

# **The analysis of REF shadow returns**

## **2009**

15 August 2010



**COUNCIL FOR MEDICAL SCHEMES**

Private Bag X34, HATFIELD, 0028  
Hatefields Block E, 1267 Pretorius Street, HATFIELD

## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>IV</b>
<b>1 INTRODUCTION.....</b>	<b>1</b>
1.1 The REF shadow period .....	1
1.2 Purpose of the report .....	1
<b>2 REF DATA AND METHODS: 2008 REF SUBMISSIONS .....</b>	<b>1</b>
2.1 Case definitions and benchmarks .....	1
2.1.1 Entry and verification criteria .....	1
2.1.2 2008 REF weighting table.....	2
2.1.3 Estimation of expected values (CDL benchmarks) .....	2
2.2 REF data submitted for analysis .....	3
2.3 Categorisation and the assessment of submitted data .....	3
2.3.1 Categorisation.....	3
2.3.2 DIN scores .....	5
2.3.1 Evaluation of clinical credibility of submissions .....	6
2.3.2 REF risk factors with deviations with significant financial impact.....	9
2.3.3 Evaluation of REF submissions by administrator .....	13
2.3.4 REF price by age and community rate analyses.....	15
<b>3 THE POTENTIAL FINANCIAL IMPACT ON SCHEMES.....</b>	<b>17</b>
<b>4 CONCLUSIONS.....</b>	<b>19</b>
4.1 Clinical credibility of submissions .....	19
4.2 Potential financial impact on schemes .....	19

## LIST OF FIGURES

Figure 1:	Data quality groups by month.....	5
Figure 2:	Distribution of categories: 2005 - 2008.....	<b>Error! Bookmark not defined.</b>
Figure 3:	Distribution of data quality groups: 2005 - 2008.	<b>Error! Bookmark not defined.</b>
Figure 4:	All schemes: Total CDL count per 1 000 lives (2008)	<b>Error! Bookmark not defined.</b>
Figure 5:	Distribution of chronic disease (December 2008)	<b>Error! Bookmark not defined.</b>
Figure 6:	The top ten CDL conditions in 2007 and 2008...	<b>Error! Bookmark not defined.</b>
Figure 7:	Relative weight of the top six REF risk factors (December 2008) .....	<b>Error! Bookmark not defined.</b>
Figure 8:	Total cost load by REF risk factor group (December 2008)	<b>Error! Bookmark not defined.</b>
Figure 9:	Age-specific REF risk factor cost pbpm (December 2008)	<b>Error! Bookmark not defined.</b>
Figure 10:	Price by age: All administrators (2008) .....	16
Figure 11:	Price by age: All administrators (2007) .....	16
Figure 12:	Price by age: All administrators (2006) .....	16



Figure 13:	Price by age: All administrators (2005) .....	17
Figure 14:	Number of beneficiaries by payment band (December 2008): Alternative payment intervals .....	17

#### LIST OF TABLES

Table 1:	Percentage of beneficiaries included in 2008 REF returns.....	3
Table 2:	Categories and groups used in the analysis of REF returns .....	4
Table 3:	REF analyst performance: percentage of schemes where an analyst's initial categorisation was the same as the final category agreed to by the REF team.....	4
Table 4:	The 10 most frequently occurring chronic diseases (December 2008)	<b>Error! Bookmark not defined.</b>
Table 5:	Expected and actual estimated REF risk factor costs	<b>Error! Bookmark not defined.</b>
Table 6:	Scheme categories by administrator (December 2008) .....	14
Table 7:	Frequency distribution of the number of schemes by payment intervals.....	18
Table 8:	Risk rates by month .....	18

#### LIST OF ANNEXURES

Annexure A:	Changes introduced to the entry & verification criteria applicable during 2008	21
Annexure B:	Category definitions.....	21
Annexure C:	REF submissions for 2007, the categorisation thereof, and the potential financial impact of the REF.....	23
Annexure D:	REF health risk factors with numerically or financially significant deviations from expected levels.....	44
Annexure E:	REF price by age curves and community rate analysis for administrator groups .....	68



## Executive summary

The purpose of the REF shadow period is to provide an opportunity for the CMS office and medical schemes to prepare for a system of risk equalisation. During this period, the CMS assesses consolidated monthly REF data submissions and reports on the quality of these submissions as well as the potential financial impact of the REF at a high level.

During 2005, many REF submissions were of very poor quality, while during 2006 there were changes to the entry and verification criteria and the REF weighting tables. The analysis of 2007 submissions indicated an impressive improvement in data quality over the three-year period. In the 2008 REF submission evaluation it was noted that there was a reduction in the quality of data submitted during 2008. The same observation is made in the 2009 REF submission evaluations. The quality of data submitted during 2009 is not better than the data submitted in 2008, and the data submitted during December 2009 includes many submissions with poor correlation with the corresponding statutory returns submissions..

Similar to the techniques applied since 2007, the CMS has applied techniques that classify benefit options as “high”, “medium” or “low” risk options to develop scheme-specific expected rates, and has applied these as benchmarks during the evaluation of REF data submissions in 2009.

The report indicates that data was analysed for 98.3% of medical scheme beneficiaries. The proportion of schemes submitting fair data ranged from 47% - 75% during the year, with 21% - 47% of schemes submitting poor data and 4% - 6% of schemes having applied CDL definitions inadequately. The proportion of fair data dropped to *47% in December 2009* from *71% in December 2008*. Of concern is that there may be a trend developing whereby more schemes are submitting poor quality data, particularly when considering September and December 2009 submissions.

The report shows that there has been no improvement in the quality of data submitted by medical schemes since 2007. The problem is compounded by the fact that the expected rates used by the office are likely to be outdated. A new REF study is underway to establish the correct CDL benchmarks.

The CMS will invite schemes that have submitted poor data in 2009 to meet with the REF team to work towards solutions.



# 1 Introduction

## 1.1 The REF shadow period

As part of the Risk Equalisation Fund (REF) shadow period, which started in January 2005, schemes submit consolidated monthly REF returns to the Council for Medical Schemes (CMS) on a quarterly basis. The main purpose of the shadow period is to give schemes and the CMS an opportunity to prepare for a system of risk equalisation and to test the risk equalisation formula. This entails the development of specific skills and development of systems to administrate the REF.

## 1.2 Purpose of the report

The purpose of this report is to assist individual schemes to interpret the scheme-specific results given on the statutory returns portal on the CMS website<sup>1</sup>. Schemes should consider this report to assist in the adjustment of processes and systems to meet the requirements of the REF before submitting future REF returns.

This report contains high-level information with more details provided in the various annexures.

# 2 REF data and methods: 2008 REF submissions

## 2.1 Case definitions and benchmarks

### 2.1.1 Entry and verification criteria

Version 4<sup>2</sup> of the REF entry and verification criteria was used to identify qualifying beneficiaries for 2009. A few changes were made on Version 4 of the criteria since the publication of Version 3.2<sup>3</sup> of the Guidelines on 27 March 2008. The definition of

---

<sup>1</sup> The CMS statutory returns portal is available at:  
<https://www.medicalschemes.com>Returns/login.aspx> Note that a username and password is required to access scheme-specific information

<sup>2</sup> Version 4: Guidelines for the Identification of Beneficiaries with REF Risk Factors.  
[http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/V4\\_of\\_Entry\\_and\\_Verification\\_Guidelines.pdf](http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/V4_of_Entry_and_Verification_Guidelines.pdf)

<sup>3</sup> Version 3.2: Guidelines for the Identification of Beneficiaries with REF Risk Factors.  
[http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/V3.2\\_of\\_Entry\\_and\\_Verification\\_Guidelines.pdf](http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/V3.2_of_Entry_and_Verification_Guidelines.pdf)



beneficiaries has been changed in paragraph 3.2 to reflect that beneficiaries should be counted if they are entitled to benefits. The Days-of-therapy (DOT) method, as an additional method to test for compliance to treatment for REF purposes, is introduced. The ICD10 codes, Z37 and Z38 codes for maternity, are now included. In instances where only specified specialists were required to make certain diagnoses, it is now acceptable that where these diagnoses have been made by providers employed by state hospitals, that only the state hospital discipline code is recorded if the HPCSA or PCNS codes are not available

### 2.1.2 2008 REF weighting table

The 2009 REF weighting table<sup>4</sup> is based on the 2005 REF study<sup>5</sup>. The method applied to adjust the table for inflation has been described previously<sup>6</sup>.

### 2.1.3 Estimation of expected values (CDL benchmarks)

In the evaluation of scheme submissions, the CMS compares the reported values against benchmarks. Since 2007, the CMS applied a clustering method that grouped scheme options as “low,” “medium,” or “high” risk options (see the 2007 REF report for details on the clustering technique<sup>7</sup>). Based on the clusters, the CMS adjusted the raw rates from the 2005 REF study data, smoothed the expected rate curves and adjusted the rates to the respective “low”, “medium”, and “high” risk demographic profiles to ensure that the total average of these is the same as the raw rates for the total industry. The CMS published the expected rates for the respective clusters in the scheme specific reports on the CMS website<sup>8</sup>. The same rates that were used in 2008 were used in 2009.

---

<sup>4</sup> 7 October 2008, “REF Weighting and COUNT Tables 2009”

[http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/REF\\_Weighting\\_and\\_COUNT\\_Tables\\_2009.xlsx](http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/REF_Weighting_and_COUNT_Tables_2009.xlsx)

<sup>5</sup> 3 May 2006, “Recommendations by the Risk Equalisation Technical Advisory Panel to the Council for Medical Schemes - Proposed Methodology for the Risk Equalisation Fund Contribution Table 2007: RETAP Recommendations Report No. 8 (20 April 2006)”

<http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/REFCT%202007%20Methodology%20March%202006%20vFinal.pdf>

<sup>6</sup> 07 October 2009, “Methodology to Determine the REF Weighting table for 2009”

<http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/Methodology%20to%20Determine%20the%20REFWT%20for%202009.pdf>

<sup>7</sup> 8 August 2008, “The analysis of REF shadow returns. 2007”

<http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/REF%20Report%202007%20submissions.pdf>

<sup>8</sup> “Expected count rates by cluster 2008”, available at:



Based on these expected rates, the CMS calculated DIN<sup>9</sup> scores for each of the risk factors included in the REF submissions. The CMS office applies DIN scores to flag submissions that may represent unrealistic values.

## 2.2 REF data submitted for analysis

Table 1 indicates that by December 2009, 98.3% of the total number of beneficiaries reported in the statutory returns was accounted for in REF submissions, 1.4% lower than in December 2008.

**Table 1: Percentage of beneficiaries included in 2008 REF returns**

	<b><i>Statutory returns submissions</i></b>	<b><i>REF submissions</i></b>	<b><i>Difference (REF-SR)</i></b>	<b><i>REF Beneficiaries as % SR Beneficiaries</i></b>
Mar 2009	7 883 572	7 778 905	-104 667	98.7%
Jun 2009	7 918 113	7 834 652	-83 461	98.9%
Sep 2009	7 990 150	7 907 099	-83 051	99.0%
Dec 2009	8 068 469	7 934 845	-133 624	98.3%

## 2.3 Categorisation and the assessment of submitted data

Similar to the previous analyses of REF returns, in assigning submissions to categories, the CMS considered the deviation from expected count values, deviations from statutory returns, and the evaluation of clinical credibility. At least two analysts manually evaluated each of the submissions. In instances where the analysts assigned discordant categories to a scheme, the REF team evaluated the submission.

### 2.3.1 Categorisation

REF submissions were categorised by REF analysts in accordance with the categories listed in Table 2 below. The table groups categories as representative of “fair data,” “CDL definitions applied poorly,” or “poor data,” in accordance with the definitions in

---

[http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/Expected\\_count\\_rates\\_by\\_cluster\\_2008.xls](http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/Expected_count_rates_by_cluster_2008.xls)

<sup>9</sup> DIN scores refer to scores assigned to REF submissions based on the particular dataset’s Deviation from the Industry Norm.



The definition of beneficiaries has been changed in paragraph 3.2 to reflect that beneficiaries should be counted if they are entitled to benefits.

1. The Days-of-therapy (DOT) method, as an additional method to test for compliance to treatment for REF purposes, is introduced in paragraph 5.12 while the details for this method are presented in section 8.
2. The Z37 and Z38 codes for maternity are included in Table 27.
3. In instances where only specified specialists were required to make certain diagnoses, it is now acceptable that where these diagnoses have been made by providers employed by state hospitals, that only the state hospital discipline code is recorded if the HPCSA or PCNS codes are not available (paragraph 5.18 and section 6).
4. The requirement to submit REF grids as CSV files have been removed (paragraph 4.3.3)





Annexure B on page 21.

**Table 2: Categories and groups used in the analysis of REF returns**

<b>Category<sup>10</sup></b>	<b>Short description</b>	<b>Group</b>
<b>3 L</b>	Some concerns, CDLs are reported at very low levels	<b>Fair data</b>
<b>3</b>	Some concerns	
<b>3 H</b>	Some concerns, CDLs are reported at very high levels	
<b>4</b>	Many more beneficiaries in REF returns than in statutory returns	<b>Poor data</b>
<b>5</b>	No REF data or substantially less than in statutory returns	
<b>6</b>	Much lower than expected CDLs	<b>CDL definitions applied poorly</b>
<b>7</b>	Much higher than expected CDLs	
<b>8</b>	Maternity data unlikely	<b>Poor data</b>
<b>9</b>	Combinations of the above or other serious errors in submitted data	

Table 3 shows the percentage of analysed schemes where a specific analyst's initial categorisation is in agreement with the final categorisation agreed to by the team. The figures below are consistent with the results in the 2008 evaluation.

**Table 3: REF analyst performance: Percentage of schemes where an analyst's initial categorisation is the same as the final category agreed to by the REF team**

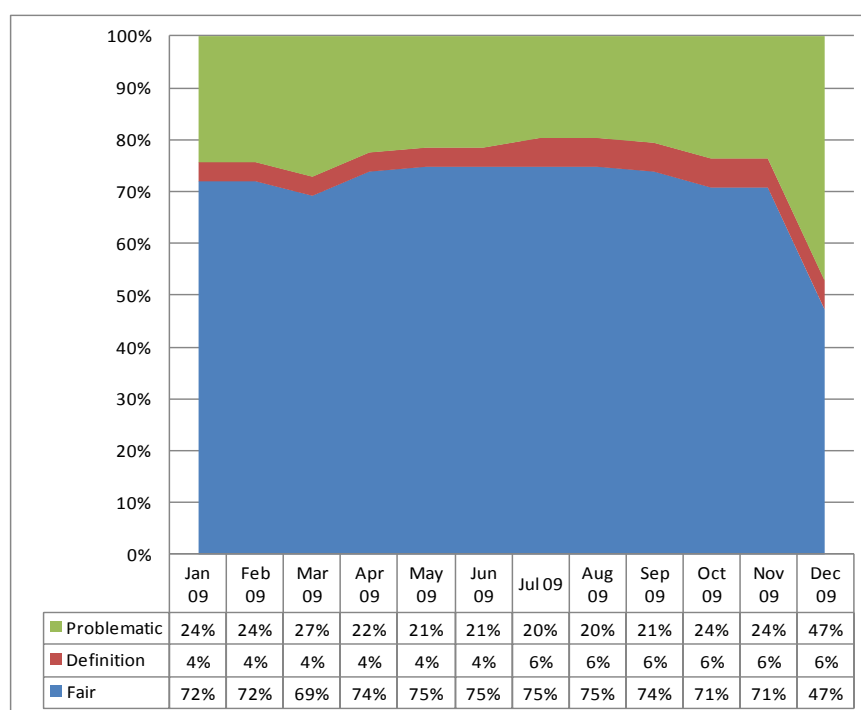
<b>Analyst</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>
<b>1</b>	100	97	97	97	97	94	97	97	97	94	97	97
<b>2</b>	64	64	64	64	64	64	64	64	71	64	64	57
<b>3</b>	88	86	86	86	83	86	83	83	86	81	76	76
<b>4</b>	69	66	62	76	72	72	76	76	72	75	75	46
<b>5</b>	95	95	95	95	95	95	95	95	95	92	92	97
<b>6</b>	81	81	81	83	83	83	83	83	83	81	79	83

<sup>10</sup> Note that categories 1 and 2, which were previously used to identify "good" datasets with minor and no concerns respectively, have been discontinued.



Figure 1 indicates that the proportion of schemes submitting fair data averaged 73% for January to November 2009. The proportion of fair data dropped to 47% in December 2009 from 71% in December 2008. The proportion of schemes reporting problematic data has increased to a range of 21% to 47% from 18% - 25% in the previous year. Schemes that applied CDL definitions inadequately increased by about 2% - 4% in 2009 when compared to 2008. Of concern is that there may be a trend developing whereby more schemes are submitting poor quality data, particularly when considering December submissions. This trend was also observed in 2008, however it is more pronounced in 2009.

**Figure 1: Data quality groups by month**



### 2.3.2 DIN scores

The REF unit calculated DIN<sup>11</sup> scores for each scheme to estimate the quality of data submitted on the REF risk factors. The basis of DIN scores is the deviation from the scheme-specific expected level of REF risk factors (see section 2.1.3) and the statutory returns data for the same period. The DIN scores, therefore, make provision for variations in the expected values among schemes.

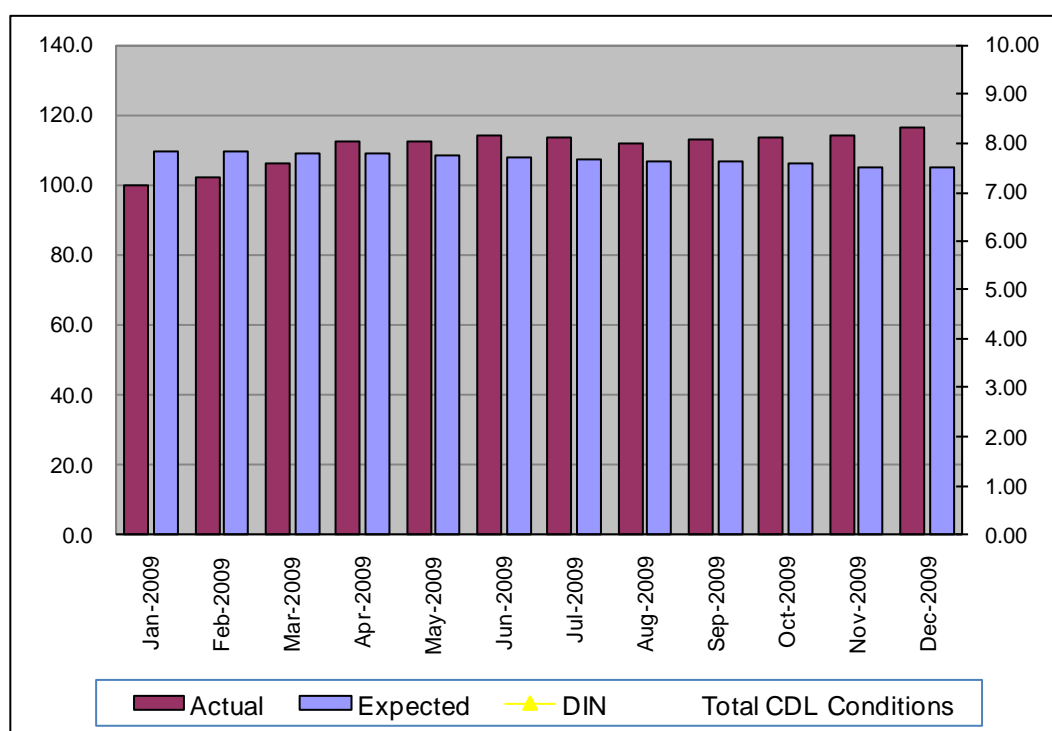
<sup>11</sup> DIN scores refer to scores assigned to REF submissions based on the particular dataset's Deviation from the Industry Norm. A weighted average standard deviation of the mean is calculated.

Statutory returns data were used to measure the reasonableness of the number of beneficiaries in the “below one” age band, the number of beneficiaries in the “85+” age band, and the total data submitted in the REF grids. The previous REF annual report contains a description of the DIN score methodology<sup>12</sup>.

### 2.3.1 Evaluation of clinical credibility of submissions

**Error! Reference source not found. Error! Reference source not found.** indicates that the actual rate of reported CDL counts was lower than expected in January at 91% and showed a gradual increase of up to 117% of the expected by December 2009. Previous reports on REF submissions<sup>13</sup> noted similar upward trends in the level of CDLs; during 2008, the initial percentage of expected CDL was 96% in January and increased to 106% in December.

**Figure 2: All Schemes: Total CDL count per 1 000 lives (2009)**



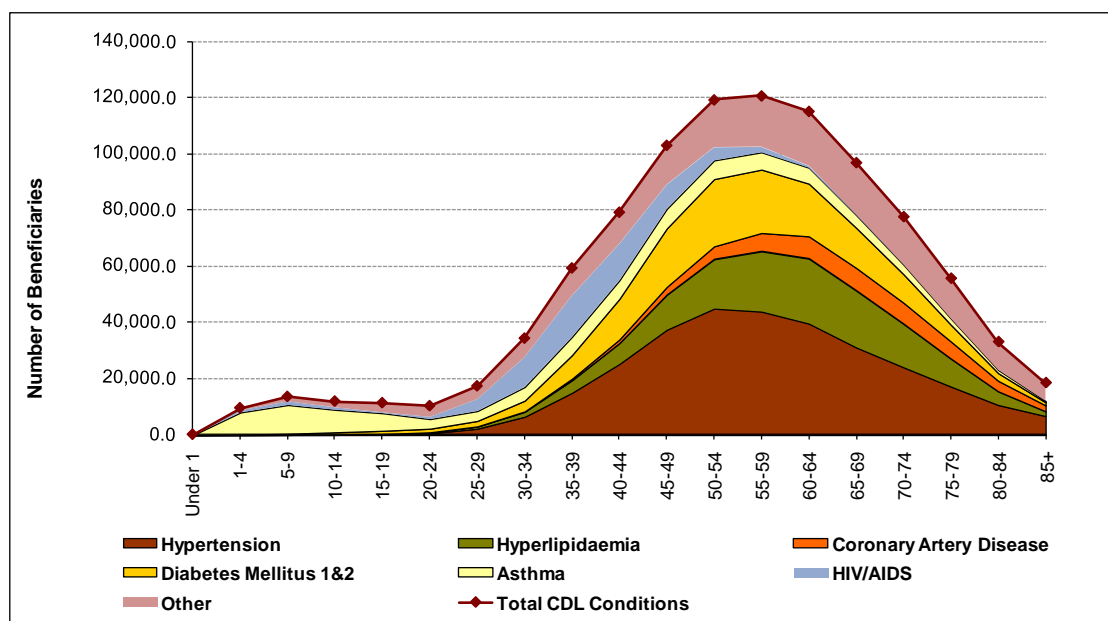
<sup>12</sup> 8 August 2008, “**The analysis of REF Shadow returns 2007**”, available at: <http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/REF%20Report%202007%20submissions.pdf>

<sup>13</sup> For January 2006 CDLs were reported at 97% of the expected and increased to 117% of the expected by December 2006, from: “**The analysis of REF Shadow returns 2006**”, available at: [http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/REF\\_Shadow-Report\\_2006\\_Main\\_Report.pdf](http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/REF_Shadow-Report_2006_Main_Report.pdf)



Error! Reference source not found. Error! Reference source not found. graphically shows the large burden of cardiac and associated conditions, highlighting that lifestyle diseases are prevalent, while Error! Reference source not found. Error! Reference source not found. displays the count rates for the 10 most common chronic conditions.

**Figure 3: Distribution of chronic disease (December 2009)**



**Table 4: The 10 most frequently occurring chronic diseases (December 2009)**

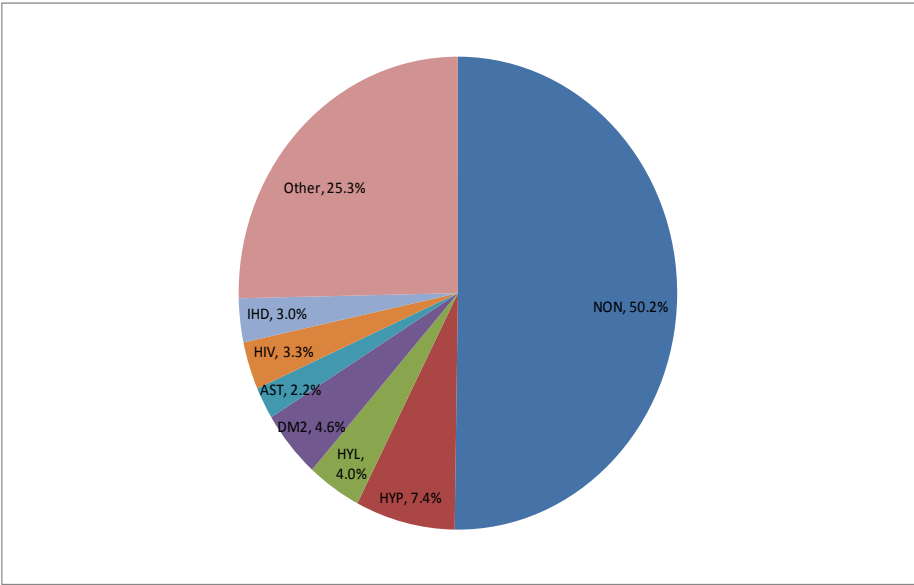
Top 10 CDL conditions 2009				
Order	Name	Number	% of CDL	% of population
1	Hypertension	306 586	31.1%	4%
2	Hyperlipidaemia	142 047	14.4%	2%
3	Diabetes mellitus 2	132 118	13.4%	2%
4	Asthma	94 471	9.6%	1%
5	HIV / AIDS	62 246	6.3%	1%
6	Ischaemic heart disease	50 514	5.1%	1%
7	Cardiomyopathy	36 707	3.7%	0%
8	Hypothyroidism	33562	3.4%	0%
9	Epilepsy	27238	2.8%	0%
10	Diabetes mellitus 1	20827	2.1%	0%
Other*		77 191	8.2%	1.0%
Total		931 925	100%	12.0%

\*Other: Addison's, bronchiectasis, congestive heart failure, chronic renal failure, chronic obstructive pulmonary disease, Crohn's disease, diabetes insipidus, Dysrhythmias, glaucoma, haemophilia, multiple sclerosis, Parkinson's disease, rheumatoid arthritis, schizophrenia, systemic lupus erythematosus, ulcerative colitis



**Error! Reference source not found.** shows the 10 most commonly occurring conditions by December 2009, indicating that 12.0% of the population had chronic diseases. The corresponding percentage in 2008 was 11.9%.

**Figure 6:** Relative weight of the top six REF risk factors (December 2009)



**Error! Reference source not found.** shows that the bulk of REF risk factor costs<sup>14</sup> are included in the “NON” column (50%), indicating the importance of age as a risk factor in REF. **Error! Reference source not found.**<sup>7</sup> presents the total cost load by REF risk factor groups, indicating the importance of lifestyle diseases, maternity, and multiple chronic diseases<sup>15</sup>. **Error! Reference source not found.**<sup>8</sup> demonstrates the risk factor group costs per beneficiary per month by age.

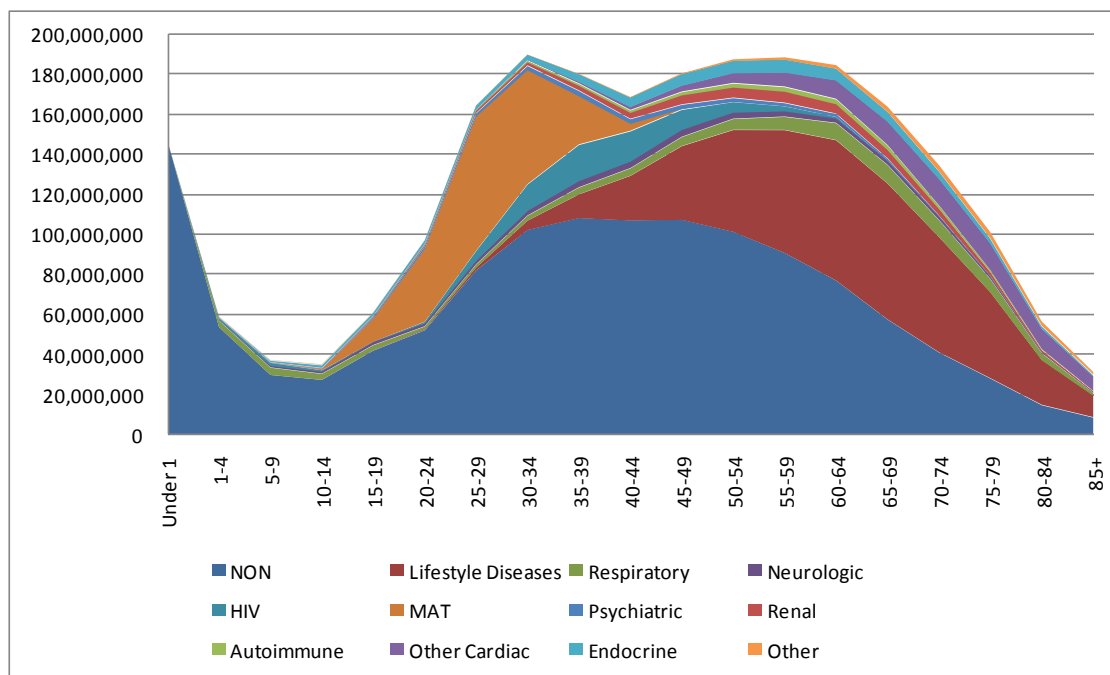
<sup>14</sup> Note that REF risk factor costs are based on the weights published in the REF weighting tables, and that the weight of a specific risk factor (E.g. Hypertension), includes the costs included in the “NON” column. The cost estimates published here are the numbers of actual cases reported in the industry in December 2008, multiplied by the values in the REF weighting table.

<sup>15</sup> For the purposes of the illustration, CDL are grouped together as follows:

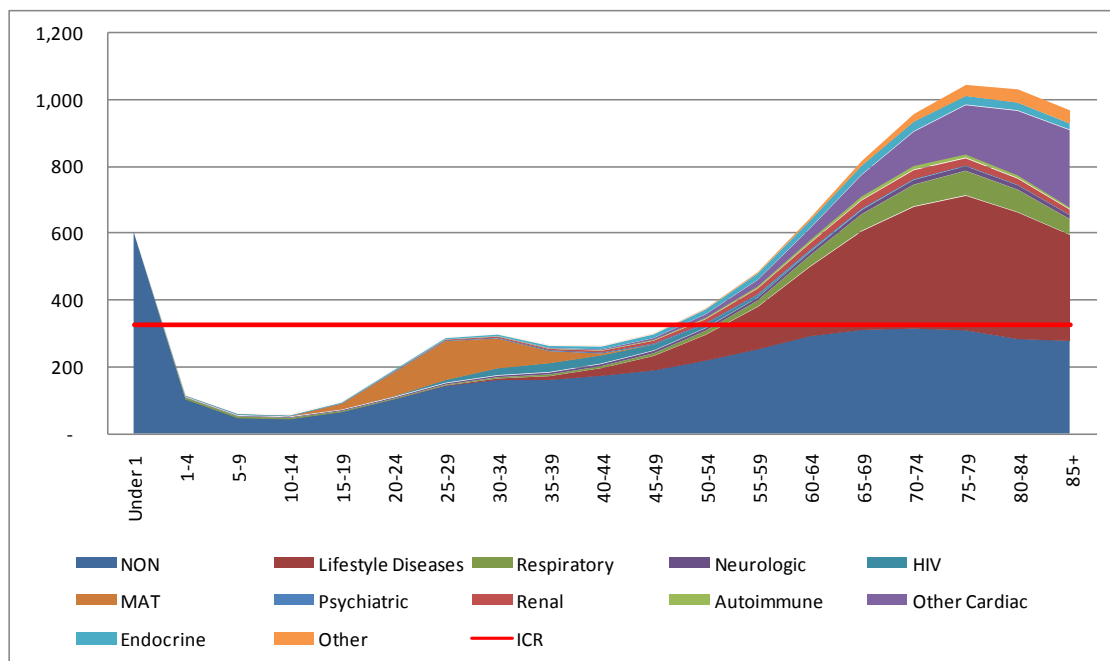
Lifestyle diseases	HYP, IHD, HYL, DM2
Other cardiac	CMY, CHF, DYS
Multiple chronic diseases	CC2, CC3, CC4
Psychiatric	BMD, SCZ
Respiratory	AST, COP, BCE
Endocrine	DM1, TDH, ADS, DBI
Neurologic	EPL, MSS
Autoimmune	RHA, SLE, CSD, IBD
Other	HAE, PAR, GLC



**Figure 7: Total cost load by REF risk factor group (December 2009)**



**Figure 8: Age-specific REF risk factor cost pbpm (December 2009)**



**2.3.2 REF risk factors with deviations with significant financial impact**

**Error! Reference source not found.** lists the expected as well as the estimated REF risk factor costs along with the actually reported count numbers. The table shows the degree of deviation from the expected values. These are highlighted in red or blue in the A / E table **Error! Reference source not found.** Schemes have reported



asthma and chronic obstructive pulmonary disease (COPD) consistently below expected values at 87% and 55% of the expected respectively. Note that the data used in the calculation of expected values in 2005 probably represents an under-estimation of these rates.

Risk factors that are highlighted in red are reported above expected levels and the trend increases year on year. The numbers might be a true reflection of the industry's risk profile, a true epidemiologic shift, or PMB 'diagnosis creep' by providers. The reporting of two to multiple chronic conditions is consistently higher than at expected levels year on year and not necessarily confined to schemes with aging populations.

Financially relevant conditions are asthma, chronic obstructive pulmonary disease, diabetes mellitus, hyperlipidaemia, and three simultaneous conditions highlighted in red and blue in the column titled 'Diff A-E'. These are defined by deviations larger than 0.5% of the total expected cost of the respective risk factors.



**Table 5: Expected and actual estimated REF risk factor costs**

<i>Amount from REF by Condition</i>			<b>Dec-2009</b>	
	<i>Diff (A-E)</i>	<i>Expected</i>	<i>Actual</i>	<i>A/E</i>
No CDL disease	-48,445,093	1,338,628,294	1,290,183,201	96%
Addison's Disease	-27,717	122,009	94,292	77%
Asthma	-8,638,568	64,783,107	56,144,539	87%
Bronchiectasis	-77,754	337,450	259,696	77%
Bipolar Mood Disorder	14,017,824	7,145,021	21,162,845	296%
Cardiac failure	32,262	-	32,262	0%
Cardiomyopathy	-2,449,762	73,756,841	71,307,079	97%
CHF&CMY	-2,417,500	73,756,841	71,339,341	97%
Chronic Obs. Pulmonary Disease	-19,932,425	44,298,939	24,366,514	55%
Chronic Renal Disease	7,997,669	38,565,143	46,562,811	121%
Crohn's Disease	-98,404	2,345,427	2,247,022	96%
Diabetes Insipidus	51,870	107,883	159,753	148%
Diabetes Mellitus 1	2,616,071	37,803,921	40,419,992	107%
Diabetes Mellitus 2	46,364,176	72,697,292	119,061,467	164%
Dysrhythmias	6,043,889	12,551,170	18,595,059	148%
Epilepsy	2,187,236	27,564,567	29,751,802	108%
Glaucoma	1,212,189	7,571,748	8,783,937	116%
Haemophilia	174,980	1,299,510	1,474,489	113%
Hyperlipidaemia	18,641,603	83,911,082	102,552,685	122%
Hypertension	14,200,586	174,580,551	188,781,138	108%
Ulcerative Colitis	122,900	1,604,643	1,727,543	108%
Coronary Artery Disease	5,563,956	71,409,081	76,973,037	108%
Multiple Sclerosis	-1,584,540	10,414,694	8,830,154	85%
Parkinson's Disease	1,612,700	7,021,532	8,634,233	123%
Rheumatoid Arthritis	-1,377,298	12,911,787	11,534,489	89%
Schizophrenia	783,731	1,982,839	2,766,570	140%
Systemic LE	420,889	2,415,819	2,836,709	117%
Hypothyroidism	236,925	15,084,203	15,321,128	102%
HIV/AIDS	12,085,682	71,542,555	83,628,238	117%
Two simultaneous conditions	13,374,955	46,089,936	59,464,891	129%
Three simultaneous conditions	24,357,361	28,645,256	53,002,617	185%
Four or more simultaneous conditions	10,849,490	7,728,150	18,577,639	240%
Maternity Events	7,548,193	195,522,171	203,070,365	104%
Total CDL Conditions	88,094,986	772,286,259	860,381,245	111%
Multiple CDL Conditions	48,581,806	82,463,342	131,045,147	159%
<b>Total</b>	<b>107,865,574</b>	<b>2,460,442,622</b>	<b>2,568,308,196</b>	<b>104%</b>

\* "Diff (A-E)" means the difference between actual and reported values while "A / E" means actual divided by expected

#### 2.3.2.1 Asthma and chronic obstructive pulmonary disease

The reported respiratory conditions, notably asthma and chronic obstructive pulmonary disease, have persistently lower count rates than expected across submissions throughout the REF shadow period. The levels range between 50% - 95% of expected levels in most schemes.





#### *2.3.2.2 Diabetes mellitus 2*

Overall, the reported DM2 count rate across the scheme population is 62% above expected levels. Metropolitan Health Corporate (Pty) Ltd and Discovery Health administered schemes reported levels twice the expected levels. The financial impact would be substantial as the cost of DM2 is above 0.5% of the total PMB cost. The count rates for DM2 reflects the difficulty of correctly classifying these cases, which is partly due to the inadequacy of the International Classification of Diseases (ICD) 10 codes to accurately capture the epidemiologic trends of this disease. The differentiation between Diabetes Mellitus types 1 and 2 diseases according to treatment has become blurred with current practice of managing both forms of diabetes with insulin.

#### *2.3.2.3 Bipolar mood disorder*

Levels of BMD are reported at rates two to four times higher than expected across most schemes. This trend has been steadily increasing year-on-year. The therapeutic algorithm, which guides the treatment of this illness, was published late in 2009 by the department of health.

#### *2.3.2.4 Three simultaneous conditions*

Schemes reported this indicator at levels 85% higher than expected with Metropolitan Health Corporate (Pty) Ltd administered schemes reporting the highest levels.

#### *2.3.2.5 Multiple CDLs*

Multiple disease counts represent one of the biggest financial risks to the schemes as they represent the cost associated with managing multiple chronic conditions.

#### *2.3.2.6 Total CDL conditions*

The combined effect of these deviations results in a financial impact that translates to 4% above the expected levels compared to 3% above the expected levels in the previous year.



### **2.3.3 Evaluation of REF submissions by administrator**

#### *2.3.3.1 Categorisation by administrator*

Table 6 shows the number of schemes by administrator and category in December 2008. Forty-four schemes (42%) were classified as category 9 schemes. Only 26 or 24% of schemes were classified as category 9 schemes for the same period in 2008. The MEDSCHEME Holdings Pty Ltd category 9 schemes increased from zero (0) in 2008 to 16 in 2009. The self-administered category 9 schemes increased from 8 in 2008 to 11 in 2009. Each of the 5 Allcare Administrators (Pty) Ltd administered schemes were classified as category 9.



Table 6: Scheme categories by administrator (December 2008)

Administrator	Category							
	3	3H	4	5	6	7	9	Total
Frequency, Row Pct								
<b>AGILITY GLOBAL HEALTH SOLUTIONS AFRICA</b>	0 0.00	0 0.00	0 0.00	1 50.00	0 0.00	0 0.00	1 50.00	2
<b>ALLCARE ADMINISTRATORS PTY LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	5 100.00	5
<b>DISCOVERY HEALTH PTY LTD</b>	10 83.33	1 8.33	0 0.00	0 0.00	1 8.33	0 0.00	0 0.00	12
<b>ETERNITY PRIVATE HEALTH FUND ADMINISTRATORS PTY LTD</b>	0 0.00	0 0.00	1 50.00	0 0.00	0 0.00	0 0.00	1 50.00	2
<b>MEDSCHEME HOLDINGS PTY LTD</b>	6 26.09	1 4.35	0 0.00	0 0.00	0 0.00	0 0.00	16 69.57	23
<b>METROPOLITAN HEALTH CORPORATE PTY LTD</b>	7 63.64	1 9.09	0 0.00	1 9.09	0 0.00	1 9.09	1 9.09	11
<b>METROPOLITAN HEALTH PTY LTD</b>	1 33.33	1 33.33	0 0.00	1 33.33	0 0.00	0 0.00	0 0.00	3
<b>MOMENTUM MEDICAL SCHEME ADMINISTRATORS (PTY) LTD</b>	8 66.67	1 8.33	0 0.00	0 0.00	1 8.33	1 8.33	1 8.33	12
<b>OLD MUTUAL HEALTHCARE PTY LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>PRIVATE HEALTH ADMINISTRATORS (A DIVISION OF SWEIDAN TRUST (PTY) LTD)</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>PROFESSIONAL MEDICAL SCHEME ADMINISTRATORS (PTY) LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>PROVIDENCE HEALTHCARE RISK MANAGERS PTY LTD</b>	4 80.00	1 20.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	5
<b>SANLAM HEALTHCARE MANAGEMENT (PTY) LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>SECHABA MEDICAL SOLUTIONS (PTY) LTD</b>	2 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	2
<b>SELF-ADMINISTERED</b>	1 7.69	0 0.00	0 0.00	1 7.69	0 0.00	0 0.00	11 84.62	13
<b>SIGMA HEALTH FUND MANAGERS (PTY) LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	0 0.00	1
<b>STATUS MEDICAL AID ADMINISTRATORS PTY LTD</b>	2 40.00	1 20.00	0 0.00	0 0.00	1 20.00	0 0.00	1 20.00	5
<b>THEBE YA BOPHELO HEALTHCARE ADMINISTRATORS PTY LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>V MED ADMINISTRATORS (PTY) LTD</b>	2 50.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	2 50.00	4
<b>Total</b>	<b>43</b>	<b>7</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>44</b>	<b>105</b>



### 2.3.4 REF price by age and community rate analyses

The REF price by age curve demonstrates the combined risk of each of the reported REF risk factors on schemes in comparison to the expected risk attributable to the REF risk factors.

Figure 5 demonstrates that the price by age curves of the submitted REF returns closely follow the expected price by age curve for most age bands. In age bands above 65, the reported levels are higher than expected, and this trend is consistent over the four quarters of 2008. The minor variations observed in 2007 in the 20 - 39 year age range, due to fluctuations in the reporting of maternity, are not apparent in 2009.

The remarkable improvement in the price by age curves for submitted data in 2007 compared to 2006 and 2005 was not noticeable when comparing 2007 with 2008 submissions (see Figure 5 - Figure 8). The price by age curves for 2007 are on top of each other indicating that there are minor differences in data submitted from quarter to quarter. This is not the case for 2009 (Figure 8); the December curve is slightly higher than others. This may be because of poor quality data submitted for December 2009.

**Figure 4: Price by age: All administrators (2009)**

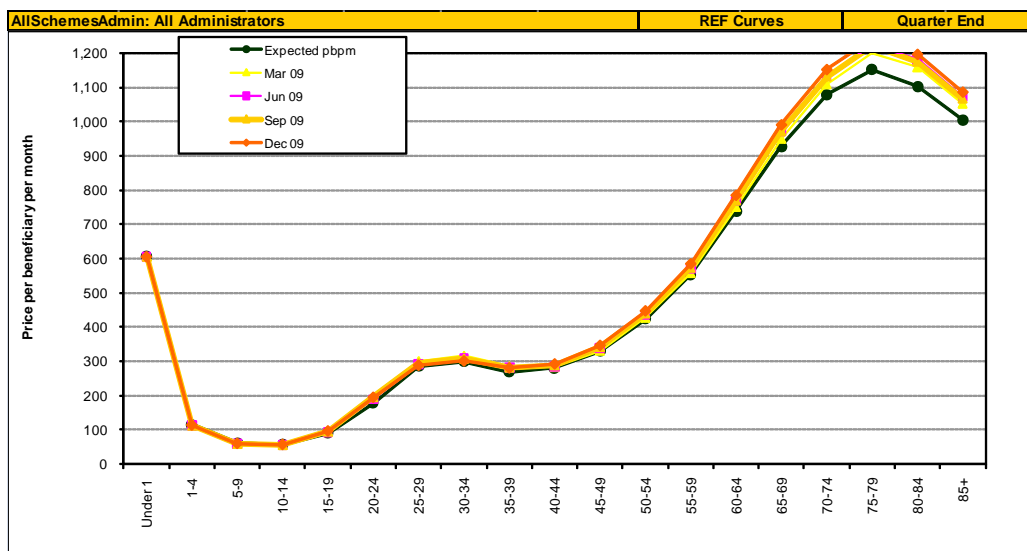


Figure 5: Price by age: All administrators (2008)

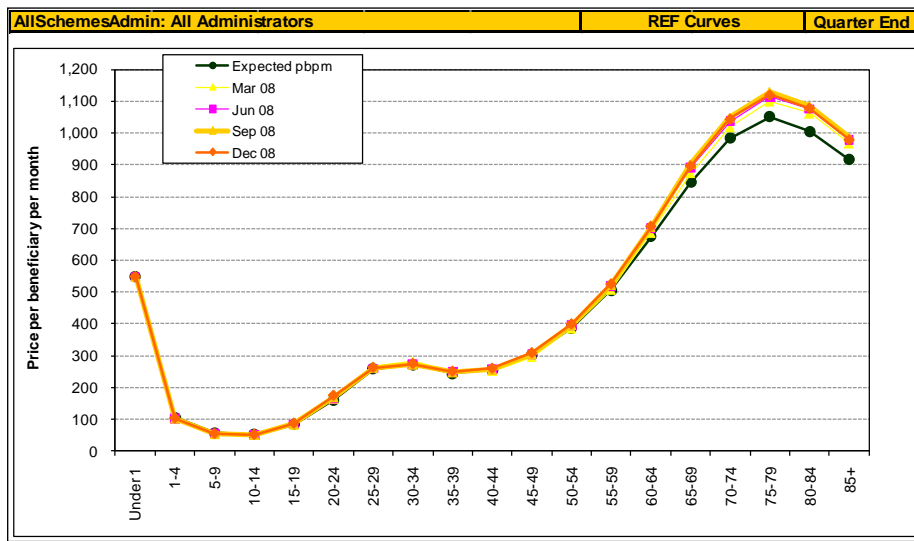


Figure 6: Price by age: All administrators (2007)

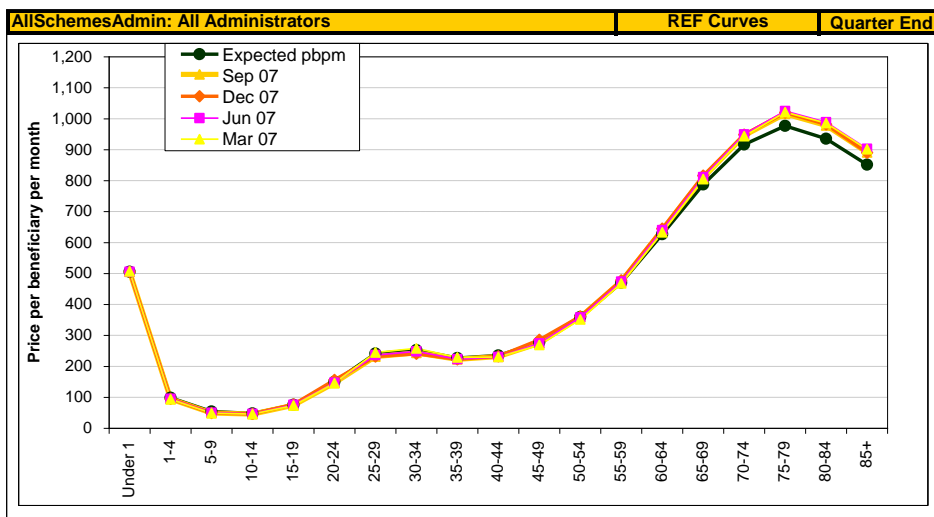
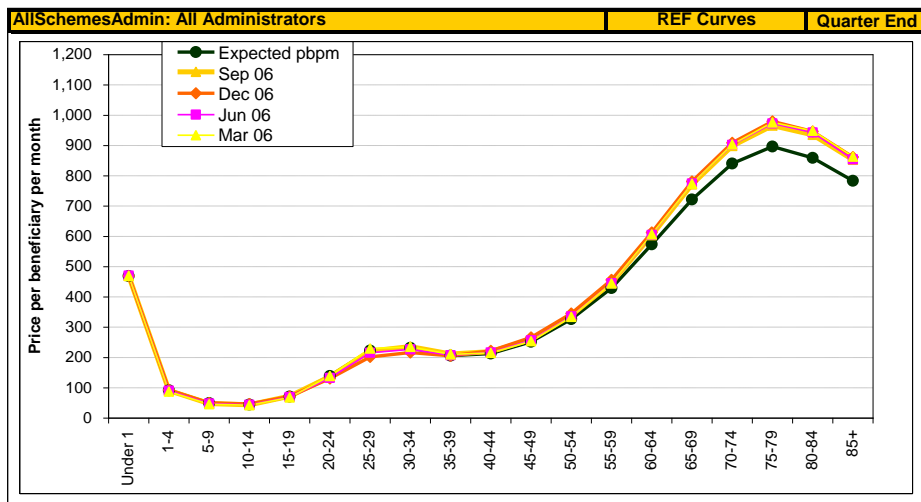
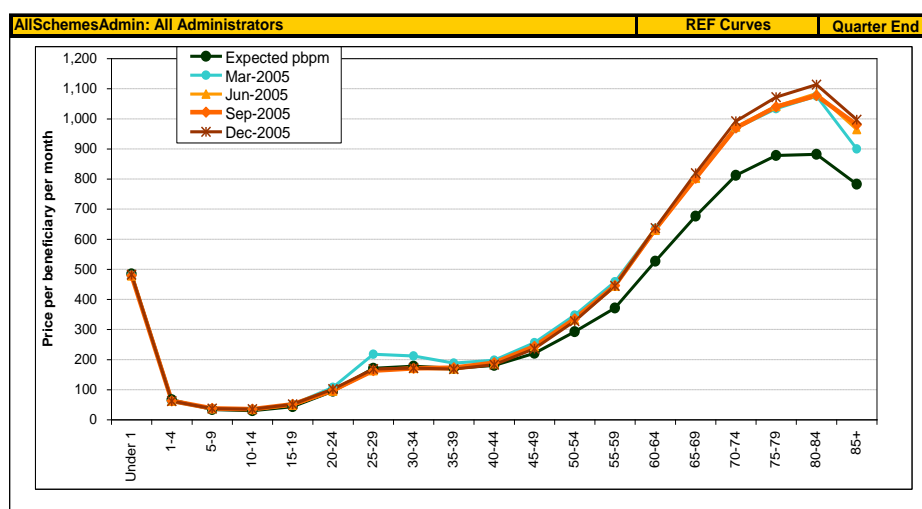


Figure 7: Price by age: All administrators (2006)



**Figure 8: Price by age: All administrators (2005)**



Price by age graphs and community rate analyses for the major administrators appear in Annexure E on page 68.

### 3 The potential financial impact on schemes

The financial impact of REF on a particular scheme is dependent on the difference between the scheme's community rate and the industry community rate. This implies that even if a scheme did submit good data, but the rest of the industry submitted poor data, the scheme risk estimate will be incorrect.

Figure 9 demonstrates that in September 2009, about 280 000 beneficiaries would pay more than R75 pbpm to REF; while about 850 000 beneficiaries would receive more than R75 pbpm.

**Figure 9: Number of beneficiaries by payment band (September 2008): Alternative payment intervals**

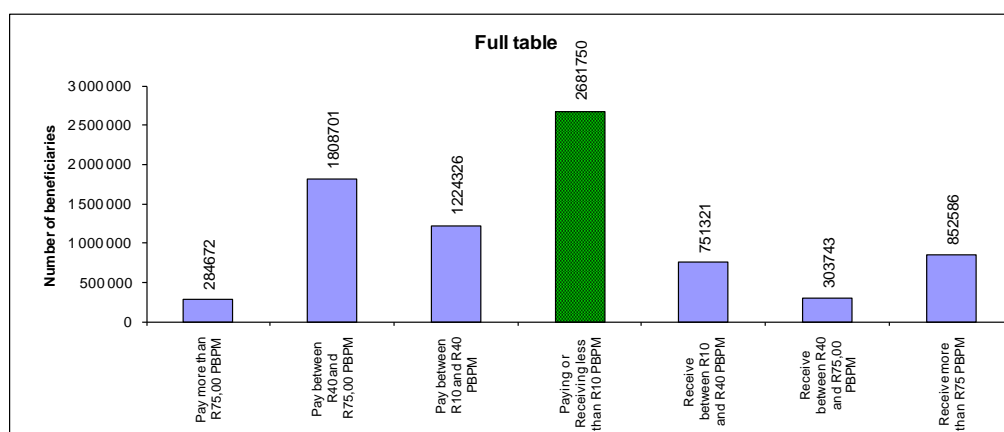


Table 7 presents the data supporting the graph in Figure 9.

**Table 7: Frequency distribution of the number of schemes by payment intervals**

<b><i>Scheme risk (September 2009)</i></b>	<b><i>Number of schemes</i></b>	<b><i>Percent (%)</i></b>	<b><i>Cumulative number of schemes</i></b>	<b><i>Cumulative percent (%)</i></b>
Pay more than R75 PBPM	11	10.38	11	10.38
Pay between R40 and R75 PBPM	9	8.49	20	18.87
Pay between R10 and R40 PBPM	20	18.87	40	37.74
Paying or receiving less than R10 PBPM	14	13.21	54	50.94
Receive between R10 and R40 PBPM	10	9.43	64	60.38
Receive between R40 and R75 PBPM	14	13.21	78	73.58
Receive more than R75 PBPM	28	26.42	106	100.00

Table 8 demonstrates a reduction in the standard deviation of the scheme's risk (the net amount payable to or from the REF) in the third and fourth quarters, because of amalgamation of outlier schemes.

**Table 8: Risk rates by month**

<b><i>Statistic</i></b>	<b><i>Full Contribution Table (Amount in rand)</i></b>			
	<b><i>March 2009</i></b>	<b><i>June 2009</i></b>	<b><i>September 2009</i></b>	<b><i>December 2009</i></b>
<b><i>Industry community rate</i></b>	317.54	321.13	322.78	323.67
<b><i>Minimum risk rate</i></b>	-446.62	-298.45	-316.76	-310.22
<b><i>Maximum risk rate</i></b>	123.98	123.47	119.98	132.57
<b><i>Standard deviation</i></b>	92.72	85.38	81.93	83.74



## **4 Conclusions**

The report on the 2007 REF submissions reported a significant improvement in the quality of data submitted during 2007, above 2006 and 2005. This trend did not continue into 2008 and 2009, at the end of 2009, 42% of schemes submitted inadequate data.

### **4.1 Clinical credibility of submissions**

The combined effect of the deviations in 2009 amounts to R107M or 4% of the total expected PMB cost. The gap between the expected and actual levels has increased from 3% to 4% in 2008 and 2009 respectively, reversing the downward trend observed in the past three years (2005, 2006, and 2007) estimated at 10.7%, 2.9%, and 0.5% respectively. Possible hypotheses are deterioration in the quality of data submitted by the schemes; a possible shift in the industry's risk profile or outdated scheme-specific expected values, which are based on a study conducted four years ago. There is an urgent need to conduct a costing study of the PMB package which will not only bridge the gap between expected and actual levels of reported chronic conditions but also assist identify possible new health risk factors.

### **4.2 Potential financial impact on schemes**

Section 3 (page 17) highlights the financial impact that REF may have on schemes. Clearly, the estimation of the impact relies on good quality data. Note that 42% of schemes were categorised as category 9 in December 2009.





# Annexures to the report on the analysis of REF shadow returns 2008

Annexure A: Changes introduced to the entry & verification criteria applicable during 2009 .....	21
Annexure B: Category definitions .....	21
Annexure C: REF submissions for 2007, the categorisation thereof, and the potential financial impact of the REF .....	23
Annexure D: REF health risk factors with numerical or financial significant deviations from expected levels .....	44
Annexure E: REF price by age curves and community rate analysis for administrator groups .....	68



**COUNCIL FOR MEDICAL SCHEMES**

Private Bag X34, HATFIELD, 0028  
Hatefield Block E, 1267 Pretorius Street, HATFIELD



## **Annexure A: Changes introduced to the entry & verification criteria applicable during 2009**

### **CONTENTS**

1 CHANGES INTRODUCED IN VERSION 4 PUBLISHED ON 10 OCTOBER 2008 .....	21
--	----

#### **1 Changes introduced in version 4 published on 10 October 2008**

5. The definition of beneficiaries has been changed in paragraph 3.2 to reflect that beneficiaries should be counted if they are entitled to benefits.
6. The Days-of-therapy (DOT) method, as an additional method to test for compliance to treatment for REF purposes, is introduced in paragraph 5.12 while the details for this method are presented in section 8.
7. The Z37 and Z38 codes for maternity are included in Table 27.
8. In instances where only specified specialists were required to make certain diagnoses, it is now acceptable that where these diagnoses have been made by providers employed by state hospitals, that only the state hospital discipline code is recorded if the HPCSA or PCNS codes are not available (paragraph 5.18 and section 6).
9. The requirement to submit REF grids as CSV files have been removed (paragraph 4.3.3)



## Annexure B: Category definitions

**Table 9: Full description of category definitions applied to the evaluation of 2009 REF returns**

<i>Category</i>	<i>Description</i>	<i>Data quality group</i>
3	There are some concerns with the submission that need to be addressed. The community rate may not be the correct value until all the concerns are addressed.	<i>Fair data</i>
3 H	There are some concerns with the submission that need to be addressed. The community rate may not be the correct value until all the concerns are addressed. Total CDL levels AND three of MAT, CMY, HYP, IHD, HIV, CC2: Are on average 2 to 3 standard deviations above the scheme-specific expected rate, or; The CDL levels are even higher than above, but the office has collateral evidence that substantiates these low levels as a true reflection of the scheme's risk profile.	
3 L	There are some concerns with the submission that need to be addressed. The community rate may not be the correct value until all the concerns are addressed. Total CDL levels AND three of MAT, CMY, HYP, IHD, HIV, CC2: Are on average 2 to 3 standard deviations below the scheme-specific expected rate, or; The CDL levels are even lower than above, but the office has collateral evidence that substantiates these low levels as a true reflection of the scheme's risk profile.	
4	Substantially more REF beneficiaries than SR (deviations up to 2% from statutory returns are acceptable, provided that SR data appears correct).	<i>Poor data</i>
5	No REF data or many beneficiaries missing (deviations up to 2% from statutory returns are acceptable, provided that SR data appears correct).	
6	LOW Total CDL AND 3 LOW of MAT, CMY, HYP, IHD, HIV, CC2. No collateral evidence & >3 SD.	<i>CDL definitions applied poorly</i>
7	HIGH Total CDL AND 3 HIGH of MAT, CMY, HYP, IHD, HIV, CC2. No collateral evidence & >3 SD.	
8	Maternity data unlikely. No or very high / very low maternity numbers, unlikely in comparison to previous data. Trends not acceptable.	<i>Poor data</i>
9	Combinations of the above, or other serious errors in submitted data, including but not limited to poor correlation between REF & SR data, unrealistic risk factor reporting that could not be classified in accordance with the other 8 categories. This includes duplicate data, poor correlation bay age band (<1, 85+), NON-column not populated, incorrect gender split, REF risk factor levels are totally unrealistic, very high levels of rare conditions e.g. MS, HAE, MSS, Addison's, etc.	



# Annexure C: REF submissions for 2009, the categorisation thereof, and the potential financial impact of the REF

## TABLE OF CONTENTS

1 REF RETURNS SUBMITTED .....	25
2 ASSESSMENT OF SUBMITTED DATA .....	27
3 EVALUATION OF REF SUBMISSIONS BY ADMINISTRATOR.....	29
4 THE POTENTIAL FINANCIAL IMPACT OF REF ON MEDICAL SCHEMES .....	33
4.1 Introduction.....	33
4.2 Analysis of the financial impact .....	33

## LIST OF FIGURES

Figure 15: Percentage of schemes with “fair data” .....	27
Figure 16: Number of beneficiaries by payment band (December 2009).....	35
Figure 17: Number of beneficiaries by payment band (December 2009): Alternative payment intervals.....	36
Figure 18: Scheme risk by scheme (December 2009) .....	37
Figure 19: Industry community rate: With and without exclusions	<b>Error! Bookmark not defined.</b>

## LIST OF TABLES

Table 10: REF and SR returns submitted for March 2009.....	<b>Error! Bookmark not defined.</b>
Table 11: REF and SR returns submitted for June 2009 .....	<b>Error! Bookmark not defined.</b>
Table 12: REF and SR returns submitted for September 2009	<b>Error! Bookmark not defined.</b>
Table 13: REF and SR returns submitted for December 2009	<b>Error! Bookmark not defined.</b>
Table 14: Number of schemes by category and month .....	28
Table 15: Scheme categories by administrator (March 2009) .....	29
Table 16: Scheme categories by administrator (June 2009) .....	30
Table 17: Scheme categories by administrator (September 2009).....	31
Table 18: Scheme categories by administrator (December 2009).....	32
Table 19: Risk rates by month.....	33
Table 20: Frequency distribution of the number of schemes versus the scheme risk in intervals .....	33
Table 21: Frequency distribution of the number of beneficiaries versus the scheme risk in intervals .....	35
Table 22: Frequency distribution of the number of beneficiaries versus the scheme risk in intervals: Alternative payment intervals.....	36



Table 23: Frequency distribution of the number of schemes versus the scheme risk in intervals: Alternative payment intervals..... 37

Table 24: Scheme risk versus category (December 2009) ..... 37

Table 25: Detailed list of scheme risks (December 2009)..... 38

Table 26: Number of schemes excluded per month ..... **Error! Bookmark not defined.**

Table 27: Risk rates per month without category 4, 5, 6, 7, 8, and 9 schemes**Error! Bookmark not defined.**



## 1 REF returns submitted

**Table 10** below indicates that during March 2009 REF data for 106 schemes were included in the analysis, representing 7 778 905 beneficiaries in the industry (99.17 percent of the total number of beneficiaries reported in the Statutory Returns).

**Table 10: REF and SR returns submitted for March 2009**

<b>Category</b>	<b>Number of Schemes</b>	<b>Beneficiaries in March 2009</b>			
		<b>Statutory Returns</b>	<b>Percentage of Total SR Beneficiaries</b>	<b>REF Grids Submitted</b>	<b>REF Beneficiaries as % SR Beneficiaries</b>
<b>3</b>	63 (59.43%)	4 428 633	56.46	4 416 050	99.72
<b>3H</b>	11 (10.38%)	805 189	10.27	802 801	99.70
<b>5</b>	9 (8.49%)	1 318 952	16.82	1 285 170	97.44
<b>6</b>	3 (2.83%)	175 321	2.24	173 032	98.69
<b>7</b>	1 (0.94%)	149 052	1.90	148 968	99.94
<b>8</b>	1 (0.94%)	55 681	0.71	55 255	99.23
<b>9</b>	18 (16.98%)	910 904	11.61	897 629	98.54
<b>Total</b>	106	7 843 732	100.00%	7 778 905	99.17%

The following schemes are exempted from PMB's and were not included in the analysis:

- Building and Construction Industry Medical Aid Fund
- Fishing Industry Medical Scheme (Fish-Med)
- Food Workers Medical Benefit Fund
- Golden Arrows Employees Medical Benefit Fund

Table 11 below indicates that during June 2009. REF data for 106 schemes were included in the analysis, representing 7 834 652 beneficiaries in the industry (99.45 percent of the total number of beneficiaries reported in the Statutory Returns).

**Table 11: REF and SR returns submitted for June 2009**

<b>Decision Category</b>	<b>Number of Schemes</b>	<b>Beneficiaries in June 2009</b>			
		<b>Statutory Returns</b>	<b>Percentage of Total SR Beneficiaries</b>	<b>REF Grids Submitted</b>	<b>REF Beneficiaries as % SR Beneficiaries</b>
<b>3</b>	69 (65.09%)	4 751 129	60.31	4 741 477	99.80
<b>3H</b>	11 (10.38%)	804 777	10.22	804 328	99.94
<b>4</b>	1 (0.94%)	2 481	0.03	2 532	102.06
<b>5</b>	4 (3.77%)	1 092 296	13.87	1 070 298	97.99
<b>6</b>	3 (2.83%)	168 061	2.13	165 942	98.74
<b>7</b>	1 (0.94%)	148 012	1.88	147 892	99.92
<b>8</b>	1 (0.94%)	54 029	0.69	53 687	99.37
<b>9</b>	16 (15.09%)	856 870	10.88	848 496	99.02
<b>Total</b>	106	7 877 655	100.00%	7 834 652	99.45%



Table 12 below indicates that during September 2009 REF data for 106 schemes were included in the analysis, representing 7 907 099 beneficiaries in the industry (99.47 percent of the total number of beneficiaries reported in the Statutory Returns).

**Table 12: REF and SR returns submitted for September 2009**

<b>Decision Category</b>	<b>Number of Schemes</b>	<b>Beneficiaries in September 2009</b>			
		<b>Statutory Returns</b>	<b>Percentage of Total SR Beneficiaries</b>	<b>REF Grids Submitted</b>	<b>REF Beneficiaries as % SR Beneficiaries</b>
<b>3</b>	66 (62.26%)	2 700 827	33.98	2 691 844	99.67
<b>3H</b>	13 (12.26%)	3 803 239	47.84	3 803 233	100.00
<b>5</b>	4 (3.77%)	153 332	1.93	146 173	95.33
<b>6</b>	3 (2.83%)	162 089	2.04	161 086	99.38
<b>7</b>	3 (2.83%)	309 692	3.90	309 031	99.79
<b>8</b>	1 (0.94%)	53 098	0.67	52 590	99.04
<b>9</b>	16 (15.09%)	767 168	9.65	743 142	96.87
<b>Total</b>	106	7 949 445	100.00%	7 907 099	99.47

Table 13 below indicates that during December 2009 REF data for 105 schemes were included in the analysis, representing 7 934 845 beneficiaries in the industry (99.50 percent of the total number of beneficiaries reported in the Statutory Returns).

**Table 13: REF and SR returns submitted for December 2009**

<b>Decision Category</b>	<b>Number of Schemes</b>	<b>Beneficiaries in December 2009</b>			
		<b>Statutory Returns</b>	<b>Percentage of Total SR Beneficiaries</b>	<b>REF Grids Submitted</b>	<b>REF Beneficiaries as % SR Beneficiaries</b>
<b>3</b>	43 (40.95%)	1 342 429	16.83	1 338 845	99.73
<b>3H</b>	7 (6.67%)	3 297 876	41.35	3 291 564	99.81
<b>4</b>	1 (0.95%)	6 631	0.08	6 891	103.92
<b>5</b>	4 (3.81%)	149 240	1.87	144 625	96.91
<b>6</b>	3 (2.86%)	41 136	0.52	41 201	100.16
<b>7</b>	3 (2.86%)	305 245	3.83	303 918	99.57
<b>9</b>	44 (41.90%)	2 832 321	35.52	2 807 801	99.13
<b>Total</b>	105	7 974 878	100.00%	7 934 845	99.50

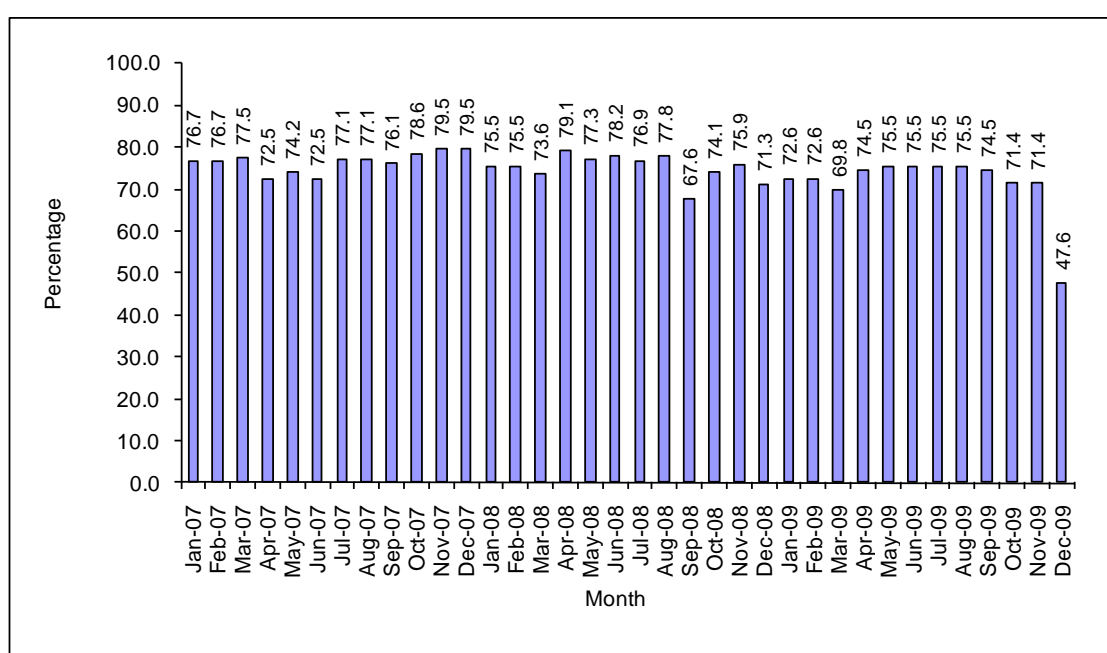
In general, there is good correlation between the SR data and the REF data, except for the Category 4, 5 and 9 schemes. These schemes must verify not only the totals before submission, but also their age calculations for both data sets.



## 2 Assessment of submitted data

The so-called “Fair data,” Categories 3L, 3 and 3H are grouped together and the percentage schemes submitting fair data per month are plotted in Figure 1 below. For the last three years, the percentage of schemes submitting fair data was around 70 to 75 percent, except for September 2008 and December 2009. In fact, for December 2009 there is a significant decrease in the quality of the data.

**Figure 10: Percentage of schemes with “fair data”**



The CMS analysts double checked all the category 9 schemes and they are confident that those schemes should be category 9 schemes. With the absence of complete SR data per age band, it was unfortunately not possible to do a similar detailed analysis for the first eleven months of 2009. One could argue that the percentage of fair data for the first eleven months could also be substantially lower if the SR data by age band was available for the analysis. The results by administrator for December 2009 indicates that this decrease in the quality of the data was due to the submission of one of the big administrators (16 category 9 schemes) and certain self administrated schemes (11 category 9 schemes). See Table 18.





The detail distribution of the number of schemes per category per month for 2009 is tabulated in Table 14. Between 14 (13%) and 19 (18%) schemes were classified as a Category 9 schemes for the first eleven months and 44 (42%) for December 2009. Their submissions contain gross irregularities in more than one area.

**Table 14: Number of schemes by category and month**

<i>Period</i>	<i>Category</i>								
Frequency Row Pct Col Pct									Total
	<b>3</b>	<b>3H</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	
<b>Jan-09</b>	67 63.21 8.72	10 9.43 7.25	0 0.00 0.00	5 4.72 8.20	3 2.83 8.33	1 0.94 4.17	1 0.94 11.11	19 17.92 8.33	106
<b>Feb-09</b>	66 62.26 8.59	11 10.38 7.97	0 0.00 0.00	6 5.66 9.84	3 2.83 8.33	1 0.94 4.17	1 0.94 11.11	18 16.98 7.89	106
<b>Mar-09</b>	63 59.43 8.20	11 10.38 7.97	0 0.00 0.00	9 8.49 14.75	3 2.83 8.33	1 0.94 4.17	1 0.94 11.11	18 16.98 7.89	106
<b>Apr-09</b>	68 64.15 8.85	11 10.38 7.97	1 0.94 20.00	5 4.72 8.20	3 2.83 8.33	1 0.94 4.17	1 0.94 11.11	16 15.09 7.02	106
<b>May-09</b>	69 65.09 8.98	11 10.38 7.97	0 0.00 0.00	5 4.72 8.20	3 2.83 8.33	1 0.94 4.17	1 0.94 11.11	16 15.09 7.02	106
<b>Jun-09</b>	69 65.09 8.98	11 10.38 7.97	1 0.94 20.00	4 3.77 6.56	3 2.83 8.33	1 0.94 4.17	1 0.94 11.11	16 15.09 7.02	106
<b>Jul-09</b>	67 63.21 8.72	13 12.26 9.42	0 0.00 0.00	5 4.72 8.20	3 2.83 8.33	3 2.83 12.50	1 0.94 11.11	14 13.21 6.14	106
<b>Aug-09</b>	66 62.26 8.59	14 13.21 10.14	0 0.00 0.00	4 3.77 6.56	3 2.83 8.33	3 2.83 12.50	1 0.94 11.11	15 14.15 6.58	106
<b>Sep-09</b>	66 62.26 8.59	13 12.26 9.42	0 0.00 0.00	4 3.77 6.56	3 2.83 8.33	3 2.83 12.50	1 0.94 11.11	16 15.09 7.02	106
<b>Oct-09</b>	62 59.05 8.07	13 12.38 9.42	1 0.95 20.00	5 4.76 8.20	3 2.86 8.33	3 2.86 12.50	0 0.00 0.00	18 17.14 7.89	105
<b>Nov-09</b>	62 59.05 8.07	13 12.38 9.42	1 0.95 20.00	5 4.76 8.20	3 2.86 8.33	3 2.86 12.50	0 0.00 0.00	18 17.14 7.89	105
<b>Dec-09</b>	43 40.95 5.60	7 6.67 5.07	1 0.95 20.00	4 3.81 6.56	3 2.86 8.33	3 2.86 12.50	0 0.00 0.00	44 41.90 19.30	105
<b>Total</b>	<b>768</b>	<b>138</b>	<b>5</b>	<b>61</b>	<b>36</b>	<b>24</b>	<b>9</b>	<b>228</b>	<b>1269</b>



### 3 Evaluation of REF submissions by administrator

The number of schemes per administrator is counted for each category and the results are reported for the four months in **Error! Not a valid bookmark self-reference.** - Table 18.

Table 15: Scheme categories by administrator (March 2009)

<i>Administrator</i>	<i>Category</i>							
Frequency								
Row Pct	<b>3</b>	<b>3H</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>Total</b>
<b>AGILITY GLOBAL HEALTH SOLUTIONS AFRICA</b>	0 0.00	0 0.00	1 50.00	0 0.00	0 0.00	0 0.00	1 50.00	2
<b>ALLCARE ADMINISTRATORS PTY LTD</b>	2 40.00	1 20.00	1 20.00	0 0.00	0 0.00	0 0.00	1 20.00	5
<b>DISCOVERY HEALTH PTY LTD</b>	10 83.33	0 0.00	0 0.00	1 8.33	0 0.00	0 0.00	1 8.33	12
<b>ETERNITY PRIVATE HEALTH FUND ADMINISTRATORS PTY LTD</b>	1 50.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 50.00	2
<b>MEDSCHEME HOLDINGS PTY LTD</b>	18 78.26	3 13.04	0 0.00	1 4.35	0 0.00	0 0.00	1 4.35	23
<b>METROPOLITAN HEALTH CORPORATE PTY LTD</b>	8 72.73	1 9.09	1 9.09	0 0.00	1 9.09	0 0.00	0 0.00	11
<b>METROPOLITAN HEALTH PTY LTD</b>	1 33.33	1 33.33	1 33.33	0 0.00	0 0.00	0 0.00	0 0.00	3
<b>MOMENTUM MEDICAL SCHEME ADMINISTRATORS (PTY) LTD</b>	9 75.00	1 8.33	0 0.00	0 0.00	0 0.00	0 0.00	2 16.67	12
<b>MPUMALANGA MANAGED HEALTH CARE (PTY) LTD</b>	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<b>OLD MUTUAL HEALTHCARE PTY LTD</b>	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<b>PRIVATE HEALTH ADMINISTRATORS (A DIVISION OF SWEIDAN TRUST (PTY) LTD)</b>	0 0.00	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<b>PROFESSIONAL MEDICAL SCHEME ADMINISTRATORS (PTY) LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>PROVIDENCE HEALTHCARE RISK MANAGERS PTY LTD</b>	4 80.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 20.00	5
<b>SANLAM HEALTHCARE MANAGEMENT (PTY) LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>SECHABA MEDICAL SOLUTIONS (PTY) LTD</b>	1 50.00	0 0.00	1 50.00	0 0.00	0 0.00	0 0.00	0 0.00	2
<b>SELF-ADMINISTERED</b>	2 15.38	3 23.08	1 7.69	0 0.00	0 0.00	1 7.69	6 46.15	13
<b>SIGMA HEALTH FUND MANAGERS (PTY) LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>STATUS MEDICAL AID ADMINISTRATORS PTY LTD</b>	2 40.00	1 20.00	0 0.00	1 20.00	0 0.00	0 0.00	1 20.00	5
<b>THEBE YA BOPHELO HEALTHCARE ADMINISTRATORS PTY LTD</b>	0 0.00	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<b>V MED ADMINISTRATORS (PTY) LTD</b>	3 75.00	0 0.00	1 25.00	0 0.00	0 0.00	0 0.00	0 0.00	4
<b>Total</b>	<b>63</b>	<b>11</b>	<b>9</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>18</b>	<b>106</b>



Table 16: Scheme categories by administrator (June 2009)

Administrator	Category								
Frequency Row Pct	3	3H	4	5	6	7	8	9	Total
<b>AGILITY GLOBAL HEALTH SOLUTIONS AFRICA</b>	0 0.00	0 0.00	0 0.00	1 50.00	0 0.00	0 0.00	0 0.00	1 50.00	2
<b>ALLCARE ADMINISTRATORS PTY LTD</b>	3 60.00	1 20.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 20.00	5
<b>DISCOVERY HEALTH PTY LTD</b>	11 91.67	0 0.00	0 0.00	0 0.00	1 8.33	0 0.00	0 0.00	0 0.00	12
<b>ETERNITY PRIVATE HEALTH FUND ADMINISTRATORS PTY LTD</b>	1 50.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 50.00	2
<b>MEDSCHEME HOLDINGS PTY LTD</b>	17 73.91	3 13.04	1 4.35	0 0.00	1 4.35	0 0.00	0 0.00	1 4.35	23
<b>METROPOLITAN HEALTH CORPORATE PTY LTD</b>	8 72.73	1 9.09	0 0.00	1 9.09	0 0.00	1 9.09	0 0.00	0 0.00	11
<b>METROPOLITAN HEALTH PTY LTD</b>	1 33.33	1 33.33	0 0.00	1 33.33	0 0.00	0 0.00	0 0.00	0 0.00	3
<b>MOMENTUM MEDICAL SCHEME ADMINISTRATORS (PTY) LTD</b>	9 75.00	1 8.33	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	2 16.67	12
<b>OLD MUTUAL HEALTHCARE PTY LTD</b>	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<b>PRIVATE HEALTH ADMINISTRATORS (A DIVISION OF SWEIDAN TRUST (PTY) LTD)</b>	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<b>PROFESSIONAL MEDICAL SCHEME ADMINISTRATORS (PTY) LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>PROVIDENCE HEALTHCARE RISK MANAGERS PTY LTD</b>	5 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	5
<b>SANLAM HEALTHCARE MANAGEMENT (PTY) LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>SECHABA MEDICAL SOLUTIONS (PTY) LTD</b>	2 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	2
<b>SELF-ADMINISTERED</b>	3 21.43	3 21.43	0 0.00	1 7.14	0 0.00	0 0.00	1 7.14	6 42.86	14
<b>SIGMA HEALTH FUND MANAGERS (PTY) LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>STATUS MEDICAL AID ADMINISTRATORS PTY LTD</b>	2 40.00	1 20.00	0 0.00	0 0.00	1 20.00	0 0.00	0 0.00	1 20.00	5
<b>THEBE YA BOPHELO HEALTHCARE ADMINISTRATORS PTY LTD</b>	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<b>V MED ADMINISTRATORS (PTY) LTD</b>	4 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	4
<b>Total</b>	<b>69</b>	<b>11</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>16</b>	<b>106</b>



Table 17: Scheme categories by administrator (September 2009)

Administrator	Category							
Frequency Row Pct	3	3H	5	6	7	8	9	Total
<b>AGILITY GLOBAL HEALTH SOLUTIONS AFRICA</b>	0 0.00	0 0.00	1 50.00	0 0.00	0 0.00	0 0.00	1 50.00	2
<b>ALLCARE ADMINISTRATORS PTY LTD</b>	3 60.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	2 40.00	5
<b>DISCOVERY HEALTH PTY LTD</b>	10 83.33	1 8.33	0 0.00	1 8.33	0 0.00	0 0.00	0 0.00	12
<b>ETERNITY PRIVATE HEALTH FUND ADMINISTRATORS PTY LTD</b>	1 50.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 50.00	2
<b>MEDSCHEME HOLDINGS PTY LTD</b>	17 73.91	3 13.04	0 0.00	1 4.35	0 0.00	0 0.00	2 8.70	23
<b>METROPOLITAN HEALTH CORPORATE PTY LTD</b>	7 63.64	2 18.18	1 9.09	0 0.00	1 9.09	0 0.00	0 0.00	11
<b>METROPOLITAN HEALTH PTY LTD</b>	1 33.33	1 33.33	1 33.33	0 0.00	0 0.00	0 0.00	0 0.00	3
<b>MOMENTUM MEDICAL SCHEME ADMINISTRATORS (PTY) LTD</b>	9 75.00	1 8.33	0 0.00	0 0.00	1 8.33	0 0.00	1 8.33	12
<b>OLD MUTUAL HEALTHCARE PTY LTD</b>	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<b>PRIVATE HEALTH ADMINISTRATORS (A DIVISION OF SWEIDAN TRUST (PTY) LTD)</b>	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<b>PROFESSIONAL MEDICAL SCHEME ADMINISTRATORS (PTY) LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>PROVIDENCE HEALTHCARE RISK MANAGERS PTY LTD</b>	4 80.00	1 20.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	5
<b>SANLAM HEALTHCARE MANAGEMENT (PTY) LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>SECHABA MEDICAL SOLUTIONS (PTY) LTD</b>	2 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	2
<b>SELF-ADMINISTERED</b>	3 21.43	3 21.43	1 7.14	0 0.00	0 0.00	1 7.14	6 42.86	14
<b>SIGMA HEALTH FUND MANAGERS (PTY) LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	0 0.00	0 0.00	1
<b>STATUS MEDICAL AID ADMINISTRATORS PTY LTD</b>	2 40.00	1 20.00	0 0.00	1 20.00	0 0.00	0 0.00	1 20.00	5
<b>THEBE YA BOPHELO HEALTHCARE ADMINISTRATORS PTY LTD</b>	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<b>V MED ADMINISTRATORS (PTY) LTD</b>	4 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	4
<b>Total</b>	<b>66</b>	<b>13</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>16</b>	<b>106</b>



Table 18: Scheme categories by administrator (December 2009)

Administrator	Category							
Frequency Row Pct	3	3H	4	5	6	7	9	Total
<b>AGILITY GLOBAL HEALTH SOLUTIONS AFRICA</b>	0 0.00	0 0.00	0 0.00	1 50.00	0 0.00	0 0.00	1 50.00	2
<b>ALLCARE ADMINISTRATORS PTY LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	5 100.00	5
<b>DISCOVERY HEALTH PTY LTD</b>	10 83.33	1 8.33	0 0.00	0 0.00	1 8.33	0 0.00	0 0.00	12
<b>ETERNITY PRIVATE HEALTH FUND ADMINISTRATORS PTY LTD</b>	0 0.00	0 0.00	1 50.00	0 0.00	0 0.00	0 0.00	1 50.00	2
<b>MEDSCHEME HOLDINGS PTY LTD</b>	6 26.09	1 4.35	0 0.00	0 0.00	0 0.00	0 0.00	16 69.57	23
<b>METROPOLITAN HEALTH CORPORATE PTY LTD</b>	7 63.64	1 9.09	0 0.00	1 9.09	0 0.00	1 9.09	1 9.09	11
<b>METROPOLITAN HEALTH PTY LTD</b>	1 33.33	1 33.33	0 0.00	1 33.33	0 0.00	0 0.00	0 0.00	3
<b>MOMENTUM MEDICAL SCHEME ADMINISTRATORS (PTY) LTD</b>	8 66.67	1 8.33	0 0.00	0 0.00	1 8.33	1 8.33	1 8.33	12
<b>OLD MUTUAL HEALTHCARE PTY LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>PRIVATE HEALTH ADMINISTRATORS (A DIVISION OF SWEIDAN TRUST (PTY) LTD)</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>PROFESSIONAL MEDICAL SCHEME ADMINISTRATORS (PTY) LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>PROVIDENCE HEALTHCARE RISK MANAGERS PTY LTD</b>	4 80.00	1 20.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	5
<b>SANLAM HEALTHCARE MANAGEMENT (PTY) LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>SECHABA MEDICAL SOLUTIONS (PTY) LTD</b>	2 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	2
<b>SELF-ADMINISTERED</b>	1 7.69	0 0.00	0 0.00	1 7.69	0 0.00	0 0.00	11 84.62	13
<b>SIGMA HEALTH FUND MANAGERS (PTY) LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	0 0.00	1
<b>STATUS MEDICAL AID ADMINISTRATORS PTY LTD</b>	2 40.00	1 20.00	0 0.00	0 0.00	1 20.00	0 0.00	1 20.00	5
<b>THEBE YA BOPHELO HEALTHCARE ADMINISTRATORS PTY LTD</b>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<b>V MED ADMINISTRATORS (PTY) LTD</b>	2 50.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	2 50.00	4
<b>Total</b>	<b>43</b>	<b>7</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>44</b>	<b>105</b>



## 4 The potential financial impact of REF on medical schemes

### 4.1 Introduction

The scheme's risk (Industry community rate – Scheme community rate) was calculated individually for each scheme for March, June, September and December based on the Full contribution table. All the schemes were included in the calculation of the Industry community rate. Once REF is live CMS will replace poor or unreliable data (Category 4, 5, 6, 7, 8, and 9 schemes) with data that gives a better estimate of the schemes' true community rate. This can have an impact on the true industry community rate, as well as the individual scheme risk. In the shadow period, it is advised that the schemes use the published industry community rate to calculate their scheme risk.

### 4.2 Analysis of the financial impact

Hundred and six schemes were included in the analysis for March, June, and September, while hundred and five were included for December. Basic statistics are shown for each of the four months in **Error! Not a valid bookmark self-reference..**

For March the scheme risk varies from –R446.62 to R123.98. This means that the highest risk scheme will receive R446.62 per beneficiary from REF and the lowest risk scheme has to pay R123.98 per beneficiary to REF. For December the scheme risk varies from –R310.22 to R132.57. The standard deviation of the scheme risk is also much more stable from quarter to quarter compared to previous years.

Table 19: Risk rates by month

<i><b>Statistic</b></i>	<i><b>Full Contribution Table (Amount in rand)</b></i>			
	<i><b>March 2009</b></i>	<i><b>June 2009</b></i>	<i><b>September 2009</b></i>	<i><b>December 2009</b></i>
<i><b>Industry community rate</b></i>	317.54	321.13	322.78	323.67
<i><b>Minimum risk rate</b></i>	-446.62	-298.45	-316.76	-310.22
<i><b>Maximum risk rate</b></i>	123.98	123.47	119.98	132.57
<i><b>Standard deviation</b></i>	92.72	85.38	81.93	83.74

Forty four schemes (41.90%) were net contributors in December 2009, but these forty four schemes presents 5 561 954 (70.10%) beneficiaries.



Table 20: Frequency distribution of the number of schemes versus scheme risk in intervals

<i>Scheme risk</i>	<i>March 2009</i>		<i>June 2009</i>		<i>September 2009</i>		<i>December 2009</i>	
	<i>Schemes</i>	<i>%</i>	<i>Schemes</i>	<i>%</i>	<i>Schemes</i>	<i>%</i>	<i>Schemes</i>	<i>%</i>
<i>Pay: R0 to R25.00 PBPM</i>	16	15.09	13	12.26	15	14.15	10	9.52
<i>Pay: R25.01 to R50.00 PBPM</i>	15	14.15	15	14.15	14	13.21	16	15.24
<i>Pay: R50.01 to R75.00 PBPM</i>	12	11.32	6	5.66	7	6.60	7	6.67
<i>Pay: R75.01 to R100.00 PBPM</i>	4	3.77	8	7.55	7	6.60	6	5.71
<i>Pay: R100.01 to R125.00 PBPM</i>	5	4.72	5	4.72	4	3.77	4	3.81
<i>Pay: R125.01 to R150.00 PBPM</i>	-	-	-	-	-	-	1	0.95
<i>Pay: More than R150.00 PBPM</i>	-	-	-	-	-	-	-	-
<i>Sub-total</i>	52	49.06	47	44.34	47	44.34	44	41.90
<i>Receive: R0.01 to R25.00 PBPM</i>	9	8.49	15	14.15	13	12.26	17	16.19
<i>Receive: R25.01 to R50.00 PBPM</i>	13	12.26	9	8.49	11	10.38	10	9.52
<i>Receive: R50.01 to R75.00 PBPM</i>	6	5.66	5	4.72	7	6.60	7	6.67
<i>Receive: R75.01 to R100.00 PBPM</i>	5	4.72	8	7.55	9	8.49	5	4.76
<i>Receive: R100.01 to R125.00 PBPM</i>	6	5.66	7	6.60	6	5.66	8	7.62
<i>Receive: R125.01 to R150.00 PBPM</i>	7	6.60	7	6.60	6	5.66	7	6.67
<i>Receive: More than R150.00 PBPM</i>	8	7.55	8	7.55	7	6.60	7	6.67
<i>Total</i>	106	100	106	100	106	100	105	100

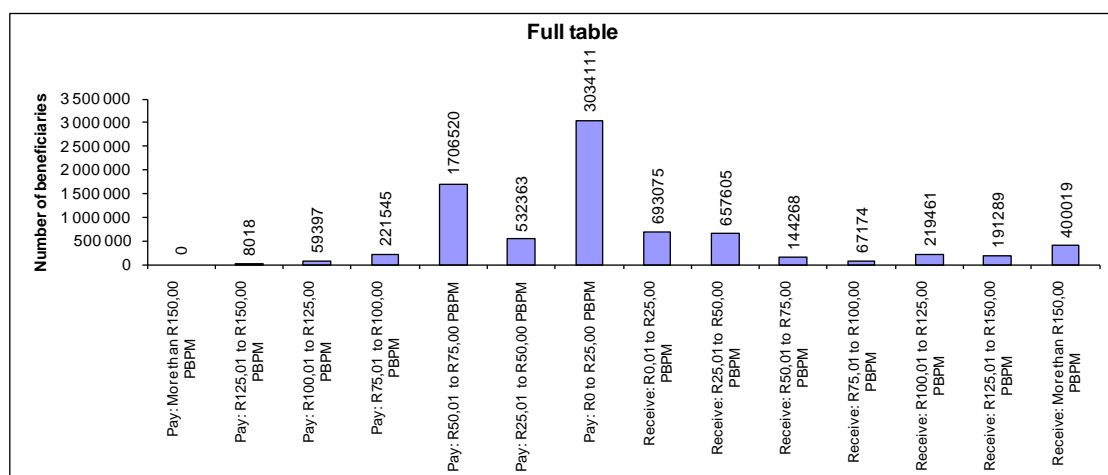


**Table 21: Frequency distribution of the number of beneficiaries versus scheme risk in intervals**

<i>Scheme risk</i>	<i>March 2009</i>		<i>June 2009</i>		<i>September 2009</i>		<i>December 2009</i>	
	<i>Beneficiaries</i>	<i>%</i>	<i>Beneficiaries</i>	<i>%</i>	<i>Beneficiaries</i>	<i>%</i>	<i>Beneficiaries</i>	<i>%</i>
<i>Pay: R0 to R25.00 PBPM</i>	3 208 775	41.25	3 271 893	41.76	3 281 179	41.50	3 034 111	38.24
<i>Pay: R25.01 to R50.00 PBPM</i>	712 407	9.16	527 422	6.73	485 326	6.14	532 363	6.71
<i>Pay: R50.01 to R75.00 PBPM</i>	1 741 895	22.39	1 600 641	20.43	1 596 952	20.20	1 706 520	21.51
<i>Pay: R75.01 to R100.00 PBPM</i>	180 815	2.32	206 141	2.63	231 720	2.93	221 545	2.79
<i>Pay: R100.01 to R125.00 PBPM</i>	75 039	0.96	90 378	1.15	52 952	0.67	59 397	0.75
<i>Pay: R125.01 to R150.00 PBPM</i>	-	-	-	-	-	-	8 018	0.10
<i>Pay: More than R150.00 PBPM</i>	-	-	-	-	-	-	-	-
<i>Sub-total</i>	5 918 931	76.09	5 696 475	72.71	5 648 129	71.43	5 561 954	70.10
<i>Receive: R0.01 to R25.00 PBPM</i>	308 692	3.97	857 715	10.95	875 671	11.07	693 075	8.73
<i>Receive: R25.01 to R50.00 PBPM</i>	665 181	8.55	284 520	3.63	401 983	5.08	657 605	8.29
<i>Receive: R50.01 to R75.00 PBPM</i>	82 907	1.07	48 589	0.62	128 730	1.63	144 268	1.82
<i>Receive: R75.01 to R100.00 PBPM</i>	83 627	1.08	123 358	1.57	151 346	1.91	67 174	0.85
<i>Receive: R100.01 to R125.00 PBPM</i>	174 136	2.24	189 779	2.42	180 571	2.28	219 461	2.77
<i>Receive: R125.01 to R150.00 PBPM</i>	136 124	1.75	236 301	3.02	123 393	1.56	191 289	2.41
<i>Receive: More than R150.00 PBPM</i>	409 307	5.26	397 915	5.08	397 276	5.02	400 019	5.04
<i>Total</i>	7 778 905	100	7 834 652	100	7 907 099	100	7 934 845	100

The financial impact by payment band on the beneficiaries is illustrated in **Error! Not a valid bookmark self-reference..** For December, 400 019 (5.04%) beneficiaries will receive R150.00 or more from REF and 221 545 (2.79%) will have to pay in between R75.00 and R100.00. (More than 70% of beneficiaries would be net payers into REF.)

**Figure 11: Number of beneficiaries by payment band (December 2009)**





The payments are grouped differently for September in **Error! Not a valid bookmark self-reference.**

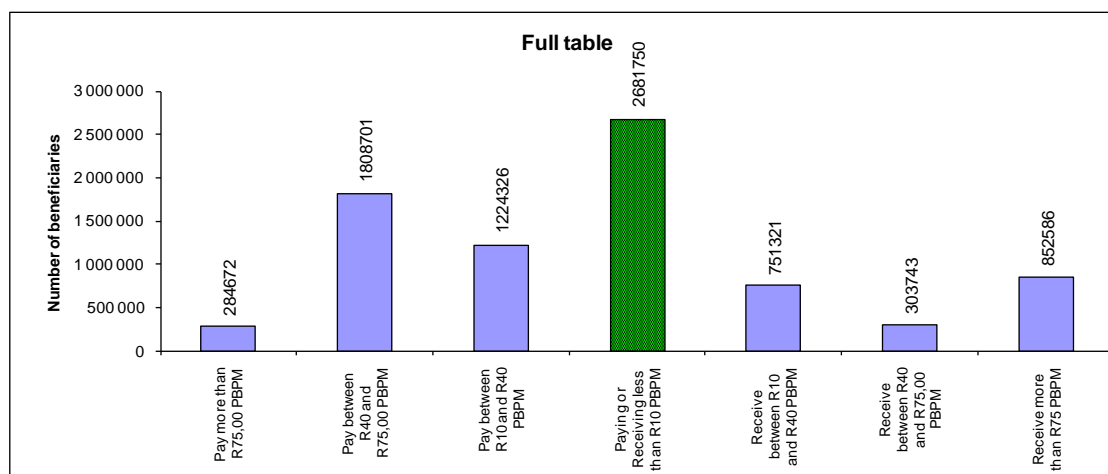


Table 23 and Figure 12 below. (We assume also that the submissions were more reliable for September than December.) If we assume that payments less than R10 are not significant, then we could conclude that REF will have no or little effect on approximately 33.92 percent of the beneficiaries in the industry. These 33.92 percent beneficiaries are in 14 (13.21%) different schemes. Only 41.96 percent "beneficiaries" will then be net payers compared to the 71.43 percent shown in Table 12.

**Table 22: Frequency distribution of the number of beneficiaries versus the scheme risk in intervals: Alternative payment intervals**

<i><b>Scheme risk (September 2009)</b></i>	<i><b>Number of beneficiaries</b></i>	<i><b>Percent (%)</b></i>	<i><b>Cumulative number of beneficiaries</b></i>	<i><b>Cumulative percent (%)</b></i>
Pay more than R75 PBPM	284 672	3.60	2 84 672	3.60
Pay between R40 and R75 PBPM	1 808 701	22.87	2 093 373	26.47
Pay between R10 and R40 PBPM	1 224 326	15.48	3 317 699	41.96
Paying or receiving less than R10 PBPM	2 681 750	33.92	5 999 449	75.87
Receive between R10 and R40 PBPM	751 321	9.50	6 750 770	85.38
Receive between R40 and R75 PBPM	303 743	3.84	7 054 513	89.22
Receive more than R75 PBPM	852 586	10.78	7 907 099	100.00

**Figure 12: Number of beneficiaries by payment band (December 2009): Alternative payment intervals**



**Table 23: Frequency distribution of the number of schemes versus the scheme risk in intervals: Alternative payment intervals**

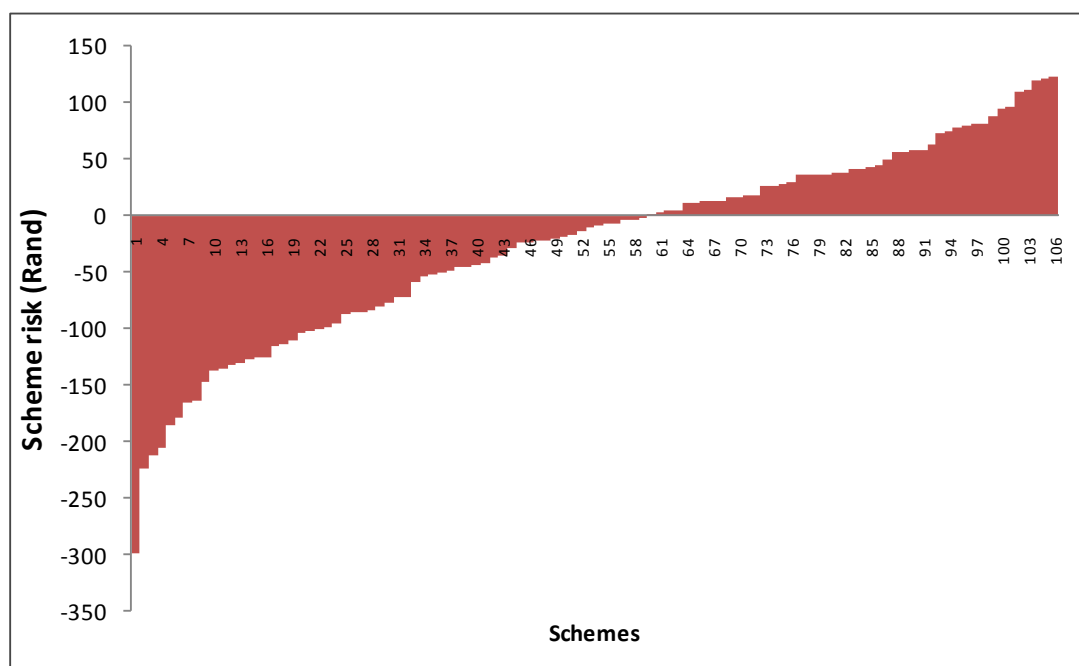
<i><b>Scheme risk (September 2009)</b></i>	<i><b>Number of schemes</b></i>	<i><b>Percent (%)</b></i>	<i><b>Cumulative number of schemes</b></i>	<i><b>Cumulative percent (%)</b></i>
Pay more than R75 PBPM	11	10.38	11	10.38
Pay between R40 and R75 PBPM	9	8.49	20	18.87
Pay between R10 and R40 PBPM	20	18.87	40	37.74
Paying or receiving less than R10 PBPM	14	13.21	54	50.94
Receive between R10 and R40 PBPM	10	9.43	64	60.38
Receive between R40 and R75 PBPM	14	13.21	78	73.58
Receive more than R75 PBPM	28	26.42	106	100.00

Figure 13 below illustrates the variation in the scheme risk based on the Full table for September 2009. Based on the submitted data there is one scheme that will receive R298.50 per beneficiary for September 2009. This is a small scheme with between 5 000 and 10 000 beneficiaries and it was classified as a Category 3 scheme by the REF analysts. The maximum net payer for September 2009 (R123.47 per beneficiary) is a scheme with between 10 000 and 30 000 beneficiaries and the scheme was classified as a Category 3 scheme by the REF analysts (see For September there are four net receiver schemes classified as Category 9 schemes and eight net payer schemes classified as Category 9 schemes. That is if we assume that payment of less than R10 is not significant.

Table 25, page 38).



**Figure 13: Scheme risk by scheme (December 2009)**



below shows the number of schemes per payment band and category for September 2009. There is one Category 8 scheme (irregularities with maternity data) that is supposed to receive more than R75.00 per beneficiary (see also Table 16 for more detail per scheme).

Table 24 below shows the number of schemes per payment band and category for September 2009. There is one Category 8 scheme (irregularities with maternity data) that is supposed to receive more than R75.00 per beneficiary (see also Table 16 for more detail per scheme).

**Table 24: Scheme risk versus category (December 2009)**

<i>Scheme Risk</i>	<i>Category</i>							
Frequency								
Row Pct								
Col Pct	<b>3</b>	<b>3H</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>Total</b>
<b><i>Pay more than R 75 pbpm</i></b>	4	0	2	2	0	0	3	11
	36.36	0.00	18.18	18.18	0.00	0.00	27.27	
	6.06	0.00	50.00	66.67	0.00	0.00	18.75	
<b><i>Pay between R 40 and R 75 pbpm</i></b>	5	2	0	0	0	0	2	9
	55.56	22.22	0.00	0.00	0.00	0.00	22.22	
	7.58	15.38	0.00	0.00	0.00	0.00	12.50	
<b><i>Pay between R 10 and R 40 pbpm</i></b>	13	3	1	0	0	0	3	20
	65.00	15.00	5.00	0.00	0.00	0.00	15.00	
	19.70	23.08	25.00	0.00	0.00	0.00	18.75	



<b><i>Paying or receiving less than R 10 pbpm</i></b>	6 42.86 9.09	2 14.29 15.38	0 0.00 0.00	1 7.14 33.33	1 7.14 33.33	0 0.00 0.00	4 28.57 25.00	14
<b><i>Receive between R 10 and R 40 pbpm</i></b>	7 70.00 10.61	2 20.00 15.38	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 10.00 6.25	10
<b><i>Receive between R 40 and R 75 pbpm</i></b>	11 78.57 16.67	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 21.43 18.75	14
<b><i>Receive more than R 75 pbpm</i></b>	20 71.43 30.30	4 14.29 30.77	1 3.57 25.00	0 0.00 0.00	2 7.14 66.67	1 3.57 100.00	0 0.00 0.00	28
<b><i>Total</i></b>	<b>66</b>	<b>13</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>16</b>	<b>106</b>

For September there are four net receiver schemes classified as Category 9 schemes and eight net payer schemes classified as Category 9 schemes. That is if we assume that payment of less than R10 is not significant.



**Table 25: Detailed list of scheme risks for September 2008**

<b>Scheme</b>	<b>Number of beneficiaries</b>	<b>Category</b>	<b>Scheme Risk (Rand)</b>
1	5 000 - 10 000	3	-298.5
2	100 000 or more	7	-224.3
3	5 000 - 10 000	3	-211.9
4	< 5 000	9	-205.4
5	100 000 or more	3H	-185.4
6	< 5 000	5	-179.6
7	10 000 - 30 000	3	-165.8
8	< 5 000	3	-164.3
9	10 000 - 30 000	3H	-146.3
10	10 000 - 30 000	3	-137.5
11	30 000 - 60 000	3	-135.3
12	10 000 - 30 000	3	-132.3
13	5 000 - 10 000	3	-129.9
14	10 000 - 30 000	3	-127
15	100 000 or more	9	-126
16	10 000 - 30 000	3	-124.9
17	30 000 - 60 000	8	-115.2
18	60 000 - 100 000	9	-113.5
19	< 5 000	3	-110
20	10 000 - 30 000	3	-103.6
21	5 000 - 10 000	3	-101.3
22	10 000 - 30 000	3	-100.1
23	5 000 - 10 000	9	-97.96
24	10 000 - 30 000	3H	-94.71
25	5 000 - 10 000	3	-86.39
26	10 000 - 30 000	3	-85.49
27	5 000 - 10 000	3	-84.86
28	30 000 - 60 000	3H	-84.05
29	30 000 - 60 000	3	-80.38
30	< 5 000	3	-76.93
31	5 000 - 10 000	3	-72.1
32	10 000 - 30 000	3	-71.51
33	5 000 - 10 000	3	-58.88
34	< 5 000	3	-54.34
35	< 5 000	3	-51.24
36	10 000 - 30 000	3	-49.81
37	5 000 - 10 000	3	-49.11
38	60 000 - 100 000	3	-45.29
39	10 000 - 30 000	3	-45.22
40	5 000 - 10 000	3	-43.48
41	30 000 - 60 000	3	-41.94



42	60 000 - 100 000	9	-37.36
43	30 000 - 60 000	9	-34.63
44	10 000 - 30 000	3	-29.33
45	5 000 - 10 000	3	-23.61
46	30 000 - 60 000	9	-23.03
47	100 000 or more	3	-22.7
48	100 000 or more	3	-21.7
49	10 000 - 30 000	3	-20.35
50	100 000 or more	3H	-18.97
51	< 5 000	3	-17.11
52	5 000 - 10 000	3	-13.46
53	5 000 - 10 000	3H	-10.82
54	< 5 000	3	-8.2
55	30 000 - 60 000	3	-7.26
56	100 000 or more	9	-6.21
57	< 5 000	3	-3.06
58	< 5 000	3	-2.89
59	30 000 - 60 000	9	-1.83
60	10 000 - 30 000	3H	1.23
61	60 000 - 100 000	3	3.79
62	100 000 or more	3	4.82
63	100 000 or more	9	5.29
64	60 000 - 100 000	9	10.63
65	5 000 - 10 000	3	11.63
66	10 000 - 30 000	3	13.69
67	10 000 - 30 000	3	13.74
68	30 000 - 60 000	3	13.85
69	100 000 or more	3	15.94
70	< 5 000	3H	17.19
71	100 000 or more	3	17.52
72	100 000 or more	3	18.78
73	< 5 000	3	26.34
74	10 000 - 30 000	3	26.6
75	10 000 - 30 000	3	27.38
76	10 000 - 30 000	3	29.21
77	< 5 000	3	36.69
78	10 000 - 30 000	3	36.77
79	10 000 - 30 000	3	36.92
80	10 000 - 30 000	3H	37.22
81	30 000 - 60 000	3	37.53
82	10 000 - 30 000	3	37.6
83	10 000 - 30 000	9	41.51
84	10 000 - 30 000	3	42.17
85	100 000 or more	3H	42.45



86	100 000 or more	6	44.36
87	10 000 - 30 000	3	49.7
88	5 000 - 10 000	3	56.2
89	100 000 or more	5	56.98
90	5 000 - 10 000	3	57.61
91	100 000 or more	3	58.37
92	60 000 - 100 000	9	63.29
93	60 000 - 100 000	3H	73.38
94	5 000 - 10 000	6	75.49
95	30 000 - 60 000	9	77.75
96	< 5 000	4	79.92
97	30 000 - 60 000	5	81.68
98	10 000 - 30 000	3	81.82
99	10 000 - 30 000	6	87.53
100	60 000 - 100 000	5	95.42
101	5 000 - 10 000	3	95.83
102	10 000 - 30 000	3	110.36
103	10 000 - 30 000	9	111.7
104	10 000 - 30 000	3	119.13
105	5 000 - 10 000	9	121.99
106	10 000 - 30 000	3	123.47





Scheme	Category	Number of beneficiaries	Scheme Risk (Rand)
1	3H	5 000 - 10 000	-245.10
2	7	100 000 or more	-199.80
3	3	5 000 - 10 000	-194.10
4	3	10 000 - 30 000	-185.30
5	3H	100 000 or more	-183.30
6	3	10 000 - 30 000	-146.90
7	3	30 000 - 60 000	-144.80
8	3	< 5 000	-142.00
9	3	5 000 - 10 000	-124.20
10	3	10 000 - 30 000	-122.90
11	3	5 000 - 10 000	-117.90
12	7	100 000 or more	-115.80
13	3H	10 000 - 30 000	-113.30
14	3	< 5 000	-103.40
15	9	60 000 - 100 000	-102.30
16	9	< 5 000	-93.64
17	7	60 000 - 100 000	-92.89
18	3	10 000 - 30 000	-91.44
19	3	5 000 - 10 000	-90.43
20	3H	10 000 - 30 000	-87.26
21	3L	10 000 - 30 000	-82.98
22	9	10 000 - 30 000	-76.51
23	3	5 000 - 10 000	-75.83
24	3	< 5 000	-75.66
25	3H	10 000 - 30 000	-74.60
26	3H	10 000 - 30 000	-73.30
27	3	5 000 - 10 000	-69.93
28	3	10 000 - 30 000	-66.74
29	3	10 000 - 30 000	-64.71
30	3	< 5 000	-53.67
31	3L	10 000 - 30 000	-52.22
32	3	< 5 000	-50.80
33	3	60 000 - 100 000	-48.03
34	9	100 000 or more	-47.02
35	9	30 000 - 60 000	-45.57
36	3	5 000 - 10 000	-41.88
37	9	10 000 - 30 000	-40.67
38	3	5 000 - 10 000	-39.85
39	3	5 000 - 10 000	-39.40
40	9	30 000 - 60 000	-38.81
41	3	10 000 - 30 000	-36.23
42	3	5 000 - 10 000	-35.37
43	3	< 5 000	-34.41
44	3L	100 000 or more	-33.45
45	3	30 000 - 60 000	-31.84
46	3	< 5 000	-29.19
47	3	10 000 - 30 000	-26.78
48	3	5 000 - 10 000	-21.20
49	3	< 5 000	-19.58
50	3H	5 000 - 10 000	-18.23
51	3	100 000 or more	-16.12
52	3H	100 000 or more	-13.51
53	9	60 000 - 100 000	-12.99
54	9	10 000 - 30 000	-9.22
55	9	30 000 - 60 000	-8.96
56	3	100 000 or more	-8.03
57	3	10 000 - 30 000	-6.92
58	3L	30 000 - 60 000	-1.32
59	9	5 000 - 10 000	0.52
60	3	10 000 - 30 000	1.93
61	9	30 000 - 60 000	2.59
62	9	30 000 - 60 000	5.05
63	3H	100 000 or more	5.42
64	3	< 5 000	6.01
65	3H	< 5 000	6.95
66	3	30 000 - 60 000	8.93
67	3	10 000 - 30 000	9.96



Scheme	Category	Number of beneficiaries	Scheme Risk (Rand)
68	3	5 000 - 10 000	12.75
69	3	60 000 - 100 000	13.04
70	6	< 5 000	13.80
71	3	10 000 - 30 000	18.09
72	3	100 000 or more	18.63
73	3	100 000 or more	21.54
74	9	100 000 or more	21.68
75	3	10 000 - 30 000	23.51
76	5	< 5 000	23.55
77	3	5 000 - 10 000	24.28
78	9	60 000 - 100 000	28.31
79	9	100 000 or more	28.41
80	3H	10 000 - 30 000	29.37
81	9	10 000 - 30 000	30.13
82	3	10 000 - 30 000	30.33
83	3H	10 000 - 30 000	30.66
84	9	< 5 000	31.05
85	3	10 000 - 30 000	37.80
86	9	100 000 or more	38.58
87	3H	30 000 - 60 000	40.25
88	3H	10 000 - 30 000	45.65
89	9	30 000 - 60 000	45.85
90	3	10 000 - 30 000	49.65
91	3H	100 000 or more	51.05
92	3	5 000 - 10 000	52.74
93	3H	100 000 or more	53.17
94	9	< 5 000	56.09
95	3	5 000 - 10 000	56.72
96	9	10 000 - 30 000	58.13
97	3	10 000 - 30 000	68.78
98	9	60 000 - 100 000	69.07
99	9	100 000 or more	71.30
100	3	60 000 - 100 000	71.57
101	3	30 000 - 60 000	79.88
102	3	< 5 000	82.15
103	9	60 000 - 100 000	83.20
104	3L	10 000 - 30 000	83.92
105	3	< 5 000	83.99
106	3	5 000 - 10 000	92.45
107	9	10 000 - 30 000	106.42
108	3	10 000 - 30 000	109.15

**(-) Negative scheme risk: Receive from REF**

**(+) Positive scheme risk: Pay to REF**



## Annexure D: REF health risk factors with numerically or financially significant deviations from expected levels

### TABLE OF CONTENTS

1	INTRODUCTION .....	45
2	TOTAL REPORTED CHRONIC DISEASE LIST (CDL) CONDITIONS .....	47
3	ASTHMA (AST) .....	49
4	BIPOLAR MOOD DISORDER (BMD) .....	51
5	CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) .....	53
6	DIABETES MELLITUS 2 (DM2) .....	55
7	HYPERLIPIDAEMIA (HYL) .....	57
8	THREE SIMULTANEOUS CONDITIONS (CC3) .....	59
9	FOUR OR MORE SIMULTANEOUS CONDITIONS (CC4) .....	61
10	MULTIPLE CDL CONDITIONS .....	63
11	MATERNITY (MAT) .....	65
12	CONCLUSION.....	67

### LIST OF FIGURES

Figure 20:	Expected and reported total CDL cases by age (December 2009) .....	47
Figure 21:	Expected and reported total CDL cases by month (2009).....	48
Figure 22:	Reported total CDL rates by five large administrators .....	48
Figure 23:	Expected and reported rates of AST cases by age (December2009) .....	49
Figure 24:	Expected and reported number of AST cases by month (2009) .....	50
Figure 25:	Reported asthma rates by five large administrators .....	50
Figure 26:	Expected and reported BMD cases by age (December 2009) .....	51
Figure 27:	Expected and reported BMD cases by month (2009).....	52
Figure 28:	Reported BMD rates by five large administrators .....	52
Figure 29:	Expected and reported COPD cases by age (December 2009).....	53
Figure 30:	Expected and reported COPD cases by month (2009) .....	54
Figure 31:	Reported COPD rates by five large administrators (December 2009) .....	54
Figure 32:	Expected and reported DM2 cases by age (December 2009) .....	55
Figure 33:	Expected and reported DM2 cases by month (2009) .....	56
Figure 34:	Reported DM2 rates by five large administrators .....	56
Figure 35:	Expected and reported HYL cases by age (December 2009) .....	57
Figure 36:	Expected and reported HYL cases by month (2009).....	58
Figure 37:	Reported HYL rates by five large administrators (2009) .....	58
Figure 38:	Expected and reported CC3 cases by age (December 2009).....	59
Figure 39:	Expected and reported CC3 cases by month (2009) .....	60
Figure 40:	Reported CC3 rates by five large administrators (2009) .....	60



Figure 41:	Expected and reported CC4 cases by age (December 2009).....	61
Figure 42:	Expected and reported CC4 cases by month (2009) .....	62
Figure 43:	Reported CC4 rates by five large administrators ( December 2009) .....	62
Figure 44:	Expected and reported multiple CDL cases by age (December 2009) .....	63
Figure 45:	Expected and reported multiple CDL cases by month (2009) .....	64
Figure 46:	Reported multiple CDL rates by five large administrators (December 2009) ..	64
Figure 47:	Expected and reported MAT cases by age (December 2009) .....	65
Figure 48:	Expected and reported MAT cases by month (2009) .....	66
Figure 49:	Reported MAT rates by five large administrators (December 2009) .....	66

## LIST OF TABLES

Table 28:	Expected and actual estimated REF risk factor costs.....	46
-----------	--	----



# 1 Introduction

This section reviews cases or conditions with significant numerical or financial deviations from expected levels. Table 26 (page 46) lists the risk factors and their deviation from the expected.

**Table 26: Expected and actual estimated REF risk factor costs**

Amount from REF by Condition			Dec-2009	
	Diff (A-E)	Expected	Actual	A/E
No CDL disease	-48,445,093	1,338,628,294	1,290,183,201	96%
Addison's Disease	-27,717	122,009	94,292	77%
Asthma	-8,638,568	64,783,107	56,144,539	87%
Bronchiectasis	-77,754	337,450	259,696	77%
Bipolar Mood Disorder	14,017,824	7,145,021	21,162,845	296%
Cardiac failure	32,262	-	32,262	0%
Cardiomyopathy	-2,449,762	73,756,841	71,307,079	97%
CHF&CMY	-2,417,500	73,756,841	71,339,341	97%
Chronic Obs. Pulmonary Disease	-19,932,425	44,298,939	24,366,514	55%
Chronic Renal Disease	7,997,669	38,565,143	46,562,811	121%
Crohn's Disease	-98,404	2,345,427	2,247,022	96%
Diabetes Insipidus	51,870	107,883	159,753	148%
Diabetes Mellitus 1	2,616,071	37,803,921	40,419,992	107%
Diabetes Mellitus 2	46,364,176	72,697,292	119,061,467	164%
Dysrhythmias	6,043,889	12,551,170	18,595,059	148%
Epilepsy	2,187,236	27,564,567	29,751,802	108%
Glaucoma	1,212,189	7,571,748	8,783,937	116%
Haemophilia	174,980	1,299,510	1,474,489	113%
Hyperlipidaemia	18,641,603	83,911,082	102,552,685	122%
Hypertension	14,200,586	174,580,551	188,781,138	108%
Ulcerative Colitis	122,900	1,604,643	1,727,543	108%
Coronary Artery Disease	5,563,956	71,409,081	76,973,037	108%
Multiple Sclerosis	-1,584,540	10,414,694	8,830,154	85%
Parkinson's Disease	1,612,700	7,021,532	8,634,233	123%
Rheumatoid Arthritis	-1,377,298	12,911,787	11,534,489	89%
Schizophrenia	783,731	1,982,839	2,766,570	140%
Systemic LE	420,889	2,415,819	2,836,709	117%
Hypothyroidism	236,925	15,084,203	15,321,128	102%
HIV/AIDS	12,085,682	71,542,555	83,628,238	117%
Two simultaneous conditions	13,374,955	46,089,936	59,464,891	129%
Three simultaneous conditions	24,357,361	28,645,256	53,002,617	185%
Four or more simultaneous conditions	10,849,490	7,728,150	18,577,639	240%
Maternity Events	7,548,193	195,522,171	203,070,365	104%
Total CDL Conditions	88,094,986	772,286,259	860,381,245	111%
Multiple CDL Conditions	48,581,806	82,463,342	131,045,147	159%
<b>Total</b>	<b>107,865,574</b>	<b>2,460,442,622</b>	<b>2,568,308,196</b>	<b>104%</b>

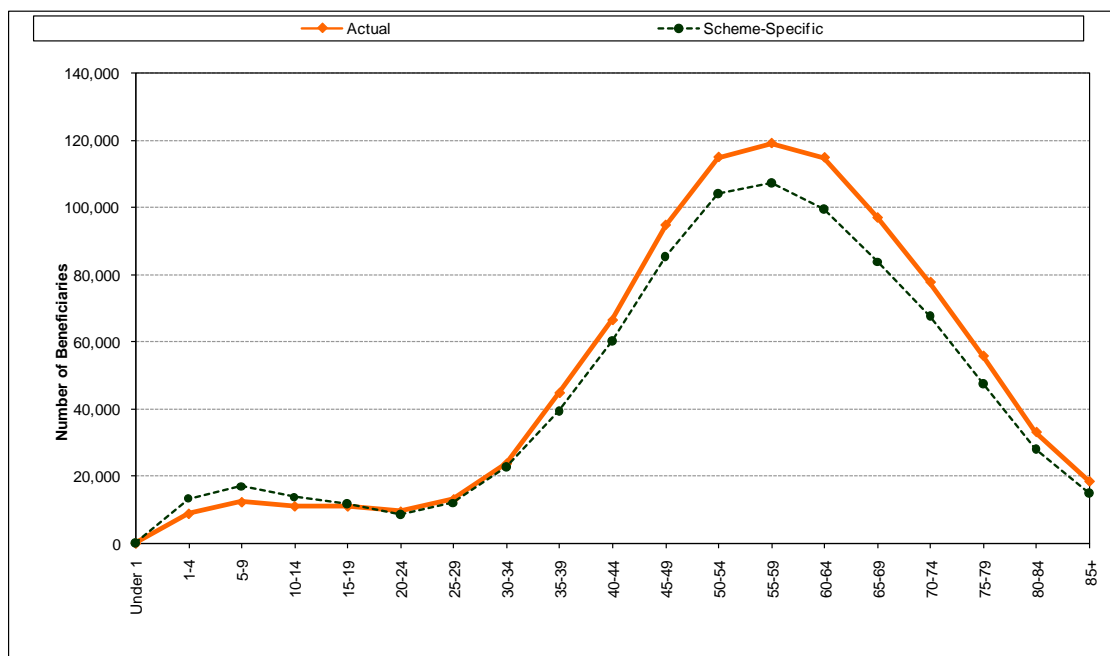
\* "Diff (A-E)" means the difference between actual and reported values while "A / E" means actual divided by expected



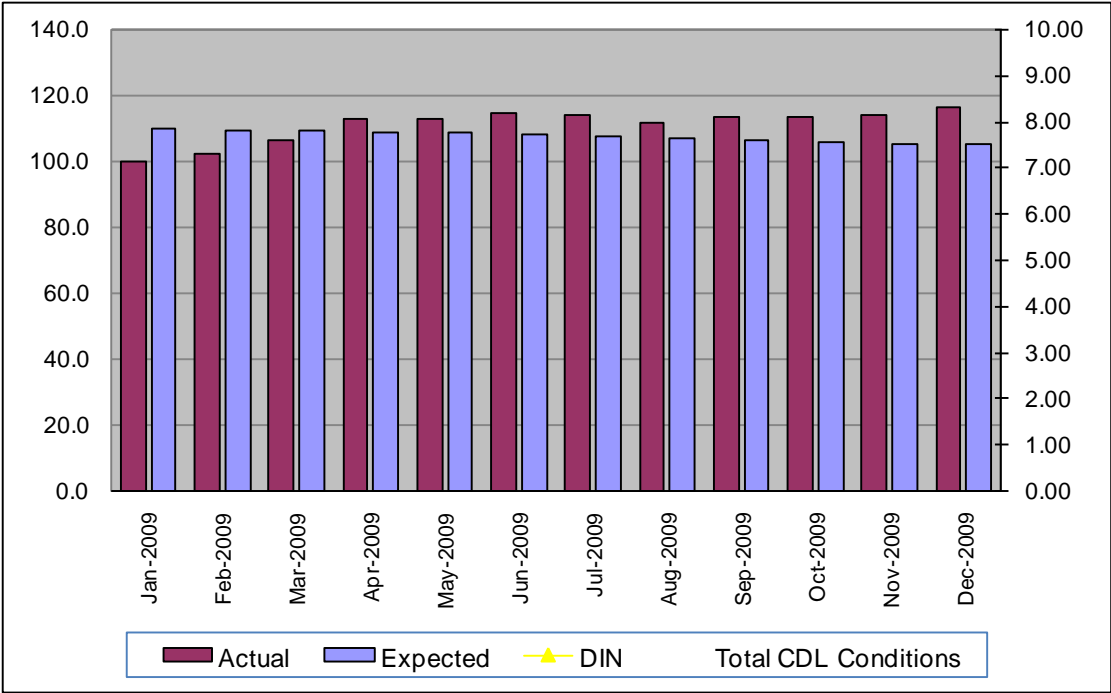
## 2 Total reported Chronic Disease List (CDL) conditions

The higher than expected total CDLs (HIV, MAT, CCs excluded) results in an estimated PMB cost at 4% higher than the expected. This difference constitutes an approximate amount of R107M per month. The reporting of chronic conditions is lower age groups younger than 20 years indicative of a lower burden of chronic diseases in this population, as shown in Figure 20 below. By contrast, CDL levels exceed the expected levels from the age band 50 - 55 years onwards and this can be attributed to some of the most commonly occurring conditions, such as HYP, HYL, DYS, BMD, and IHD.

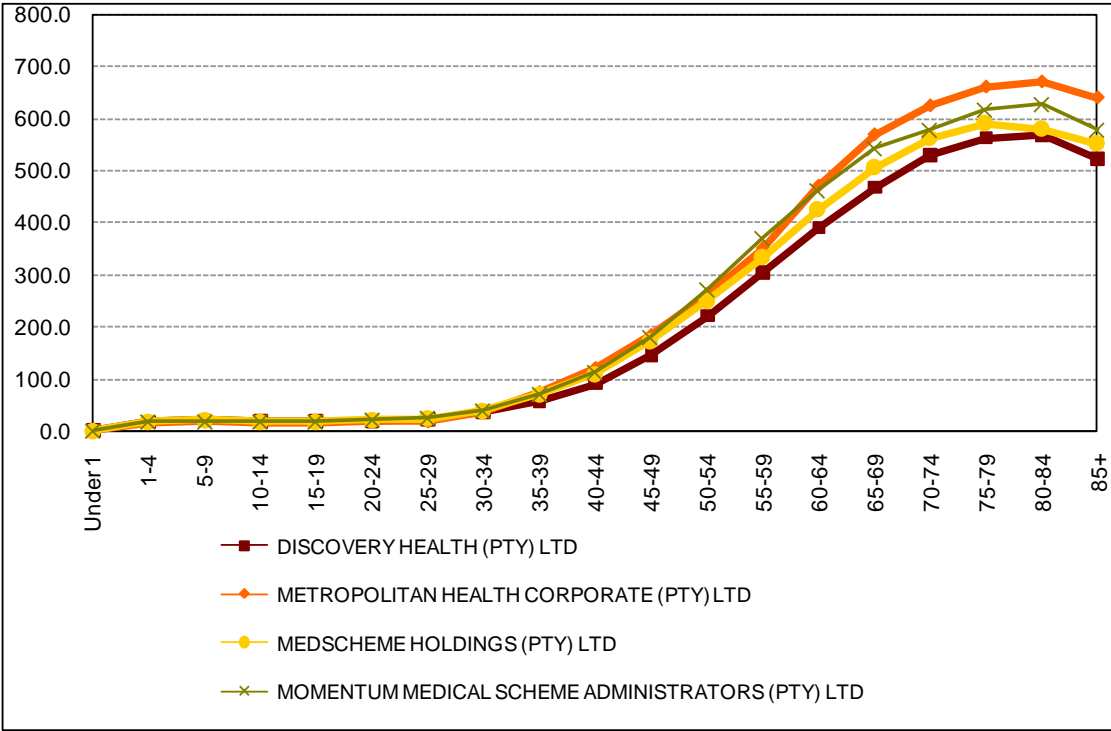
**Figure 14: Expected and reported total CDL cases by age (December 2009)**



**Figure 15: Expected and reported total CDL cases by month (2009)**



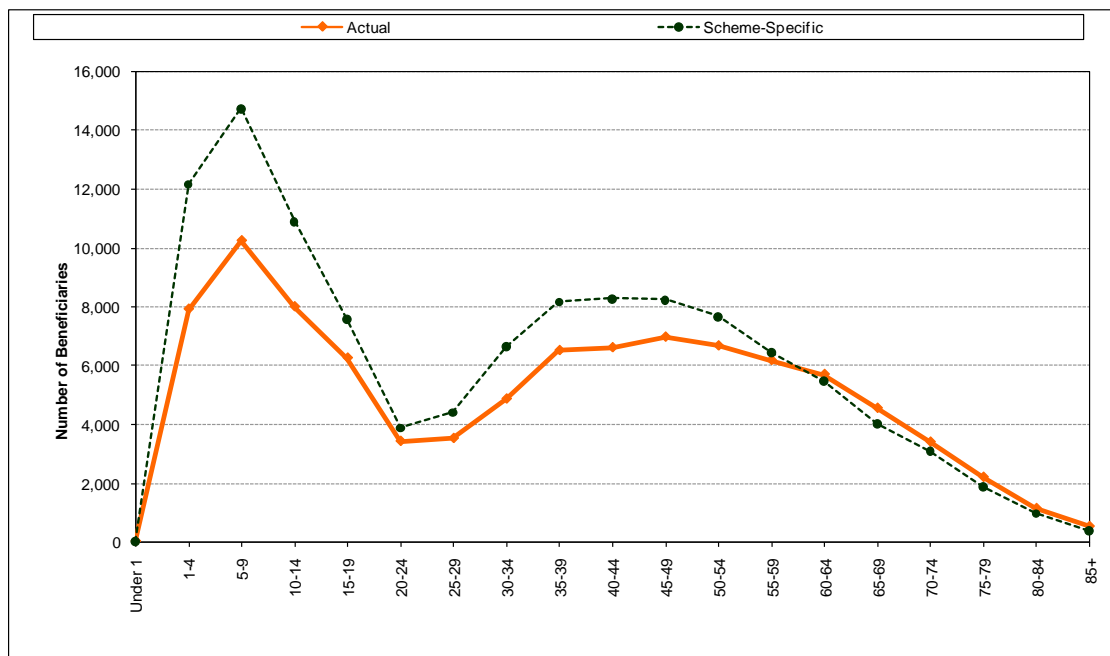
**Figure 16: Reported Total CDL rates by four large administrators**



### 3 Asthma (AST)

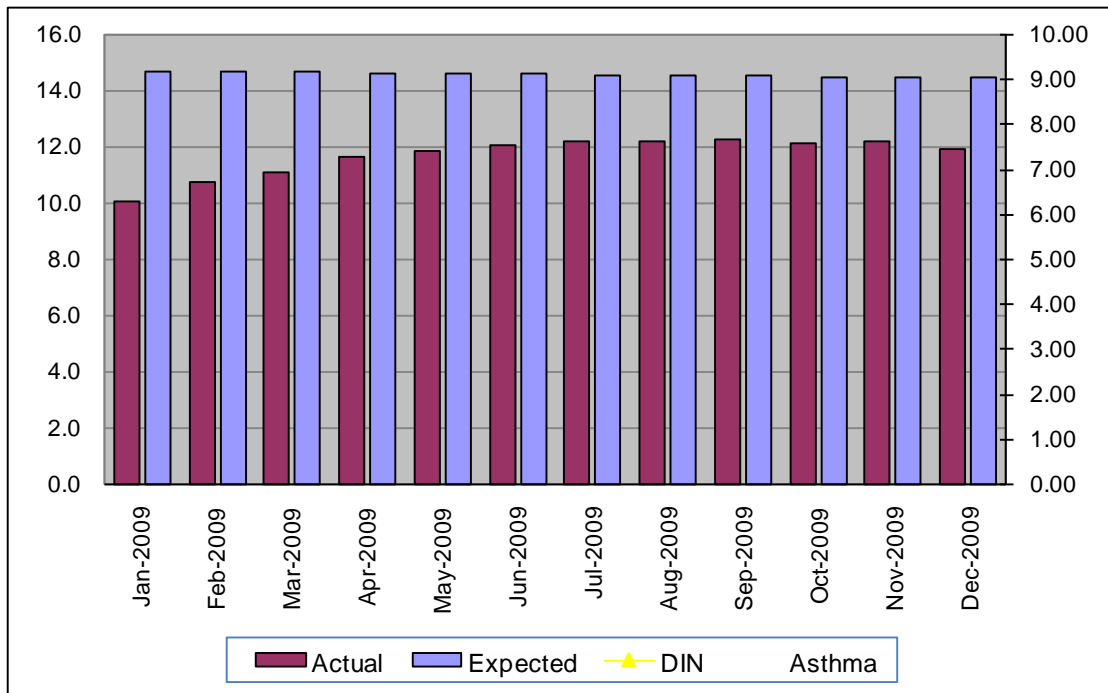
Figure 17 shows that asthma counts peak at young age bands (1 - 4 age bands to 15 - 19 age bands) and in middle age (30 - 35 and 50 – 54) bands. Figure 18 below shows that AST levels are still reported at lower than expected levels, even if seasonal variation is taken into account. As can be seen in Figure 19, Momentum Medical Scheme Administrators (Pty) Ltd administered schemes and Metropolitan Health Corporate (Pty) Ltd administered schemes have reported higher rates of asthma in the older age groups (55 - 59 - 85+ age bands), whereas Medscheme Health administered schemes reported higher rates in the younger (1 - 4 - 15 - 19 age bands) in December 2008.

**Figure 17: Expected and reported rates of AST cases by age (December 2009)**

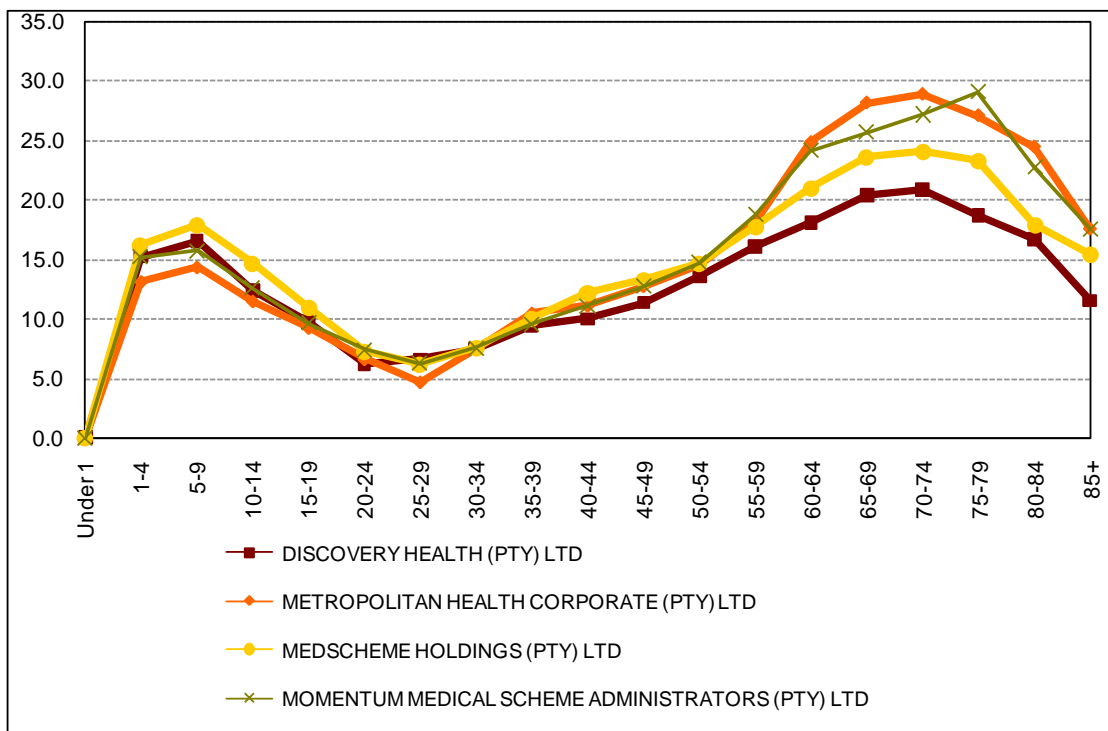




**Figure 18: Expected and reported number of AST cases by month (2009)**



**Figure 19: Reported asthma rates by four large administrators (December 2009)**



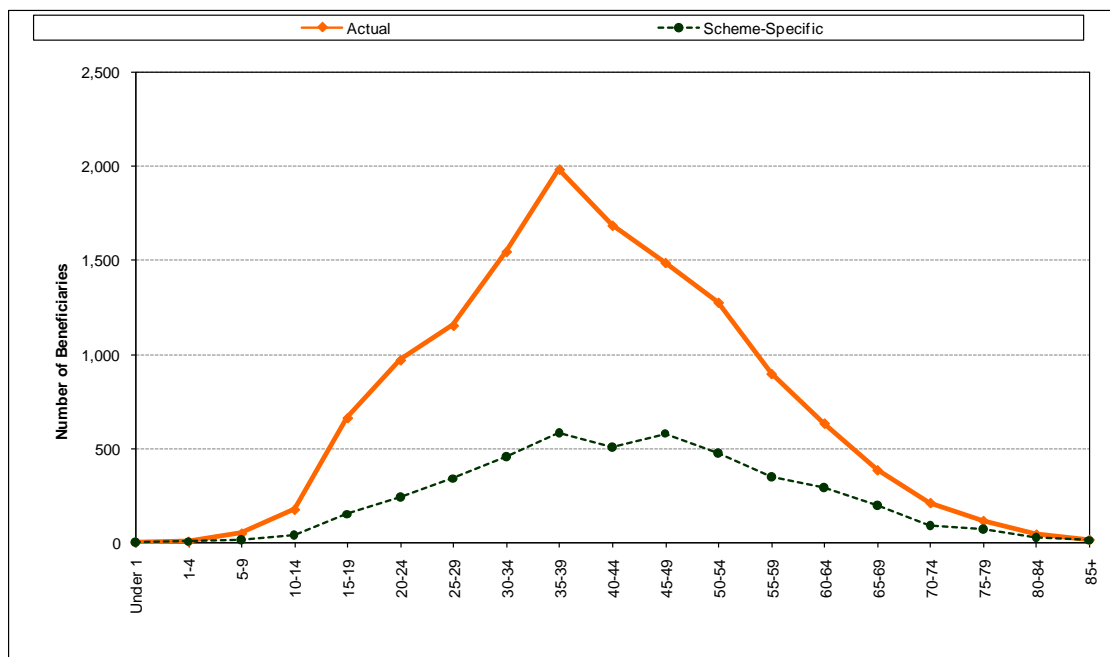
## 4 Bipolar mood disorder (BMD)

Table 26 (page 46) demonstrates that BMD reported count levels are 296% of the expected levels compared to 242% of expected levels for the same period in 2008. Possible reasons for this observed increase are still likely to be a true reflection of the risk faced by scheme or up-coding by providers in order to get access to PMB benefits for mental illnesses.

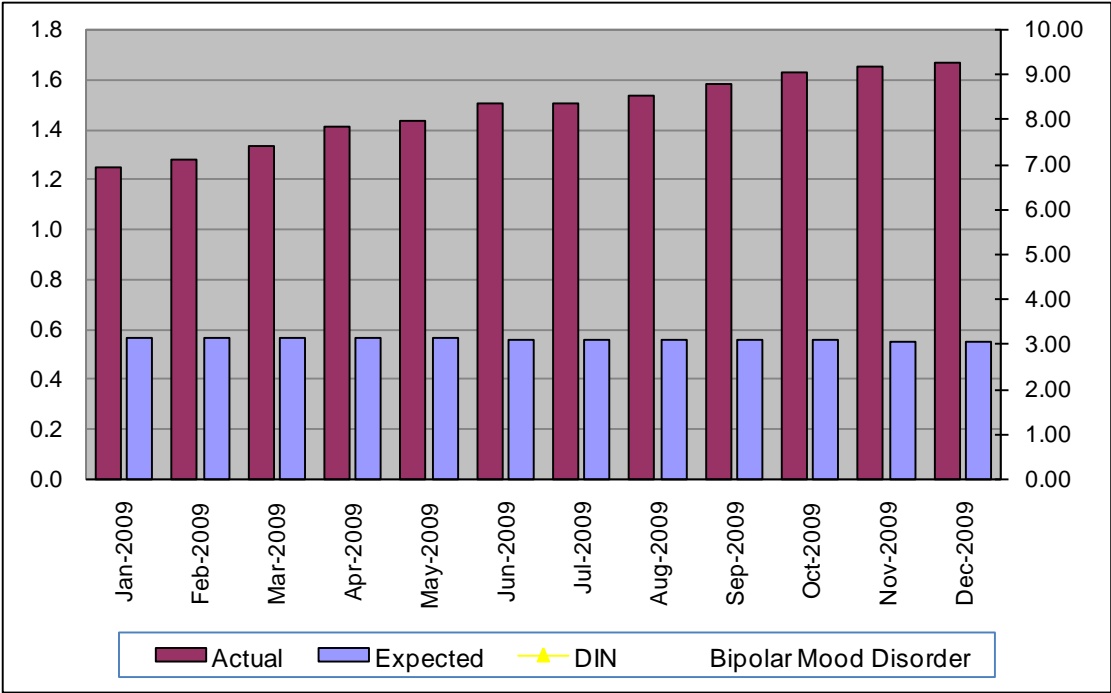
Figure 20 illustrates that BMD is spread across all age bands, from the 10 - 14 age band, peaking at the 30 - 34 age band and is at its lowest in the older age groups (the 70 - 74 age bands onwards).

It is also worth noting that Discovery Health (Pty) Ltd administered schemes continue to have the highest reported rates of BMD cases by far.

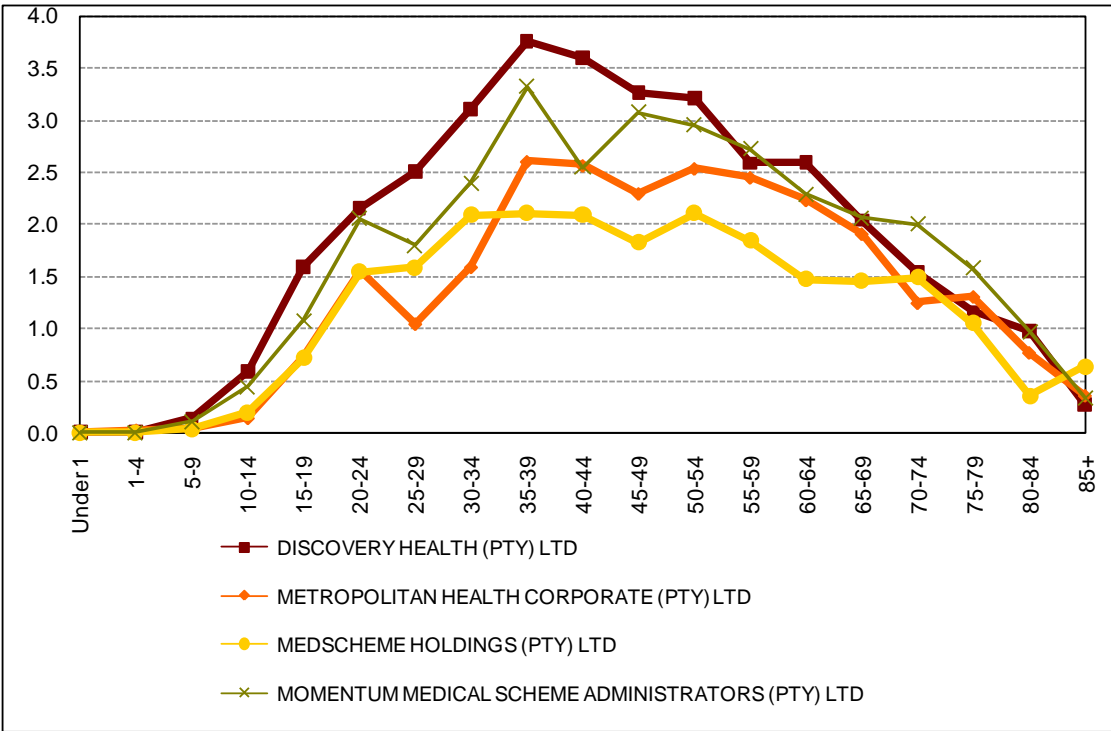
**Figure 20: Expected and reported BMD cases by age (December 2009)**



**Figure 21: Expected and reported BMD cases by month (2009)**



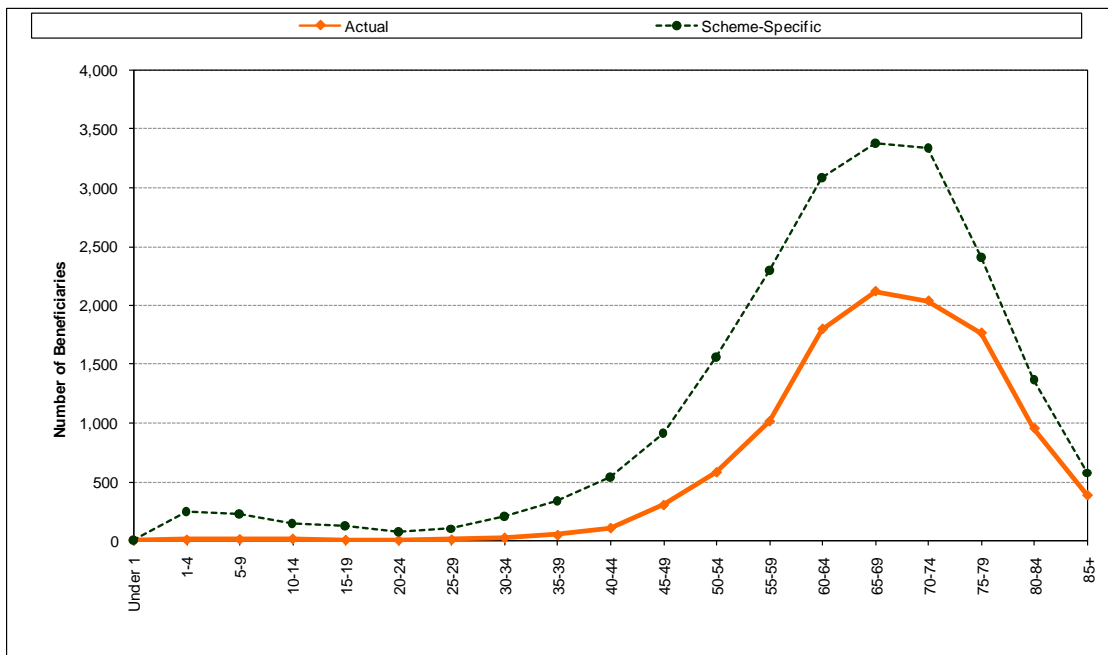
**Figure 22: Reported BMD rates per 1000 by five large administrators (December 2009)**



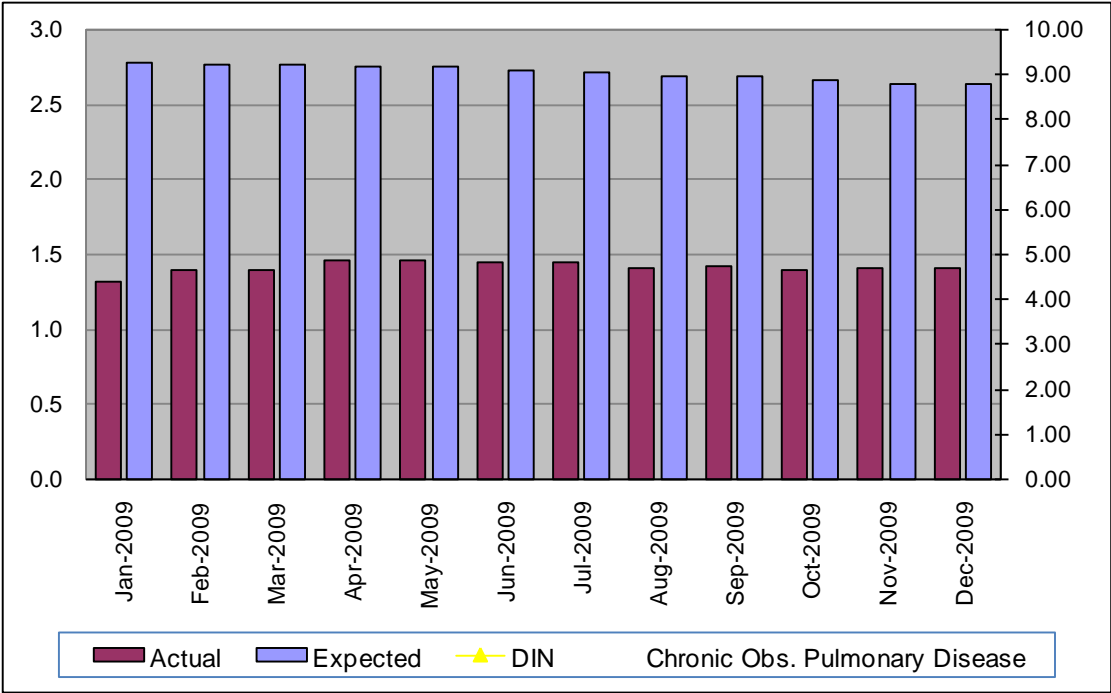
## 5 Chronic obstructive pulmonary disease (COPD)

Schemes reported COPD and other respiratory disease levels consistently below expected levels. It is possible that the REF 2005 study data overestimates the levels of this condition in the industry or that there is a true epidemiologic shift. Future pricing studies will have to confirm the rates of COPD and other respiratory conditions.

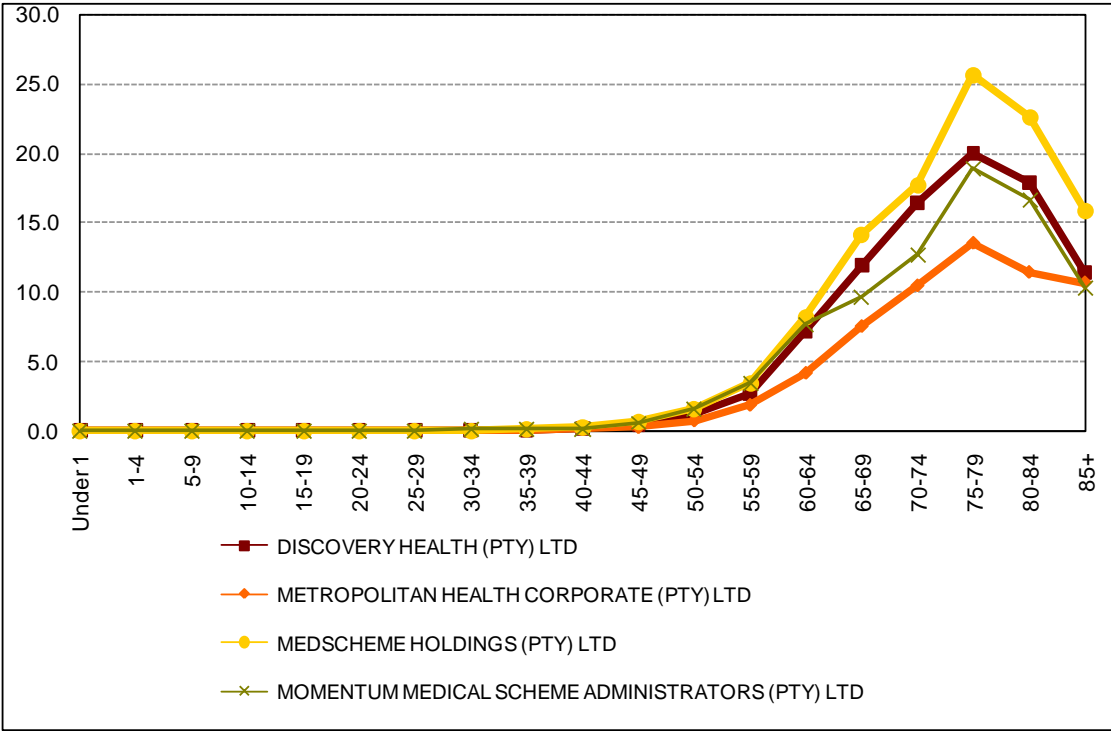
**Figure 23: Expected and reported COPD cases by age (December 2009)**



**Figure 24: Expected and reported COPD cases by month (2009)**



**Figure 25: Reported COPD rates by four large administrators (December 2009)**

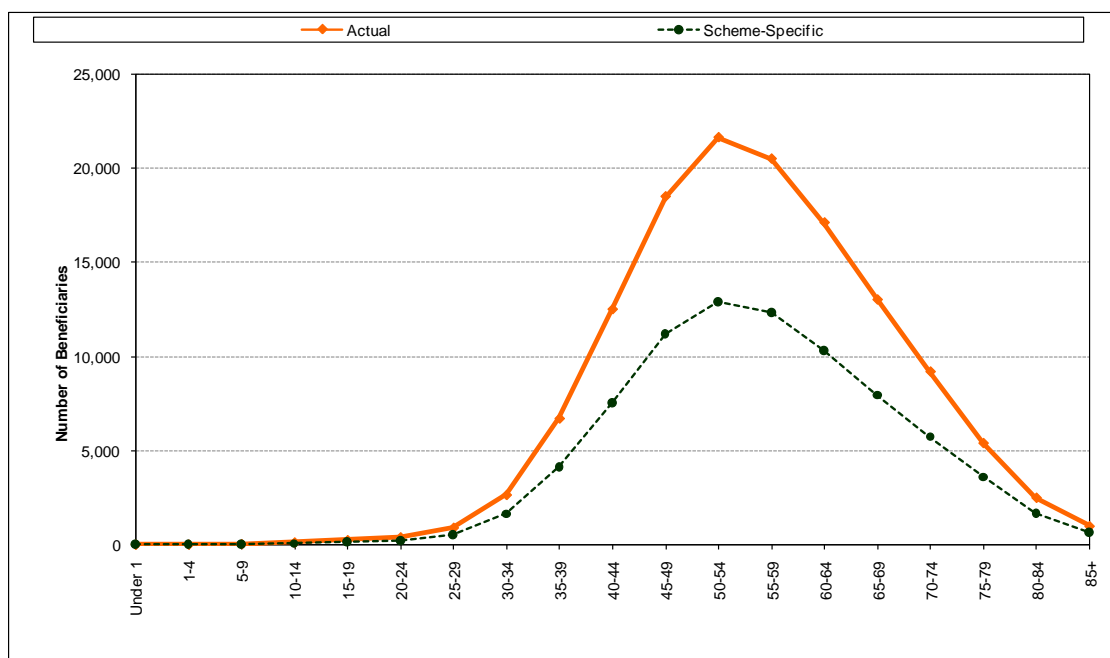


## 6 Diabetes mellitus 2 (DM2)

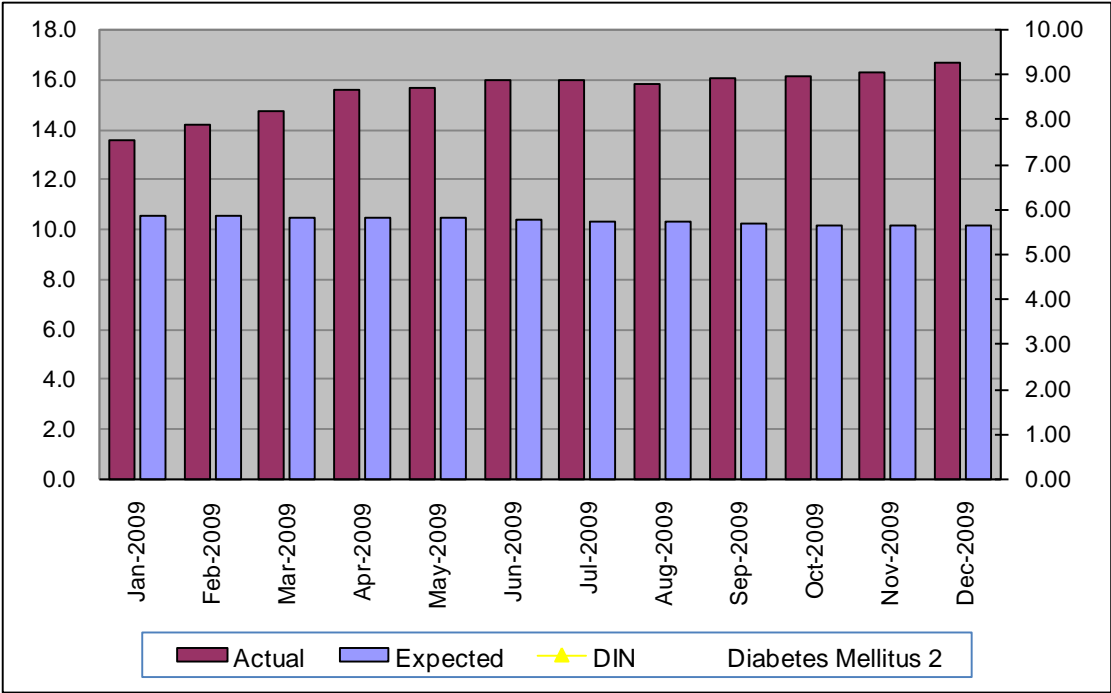
Schemes consistently reported DM2 above the expected levels. Table 26 (page 46) shows that the estimate of this risk factor cost is R46M more than expected in December 2009. A number of factors, such as poor application of REF entry and verification criteria, a true reflection of the industry's risk, and up-coding by providers to assist patients in obtaining PMB benefits for emerging metabolic syndrome, have been hypothesised as the cause for this observation. The epidemiology and therefore the risk on the schemes of metabolic syndrome are poorly understood in the South African population.

The Metropolitan Health Corporate (Pty) Ltd administered schemes have reported the highest rates of DM2, at approximately two times the expected levels.

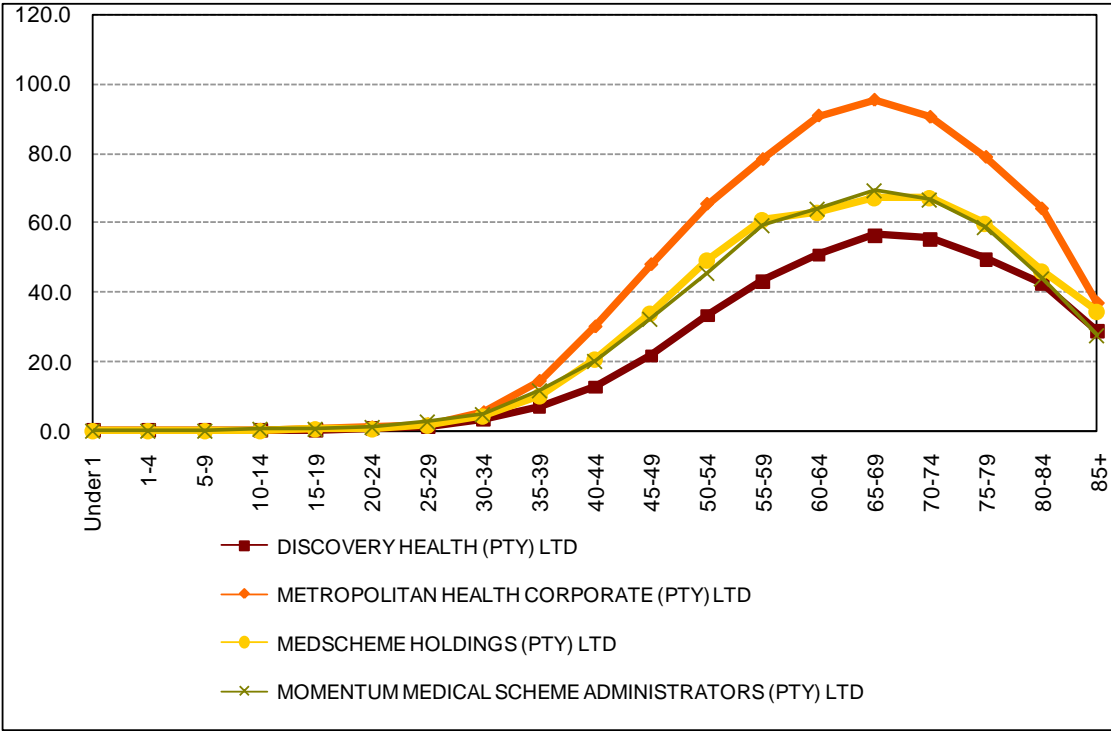
**Figure 26: Expected and reported DM2 cases by age (December 2009)**



**Figure 27: Expected and reported DM2 cases by month (2009)**



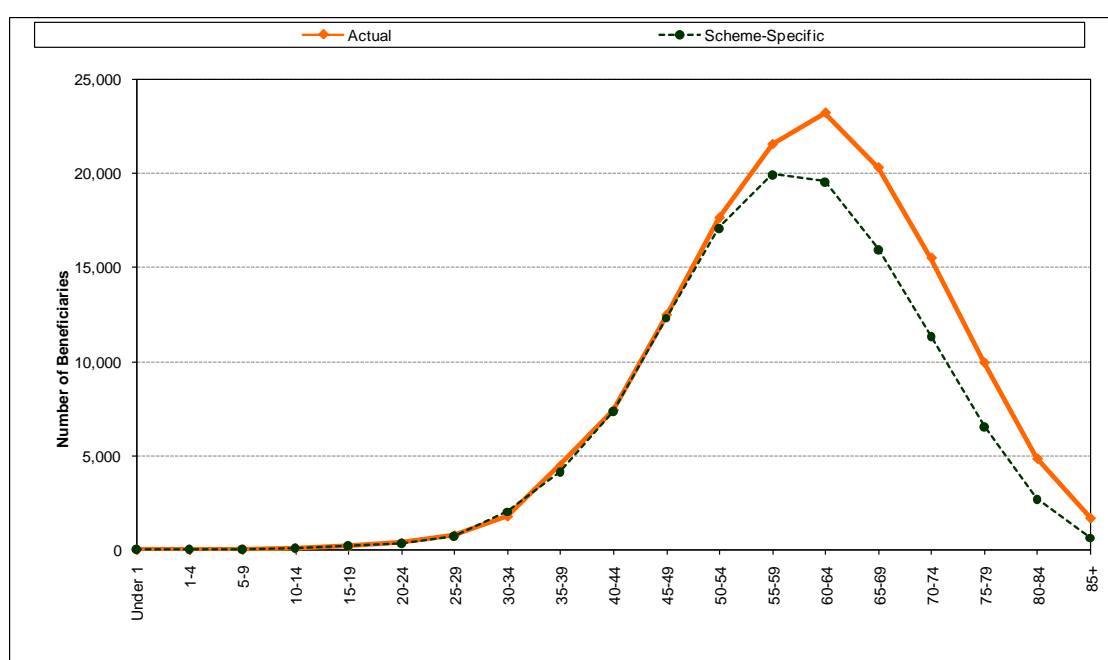
**Figure 28: Reported DM2 rates by four large administrators (December 2009)**



## 7 Hyperlipidaemia (HYL)

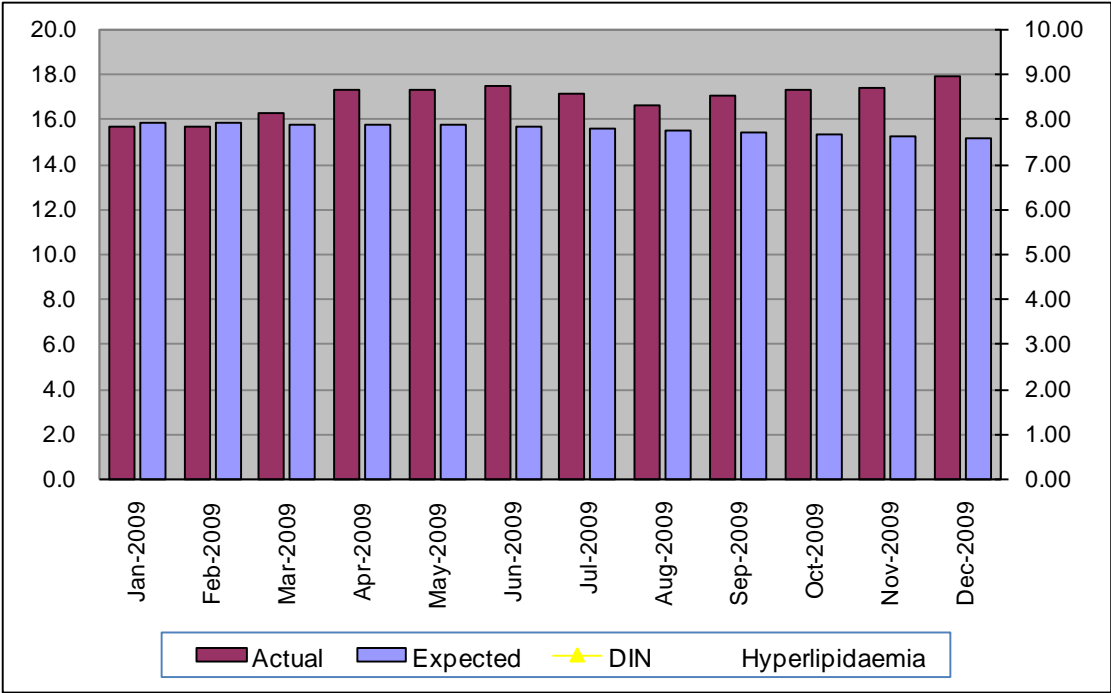
Despite the fact that HYL cases have been reported at 22% above the expected levels, the financial impact on the medical schemes translates to R18M above the estimated cost. This can be attributed to a true risk faced by the scheme as well as the relative high cost of managing this condition. As with most health risk factors, reported HYL levels show a month-to-month and quarter-to-quarter variation. Most schemes have reported HYL rates at approximately the same level as illustrated in Figure 29 below.

**Figure 29: Expected and reported HYL cases by age (December 2009)**

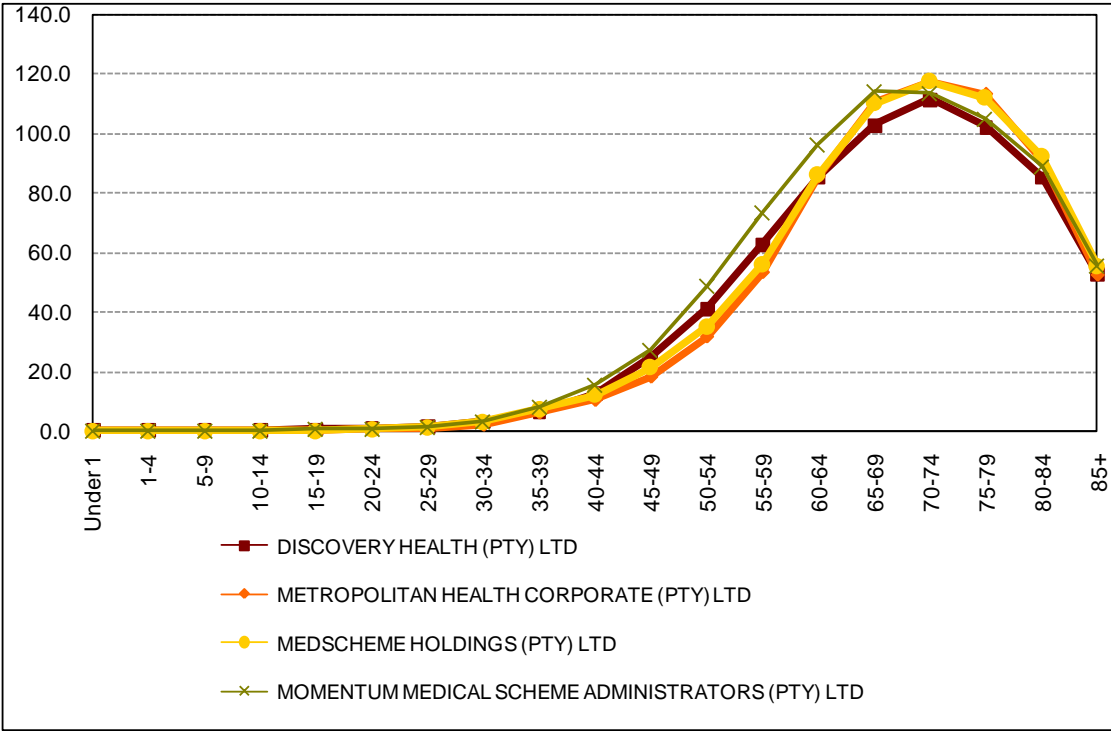




**Figure 30: Expected and reported HYL cases by month (2009)**



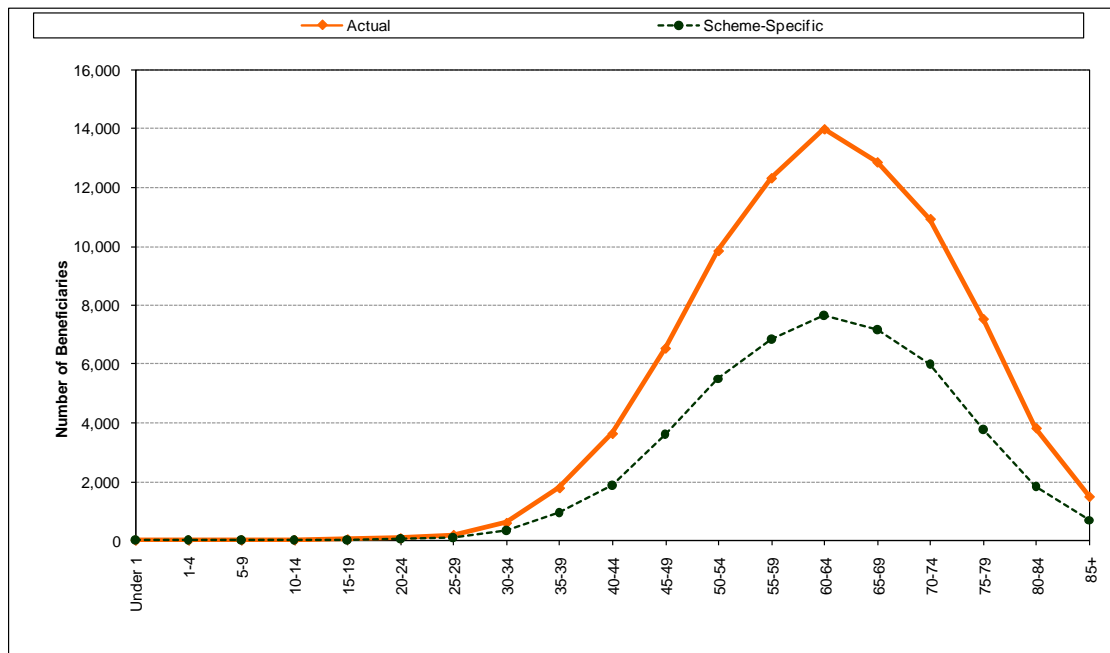
**Figure 31: Reported HYL rates by five large administrators (2009)**



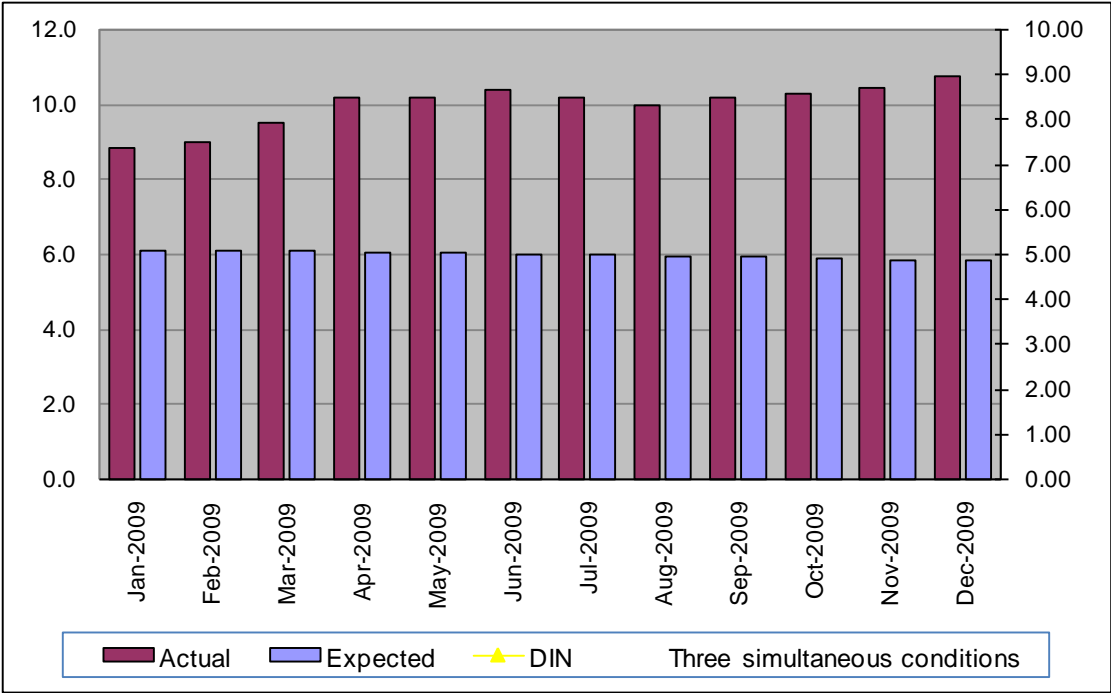
## 8 Three simultaneous conditions (CC3)

Three simultaneous conditions are reported at 185% of expected levels, translating to R24M above the estimated cost. As with most risk factors, there is a noticeable month-to-month and quarter-to-quarter variation, possibly related to data-processing issues and case definition. Metropolitan Health Corporate (Pty) Ltd administered schemes have reported higher rates when compared with other administrator groups. Schemes administered by Discovery Health (Pty) Ltd administrators reported rates similar to other administrator groups in 2008, while very high rates were reported previously.

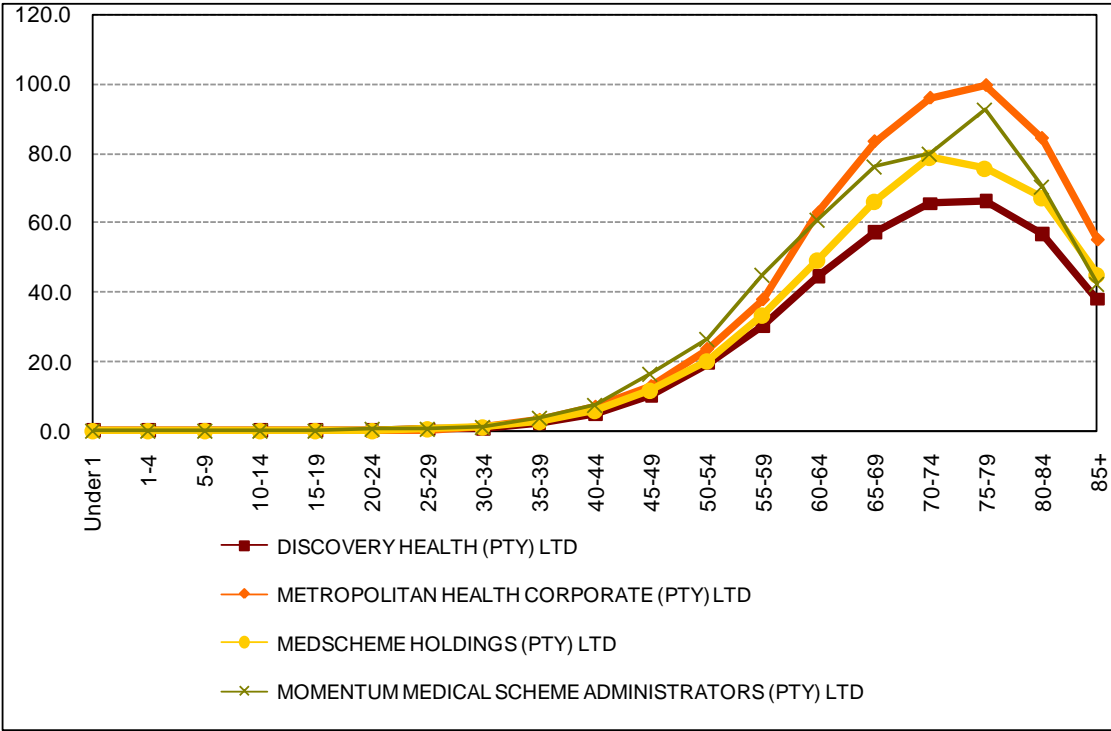
**Figure 32: Expected and reported CC3 cases by age (December 2009)**



**Figure 33: Expected and reported CC3 cases by month (2009)**



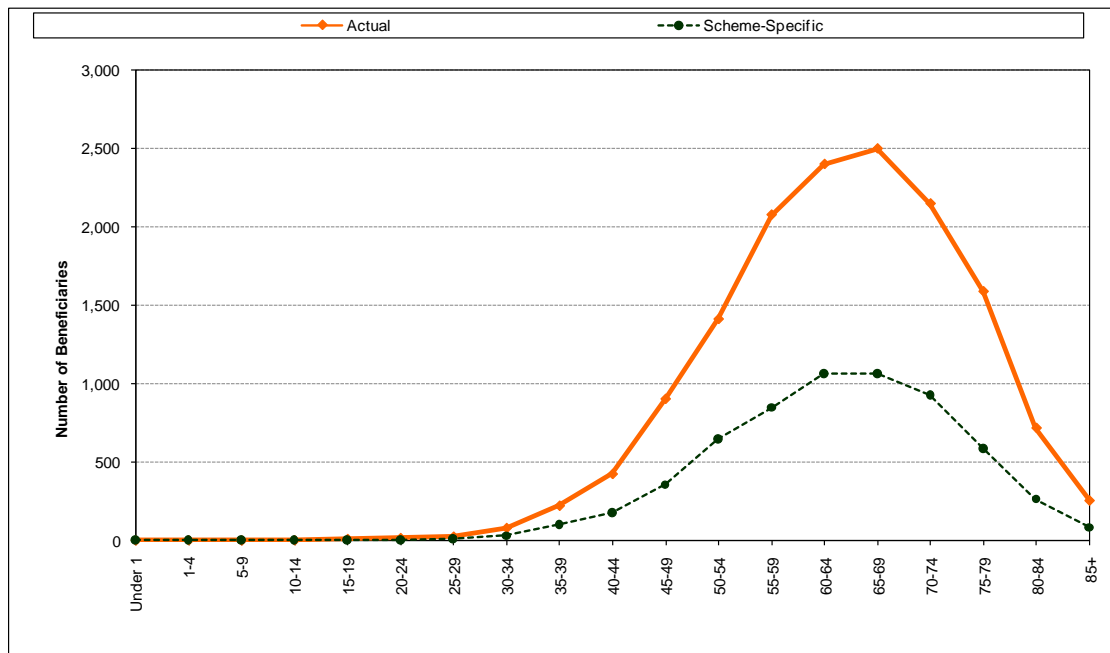
**Figure 34: Reported CC3 rates by four large administrators (2009)**



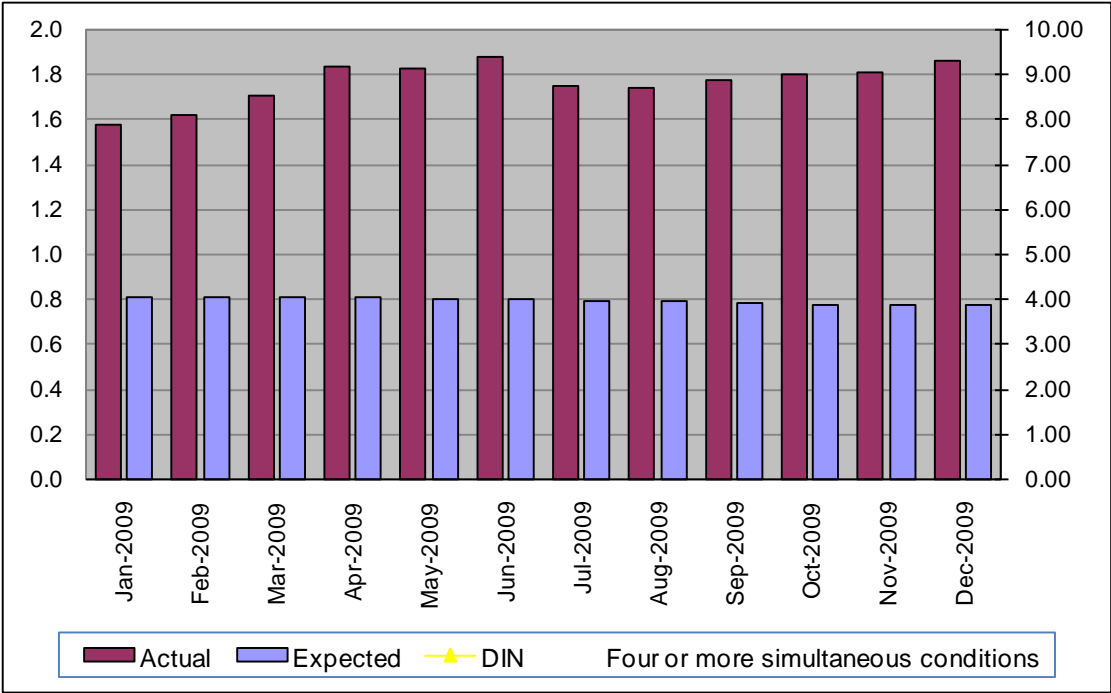
## 9 Four or more simultaneous conditions (CC4)

The levels of four or more simultaneous conditions were the second highest over-reported factor at levels 240% higher than expected. Even though the CC4 cases are reported at such high levels, the financial impact on the industry is not significant as it represents less than 0.5% of the total PMB costs. Similar to CC3 cases, there is a marked large month-to-month and quarter-to-quarter variation and the same justification for this deviation offered above is applicable to this risk factor. Metropolitan Health Corporate (Pty) Ltd administered schemes again reported higher rates compared to other schemes.

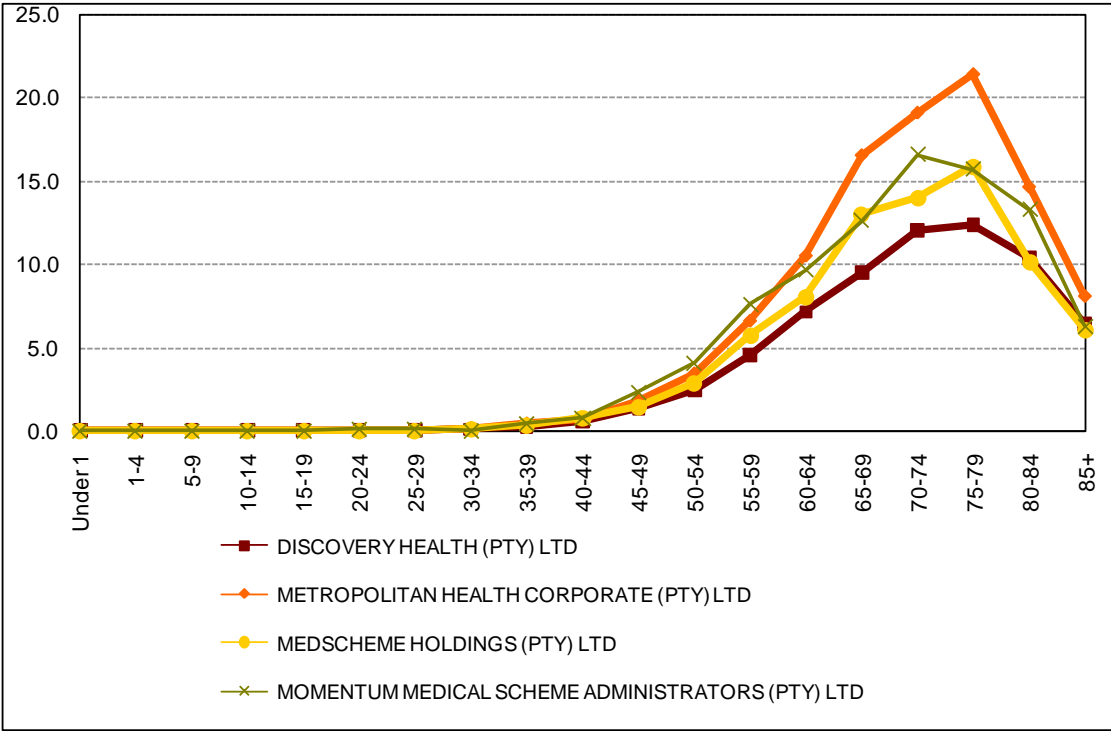
**Figure 35: Expected and reported CC4 cases by age (December 2009)**



**Figure 36: Expected and reported CC4 cases by month (2009)**



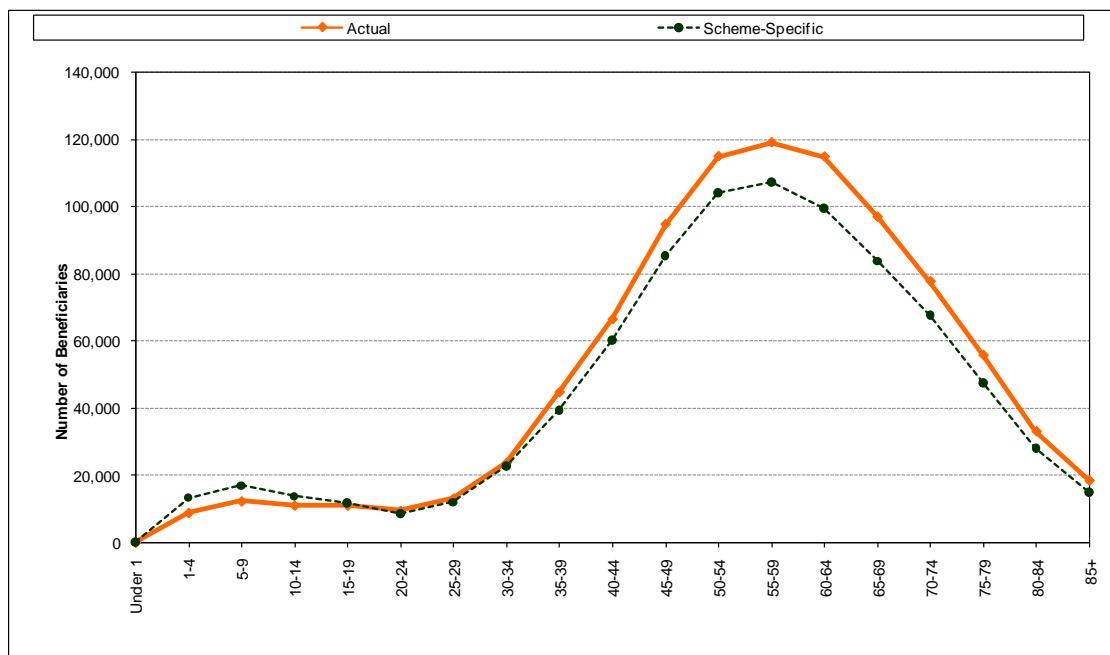
**Figure 37: Reported CC4 rates by five large administrators (December 2009)**



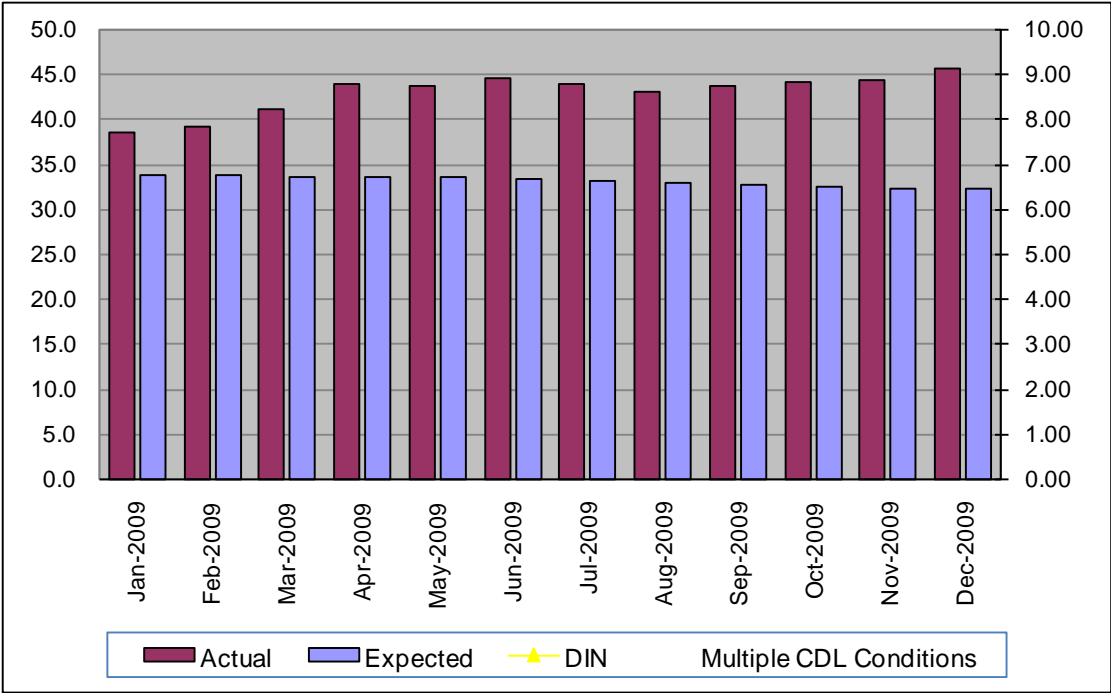
## 10 Multiple CDL conditions

Multiple CDL conditions are reported at 59% above the expected levels, but this deviation represents a substantial financial impact, which is approximately R48M higher than the estimated cost. The multiple CDL rates reported by the four large administrators closely approximate each other with the Metropolitan Health Corporate (Pty) Ltd administered schemes reporting slightly higher rates.

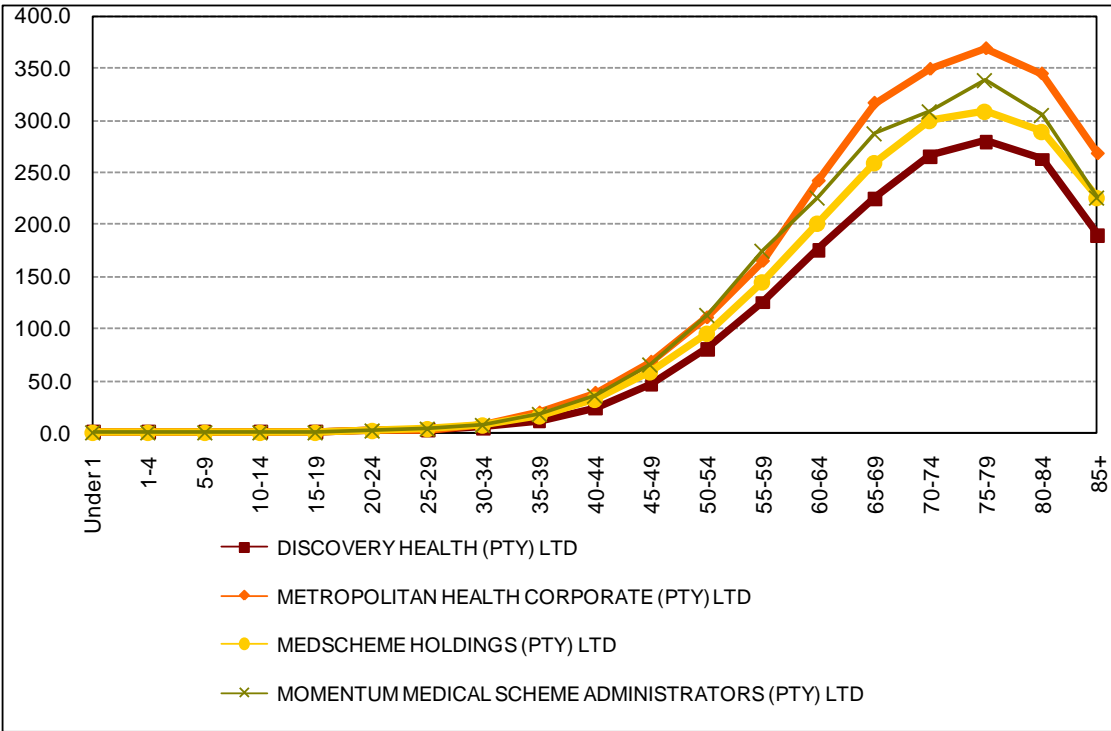
**Figure 38: Expected and reported multiple CDL cases by age (December 2009)**



**Figure 39: Expected and reported multiple CDL cases by month (2009)**



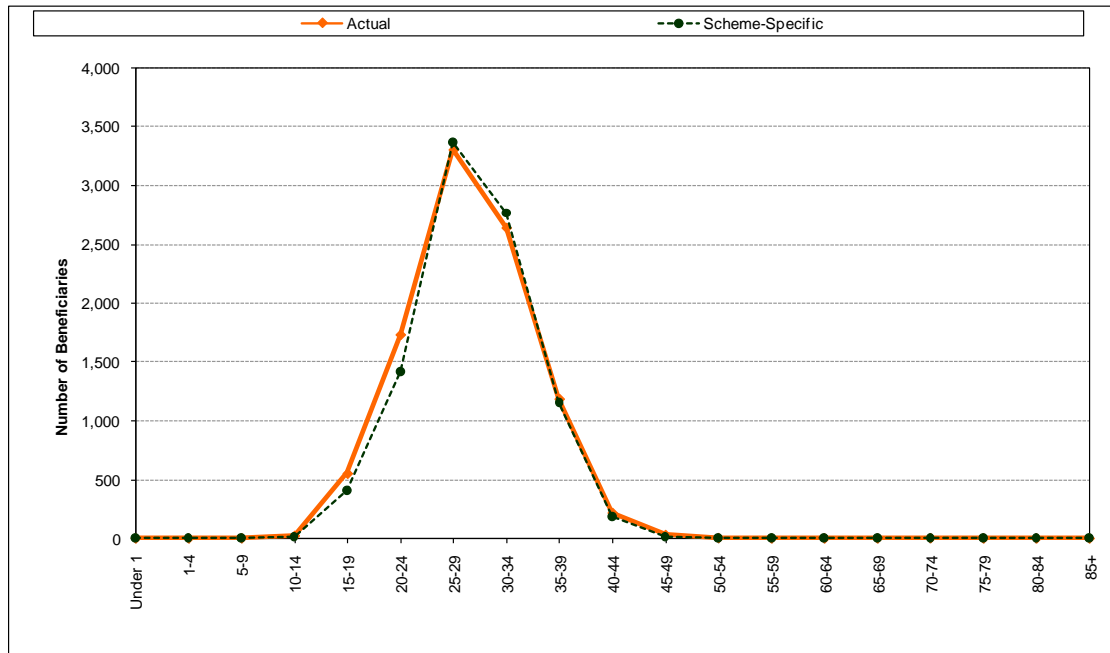
**Figure 40: Reported multiple CDL rates by four large administrators (December 2008)**



## 11 Maternity (MAT)

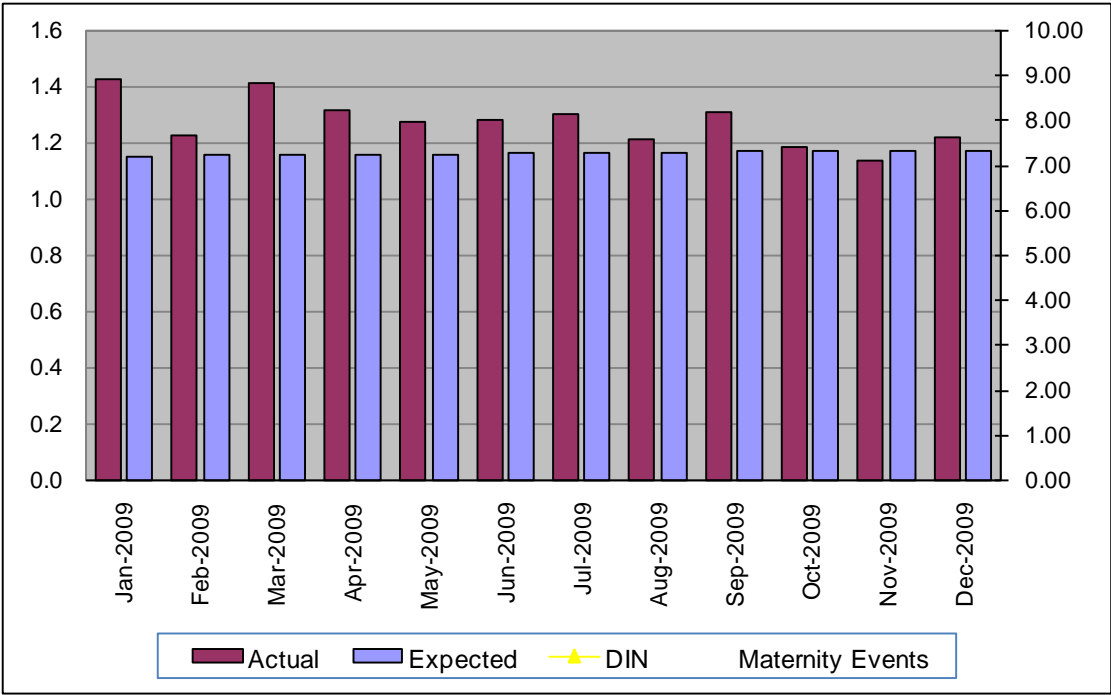
Maternity events are reported at only 4% higher than expected levels and Metropolitan administered schemes have reported slightly higher rates compared to the other administrators.

**Figure 41: Expected and reported MAT cases by age (December 2009)**

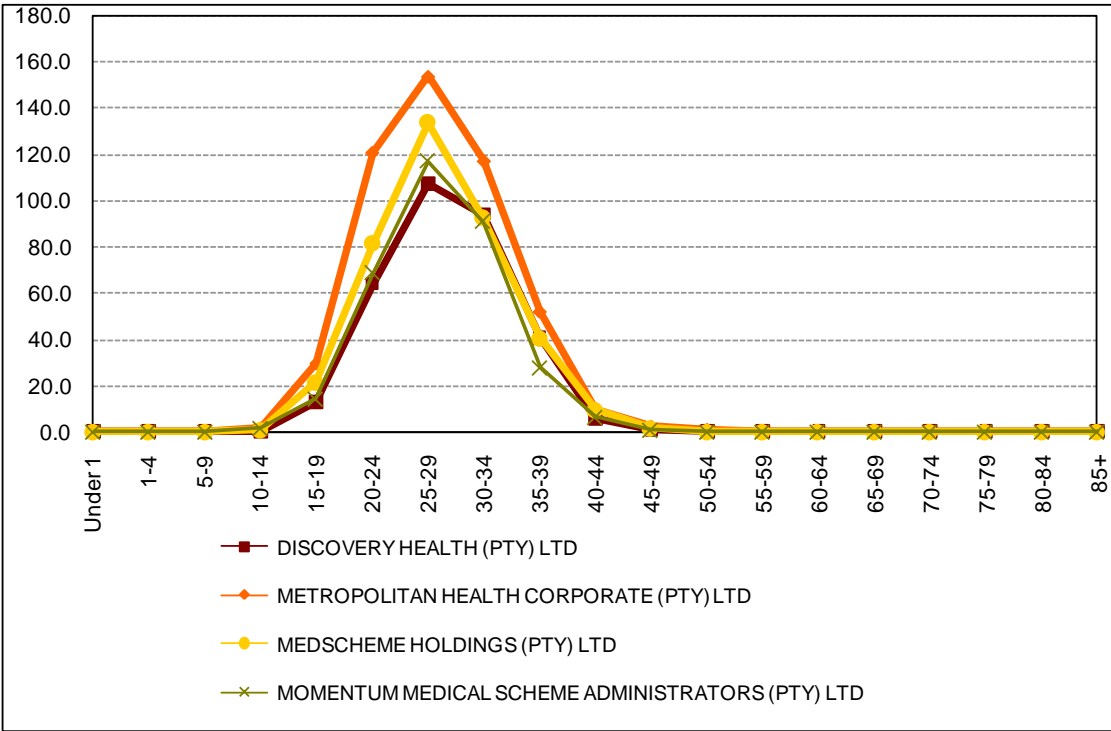




**Figure 42: Expected and reported MAT cases by month (2009)**



**Figure 43: Reported MAT rates by four large administrators (December 2009)**



## 12 Conclusion

The combined effect of the deviations in 2009 amounts to R107M or 4% of the total expected PMB cost. The gap between the expected and actual levels has increased from 3% to 4% in 2008 and 2009 respectively, reversing the downward trend observed in the past three years (2005, 2006, and 2007) estimated at 10.7%, 2.9%, and 0.5% respectively. Possible hypotheses are deterioration in the quality of data submitted by the schemes; a possible shift in the industry's risk profile or outdated scheme-specific expected values, which are based on a study conducted four years ago. There is an urgent need to conduct a costing study of the PMB package which will not only bridge the gap between expected and actual levels of reported chronic conditions but also assist identify possible new health risk factors.



## Annexure E: REF price by age curves and community rate analysis for administrator groups

### [Table of Contents](#)

1.	Benchmarks applied in the price by age curves and community rate analyses .....	70
2.	Discovery Health (Pty) Ltd .....	70
3.	Metropolitan Health Corporate (Pty) Ltd .....	71
4.	Medscheme Holdings (Pty) Ltd.....	73
5.	Momentum Medical scheme Administrators (Pty) Ltd .....	75
6.	V Med Administrators (Pty) Ltd.....	77
7.	Sechaba Medical Solutions (Pty) Ltd .....	79
8.	Allcare Administrators (Pty) Ltd .....	80
9.	Agility Global Health Solutions Africa .....	82
10.	Other Administrators .....	83
11.	Sanlam Healthcare Management (Pty) Ltd.....	85
12.	Sigma Health Fund Managers (Pty) Ltd .....	86
13.	Status Medical Aid Administrators .....	88
14.	Providence Healthcare Risk Managers (Pty) Ltd.....	89
15.	Eternity Private Health Fund Administrators (Pty) Ltd .....	91
16.	Old Mutual Healthcare (Pty) Ltd .....	92
17.	Self-Administered.....	94
Figure 1	Discovery Health (Pty) Ltd: Price by age analysis .....	70
Figure 2	Discovery Health (Pty) Ltd: Community rate analysis .....	71
Figure 3	Metropolitan Health Corporate (Pty) Ltd: Price by age analysis.....	71
Figure 4	Metropolitan Health Corporate (Pty) Ltd: Community rate analysis .....	72
Figure 5	Medscheme Holdings (Pty) Ltd: Price by age analysis .....	73
Figure 6	Medscheme Holdings (Pty) Ltd: Community rate analysis .....	74
Figure 7	Momentum Medical scheme Administrators (Pty) Ltd: Price by age analysis.....	75
Figure 8	Momentum Medical scheme Administrators (Pty) Ltd: Community rate analysis .....	76
Figure 9	V Med Administrators (Pty) Ltd: Price by age analysis.....	77
Figure 10	V Med Administrators (Pty) Ltd: Community rate analysis .....	78
Figure 11	Sechaba Medical Solutions (Pty) Ltd: Price by age analysis.....	79
Figure 12	Sechaba Medical Solutions (Pty) Ltd: Community rate analysis .....	80
Figure 13	Allcare Administrators (Pty) Ltd: Price by age analysis .....	80
Figure 14	Allcare Administrators (Pty) Ltd: Price by age analysis .....	81
Figure 15	Agility Global Health Solutions Africa: Price by age analysis .....	82
Figure 16	Agility Global Health Solutions Africa: Community rate analysis.....	83
Figure 17	Other Administrators: Price by age analysis.....	83
Figure 18	Other Administrators: Price by age analysis.....	84
Figure 19	Sanlam Healthcare Management (Pty) Ltd: Price by age .....	85



Figure 20	Sanlam Healthcare Management (Pty) Ltd: Community rate analysis.....	86
Figure 21	Sigma Health Fund Managers (Pty) Ltd: Price by age analysis .....	86
Figure 22	Sigma Health Fund Managers (Pty) Ltd: Community rate analysis .....	87
Figure 23	Status Medical Aid Administrators: Price by age analysis .....	88
Figure 24	Status Medical Aid Administrators: Community rate analysis .....	89
Figure 25	Providence Healthcare Risk Managers (Pty) Ltd: Price by age analysis .....	89
Figure 26	Providence Healthcare Risk Managers (Pty) Ltd: Community rate analysis .....	90
Figure 27	Eternity Private Health Fund Administrators (Pty) Ltd: Price by age analysis .....	91
Figure 28	Eternity Private Health Fund Administrators (Pty) Ltd: Community rate analysis .....	92
Figure 29	Old Mutual Healthcare (Pty) Ltd: Price by age analysis .....	92
Figure 30	Old Mutual Healthcare (Pty) Ltd: Community rate analysis.....	93
Figure 31	Self-Administered Schemes: Price by age analysis .....	94
Figure 32	Self-Administered Schemes: Community rate analysis .....	95



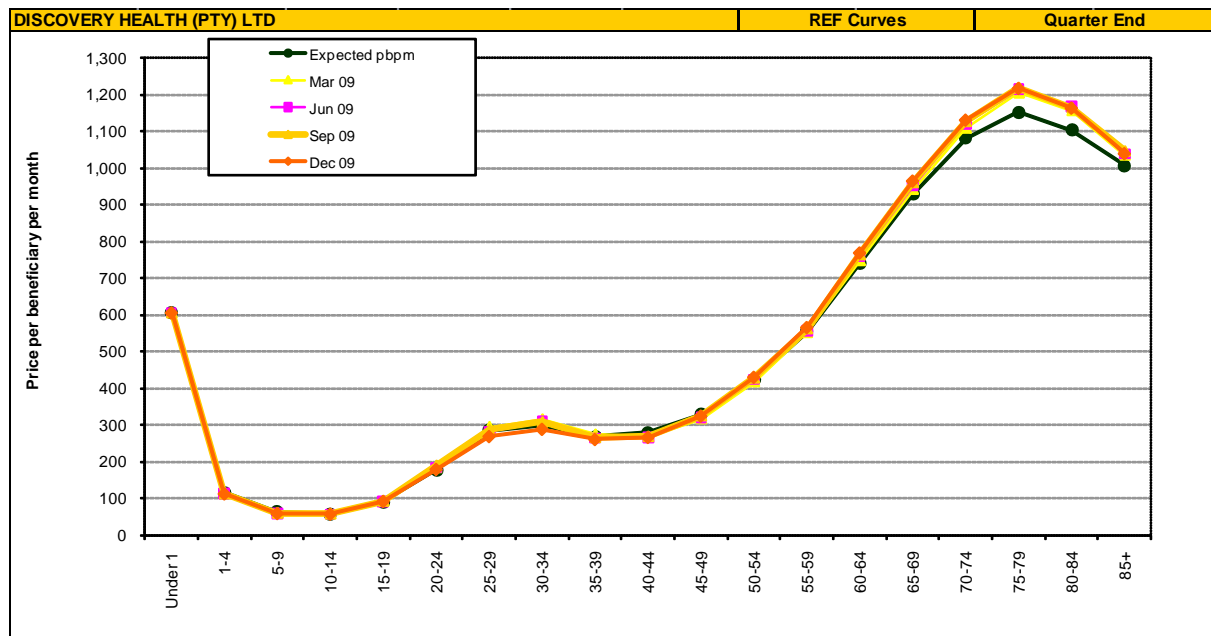
## 1. Benchmarks applied in the price by age curves and community rate analyses

Note that the expected REF risk factor rates applied in this section are the 2005 REF study rates. These curves, therefore express the deviations from the expected study rates. A small administrator that administrates a single scheme with a very low (or high) risk might have very low (or high) price by age curves, which could, in fact, be a true reflection of the particular scheme's true risk. Large fluctuations and trends should however, not be influenced by this single standard benchmark for REF risk factors.

The CMS calculates the industry community rate for each month, using the full set of REF submissions. The community rate analysis used the June 2009 age profile of all REF submission against which administrator age profiles are compared.

## 2. Discovery Health (Pty) Ltd

**Figure 44** Discovery Health (Pty) Ltd: Price by age analysis

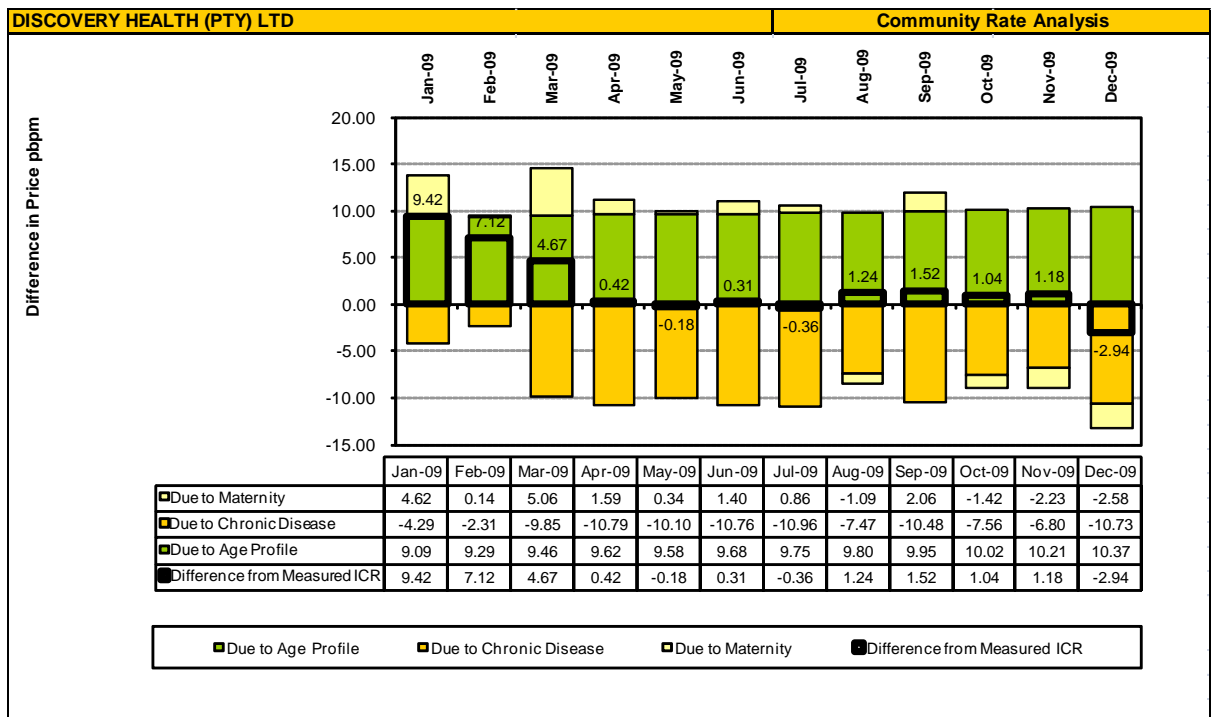


The price by age curves for schemes administered by Discovery Health (Pty) Ltd closely resembles the expected price by age curve for the industry in most age bands, but moves above and below the expected in the ages 29 to 35 and 39 to 49, and from the age bands above 55 years. These deviations can be attributed to the following:

- BMD increased from 306% of the expected in March to 377% in December
- DYS increased from 179% of the expected in March to 188% in December
- CRF increased from 146% of the expected in March to 154% in December



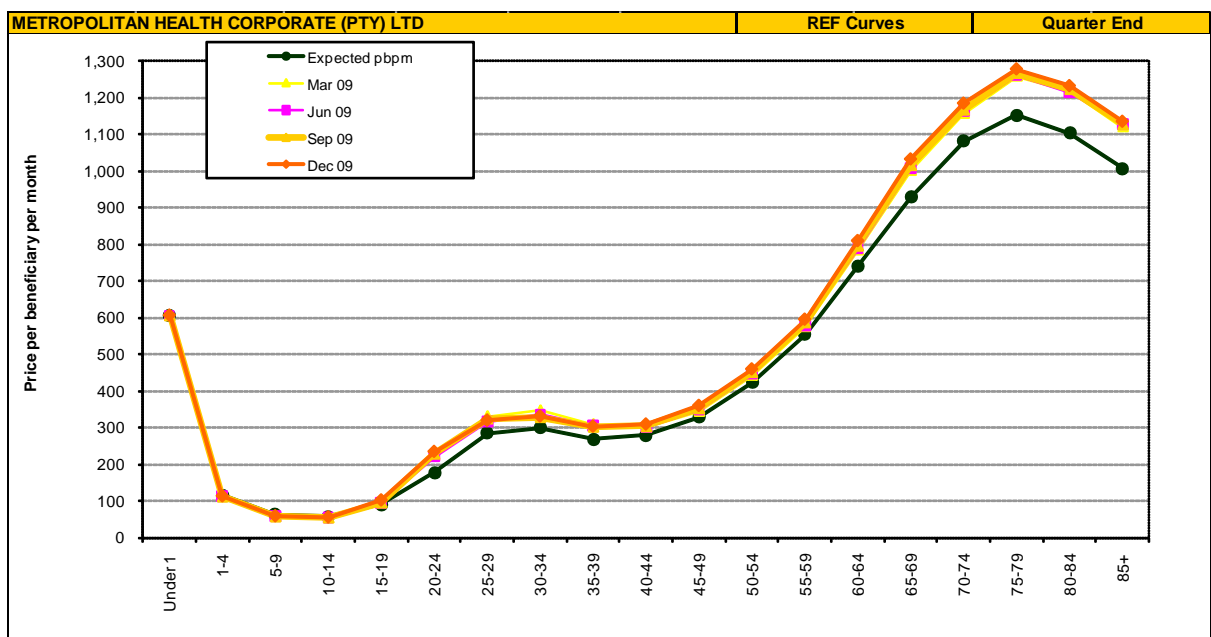
**Figure 45** Discovery Health (Pty) Ltd: Community rate analysis



The Discovery Health administered schemes reported Maternity rates fluctuating between R3.58 pbpm below the expected to R5.06 pbpm above the expected; the Chronic Disease rates were reported at between R2.31 and R10.96 pbpm lower than expected. The slightly older age profile leads to a community rate that fluctuates between R9.09 and R10.37 pbpm higher than the industry community rate for January and December respectively.

### 3. Metropolitan Health Corporate (Pty) Ltd

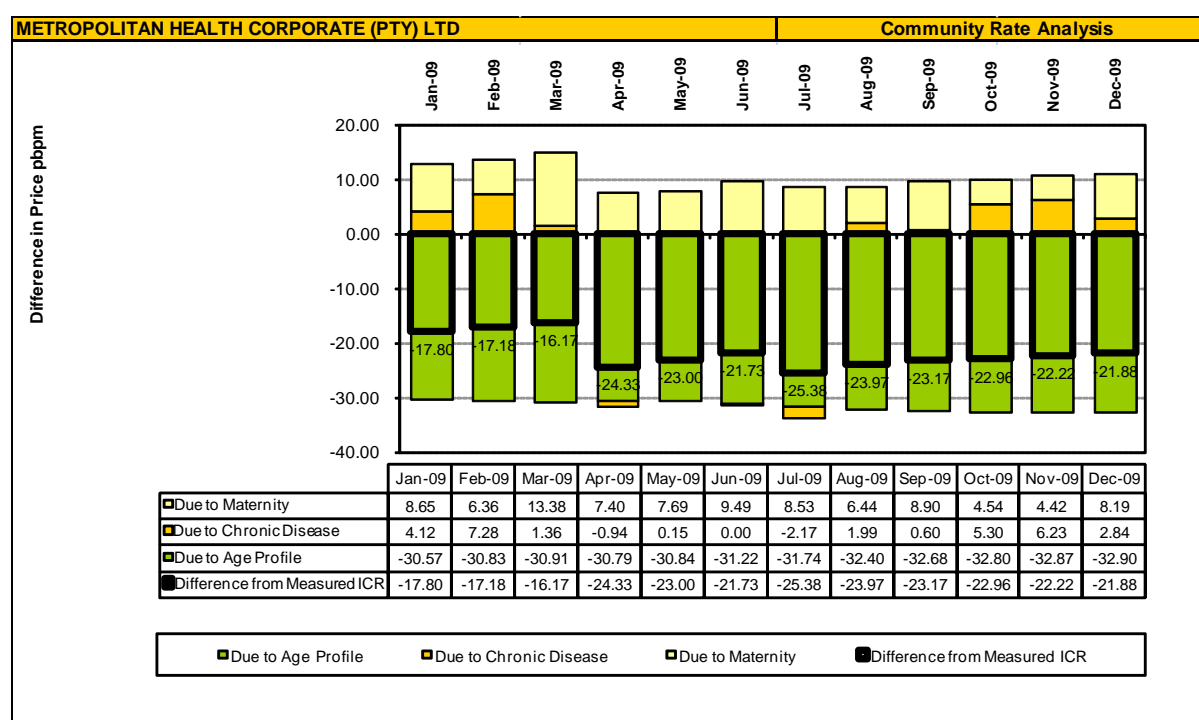
**Figure 46** Metropolitan Health Corporate (Pty) Ltd: Price by age analysis



The price by age curve for the schemes administered by Metropolitan Health Corporate (Pty) Ltd follows that of the industry, but moves away from the expected in the age bands between 15 and 85+. Greater variations are shown in the age bands above 65 years. These higher than expected rates could be due to the following:

- DM2 increased from 203% of the expected in March to 232% in December
- BMD increased from 194% of the expected in March to 254% in December
- Multiple CD increased from 150% of the expected in March to 166% in December
- MAT increased from 145% of the expected in March to 124% in December

**Figure 47 Metropolitan Health Corporate (Pty) Ltd: Community rate analysis**

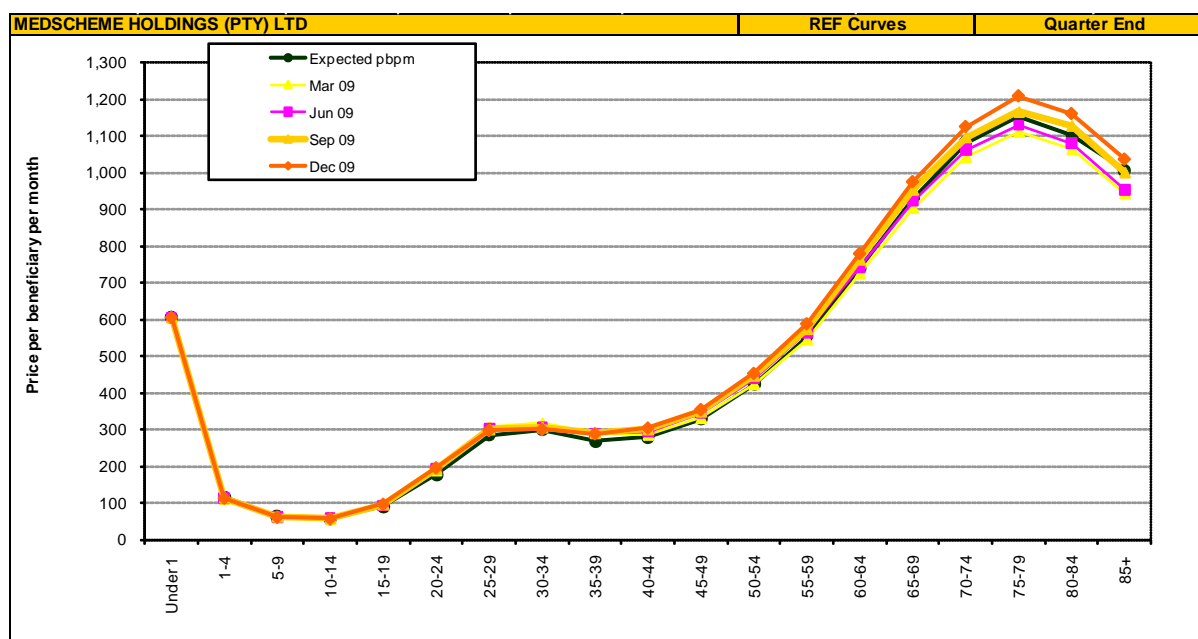


The Metropolitan Health Corporate (Pty) Ltd administered schemes reported Maternity rates fluctuating between R4.42 and R13.38 pbpm above the expected; the Chronic Disease rates were reported at between R2.17 below and R7.28 pbpm above the expected. The younger age profile leads to a community rate that fluctuates between R30.57 and R32.90 pbpm below the industry community rate.



#### 4. Medscheme Holdings (Pty) Ltd

**Figure 48 Medscheme Holdings (Pty) Ltd: Price by age analysis**



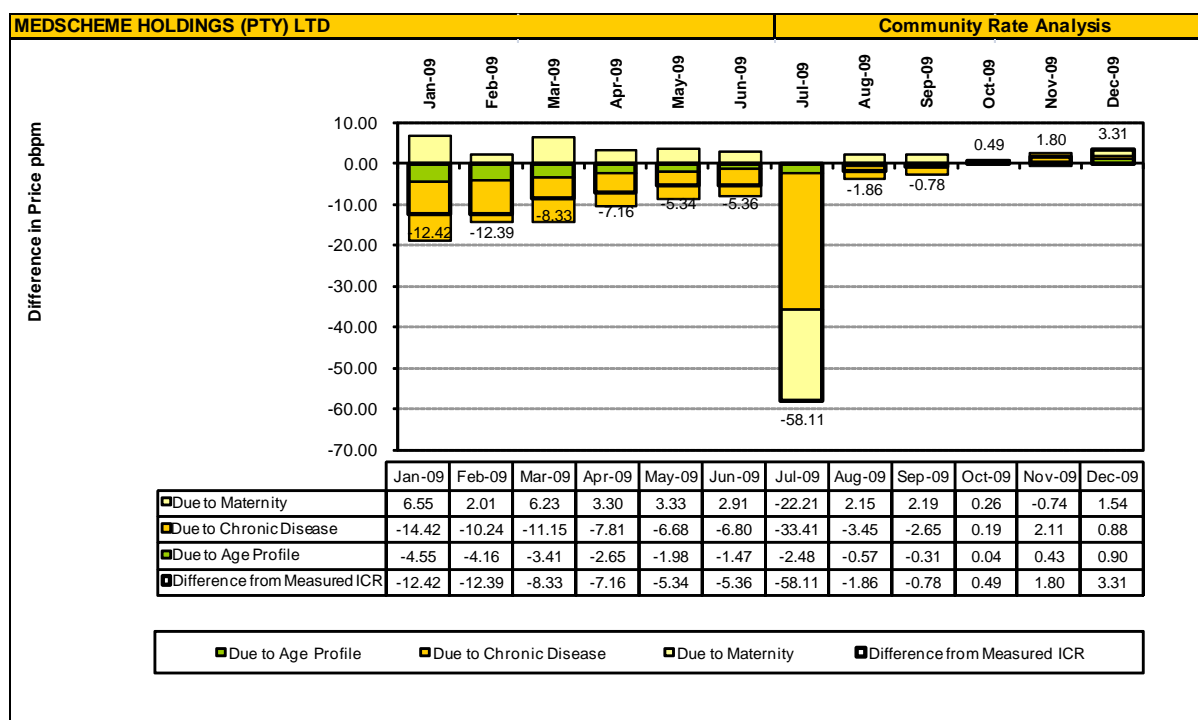
The price by age curve for the Medscheme Holdings (Pty) Ltd administered schemes closely follows that of the industry, but rises slightly above for the ages between 19 – 60 years with greater variation in the age groups above 65 years. The price by age for the months of March and June (for the ages above 65 years) fall below the expected as most CDLs showed a steady increase above the expected in the second part of the year which could be attributed to the following deviations:

- Multiple CDL increased from 109% of the expected in March to 142% in December
- HYL increased from 90% of the expected in March to 116% in December
- HYP increased from 95% of the expected in March to 116% in December
- DM2 increased from 130% of the expected in March to 169% in December
- BMD increased from 174% of the expected in March to 227% in December
- HIV increased from 133% of the expected in March to 169% in December





**Figure 49 Medscheme Holdings (Pty) Ltd: Community rate analysis**

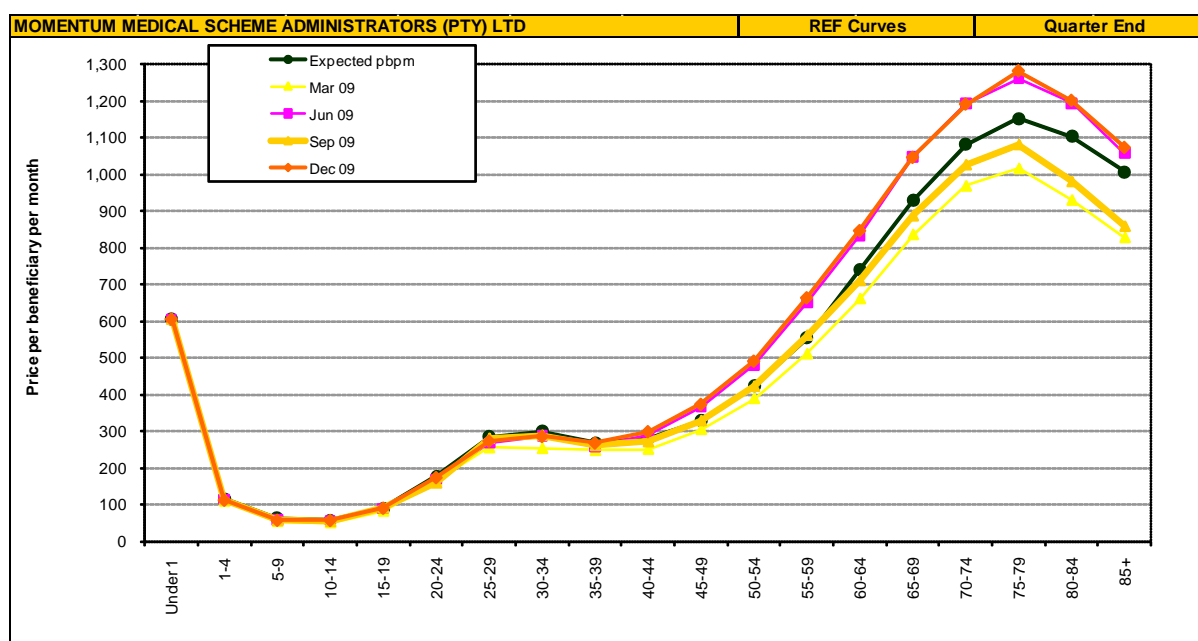


Medscheme Holdings (Pty) Ltd administered schemes reported maternity rates that fluctuated between R22.21 pbpm below the expected to R6.55 pbpm above the expected; chronic disease rates between R33.41 pbpm below the expected to R2.11 pbpm above the expected. These huge fluctuations are attributed to the extraordinary low rates reported for July and inconsistent reporting on CDLs and maternity rates. The age profile of these schemes leads to a community rate of between R4.55 - R0.90 pbpm below and above the average, respectively.



## 5. Momentum Medical scheme Administrators (Pty) Ltd

**Figure 50** Momentum Medical scheme Administrators (Pty) Ltd: Price by age analysis

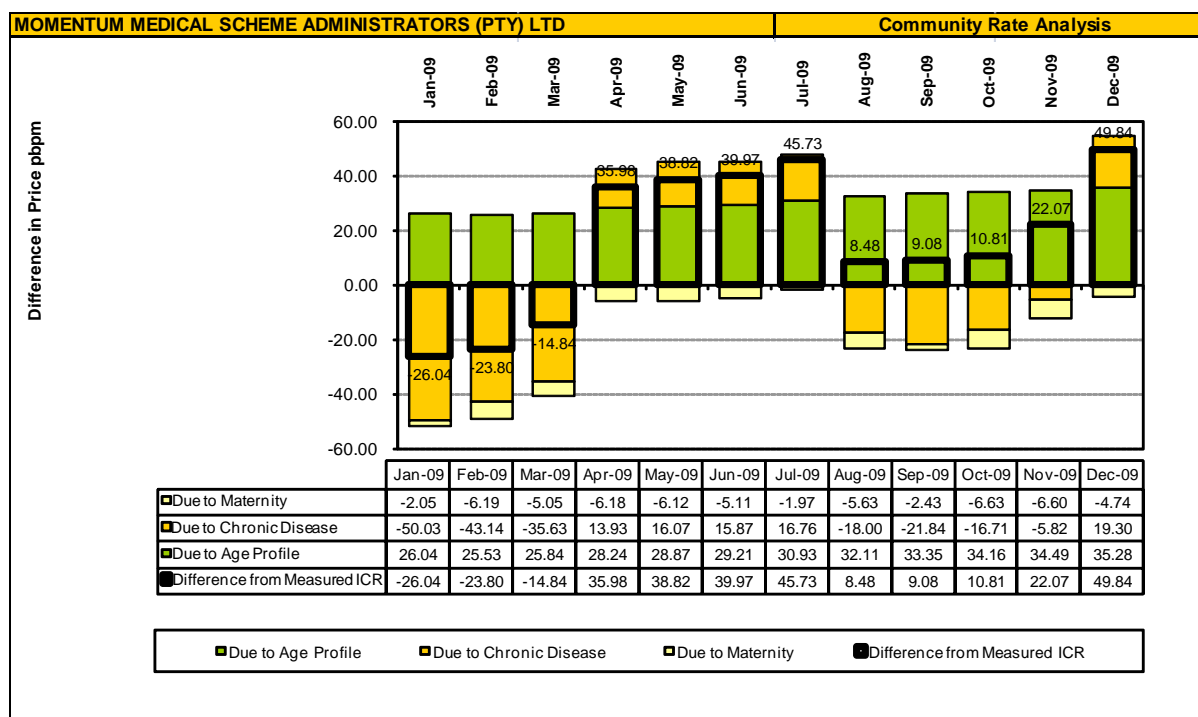


The Momentum Medical Scheme administered schemes price by age falls slightly below the expected for the ages between 19 and 39, but rises above the expected for the quarters ending June and December for the ages above 40 years. The quarters ending March and September fall below the expected for the ages above 40 years. These variations are due to the following fluctuations:

- DM2 reported at 96% of the expected for March, 179% for June, 123% for September and 177% for December
- DYS reported at 89% of the expected for March, 238% for June, 119% for September and 223% for December
- Multiple CDLs reported at 77% of the expected for March, 167% for June, 97% for September and 167% for December
- Total CDL reported at 62% of the expected for March, 129% for June, 81% for September and 127% for December



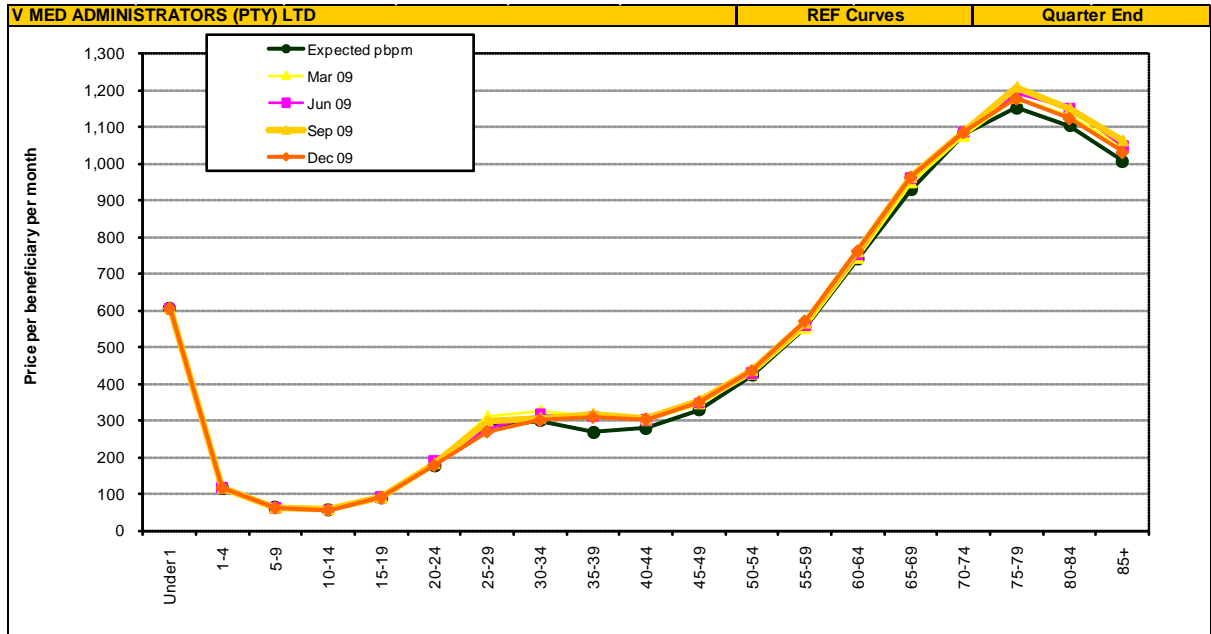
**Figure 51 Momentum Medical scheme Administrators (Pty) Ltd: Community rate analysis**



Momentum Medical Scheme administered schemes reported maternity rates fluctuating between R1.97 and R6.63 pbpm below the expected; the chronic disease rates were reported R50.03 pbpm below the expected to R19.30 pbpm above the expected. The older than average age profile leads to a community rate that is between R25.53 and R35.28 pbpm higher than the industry community rate.

## 6. V Med Administrators (Pty) Ltd

**Figure 52 V Med Administrators (Pty) Ltd: Price by age analysis**

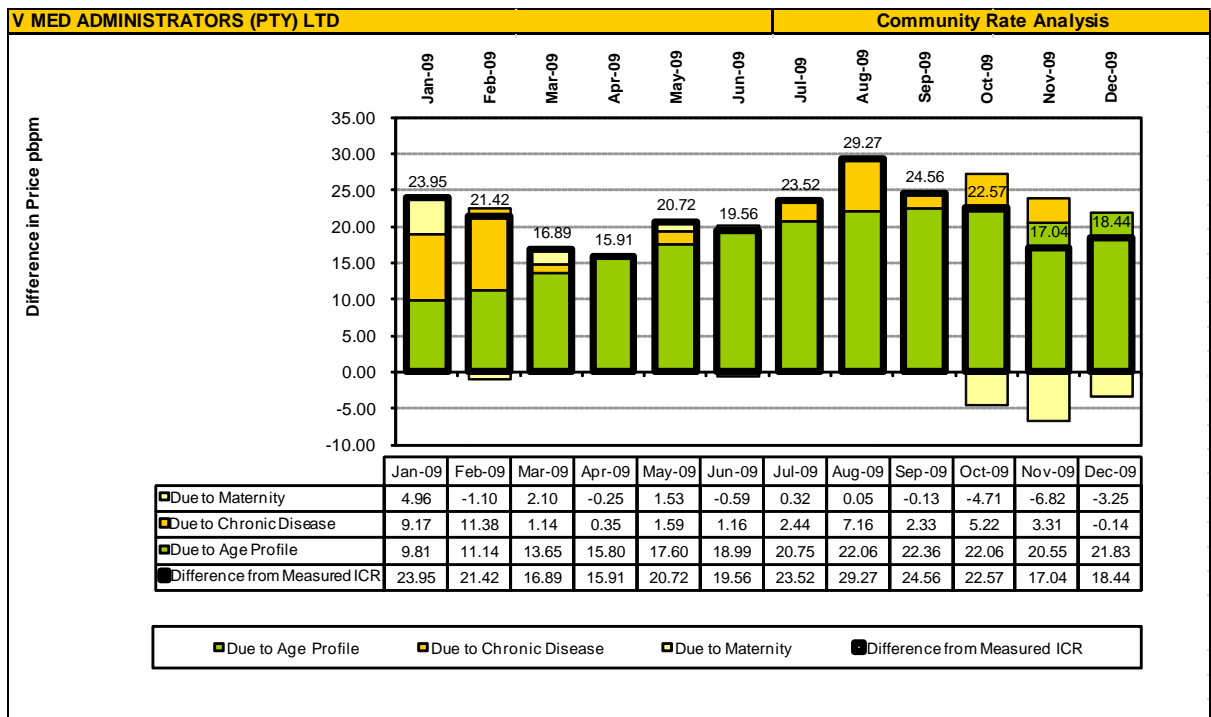


The price by age for the schemes administered by V Med Administrators rise above that of the expected for the ages above 24 years with slight variation between the quarters, attributed to the following variations:

- Total CDL increased from 86% of the expected in March to 93% in December
- DM2 increased from 127% of the expected in March to 143% in December
- HIV increased from 190% of the expected in March to 185% in December
- CRF increased from 194% of the expected in March to 183% in December
- BMD increased from 257% of the expected in March to 310% in December



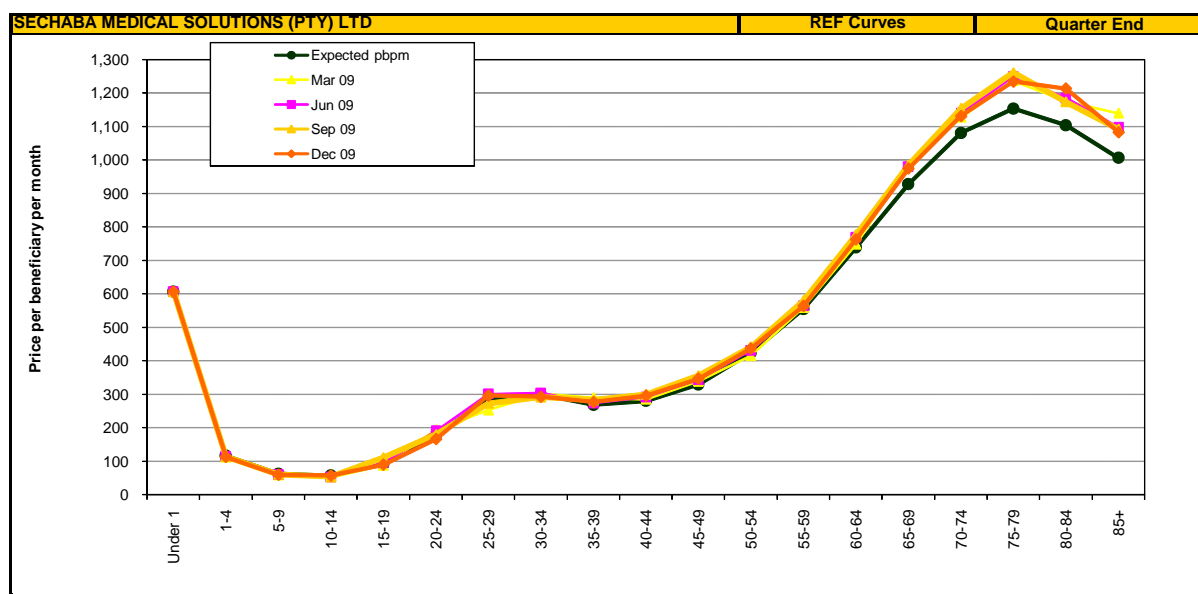
**Figure 53 V Med Administrators (Pty) Ltd: Community rate analysis**



V Med administrated schemes reported maternity rates fluctuating between R6.82 pbpm below the expected to R4.96 pbpm above the expected; chronic disease rates fluctuating between R6.82 pbpm below the expected and R11.38 pbpm above the expected. The older than average age profile leads to a community rate that is between R9.81 to R22.36 pbpm higher than that of the industry community rate.

## 7. Sechaba Medical Solutions (Pty) Ltd

**Figure 54 Sechaba Medical Solutions (Pty) Ltd: Price by age analysis**

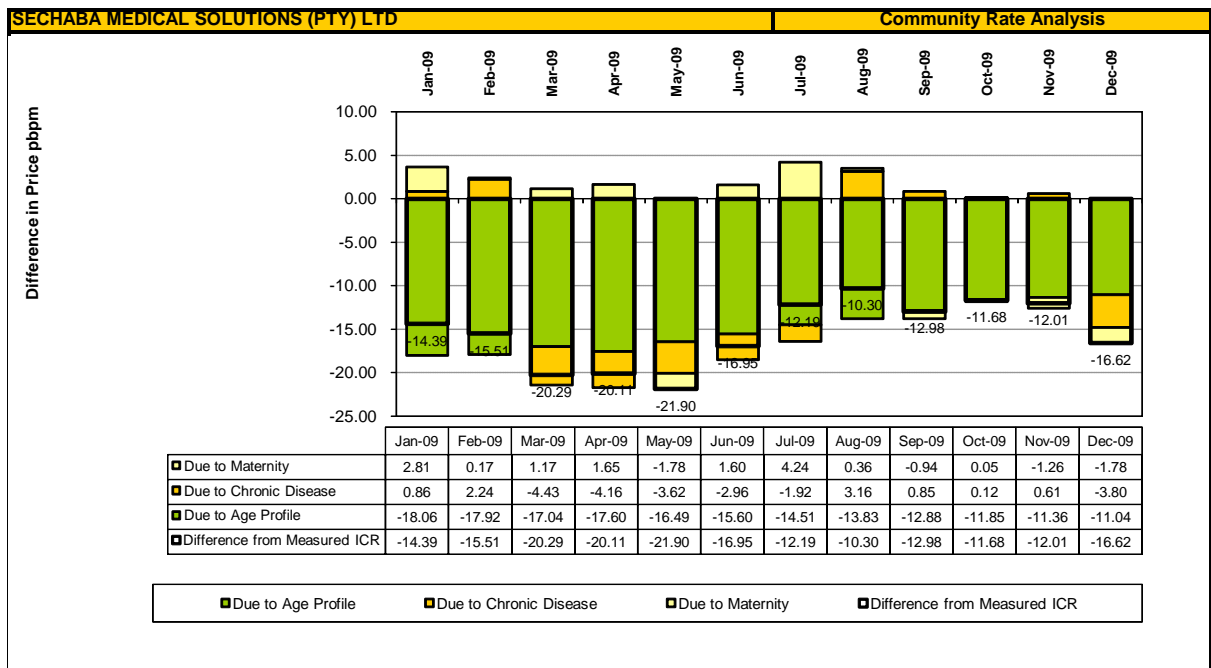


The price by age for the Sechaba Medical Solutions administered schemes rises slightly above the expected for the ages above 40 years with greater variation for the ages above 65 years. There are also slight variations above and below the expected for March for the ages between 14 and 34. These variations are due to the following:

- DM2 increased from 161% of the expected in March to 177% in December
- HIV increased from 141% of the expected in March to 176% in December
- BMD increased from 157% of the expected in March to 222% in December
- CC2 increased from 108% of the expected in March to 118% in December
- Multiple CD increased from 126% of the expected in March to 137% in December



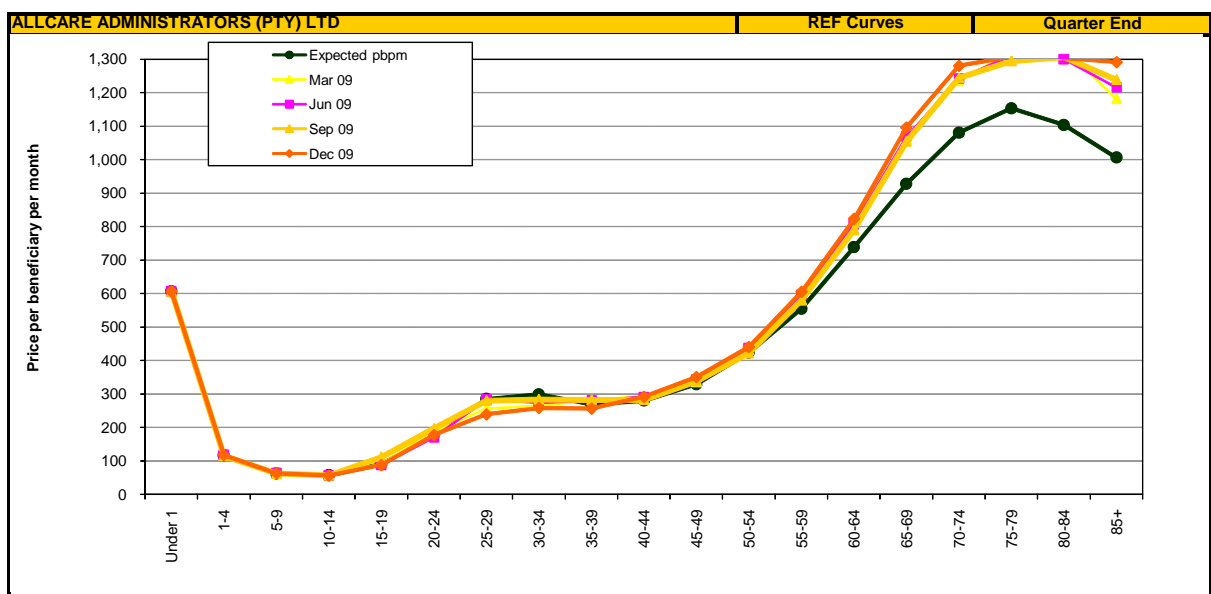
**Figure 55 Sechaba Medical Solutions (Pty) Ltd: Community rate analysis**



The Sechaba Medical Solutions administered schemes reported maternity rates fluctuating between R1.78 pbpm below and R4.24 pbpm above the expected; chronic disease rates fluctuating between R4.43 pbpm below and R3.16 pbpm above the expected. The younger age profile leads to a community rate that is between R18.06 to R11.04 pbpm lower than the industry community rate.

## 8. Allcare Administrators (Pty) Ltd

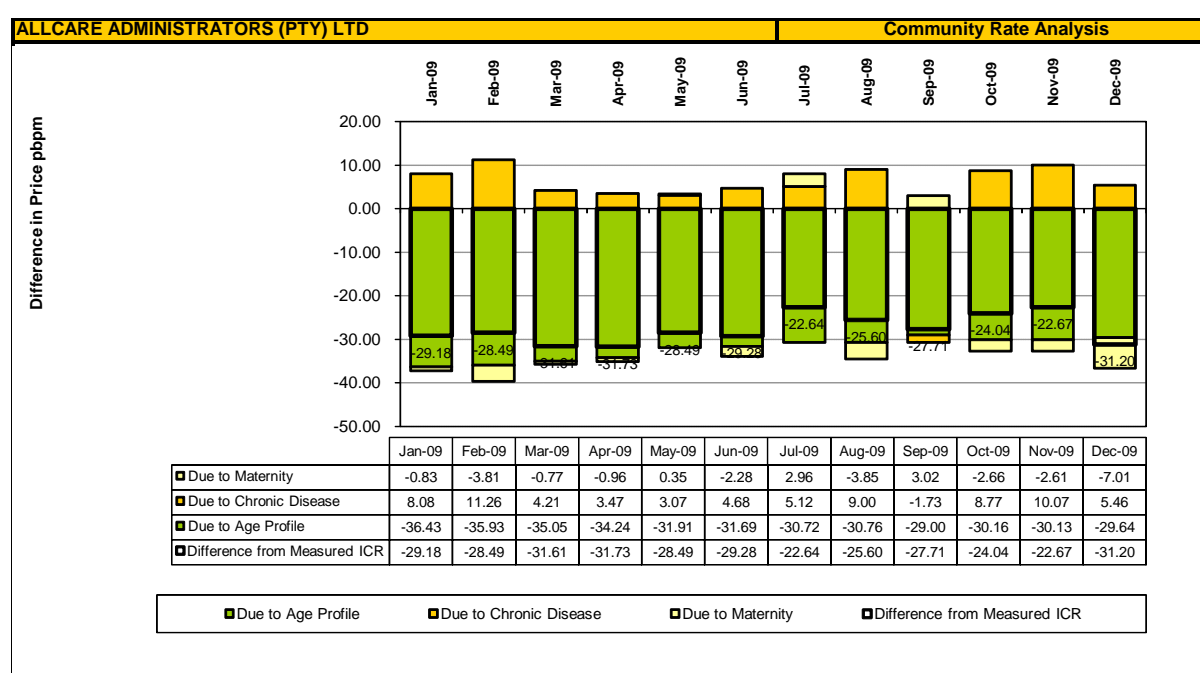
**Figure 56 Allcare Administrators (Pty) Ltd: Price by age analysis**



The Allcare administered schemes price by age vary slightly below and above the expected for the ages between 15 – 50, but rises sharply above the expected for the ages above 54 years. These variations are attributed to the following:

- CMY increased from 141% of the expected in March to 147% in December
- CRF increased from 208% of the expected in March to 276% in December
- DM2 increased from 161% of the expected in March to 178% in December
- HYP increased from 120% of the expected in March to 131% in December
- CC2 increased from 127% of the expected in March to 124% in December
- Total CDL increased from 111% of the expected in March to 121% in December
- Multiple CD increased from 133% of the expected in March to 134% in December
- BMD increased from 171% of the expected in March to 237% in December

**Figure 57 Allcare Administrators (Pty) Ltd: Price by age analysis**



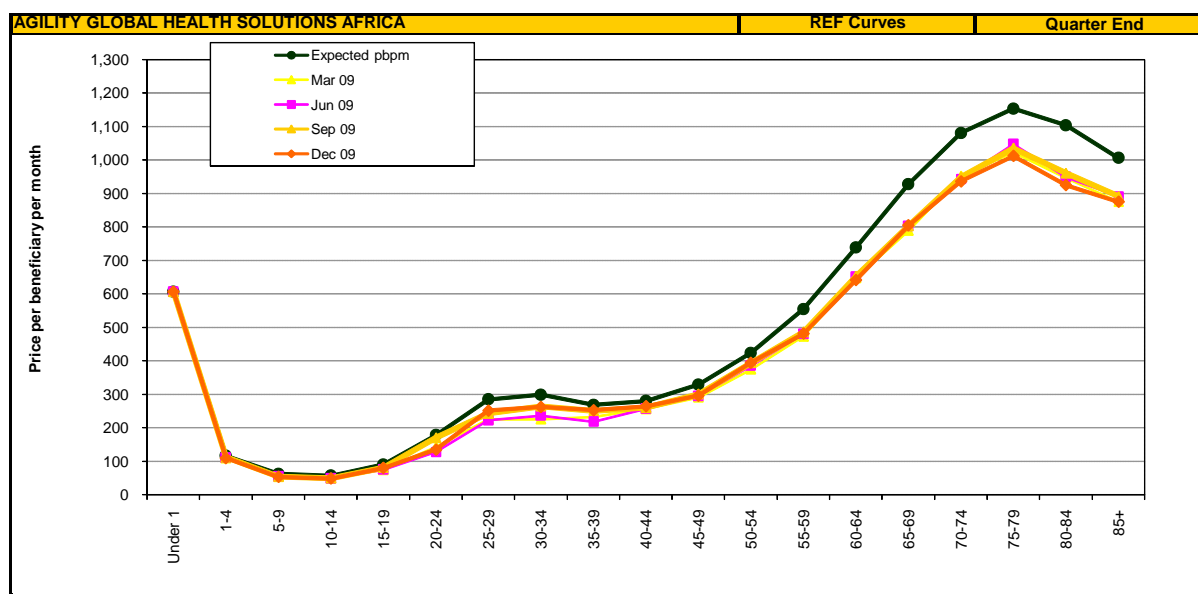
The Allcare administered schemes reported maternity rates fluctuating between R7.01 pbpm below the expected and R3.02 pbpm above the expected; chronic disease rates of between R7.01 pbpm below the expected and R11.26 pbpm above the expected. The younger than average age profile of these schemes translate into a community rate of between R36.43 and R29.00 pbpm lower than the industry community rate.





## 9. Agility Global Health Solutions Africa

**Figure 58** Agility Global Health Solutions Africa: Price by age analysis

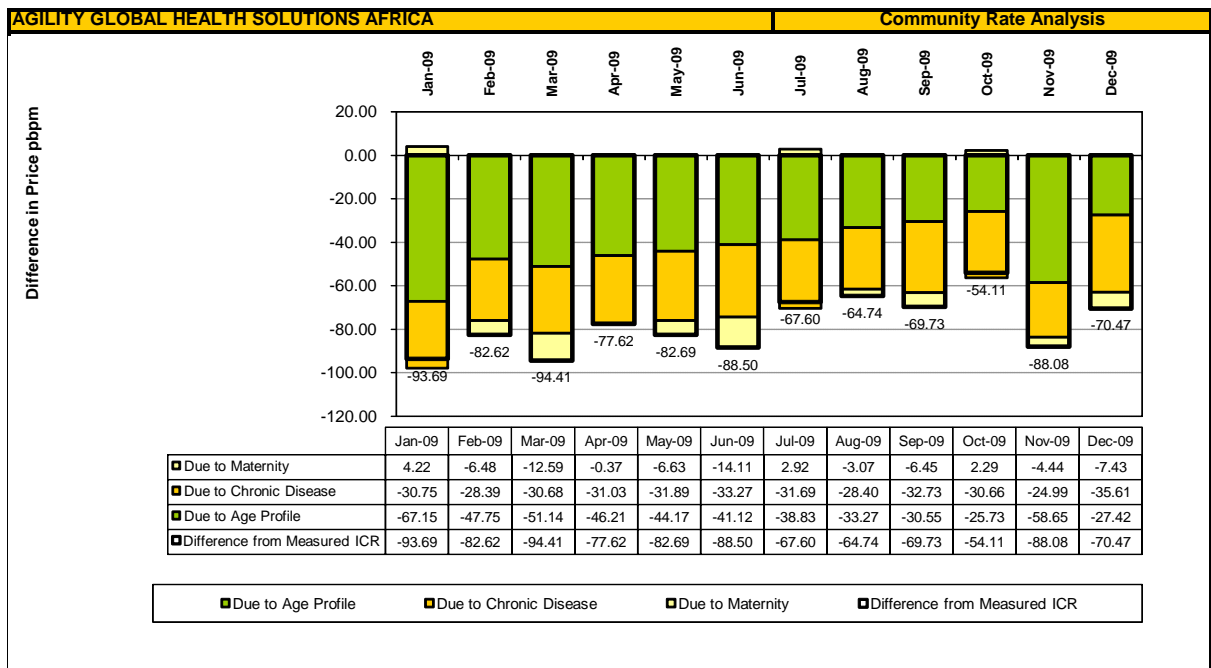


The schemes administered by Agility Global Health Solutions Africa's price by age falls below the expected for all ages above 5 years, with greater variation from quarter to quarter in the ages between 19 -44 years and above 70 years. These deviations are attributed to the following:

- AST increased from 39% of the expected for March to 40% in December
- CMY increased from 66% of the expected for March to 79% in December
- COP decreased from 50% of the expected for March to 46% in December
- DM2 increased from 74% of the expected for March to 79% in December
- HYL increased from 31% of the expected for March to 37% in December
- Multiple CDL increased from 46% of the expected for March to 51% in December
- Total CDL increased from 62% of the expected for March to 66% in December



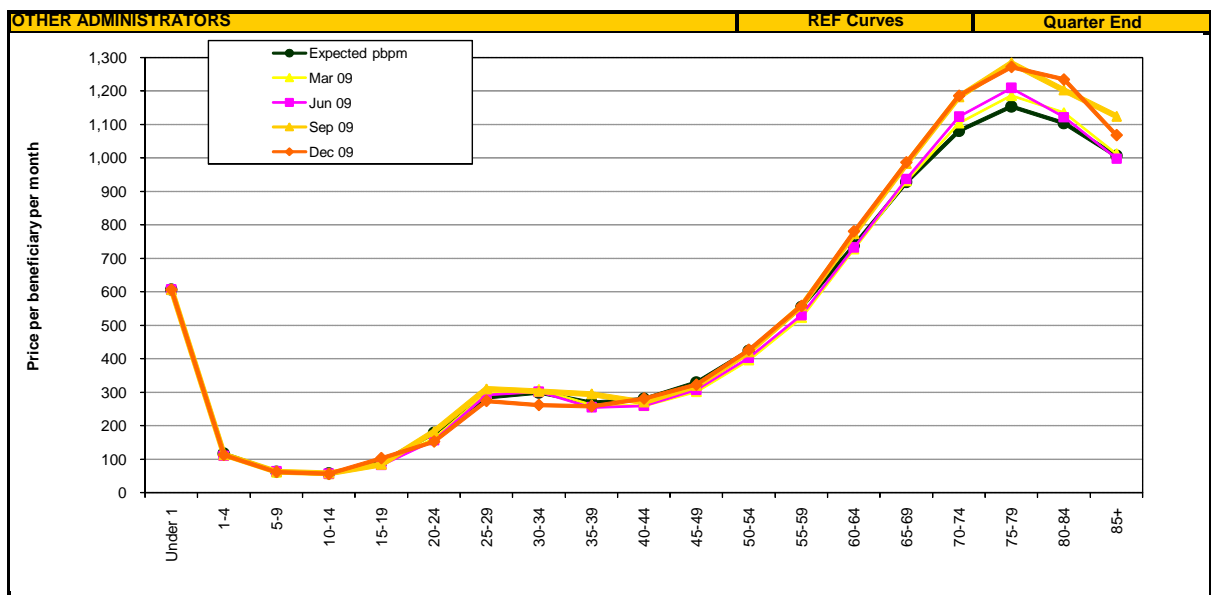
**Figure 59 Agility Global Health Solutions Africa: Community rate analysis**



The schemes administered by Agility Global Health Solutions Africa, reported maternity rates of between R14.11 pbpm below the expected and R4.22 pbpm above the expected; chronic disease rates of between R35.61 and R24.99 pbpm below the expected. The younger than average age profile leads to a community rate of between R67.15 and R25.73 pbpm lower than the industry community rate.

## 10. Other Administrators

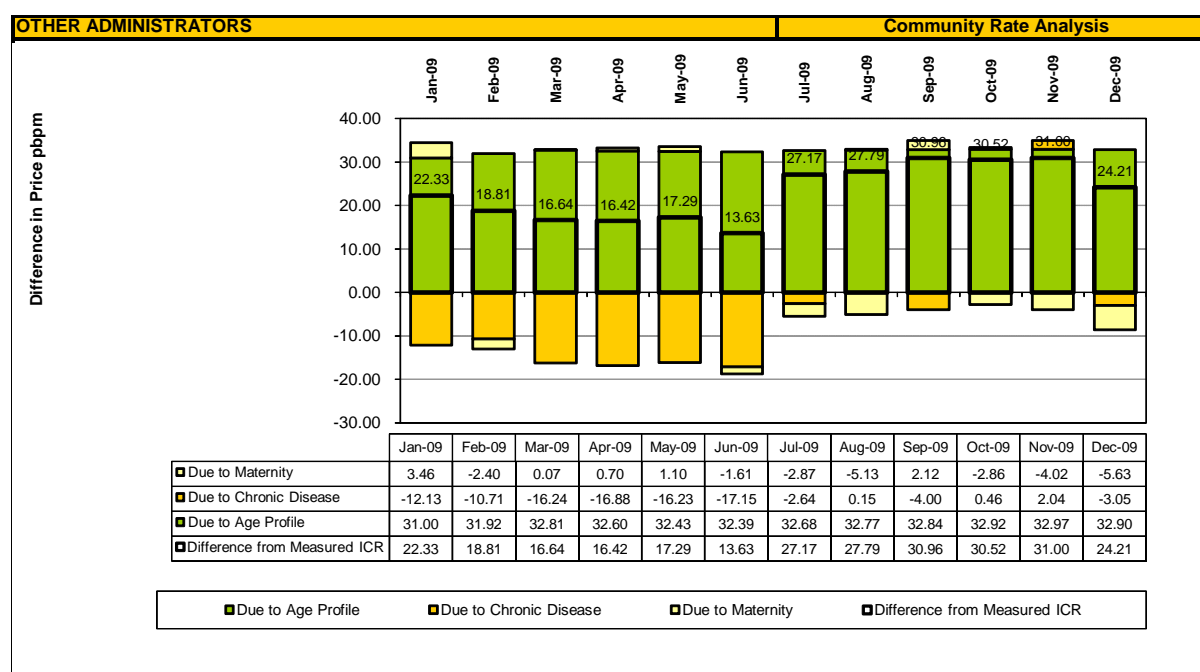
**Figure 60 Other Administrators: Price by age analysis**



The schemes administered by this group of administrators' price by age moves away from the expected varying above and below the expected for the ages between 15 – 55 years, and then rise above the expected for the ages above 55 years. These variations are attributed to the following fluctuations:

- BMD increased from 195% of the expected for March to 557% in December
- DYS increased from 40% of the expected for March to 238% in December
- HYL decreased from 184% of the expected for March to 181% in December
- IHD increased from 20% of the expected for March to 115% in December
- CC2 increased from 127% of the expected for March to 131% in December
- Total CDL increased from 86% of the expected for March to 112% in December
- Multiple CDL decreased from 172% of the expected for March to 145% in December
- CMY increased from 20% of the expected for March to 56% in December

**Figure 61 Other Administrators: Price by age analysis**

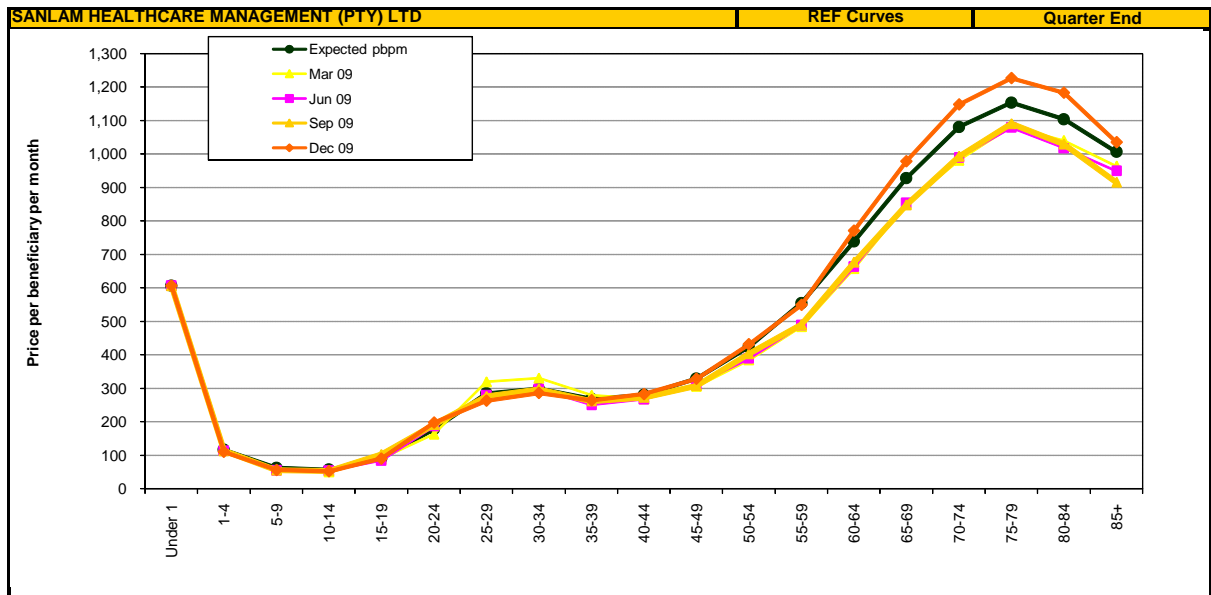


The schemes in this group of administrators reported maternity rates fluctuating between R5.63 pbpm below the expected and R3.46 pbpm above the expected; chronic disease rates between R17.15 pbpm below and R2.04 pbpm above the expected. The older than average age profile translates into a community rate of between R31.00 and R32.97 pbpm higher than the industry community rate.



## 11. Sanlam Healthcare Management (Pty) Ltd

**Figure 62 Sanlam Healthcare Management (Pty) Ltd: Price by age**

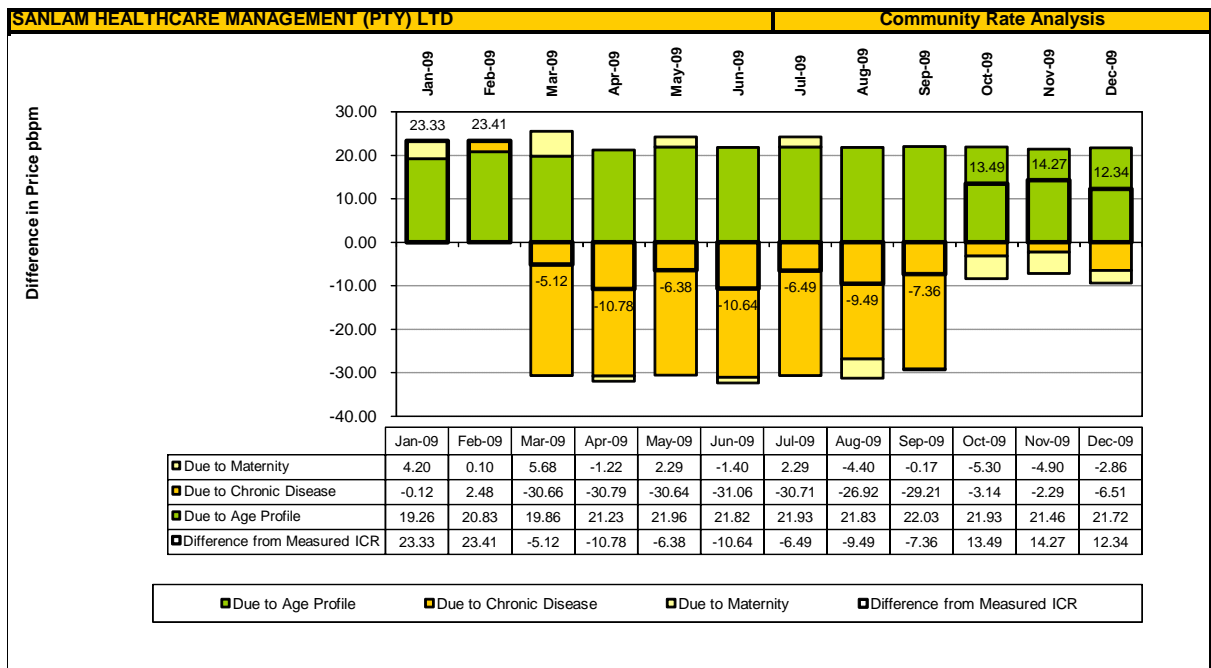


The price by age for the scheme administered by Sanlam Healthcare Management varies above and below the expected for the ages between 20 – 39 years and moves below the expected for March, June and September, but rises above the expected for December. These fluctuations are attributed to the following:

- BMD increased from 213% of the expected for March to 455% in December
- CRF increased from 151% of the expected for March to 154% in December
- DM2 increased from 139% of the expected for March to 140% in December
- DYS increased from 93% of the expected for March to 186% in December
- HYL increased from 64% of the expected for March to 130% in December
- CC3 increased from 85% of the expected for March to 179% in December
- CMY increased from 33% of the expected for March to 58% in December
- Total CDL increased from 62% of the expected for March to 104% in December



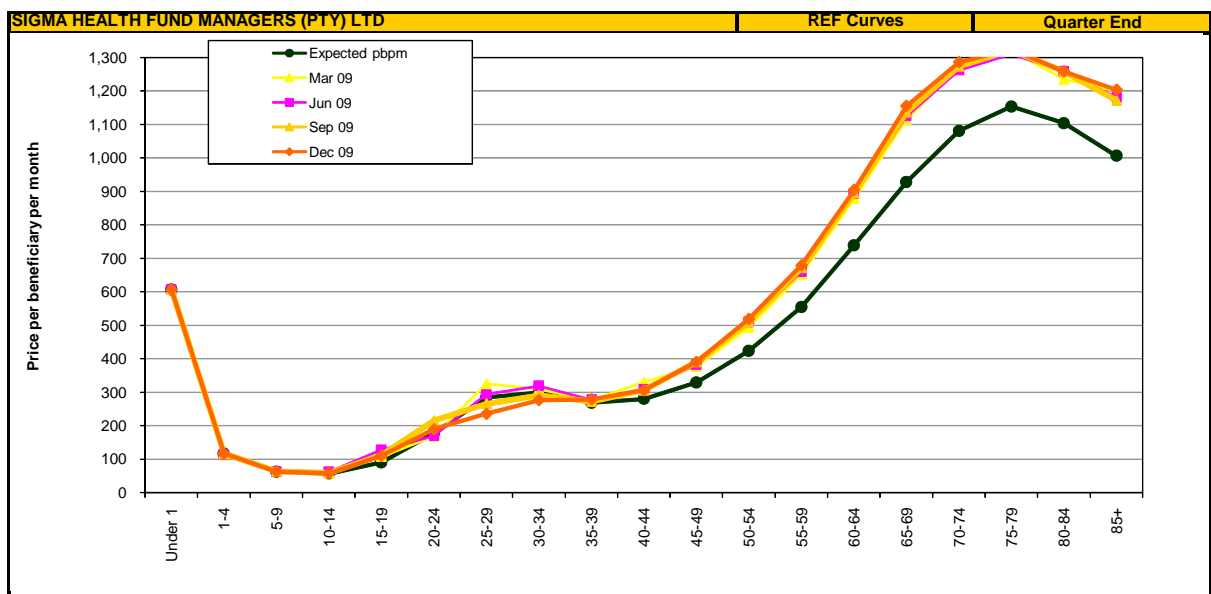
**Figure 63 Sanlam Healthcare Management (Pty) Ltd: Community rate analysis**



The Sanlam Healthcare administrators reported maternity rates fluctuating between R5.30 pbpm below the expected and R5.68 pbpm above the expected; chronic disease rates between R31.06 pbpm below and R2.48 pbpm above the expected. The older than average age profile translates into a community rate of between R19.26 and R22.03 pbpm higher than the industry community rate.

## 12. Sigma Health Fund Managers (Pty) Ltd

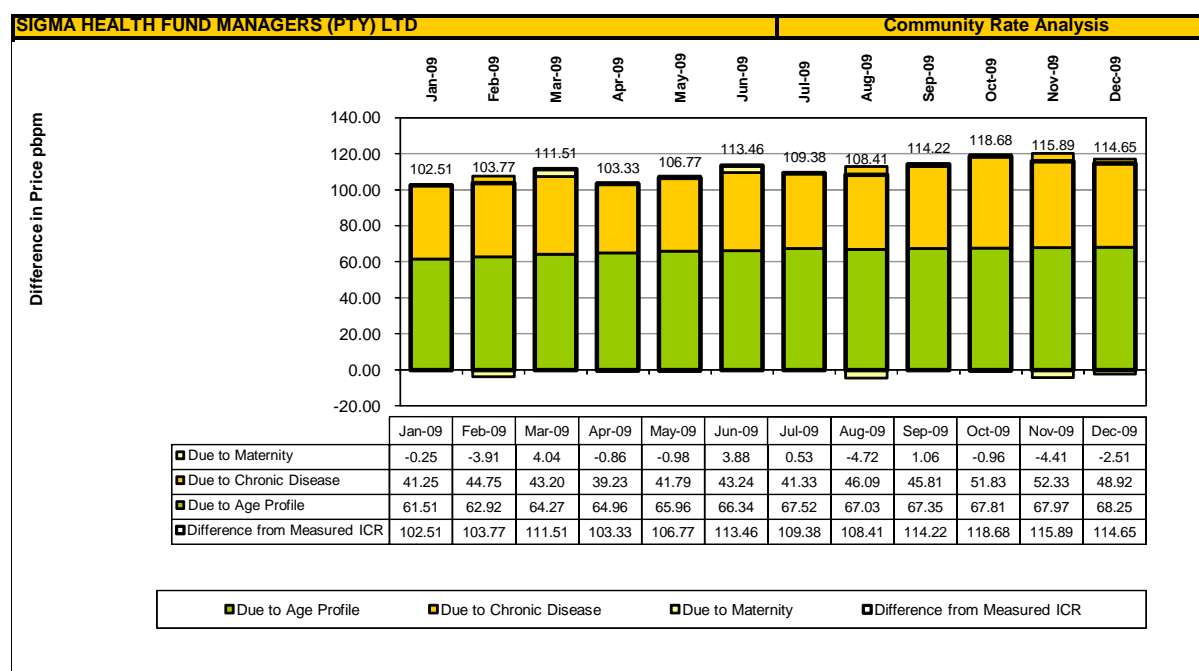
**Figure 64 Sigma Health Fund Managers (Pty) Ltd: Price by age analysis**



The price by age for Sigma Health Fund Managers administered schemes varies above and below the expected for the ages between 14 – 39 years, but rises sharply above the expected for the ages above 39 years. These fluctuations are attributed to the following:

- AST increased from 129% of the expected for March to 135% in December
- BMD decreased from 326% of the expected for March to 317% in December
- DM1 decreased from 146% of the expected for March to 132% in December
- DM2 increased from 393% of the expected for March to 422% in December
- HYL increased from 143% of the expected for March to 150% in December
- CC3 increased from 351% of the expected for March to 391% in December
- Total CDL increased from 147% of the expected for March to 156% in December
- HIV increased from 33% of the expected for March to 40% in December
- COP increased from 29% of the expected for March to 31% in December
- CMY increased from 59% of the expected for March to 65% in December

**Figure 65 Sigma Health Fund Managers (Pty) Ltd: Community rate analysis**

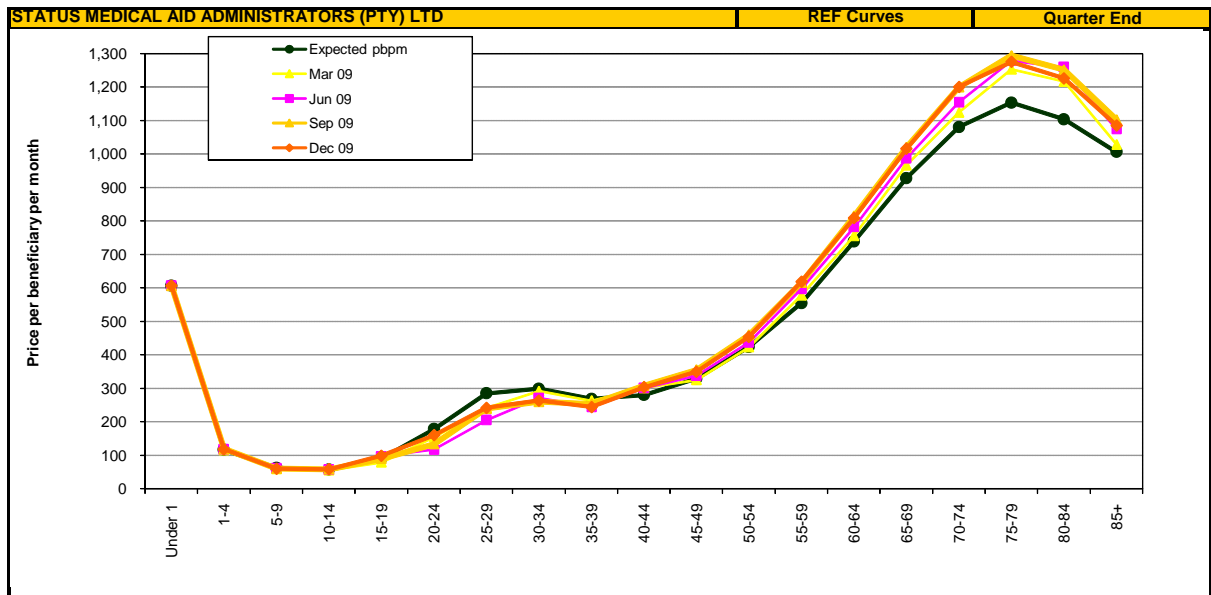


The Sigma Health Fund administrators reported maternity rates fluctuating between R4.72 pbpm below the expected and R4.04 pbpm above the expected; chronic disease rates between R4.72 pbpm below and R52.33 pbpm above the expected. The older than average age profile translates into a community rate of between R61.51 and R68.25 pbpm higher than the industry community rate.



### 13. Status Medical Aid Administrators

**Figure 66** Status Medical Aid Administrators: Price by age analysis

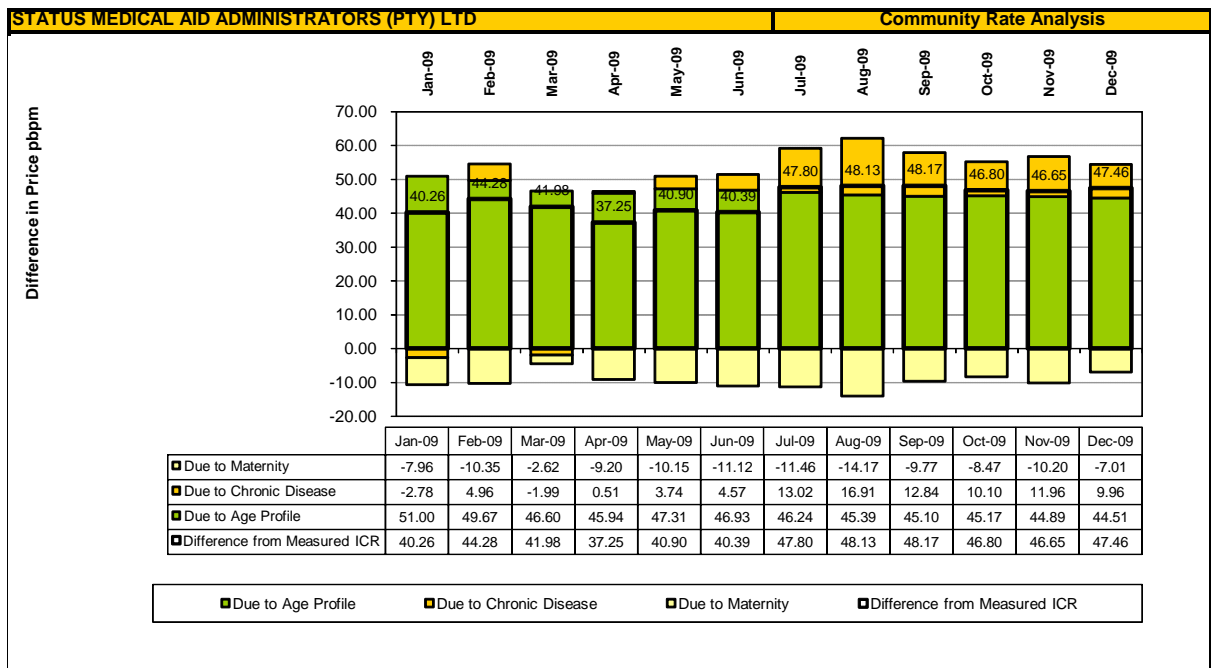


The price by age for the Status Medical Aid Administrators' schemes falls below the expected for the ages between 19 and 39 years, but rises above the expected for the ages above 40 years with greater variation for the ages above 54 years. These deviations are attributed to the following:

- CMY increased from 117% of the expected for March to 128% in December
- DM2 increased from 111% of the expected for March to 177% in December
- HYL increased from 148% of the expected for March to 151% in December
- THD increased from 172% of the expected for March to 209% in December
- CC3 increased from 170% of the expected for March to 219% in December
- Total CDL increased from 115% of the expected for March to 131% in December
- Multiple CDL increased from 136% of the expected for March to 164% in December
- COP increased from 45% of the expected for March to 48% in December



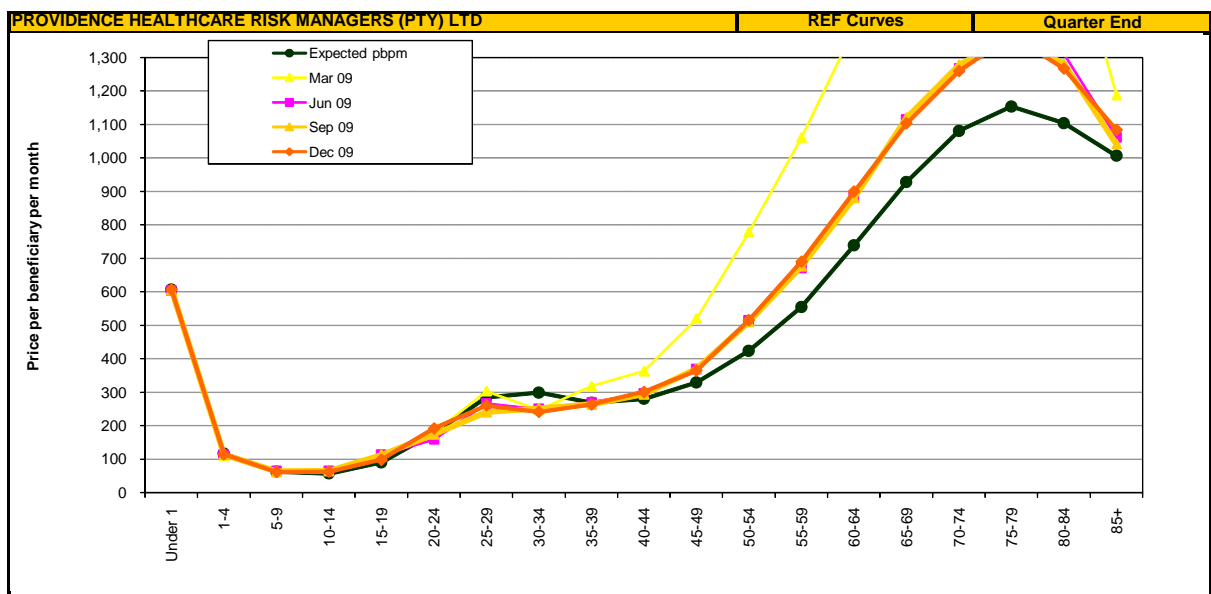
**Figure 67 Status Medical Aid Administrators: Community rate analysis**



The Status Medical Aid administrated schemes reported maternity rates fluctuating between R14.17 pbpm and 2.62 below the expected; chronic disease rates between R14.17 pbpm below and R16.91 pbpm above the expected. The older than average age profile translates into a community rate of between R44.51 and R51.00 pbpm higher than the industry community rate.

#### 14. Providence Healthcare Risk Managers (Pty) Ltd

**Figure 68 Providence Healthcare Risk Managers (Pty) Ltd: Price by age analysis**

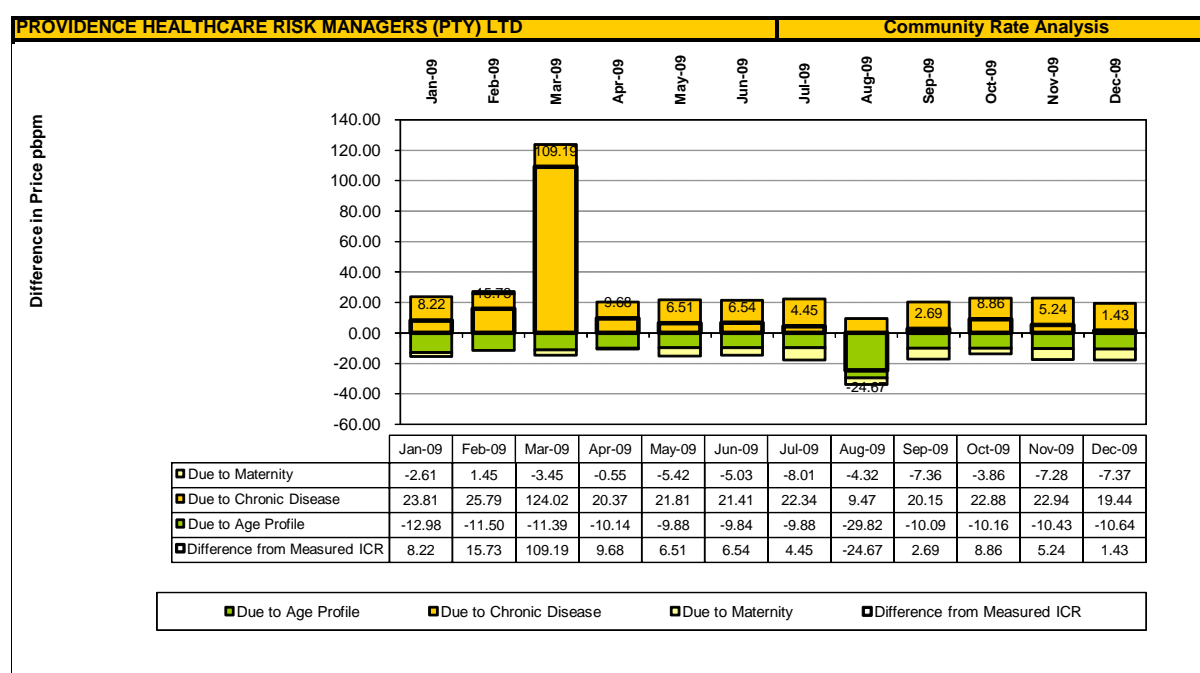




The price by age for the Providence Healthcare Risk Managers administered schemes moves slightly above the expected for the ages above 14 years and falls below the expected for the ages between 24 and 39 years. It rises above the expected for the ages above 35 years with huge variations between quarters. These deviations are attributed to the following:

- COP increased from 86% of the expected for March to 157% in December
- DM1 decreased from 284% of the expected for March to 173% in December
- DM2 increased from 142% of the expected for March to 187% in December
- EPL increased from 131% of the expected for March to 162% in December
- HYL increased from 217% of the expected for March to 219% in December
- CC2 increased from 180% of the expected for March to 198% in December
- Total CDL increased from 146% of the expected for March to 158% in December
- Multiple CDL increased from 194% of the expected for March to 213% in December
- MAT decreased from 92% of the expected for March to 73% in December

**Figure 69 Providence Healthcare Risk Managers (Pty) Ltd: Community rate analysis**

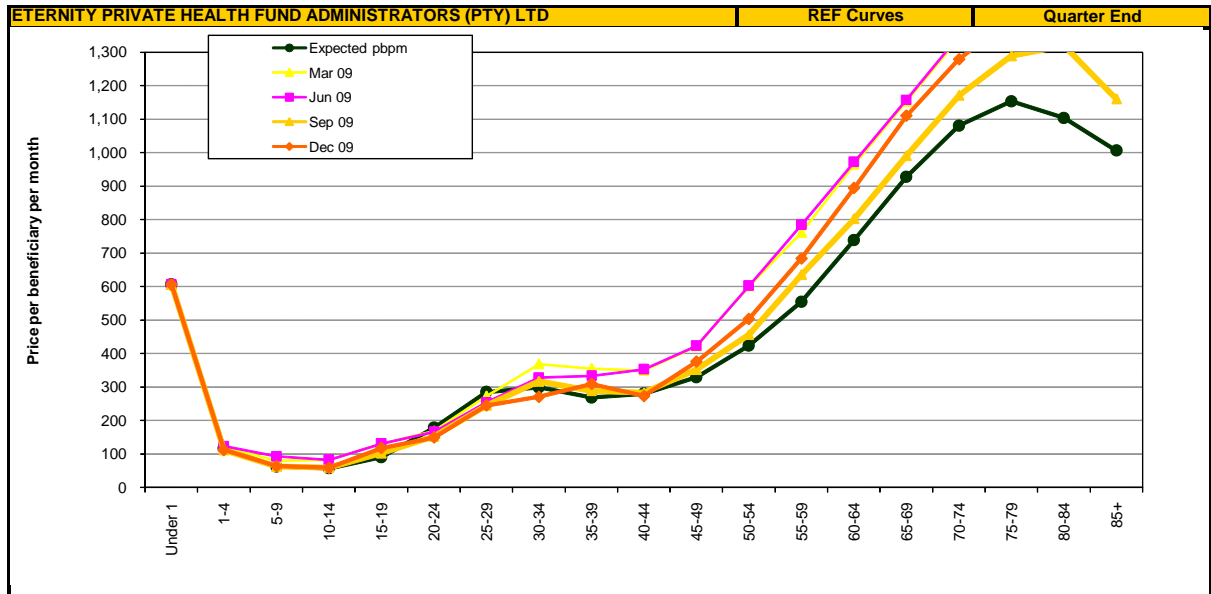


The Providence HealthCare Risk administrated schemes reported maternity rates fluctuating between R8.01 pbpm below the expected and 1.45 pbpm above the expected; chronic disease rates between R8.01 pbpm below and R124.02 pbpm above the expected. The slightly younger than average age profile translates into a community rate of between R29.82 and R9.84 pbpm lower than the industry community rate.



## 15. Eternity Private Health Fund Administrators (Pty) Ltd

**Figure 70 Eternity Private Health Fund Administrators (Pty) Ltd: Price by age analysis**

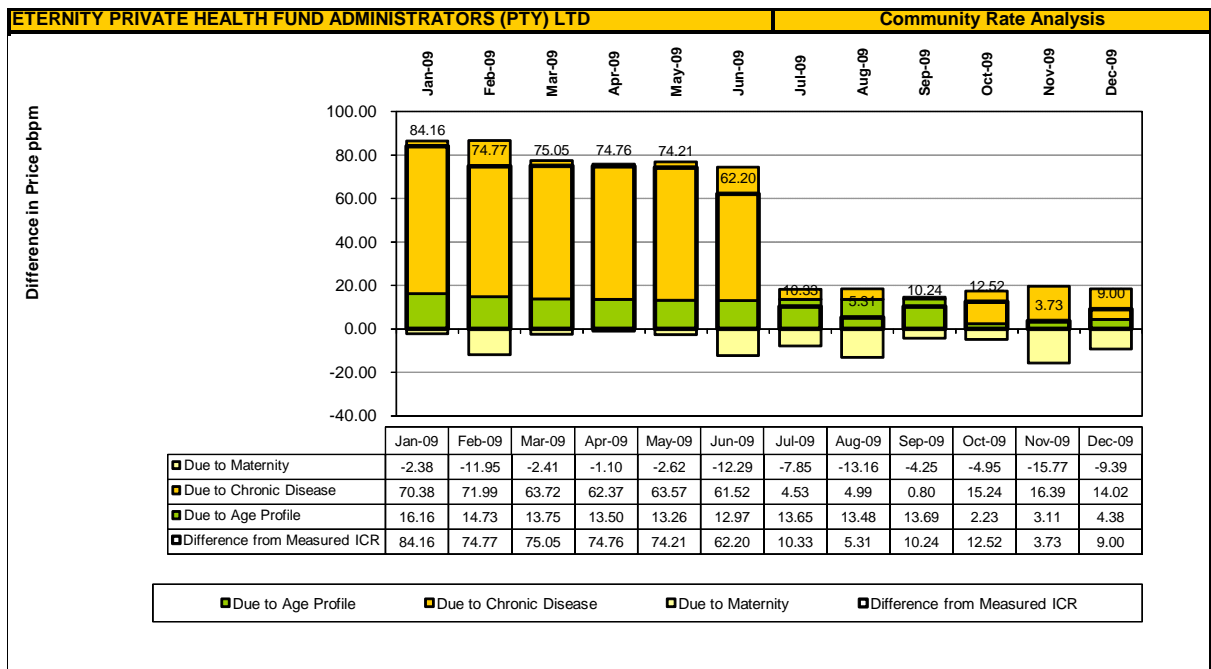


The schemes administered by the Eternity Private Health Fund Administrators' price by age curve varies above and below the expected from the ages above 4 years for the quarter ending June 2009 and 14 years for the rest of the quarters. It rises sharply above the expected for the quarters ending March and June for the ages above 29 years and 45 years for the quarters ending September and December. These deviations are attributed to the following:

- AST decreased from 192% of the expected for March to 115% in December
- BMD decreased from 824% of the expected for March to 406% in December
- CRF decreased from 304% of the expected for March to 174% in December
- DM1 decreased from 123% of the expected for March to 31% in December
- DM2 decreased from 187% of the expected for March to 129% in December
- HYL decreased from 259% of the expected for March to 200% in December
- IHD decreased from 269% of the expected for March to 219% in December
- CC3 decreased from 349% of the expected for March to 259% in December
- Total CDL decreased from 179% of the expected for March to 131% in December
- Multiple CDL decreased from 246% of the expected for March to 181% in December



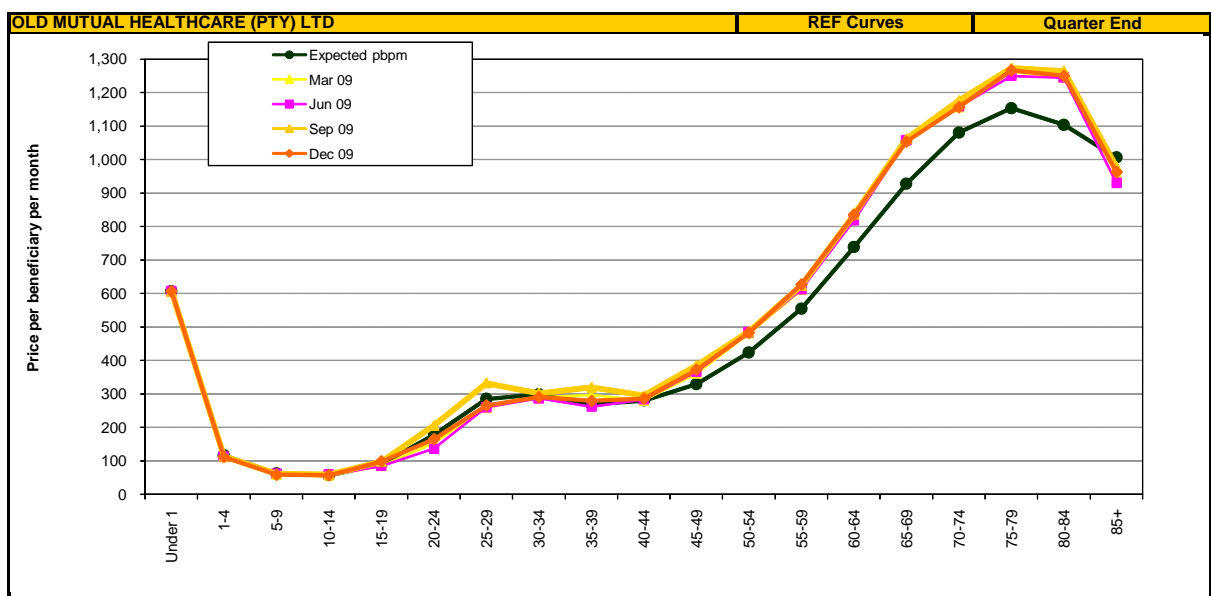
**Figure 71 Eternity Private Health Fund Administrators (Pty) Ltd: Community rate analysis**



The Eternity Private Health Fund administrated schemes reported maternity rates fluctuating between R15.77 and 1.10 pbpm below the expected; chronic disease rates between R15.77 pbpm below and R71.99 pbpm above the expected. The slightly older than average age profile translates into a community rate of between R2.23 and R16.16 pbpm higher than the industry community rate.

## 16. Old Mutual Healthcare (Pty) Ltd

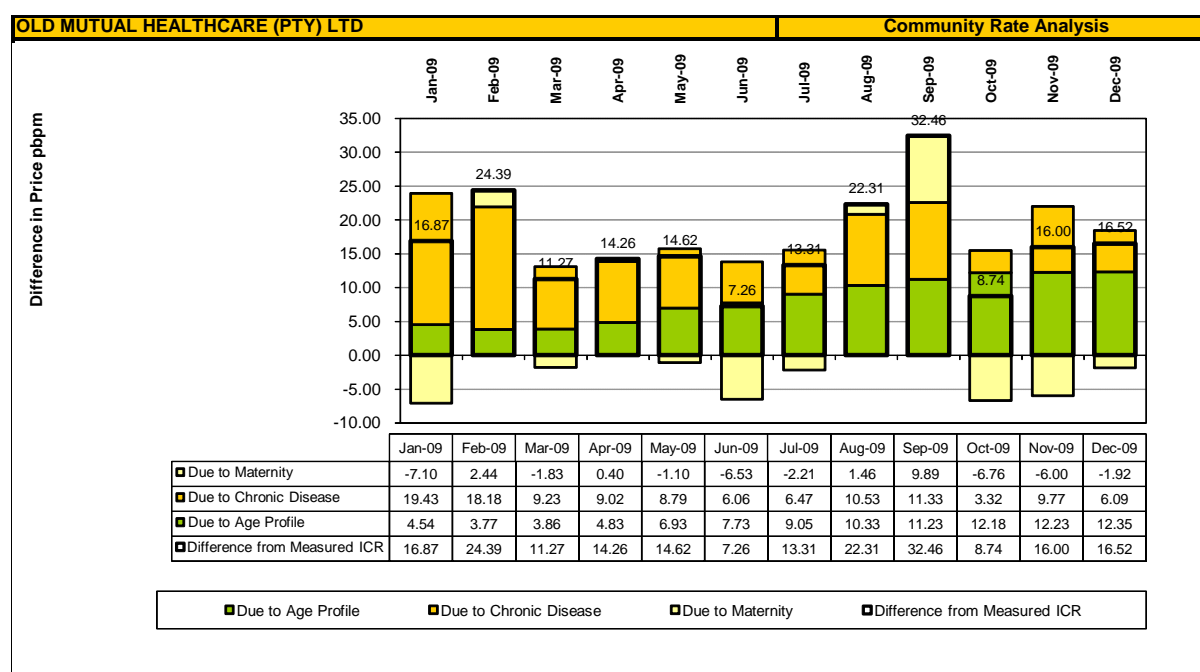
**Figure 72 Old Mutual Healthcare (Pty) Ltd: Price by age analysis**



The price by age for the schemes administered by Old Mutual Healthcare varies above and below the expected from quarter to quarters for the ages between 14 to 44 years. It rises above the expected for the ages above 44 years. These deviations are attributed to the following:

- DM1 reported at 57% of the expected for March and 271% in December
- DM2 reported at 187% of the expected for March and 160% in December
- HYL reported at 170% of the expected for March and 184% in December
- IHD reported at 130% of the expected for March and 116% in December
- CC3 reported at 233% of the expected for March and 252% in December
- Multiple CD reported at 168% of the expected for March and 173% in December
- Total CDL reported at 126% of the expected for March and 129% in December
- HIV reported at 64% of the expected for March and 14% in December
- CMY reported at 87% of the expected for March and 71% in December

**Figure 73 Old Mutual Healthcare (Pty) Ltd: Community rate analysis**

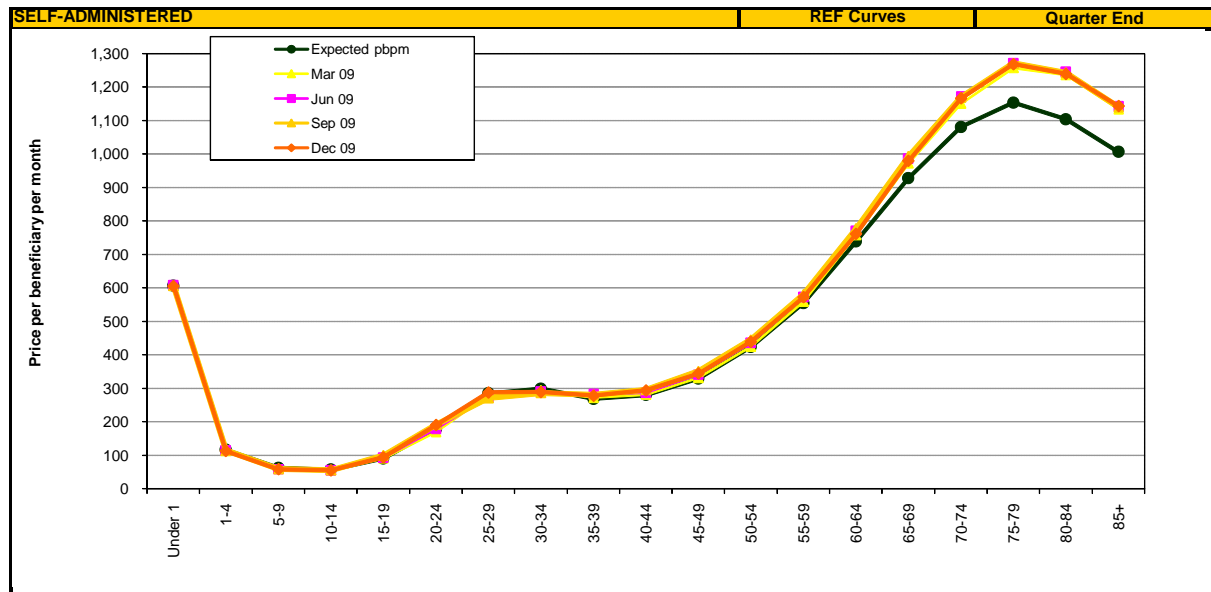


The Old Mutual HealthCare administrated schemes reported maternity rates fluctuating between R7.10 below the expected and 9.89 pbpm above the expected; chronic disease rates between R7.10 pbpm below and R19.43 pbpm above the expected. The slightly older than average age profile translates into a community rate of between R3.77 and R12.35 pbpm higher than the industry community rate.



## 17. Self-Administered

**Figure 74 Self-Administered Schemes: Price by age analysis**

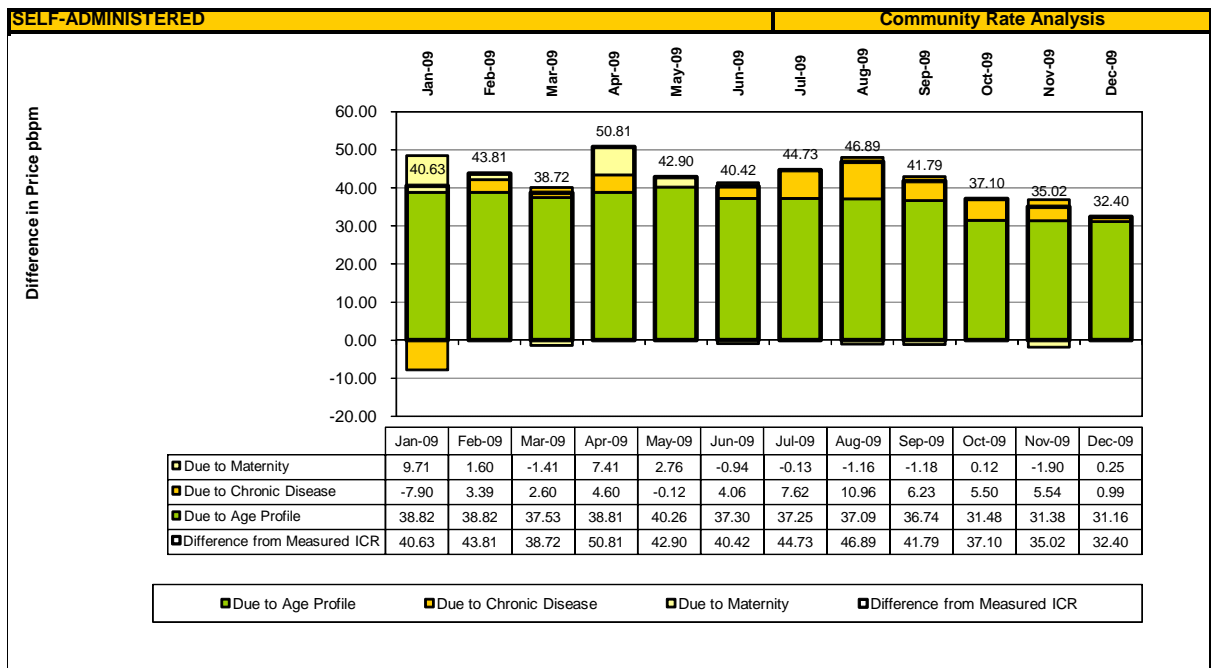


The price by age for the self-administered schemes only slightly varies that of the expected for the ages between 30 and 59 years, but rises further above the expected for the ages above 60 years. These variations are due to the following:

- DM1 reported at 78% of the expected for March and 177% in December
- HYP reported at 116% of the expected for March and 119% in December
- IHD reported at 122% of the expected for March and 117% in December
- CC3 reported at 160% of the expected for March and 167% in December
- Multiple CD reported at 133% of the expected for March and 138% in December
- Total CDL reported at 110% of the expected for March and 112% in December



**Figure 75 Self-Administered Schemes: Community rate analysis**



The Self administrated schemes reported maternity rates fluctuating between R1.90 below the expected and R9.71 pbpm above the expected; chronic disease rates between R7.90 pbpm below and R10.96 pbpm above the expected. The older than average age profile translates into a community rate of between R31.16 and R40.26 pbpm higher than the industry community rate.

000 - END - 000

