

The analysis of REF shadow returns

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COUNCIL FOR MEDICAL SCHEMES

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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. This trend was not continued and it appears that there is a reduction in the quality of data submitted during 2008.

Similar to the techniques applied in 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 2008.

The report indicates that data was analysed for 99.7% of medical scheme beneficiaries. The proportion of schemes submitting fair data ranged from 71% - 78% during the year, with 18% - 25% of schemes submitting poor data and 2% - 4% of schemes having applied CDL definitions inadequately. Of concern is that there may be a trend developing whereby more schemes are submitting poor quality data, particularly when considering September and December submissions.

However, the report shows that there has been an impressive improvement in the quality of data over the four years of the shadow period:

- The clinical credibility of submissions has improved dramatically and there are only a few submissions with totally unrealistic REF risk factors reported;
- In 2008, the total financial impact of deviations from expected levels has increased to 3% of the total estimated cost of the PMBs (opposed to 0.5% in 2007, 3% in 2006 and 11% in 2005);
- The price by age curves for REF submissions are close to the expected curves, but deviate more from the expected than in 2007;
- The industry community rate remained stable and shows very little month-to-month variation;
- The highest and lowest community rates observed in schemes have come closer together, showing that some of the previous extreme rates were due to data errors.

The CMS will invite schemes that have submitted poor data in 2008 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 website¹. 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

Similar to the situation in 2007, there were no major changes in the REF entry and verification criteria affecting REF submissions during 2008. Version 3² was effective from 1 January 2008. Due to adjustments for inflation³, the weight ascribed to

¹ 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

² 30 October 2007, "Guidelines for the Identification of Beneficiaries with REF Risk Factors in Accordance with the REF Entry and Verification Criteria Version 3"
http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/Entry_And_Verification_Guidelines_Version_3.pdf

³ 21 April 2008, "Methodology to Determine the REF Weighting table for 2008"



cardiomyopathy (CMY) has become larger than the weight ascribed to bipolar mood disorder (BMD) in the 2008 REF weighting table. (Previously BMD had a larger weight). Version 3 made provision for the revised weighting hierarchy. In addition, this version clarified a number of uncertainties, specifically addressing the differences between the REF entry and verification criteria and the PMB regulations, improved clarity on version control, and introduced 5-digit ICD10 codes. Version 3.1⁴ corrected the incorrect ICD10 code for Parkinson's disease, and version 3.2⁵ made corrections to ICD10 codes for rheumatoid arthritis, ATC codes are in accordance with WHO 2008 guidelines and the document contains improved definitions for diabetes type 1 and 2.

In consultation with the Risk Equalisation Technical Advisory Panel (RETAP), the office has made a few other less significant technical corrections to the guidelines (see Annexure A, page 22 for details).

2.1.2 2008 REF weighting table

The 2008 REF weighting table⁶ is based on the 2005 REF study⁷. The method applied to adjust the table for inflation has been described previously⁸.

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

<http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/Methodology%20to%20Determine%20the%20REFWT%20for%202008.pdf>

⁴ 6 December 2007, "Guidelines for the Identification of Beneficiaries with REF Risk Factors in Accordance with the REF Entry and Verification Criteria Version 3.1"

http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/07_12_06_V3_1_EV_Guidelines.pdf

⁵ 27 March 2008, "Guidelines for the Identification of Beneficiaries with REF Risk Factors in Accordance with the REF Entry and Verification Criteria Version 3.2"

http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/V3.2_of_Entry_and_Verification_Guidelines.pdf

⁶ 21 April 2008, "REF Weighting and COUNT Tables 2008"

<http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/REFWT%20and%20COUNT%202008.xls>

⁷ 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>

⁸ 21 April 2008, "Methodology to Determine the REF Weighting table for 2008"

<http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/Methodology%20to%20Determine%20the%20REFWT%20for%202008.pdf>



scheme options as “low”, “medium”, or “high” risk options (see the 2007 REF report for details on the clustering technique⁹). 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 website¹⁰.

Based on these expected rates, the CMS calculated DIN¹¹ 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 2008, 99.7% of the total number of beneficiaries reported in the statutory returns were accounted for in REF submissions.

Table 1: Percentage of beneficiaries included in 2008 REF returns

	<i>Statutory returns submissions</i>	<i>REF submissions</i>	<i>REF Beneficiaries as % SR Beneficiaries</i>
Mar 08	7 441 199	7 425 174	99.8%
Jun 08	7 523 213	7 483 560	99.5%
Sep 08	7 770 419	7 730 862	99.5%
Dec 08	7 832 544	7 812 388	99.7%

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

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

¹⁰ “Expected count rates by cluster 2008”, available at:
http://www.medicalschemes.com/publications/ZipPublications/Risk%20Equalisation%20Fund/Expected_count_rates_by_cluster_2008.xls

¹¹ DIN scores refer to scores assigned to REF submissions based on the particular dataset’s Deviation from the Industry Norm.



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 Annexure B on page 25.

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

Category¹²	Short description	Group
3 L	Some concerns, CDLs are reported at very low levels	Fair data
3	Some concerns	
3 H	Some concerns, CDLs are reported at very high levels	
4	Many more beneficiaries in REF returns than in statutory returns	Poor data
5	No REF data or substantially less than in statutory returns	
6	Much lower than expected CDLs	CDL definitions applied poorly
7	Much higher than expected CDLs	
8	Maternity data unlikely	Poor data
9	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. A similar analysis of the categorisation of 2007 submissions showed agreement with the final categorisation in less than 70% of cases. The above values represent an improvement in the inter-observer differences and are indicative of much more consistent application of the categorisation definitions.

¹² Note that categories 1 and 2, which were previously used to identify “good” datasets with minor and no concerns respectively, have been discontinued.

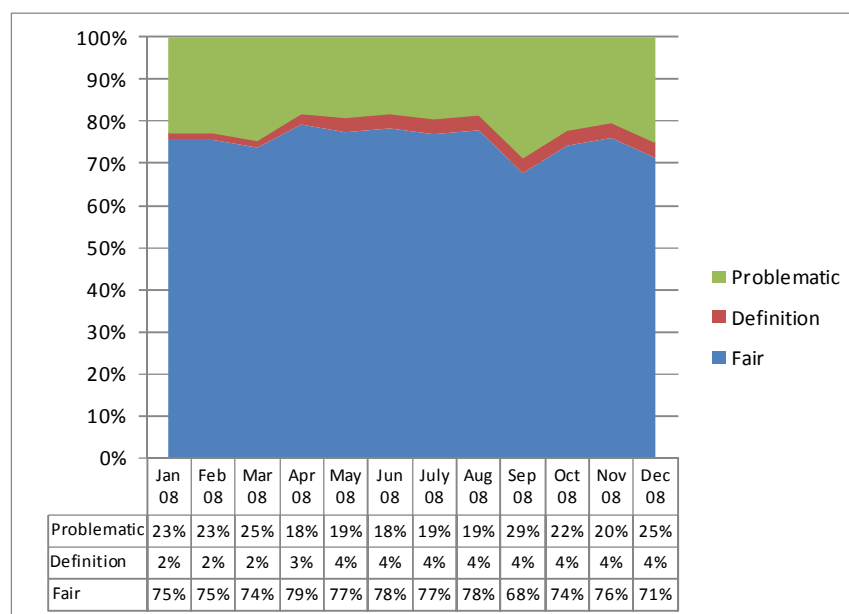


Table 3: REF analyst performance: Percentage of schemes where an analyst's initial categorisation is the same as the final category agreed to by the REF team

<i>Analyst</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>
1	93	93	91	98	98	93	96	96	100	94	94	94
2	96	98	98	89	89	93	81	81	81	81	81	81
3	89	89	89	92	92	92						
4	95	97	97	100	92	95	92	92	86	84	86	84
5	93	91	95	98	96	98	78	80	80	85	83	77
6							72	72	60	68	68	60

Figure 1 indicates that the proportion of schemes submitting fair data ranged from 71% - 78% during the year, with 18% - 25% of schemes submitting poor data and 2% - 4% of schemes having applied CDL definitions inadequately. Of concern is that there may be a trend developing whereby more schemes are submitting poor quality data, particularly when considering September and December submissions.

Figure 1: Data quality groups by month



The numbers presented in Figure 1 are not directly comparable to numbers reported previously. During the shadow period, there have been various incremental changes in the categorisation definitions with one major change in 2007. Figure 2 gives the details of each category over the four years for which schemes have submitted REF data. Note that with the introduction of scheme-specific expected values based on the clustering of schemes into “high”, “medium”, and “low” risk clusters, that the majority of schemes in category 6 and 7 during 2005 and 2006 were placed in either 3, 3 L or 3 H categories.



Figure 2: Distribution of categories: 2005 - 2008

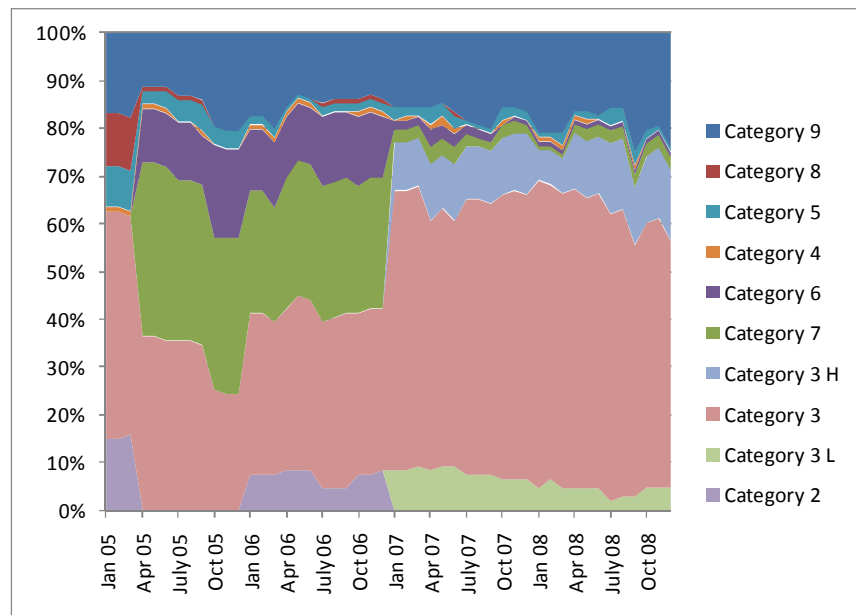
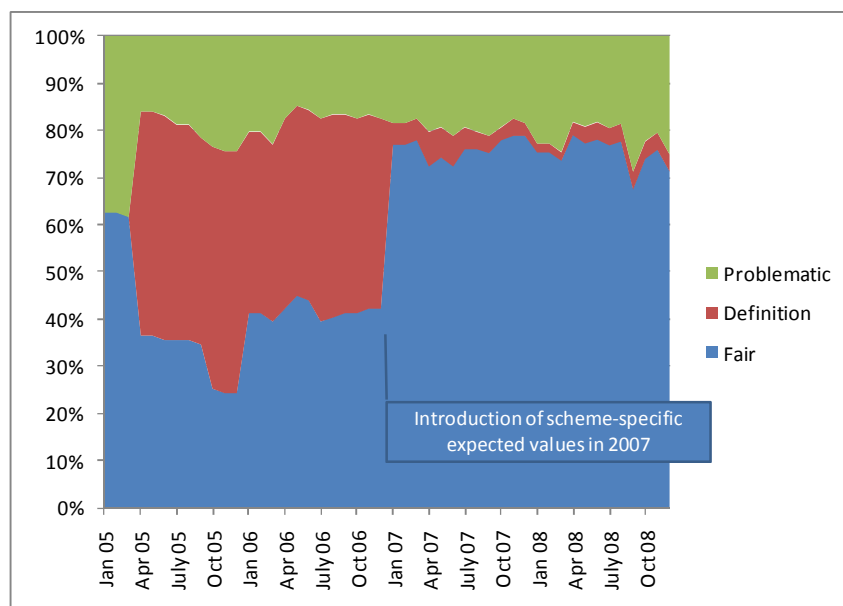


Figure 3 shows that the proportion of schemes with poor data has remained approximately 20% over the four-year period (with the exception of the data received in the first quarter of 2005, when almost 40% of schemes submitted poor quality data). It appears that there might be a slightly larger proportion of poor data submissions during 2008. This is probably the result of a continued refinement of the analytical process. Sections 2.3.3, 2.3.4 and 3 provide information that indicates the improvement in data quality over the four years that schemes have submitted REF returns.

Figure 3: Distribution of data quality groups: 2005 - 2008



2.3.2 DIN scores

The REF unit calculated DIN¹³ 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.

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 methodology¹⁴.

2.3.3 Evaluation of clinical credibility of submissions

Figure 4 below indicates that the actual rate of reported CDL counts was lower than expected in January (96%) and showed a gradual increase of up to 107% of the expected by November 2008. Previous reports on REF submissions¹⁵ noted similar upward trends in the level of CDLs; during 2007 the initial percentage of expected CDL was 96% in January and increased to 105% in December.

¹³ 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.

¹⁴ 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>

¹⁵ 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



Figure 4: All Schemes: Total CDL count per 1 000 lives (2008)

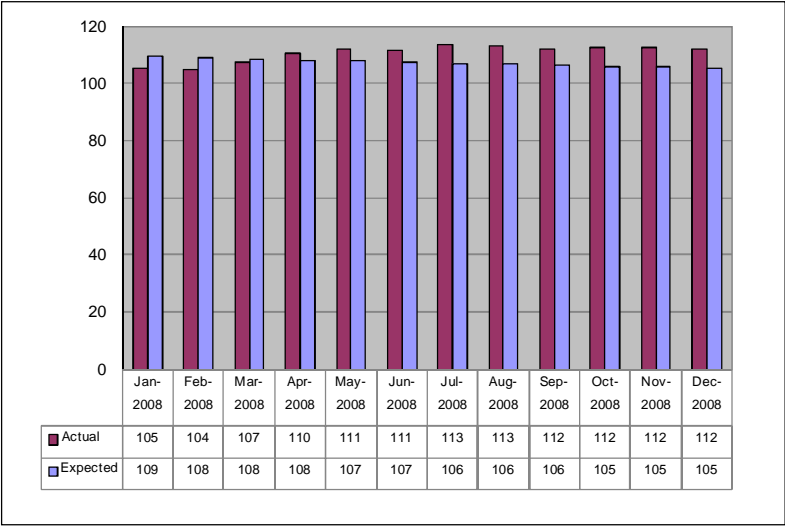


Figure 5 below graphically shows the large burden of cardiac and associated conditions, highlighting that lifestyle diseases are prevalent, while Table 4 below displays the count rates for the 10 most common chronic conditions.

Figure 5: Distribution of chronic disease (December 2008)

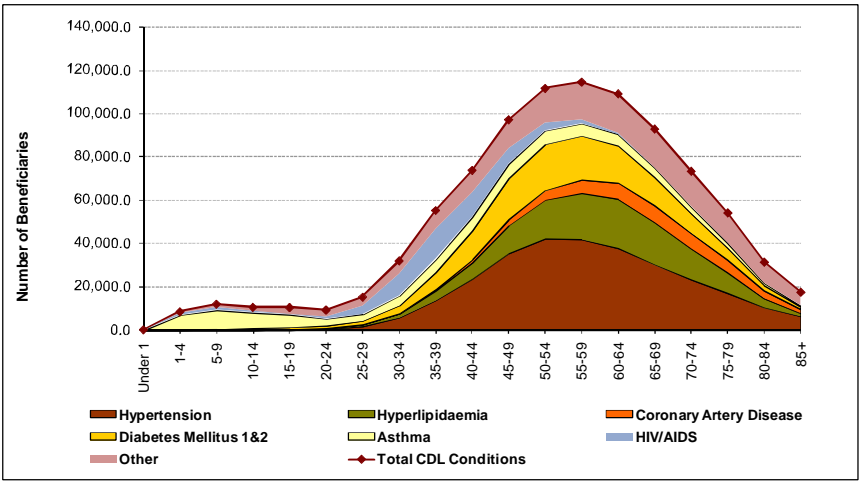


Table 4: The 10 most frequently occurring chronic diseases (December 2008)

Top 10 CDL conditions 2008				
Order	Name	Number	% of CDL	% of population
1	Hypertension	292 304	31.4%	3.7%
2	Hyperlipidaemia	139 866	15.0%	1.8%
3	Diabetes mellitus 2	118 468	12.7%	1.5%
4	Asthma	86 241	9.3%	1.1%
5	HIV / AIDS	55 774	6.0%	0.7%
6	Ischaemic heart disease	49 670	5.3%	0.6%
7	Cardiomyopathy	33 260	3.6%	0.4%
8	Hypothyroidism	31 677	3.4%	0.4%
9	Epilepsy	26 018	2.8%	0.3%
10	Diabetes mellitus 1	21 456	2.3%	0.3%
Other*		77 191	8.3%	1.0%
Total		931 925	100%	11.9%

*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

Table 4 shows the 10 most commonly occurring conditions by December 2008, indicating that 11.9% of the population had chronic diseases. The corresponding percentage in 2007 was 11.3%.

Figure 6 shows the count percentage of the top 10 chronic conditions in 2007 and 2008 respectively. The graph shows that hyperlipidaemia, diabetes mellitus 2 and HIV / AIDS increased markedly. From 2006 to 2007, HIV / AIDS has moved up from position seven to position six. In the following year, this condition moved up from position six to position five. This is probably indicative of the increasing national HIV / AIDS prevalence influenced by the increasing uptake of antiretroviral medication.

Figure 6: The top 10 CDL conditions in 2007 and 2008

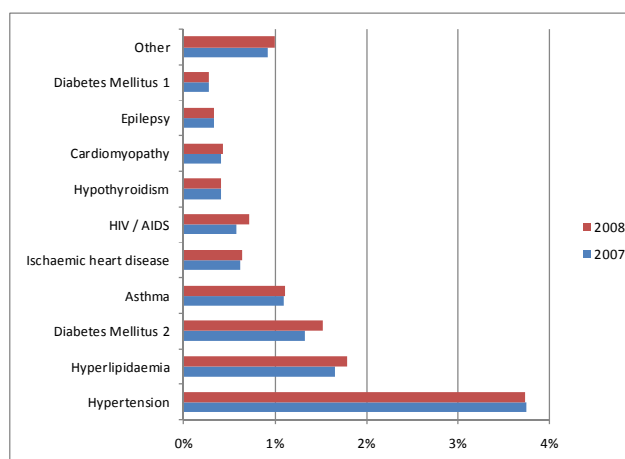


Figure 7: Relative weight of the top six REF risk factors (December 2008)

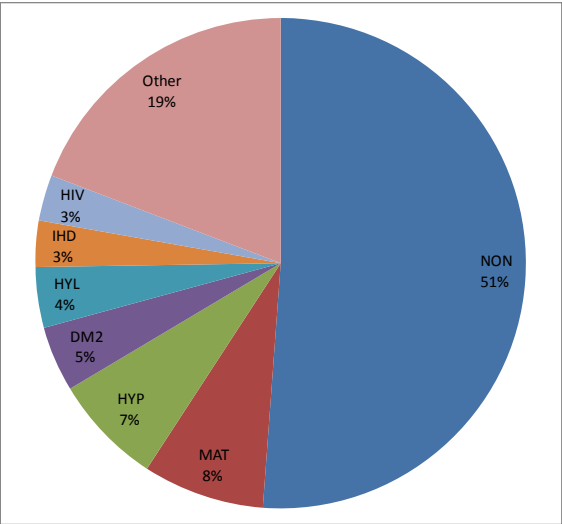


Figure 7 shows that the bulk of REF risk factor costs¹⁶ are included in the “NON” column (51%), indicating the importance of age as a risk factor in REF. Note that “maternity” is responsible for 8% of the REF risk factor costs.

Figure 8 presents the total cost load by REF risk factor groups, indicating the importance of lifestyle diseases, maternity, and multiple chronic diseases¹⁷. Figure 9 demonstrates the risk factor group costs per beneficiary per month by age.

¹⁶ 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.

¹⁷ 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 8: Total cost load by REF risk factor group (December 2008)

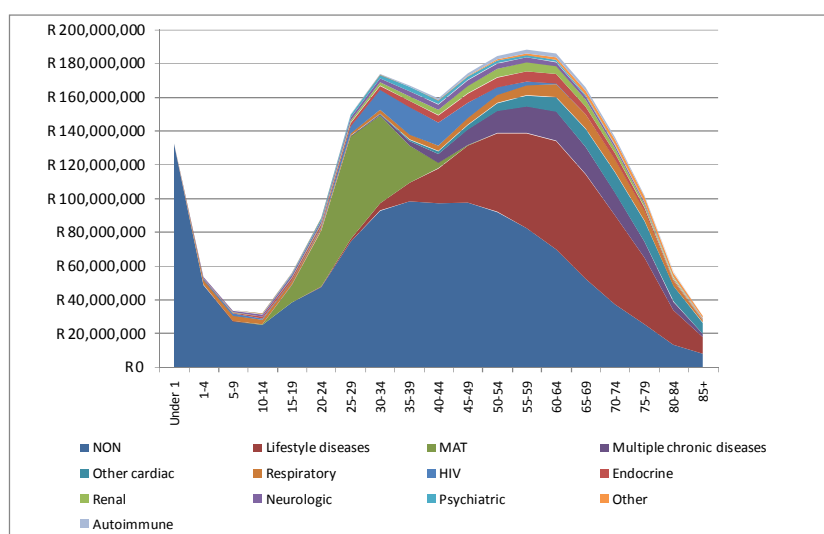
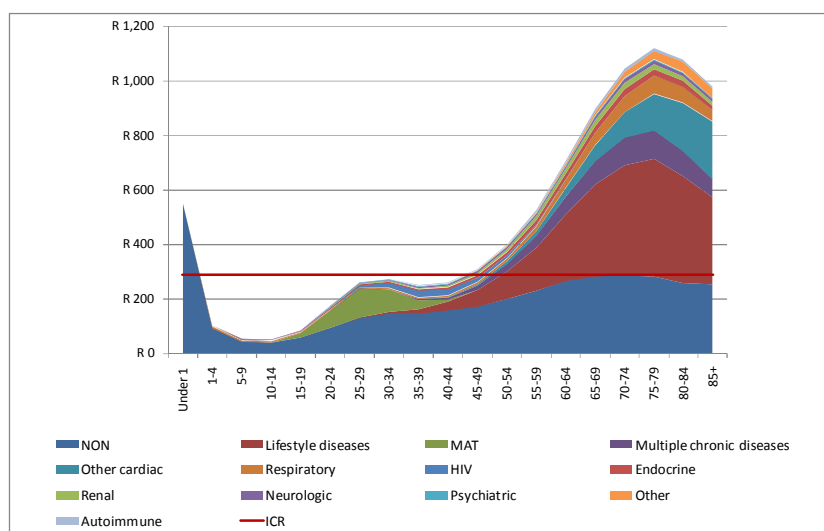


Figure 9: Age-specific REF risk factor cost pbpm (December 2008)



2.3.4 REF risk factors with deviations with significant financial impact

Table 5 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 below. Schemes have reported asthma and chronic obstructive pulmonary disease (COPD) consistently below expected values at 20% and 40% of the expected respectively. This might reflect the appropriate application of the entry and verification criteria by schemes. Alternatively, the data used in the calculation of expected values in 2005 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. Schemes reported Addison's disease at 243% of expected levels in December 2007, but at close to expected values in December 2008.

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. Asthma and chronic obstructive pulmonary disease are at lower than expected levels, with diabetes mellitus 2, hyperlipidaemia, and three simultaneous conditions at higher than expected levels.



Table 5: Expected and actual estimated REF risk factor costs

<i>Amount from REF by Condition</i>			<i>Dec2008</i>	
	Diff (A-E)*	Expected	Actual	A / E*
No CDL disease	-31 930 909	1 193 087 321	1 161 156 412	97%
Addison's Disease	2 460	110 023	112 483	102%
Asthma	-11 290 581	58 274 568	46 983 987	81%
Bronchiectasis	-48 852	303 910	255 059	84%
Bipolar mood disorder	9 284 920	6 548 406	15 833 327	242%
Cardiac failure	40 178	-	40 178	0%
Cardiomyopathy	-6 934 625	66 010 291	59 075 666	89%
CHF & CMY	-6 894 447	66 010 291	59 115 844	90%
Chronic obs. pulmonary disease	-15 841 772	39 673 990	23 832 218	60%
Chronic renal disease	5 543 138	34 711 972	40 255 110	116%
Crohn's disease	-80 016	2 115 327	2 035 311	96%
Diabetes insipidus	42 596	98 553	141 149	143%
Diabetes mellitus 1	3 975 676	34 232 716	38 208 392	112%
Diabetes mellitus 2	32 041 806	65 467 691	97 509 497	149%
Dysrhythmias	5 536 116	11 259 627	16 795 743	149%
Epilepsy	1 091 391	24 912 260	26 003 651	104%
Glaucoma	729 969	6 801 547	7 531 515	111%
Haemophilia	351 222	1 190 082	1 541 304	130%
Hyperlipidaemia	15 843 034	75 537 475	91 380 509	121%
Hypertension	8 430 650	156 922 376	165 353 026	105%
Ulcerative colitis	10 977	1 456 939	1 467 916	101%
Coronary artery disease	4 811 037	64 083 203	68 894 240	108%
Multiple sclerosis	-1 618 212	9 556 926	7 938 714	83%
Parkinson's disease	1 161 514	6 326 219	7 487 733	118%
Rheumatoid arthritis	-1 295 724	11 611 161	10 315 437	89%
Schizophrenia	744 185	1 808 236	2 552 421	141%
Systemic LE	178 460	2 164 659	2 343 119	108%
Hypothyroidism	-342 891	13 504 785	13 161 894	97%
HIV / AIDS	5 014 893	63 583 908	68 598 801	108%
Two simultaneous conditions	9 697 805	41 871 662	51 569 467	123%
Three simultaneous conditions	18 368 249	25 974 882	44 343 132	171%
Four or more simultaneous conditions	9 104 896	6 978 287	16 083 183	230%
Maternity events	8 634 133	173 207 311	181 841 444	105%
Total CDL conditions	52 366 658	694 682 940	747 049 598	108%
Multiple CDL conditions	37 170 950	74 824 831	111 995 781	150%
Total	71 255 724	2 199 386 312	2 270 642 036	103%

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

2.3.4.1 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 50% - 95% of expected levels in most schemes.

2.3.4.2 Diabetes mellitus 2

Overall, the reported DM2 count rate across the scheme population is 49% 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 prevalence of DM2 needs to be closely studied and monitored in future to inform policy and benefit design direction.

2.3.4.3 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 and may be the result of up-coding by the treating providers, or by a true increase in this condition.

2.3.4.4 Three simultaneous conditions

Schemes reported this indicator at levels 71% higher than expected with Metropolitan Health Corporate (Pty) Ltd administered schemes reporting the highest levels.

2.3.4.5 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. The Metropolitan Health Corporate (Pty) Ltd administered schemes reported the highest at 174% of expected levels, closely followed by Momentum Medical Scheme Administrators (Pty) Ltd administered schemes at 165%.

2.3.4.6 Total CDL conditions

The combined effect of these deviations results in a financial impact that translates to 3% above the expected levels compared to 0.5% above the expected levels in the previous year.



2.3.5 Evaluation of REF submissions by administrator

2.3.5.1 Categorisation by administrator

Table 6 shows the number of schemes by administrator and category in December 2008. Twenty-six schemes (24%) were classified as category 9 schemes. Of the category 9 schemes, eight are self-administered. Old Mutual Healthcare (Pty) Ltd administered four; Full Circle Health (Pty) Ltd and Allcare Administrators (Pty) Ltd administered three each and Sechaba Medical Solutions (Pty) Ltd administered two. Each of the following administrators administered one category 9 scheme: Discovery Health (Pty) Ltd, Eternity Private Health Fund Administrators (Pty) Ltd, Resolution Administrators (Pty) Ltd, Rowan Angel (Pty) Ltd, Status Medical Aid Administrators (Pty) Ltd, and Thebe Ya Bophelo Healthcare Administrators (Pty) Ltd.



Table 6: Scheme categories by administrator (December 2008)

<i>Administrator</i>	<i>Category</i>							Total
Frequency Row Pct	3L	3	3H	5	6	7	9	
ALLCARE ADMINISTRATORS (PTY) LTD	0 0.00	2 40.00	0 0.00	0 0.00	0 0.00	0 0.00	3 60.00	5
DISCOVERY HEALTH (PTY) LTD	0 0.00	9 81.82	1 9.09	0 0.00	0 0.00	0 0.00	1 9.09	11
ETERNITY PRIVATE HEALTH FUND ADMINISTRATORS (PTY) LTD	0 0.00	0 0.00	1 50.00	0 0.00	0 0.00	0 0.00	1 50.00	2
FULL CIRCLE HEALTH (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	3 100.00	3
MEDSCHEME HOLDINGS (PTY) LTD	1 5.56	15 83.33	2 11.11	0 0.00	0 0.00	0 0.00	0 0.00	18
METROPOLITAN HEALTH CORPORATE (PTY) LTD	0 0.00	11 68.75	4 25.00	0 0.00	0 0.00	1 6.25	0 0.00	16
MOMENTUM MEDICAL SCHEME ADMINISTRATORS (PTY) LTD	1 10.00	6 60.00	3 30.00	0 0.00	0 0.00	0 0.00	0 0.00	10
MULTIMED HEALTHCARE ADMINISTRATORS (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	0 0.00	1
OLD MUTUAL HEALTHCARE (PTY) LTD	0 0.00	2 25.00	1 12.50	1 12.50	0 0.00	0 0.00	4 50.00	8
PPS MEDICAL SCHEME ADMINISTRATORS (PTY) LTD	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
PRIVATE HEALTH ADMINISTRATORS	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
PROVIDENCE HEALTHCARE RISK MANAGERS (PTY) LTD	0 0.00	2 40.00	3 60.00	0 0.00	0 0.00	0 0.00	0 0.00	5
ROWAN ANGEL (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
RESOLUTION ADMINISTRATORS (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
SECHABA MEDICAL SOLUTIONS (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	2 100.00	2
SELF-ADMINISTERED	0 0.00	6 40.00	1 6.67	0 0.00	0 0.00	0 0.00	8 53.33	15
SIGMA HEALTH FUND MANAGERS (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	0 0.00	1
STATUS MEDICAL AID ADMINISTRATORS (PTY) LTD	2 40.00	1 20.00	0 0.00	0 0.00	1 20.00	0 0.00	1 20.00	5
THEBE YA BOPHELO HEALTHCARE ADMINISTRATORS (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
V MEDICAL AID ADMINISTRATORS (PTY) LTD	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
Total	5	56	16	1	1	3	26	108

2.3.6 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 10 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 2008.

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 10 - Figure 13).

Figure 10: Price by age: All administrators (2008)

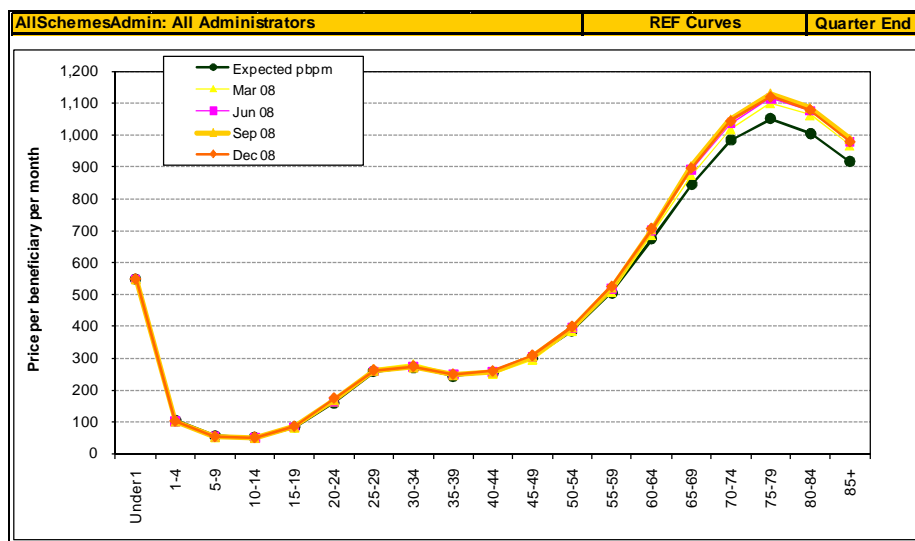


Figure 11: Price by age: All administrators (2007)

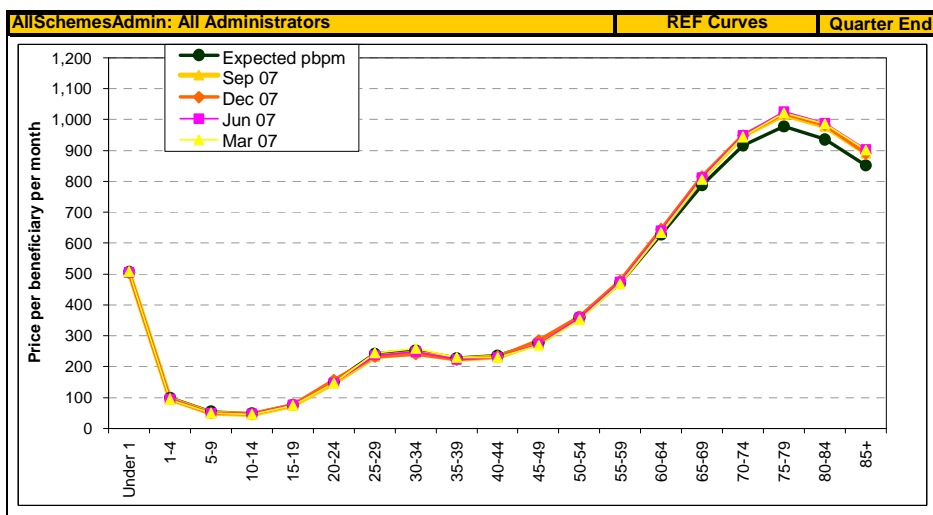


Figure 12: Price by age: All administrators (2006)

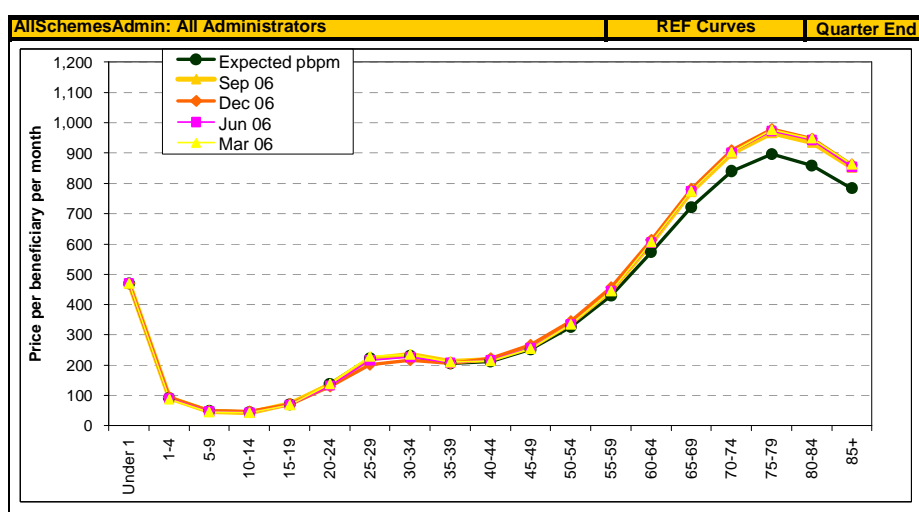
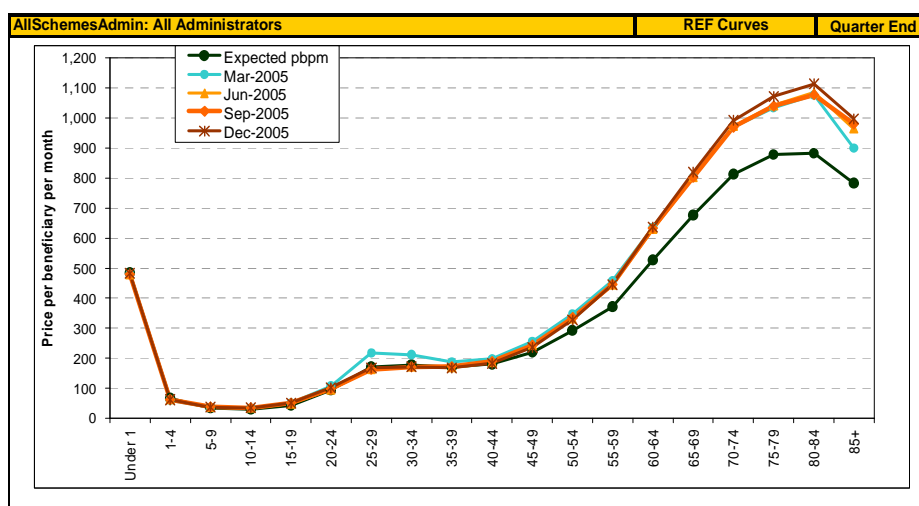


Figure 13: Price by age: All administrators (2005)



Price by age graphs and community rate analyses for the major administrators appear in Annexure E on page 65.

3 The potential financial impact on schemes

In spite of a clear improvement of the quality of data submitted over the past three years, approximately 20% of schemes are categorised as category 9 schemes. Even though the sensitivity analysis presented in Annexure C (section 4.3, page 44) indicates a small difference in the community rates of schemes with fair data and schemes with poor data, the exact financial impact of the REF on medical schemes will be known only when data quality has improved further.



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 14 demonstrates that in December 2008, about 200 000 beneficiaries would pay more than R75 pbpm to REF; while about 840 000 beneficiaries would receive more than R75 pbpm.

Figure 14: Number of beneficiaries by payment band (December 2008): Alternative payment intervals

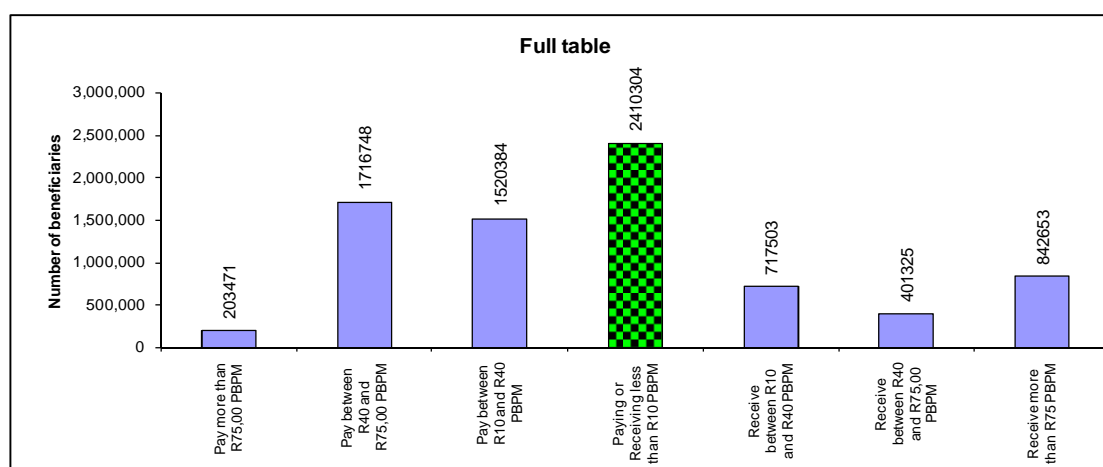


Table 7 presents the data supporting the graph in Figure 14.

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

<i>Scheme risk (December 2008)</i>	<i>Number of schemes</i>	<i>Percent (%)</i>	<i>Cumulative number of schemes</i>	<i>Cumulative percent (%)</i>
Pay more than R75 pbpm	8	7.41	8	7.41
Pay between R40 and R75 pbpm	14	12.96	22	20.37
Pay between R10 and R40 pbpm	19	17.59	41	37.96
Paying or receiving less than R10 pbpm	14	12.96	55	50.93
Receive between R10 and R40 pbpm	16	14.81	71	65.74
Receive between R40 and R75 pbpm	13	12.04	84	77.78
Receive more than R75 pbpm	24	22.22	108	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

Statistic	Full Contribution Table (Amount in rand)			
	March 2008	June 2008	September 2008	December 2008
Industry community rate	283.81	286.72	289.41	290.66
Minimum risk rate	-907.82	-907.71	-237.61	-245.10
Maximum risk rate	111.86	113.00	117.68	109.15
Standard deviation	117.92	119.44	76.50	72.58

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 by the end of 2008, 24% of schemes submitted inadequate data.

4.1 Clinical credibility of submissions

Many of the serious problems with clinical data stated in previous reports have been resolved for most schemes. Only a small number of schemes continued to submit data sets that were not clinically credible. The combined effect of the differences in 2008 amounts to R71M or 3% of the total expected PMB cost. In the past three years (2005, 2006, 2007) the gap between the expected and actual reported levels has been declining steadily, at 10.7%, 2.9% and 0.5% respectively. This is largely attributed to improved quality of data submitted by the schemes. The upward trend observed in the 2008 data might not necessarily reflect deterioration in the quality of data submitted by the schemes, but a possible shift in the industry's risk profile. There is a need to review the scheme-specific expected values as these are based on the 2005 REF study.

4.2 REF price by age and community rate analysis

The impressive improvement reported on previously did not continue into 2008.

4.3 Potential financial impact on schemes

Section 3 (page 18) highlights the financial impact that REF may have on schemes. Clearly, the estimation of the impact relies on good quality data. Note that 24% of schemes are still categorised as category 9.



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

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Annexure A: Changes introduced to the entry & verification criteria applicable during 2008

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3 CHANGES INTRODUCED IN VERSION 3.2 PUBLISHED ON 27 MARCH 2008.....	23

1 Changes introduced in version 3 published on 30 October 2007

As part of the process of the implementation of the REF, the experience gained from the analysis of the REF shadow returns guides possible changes to these guidelines. In addition, an industry workshop on 15 June 2007 was attended by more than 100 stakeholders, who were asked to comment on the guidelines to further improve them. The comments received have lead to changes in the following areas:

- In the interest of clarity, many changes were made throughout the document.
- The frequency of treatment that is required to meet proof of treatment criteria:
 - This area has not been changed since it would be too onerous to include “days of therapy” calculation or add administrative burden through the use of other verification methods. Furthermore this issue impacts on less than 0.5% of cases.
- Further clarification to ensure that autochronic methods are not used to identify beneficiaries with REF risk factors.
- Version control requirements are made more explicit.
- Differences between the status of PMB legislation and the REF entry and verification criteria is stated more clearly
- Other matters:
 - The table indicating the cost hierarchy of diseases is updated to be in line with the REFCT2008 (note that CMY is more expensive than BMD in the 2008 contribution table).
 - Five digit ICD10 codes are now required in the application of version 3 for 2008 cases.
 - The use of in-house codes as proof of diagnosis or treatment cannot be considered, as ICD10 and NHRPL codes are the national standard.



Schemes using these codes must cross-walk them to the national standard to comply with REF guidelines.

- The ICD10 codes for maternity have been expanded.
- The Boolean table for diabetes mellitus has been changed to allow authorisation for either type 1 or 2 diabetes to be sufficient to count either type 1 or type 2 as long as proof of treatment criteria are met.

To affect the above, changes were made to a number of sections throughout the document.

2 Changes introduced in version 3.1 published on 6 December 2007

The correct ICD10 code for Parkinsonism was inadvertently removed in the previous version. This error is corrected in this version:

- The ICD10 code for Parkinson's disease, G20, has been reinstated in Table 21 on page 35.

3 Changes introduced in version 3.2 published on 27 March 2008

- i. Some ICD10 codes for rheumatoid arthritis were inadvertently removed in the previous versions. These ICD10 codes have been reinstated in Table 22 on page 36.

M05.10	M05.30
M05.11	M05.31
M05.12	M05.32
M05.13	M05.33
M05.14	M05.34
M05.15	M05.35
M05.16	M05.36
M05.17	M05.37
M05.18	M05.38
M05.19	M05.39

- ii. The ATC class for the followings therapeutic groups has been updated in accordance with 2008 WHO guidelines. Accordingly Table 10: Crohn's disease, page 28; Table 24: Systemic lupus erythematosus, page 37; and Table 25:



Ulcerative colitis, page 38 have been updated. The ATC code descriptions on page 43 and page 45 also reflect these updates.

Description	Old code	New code
Ciclosporin	L04AA01	L04AD01
Tacrolimus	L04AA05	L04AD02
Etanercept	L04AA11	L04AB01
Infliximab	L04AA12	L04AB02

- iii. Two non-existent ATC codes that were previously incorrectly included were removed (M01AD and M01AF were removed from Table 22: Rheumatoid arthritis, page 36; and from Table 24: Systemic lupus erythematosus, page 37).
- iv. The correct ICD10 code for hypothyroidism was inadvertently removed in the previous versions. The ICD10 code for hypothyroidism, E02, has been reinstated in Table 19 on page 35.
- v. The words in bold and underlined below have been inserted in Table 12 (page 30) to clarify that the definition of the type of diabetes should be counted
 - *Evidence of use of oral euglycaemic medicines **in the preceding three months** automatically leads to the classification of a diabetic case as type 2.*



Annexure B: Category definitions

Table 9: Full description of category definitions applied to the evaluation of 2008 REF returns

Category	Description	Data quality group
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.	Fair data
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).	Poor data
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.	CDL definitions applied poorly
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.	Poor data
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 2007, the categorisation thereof, and the potential financial impact of the REF

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1 REF returns submitted

Table 10 indicates that during March 2008 REF data for 110 schemes were included in the analysis, representing 7 425 174 beneficiaries in the industry (99.78% of the total number of beneficiaries reported in the statutory returns).

Table 10: REF and SR returns submitted for March 2008

Category	Number of Schemes	Beneficiaries in March 2008			
		Statutory Returns	Percentage of Total SR Beneficiaries	REF Grids Submitted	REF Beneficiaries as % SR Beneficiaries
3L	5 (4.55%)	112 969	1.52	112 837	99.88
3	68 (61.82%)	5 616 203	75.47	5 619 225	100.05
3H	8 (7.27%)	320 255	4.3	320 545	100.09
4	1 (0.91%)	13 322	0.18	13 629	102.30
5	3 (2.73%)	144 149	1.94	137 616	95.46
6	1 (0.91%)	4 410	0.06	4 408	99.95
7	1 (0.91%)	154 859	2.08	154 859	100.00
8	-	-	-	-	-
9	23 (20.91%)	1 075 032	14.45	1 062 055	98.79
Total	110	7 441 199	100%	7 425 174	99.78%

The following exempted schemes 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 indicates that during June 2008, REF data for 110 schemes were included in the analysis, representing 7 483 560 beneficiaries in the industry (99.47% of the total number of beneficiaries reported in the statutory returns).



Table 11: REF and SR returns submitted for June 2008

<i>Decision Category</i>	<i>Number of Schemes</i>	<i>Beneficiaries in June 2008</i>			
		<i>Statutory Returns</i>	<i>Percentage of Total SR Beneficiaries</i>	<i>REF Grids Submitted</i>	<i>REF Beneficiaries as % SR Beneficiaries</i>
3L	5 (4.55%)	107 509	1.43	106 978	99.50
3	68 (61.82%)	4 824 669	64.13	4 818 708	99.87
3H	13 (11.82%)	1 247 147	16.58	1 247 077	99.99
4	-	-	-	-	-
5	1 (0.91%)	100 653	1.34	94 895	94.27
6	1 (0.91%)	5 024	0.07	5 023	99.98
7	3	350 580	4.66	348 902	99.52
8	-	-	-	-	-
9	19 (17.27%)	887 631	11.80	861 977	97.11
Total	110	7 523 213	100%	7 483 560	99.47

Table 12 indicates that during September 2008 REF data for 108 schemes were included in the analysis, representing 7 730 862 beneficiaries in the industry (99.49% of the total number of beneficiaries reported in the statutory returns).

Table 12: REF and SR returns submitted for September 2008

<i>Decision Category</i>	<i>Number of Schemes</i>	<i>Beneficiaries in September 2008</i>			
		<i>Statutory Returns</i>	<i>Percentage of Total SR Beneficiaries</i>	<i>REF Grids Submitted</i>	<i>REF Beneficiaries as % SR Beneficiaries</i>
3L	3 (2.78%)	69 598	0.90	68 896	98.99
3	57 (52.78%)	3 950 106	50.84	3 945 634	99.88
3H	13 (12.04%)	1 787 063	23.	1 787 308	100.01
4	1 (0.93%)	63 372	0.82	65 333	103.09
5	3 (2.78%)	167 562	2.16	139 128	83.03
6	1 (0.93%)	4 991	0.06	4 990	99.97
7	3 (2.78%)	346 455	4.46	344 886	99.54
8	-	-	-	-	-
9	27 (25%)	1 381 272	17.78	1 374 687	99.52
Total	108	7 770 419	100%	7 730 862	99.49

Table 13 indicates that during December 2008 REF data for 108 schemes were included in the analysis, representing 7 812 388 beneficiaries in the industry (99.74% of the total number of beneficiaries reported in the statutory returns).



Table 13: REF and SR returns submitted for December 2008

<i>Decision Category</i>	<i>Number of Schemes</i>	<i>Beneficiaries in December 2008</i>			
		<i>Statutory Returns</i>	<i>Percentage of Total SR Beneficiaries</i>	<i>REF Grids Submitted</i>	<i>REF Beneficiaries as % SR Beneficiaries</i>
3L	5 (4.63%)	204 587	2.61	203 375	99.40
3	56 (51,.5%)	1 923 167	24.55	1 921 093	99.89
3H	16 (14,.1%)	3 809 940	48.64	3 806 894	99.92
4	-	-	-	-	-
5	1 (0,.3%)	2 445	0.03	2 305	94.27
6	1 (0,.3%)	4 932	0.06	4 931	99.97
7	3 (2,.8%)	343 012	4.38	341 420	99.53
8	-	-	-	-	-
9	26 (24,.7%)	1 544 461	19.72	1 532 370	99.21
Total	108	7 832 544	100%	7 812 388	99.74

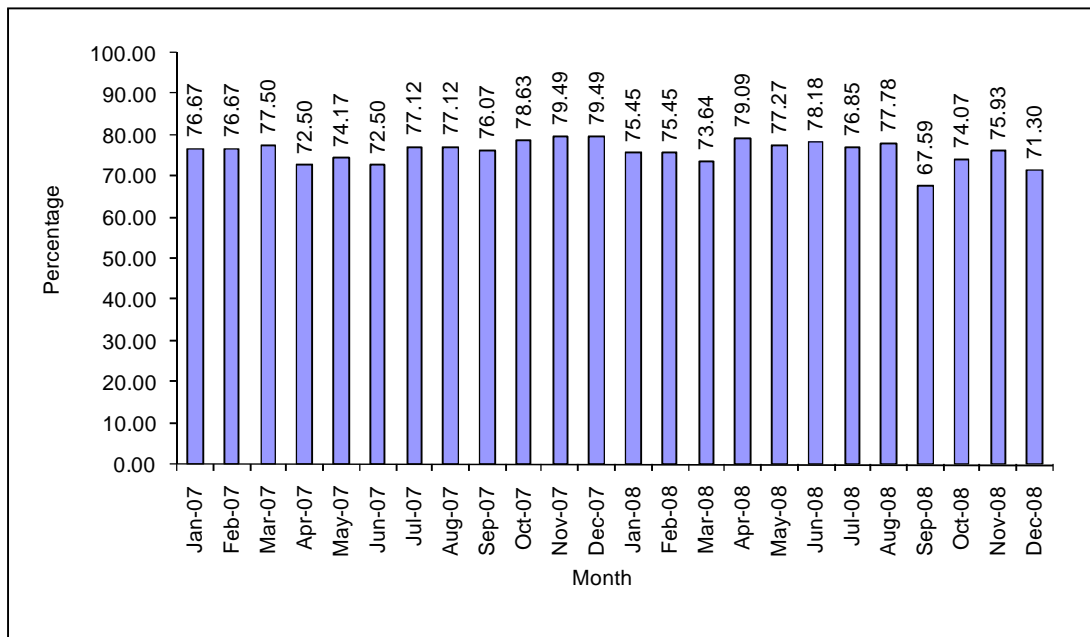
In general there is good correlation between the SR data and the REF data, except for the category 4, 5 and 9 schemes. These schemes must verify not only the totals before submission, but also their age calculations for both data sets.

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 is plotted in Figure 15. During 2007, there was a slight improvement in the number of schemes grouped as giving “fair data”, but over the two-year span there was not really an improvement in the quality of the submitted REF data. In fact, in the second half of 2008 there is a noticeable decrease in the quality of the data for September and December.



Figure 15: Percentage of schemes with “fair data”



The detail distribution of the number of schemes per category per month for 2008 is tabulated in Table 14. Between 17 (15.74%) and 27 (25%) schemes were classified as category 9 schemes. These submissions contain gross irregularities in more than one area. These schemes are definitely not ready for REF implementation.

CMS will again have feedback sessions with the problematic schemes and schemes will be invited to submit voluntary beneficiary claims and authorisation data to CMS. Using and audit module, CMS will construct grids from the submitted raw data in order to help the schemes to improve the quality of their REF submissions.

Table 14: Number of schemes by category and month

PERIOD	Category								Total
Frequency									
Row Pct									
Col Pct	3L	3	3H	4	5	6	7	9	
Jan 08	5 4.55 9.09	71 64.55 9.16	7 6.36 4.55	1 0.91 16.67	1 0.91 4.35	1 0.91 8.33	1 0.91 3.45	23 20.91 9.06	110
Feb 08	7 6.36 12.73	68 61.82 8.77	8 7.27 5.19	1 0.91 16.67	1 0.91 4.35	1 0.91 8.33	1 0.91 3.45	23 20.91 9.06	110
Mar 08	5 4.55 9.09	68 61.82 8.77	8 7.27 5.19	1 0.91 16.67	3 2.73 13.04	1 0.91 8.33	1 0.91 3.45	23 20.91 9.06	110
Apr 08	5 4.55 9.09	69 62.73 8.90	13 11.82 8.44	1 0.91 16.67	1 0.91 4.35	1 0.91 8.33	2 1.82 6.90	18 16.36 7.09	110
May 08	5 4.55 9.09	67 60.91 8.65	13 11.82 8.44	1 0.91 16.67	2 1.82 8.70	1 0.91 8.33	3 2.73 10.34	18 16.36 7.09	110
Jun 08	5 4.55 9.09	68 61.82 8.77	13 11.82 8.44	0 0.00 0.00	1 0.91 4.35	1 0.91 8.33	3 2.73 10.34	19 17.27 7.48	110
Jul 08	2 1.85 3.64	65 60.19 8.39	16 14.81 10.39	0 0.00 0.00	4 3.70 17.39	1 0.93 8.33	3 2.78 10.34	17 15.74 6.69	108
Aug 08	3 2.78 5.45	65 60.19 8.39	16 14.81 10.39	0 0.00 0.00	3 2.78 13.04	1 0.93 8.33	3 2.78 10.34	17 15.74 6.69	108
Sep 08	3 2.78 5.45	57 52.78 7.35	13 12.04 8.44	1 0.93 16.67	3 2.78 13.04	1 0.93 8.33	3 2.78 10.34	27 25.00 10.63	108
Oct 08	5 4.63 9.09	60 55.56 7.74	15 13.89 9.74	0 0.00 0.00	2 1.85 8.70	1 0.93 8.33	3 2.78 10.34	22 20.37 8.66	108
Nov 08	5 4.63 9.09	61 56.48 7.87	16 14.81 10.39	0 0.00 0.00	1 0.93 4.35	1 0.93 8.33	3 2.78 10.34	21 19.44 8.27	108
Dec 08	5 4.63 9.09	56 51.85 7.23	16 14.81 10.39	0 0.00 0.00	1 0.93 4.35	1 0.93 8.33	3 2.78 10.34	26 24.07 10.24	108
Total	55	775	154	6	23	12	29	254	1308

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 Table 15 - Table 18.



Table 15: Scheme categories by administrator (March 2008)

<i>Administrator</i>	<i>Category</i>								<i>Total</i>
Frequency Row Pct	<i>3L</i>	<i>3</i>	<i>3H</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>9</i>	
<i>ALLCARE ADMINISTRATORS (PTY) LTD</i>	0 0.00	3 50.00	0 0.00	0 0.00	1 16.67	0 0.00	0 0.00	2 33.33	6
<i>DISCOVERY HEALTH (PTY) LTD</i>	0 0.00	9 81.82	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	2 18.18	11
<i>ETERNITY PRIVATE HEALTH FUND ADMINISTRATORS (PTY) LTD</i>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	2 100.00	2
<i>FULL CIRCLE HEALTH (PTY) LTD</i>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	2 100.00	2
<i>MEDSCHEME HOLDINGS (PTY) LTD</i>	0 0.00	15 83.33	2 11.11	0 0.00	1 5.56	0 0.00	0 0.00	0 0.00	18
<i>METROPOLITAN HEALTH CORPORATE (PTY) LTD</i>	1 6.25	14 87.50	0 0.00	0 0.00	0 0.00	0 0.00	1 6.25	0 0.00	16
<i>MOMENTUM MEDICAL SCHEME ADMINISTRATORS (PTY) LTD</i>	0 0.00	7 70.00	2 20.00	0 0.00	1 10.00	0 0.00	0 0.00	0 0.00	10
<i>MPUMALANGA MANAGED HEALTHCARE (PTY) LTD</i>	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<i>MULTIMED HEALTHCARE ADMINISTRATORS (PTY) LTD</i>	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
<i>OLD MUTUAL HEALTHCARE (PTY) LTD</i>	0 0.00	6 66.67	2 22.22	0 0.00	0 0.00	0 0.00	0 0.00	1 11.11	9
<i>PPS MEDICAL SCHEME ADMINISTRATORS (PTY) LTD</i>	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<i>PRIVATE HEALTH ADMINISTRATORS</i>	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<i>PROVIDENCE HEALTHCARE RISK MANAGERS (PTY) LTD</i>	0 0.00	1 20.00	1 20.00	0 0.00	0 0.00	0 0.00	0 0.00	3 60.00	5
<i>ROWAN ANGEL (PTY) LTD</i>	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
<i>RESOLUTION ADMINISTRATORS (PTY) LTD</i>	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
<i>SECHABA MEDICAL SOLUTIONS (PTY) LTD</i>	0 0.00	1 50.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 50.00	2
<i>SELF-ADMINISTERED</i>	1 6.67	6 40.00	1 6.67	1 6.67	0 0.00	0 0.00	0 0.00	6 40.00	15
<i>SIGMA HEALTH FUND MANAGERS (PTY) LTD</i>	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<i>STATUS MEDICAL AID ADMINISTRATORS (PTY) LTD</i>	2 40.00	1 20.00	0 0.00	0 0.00	0 0.00	1 20.00	0 0.00	1 20.00	5
<i>THEBE YA BOPHELO HEALTHCARE ADMINISTRATORS (PTY) LTD</i>	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<i>V MEDICAL AID ADMINISTRATORS (PTY) LTD</i>	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
Total	5	68	8	1	3	1	1	23	110



Table 16: Scheme categories by administrator (June 2008)

<i>Administrator</i>	<i>Category</i>							<i>Total</i>
Frequency Row Pct	<i>3L</i>	<i>3</i>	<i>3H</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>9</i>	
<i>ALLCARE ADMINISTRATORS (PTY) LTD</i>	0 0.00	4 66.67	0 0.00	0 0.00	0 0.00	0 0.00	2 33.33	6
<i>DISCOVERY HEALTH (PTY) LTD</i>	0 0.00	10 90.91	0 0.00	0 0.00	0 0.00	0 0.00	1 9.09	11
<i>ETERNITY PRIVATE HEALTH FUND ADMINISTRATORS (PTY) LTD</i>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	2 100.00	2
<i>FULL CIRCLE HEALTH (PTY) LTD</i>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	2 100.00	2
<i>MEDSCHEME HOLDINGS (PTY) LTD</i>	0 0.00	14 77.78	2 11.11	1 5.56	0 0.00	0 0.00	1 5.56	18
<i>METROPOLITAN HEALTH CORPORATE (PTY) LTD</i>	0 0.00	12 75.00	3 18.75	0 0.00	0 0.00	1 6.25	0 0.00	16
<i>MOMENTUM MEDICAL SCHEME ADMINISTRATORS (PTY) LTD</i>	1 10.00	7 70.00	2 20.00	0 0.00	0 0.00	0 0.00	0 0.00	10
<i>MULTIMED HEALTHCARE ADMINISTRATORS (PTY) LTD</i>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	0 0.00	1
<i>OLD MUTUAL HEALTHCARE (PTY) LTD</i>	0 0.00	6 66.67	2 22.22	0 0.00	0 0.00	0 0.00	1 11.11	9
<i>PPS MEDICAL SCHEME ADMINISTRATORS (PTY) LTD</i>	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<i>PRIVATE HEALTH ADMINISTRATORS</i>	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<i>PROSPERITY HEALTH MANAGERS (PTY) LTD</i>	0 .	0 .	0 .	0 .	0 .	0 .	0 .	0
<i>PROVIDENCE HEALTHCARE RISK MANAGERS (PTY) LTD</i>	0 0.00	2 40.00	3 60.00	0 0.00	0 0.00	0 0.00	0 0.00	5
<i>ROWAN ANGEL (PTY) LTD</i>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<i>RESOLUTION ADMINISTRATORS (PTY) LTD</i>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
<i>SECHABA MEDICAL SOLUTIONS (PTY) LTD</i>	0 0.00	1 50.00	0 0.00	0 0.00	0 0.00	0 0.00	1 50.00	2
<i>SELF-ADMINISTERED</i>	1 6.25	8 50.00	1 6.25	0 0.00	0 0.00	0 0.00	6 37.50	16
<i>SIGMA HEALTH FUND MANAGERS (PTY) LTD</i>	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	0 0.00	1
<i>STATUS MEDICAL AID ADMINISTRATORS (PTY) LTD</i>	2 40.00	1 20.00	0 0.00	0 0.00	1 20.00	0 0.00	1 20.00	5
<i>THEBE YA BOPHELO HEALTHCARE ADMINISTRATORS (PTY) LTD</i>	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
<i>V MEDICAL AID ADMINISTRATORS (PTY) LTD</i>	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
Total	5	68	13	1	1	3	19	110



Table 17: Scheme categories by administrator (September 2008)

Administrator	Category								Total
Frequency Row Pct	3L	3	3H	4	5	6	7	9	
ALLCARE ADMINISTRATORS (PTY) LTD	0 0.00	2 40.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	3 60.00	5
DISCOVERY HEALTH (PTY) LTD	0 0.00	10 90.91	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 9.09	11
ETERNITY PRIVATE HEALTH FUND ADMINISTRATORS (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	2 100.00	2
FULL CIRCLE HEALTH (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	3 100.00	3
MEDSCHEME HOLDINGS (PTY) LTD	0 0.00	13 72.22	2 11.11	1 5.56	1 5.56	0 0.00	0 0.00	1 5.56	18
METROPOLITAN HEALTH CORPORATE (PTY) LTD	0 0.00	11 68.75	4 25.00	0 0.00	0 0.00	0 0.00	1 6.25	0 0.00	16
MOMENTUM MEDICAL SCHEME ADMINISTRATORS (PTY) LTD	1 10.00	6 60.00	3 30.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	10
MULTIMED HEALTHCARE ADMINISTRATORS (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	0 0.00	1
OLD MUTUAL HEALTHCARE (PTY) LTD	0 0.00	4 50.00	2 25.00	0 0.00	1 12.50	0 0.00	0 0.00	1 12.50	8
PPS MEDICAL SCHEME ADMINISTRATORS (PTY) LTD	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
PRIVATE HEALTH ADMINISTRATORS	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
PROVIDENCE HEALTHCARE RISK MANAGERS (PTY) LTD	0 0.00	1 20.00	1 20.00	0 0.00	0 0.00	0 0.00	0 0.00	3 60.00	5
ROWAN ANGEL (PTY) LTD	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
RESOLUTION ADMINISTRATORS (PTY) LTD	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
SECHABA MEDICAL SOLUTIONS (PTY) LTD	0 0.00	1 50.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 50.00	2
SELF-ADMINISTERED	0 0.00	5 33.33	1 6.67	0 0.00	0 0.00	0 0.00	0 0.00	9 60.00	15
SIGMA HEALTH FUND MANAGERS (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	0 0.00	1
STATUS MEDICAL AID ADMINISTRATORS (PTY) LTD	1 20.00	1 20.00	0 0.00	0 0.00	1 20.00	1 20.00	0 0.00	1 20.00	5
THEBE YA BOPHELO HEALTHCARE ADMINISTRATORS (PTY) LTD	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
V MEDICAL AID ADMINISTRATORS (PTY) LTD	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
Total	3	57	13	1	3	1	3	27	108



Table 18: Scheme categories by administrator (December 2008)

<i>Administrator</i>	<i>Category</i>							Total
Frequency Row Pct	3L	3	3H	5	6	7	9	
ALLCARE ADMINISTRATORS (PTY) LTD	0 0.00	2 40.00	0 0.00	0 0.00	0 0.00	0 0.00	3 60.00	5
DISCOVERY HEALTH (PTY) LTD	0 0.00	9 81.82	1 9.09	0 0.00	0 0.00	0 0.00	1 9.09	11
ETERNITY PRIVATE HEALTH FUND ADMINISTRATORS (PTY) LTD	0 0.00	0 0.00	1 50.00	0 0.00	0 0.00	0 0.00	1 50.00	2
FULL CIRCLE HEALTH (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	3 100.00	3
MEDSCHEME HOLDINGS (PTY) LTD	1 5.56	15 83.33	2 11.11	0 0.00	0 0.00	0 0.00	0 0.00	18
METROPOLITAN HEALTH CORPORATE (PTY) LTD	0 0.00	11 68.75	4 25.00	0 0.00	0 0.00	1 6.25	0 0.00	16
MOMENTUM MEDICAL SCHEME ADMINISTRATORS (PTY) LTD	1 10.00	6 60.00	3 30.00	0 0.00	0 0.00	0 0.00	0 0.00	10
MULTIMED HEALTHCARE ADMINISTRATORS (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	0 0.00	1
OLD MUTUAL HEALTHCARE (PTY) LTD	0 0.00	2 25.00	1 12.50	1 12.50	0 0.00	0 0.00	4 50.00	8
PPS MEDICAL SCHEME ADMINISTRATORS (PTY) LTD	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
PRIVATE HEALTH ADMINISTRATORS	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
PROVIDENCE HEALTHCARE RISK MANAGERS (PTY) LTD	0 0.00	2 40.00	3 60.00	0 0.00	0 0.00	0 0.00	0 0.00	5
ROWAN ANGEL (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
RESOLUTION ADMINISTRATORS (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
SECHABA MEDICAL SOLUTIONS (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	2 100.00	2
SELF-ADMINISTERED	0 0.00	6 40.00	1 6.67	0 0.00	0 0.00	0 0.00	8 53.33	15
SIGMA HEALTH FUND MANAGERS (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	0 0.00	1
STATUS MEDICAL AID ADMINISTRATORS (PTY) LTD	2 40.00	1 20.00	0 0.00	0 0.00	1 20.00	0 0.00	1 20.00	5
THEBE YA BOPHELO HEALTHCARE ADMINISTRATORS (PTY) LTD	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1
V MEDICAL AID ADMINISTRATORS (PTY) LTD	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1
Total	5	56	16	1	1	3	26	108

4 The potential financial impact of REF on medical schemes

4.1 Introduction

The scheme's risk (industry community rate less the scheme community rate) is presented for each scheme for March, June, September and December. Initially all the schemes were included in the calculation of the industry community rate and then the category 4, 5, 6, 7, 8 and 9 schemes were excluded in the analysis. Once REF is



live, CMS will replace poor or unreliable data with data that gives a better estimate of the schemes' true community rate.

4.2 Analysis of the financial impact

110 schemes were included in the analysis for March and June, while 108 were included for September and December. Basic statistics are shown for each of the four months in Table 19.

For March the scheme risk varies from –R907.82 - R111.86. This means that the highest risk scheme will receive R907.82 pbpm from REF and the lowest risk scheme has to pay R111.86 pbpm to REF. For December the scheme risk varies from – R245.10 - R109.15. This difference is the result of liquidated schemes during 2008, of which two were outliers in terms of their calculated scheme risk. The standard deviation of the scheme risk is also much smaller in the second half of the year compared to the first half.

Table 19: Risk rates by month

Statistic	Full Contribution Table (Amount in rand)			
	March 2008	June 2008	September 2008	December 2008
Industry community rate	283.81	286.72	289.41	290.66
Minimum risk rate	-907.82	-907.71	-237.61	-245.10
Maximum risk rate	111.86	113.00	117.68	109.15
Standard deviation	117.92	119.44	76.50	72.58

50 schemes (46.3%) were net contributors in December 2008. These 50 (ED: is it 50 or 52?) schemes represent 5 559 680 (71.16%) beneficiaries.



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

<i>Scheme risk</i>	<i>March 08</i>		<i>June 08</i>		<i>September 08</i>		<i>December 08</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 pbpm</i>	20	18.18	21	19.09	14	12.96	19	17.59
<i>Pay: R25.01 to R50 pbpm</i>	11	10	10	9.09	18	16.67	13	12.04
<i>Pay: R50.01 to R75 pbpm</i>	12	10.91	15	13.64	14	12.96	10	9.26
<i>Pay: R75.01 to R100 pbpm</i>	5	4.55	3	2.73	4	3.70	6	5.56
<i>Pay: R100.01 to R125 pbpm</i>	2	1.82	3	2.73	2	1.85	2	1.85
<i>Pay: R125.01 to R150 pbpm</i>	-	-	-	-	-	-	-	-
<i>Pay: More than R150 pbpm</i>	-	-	-	-	-	-	-	-
<i>Sub-total</i>	50	45.45	52	47.27	52	48.15	50	46.30
<i>Receive: R0.01 to R25 pbpm</i>	12	10.91	10	9.09	12	11.11	11	10.19
<i>Receive: R25.01 to R50 pbpm</i>	16	14.55	14	12.73	12	11.11	15	13.89
<i>Receive: R50.01 to R75 pbpm</i>	10	9.09	7	6.36	10	9.26	8	7.41
<i>Receive: R75.01 to R100 pbpm</i>	6	5.45	9	8.18	7	6.48	9	8.33
<i>Receive: R100.01 to R125 pbpm</i>	4	3.64	5	4.55	5	4.63	7	6.48
<i>Receive: R125.01 to R150 pbpm</i>	4	3.64	4	3.64	3	2.78	3	2.78
<i>Receive: More than R150 pbpm</i>	8	7.27	9	8.18	7	6.48	5	4.63
<i>Total</i>	110	100	110	100	108	100	108	100

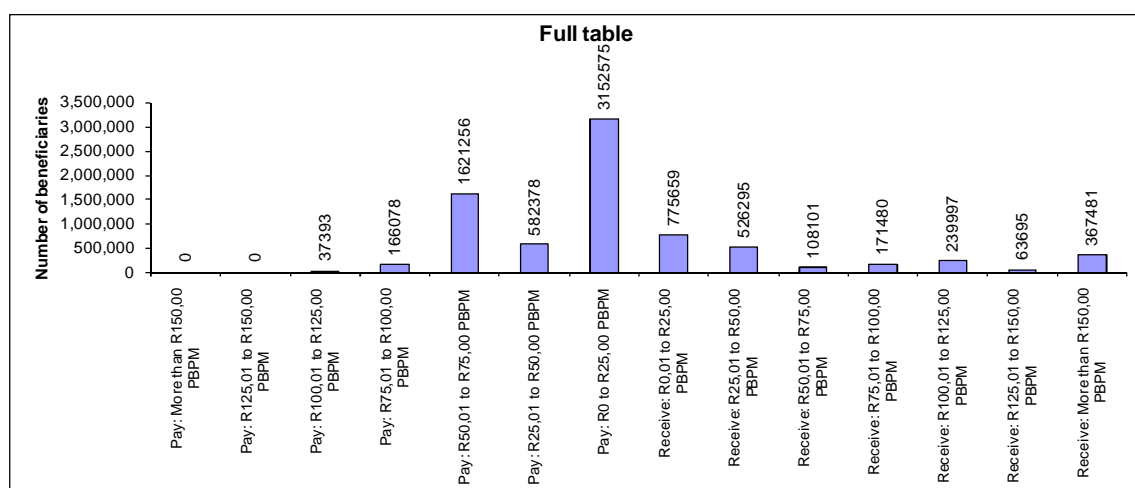


Table 21: Frequency distribution of the number of beneficiaries versus scheme risk in intervals

Scheme risk	March 2008		June 2008		September 2008		December 2008	
	Beneficiaries	%	Beneficiaries	%	Beneficiaries	%	Beneficiaries	%
Pay: R0 to R25 pbpm	2 972 705	40.04	3 217 362	42.99	2 514 712	32.53	3 152 575	40.35
Pay: R25.01 to R50 pbpm	513 110	6.91	432 039	5.77	1 193 491	15.44	582 378	7.45
Pay: R50.01 to R75 pbpm	1 492 110	20.10	1 557 452	20.81	1 781 938	23.05	1 621 256	20.75
Pay: R75.01 to R100 pbpm	178 809	2.41	74 997	1	139 800	1.81	166 078	2.13
Pay: R100.01 to R125 pbpm	42 670	0.57	135 718	1.81	45 314	0.59	37 393	0.48
Pay: R125.01 to R150 pbpm	-	-	-	-	-	-	-	-
Pay: More than R150 pbpm	-	-	-	-	-	-	-	-
Sub-total	5 199 404	70.02	5 417 568	72.39	5 675 255	73.41	5 559 680	71.16
Receive: R0.01 to R25 pbpm	752 944	10.14	612 554	8.19	697 732	9.03	775 659	9.93
Receive: R25.01 to R50 pbpm	522 475	7.04	487 314	6.51	385 598	4.99	526 295	6.74
Receive: R50.01 to R75 pbpm	238 021	3.21	97 405	1.30	123 620	1.60	108 101	1.38
Receive: R75.01 to R100 pbpm	85 804	1.16	191 139	2.55	164 574	2.13	171 480	2.19
Receive: R100.01 to R125 pbpm	172 318	2.32	173 995	2.33	171 533	2.22	239 997	3.07
Receive: R125.01 to R150 pbpm	75 744	1.02	84 500	1.13	69 396	0.90	63 695	0.82
Receive: More than R150 pbpm	378 464	5.10	419 085	5.60	443 154	5.73	367 481	4.70
Total	7 425 174	100	7 483 560	100	7 730 862	100	7 812 388	100

The financial impact by payment band on the beneficiaries is illustrated in Figure 16 for December 2008.. 367 481 (4.7%) beneficiaries will receive R150 or more from REF and 166 078 (2.13%) will have to pay in between R75 and R100. (Theoretically, more than 70% of the beneficiaries will be net payers into REF.)

Figure 16: Number of beneficiaries by payment band (December 2008)



Alternate payment bands appear in Table 22, Table 23 and Figure 17 below. If we assume that payments smaller than R10 are not significant, then we can conclude that REF will have no or little effect on approximately 30.85% of the beneficiaries in the industry. These beneficiaries are in 14 different schemes. Only 44.04% will then be net payers compared to the 71.16% shown in Table 21.

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

<i>Scheme risk (December 2008)</i>	<i>Number of beneficiaries</i>	<i>Percent (%)</i>	<i>Cumulative number of beneficiaries</i>	<i>Cumulative percent (%)</i>
Pay more than R75 pbpm	203 471	2.60	203 471	2.60
Pay between R40 and R75 pbpm	1 716 748	21.97	1 920 219	24.58
Pay between R10 and R40 pbpm	1 520 384	19.46	3 440 603	44.04
Paying or receiving less than R10 pbpm	2 410 304	30.85	5 850 907	74.89
Receive between R10 and R40 pbpm	717 503	9.18	6 568 410	84.08
Receive between R40 and R75 pbpm	401 325	5.14	6 969 735	89.21
Receive more than R75 pbpm	842 653	10.79	7 812 388	100

Figure 17: Number of beneficiaries by payment band (December 2008): Alternative payment intervals

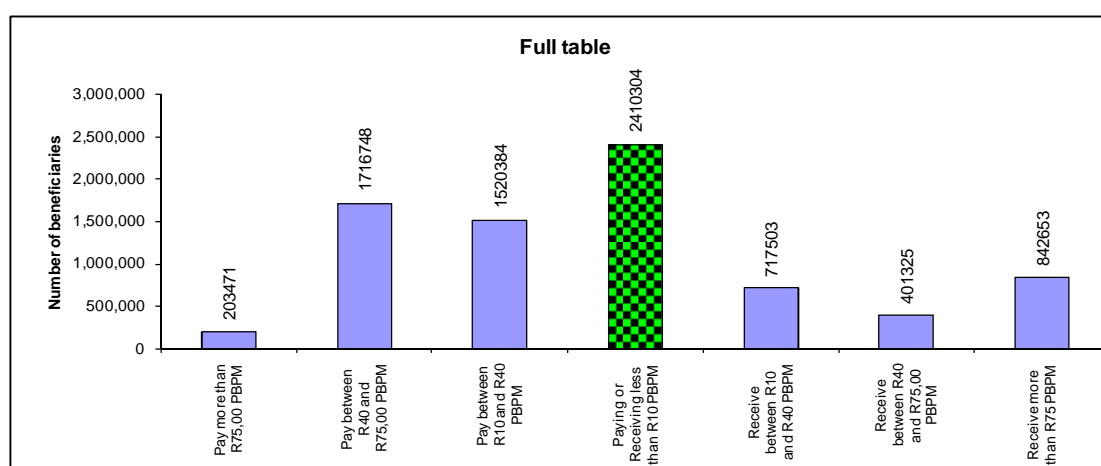


Table 23: Frequency distribution of the number of schemes versus the scheme risk in intervals: Alternative payment intervals

<i>Scheme risk (December 2008)</i>	<i>Number of schemes</i>	<i>Percent (%)</i>	<i>Cumulative number of schemes</i>	<i>Cumulative percent (%)</i>
Pay more than R75 pbpm	8	7.41	8	7.41
Pay between R40 and R75 pbpm	14	12.96	22	20.7
Pay between R10 and R40 pbpm	19	17.59	41	37.96
Paying or receiving less than R10 pbpm	14	12.96	55	50.93
Receive between R10 and R40 pbpm	16	14.81	71	65.74
Receive between R40 and R75 pbpm	13	12.04	84	77.78
Receive more than R75 pbpm	24	22.22	108	100

Figure 18 below illustrates the variation in the scheme risk based on the contribution table for December 2008. Based on the submitted data there is one scheme that will



receive R245.10 per beneficiary for December 2008. This is a small scheme with between 5 000 and 10 000 beneficiaries and the REF analysts classified it as a category 3H scheme. The maximum net payer for December 2008 (R109.15 pbpm) is a scheme with between 10 000 and 30 000 beneficiaries and REF analysts classified the scheme as category 3 (see Table 25, page 43).

Figure 18: Scheme risk by scheme (December 2008)

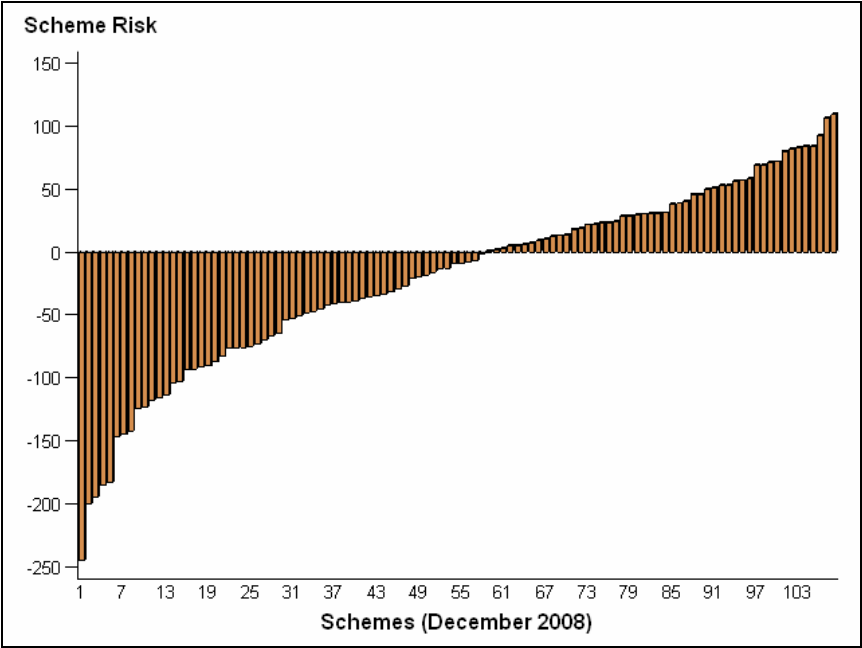


Table 24 below shows the number of schemes per payment band and category for December 2008. There is one category 9 scheme that would receive more than R100 pbpm in accordance with the submitted REF returns (see Table 16).



Table 24: Scheme risk versus category (December 2008)

<i>Scheme Risk</i>	<i>Category</i>							
Frequency								
Row Pct								
Col Pct	<i>3L</i>	<i>3</i>	<i>3H</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>9</i>	<i>Total</i>
<i>Pay more than R75 pbpm</i>	1 12.50 20.00	5 62.50 8.93	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 25.00 7.69	8
<i>Pay between R40 and R75 pbpm</i>	0 0.00 0.00	5 35.71 8.93	4 28.57 25.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 35.71 19.23	14
<i>Pay between R10 and R40 pbpm</i>	0 0.00 0.00	9 47.37 16.07	2 10.53 12.50	1 5.26 100.00	1 5.26 100.00	0 0.00 0.00	6 31.58 23.08	19
<i>Paying or receiving less than R10 pbpm</i>	1 7.14 20.00	6 42.86 10.71	2 14.29 12.50	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5 35.71 19.23	14
<i>Receive between R10 and R40 pbpm</i>	1 6.25 20.00	11 68.75 19.64	2 12.50 12.50	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 12.50 7.69	16
<i>Receive between R40 and R75 pbpm</i>	1 7.69 20.00	7 53.85 12.50	2 15.38 12.50	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	3 23.08 11.54	13
<i>Receive more than R75 pbpm</i>	1 4.17 20.00	13 54.17 23.21	4 16.67 25.00	0 0.00 0.00	0 0.00 0.00	3 12.50 100.00	3 12.50 11.54	24
Total	5	56	16	1	1	3	26	108

For December there are eight net receiver schemes classified as category 9 schemes and 13 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 December 2008

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



Scheme	Category	Number of beneficiaries	Scheme Risk (Rand)
66	3	30 000 - 60 000	8.93
67	3	10 000 - 30 000	9.96
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

4.3 Sensitivity analysis

Schemes in categories 4, 5, 6, 7, 8, and 9 have sufficiently bad data to warrant an audit. In this section categories 4, 5, 6, 7, 8, and 9 are excluded and the industry community rate is calculated on the remaining schemes. Table 26 shows the number of schemes excluded from the analysis.



Table 26: Number of schemes excluded per month

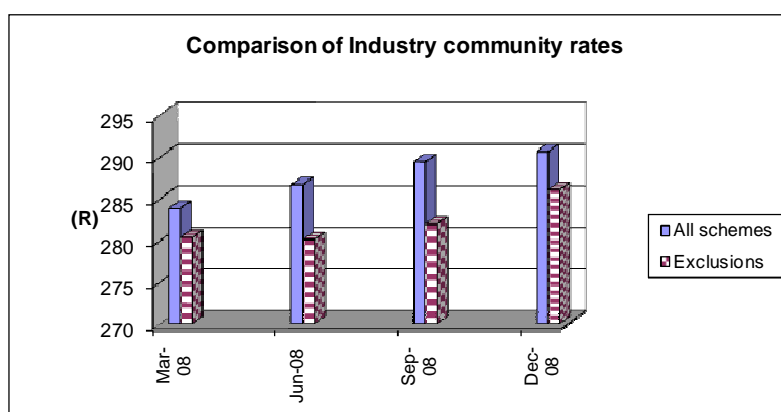
<i>Category</i>	<i>March 2008</i>	<i>June 2008</i>	<i>September 2008</i>	<i>December 2008</i>
4	1	0	1	0
5	3	1	3	1
6	1	1	1	1
7	1	3	3	3
8	0	0	0	0
9	23	19	27	26
Total number of schemes excluded in the analysis	29	24	35	31
Total number of schemes included in the analysis	81	86	73	77

Table 27: Risk rates per month without category 4, 5, 6, 7, 8, and 9 schemes

<i>Statistic</i>	<i>Full Contribution Table (Amount in rand)</i>			
	<i>March 2008</i>	<i>June 2008</i>	<i>September 2008</i>	<i>December 2008</i>
Industry community rate	280.36	280.11	281.99	286.10
Minimum risk rate	-911.27	-914.32	-208.19	-249.66
Maximum risk rate	108.41	106.39	110.26	104.59
Standard deviation	129.64	127.27	72.79	74.11

Figure 19 shows the lower industry community rates after excluding the schemes with poor data.

Figure 19: Industry community rate: With and without exclusions



The industry community rate without the category 4, 5, 6, 7, 8, and 9 schemes is slightly lower, but when REF becomes operational, it would not be that simple to exclude the unacceptable data from the REF database. The CMS will replace unacceptable data with estimates based on previous submissions and then will recalculate the industry community rate. This can have an impact on the true industry community rate, as well as the scheme risk for each scheme. During the shadow period, schemes should use the published industry community rate to calculate their scheme risk.



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

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1 Introduction

This section reviews cases or conditions with significant numerical or financial deviations from expected levels. Table 28 (page 48) lists the risk factors and their deviation from the expected.



Table 28: Expected and actual estimated REF risk factor costs

<i>Amount from REF by condition</i>			<i>Dec 2008</i>	
	Diff (A-E)*	Expected	Actual	A / E*
No CDL disease	-31 930 909	1 193 087 321	1 161 156 412	97%
Addison's disease	2 460	110 023	112 483	102%
Asthma	-11 290 581	58 274 568	46 983 987	81%
Bronchiectasis	-48 852	303 910	255 059	84%
Bipolar mood disorder	9 284 920	6 548 406	15 833 327	242%
Cardiac failure	40 178	-	40 178	0%
Cardiomyopathy	-6 934 625	66 010 291	59 075 666	89%
CHF & CMY	-6 894 447	66 010 291	59 115 844	90%
Chronic obs. pulmonary disease	-15 841 772	39 673 990	23 832 218	60%
Chronic renal disease	5 543 138	34 711 972	40 255 110	116%
Crohn's disease	-80 016	2 115 327	2 035 311	96%
Diabetes insipidus	42 596	98 553	141 149	143%
Diabetes mellitus 1	3 975 676	34 232 716	38 208 392	112%
Diabetes mellitus 2	32 041 806	65 467 691	97 509 497	149%
Dysrhythmias	5 536 116	11 259 627	16 795 743	149%
Epilepsy	1 091 391	24 912 260	26 003 651	104%
Glaucoma	729 969	6 801 547	7 531 515	111%
Haemophilia	351 222	1 190 082	1 541 304	130%
Hyperlipidaemia	15 843 034	75 537 475	91 380 509	121%
Hypertension	8 430 650	156 922 376	165 353 026	105%
Ulcerative colitis	10 977	1 456 939	1 467 916	101%
Coronary artery disease	4 811 037	64 083 203	68 894 240	108%
Multiple sclerosis	-1 618 212	9 556 926	7 938 714	83%
Parkinson's disease	1 161 514	6 326 219	7 487 733	118%
Rheumatoid arthritis	-1 295 724	11 611 161	10 315 437	89%
Schizophrenia	744 185	1 808 236	2 552 421	141%
Systemic LE	178 460	2 164 659	2 343 119	108%
Hypothyroidism	-342 891	13 504 785	13 161 894	97%
HIV / AIDS	5 014 893	63 583 908	68 598 801	108%
Two simultaneous conditions	9 697 805	41 871 662	51 569 467	123%
Three simultaneous conditions	18 368 249	25 974 882	44 343 132	171%
Four or more simultaneous conditions	9 104 896	6 978 287	16 083 183	230%
Maternity events	8 634 133	173 207 311	181 841 444	105%
Total CDL conditions	52 366 658	694 682 940	747 049 598	108%
Multiple CDL conditions	37 170 950	74 824 831	111 995 781	150%
Total	71 255 724	2 199 386 312	2 270 642 036	103%

* "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 3% higher than the expected. This difference constitutes an



approximate amount of R71M per month. The lower reporting of respiratory conditions, such as asthma, result in lower than expected rates in the age groups younger than 20 years, 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. Schemes administered by Metropolitan Health Corporate (Pty) Ltd have again reported CDL rates at higher than expected levels when compared to the other large administrators (see Figure 22).

Figure 20: Expected and reported total CDL cases by age (December 2008)

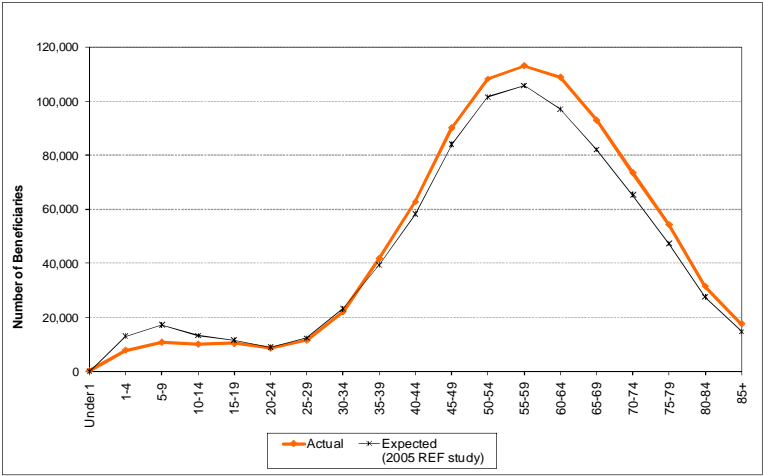


Figure 21: Expected and reported total CDL cases by month (2008)

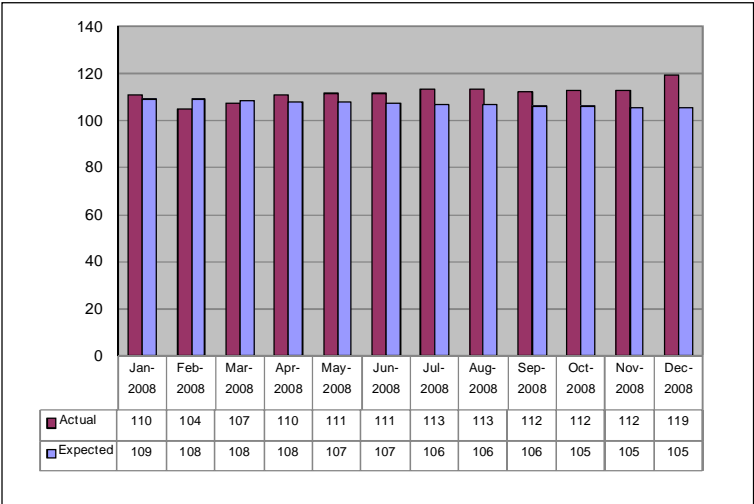
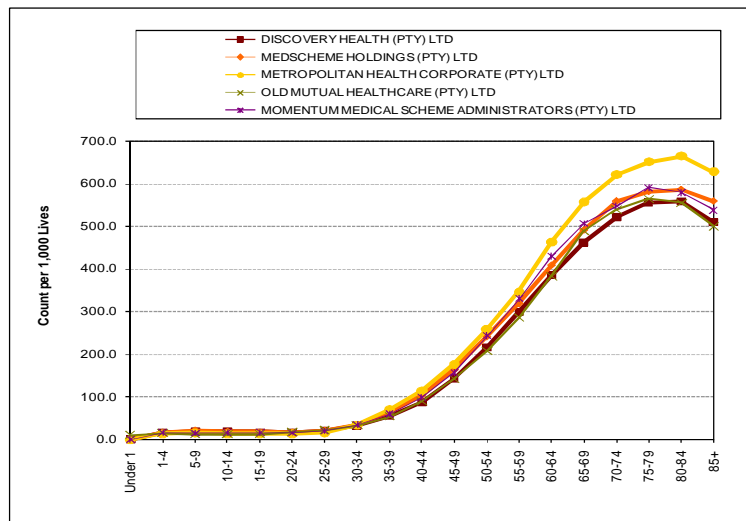


Figure 22: Reported Total CDL rates by five large administrators



3 Asthma (AST)

Figure 23 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) age bands. Figure 24 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 25, 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 23: Expected and reported rates of AST cases by age (December 2008)

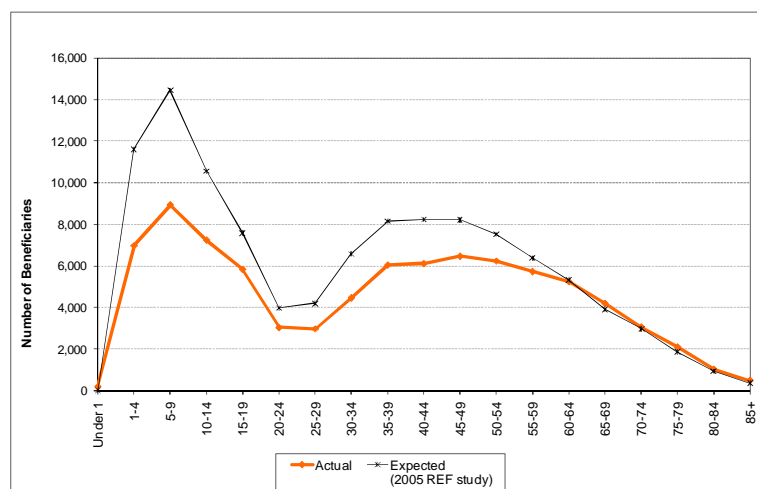


Figure 24: Expected and reported number of AST cases by month (2008)

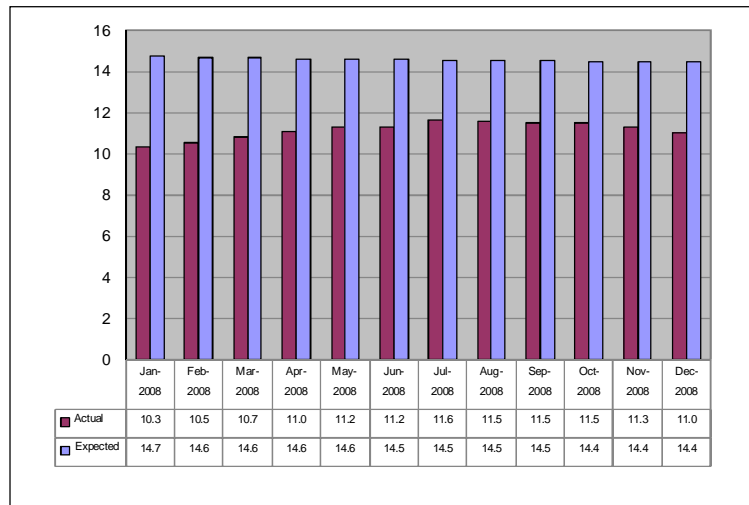
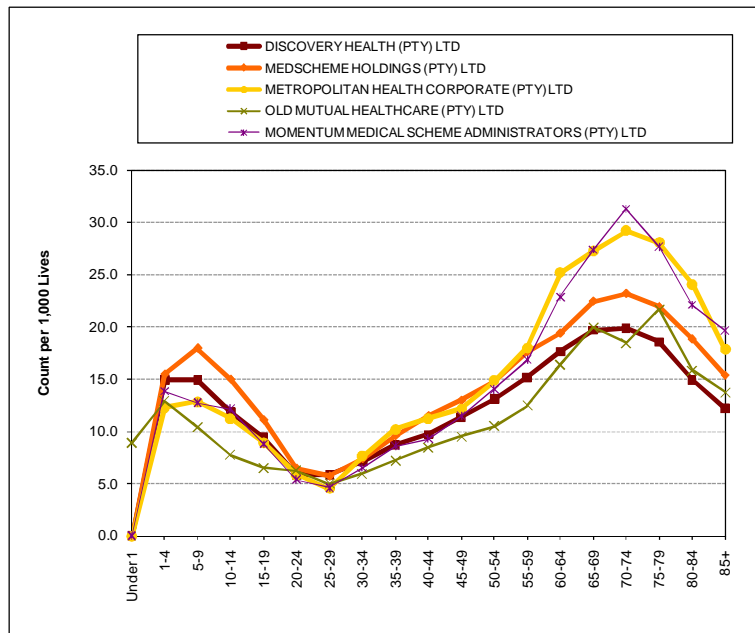


Figure 25: Reported asthma rates by five large administrators



4 Bipolar mood disorder (BMD)

Table 28 (page 48) shows that the estimated cost of managing BMD is R9.3M higher than expected in December 2008. The table also demonstrates that BMD reported count levels are 242% of the expected levels compared to 196% of expected levels for the same period in 2007. This represents 46% more BMD cases reported in 2008 compared to 2007. 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 26 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 rates of reported BMD cases by far and at younger age groups in comparison to other schemes.

Figure 26: Expected and reported BMD cases by age (December 2008)

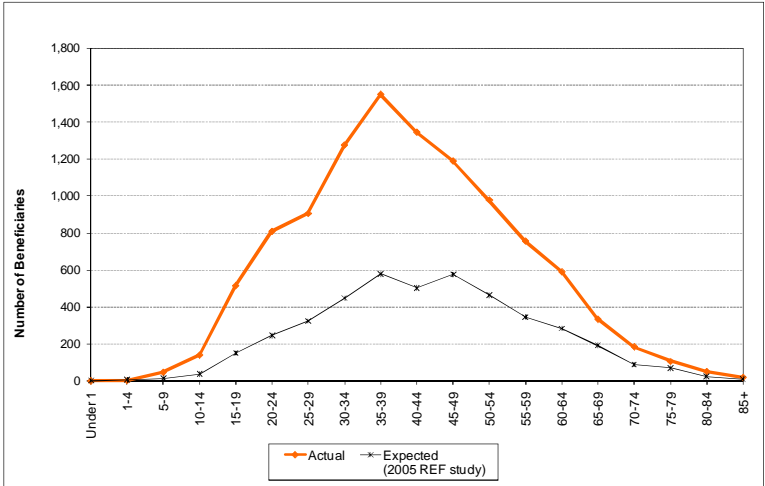


Figure 27: Expected and reported BMD cases by month (2008)

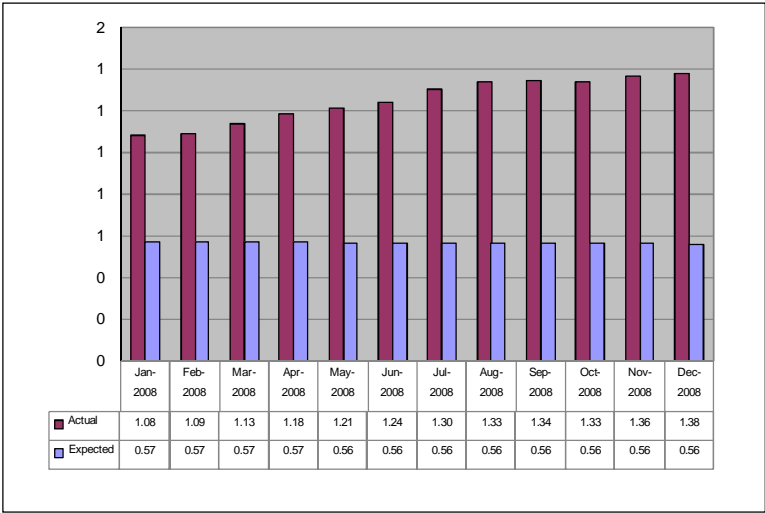
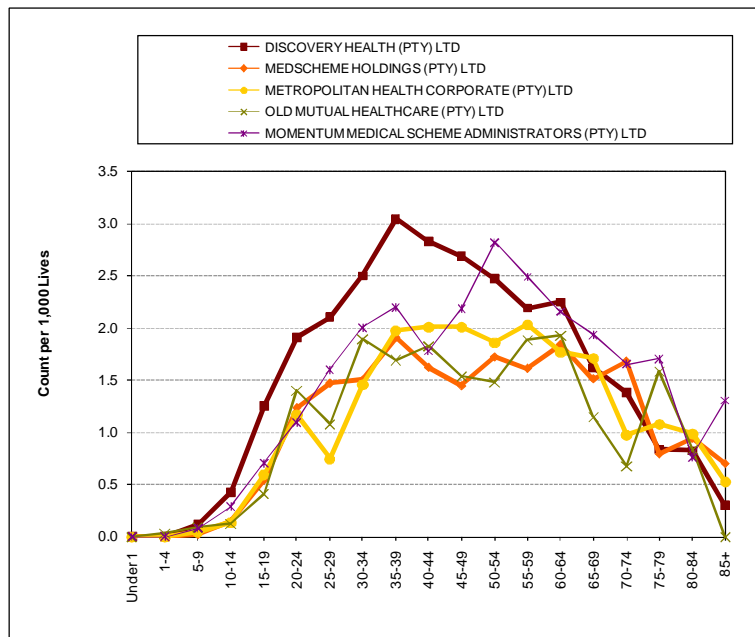


Figure 28: Reported BMD rates by five large administrators



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 29: Expected and reported COPD cases by age (December 2008)

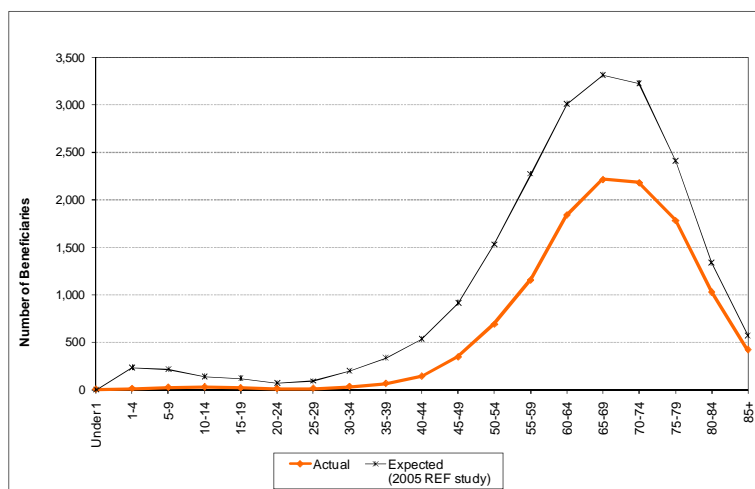


Figure 30: Expected and reported COPD cases by month (2008)

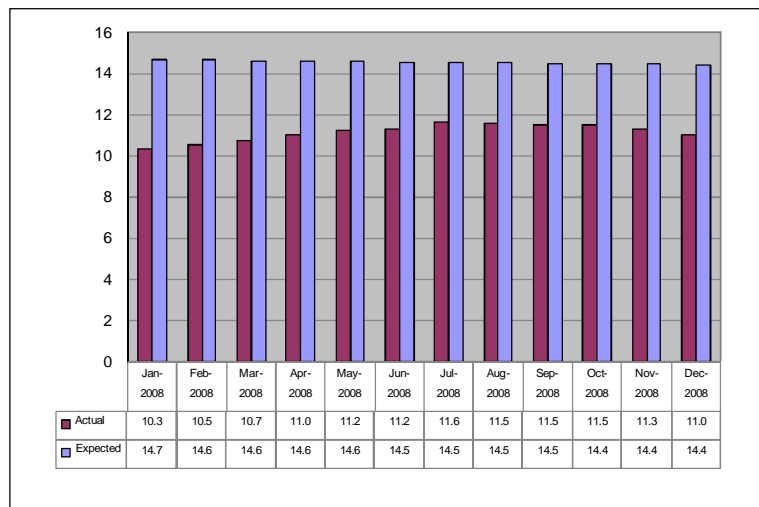
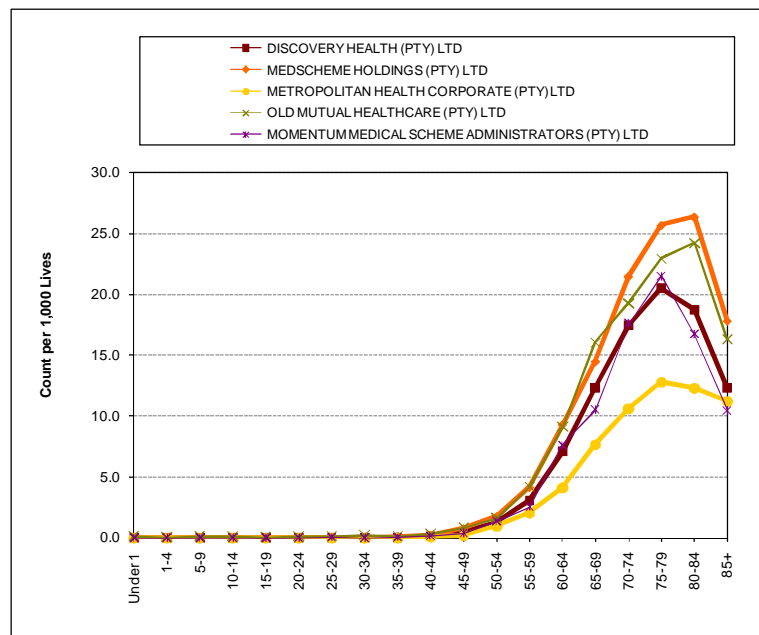


Figure 31: Reported COPD rates by five large administrators (December 2008)



6 Diabetes mellitus 2 (DM2)

Schemes consistently reported DM2 above the expected levels. Table 28 (page 48) shows that the estimate of this risk factor cost is R32M more than expected in December 2008. 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 twice the expected levels.

Figure 32: Expected and reported DM2 cases by age (December 2008)

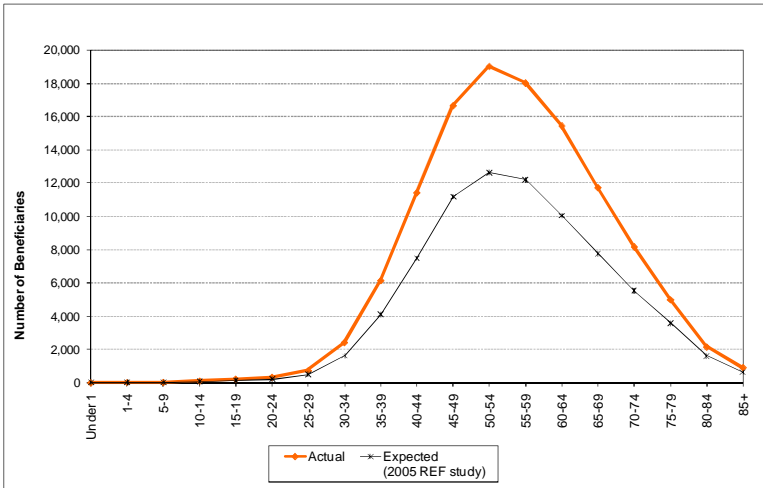


Figure 33: Expected and reported DM2 cases by month (2008)

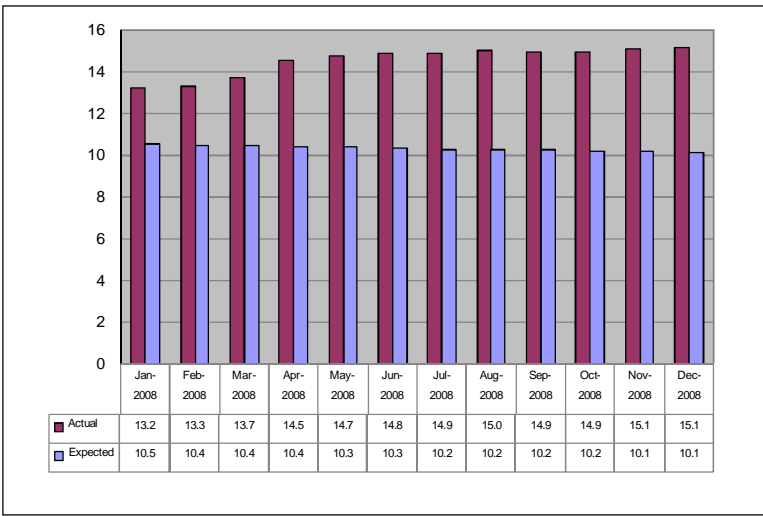
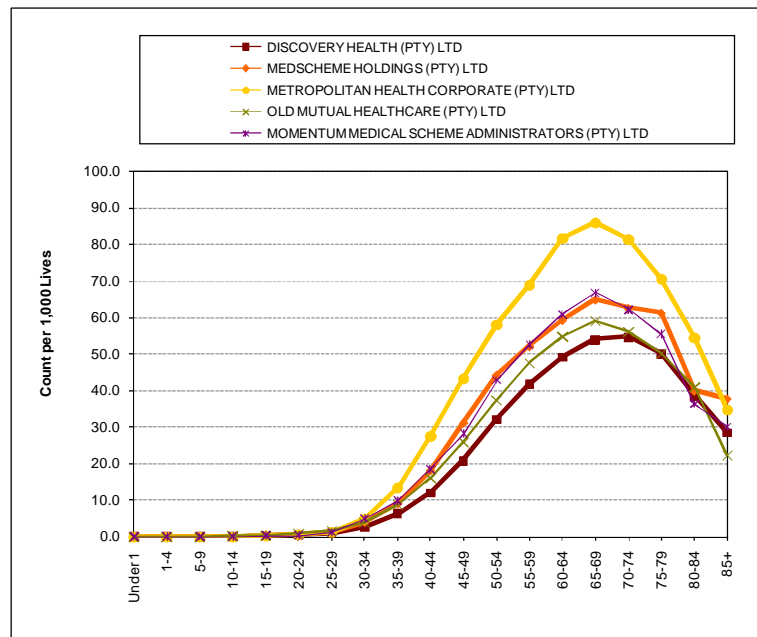


Figure 34: Reported DM2 rates by five large administrators



7 Hyperlipidaemia (HYL)

Despite the fact that HYL cases have been reported at 21% above the expected levels, the financial impact on the medical schemes translates to R15.8M 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 18 below.

Figure 35: Expected and reported HYL cases by age (December 2008)

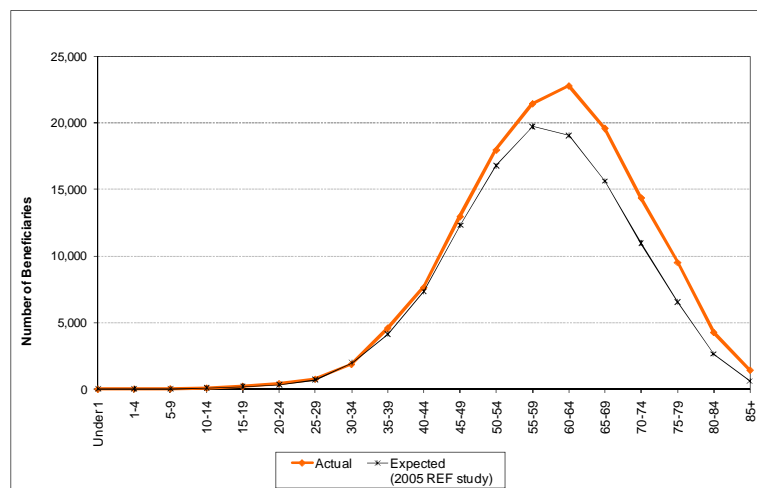


Figure 36: Expected and reported HYL cases by month (2008)

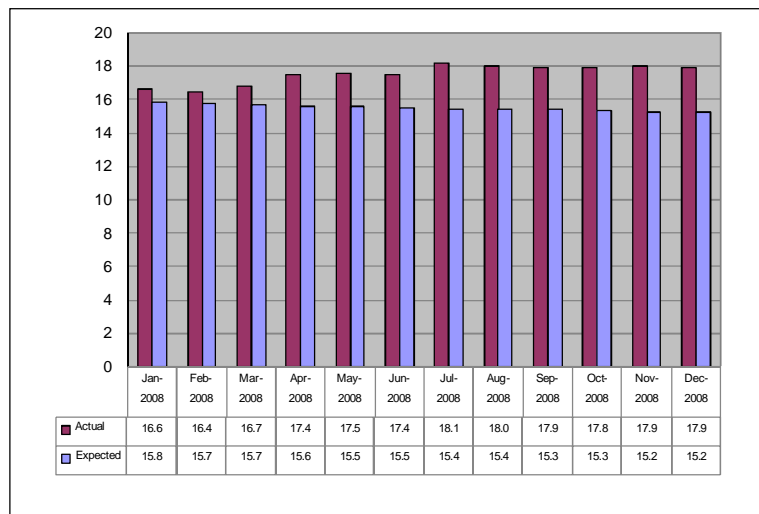
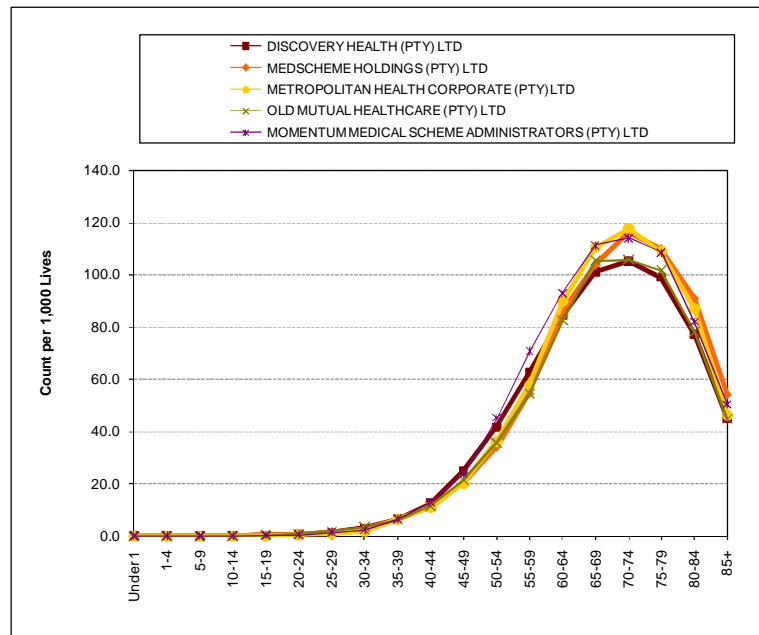


Figure 37: Reported HYL rates by five large administrators (2008)



8 Three simultaneous conditions (CC3)

Three simultaneous conditions are reported at 171% of expected levels, translating to R18M 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 38: Expected and reported CC3 cases by age (December 2008)

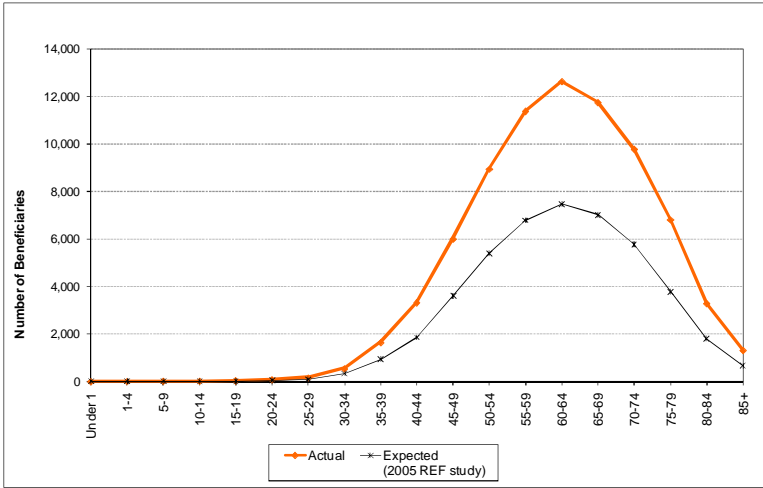


Figure 39: Expected and reported CC3 cases by month (2008)

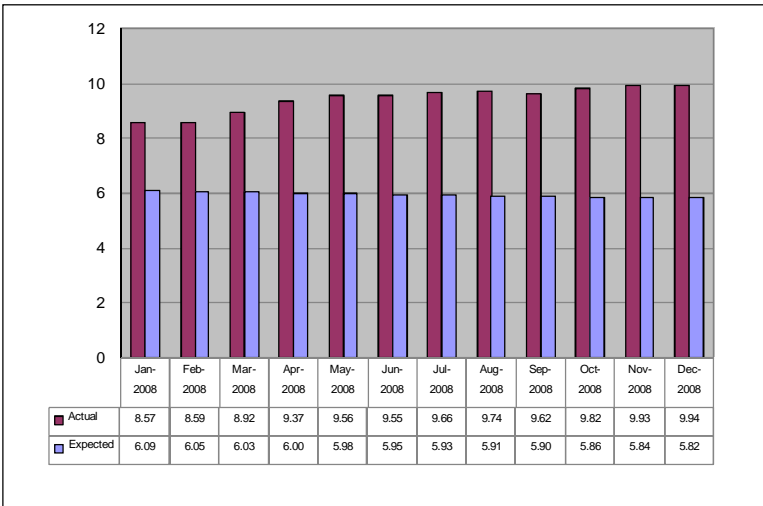
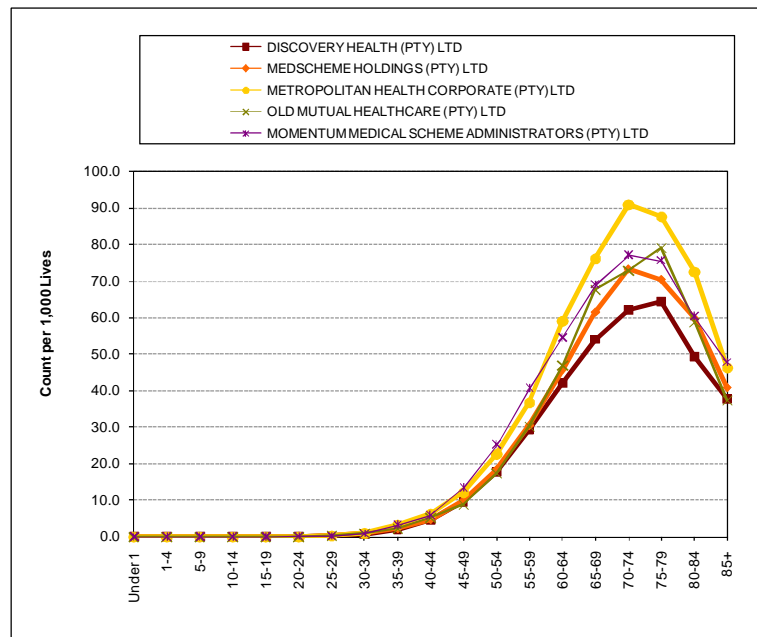


Figure 40: Reported CC3 rates by five large administrators (2008)



9 Four or more simultaneous conditions (CC4)

The levels of four or more simultaneous conditions were the second highest over-reported factor at levels 130% 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. Both Momentum Medical Scheme Administrators (Pty) Ltd and Metropolitan Health Corporate (Pty) Ltd administered schemes have reported higher rates compared to other schemes.



Figure 41: Expected and reported CC4 cases by age (December 2008)

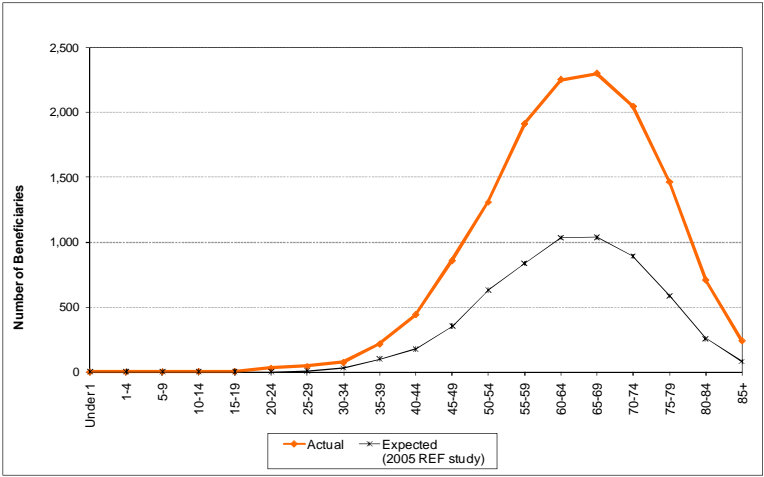


Figure 42: Expected and reported CC4 cases by month (2008)

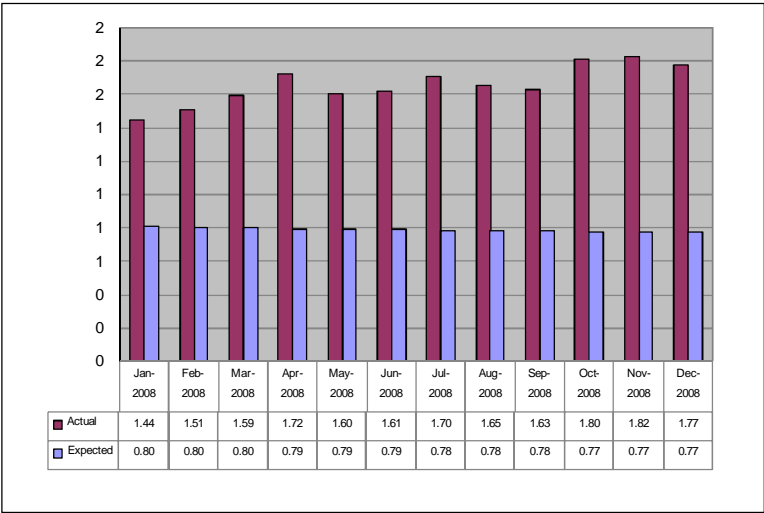
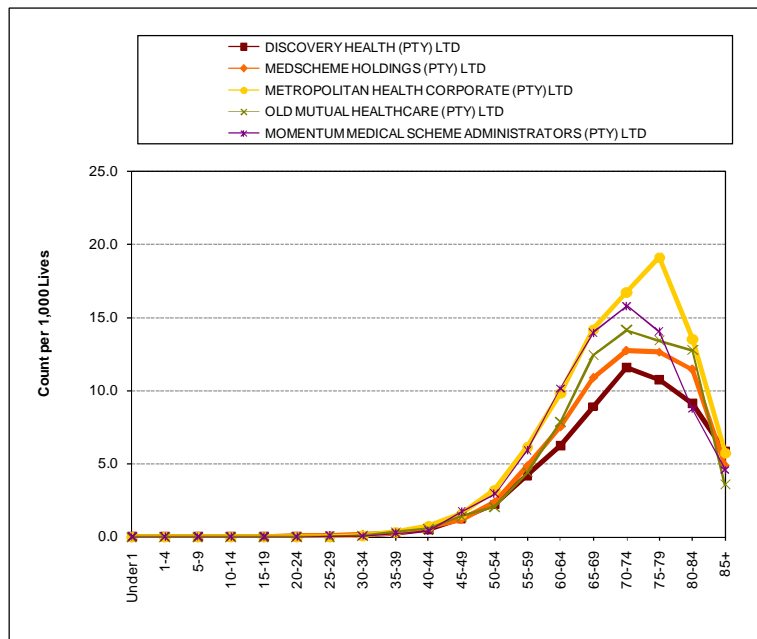


Figure 43: Reported CC4 rates by five large administrators (December 2008)



10 Multiple CDL conditions

Multiple CDL conditions are reported at 50% above the expected levels, but this deviation represents a substantial financial impact, which is approximately R37M higher than the estimated cost. The multiple CDL rates reported by five large administrators closely approximate each other with the Metropolitan Health Corporate (Pty) Ltd administered schemes reporting slightly higher rates.

Figure 44: Expected and reported multiple CDL cases by age (December 2008)

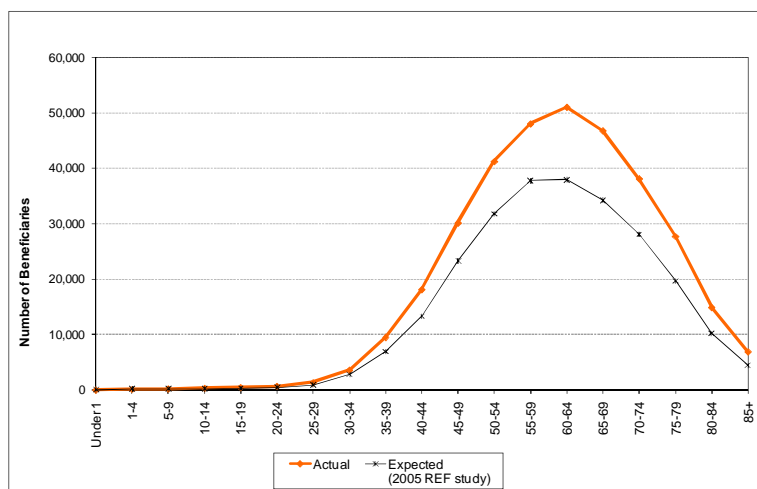


Figure 45: Expected and reported multiple CDL cases by month (2008)

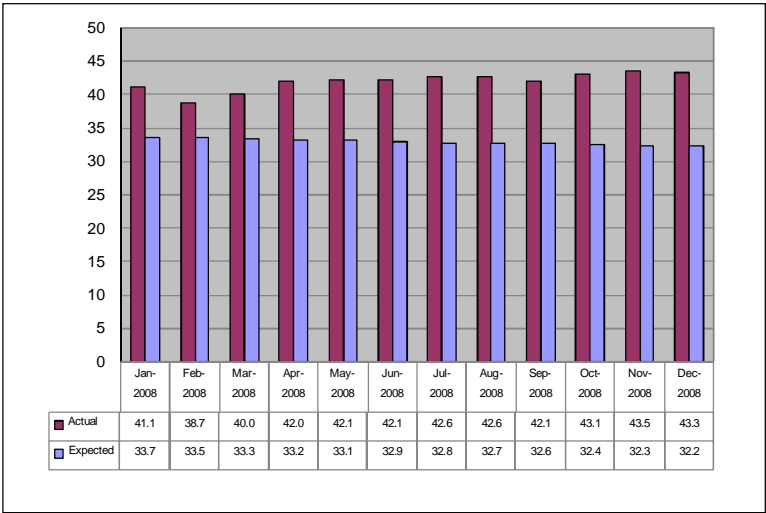
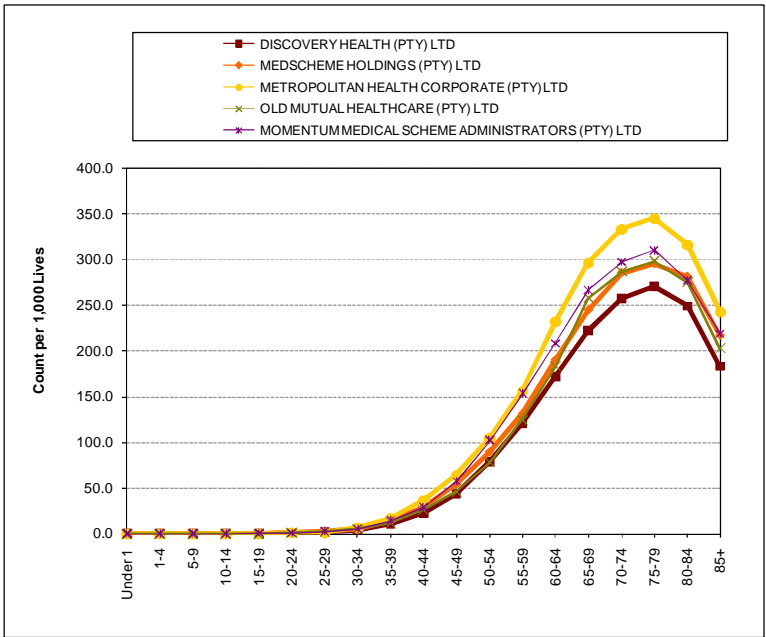


Figure 46: Reported multiple CDL rates by five large administrators (December 2008)



11 Maternity (MAT)

Maternity events are reported at only 5% higher than expected levels and these rates are consistent in five large scheme administration groups.



Figure 47: Expected and reported MAT cases by age (December 2008)

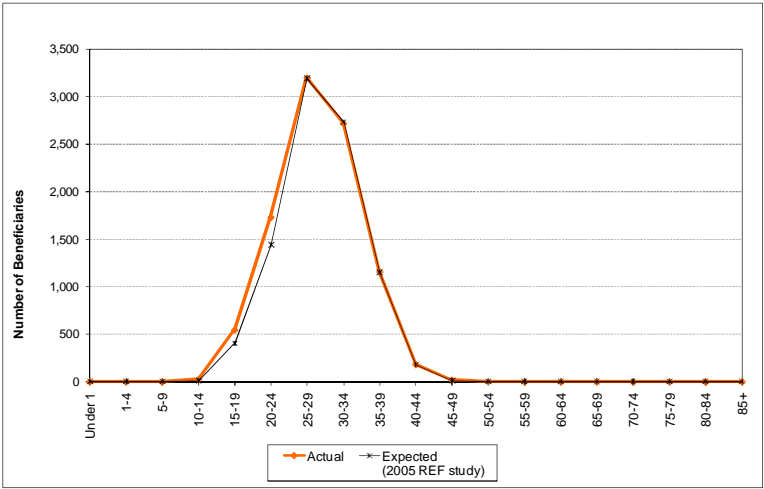


Figure 48: Expected and reported MAT cases by month (2008)

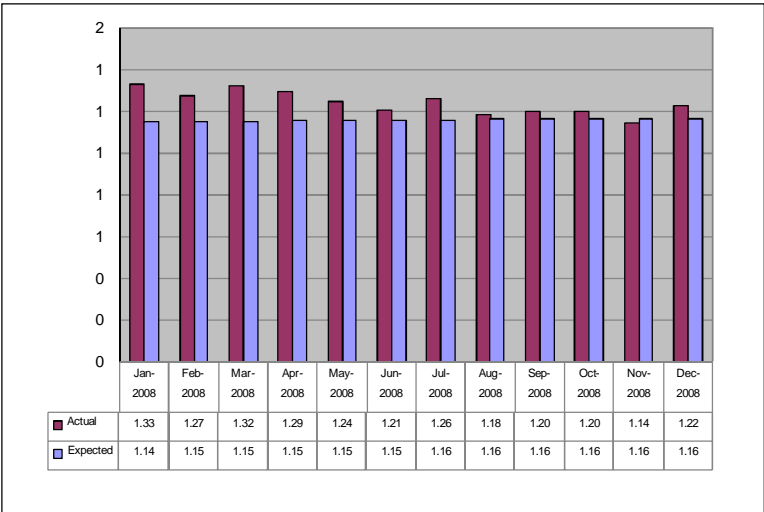
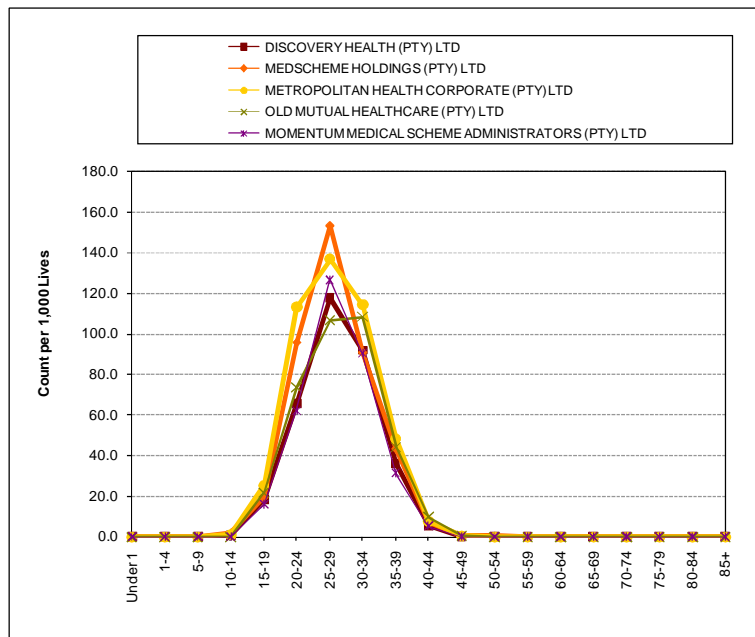


Figure 49: Reported MAT rates by five large administrators (December 2008)



12 Conclusion

The combined effect of the deviations in 2008 amounts to R71M or 3% of the total expected PMB cost. In the past three years (2005, 2006, 2007) the gap between the expected and actual reported levels has been declining steadily at 10.7%, 2.9%, and 0.5% respectively. This is largely attributed to improved quality of data submitted by the schemes. The upward trend observed in the 2008 data might not necessarily reflect deterioration in the quality of data submitted by the schemes, but a possible shift in the industry's risk profile. There is a need to review the scheme-specific expected values as these are based on a study conducted four years ago.



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

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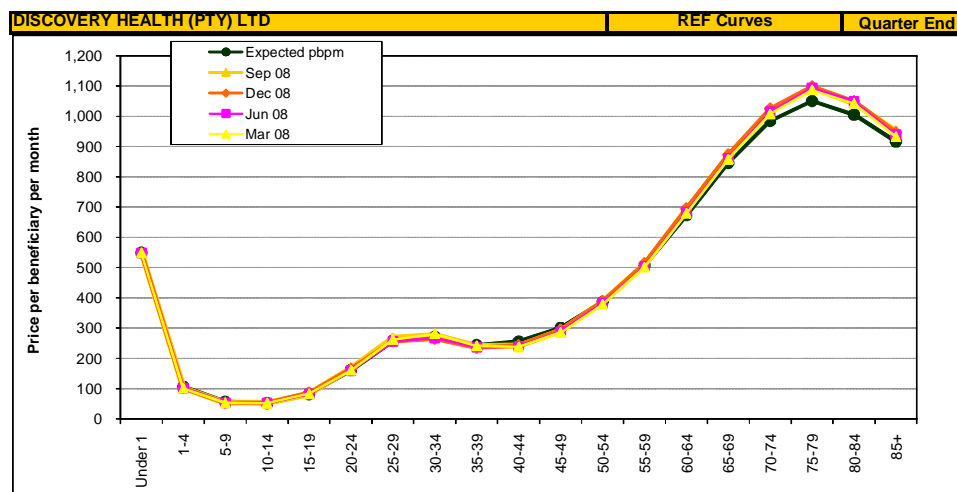
1 Benchmarks applied in the price by age curves and community rate analyses

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 industry average, and do not consider the unique risks of the particular schemes. 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 uses the June 2008 age profile of all REF submissions against which administrator age profiles are compared.

2 Discovery Health (Pty) Ltd

Figure 50: Discovery Health (Pty) Ltd: Price by age



The price by age curve for Discovery Health (Pty) Ltd administered schemes very closely resembles that of the expected price by age curve for the industry, but falls below the expected in the ages 35 - 49 and rises above the expected in the ages 20 - 35 and again 55 - 85+. These deviations can be attributed to the following:

- BMD increases from 238% of the expected in March to 305% in December



- CRF increases from 135% of the expected in March to 154% in December
- DM2 increases from 99% of the expected in March to 118% in December
- HYL increases from 108% of the expected in March to 117% in December
- Multiple CDLs show a steady rise from 105% of the expected in Mar to 116% in December with CC3 increasing from 128% to 148% of the expected in March and December respectively.

Figure 51: Discovery Health (Pty) Ltd: Community rate analysis

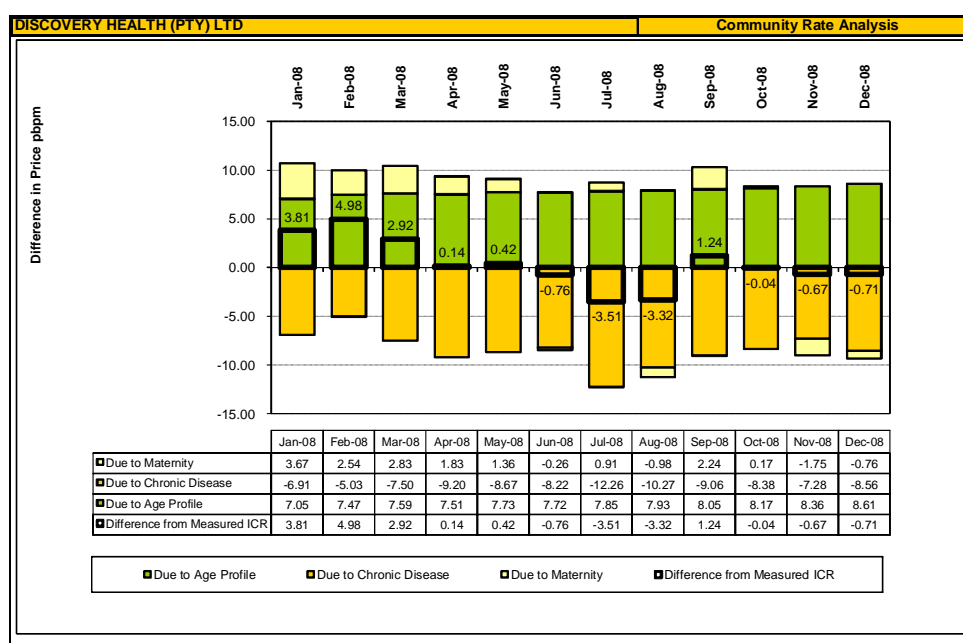
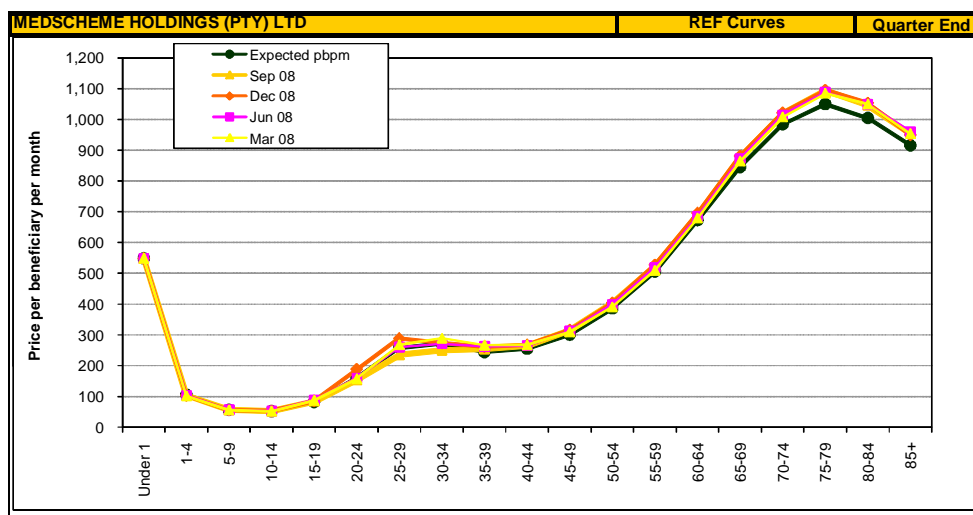


Figure 51 above shows that Discovery Health (Pty) Ltd administered schemes reported maternity rates fluctuating between R1.75 pbpm below the expected to R3.67 pbpm above the expected; the chronic disease rates were reported at between R5.03 pbpm and R12.26 pbpm lower than expected. The slightly older than average age profile leads to a community rate that is between R7.05 pbpm and R8.61 pbpm higher than the industry community rate for January and December respectively.

3 Medscheme Holdings (Pty) Ltd

Figure 52: Medscheme Holdings (Pty) Ltd: Price by age

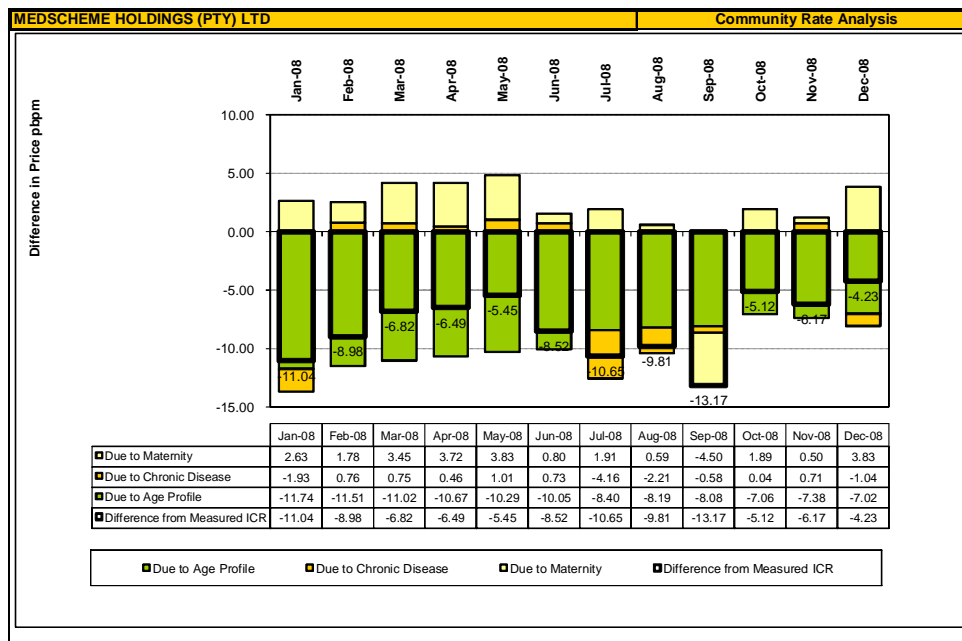


The price by age curve for Medscheme Holdings (Pty) Ltd administered schemes moves away from the expected in the ages between 15 and 39 with September below and March, June, and Dec above the expected; for the ages above 49 the curve moves to above the expected, with greater variance in the ages 69 - 85+ for all quarters. These deviations can be attributed to the following:

- DM2 increases from 142% of the expected in March to 154% in December
- HYL increases from 106% of the expected in March to 110% in December
- HYP increases from 108% of the expected in March to 112% in December
- HIV increases from 157% of the expected in March to 164% in December
- Multiple CDLs increases from 122% of the expected in March to 132% in December with CC3 increasing from 143% to 162% for March and December respectively.



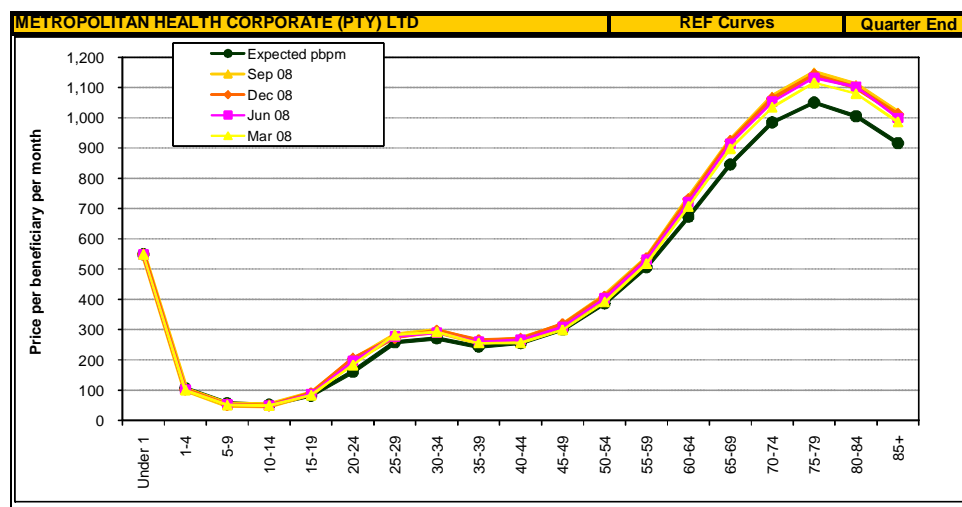
Figure 53: Medscheme Holdings (Pty) Ltd: Community rate analysis



Medscheme Holdings administered schemes reported maternity rates that fluctuate between R4.50 pbpm below the expected to R3.83 pbpm above the expected; chronic disease rates of between R4.16 pbpm below the expected to R1.01 pbpm above the expected. The younger age profile of these schemes translates to a community rate of between R11.74 pbpm - R7.02 pbpm below the average.

4 Metropolitan Health Corporate (Pty) Ltd

Figure 54: Metropolitan Health Corporate (Pty) Ltd: Price by age



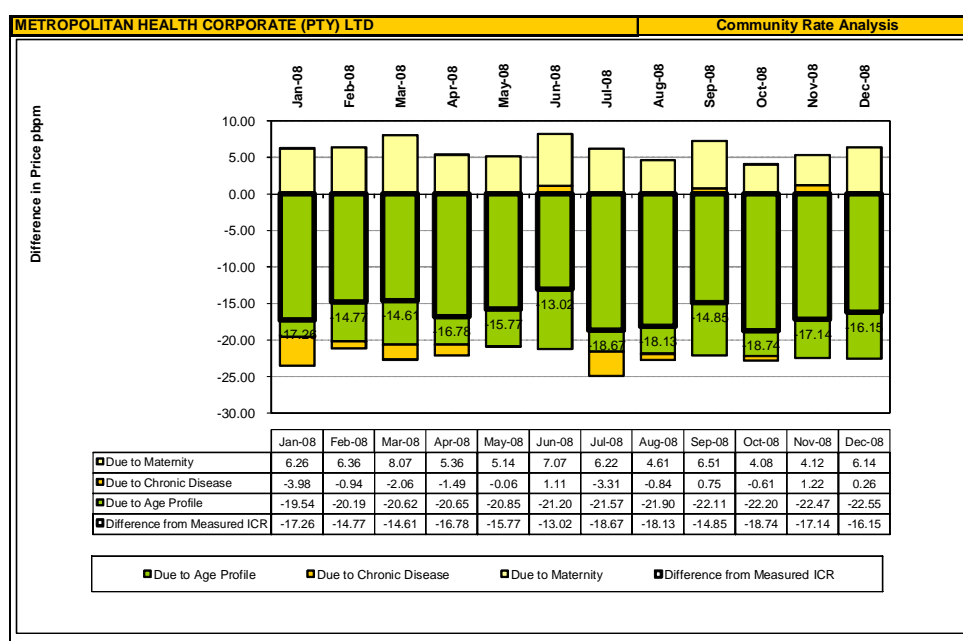
The price by age curve for the schemes administered by Metropolitan Health Corporate (Pty) Ltd follows that of the industry, with variations in the age bands 19 -



44 years. There are slightly bigger variations for June and December; greater variation is shown for the age bands above 54 years, with each quarter moving further away from the expected. This could be caused by the following:

- BMD reported at 159% of the expected for March to 202% in December
- DM2 reported at 180% of the expected for March to 208% in December
- Multiple CDL reported at 140% of the expected in March increasing to 157% in December with CC3 at 176% in March increasing to 202% in December and CC2 at 130% in March increasing to 140% in December.

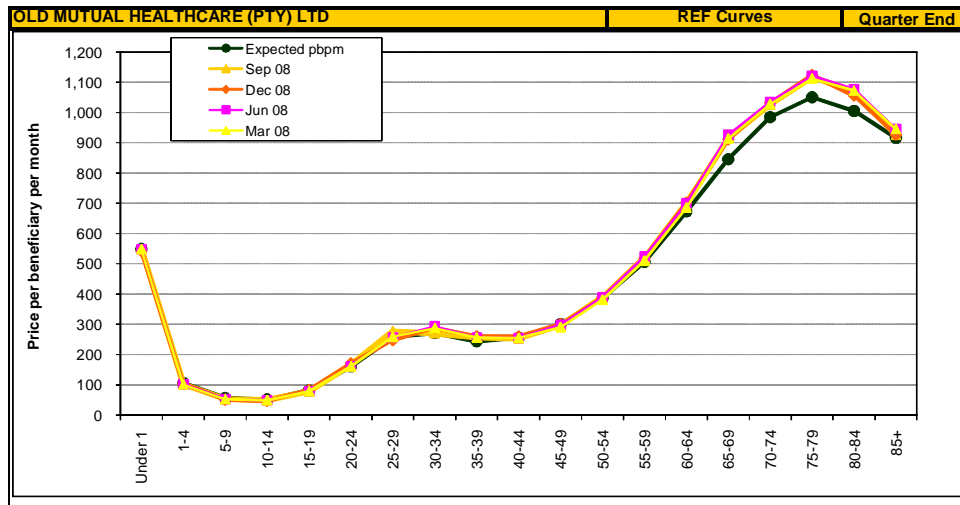
Figure 55: Metropolitan Health Corporate (Pty) Ltd: Community rate analysis



Metropolitan Health Corporate (Pty) Ltd administered schemes reported maternity rates between R4.08 pbpm - R8.07 pbpm higher than the expected; chronic disease rates of between R3.98 pbpm below - R1.22 above the expected. The schemes' younger age profile leads to a community rate of between R19.54 pbpm - R22.55 pbpm below the expected.

5 Old Mutual Healthcare (Pty) Ltd

Figure 56: Old Mutual Healthcare (Pty) Ltd: Price by age

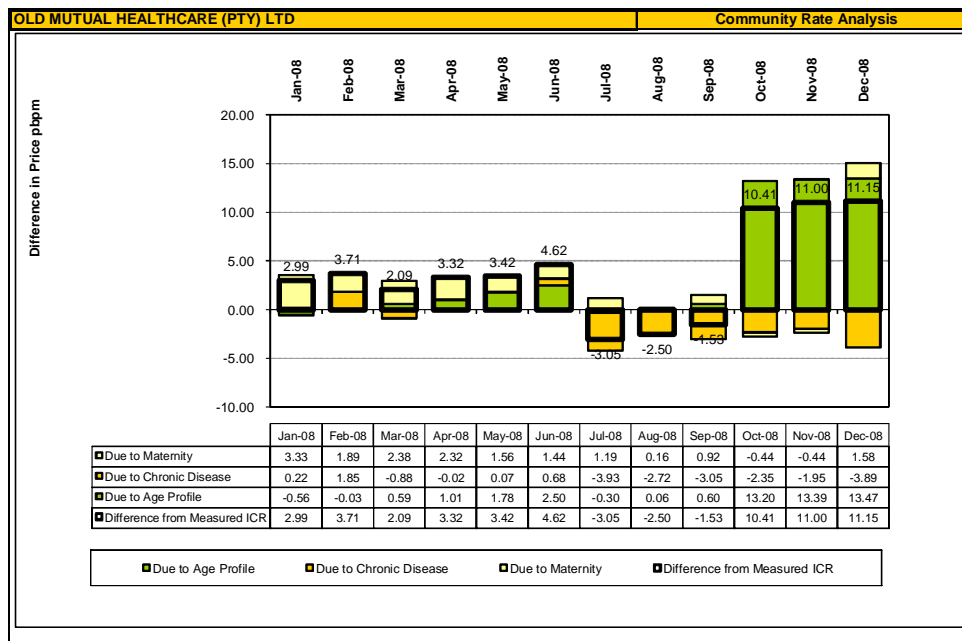


The price by age curve for Old Mutual Healthcare administered schemes resembles that of the expected price by age curve for the industry, with minor differences in the ages between 20 and 40 years. It does, however, move above the expected in the ages between 59 and 85+, which can be attributed to the following:

- BMD reported at 164% of the expected for March and 190% for December
- DM2 reported at 128% of the expected for March and 137% for December
- CRF reported at 134% of the expected for March and 156% for December
- Multiple CDL reported at 120% of the expected for March and 127% for December, with CC3 at 150% for March and 166% for December and CC4 181% for March and 202% for December.



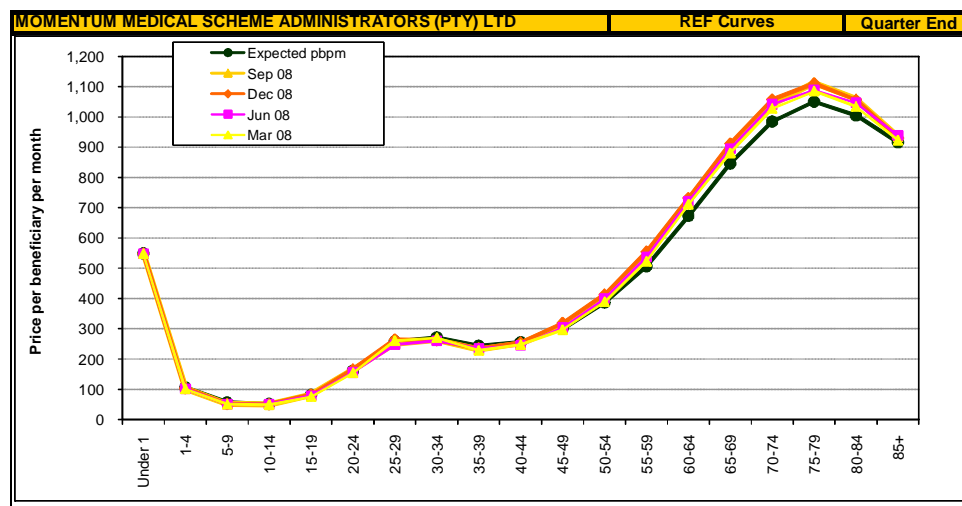
Figure 57: Old Mutual Healthcare (Pty) Ltd: Community rate analysis



The Old Mutual Healthcare administered schemes reported maternity rates fluctuating between R0.44 pbpm below the expected to R3.33 pbpm above the expected; the chronic disease rates were reported at between R3.93 pbpm below - R1.85 pbpm above the expected. The fluctuating community rate from R0.56 pbpm below the average for January to R0.60 pbpm above the average for September and the increase to R13.47 pbpm above the average for December is due to the irregular age profile.

6 Momentum Medical Scheme Administrators (Pty) Ltd

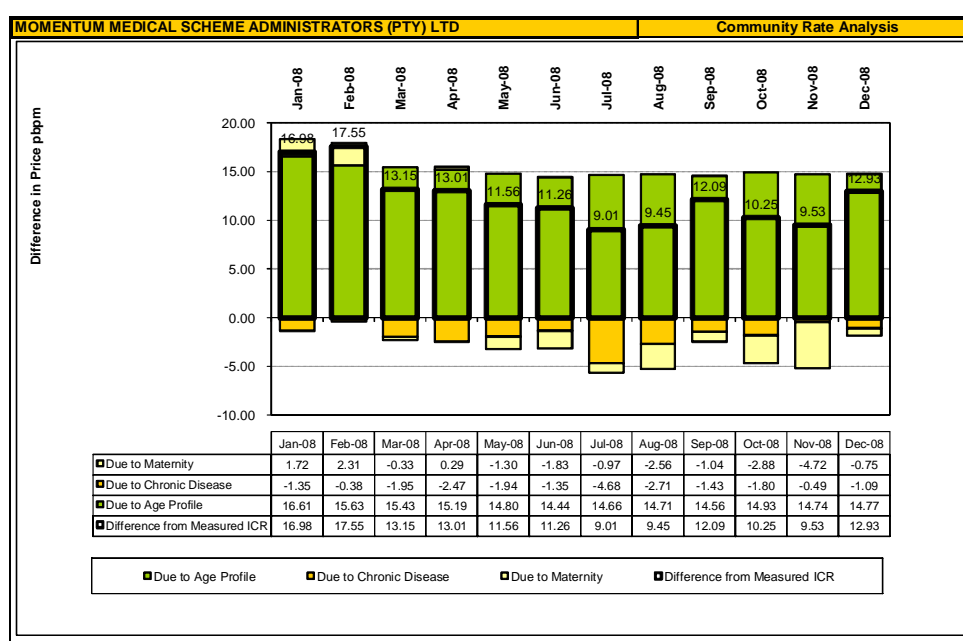
Figure 58: Momentum Medical Scheme Administrators (Pty) Ltd: Price by age



The price by age curve for the Momentum Medical Scheme administrator closely resembles that of the industry expected curve, with slight variation in the age bands between 29 - 40 years, with the curve moving higher than the industry curve in the ages above 54 years, due to the following higher than expected CDL rates reported:

- CRF reported at 118% of the expected for March to 152% for December
- DM1 reported at 153% of the expected for March to 163% for December
- HYL reported at 114% of the expected for March to 132% for December
- Multiple CDL reported at 130% of the expected for March to 145% in December, with CC2 reported at 117% for March and 132% for December and CC3 at 175% in March to 201% for December

Figure 59: Momentum Medical Scheme Administrator (Pty) Ltd: Community rate analysis

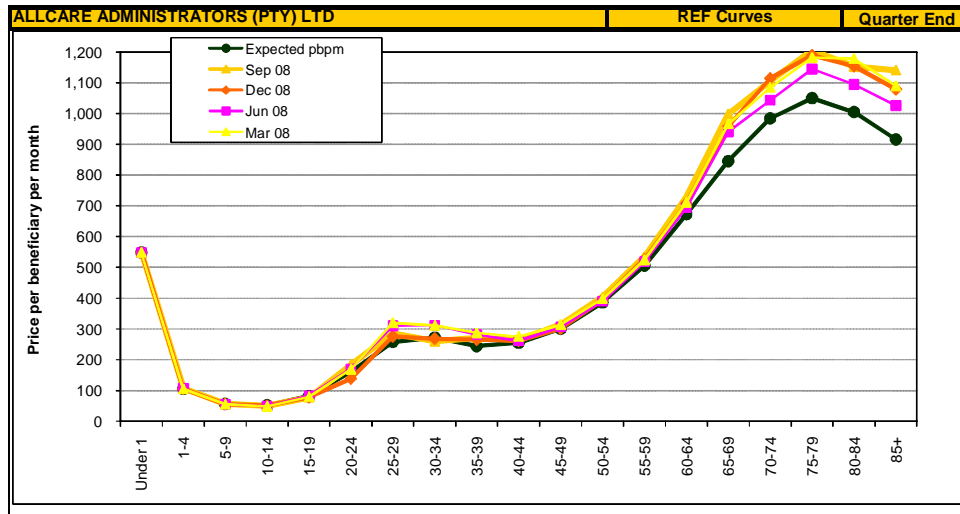


Momentum Medical Scheme Administrators (Pty) Ltd administered schemes reported maternity rates fluctuating between R4.72 pbpm below the expected to R2.31 pbpm above the expected; the chronic disease rates reported between R0.38 pbpm - R4.68 pbpm below the expected. These schemes have an older than average age profile that amounts to a community rate of between R16.61 pbpm - R14.77 pbpm higher than the industry community rate for January and December respectively.



7 Allcare Administrators (Pty) Ltd

Figure 60: Allcare Administrators (Pty) Ltd: Price by age

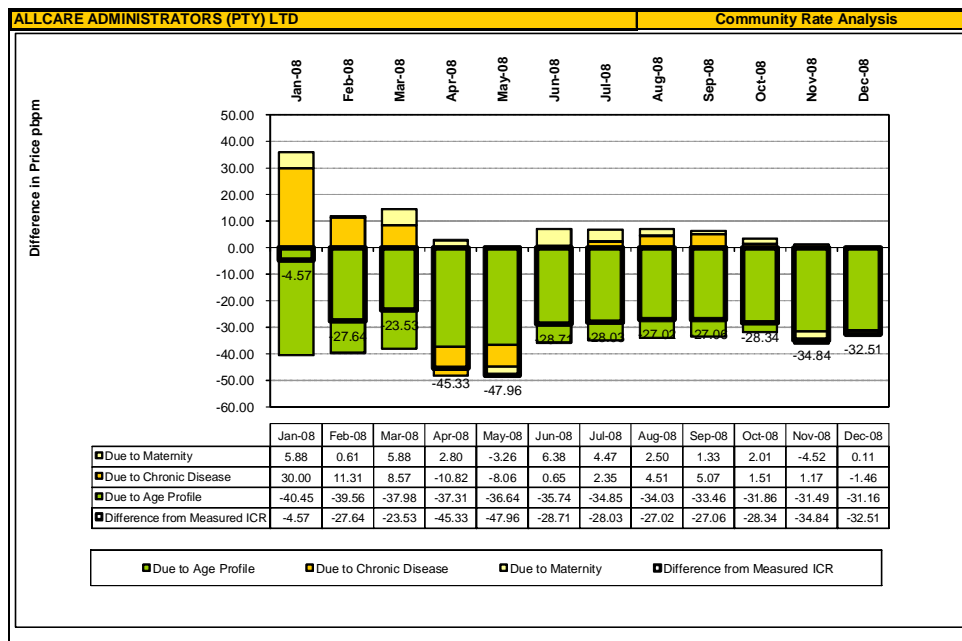


The price by age curve for the Allcare Administrators schemes follow the industry price by age curve for most age bands, with differences in the age bands between 20 - 44 and from 55 - 85+. These differences are due to the higher than expected reporting of the following CDLs:

- CRF reported at 156% of the expected for March increasing to 173% for December
- BMD reported at 126% of the expected for March increasing to 153% for December
- CMY reported at 143% of the expected for March and 142% for December
- DM2 reported at 161% of the expected for March increasing to 166% for December
- DYS reported at 125% of the expected for March increasing to 131% for December
- CC3 reported at 156% of the expected for March increasing to 155% for December
- CC4 reported at 383% of the expected for March and 181 % for December



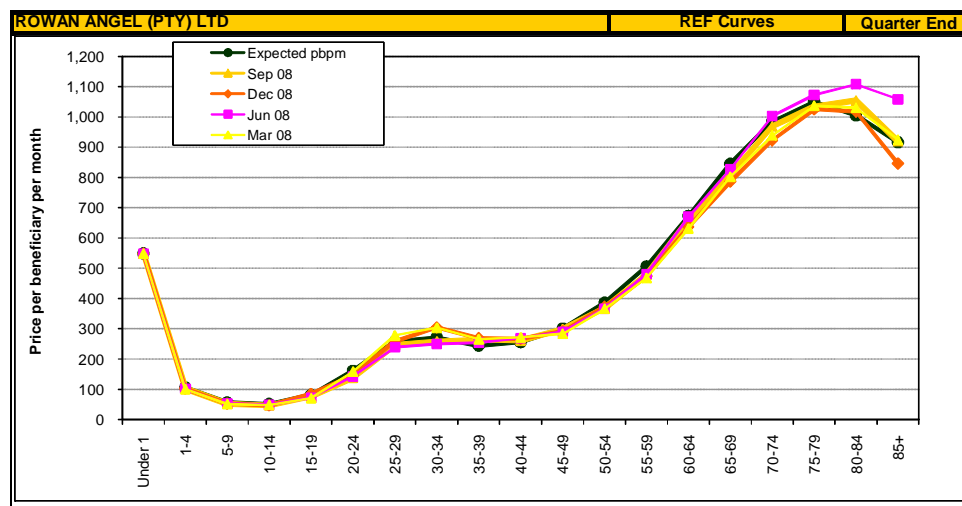
Figure 61: Allcare Administrators (Pty) Ltd: Community rate analysis



The Allcare Administrators (Pty) Ltd administered schemes reported maternity rates fluctuating between R4.52 pbpm below the expected to R6.39 pbpm above the expected for maternity; chronic disease rates of between R10.82 pbpm below the expected to R30 pbpm above the expected. These schemes have a younger than average age profile that leads to a community rate ranging between R31.16 pbpm to R40.45 pbpm below the industry community rate for January and December respectively.

8 Rowan Angel (Pty) Ltd

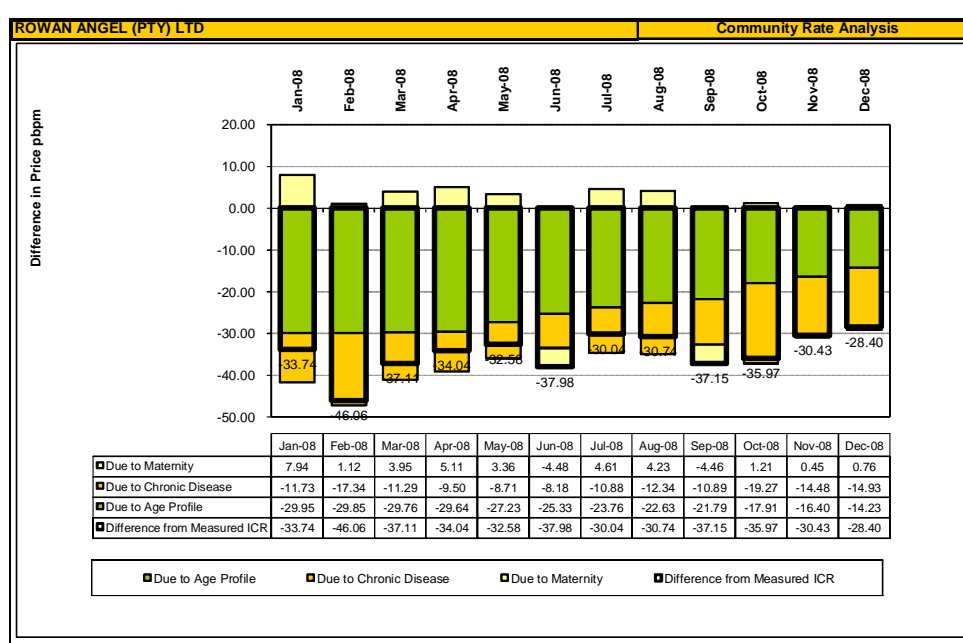
Figure 62: Rowan Angel (Pty) Ltd: Price by age



The price by age curve for the Rowan Angel administrated schemes follow the industry price by age curve for most age bands, with differences in the age bands between 20 - 44 and from 55 - 85+. These differences are due to the following CDL rates reported:

- AST reported at 47% of the expected for March to 46% for December
- COP reported at 88% of the expected for March to 71% for December
- CRF reported at 22% of the expected for March to 22% for December
- DM1 reported at 51% of the expected for March to 54% for December
- DM2 reported at 136% of the expected for March to 142% for December
- BMD reported at 122% of the expected for March to 153% for December
- CC4 reported at 148% of the expected for March to 146% for December

Figure 63: Rowan Angel (Pty) Ltd: Community rate analysis

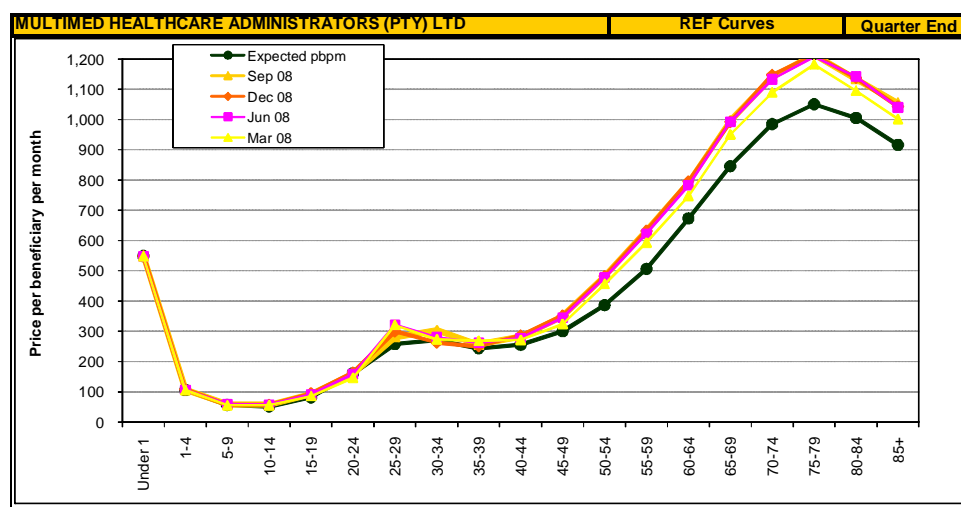


Rowan Angel (Pty) Ltd administered schemes reported maternity rates fluctuating from R4.48 pbpm below the expected to R7.94 pbpm above the expected; chronic disease rates between R8.18 pbpm - R19.27 pbpm below the expected. The schemes' younger than average age profile is equivalent to a community rate of between R29.95 pbpm - R14.23 pbpm below the industry average for January and December respectively.



9 Multimed Healthcare Administrators (Pty) Ltd

Figure 64: Multimed Healthcare Administrators (Pty) Ltd: Price by age

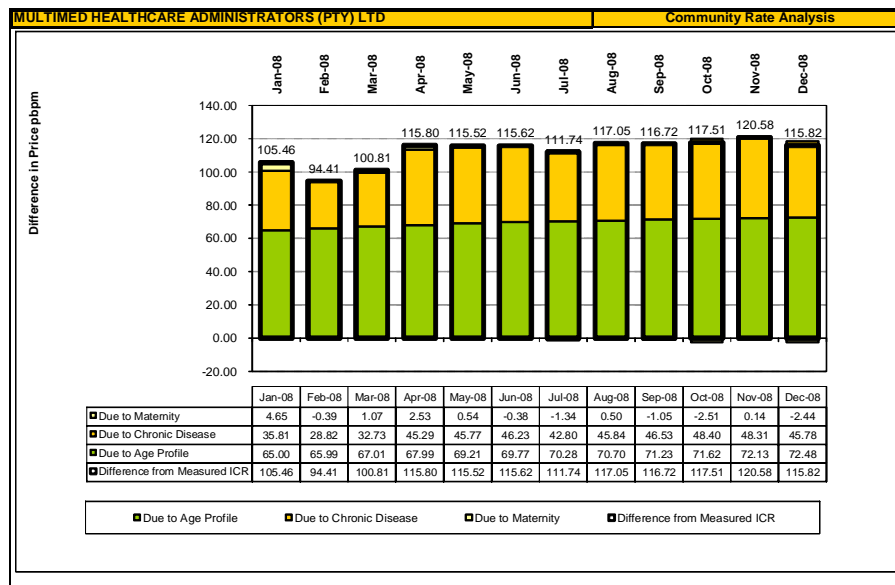


The schemes administered by Multimed Healthcare Administrators display a price by age curve that is above the expected for the age bands 25 - 34 and 39 - 85+. These moves above the industry are due to higher than expected rates reported for the following CDLs:

- BMD reported at 331% of the expected for March, increasing to 410% for December
- DM2 reported at 145% of the expected for March, increasing to 178% for December
- DYS reported at 300% of the expected for March, increasing to 329% for December
- HYL reported at 144% of the expected for March, increasing to 189% for December
- COP reported at 125% of the expected for March, increasing to 126% for December
- CRF reported at 139% of the expected for March, increasing to 156% for December
- EPL reported at 169% of the expected for March, increasing to 189% for December
- IHD reported at 158% of the expected for March, increasing to 179% for December
- Total CDL reported at 139% of the expected for March, increasing to 155% for December
- Multiple CDL reported at 164% of the expected for March, increasing to 199% for December, with CC2 reported at 152% for March and 180% for December and CC3 reported at 203% for March and 263% for December



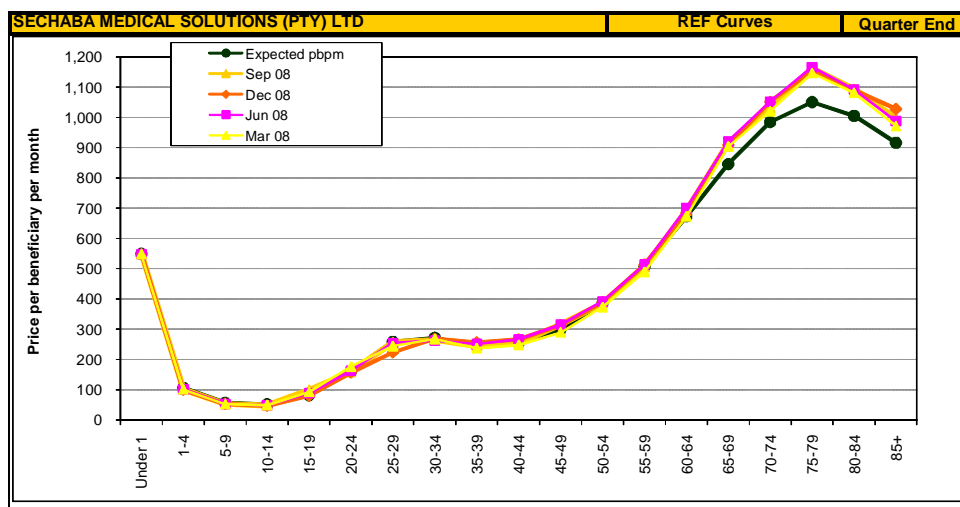
Figure 65: Multimed Healthcare Administrators (Pty) Ltd: Community rate analysis



Multimed Healthcare Administrators (Pty) Ltd schemes reported fluctuating rates for maternity from R2.51 pbpm below the expected to R4.65 pbpm above the expected; chronic disease rates at between R28.82 pbpm - R48.40 pbpm above the expected. These schemes have a much older age profile than the industry average, which amounts to a community rate of between R65.60 pbpm - R72.48 pbpm above the industry community rate for January and December respectively.

10 Sechaba Medical Solutions (Pty) Ltd

Figure 66: Sechaba Medical Solutions (Pty) Ltd: Price by age



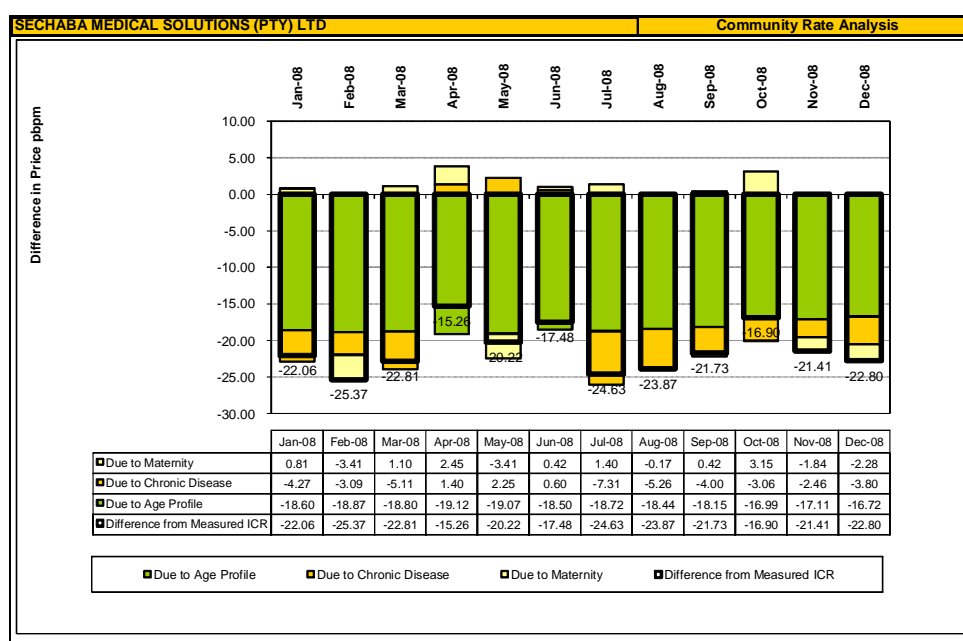
Sizwe Medical Scheme, which is administered by Sechaba Medical Solutions, remains close to the expected on most age bands, with slight variations in the



reproductive age bands, moving above the expected above 64 years. This is due to the higher than expected reporting of the following CDL conditions:

- BMD reported at 156% of the expected for March increasing to 157% for December
- HIV reported at 113% for March increasing to 161% for December
- CC4 reported at 305% for March increasing to 372% for December
- Multiple CDL reported at 110% increasing to 125%

Figure 67: Sechaba Medical Solutions (Pty) Ltd: Community rate analysis

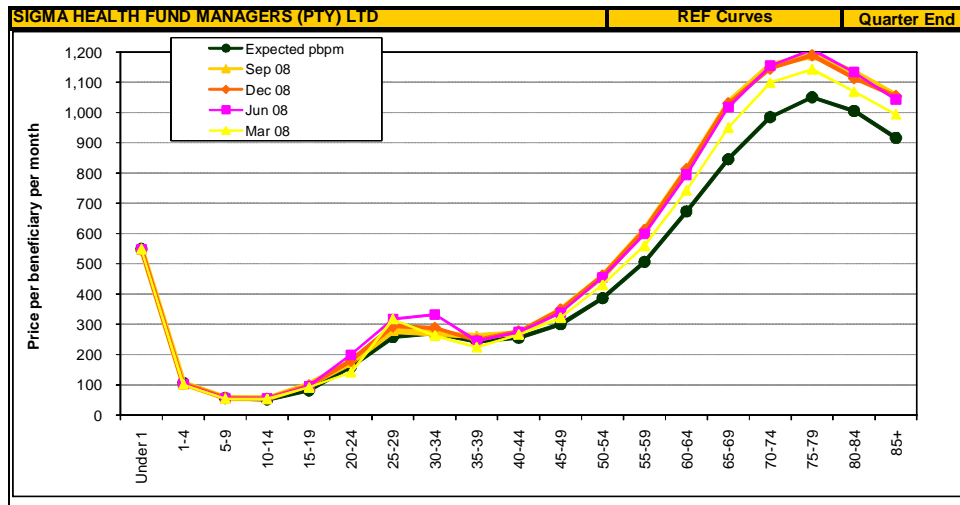


Sizwe Medical Scheme reported maternity rates fluctuating from R3.41 pbpm below the expected to R3.15 pbpm; chronic disease rates fluctuating from R7.31 pbpm below to R2.25 pbpm above the expected. The younger age profile leads to a community rate of between R18.60 pbpm - R16.72 pbpm below the industry average for January and December respectively.



11 Sigma Health Fund Managers (Pty) Ltd

Figure 68: Sigma Health Fund Managers (Pty) Ltd: Price by age

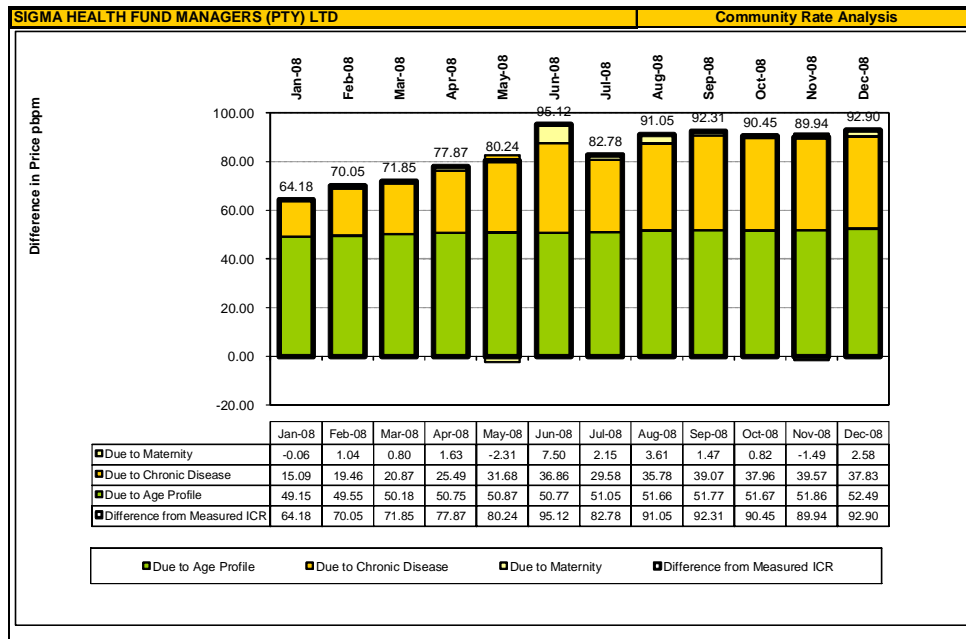


Pro Sano Medical scheme administered by Sigma Health Fund Managers has a price by age curve that resembles the industry expected, with deviation in the age bands between the ages of 19 - 39, and moves away from the industry expected for the ages above 40 years. This is due to higher than expected reporting on most CDLs including the following:

- BMD reported at 194% of the expected for March, increasing to 272% for December
- CRF reported at 141% of the expected for March to 106% for December
- DM2 reported at 319% of the expected for March, increasing to 394% for December
- Multiple CDL reported at 171% of the expected for March, increasing to 221% for December, with CC2 and CC3 reported at 146% and 264% for March, increasing 188% and 340% for December respectively.
- Total CDL reported at 126% of the expected for March, increasing to 152% for December



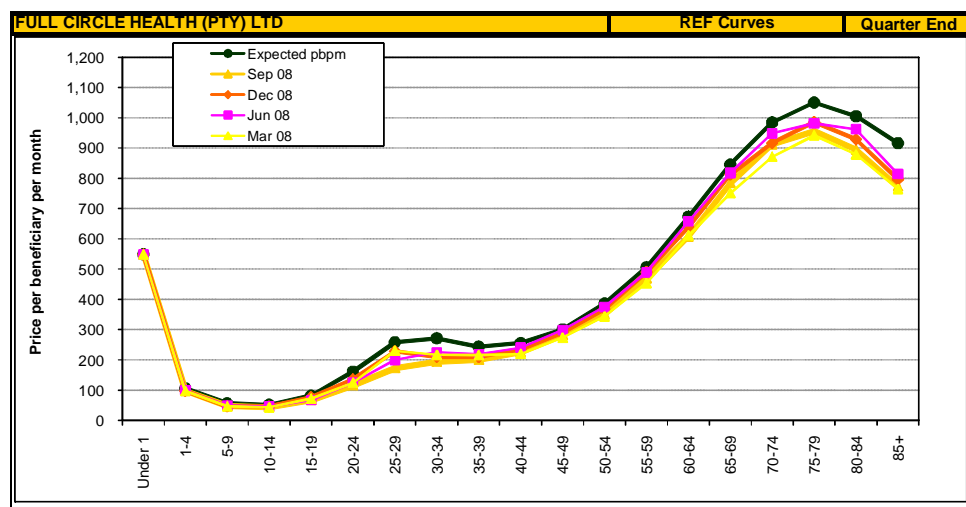
Figure 69: Sigma Health Fund Managers (Pty) Ltd: Community rate analysis



Pro Sano Medical scheme reported maternity rates fluctuating from R2.31 pbpm below the expected to R7.50 pbpm above the expected; chronic disease rates between R15.09 pbpm - R39.57 pbpm above the expected. The older age profile translates into a community rate of R49.15 pbpm - R52.49 pbpm above the industry average for January and December respectively.

12 Full Circle Health (Pty) Ltd

Figure 70: Full Circle Health (Pty) Ltd: Price by age



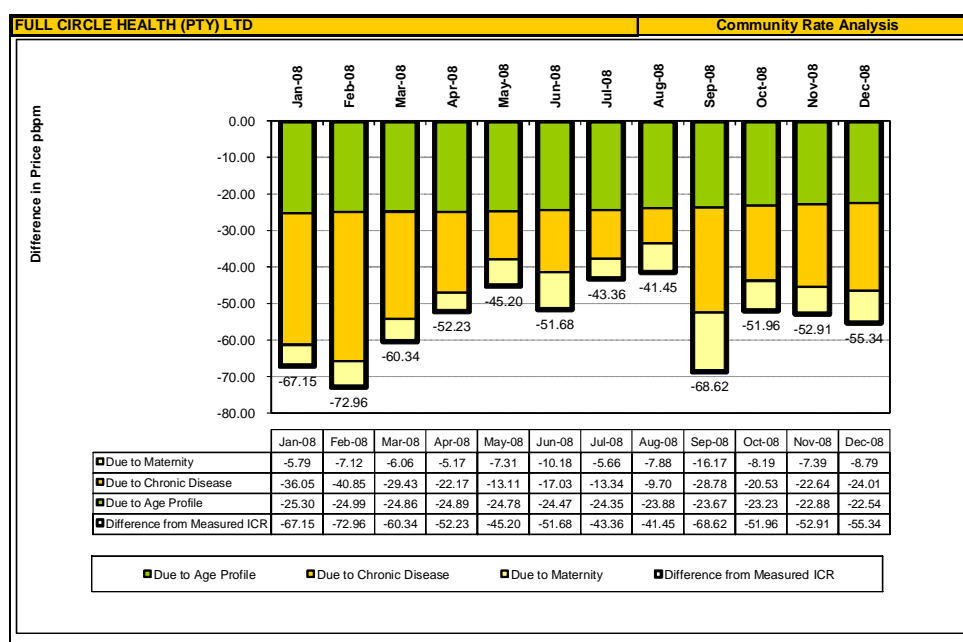
Full Circle Health's price by age curve is below the expected for the age bands above 19 years, with greater variance between the ages of 20 - 44 and from 55+ for all



quarters, due to the reporting of total CDL at 52% of the expected for March, increasing to 78% of the expected for December. The following CDLs were also reported at rates much lower than the expected:

- AST reported at 28% of the expected for March, increasing to 35% for December
- HYP reported at 54% of the expected for March, increasing to 95% for December
- Multiple CDL reported at 42% of the expected for March, increasing to 77% for December

Figure 71: Full Circle Health (Pty) Ltd: Community rate analysis

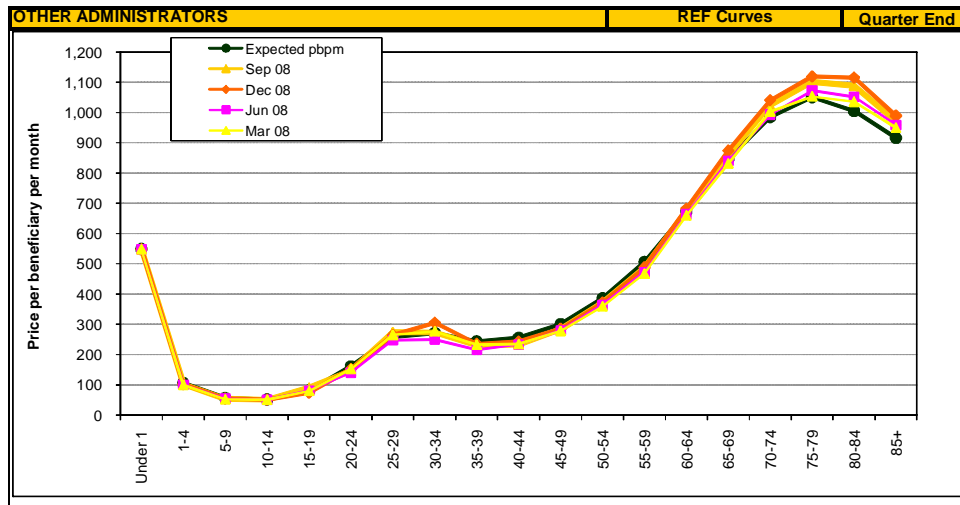


The schemes administered by Full Circle Health (Pty) Ltd reported maternity rates of between R5.17 pbpm - R16.17 pbpm above the expected; chronic disease rates of between R9.79 pbpm - R40.85 pbpm below the expected. The younger age profile contributes to a community rate of between R25.30 pbpm - R22.54 pbpm below the industry average for January and December respectively.



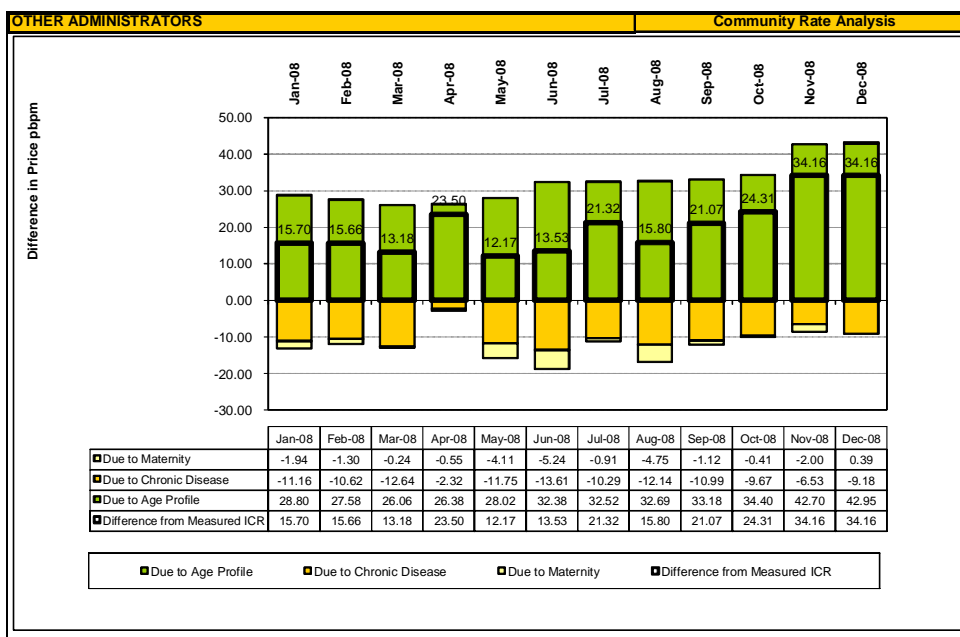
13 Other Administrators

Figure 72: Other Administrators: Price by age



The schemes administered in the group under “Other Administrators” has a price by age curve that remains close to the expected for most age bands, with slight variation in the ages between 29 and 39, falling below the expected for the ages between 39 and 59, moving above the expected for the ages above 70. This is due to higher than expected reporting on BMD and multiple CDL reported at 313% and 108% of the expected for March and 427% and 125% for December respectively.

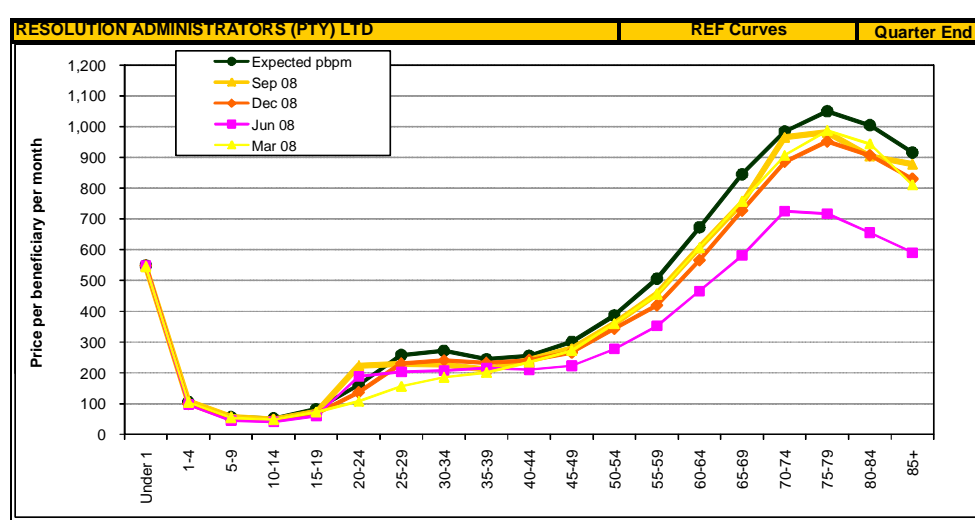
Figure 73: Other Administrators: Community rate analysis



The schemes administered in the group “Other Administrators” has a community rate that fluctuates between R5.24 pbpm below the expected to R0.39 pbpm above the expected; chronic disease rates fluctuating between R2.32 pbpm - R13.61 pbpm below the expected. These schemes’ older age profile leads to a community rate of between R28.89 pbpm - R42.95 pbpm above the expected for January and December respectively.

14 Resolution Administrators (Pty) Ltd

Figure 74: Resolution Administrators (Pty) Ltd: Price by age

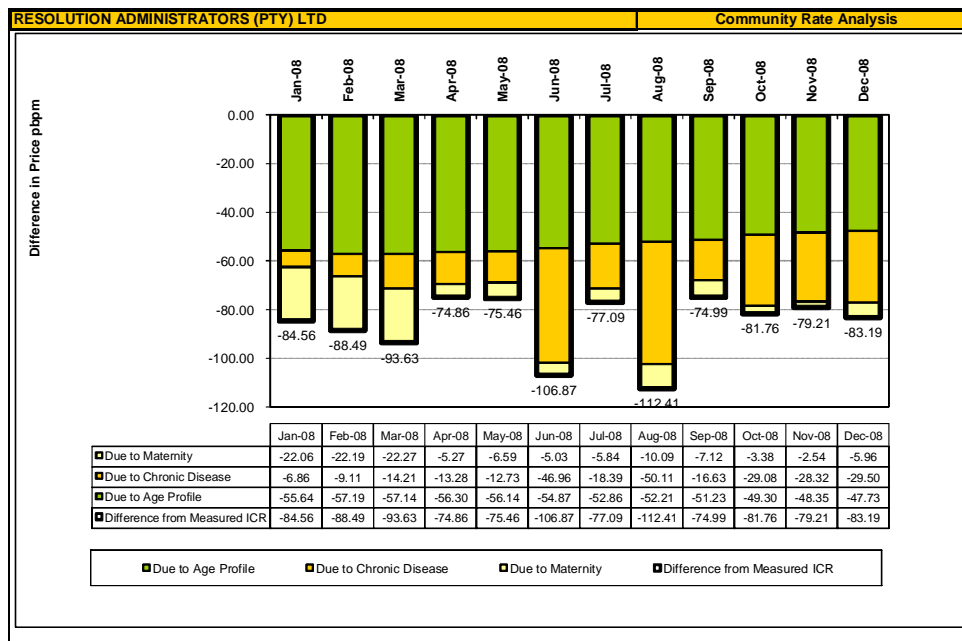


Resolution Health Medical Scheme administered by Resolution Health Administrators’ price by age is below the expected for all age bands above 19 years, due to the reporting of lower than expected CDL conditions listed below:

- CMY reported at 52% of the expected in March, decreasing to 23% in December
- COP reported at 39% of the expected in March, decreasing to 20% in December
- DM2 reported at 43% of the expected in March, decreasing to 30% in December
- IHD reported at 64% of the expected in March, decreasing to 19% in December



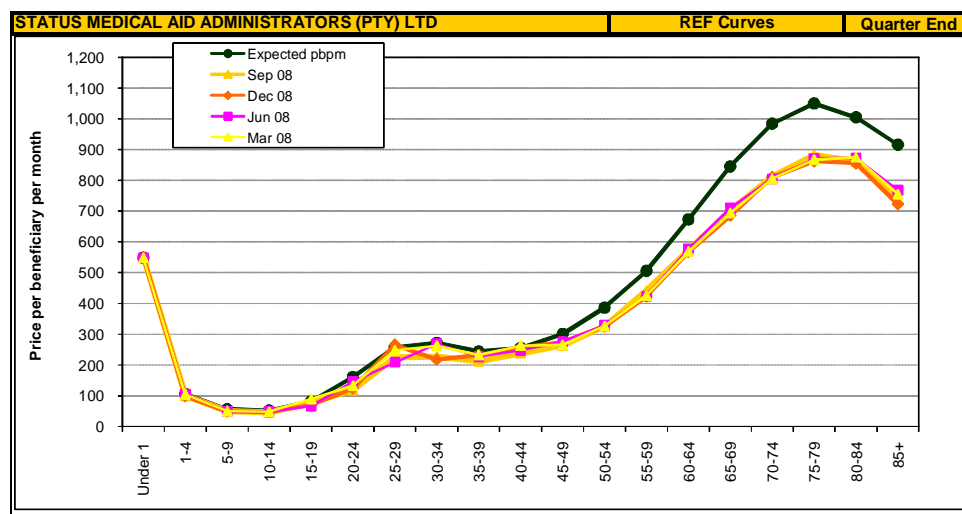
Figure 75: Resolution Administrators (Pty) Ltd: Community rate analysis



Resolution Health Medical scheme reported maternity rates fluctuating between R2.54 pbpm - R22.27 pbpm below the expected; chronic diseases were reported at between R6.86 pbpm - R50.11 pbpm below the expected. The much younger age profile of the schemes contribute to a community rate of between R55.64 pbpm - R47.73 pbpm below the expected for January and December respectively.

15 Status Medical Aid Administrators (Pty) Ltd

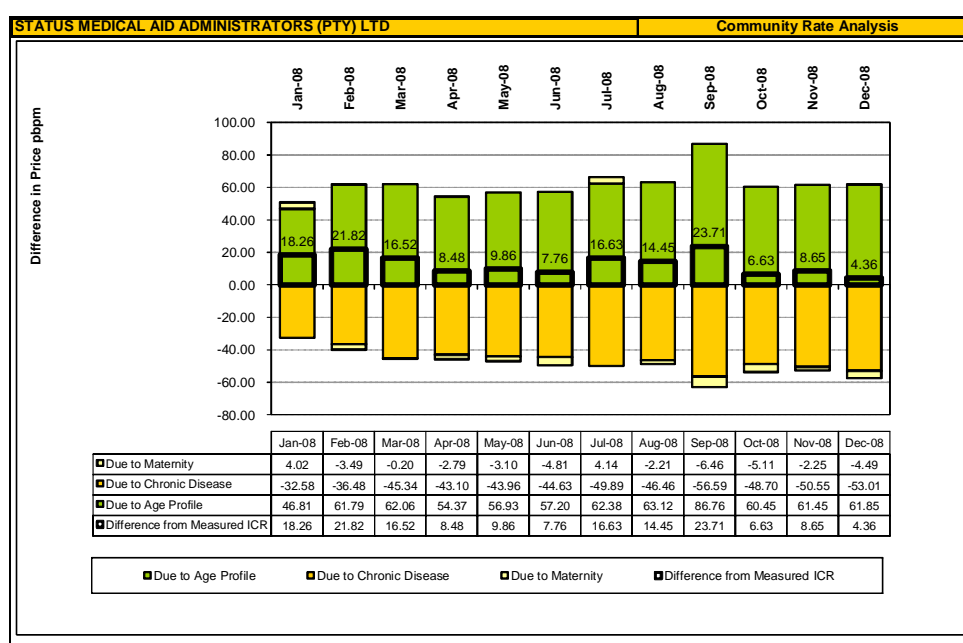
Figure 76: Status Medical Aid Administrators (Pty) Ltd: Price by age



The price by age curve for Status Medical Aid Administrators administered schemes moves below the expected for all ages above 19 years. This is due to the reporting of lower than expected rates for total CDL, reported at 59% in March decreasing to 57% for December, and certain other CDL conditions reported as below:

- AST reported at 34% of the expected for March, decreasing to 33% for December
- CMY reported at 16% of the expected for March, decreasing to 14% for December
- IHD reported at 44% of the expected for March, decreasing to 43% for December
- Multiple CDL reported at 42% of the expected for March, decreasing to 38% for December

Figure 77: Status Medical Aid Administrators: Community rate analysis

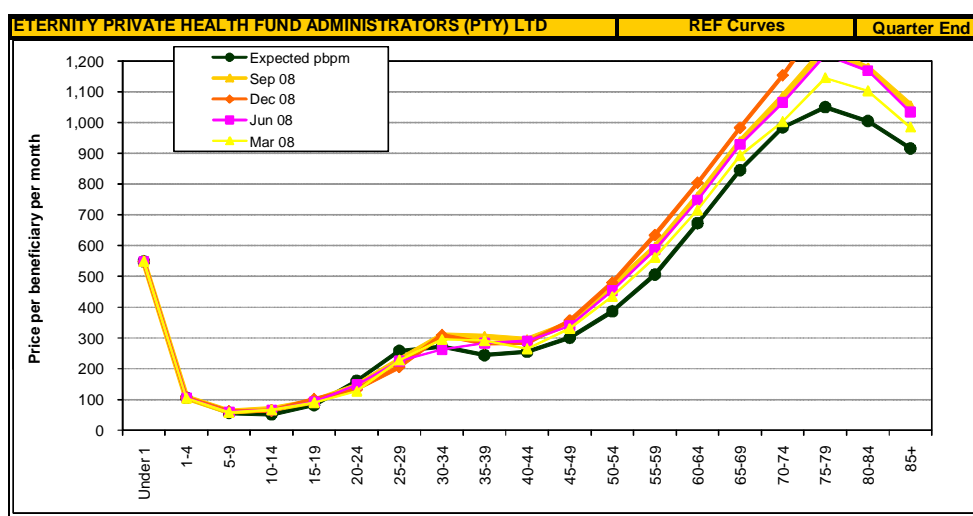


The Status Medical Aid Administrators administered schemes reported maternity rates varying between R6.46 pbpm below the expected to R4.14 pbpm above the expected; chronic disease rates of between R32.58 pbpm - R56.59 pbpm below the expected. The schemes' older age profile leads to a community rate of between R46.81 pbpm - R61.85 pbpm higher than expected.



16 Eternity Private Health Fund Administrators

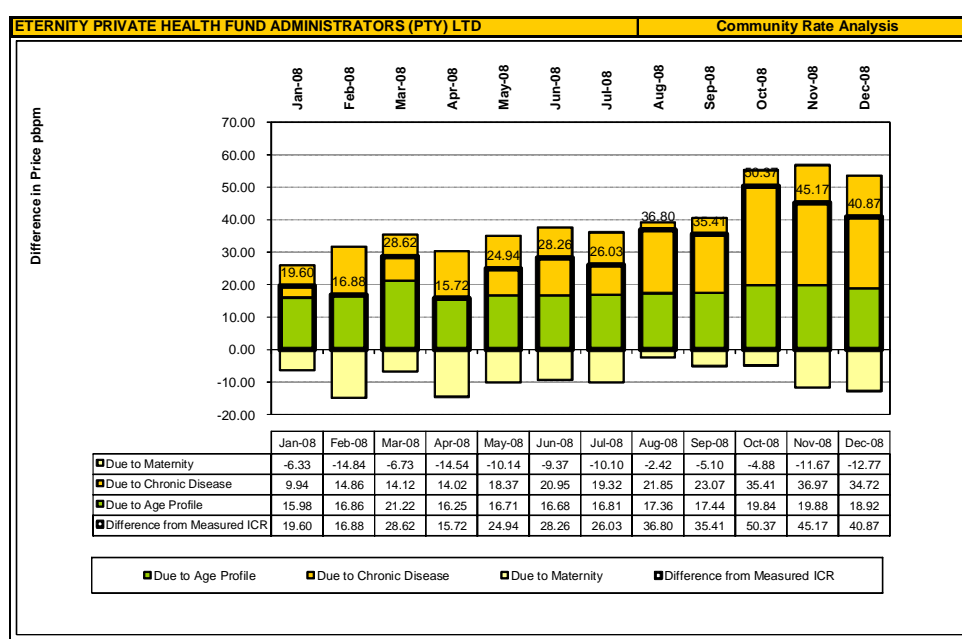
Figure 78: Eternity Private Health Fund Administrators: Price by age



Chartered Accountants Medical Aid Fund (CAMAf), administered by Eternity Private Health Fund Administrators has shown improvement from 2007, but remains above the expected for all age bands above 29 years. This is due to following higher than expected reporting of:

- Total CDL at 139% of the expected for March, increasing to 156% for December
- Multiple CDL at 126% for March, increasing to 185% for December
- IHD at 173% for March, increasing to 231% for December
- DYS at 328% for March to 317% for December
- CRF at 166% for March increasing to 247% for December

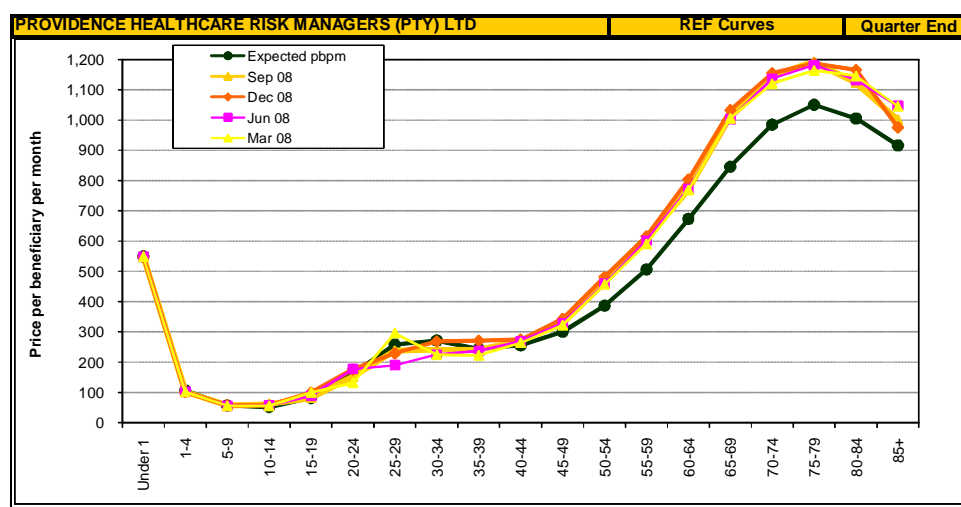
Figure 79: Eternity Private Health Fund: Community rate analysis



Chartered Accountants Medical Aid Fund (CMAF) reported maternity rates fluctuating from R2.42 pbpm - R14.84 pbpm below the expected; chronic disease rates were reported at between R9.94 pbpm - R36.97 pbpm above the expected. The older age profile of these schemes leads to a community rate of between R15.98 pbpm - R18.92 pbpm higher than expected.

17 Providence Healthcare Risk Managers (Pty) Ltd

Figure 80: Providence Healthcare Risk Managers (Pty) Ltd: Price by age

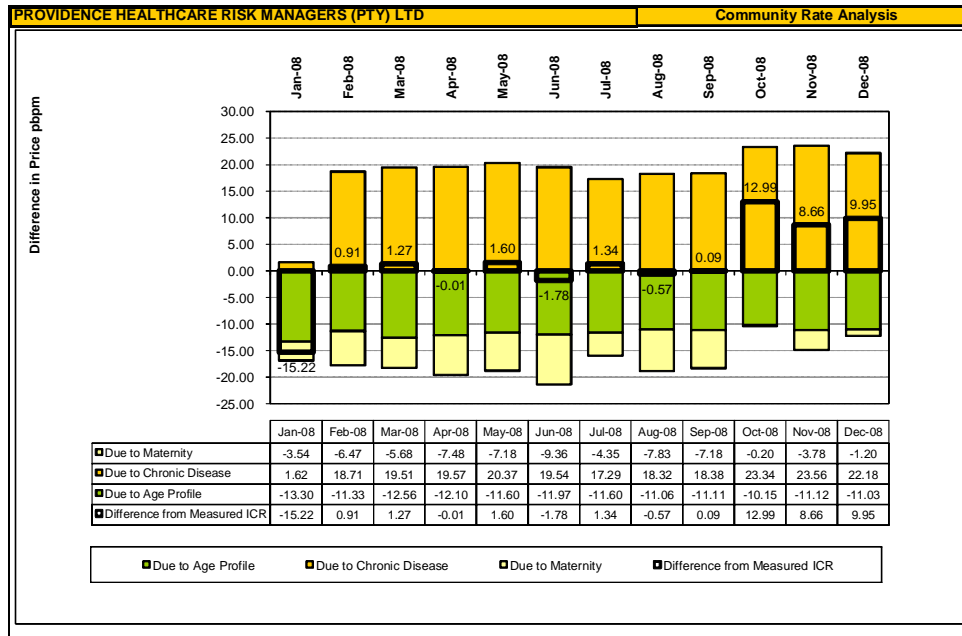


The price by age for Providence Healthcare Risk Managers administered schemes shows deviation from the expected in the age bands between 19 and 40 years, and moves above the expected for the ages above 44 years. This is due to higher than expected rates reported for the following CDL conditions:

- Total CDL reported at 146% of the expected for March increasing to 155% for December
- Multiple CDL reported at 183% for March increasing to 213% for December
- CC3 reported at 218% for March increasing to 310% for December
- HYL reported at 168% for March increasing to 223% for December
- DM2 reported at 171% for March increasing to 188% for December



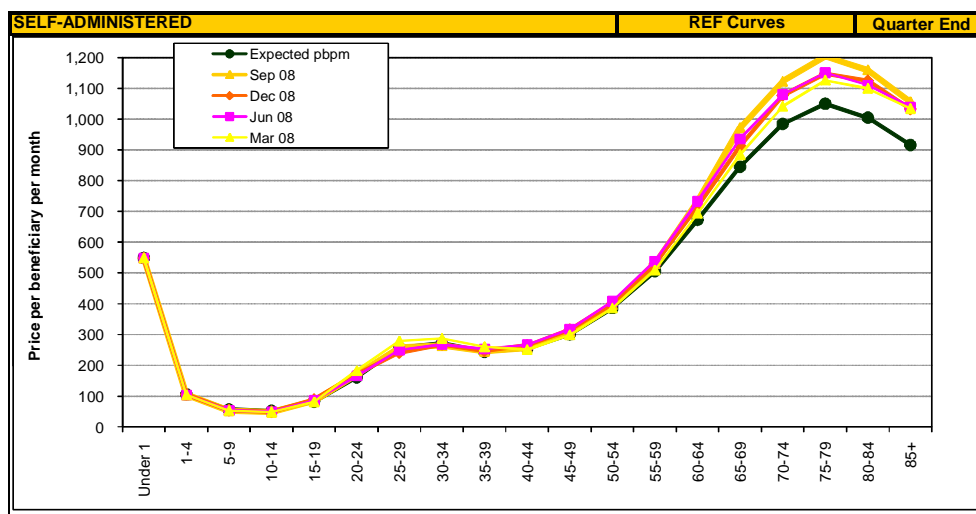
Figure 81: Providence Healthcare Risk Managers (Pty) Ltd: Community rate analysis



The schemes administered by Providence Healthcare Risk Managers reported maternity rates between R0.20 pbpm - R9.36 pbpm below the expected; chronic conditions were reported at between R1.62 pbpm - R23.56 pbpm above the expected. The younger age profile of these schemes contributes to a community rate of between R13.30 pbpm - R11.03 pbpm below the expected for January and December respectively.

18 Self-administered

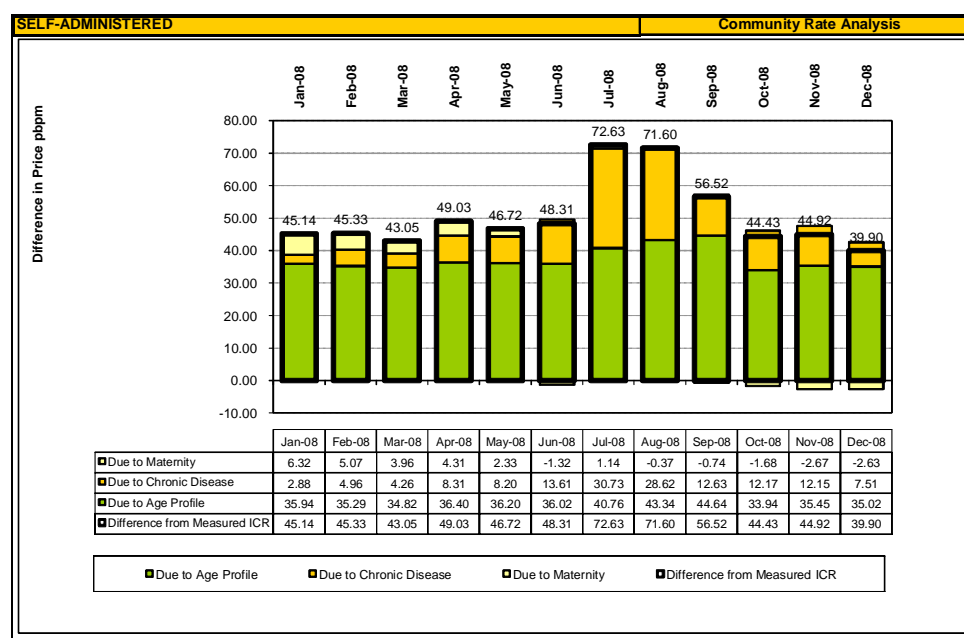
Figure 82: Self-administered: Price by age



The price by age curve for the schemes falling under the group “Self-administered” followed the industry curve closely for the age bands up to 59 years, with minor variation in the age bands between 20 and 39 years. The price by age then moves above the expected for the age bands above 59 years, which is due to higher rates reported for the following CDLs:

- BMD reported at 304% of the expected in March, increasing to 345% in December
- DYS reported at 181% of the expected in March, increasing to 203% in December
- HYP reported at 116% of the expected in March increasing to 154% in June and decreasing to 127% in December
- Multiple CDL conditions reported at 133% of the expected in March, increasing to 144% in December, with CC3 reported at 163% in March, increasing to 176% in December and CC4 reported at 272% in March, increasing to 372% in December

Figure 83: Self-administered: Community rate analysis



The schemes in the group of “Self-administered” schemes reported maternity rates fluctuating between R2.67 pbpm below the expected to R6.32 pbpm above the expected; chronic disease rates of between R2.88 pbpm - R30.73 pbpm above the expected. The older age profile of these schemes leads to a community rate of R35.94 pbpm in January to R35.02 pbpm in December.

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