%	1.07%	2.62%	4.39%
Age	1.00%	5.30%	-0.08%	0.86%	1.77%
Gender	0.04%	-0.13%	0.11%	-0.01%	0.00%
Disease Profile	4.08%	0.86%	0.93%	1.70%	1.89%
Member Profile	2.27%	0.45%	0.11%	0.08%	0.73%
Unexplained Factors	-1.53%	1.68%	1.08%	2.21%	0.86%

54. Table 33 and Table 34 show that the Traditional options have experienced increases of 10.85% a year on average, identical to the Comprehensive options but higher than the overall increase of 9.24%. The amount contributed by the explanatory factors is again markedly higher than the overall figure. This is again likely a result of the accelerated ageing and disease burden effects outlined above, although the effects are less pronounced than for the Comprehensive options. The unexplained increase is very similar for these options to the overall figure in the narrow disease burden scenario, and marginally higher in the broad disease burden scenario.

55. Table 35 and Table 36 show the attribution results for Savings options. Savings options are defined as options which provide benefits outside of hospitals through primarily a medical savings account which members can use as they choose to. In-hospital benefits are still usually covered from risk benefits, as are Prescribed Minimum Benefits (PMBs).

TABLE 35: ALL CLAIMS COST TRENDS 2010-14, SAVINGS OPTIONS (NARROW DISEASE BURDEN)

Savings Options, All Claims	2011	2012	2013	2014	Average
Total Increase	11.34%	10.48%	9.49%	10.90%	10.55%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	4.25%	0.61%	1.67%	1.86%	2.10%
Age	0.71%	1.69%	0.28%	0.84%	0.88%
Gender	0.01%	0.05%	0.03%	0.02%	0.03%
Disease Profile	1.38%	-0.96%	1.20%	1.26%	0.72%
Member Profile	2.15%	-0.16%	0.17%	-0.27%	0.47%
Unexplained Factors	2.09%	4.27%	2.12%	2.94%	2.86%

TABLE 36: ALL CLAIMS COST TRENDS 2010-14, SAVINGS OPTIONS (BROAD DISEASE BURDEN)

Savings Options, All Claims	2011	2012	2013	2014	Average
Total Increase	11.34%	10.48%	9.49%	10.90%	10.55%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	6.71%	2.89%	3.14%	3.23%	3.99%
Age	0.71%	1.69%	0.28%	0.84%	0.88%
Gender	0.01%	0.05%	0.03%	0.02%	0.03%
Disease Profile	3.65%	1.29%	2.61%	2.66%	2.55%
Member Profile	2.34%	-0.13%	0.23%	-0.30%	0.54%
Unexplained Factors	-0.37%	1.99%	0.65%	1.57%	0.96%

56. Table 35 and Table 36 show that the Savings options have experienced increases of 10.55% a year on average, marginally below the first two option groups but still higher than the overall increase of 9.24%. The amount contributed by the explanatory factors is higher than the overall figure. This is again likely a result of the disease burden effects outlined above, although the effects are less pronounced than for the Comprehensive and Traditional options. The unexplained increase is higher for the Comprehensive and Traditional options than the overall figure.

57. Table 37 and Table 38 show the attribution results for Network options.Care is not funded if members elect to bypass the network or visit practitioners outside of the network. Again, in-hospital benefits and PMBs are still usually covered from risk benefits.

TABLE 37: ALL CLAIMS COST TRENDS 2010-14, NETWORK OPTIONS (NARROW DISEASE BURDEN)

Network Options, All Claims	2011	2012	2013	2014	Average
Total Increase	3.71%	7.74%	9.44%	10.24%	7.78%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	2.55%	1.75%	2.72%	2.22%	2.31%
Age	0.50%	0.97%	0.44%	0.54%	0.61%
Gender	-0.27%	0.14%	0.08%	0.12%	0.01%
Disease Profile	0.01%	-0.10%	1.91%	1.27%	0.77%
Member Profile	2.32%	0.75%	0.29%	0.30%	0.91%
Unexplained Factors	-3.84%	0.39%	1.02%	1.92%	-0.13%

TABLE 38: ALL CLAIMS COST TRENDS 2010-14, NETWORK OPTIONS (BROAD DISEASE BURDEN)

Network Options, All Claims	2011	2012	2013	2014	Average
Total Increase	3.71%	7.74%	9.44%	10.24%	7.78%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	2.95%	1.98%	4.92%	3.53%	3.34%
Age	0.50%	0.97%	0.44%	0.54%	0.61%
Gender	-0.27%	0.14%	0.08%	0.12%	0.01%
Disease Profile	0.31%	0.54%	4.05%	2.49%	1.85%
Member Profile	2.41%	0.33%	0.35%	0.38%	0.87%
Unexplained Factors	-4.24%	0.16%	-1.18%	0.60%	-1.16%

58. The table shows that the Network options have experienced increases of 7.79% a year, well below the other option groups and the overall increase of 9.24%. The amount contributed by the explanatory factors is again higher than the overall figure. This is again likely a result of the disease burden effects outlined above, although the effects are again less pronounced than for the Comprehensive and Traditional options. The unexplained increase is negative for these options, but this appears primarily to be driven by a step change from 2010 to 2011.

59. We note that the results for Network options should be interpreted with caution since many of the models involve the payment of capitation fees, and many schemes and administrators do not keep data from capitation service providers. We may therefore be missing some of the cost data in respect of these options, but this should only affect a small component of total claims.

60. Table 39 and Table 40 show the attribution results for Hospital options.

TABLE 39: ALL CLAIMS COST TRENDS 2010-14, HOSPITAL OPTIONS (NARROW DISEASE BURDEN)

Hospital Options, All Claims	2011	2012	2013	2014	Average
Total Increase	9.20%	5.72%	7.81%	13.14%	8.97%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	3.12%	1.12%	0.66%	1.92%	1.71%
Age	1.08%	0.84%	0.25%	0.91%	0.77%
Gender	0.00%	0.06%	0.08%	0.05%	0.05%
Disease Profile	0.74%	0.19%	0.40%	0.72%	0.51%
Member Profile	1.30%	0.03%	-0.07%	0.24%	0.37%
Unexplained Factors	1.08%	-1.00%	1.45%	5.12%	1.66%

TABLE 40: ALL CLAIMS COST TRENDS 2010-14, HOSPITAL OPTIONS (BROAD DISEASE BURDEN)

Hospital Options, All Claims	2011	2012	2013	2014	Average
Total Increase	9.20%	5.72%	7.81%	13.14%	8.97%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	6.43%	0.97%	1.63%	4.01%	3.26%
Age	1.08%	0.84%	0.25%	0.91%	0.77%
Gender	0.00%	0.06%	0.08%	0.05%	0.05%
Disease Profile	3.75%	0.06%	1.38%	2.76%	1.99%
Member Profile	1.59%	0.00%	-0.09%	0.28%	0.45%
Unexplained Factors	-2.23%	-0.84%	0.48%	3.04%	0.11%

61. Table 39 and Table 40 show that the Hospital options have experienced increases of 8.97% a year, below the overall increase of 9.24%. The amount contributed by the explanatory factors is only marginally higher than the overall figure in Table 25 and Table 26, and reflects the smaller risk profile changes these options have experienced. The unexplained increase is lower for these options than the overall figure.

62. Attribution results for the PMB exempt options as well as the Unknown group were excluded as the groups were too small to provide reliable figures.

63. The option type analysis suggests that the three largest option groups (which account for almost 80% of total beneficiaries) have experienced markedly higher total claims cost increases than the overall dataset. This is again consistent with the submission received which suggested that a net downward movement between options has occurred, leading to an understatement of the overall increases reported. This is captured in the overall results by the 'plan mix' factor.

64. There is some evidence that the more restrictive options (Network and Hospital options) are less affected by high cost increases, although this could be a result of strict limitations on access to benefits in these options.

ADMINISTRATOR ANALYSIS

65. The next set of analyses compares the schemes administered by the three largest medical scheme administrators to each other as well as to a group of schemes administered by other third-party administrators and a group of self-administered schemes. The objective is to establish whether any differing claims or membership trends exist by administrator and the potential reasons for these.

66. We note that for the groups of other schemes and self-administered schemes the data is not complete for every year, as outlined in the Descriptive Statistics Report. This may mean that some of the trends for these groups are a result of schemes entering and leaving the dataset (where these schemes are potentially systematically different from the other schemes in the group) rather than genuine trends. The data for the three large administrators is however complete, and the trends for these are comparable to each other.

67. Table 41 shows the proportion of analysed beneficiaries who belong to schemes administered by each of the three large administrators, as well as the other schemes and the self-administered schemes, as well as the movements over time in these proportions.

TABLE 41: MEMBERSHIP TRENDS BY ADMINISTRATOR GROUP, 2010-14

	Discovery Health	Metropolitan Health	Medscheme	Self-Administered	Other Administrators
2010	34.61%	32.51%	19.14%	4.36%	9.39%
2011	35.10%	34.18%	17.22%	4.61%	8.89%
2012	33.56%	33.08%	15.12%	8.21%	10.03%
2013	33.65%	32.41%	14.84%	8.13%	10.97%
2014	34.78%	32.44%	14.66%	8.26%	9.86%
Trend	**0.16%**	**-0.07%**	**-4.47%**	**3.91%**	**0.47%**

68. Based on 2014 data, over 80% of beneficiaries belong to schemes administered by the three large administrators. Table 41 shows that the schemes administered by Medscheme have shown a declining relative membership over time, while the self-administered schemes have grown. This is likely a result of the large self-administered schemes entering the dataset late. When looking at actual membership, while membership of schemes administered by Discovery Health and Metropolitan Health have grown, those administered by Medscheme have shrunk slightly.

69. Table 42 shows the trends in average age for each of the administrator groups. The table shows that Metropolitan Health schemes have the lowest average age, while the self-administered and other schemes have the highest average age. The trends for the last two groups are distorted by the incomplete data in respect of those schemes, but reflect significant increases in average age. It is noticeable that Discovery Health shows lower increases in average age than the other two large administrators.

TABLE 42: AVERAGE AGE TRENDS BY ADMINISTRATOR GROUP, 2010-14

	Discovery Health	Metropolitan Health	Medscheme	Self-Administered	Other Administrators
2010	32.44	28.99	32.24	31.40	32.74
2011	32.46	29.14	32.67	31.78	33.02
2012	32.56	29.71	32.93	35.45	33.52
2013	32.77	29.92	33.34	34.37	34.82
2014	33.03	30.20	33.42	34.42	35.10
Trend	**0.59**	**1.21**	**1.18**	**3.02**	**2.37**

70. Table 43 shows the proportion of beneficiaries by administrator who have been flagged with at least one of the clinical profile disease burden indicators i.e. those not in the 'Healthy' group, and the trend in this over time. The Descriptive Statistics Report showed that, over time, the proportion of beneficiaries falling outside of the 'Healthy' group had increased by 1.4% using the narrow definition and 3.5% using the broad definition.

TABLE 43: DISEASE BURDEN TRENDS BY ADMINISTRATOR GROUP, 2010-14 (NARROW DISEASE BURDEN)

	Discovery Health	Metropolitan Health	Medscheme	Self-Administered	Other Administrators
2010	32.94%	43.75%	36.02%	26.61%	16.09%
2011	33.57%	45.55%	37.71%	27.48%	16.14%
2012	33.20%	45.52%	37.27%	26.99%	14.98%
2013	33.34%	45.45%	39.30%	27.57%	18.90%
2014	33.75%	45.46%	39.57%	28.68%	20.04%
Trend	**0.80%**	**1.71%**	**3.55%**	**2.07%**	**3.95%**

TABLE 44: DISEASE BURDEN TRENDS BY ADMINISTRATOR GROUP, 2010-14 (BROAD DISEASE BURDEN)

	Discovery Health	Metropolitan Health	Medscheme	Self-Administered	Other Administrators
2010	49.83%	55.17%	47.52%	37.89%	29.10%
2011	50.64%	57.18%	49.39%	39.13%	28.82%
2012	51.27%	59.06%	49.98%	39.79%	29.91%
2013	52.04%	58.93%	52.72%	39.81%	33.73%
2014	52.89%	58.97%	52.60%	41.53%	35.98%
Trend	**3.06%**	**3.80%**	**5.08%**	**3.64%**	**6.88%**

71. Again, this table shows that Discovery Health has slower growth in the proportion of beneficiaries flagged by the clinical profile indicator than the other administrators. Again the trends for the other and self-administered schemes are affected by the incomplete data, but this time appear more comparable to the three large administrators.

72. The next set of tables repeat the attribution analyses on total cost by administrator group. The overall results are shown in Table 25 above, and show an average annual claims increase of 9.24%, of which 5.60% is made up of changes in the Consumer Price Index (CPI), 1.48% by the various explanatory factors, and the remaining 2.16% by other unexplained factors. Table 45 and Table 46 show the attribution for Discovery Health administered schemes. The schemes administered in this case consist of one very large open scheme and a number of much smaller restricted schemes.

TABLE 45: ALL CLAIMS COST TRENDS 2010-14, DISCOVERY HEALTH (NARROW DISEASE BURDEN)

Discovery Health, All Claims	2011	2012	2013	2014	Average
Total Increase	7.48%	5.92%	7.96%	9.65%	7.75%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	1.17%	-0.13%	0.07%	0.62%	0.43%
Age	0.25%	0.56%	0.81%	1.09%	0.68%
Gender	0.00%	0.03%	0.02%	0.02%	0.02%
Disease Profile	0.13%	0.10%	0.03%	0.45%	0.17%
Member Profile	2.26%	0.19%	0.12%	-0.17%	0.60%
Plan Mix	-1.46%	-1.01%	-0.90%	-0.77%	-1.04%
Unexplained Factors	1.31%	0.45%	2.19%	2.93%	1.72%

TABLE 46: ALL CLAIMS COST TRENDS 2010-14, DISCOVERY HEALTH (BROAD DISEASE BURDEN)

Discovery Health, All Claims	2011	2012	2013	2014	Average
Total Increase	7.48%	5.92%	7.96%	9.65%	7.75%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	3.07%	1.47%	1.18%	1.96%	1.92%
Age	0.25%	0.56%	0.81%	1.09%	0.68%
Gender	0.00%	0.03%	0.02%	0.02%	0.02%
Disease Profile	1.28%	1.45%	1.14%	1.42%	1.33%
Member Profile	2.65%	0.18%	0.04%	-0.25%	0.65%
Plan Mix	-1.11%	-0.75%	-0.83%	-0.32%	-0.75%
Unexplained Factors	-0.58%	-1.15%	1.08%	1.58%	0.23%

73. Table 46 shows that the claims cost for Discovery Health administered schemes has increased by 7.75% a year on average, compared to 9.24% for the complete dataset. The proportion of this contributed by the explanatory factors is much lower than the overall dataset. This is a result of two effects, an age and disease profile worsening more slowly than the overall dataset as outlined above, and a larger plan mix effect. The unexplained component is less than the overall figure in both disease burden scenarios.

74. Table 47 and Table 48 show the attribution for Metropolitan Health administered schemes. The schemes administered in this case consist entirely of restricted schemes, some large and some smaller.

TABLE 47: ALL CLAIMS COST TRENDS 2010-14, METROPOLITAN HEALTH (NARROW DISEASE BURDEN)

Metropolitan Health, All Claims	2011	2012	2013	2014	Average
Total Increase	9.75%	12.53%	6.72%	10.64%	9.91%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	2.82%	3.26%	1.54%	0.73%	2.09%
Age	0.57%	2.75%	0.76%	1.06%	1.29%
Gender	0.07%	-0.07%	0.05%	0.04%	0.02%
Disease Profile	1.44%	0.75%	-0.12%	-0.18%	0.47%
Member Profile	1.91%	-0.12%	1.18%	0.07%	0.76%
Plan Mix	-1.18%	-0.05%	-0.33%	-0.26%	-0.45%
Unexplained Factors	1.94%	3.67%	-0.52%	3.81%	2.22%

TABLE 48: ALL CLAIMS COST TRENDS 2010-14, METROPOLITAN HEALTH (BROAD DISEASE BURDEN)

Metropolitan Health, All Claims	2011	2012	2013	2014	Average
Total Increase	9.75%	12.53%	6.72%	10.64%	9.91%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	5.38%	4.89%	1.99%	1.11%	3.34%
Age	0.57%	2.75%	0.76%	1.06%	1.29%
Gender	0.07%	-0.07%	0.05%	0.04%	0.02%
Disease Profile	3.56%	2.47%	0.39%	0.22%	1.66%
Member Profile	2.40%	-0.47%	1.23%	-0.02%	0.78%
Plan Mix	-1.22%	0.21%	-0.43%	-0.20%	-0.41%
Unexplained Factors	-0.62%	2.04%	-0.97%	3.43%	0.97%

75. The two tables show that the claims cost for Metropolitan Health administered schemes has increased by 9.91% a year on average, compared to 9.24% for the complete dataset. The proportion of this contributed by the explanatory factors is higher than the overall dataset. This is a result of two things, an age and disease profile worsening more rapidly than the overall dataset as outlined above, and a smaller plan mix effect. The unexplained component is similar to the overall figure in the narrow disease burden scenario, and marginally higher in the broad disease burden scenario.

76. Table 49 and Table 50 show the attribution for Medscheme administered schemes. The schemes administered in this case consist of two relatively large open schemes as well as a number of smaller restricted schemes.

TABLE 49: ALL CLAIMS COST TRENDS 2010-14, MEDSCHEME (NARROW DISEASE BURDEN)

Medscheme, All Claims	2011	2012	2013	2014	Average
Total Increase	12.36%	8.58%	13.45%	9.31%	10.92%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	3.80%	1.13%	1.58%	1.17%	1.92%
Age	1.74%	1.42%	1.95%	0.66%	1.44%
Gender	-0.26%	-0.05%	0.02%	0.05%	-0.06%
Disease Profile	1.68%	0.13%	1.61%	-0.77%	0.66%
Member Profile	1.91%	-0.13%	-1.76%	1.65%	0.42%
Plan Mix	-1.27%	-0.24%	-0.23%	-0.41%	-0.54%
Unexplained Factors	3.56%	1.85%	6.16%	2.04%	3.40%

TABLE 50: ALL CLAIMS COST TRENDS 2010-14, MEDSCHEME (BROAD DISEASE BURDEN)

Medscheme, All Claims	2011	2012	2013	2014	Average
Total Increase	12.36%	8.58%	13.45%	9.31%	10.92%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	6.19%	2.21%	3.87%	2.83%	3.78%
Age	1.74%	1.42%	1.95%	0.66%	1.44%
Gender	-0.26%	-0.05%	0.02%	0.05%	-0.06%
Disease Profile	3.78%	1.27%	3.86%	0.47%	2.34%
Member Profile	2.17%	-0.42%	-2.11%	1.96%	0.40%
Plan Mix	-1.23%	-0.01%	0.15%	-0.30%	-0.35%
Unexplained Factors	1.17%	0.77%	3.88%	0.37%	1.55%

77. The tables show that the claims cost for Medscheme schemes has increased by 10.92% a year on average, compared to 9.24% for the complete dataset. The proportion of this contributed by the explanatory factors is higher than the overall dataset. This is a result of a smaller plan mix effect. The unexplained component is higher than the overall figure in both disease burden scenarios.

78. Table 51 and Table 52 shows the attribution for the self-administered schemes group. This group consists of two large open schemes a number of smaller open schemes as well as a few small restricted schemes. We again note that the trends for this group may be affected by schemes moving into and out of the dataset as outlined previously.

TABLE 51: ALL CLAIMS COST TRENDS 2010-14, SELF-ADMINISTERED SCHEMES (NARROW DISEASE BURDEN)

Self-Administered, All Claims	2011	2012	2013	2014	Average
Total Increase	9.08%	10.10%	6.61%	8.24%	8.51%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	2.39%	13.87%	-5.78%	2.80%	3.32%
Age	0.30%	10.47%	-5.07%	0.29%	1.50%
Gender	-0.06%	-0.09%	0.29%	0.01%	0.04%
Disease Profile	1.20%	-2.04%	0.27%	0.28%	-0.07%
Member Profile	0.03%	1.91%	-1.62%	1.37%	0.43%
Plan Mix	0.92%	3.62%	0.34%	0.84%	1.43%
Unexplained Factors	1.69%	-9.37%	6.69%	-0.66%	-0.41%

TABLE 52: ALL CLAIMS COST TRENDS 2010-14, SELF-ADMINISTERED SCHEMES (BROAD DISEASE BURDEN)

Self-Administered, All Claims	2011	2012	2013	2014	Average
Total Increase	9.08%	10.10%	6.61%	8.24%	8.51%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	4.74%	24.28%	-5.79%	4.96%	7.05%
Age	0.30%	10.47%	-5.07%	0.29%	1.50%
Gender	-0.06%	-0.09%	0.29%	0.01%	0.04%
Disease Profile	3.25%	-1.06%	1.11%	2.76%	1.52%
Member Profile	-0.28%	2.38%	-2.15%	1.69%	0.41%
Plan Mix	1.52%	12.58%	0.02%	0.21%	3.58%
Unexplained Factors	-0.67%	-19.77%	6.70%	-2.82%	-4.14%

79. Table 51 and Table 52 show that the claims cost for self-administered schemes has increased by 8.51% a year on average, compared to 9.24% for the complete dataset. The proportion of this contributed by the explanatory factors is substantially higher than in the overall dataset. This is a result of faster increases in average age and disease burden, as well as a positive plan mix effect which is driven by a step change in 2012 when some schemes joined the dataset. The unexplained component is negative, but is potentially distorted by the step change caused as schemes entered the dataset.

80. Table 53 and Table 54 show the attribution for the other administrators group. This group consists of three large open schemes, a number of smaller open schemes as well as a few small restricted schemes. Again, we note that the trends for this group may be affected by schemes moving into and out of the dataset as outlined previously.

TABLE 53: ALL CLAIMS COST TRENDS 2010-14, OTHER ADMINISTRATORS (NARROW DISEASE BURDEN)

Other Schemes, All Claims	2011	2012	2013	2014	Average
Total Increase	6.38%	9.97%	17.36%	12.21%	11.48%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	1.92%	-3.80%	18.08%	4.28%	5.12%
Age	1.25%	1.99%	4.96%	1.19%	2.35%
Gender	-0.06%	0.03%	0.07%	-0.01%	0.01%
Disease Profile	-0.42%	-2.25%	8.65%	2.05%	2.01%
Member Profile	1.01%	-0.82%	0.59%	-0.21%	0.15%
Plan Mix	0.12%	-2.75%	3.81%	1.27%	0.61%
Unexplained Factors	-0.60%	7.51%	-6.66%	1.65%	0.48%

TABLE 54: ALL CLAIMS COST TRENDS 2010-14, OTHER ADMINISTRATORS (BROAD DISEASE BURDEN)

Other Schemes, All Claims	2011	2012	2013	2014	Average
Total Increase	6.38%	9.97%	17.36%	12.21%	11.48%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	3.07%	-1.82%	20.78%	7.12%	7.29%
Age	1.25%	1.99%	4.96%	1.19%	2.35%
Gender	-0.06%	0.03%	0.07%	-0.01%	0.01%
Disease Profile	0.29%	0.83%	10.53%	5.09%	4.19%
Member Profile	1.06%	-0.75%	0.52%	-0.17%	0.17%
Plan Mix	0.51%	-3.92%	4.70%	1.03%	0.58%
Unexplained Factors	-1.70%	6.19%	-9.12%	-1.02%	-1.41%

81. Table 53 and Table 54 show that the claims cost for other schemes has increased by 11.48% a year on average, compared to 9.24% for the complete dataset. The proportion of this contributed by the explanatory factors is again substantially higher than the overall dataset. This is a result of a faster increase in average age and disease burden, as well as a positive plan mix effect, driven by a step change in 2013 when some schemes joined the dataset. The unexplained component is small but is potentially distorted by the step change caused as schemes entered the dataset.

MEDICAL SCHEME TYPE AND SIZE ANALYSIS

82. The objective of this section is to assess whether claims and risk profile trends differ by scheme type (open vs. restricted) or scheme size. To do this we have grouped the schemes into five groups by type and size, and repeated the overall attribution results by scheme group. The scheme groups are as follows:

    82.1. DHMS is analysed separately because it makes up over 50% of the open scheme market;

82.2. Since there are too few smaller open schemes which were able to provide data for the entire period, all other open medical schemes have been combined into one group;

82.3. For similar reasons to DHMS, GEMS is analysed separately;

82.4. Discovery Health restricted schemes are analysed separately;

82.5. Large restricted schemes with membership of over 100 000 beneficiaries are grouped together; and

82.6. The final group is made up of all of the other smaller restricted schemes.

83. Table 55 and Table 56 show the attribution results for DHMS over the period analysed.

TABLE 55: ALL CLAIMS COST TRENDS 2010-14, DHMS (NARROW DISEASE BURDEN)

DHMS, All Claims	2011	2012	2013	2014	Average
Total Increase	8.11%	6.01%	8.33%	9.52%	7.99%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	1.40%	-0.07%	0.38%	0.80%	0.63%
Age	0.78%	0.80%	1.06%	1.10%	0.93%
Gender	0.01%	0.02%	0.01%	0.02%	0.02%
Disease Profile	0.28%	0.09%	0.17%	0.36%	0.23%
Member Profile	2.01%	0.08%	0.05%	0.16%	0.57%
Plan Mix	-1.68%	-1.05%	-0.92%	-0.85%	-1.12%
Unexplained Factors	1.71%	0.48%	2.25%	2.62%	1.77%

TABLE 56: ALL CLAIMS COST TRENDS 2010-14, DHMS (BROAD DISEASE BURDEN)

DHMS, All Claims	2011	2012	2013	2014	Average
Total Increase	8.11%	6.01%	8.33%	9.52%	7.99%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	2.76%	1.38%	1.52%	1.85%	1.88%
Age	0.78%	0.80%	1.06%	1.10%	0.93%
Gender	0.01%	0.02%	0.01%	0.02%	0.02%
Disease Profile	1.42%	1.44%	1.24%	1.35%	1.36%
Member Profile	2.26%	0.04%	-0.06%	0.16%	0.60%
Plan Mix	-1.70%	-0.91%	-0.74%	-0.78%	-1.03%
Unexplained Factors	0.34%	-0.97%	1.11%	1.57%	0.51%

84. The figures in the tables suggest that, relative to the entire industry, DHMS has had a slower movement in its risk profile, notably age and disease profile, over time and a slightly smaller unexplained increase. This suggests that this very large scheme has been able to attract and retain young and healthy beneficiaries.

85. Table 57 and Table 58 are for the rest of the open schemes. We note here that although some schemes have joined the dataset midway through, significant step changes are not evident here. The table shows that the other open schemes have substantially higher claims increases than DHMS, averaging out at 11.62%. The explained component is also higher, driven by larger age and disease burden factors, while the unexplained component is also much higher at 3.74%.

86. This suggests that the other open schemes are less able to attract younger and healthier beneficiaries in the way DHMS has.

TABLE 57: ALL CLAIMS COST TRENDS 2010-14, OTHER OPEN SCHEMES (NARROW DISEASE BURDEN)

Other Open Schemes, All Claims	2011	2012	2013	2014	Average
Total Increase	11.43%	9.24%	15.82%	9.99%	11.62%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	3.98%	-0.44%	4.38%	1.22%	2.28%
Age	2.12%	5.85%	1.06%	0.67%	2.42%
Gender	-0.25%	-0.12%	0.09%	0.02%	-0.06%
Disease Profile	1.34%	-1.76%	3.82%	-0.26%	0.78%
Member Profile	1.86%	-0.10%	-1.30%	1.23%	0.42%
Plan Mix	-1.09%	-4.31%	0.70%	-0.45%	-1.29%
Unexplained Factors	2.45%	4.09%	5.75%	2.67%	3.74%

TABLE 58: ALL CLAIMS COST TRENDS 2010-14, OTHER OPEN SCHEMES (BROAD DISEASE BURDEN)

Other Open Schemes, All Claims	2011	2012	2013	2014	Average
Total Increase	11.43%	9.24%	15.82%	9.99%	11.62%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	5.83%	0.60%	6.09%	2.96%	3.87%
Age	2.12%	5.85%	1.06%	0.67%	2.42%
Gender	-0.25%	-0.12%	0.09%	0.02%	-0.06%
Disease Profile	2.90%	-2.83%	5.54%	1.07%	1.67%
Member Profile	2.06%	-0.28%	-1.84%	1.63%	0.39%
Plan Mix	-0.99%	-2.02%	1.23%	-0.43%	-0.55%
Unexplained Factors	0.60%	3.04%	4.04%	0.93%	2.15%

87. The next set of tables, starting with Table 59 for GEMS, analyse the restricted scheme group.

Table 59: All Claims Cost Trends 2010-14, GEMS (Narrow Disease Burden)

GEMS, All Claims	2011	2012	2013	2014	Average
Total Increase	10.48%	15.93%	6.01%	11.25%	10.92%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	6.03%	6.25%	2.50%	0.79%	3.89%
Age	1.88%	4.81%	1.39%	1.68%	2.44%
Gender	-0.05%	-0.25%	-0.02%	-0.02%	-0.09%
Disease Profile	2.09%	1.32%	-0.11%	-0.47%	0.71%
Member Profile	3.23%	0.09%	1.89%	0.17%	1.35%
Plan Mix	-1.12%	0.28%	-0.64%	-0.57%	-0.51%
Unexplained Factors	-0.55%	4.08%	-2.19%	4.36%	1.43%

TABLE 60: ALL CLAIMS COST TRENDS 2010-14, GEMS (BROAD DISEASE BURDEN)

GEMS, All Claims	2011	2012	2013	2014	Average
Total Increase	10.48%	15.93%	6.01%	11.25%	10.92%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	8.45%	7.69%	2.06%	1.03%	4.81%
Age	1.88%	4.81%	1.39%	1.68%	2.44%
Gender	-0.05%	-0.25%	-0.02%	-0.02%	-0.09%
Disease Profile	4.37%	3.32%	-0.10%	-0.20%	1.85%
Member Profile	3.97%	-0.49%	1.89%	0.08%	1.36%
Plan Mix	-1.71%	0.30%	-1.09%	-0.51%	-0.75%
Unexplained Factors	-2.97%	2.64%	-1.75%	4.12%	0.51%

88. Table 59 and Table 60 shows that GEMS has experienced increases of 10.92%, well above the overall average of 9.24%. This is driven almost entirely by the explained factors, most notably age and member profile effects. The unexplained increase for GEMS is similar to the figure for DHMS, and well below the overall figure. This suggests that as GEMS' growth has slowed, the scheme has been subject to ageing effects relating to the slowdown in new younger and heathier beneficiaries joining.

89. The next tables (Table 61 and Table 62) show the same analysis for the restricted schemes administered by Discovery Health.

TABLE 61: ALL CLAIMS COST TRENDS 2010-14, DISCOVERY HEALTH RESTRICTED SCHEMES (NARROW DISEASE BURDEN)

Discovery Health Restricted, All Claims	2011	2012	2013	2014	Average
Total Increase	1.09%	5.24%	4.42%	11.83%	5.65%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	-1.14%	-0.36%	-2.82%	-0.10%	-1.10%
Age	-4.79%	-1.74%	-1.54%	1.13%	-1.74%
Gender	-0.21%	0.15%	0.04%	0.08%	0.01%
Disease Profile	-1.01%	0.10%	-1.29%	1.09%	-0.28%
Member Profile	4.39%	1.32%	0.69%	-3.09%	0.83%
Plan Mix	0.48%	-0.19%	-0.72%	0.69%	0.07%
Unexplained Factors	-2.77%	0.00%	1.54%	5.84%	1.15%

TABLE 62: ALL CLAIMS COST TRENDS 2010-14, DISCOVERY HEALTH RESTRICTED SCHEMES (BROAD DISEASE BURDEN)

Discovery Health Restricted, All Claims	2011	2012	2013	2014	Average
Total Increase	1.09%	5.24%	4.42%	11.83%	5.65%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	7.78%	3.32%	-2.12%	4.76%	3.43%
Age	-4.79%	-1.74%	-1.54%	1.13%	-1.74%
Gender	-0.21%	0.15%	0.04%	0.08%	0.01%
Disease Profile	0.14%	1.60%	0.21%	2.06%	1.00%
Member Profile	6.13%	1.54%	0.94%	-3.97%	1.16%
Plan Mix	6.51%	1.78%	-1.77%	5.47%	2.99%
Unexplained Factors	-11.70%	-3.68%	0.84%	0.98%	-3.39%

90. Table 61 and Table 62 show that these schemes have experienced increases of 5.65% on average, below the overall average of 9.24% (we note that this is a relatively small group and some random variation is likely to impact the trends). The explained factors contribute negatively in this case, mostly a result of a negative age effect. The unexplained component is smaller than any of the other groups outlined so far.

91. The next tables (Table 63 and Table 64) shows the same analysis for the two large restricted schemes which have over 100 000 beneficiaries on them and were at the time period of the data submission not administered by Discovery Health (South African Police Services Medical Scheme and Bankmed).

Table 63: All Claims Cost Trends 2010-14, Large Restricted Schemes (Narrow Disease Burden)

Large Restricted, All Claims	2011	2012	2013	2014	Average
Total Increase	10.52%	9.06%	8.23%	8.58%	9.10%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	0.99%	-0.06%	0.51%	0.77%	0.55%
Age	0.45%	0.54%	0.59%	0.76%	0.59%
Gender	0.08%	0.12%	0.15%	0.14%	0.12%
Disease Profile	0.41%	-0.54%	-0.13%	0.06%	-0.05%
Member Profile	0.74%	-0.10%	0.07%	-0.12%	0.15%
Plan Mix	-0.70%	-0.08%	-0.17%	-0.06%	-0.25%
Unexplained Factors	4.52%	3.52%	2.01%	1.71%	2.94%

Table 64: All Claims Cost Trends 2010-14, Large Restricted Schemes (Broad Disease Burden)

Large Restricted, All Claims	2011	2012	2013	2014	Average
Total Increase	10.52%	9.06%	8.23%	8.58%	9.10%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	3.11%	1.69%	1.81%	0.90%	1.88%
Age	0.45%	0.54%	0.59%	0.76%	0.59%
Gender	0.08%	0.12%	0.15%	0.14%	0.12%
Disease Profile	2.38%	1.26%	0.96%	0.25%	1.21%
Member Profile	0.81%	-0.19%	0.05%	-0.24%	0.11%
Plan Mix	-0.62%	-0.05%	0.06%	-0.01%	-0.16%
Unexplained Factors	2.41%	1.78%	0.72%	1.58%	1.62%

92. Table 63 and Table 64 show that these larger schemes have experienced increases of 9.10% on average, marginally below the overall average of 9.24%. The explained factors contribute a lower amount than the overall result, indicating a marginal age effect combined with a slight plan mix effect. The unexplained component is lower than the other open schemes analysed, suggesting that these restricted schemes are experiencing similar issues to the other open schemes which are of similar size, albeit to a lesser extent.

93. The next tables (Table 65 and Table 66) shows the same analysis for the other smaller restricted schemes which have fewer than 100 000 beneficiaries registered on them and are not administered by Discovery Health. Again some schemes are moving into and out of the dataset in this group, and some minor step changes are evident.

TABLE 65: ALL CLAIMS COST TRENDS 2010-14, OTHER RESTRICTED SCHEMES (NARROW DISEASE BURDEN)

Other Restricted, All Claims	2011	2012	2013	2014	Average
Total Increase	6.63%	8.92%	6.72%	10.44%	8.18%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	0.21%	-0.96%	2.25%	4.73%	1.56%
Age	-0.45%	-0.25%	0.66%	0.21%	0.04%
Gender	0.04%	0.04%	0.12%	0.01%	0.05%
Disease Profile	0.07%	-0.96%	-0.96%	2.36%	0.13%
Member Profile	0.30%	0.08%	-0.36%	0.20%	0.05%
Plan Mix	0.26%	0.13%	2.78%	1.95%	1.28%
Unexplained Factors	1.41%	4.28%	-1.24%	-0.40%	1.01%

TABLE 66: ALL CLAIMS COST TRENDS 2010-14, OTHER RESTRICTED SCHEMES (BROAD DISEASE BURDEN)

Other Restricted, All Claims	2011	2012	2013	2014	Average
Total Increase	6.63%	8.92%	6.72%	10.44%	8.18%
CPI	5.00%	5.60%	5.70%	6.10%	5.60%
Explanatory Factors	2.11%	2.26%	2.40%	8.27%	3.76%
Age	-0.45%	-0.25%	0.66%	0.21%	0.04%
Gender	0.04%	0.04%	0.12%	0.01%	0.05%
Disease Profile	1.77%	2.23%	-0.47%	6.41%	2.49%
Member Profile	0.35%	0.05%	-0.26%	0.14%	0.07%
Plan Mix	0.42%	0.19%	2.34%	1.50%	1.11%
Unexplained Factors	-0.49%	1.06%	-1.38%	-3.94%	-1.19%

94. Table 65 and Table 66 shows that these smaller restricted schemes have experienced increases of 8.18% on average, below the overall average of 9.24%. The explained factors contribute 1.56% in this case, indicating slight increases in disease burden as well as a positive plan mix effect i.e. members moving to higher as opposed to lower benefit options. The unexplained component is the smallest of any of the scheme groups. This is likely a combination of two factors:

    94.1. Firstly, the step changes in the data appear to be reducing the residual increase, indicating different populations being analysed over time; and

    94.2. Secondly and potentially more importantly, a 'survival' effect whereby smaller restricted schemes experiencing problems in managing claims are likely to amalgamate, leaving a set of schemes in this group which by definition have had manageable claims increases (else would not still be in existence).

95. In order to further investigate the issues around scheme type and size, some of the in-hospital cost and admission rate attribution analyses have been repeated by scheme group. The out-of-hospital analyses have not been repeated because they will be significantly confounded

by benefit design effects, whereas in-hospital effects will be less impacted. Table 67 and Table 68 below show the overall in-hospital cost attribution analysis by scheme group (for reasons of size as well as reducing the number of tables the yearly breakdowns are not shown).

TABLE 67: IN-HOSPITAL COST INCREASES BREAKDOWN BY SCHEME GROUP, 2010-14 (NARROW DISEASE BURDEN)

IH Claims Increases	DHMS	Other Open	GEMS	Large Rest	Discovery Health Rest	Other Rest
Total Increase	9.66%	12.82%	13.56%	10.22%	7.02%	7.91%
CPI	5.60%	5.60%	5.60%	5.60%	5.60%	5.60%
Explanatory Factors	0.85%	3.28%	4.07%	0.73%	1.64%	1.50%
Age	1.04%	2.87%	2.78%	0.56%	-1.87%	0.03%
Gender	0.02%	-0.06%	-0.15%	0.16%	0.03%	0.07%
Disease Profile	0.07%	0.42%	0.33%	-0.05%	-0.05%	0.08%
Member Profile	0.55%	0.16%	1.35%	0.19%	0.14%	0.24%
Plan Mix	-0.84%	-0.12%	-0.25%	-0.12%	3.39%	1.08%
Unexplained Factors	3.21%	3.95%	3.90%	3.88%	-0.22%	0.81%

TABLE 68: IN-HOSPITAL COST INCREASES BREAKDOWN BY SCHEME GROUP, 2010-14 (BROAD DISEASE BURDEN)

IH Claims Increases	DHMS	Other Open	GEMS	Large Rest	Discovery Health Rest	Other Rest
Total Increase	9.66%	12.82%	13.56%	10.22%	7.02%	7.91%
CPI	5.60%	5.60%	5.60%	5.60%	5.60%	5.60%
Explanatory Factors	1.71%	4.15%	4.90%	1.66%	3.27%	2.77%
Age	1.04%	2.87%	2.78%	0.56%	-1.87%	0.03%
Gender	0.02%	-0.06%	-0.15%	0.16%	0.03%	0.07%
Disease Profile	0.75%	0.78%	1.03%	0.71%	0.55%	1.43%
Member Profile	0.65%	0.30%	1.49%	0.21%	0.21%	0.34%
Plan Mix	-0.75%	0.25%	-0.25%	0.01%	4.35%	0.90%
Unexplained Factors	2.35%	3.07%	3.07%	2.96%	-1.85%	-0.46%

96. Table 67 and Table 68 show that:

96.1. In-hospital cost increases ranged between 7.02% and 13.56%, with the Discovery Health administered restricted schemes showing the lowest increases and GEMS the highest;

96.2. GEMS and the group of smaller open schemes had the highest increases in the explanatory factors analysed, primarily age; and

97. All four groups of larger schemes (the first four in the tables) show higher unexplained increases, with DHMS slightly lower than the other schemes, but the DH restricted schemes and the other small restricted schemes show lower unexplained increases.

98. Table 69 and Table 70 show the same breakdown, but for admission rates.

TABLE 69: ADMISSION RATES TRENDS BREAKDOWN BY SCHEME GROUP, 2010-14 (NARROW DISEASE BURDEN)

Admission Rate Trends	DHMS	Other Open	GEMS	Large Rest	Discvoery Health Rest	Other Rest
Total Increase	1.76%	2.68%	2.64%	2.19%	0.89%	2.32%
Explanatory Factors	0.44%	1.59%	2.03%	0.06%	3.01%	0.62%
Age	0.40%	1.29%	0.93%	0.12%	-0.71%	0.10%
Gender	0.02%	-0.09%	-0.01%	0.12%	0.03%	0.05%
Disease Profile	0.00%	0.20%	0.11%	-0.25%	-0.09%	0.00%
Member Profile	0.59%	0.39%	1.20%	0.15%	1.57%	-0.02%
Plan Mix	-0.57%	-0.20%	-0.19%	-0.08%	2.21%	0.49%
Unexplained Factors	1.32%	1.09%	0.62%	2.13%	-2.12%	1.70%

TABLE 70: ADMISSION RATES TRENDS BREAKDOWN BY SCHEME GROUP, 2010-14 (BROAD DISEASE BURDEN)

Admission Rate Trends	DHMS	Other Open	GEMS	Large Rest	Discovery Health Rest	Other Rest
Total Increase	1.76%	2.68%	2.64%	2.19%	0.89%	2.32%
Explanatory Factors	1.77%	2.54%	2.50%	1.09%	-0.23%	2.85%
Age	0.40%	1.29%	0.93%	0.12%	-0.71%	0.10%
Gender	0.02%	-0.09%	-0.01%	0.12%	0.03%	0.05%
Disease Profile	1.12%	1.30%	1.27%	0.71%	1.28%	2.58%
Member Profile	0.18%	0.09%	0.31%	0.10%	0.07%	0.08%
Plan Mix	0.05%	-0.05%	0.00%	0.03%	-0.89%	0.04%
Unexplained Factors	-0.01%	0.14%	0.14%	1.10%	1.13%	-0.53%

99. Table 69 and Table 70 show that:

99.1. Admission rates increases ranged between 0.89% and 2.68%, with the Discovery Health administered restricted schemes again showing the lowest increases and the smaller open schemes the highest;

99.2. GEMS, the group of smaller open schemes and the Discovery Health restricted schemes had the highest increases in the explanatory factors analysed, primarily age and member movements, but also a plan mix effect for the Discovery Health restricted schemes; and

99.3. The pattern of unexplained increases is more variable, with the two large restricted schemes showing the highest unexplained increases, with the remaining restricted schemes and DHMS slightly below this.

100. Table 71 and Table 72 show the same breakdown, but for cost per admission.

TABLE 71: COST PER ADMISSION INCREASES BREAKDOWN BY SCHEME GROUP, 2010-14 (NARROW DISEASE BURDEN)

Cost per Admission Increases	DHMS	Other Open	GEMS	Large Rest	Discovery Health Rest	Other Rest
Total Increase	8.14%	9.81%	11.12%	7.88%	7.06%	5.70%
CPI	5.60%	5.60%	5.60%	5.60%	5.60%	5.60%
Explanatory Factors	0.83%	1.77%	2.51%	0.27%	-0.77%	-0.23%
Age	0.87%	4.82%	2.15%	0.69%	-0.75%	0.08%
Gender	-0.01%	-0.11%	-0.10%	0.02%	0.02%	0.02%
Disease Profile	-0.07%	0.25%	0.07%	-0.16%	-0.33%	-0.16%
Member Profile	0.12%	-3.30%	0.24%	-0.63%	0.40%	-0.57%
Plan Mix	-0.08%	0.11%	0.16%	0.35%	-0.11%	0.40%
Unexplained Factors	1.72%	2.45%	3.01%	2.01%	2.24%	0.32%

TABLE 72: COST PER ADMISSION INCREASES BREAKDOWN BY SCHEME GROUP, 2010-14 (BROAD DISEASE BURDEN)

Cost per Admission Increases	DHMS	Other Open	GEMS	Large Rest	Discovery Health Rest	Other Rest
Total Increase	8.14%	9.81%	11.12%	7.88%	7.06%	5.70%
CPI	5.60%	5.60%	5.60%	5.60%	5.60%	5.60%
Explanatory Factors	0.87%	1.71%	2.44%	0.28%	-0.66%	-0.16%
Age	0.87%	4.82%	2.15%	0.69%	-0.75%	0.08%
Gender	-0.01%	-0.11%	-0.10%	0.02%	0.02%	0.02%
Disease Profile	0.00%	-0.05%	-0.01%	-0.03%	-0.05%	-0.01%
Member Profile	0.10%	-3.06%	0.24%	-0.75%	0.25%	-0.63%
Plan Mix	-0.09%	0.12%	0.16%	0.34%	-0.12%	0.38%
Unexplained Factors	1.67%	2.50%	3.08%	2.01%	2.12%	0.26%

101. Table 71 and Table 72 show that:

101.1. Cost per admission increases ranged between 5.70% and 11.12%, with the other smaller restricted schemes showing the lowest increases and GEMS again the highest;

101.2. GEMS and the group of smaller open schemes had the highest increases in the explanatory factors analysed, primarily age; and

101.3. All scheme groups other than the small restricted schemes group show unexplained increases of between 1.72% and 3.01%, with DHMS slightly lower than the other schemes and GEMS slightly higher, but the other small restricted schemes show lower unexplained increases of 0.32%.

CONCLUSION

102. This report outlines trends and details relating to funders, notably medical schemes and medical scheme administrators. The report shows that:

102.1. There is no evidence of systematic increases in claims not paid by schemes and their administrators, noting that only the claims actually submitted to the schemes can be analysed;

102.2. Although it would be logical for new members to claim at higher than expected levels when they join medical schemes, there is no evidence that this selection effect is worsening over time or contributing to the annual increases schemes have experienced;

102.3. Analyses by option group suggest a net shift from pricier, more comprehensive options to cheaper, less benefit rich options over time, which is leading to a negative so called ‘plan mix’ effect;

102.4. Analyses by administrator suggest that some administrators and their administered schemes appear to be better able to control costs than others, although this remains very dependent on the schemes’ risk profiles;

102.5. Analyses by scheme type and size suggest that the two very large schemes, as well as the smaller restricted schemes, may be more able to control the unexplained factors than schemes in the middle of the size range; and

102.6. These problems are compounded for the smaller open schemes by significant age and disease burden increases which have added to their cost increases, making this group the one subject to the highest inflationary pressure.