

# MEDICINES REVIEW 2005



**Mediscor**

PHARMACEUTICAL  
BENEFIT MANAGEMENT

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# 2005

<b>1</b>	<b>MEDICINE EXPENDITURE 2005</b> .....	<b>4</b>
	1. Introduction	4
	2. Expenditure compared	4
	3. Dispensing doctors versus pharmacies	6
	4. Branded products and generic equivalents	7
	5. Expenditure per therapeutic group	8
	6. Cost driving products	9
<b>2</b>	<b>FACTORS AROUND THE DATA</b> .....	<b>12</b>
	1. Medical scheme demographics	12
	2. The data sample	13
	3. Cost calculations	13
	4. Trend calculations	13
<b>3</b>	<b>CHRONIC DISEASE LIST AND THE RISK EQUALISATION FUND</b> .....	<b>15</b>
	1.The Risk Equalisation Fund (REF)	15
	2.The medicine cost of CDL conditions	15
	3.The prevalence of CDL conditions	17
<b>4</b>	<b>ABOUT MEDISCOR</b> .....	<b>18</b>
<b>5</b>	<b>CONTACT DETAILS</b> .....	<b>19</b>

## Mediscor Medicines Review - 2005

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# Preface

## Dear client and colleague

This past year, as with other years in the recent past, we've seen some interesting developments in the application of legislation moving us towards a national healthcare system; in the regulatory role of the Council for Medical Schemes in overseeing the application of the Prescribed Minimum Benefits, REF and other regulations; and in the role of health economics in funding and pricing decisions.

For some role players the impact of these activities on their business has been obvious and significant, for others the impact is yet to be realised. For some it has been a case of opportunity realised, for others pressure to review their business models, but without a doubt all role players have been affected.

In times of change it's always useful to turn to hard facts and statistics on which you can base your decisions and it is our fervent wish that the Mediscor Medicine Review will provide you with valuable information and insight in the field of medicine management.

This is the fourth edition of the Mediscor Medicines Review and as in previous years, we have analysed the claims processed by the Mediscor PBM system to provide you with credible data and information on medicine utilisation and expenditure trends.

A few interesting facts I picked up when going through the report include:

- Expenditure per beneficiary per month is up due to higher levels of utilisation - largely attributable to

the fact that the average number of items per beneficiary increased by 10.3%

- The average patient pay per item decreased by 20%
- The generic average item cost decreased and the utilisation of generics increased
- It appears that more patients are registering for HIV/AIDS disease management programs and that these patients are either more compliant or are using multiple therapies more frequently

The year ahead promises to be equally interesting. We look forward to the long awaited decision regarding the pharmacy dispensing fee, the realities of the REF shadow reporting period, and the release of the LIMS Task Team report. If there is anything Mediscor PBM can assist you with in 2006 please feel free to call on us.

We trust that you will find this publication useful as in previous years and that it will make a positive contribution to your healthcare management information needs.

Yours in good health



Christo Rademan  
Managing Director  
Mediscor PBM (Pty) Limited



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# Medicine expenditure 2005

## 1. Introduction

This section details the annual medicine expenditure for 2005 as experienced in the Mediscor environment.

The medicine expenditure for 2005 is summarised in Table 1 below.

TABLE 1: Annual medicine expenditure 2005

Measure of expenditure	2005
Gross cost per beneficiary	R 1,541
FSC* per beneficiary	R 1,361
Gross cost per item	R 96
FSC* per item	R 85
Gross cost per utilising beneficiary	R 1,808
FSC* per utilising beneficiary	R 1,596
Items per beneficiary	16
% utilising beneficiaries	85
Items per utilising beneficiary	19

\*FSC: Final scheme cost  
Gross cost = Sep & Dispensing fee

### Changes in medicine expenditure

Medicine expenditure can be described in terms of volume-related and cost-related factors. The annual medicine expenditure, indicated by “rand per beneficiary”, can be broken down into two components, namely **cost** and **utilisation**.

$$\text{Total medicine expenditure} = \text{cost component} \times \text{utilisation component}$$

A change in the **utilisation** or **volume** of items claimed per beneficiary per annum can further be described using **two volume related measures**:

- The **prevalence of use** indicates the proportion of patients using medicine, and is calculated as the number of utilising beneficiaries expressed as a percentage of total beneficiaries.
- The **intensity of use**, calculated as the number of items per utilising beneficiary, measures the degree to which patients are accessing their medicine benefits.

The **price component**, average cost per item, is influenced by the following factors:

- Inflation or price changes of existing medication
- Units dispensed per item (e.g. amount of tablets, capsules, etc.)
- The changes in the mix of medicines used, or the ratio of relatively more expensive or less expensive

products. Examples of such changes are shifts between expensive branded products and their generic equivalents, between more expensive and less expensive therapeutic alternatives, different strengths and dosage forms of the same product.

In this document the reported expenditure is the price paid for the medicine, irrespective of how the payment is divided between the medical scheme and the patient. It reflects the **gross cost** of medicines that includes any **mark-up** or **professional fees**, as well as **VAT**.

The gross cost was chosen as a reference to ensure that the information can be compared for different pricing and levy structures, associated with different medical scheme options. *When making comparisons with other data sources, one must remember to make allowances for these factors.*

### The data samples

The data analysis performed for this publication was done on the medicine claims database of Mediscor PBM (Pty) Ltd. Different samples were used for the two types of analysis reported on. For the expenditure analysis for 2005, only medical schemes contracted to Mediscor PBM (Pty) Ltd for the entire year were included. For the trend analysis comparing 2005 and 2004, only schemes contracted for both years were included. This approach ensured the inclusion of the utilisation data of approximately one million beneficiaries for the purpose of this analysis.

## 2. Expenditure compared

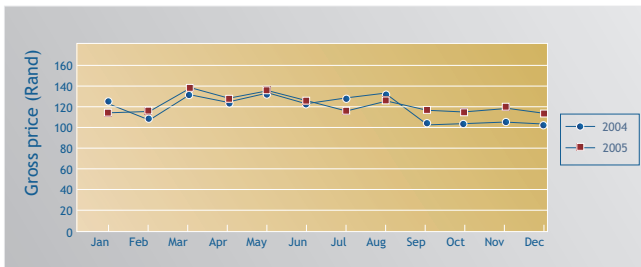
The monthly expenditure per beneficiary for 2005 versus 2004 is compared in Figure 1. Similarly the cost per item and number of items per beneficiary for 2005 versus 2004 are illustrated in Figures 2 and 3.

**Principal member:** The person under whose name all contributions are made to the medical scheme.

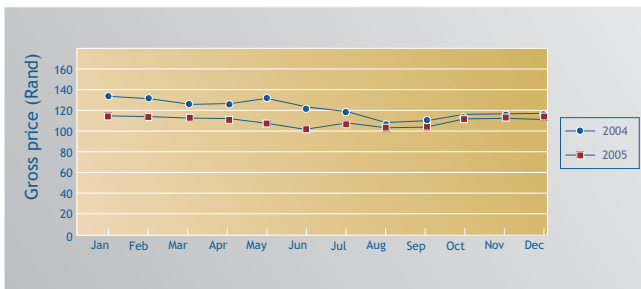
**Beneficiaries:** All principal members registered with a medical scheme and their dependants.

**Utilising beneficiary:** A beneficiary is considered an utilising beneficiary when he/she uses the medical scheme benefits, which in this case would be the medicine benefit.

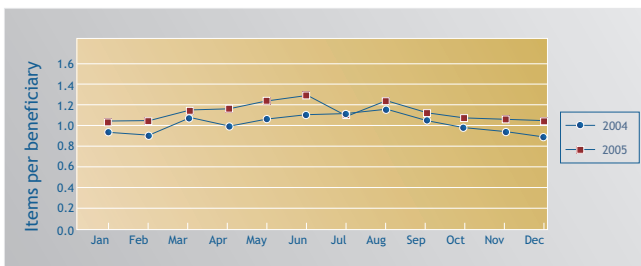
**FIGURE 1: Expenditure per beneficiary per month for 2005 versus 2004**



**FIGURE 2: Average item cost per month for 2005 versus 2004**



**FIGURE 3: Average number of items per beneficiary per month for 2005 versus 2004**



The total expenditure per beneficiary per month increased in 2005 compared to 2004. This change is primarily attributed to a higher level of utilisation in 2005 compared to 2004, as illustrated in Figure 3. The average cost per item was lower in 2005 than 2004 for January to September, but comparable with 2004 levels for September to December.

The regulated pharmacy dispensing fee at 26%/R26 per item was implemented in August 2004. Although some schemes opted to change to different pricing models in 2005, many schemes continued to reimburse medicines at this rate for the remainder of 2005.

The average member's cost share or patient pay per item decreased from 2004 to 2005 by 20%, while the average percentage patient pay decreased by 21% (from 14% to 11%

of the gross amount). A number of factors contributed to this including:

- No benefit limit can be placed on the Chronic Disease List (CDL) conditions (Prescribed Minimum Benefits (PMB)) products.
- No co-payment is allowed on CDL formulary products, except where the patients utilise non-formulary medicines or service providers outside a designated network.
- Patients may opt to change to CDL formulary products to avoid co-payments or levies.

The changes in total medicine expenditure, item cost and utilisation between 2005 and 2004 are summarised in Table 2.

**TABLE 2: The key indicators of pharmaceutical expenditure for 2005 versus 2004**

Total expenditure (average cost per beneficiary)	
Key indicator	% change 2005 versus 2004
All medicines	↑ 0.8%
Medicines registered before 2005	↑ 0.6%
New medicines registered during 2005	↑ 0.2%
Cost component (average cost per item)	
Key indicator	% change 2005 versus 2004
All medicines	↓ 8.7%
Medicines registered before 2005	↓ 8.8%
New medicines registered during 2005	↑ 0.1%
Utilisation component (average number of items per beneficiary)	
Key indicator	% change 2005 versus 2004
All medicines	↑ 10.3%
Medicines registered before 2005	↑ 10.2%
New medicines registered during 2005	↑ 0.1%

In contrast to the 2004/2003 analysis, the change in item cost had a less pronounced effect on the year-on-year change in overall expenditure than the change in utilisation. The decrease in item cost was less dramatic than the previous year (8.7% compared to 24.4%), while utilisation increased more than the previous year (10.3% compared to 4.1%).

### The price of existing medicines

The average item cost of existing medicines, or medicines introduced before 2005, decreased by 8.8%. A number of factors contributed to this change in item cost:

- The introduction of the regulated dispensing fee in

2004 based on the 26%/R26 pharmacy dispensing fee model. (Most medical schemes implemented this model during the largest part of 2005.)

- An increase in generic utilisation rate between 2004 and 2005. The generic utilisation rate increased from 40% in 2004 to 44% in 2005. The average cost per line item for generic equivalents was R49 compared to an average item cost of R141 for branded products.

### Utilisation as a driver of medicine trends

The change in utilisation of medicines registered before 2005 is summarised in Table 3.

TABLE 3: The change in utilisation for medicines registered before 2005, 2005 versus 2004

Key indicator	% change 2005 versus 2004
Total utilisation (Items per beneficiary)	↑ 10.2%
Intensity of use (Items per utilising beneficiary)	↑ 10.8%
Prevalence of use (Utilising beneficiaries as % of total beneficiaries)	↓ 0.6%

Utilisation between 2004 and 2005 increased by 10.2%. This increase is due to a 10.8% increase in the intensity of medicine use. The prevalence of use remained relatively stable, decreasing by only 0.6%.

The number of patients remained relatively stable, but the pool of patients used more medicines in 2005. A factor contributing to the high increase in the number of items per utilising beneficiaries was the availability of an unlimited benefit for CDL medicines.

### New chemical entities in 2005

Once again, the introduction of new chemical entities played a lesser role in the year-on-year change in medicine expenditure. New chemical entities introduced during 2005 increased the item cost by 0.1% and contributed only 0.1% to the overall increase in utilisation of 10.3%.

It is however important to take note of the high cost medicines and biotechnology drugs launched, or those still in the product pipeline, since these products are expected to contribute significantly to medicine expenditure in future years.

## 3. Dispensing doctors versus pharmacies

Mediscor PBM receives claims from various provider

specialties. These include community pharmacies, courier pharmacies, general practitioners, medical specialists and a variety of other disciplines, such as homeopaths and hospitals.

The majority of claims, 71% of line items, are submitted by community pharmacies and 8,5% by courier pharmacies. 74% of beneficiaries received medication from a community pharmacy at least once during 2005, 32% from a general practitioner and 6% from a courier pharmacy (see Table 4 below).

The average cost per item is the highest for medical specialists (R193). Courier pharmacies have the second highest average item cost (R165). These pharmacies mostly supply chronic medicines and are also often the preferred providers for certain expensive therapies. Courier pharmacies also have the highest number of items and cost per utilising beneficiary.

General practitioners provide products with the lowest average item cost (R38) and have an average cost per utilising beneficiary of R390 per annum. General practitioners have the highest generic utilisation rate at 63%, compared to community pharmacies at 38% and courier pharmacies at 47%. This corresponds with the lower average item cost for general practitioners.

FIGURE 4: Percentage of total expenditure and total volume of items per provider type for 2005

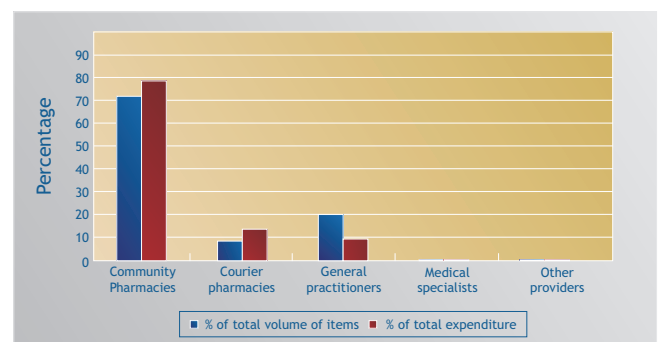


FIGURE 5: Generic utilisation rate (%) and average cost per item per provider type for 2005

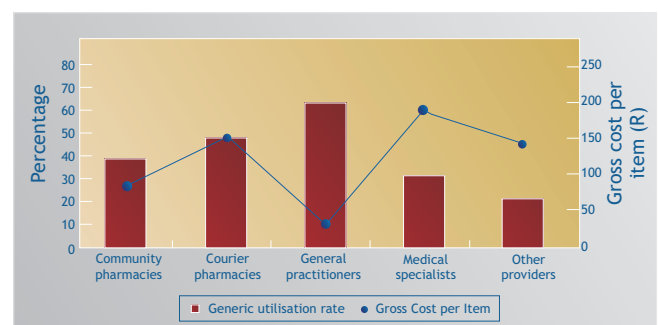


TABLE 4: Expenditure and utilisation per provider speciality for 2005

Provider speciality	% of total expenditure	% of total items	Average cost per beneficiary (R)	Average cost per utilising beneficiary (R)	Average cost per item (R)	Average # items per beneficiary	Utilising beneficiaries as % of total beneficiaries	Average # items per utilising beneficiary
Community pharmacies	77.0	70.9	1,187.37	1,606.47	104.13	11.4	73.9	15.4
Courier pharmacies	14.6	8.5	224.73	4,009.68	164.63	1.4	5.6	24.4
General practitioners	8.2	20.5	126.37	390.32	38.40	3.3	32.4	10.2
Medical specialists	0.2	0.1	2.85	686.66	193.10	0.01	0.4	3.6
Other providers	0.01	0.01	0.15	352.22	143.13	0.001	0.04	2.5

## 4. Branded products and generic equivalents

The generic utilisation rate increased by 8.7% - from 40.2% in 2004 to 43.7% in 2005. In addition to this, the average item cost of generic equivalents decreased by 21%.

This increase in the generic utilisation rate and subsequent decrease in branded product usage could have a significant impact on the business practices of the manufacturers of branded original products.

### Why did generic utilisation increase?

The increase in generic utilisation can be attributed to a combination of the following factors:

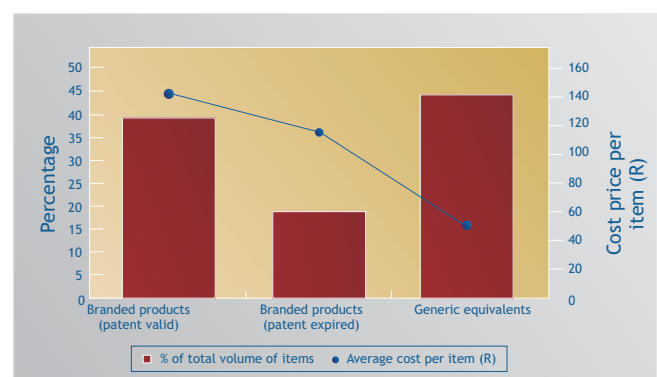
- Managed care initiatives driving generic utilisation, such as the wider implementation of generic reference pricing, including the implementation of more stringent generic reference pricing e.g. the Mediscor Reference Price (MRP).
- The introduction of formularies that promote generic utilisation for the management of various disease conditions, including the Prescribed Minimum Benefits.
- Greater awareness of the availability and use of generics by patients and providers.
- Mandatory generic substitution at pharmacy level.

The expenditure and utilisation of branded products and generic equivalents, 2005 versus 2004, are summarised in Table 5 and illustrated in Figure 6.

TABLE 5: Expenditure and utilisation of branded products and generic equivalents in 2005 versus 2004

Product type	2005			2004		
	% of total expenditure	% of total items	Average cost per item (R)	% of total expenditure	% of total items	Average cost per item (R)
Branded products (patent valid)	56.3	38.4	141	64.2	47.2	156
Branded products (patent expired)	21.2	17.9	114	14.1	12.6	128
Generic equivalents	22.5	43.7	49	21.6	40.2	62
All product types	100.0	100.0	96	100.0	100.0	114

FIGURE 6: Percentage of total volume of items per product type compared to the average item cost per product type for 2005



## 5. Expenditure per therapeutic group

The top 25 therapeutic groups represented 74.6% of overall expenditure and 70.6% of the total number of items dispensed for 2005. The expenditure and utilisation per therapeutic group are illustrated in Table 6.

TABLE 6: Expenditure and utilisation per therapeutic group for 2005

Rank in 2005	Rank in 2004	Therapeutic group	% of total expenditure	% of total items	Average cost per beneficiary (R)	Average cost per utilising beneficiary (R)	Average cost per item (R)	Average # items per beneficiary	Utilising beneficiaries as % of total beneficiaries	Average # items per utilising beneficiary
		<b>Totals for all therapeutic groups</b>	<b>100.0</b>	<b>100.0</b>	<b>1,541</b>	<b>1,808</b>	<b>96</b>	<b>16.1</b>	<b>85.3</b>	<b>18.9</b>
		<b>Totals for top 25 therapeutic groups</b>	<b>74.6</b>	<b>70.6</b>	<b>1,151</b>	<b>1,402</b>	<b>11.4</b>	<b>11.4</b>	<b>82.0</b>	<b>13.8</b>
		<b>Totals for other therapeutic groups</b>	<b>25.4</b>	<b>29.4</b>	<b>391</b>	<b>544</b>	<b>4.7</b>	<b>4.7</b>	<b>71.9</b>	<b>6.6</b>
1	1	Anti-hypertensives	11.6	8.8	179	1,240	127	1.4	14.5	9.8
2	2	Hypolipidaemic agents	5.8	3.3	90	1,358	172	0.5	6.6	7.9
3	3	Anti-depressants	5.0	3.2	77	708	151	0.5	10.9	4.7
4	7	Acid reducers	4.2	2.9	65	363	139	0.5	17.9	2.6
5	6	Beta-lactam antibiotics	4.2	5.7	64	141	70	0.9	45.7	2.0
6	4	Sex hormones	3.9	3.0	61	821	128	0.5	7.4	6.4
7	10	Anti-diabetic agents	3.5	2.2	54	1,463	155	0.4	3.7	9.5
8	8	Combination analgesics	3.4	7.5	53	107	43	1.2	49.0	2.5
9	5	NSAIDs	3.3	4.5	51	172	70	0.7	29.6	2.5
10	9	Cough & cold preparations	3.1	9.5	48	99	31	1.5	48.6	3.2
11	11	Bronchodilators	2.9	2.0	45	419	141	0.3	10.8	2.9
12	46	Cytostatics	2.3	0.2	35	7,530	1,045	0.03	0.5	7.2
13	16	Topical nasal preparations	2.1	2.1	33	175	99	0.3	18.8	1.8
14	12	Anti-epileptics	2.1	0.9	32	1,402	228	0.1	2.3	6.2
15	23	Anti-viral agents	1.8	0.9	28	815	196	0.1	3.4	4.2
16	14	Anti-anginal agents	1.7	1.2	27	905	134	0.2	3.0	6.8
17	15	Osteoporosis & other bone disorders	1.7	0.5	27	2,675	352	0.08	1.0	7.6
18	16	Topical corticosteroids	1.7	1.5	27	183	110	0.2	14.6	1.7
19	21	Erythromycin / other macrolides	1.7	1.2	26	170	128	0.2	15.1	1.3
20	20	Quinolones	1.7	1.6	25	146	98	0.3	17.5	1.5
21	18	Anti-histamines	1.6	2.3	24	120	66	0.4	19.9	1.8
22	19	Sedative hypnotics	1.4	1.7	21	285	79	0.3	7.4	3.6
23	22	Anti-asthmatics	1.3	0.6	20	538	205	0.1	3.8	2.6
24	17	Diuretics	1.3	2.7	20	269	46	0.4	7.5	5.8
25	24	Anti-fungal agents	1.2	0.7	18	241	169	0.1	7.6	1.4

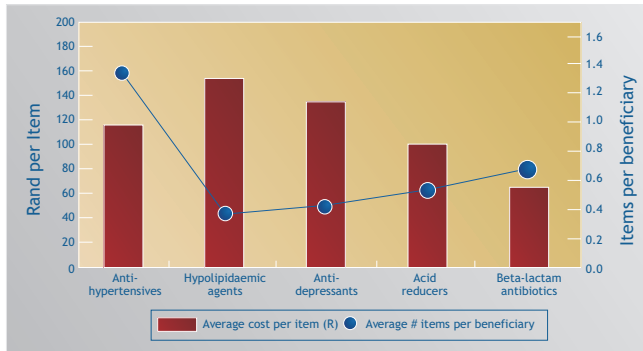
NOTE: All costs are reported as the gross cost, as defined under "Cost calculations".

The top five therapeutic groups, according to total expenditure, were:

- Anti-hypertensives (11.6%)
- Hypolipidaemic agents (5.8%)
- Anti-depressants (5.0%)
- Acid reducers (4.2%)
- Beta-lactam antibiotics (4.2%)

The top 3 groups remained constant for 2004 and 2005. The top 5 groups represent 30.8% of the total expenditure and 23.9% of the total number of items. The item cost and utilisation (items per beneficiary) are illustrated in Figure 7.

FIGURE 7: The cost and utilisation of the top 5 therapeutic groups for 2005



The five most prevalent therapeutic groups in 2005 are (prevalence included in brackets):

- Combination analgesics (49%)
- Cough and cold preparations (49%)
- Beta-lactam (BL) antibiotics (46%)
- Non-steroidal anti-inflammatory agents (30%)
- Anti-histamines (20%)

**Acid-reducers** moved from position 7 in 2004 to position 4 in 2005. A number of generic equivalents were introduced in 2005, which significantly reduced (24%) the average cost of acid-reducers. More patients (13%) are however using these agents resulting in an overall increase in expenditure. Certain acid reducers are now also available in over-the-counter (OTC) packages, encouraging increased utilisation.

**Anti-diabetic agents** once again moved to a higher position (Refer MMR 2004). The average item cost decreased by 18.7%, while the prevalence increased by 15.6% and the intensity of use increased by 6.7%. This higher utilisation can be attributed to the inclusion of diabetes mellitus under the Chronic Disease List. Unlimited cover is available for anti-diabetic treatment as opposed the pre-2004 era.

**Non-steroidal anti-inflammatory agents (NSAIDs)** moved from position 5 in 2004 to position 9 in 2005. This is due to a dramatic decrease in the average item cost of these agents (34.5%). Utilisation remained relatively stable.

**Cytostatics** moved from position 46 in 2004 to position 12 in 2005, due to the fact that Mediscor PBM is processing more oncology claims than previously.

Anti-viral medicines moved from position 23 in 2004 to position 15 in 2005. The average item cost decreased by 18.4%, while the prevalence increased by 11.7% and the intensity of use increased by 44.8%. The assumption can be made that more patients are registering for HIV/AIDS disease management programs and that these patients are either more compliant or are using multiple therapies more frequently.

## 6. Cost driving products

Table 7 summarises the 50 products that contributed most to the overall 2005 expenditure. (see next page)

The top 50 products constitute 24% of total expenditure and 14% of the total volume of items in 2005. The top 50 products in 2005 include nine generic equivalents in comparison to only six in 2004 and one in 2003. No new chemical entities, launched during 2005, are included in the top products.

The therapeutic groups represented by the top 50 products are illustrated in Figure 8.

The five therapeutic groups contributing most to the top 50 products in 2005 are (% of gross cost for top 50 products):

- Lipid lowering agents (19%)
- Anti-hypertensives (14%)
- Anti-depressants (10%)
- Acid reducers (8%)
- NSAIDs (6%)

The products in the top 50 list, falling within these five therapeutic groups, contributed 10.8% to overall expenditure and 6.1% to the utilisation for 2005.

**Lipid lowering agents** contributed 19% to the cost of the top 50 products. Six lipid lowering products are included under the top 50 products. Lipitor™ 10mg and 20mg are still the top two products (Refer MMR 2004). Hyperlipidaemia (hypercholesterolaemia) is the second most prevalent reported chronic condition. The generic equivalent Adco-Simvastatin™ 20mg moved from position 14 in 2004 to position 5 in 2005. The increase in the utilisation of this product is mostly driven by formularies implemented to manage Chronic Disease List Prescribed Minimum Benefits.

**Cytostatics.** More cytostatic medicines are currently processed by the Mediscor PBM system than in the past, resulting in high cost oncology medicines to feature on the top 50 products list.

**Prexum™ and Coversyl Plus™.** Prexum™, one of eight anti-hypertensive products under the top 50 list, continues to move up in the ranks, replacing its originator Coversyl™. Coversyl Plus™ is however following closely.

**Ciprallex™,** an anti-depressant launched in 2004, moved up 147 positions to fill position 8 in 2005 and displaced all other anti-depressants to lower ranking positions.

**Plavix™** is an expensive platelet aggregation inhibitor, which moved from position 20 in 2004 to position 41 in 2005. This product is usually used in combination with aspirin after a vascular stent procedure has been performed.

High cost anti-microbials, including anti-viral agents appear in the top 50 products. Stocrin™ has moved from position 333 in 2004 to position 23 in 2005. This is due to the fact that anti-retrovirals were included in the list of PMB conditions effective January 2005.

TABLE 7: Top 50 products ranked by contribution to total medicine expenditure for 2005

Rank in 2005	Rank in 2004	Product Name	Generic equivalent available	Therapeutic group	% of total expenditure	% of total items	Average cost per utilising beneficiary (R)	Average cost per item	Utilising beneficiaries as % of total beneficiaries	Average # items per utilising beneficiary
.	.	Totals for all products	.	.	100.0	100.0	1,808	96	85.3	18.9
.	.	Totals for top 50 products	.	.	23.7	14.0	867	163	42.2	5.3
.	.	Totals for other products	.	.	76.3	86.0	1393	85	84.4	16.4
1	1	Lipitor 10mg Tabs	No	Hypolipidaemic agents	1.7	0.9	1,393	189	1.9	7.4
2	2	Lipitor 20mg Tabs	No	Hypolipidaemic agents	1.1	0.4	1,759	270	0.9	6.5
3	4	Fosamax 70mg Tabs	Yes	Osteoporosis & bone disorders	1.0	0.3	2,534	336	0.6	7.5
4	5	Celebrex 200mg Caps	No	NSAIDs	0.8	0.4	583	224	2.2	2.6
5	14	Adco-Simvastatin 20mg Tabs	Gen*	Hypolipidaemic agents	0.7	0.6	726	113	1.5	6.4
6	32	Prexum 4mg Tabs	Gen*	Anti-hypertensives	0.7	0.5	763	129	1.4	5.9
7	10	Coversyl Plus Tabs	Yes	Anti-hypertensives	0.7	0.4	1,134	181	0.9	6.3
8	155	Ciprexal 10mg	No	Anti-depressants	0.7	0.3	925	252	1.1	3.7
9	16	Nexiam 40mg	No	Acid reducers	0.7	0.2	497	291	2.0	1.7
10	11	Myprodol Caps	Yes	Combination analgesics	0.6	1.0	80	61	11.6	1.3
11	8	Premarin 0.625mg Tabs	Yes	Sex hormones	0.6	0.6	624	98	1.4	6.3
12	6	Aropax 20mg Tabs	Yes	Anti-depressants	0.6	0.2	1,298	269	0.7	4.8
13	15	Seretide Accuhaler 50/250	No	Bronchodilators	0.6	0.1	1,471	368	0.6	4.0
14	17	Eltroxin 100mcg Tabs	No	Thyroid hormones	0.5	1.3	324	41	2.6	8.0
15	21	Klacid XL 500mg Tabs	No	Erythromycin / other macrolides	0.5	0.3	193	164	4.3	1.2
16	19	Synap Forte	No	Combination analgesics	0.5	0.4	173	116	4.5	1.5
17	7	Cilift 20mg Tabs	Gen*	Anti-depressants	0.5	0.4	543	123	1.4	4.4
18	37	Avelon 400mg Tabs	No	Quinolones	0.5	0.2	233	197	3.1	1.2
19	13	Livifem 2.5mg Tabs	No	Sex hormones	0.5	0.2	1,914	252	0.4	7.6
20	41	Plavix 75mg Filmcoated Tabs	No	Platelet aggregation inhibitors	0.4	0.1	1,743	400	0.4	4.4
21	25	Nexiam 20mg	No	Acid reducers	0.4	0.2	635	226	1.0	2.8
22	18	Flixonase AQ Nasal Spray	Yes	Topical nasal preparations	0.4	0.2	3409	191	1.9	1.8
23	333	Stocrin 600mg Tabs	No	Anti-viral agents	0.4	0.2	1,673	241	0.4	6.9
24	12	Lanzor 30mg Caps	Yes	Acid reducers	0.4	0.1	606	322	1.0	1.9
25	38	Sporanox 100mg Caps	No	Anti-fungal agents	0.4	0.1	400	318	1.5	1.3
26	22	Cozaar Comp Tabs	No	Anti-hypertensives	0.4	0.2	1,759	222	0.3	7.9
27	35	Adalat XL 30mg Tabs	No	Anti-anginal agents	0.4	0.2	1,021	206	0.5	4.9
28	54	Tavanic 500mg	No	Quinolones	0.4	0.2	249	215	2.2	1.2
29	27	Actraphane HM Penset	No	Anti-diabetic agents	0.4	0.1	3,260	554	0.2	5.9
30	203	Gleevec 100mg Caps	No	Cytostatics	0.3	0.0	141,080	6,967	0.0	20.3
31	217	Adco-Amoclav BD 1000mg	Gen*	Beta-lactam antibiotics	0.3	0.3	132	116	4.1	1.1
32	23	Co-Diovan 80/12.5mg Tabs	No	Anti-hypertensives	0.3	0.2	1,644	211	0.3	7.8
33	24	Efexor XR 150mg Caps	No	Anti-depressants	0.3	0.1	3,160	627	0.2	5.0
34	34	Efexor XR 75mg Caps	No	Anti-depressants	0.3	0.1	1,558	335	0.3	4.7
35	114	Novomix 30 Flexpen	No	Anti-diabetic agents	0.3	0.1	3,101	556	0.2	5.6
36	750	Aspen Lamzid Tabs	Gen*	Anti-viral agents	0.3	0.1	2,126	330	0.2	6.5
37	47	Adco-Simvastatin 10mg Tabs	Gen*	Hypolipidaemic agents	0.3	0.3	631	102	0.8	6.2

Table 7 continued...

Rank in 2005	Rank in 2004	Product Name	Generic equivalent available	Therapeutic group	% of total expenditure	% of total items	Average cost per utilising beneficiary (R)	Average cost per item	Utilising beneficiaries as % of total beneficiaries	Average # items per utilising beneficiary
.	.	Totals for all products	.	.	100.0	100.0	1,808	96	85.3	18.9
.	.	Totals for top 50 products	.	.	23.7	14.0	867	163	42.2	5.3
.	.	Totals for other products	.	.	76.3	86.0	1393	85	84.4	16.4
38	9	Norvasc 5mg Tabs	Yes	Anti-hypertensives	0.3	0.2	839	138	0.6	6.1
39	45	Pantoloc 40mg Tabs	Yes	Acid reducers	0.3	0.1	535	283	0.9	1.9
40	56	Lipitor 40mg Tabs	No	Hypolipidaemic agents	0.3	0.1	1,723	276	0.3	6.2
41	50	Cataflam D 50mg Disp Tabs	Yes	NSAIDs	0.3	0.4	113	84	4.2	1.4
42	44	Adco-Simvastatin 40mg Tabs	Gen*	Hypolipidaemic agents	0.3	0.2	902	141	0.5	6.4
43	48	Atacand Plus 6/12.5mg Tabs	No	Anti-hypertensives	0.3	0.1	1,547	197	0.3	7.8
44	40	Mybulen Tabs	Gen*	Combination analgesics	0.3	0.7	51	39	9.2	1.3
45	123	Ketek 400mg Tabs	No	Erythromycin / other macrolides	0.3	0.1	341	305	1.4	1.1
46	97	Coxflam 15mg	Gen*	NSAIDs	0.3	0.4	143	75	3.1	1.9
47	57	Zithromax 500mg Tabs	Yes	Erythromycin / other macrolides	0.3	0.2	171	151	2.5	1.1
48	43	Cozaar 50mg Tabs	No	Anti-hypertensives	0.3	0.1	1,644	223	0.3	7.4
49	39	Estrofem 2mg Tabs	No	Sex hormones	0.3	0.2	801	110	0.5	7.2
50	65	Co-Diovan 160/12.5mg Tabs	No	Anti-hypertensives	0.3	0.1	1,574	210	0.3	7.5

NOTE:

All brand names are trademarks of their respective manufacturers.

All prices are reported as the gross cost per item as defined under "Cost calculations".

\* Generic equivalent

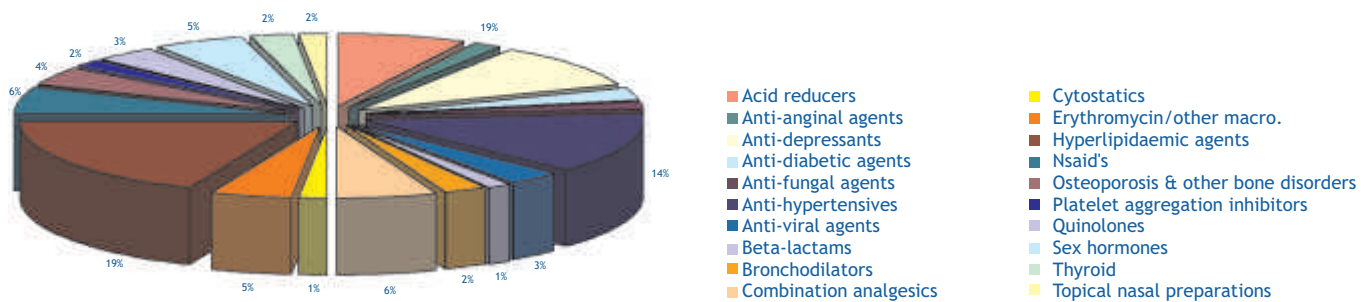


FIGURE 8: The therapeutic groups represented by the top 50 products according to total expenditure in 2005

# Factors around the data

Medicine expenditure is influenced by numerous factors, which include, but are not limited to:

- The age distribution of the population
- Differences in medicine benefit design
- Differences in membership composition, with reference to socio-economic status, race, gender, health status, marital status and family size.

## 1. Medical scheme demographics

Utilisation behaviour and expenditure patterns are by-products of patient characteristics, medical scheme profile, the benefit design and management interventions implemented by a medical scheme and, of course, prescriber habits.

Important patient characteristics are:

- Age
- Education
- Family size
- Gender
- Health status
- Income
- Marital status
- Race

Important medical scheme characteristics are:

- The medical scheme's niche market
- Fee-for-service versus capitation arrangements
- Medical scheme size
- Geographic distribution of members

Changes in the demographic profile of a medical scheme will have an impact on the volume and type of claims received by the scheme, resulting in changes in expenditure patterns.

### Age distribution

Age is an important and established factor influencing medicine utilisation. An increase in age is generally associated with an increase in medicine utilisation and a subsequent increase in total medicine expenditure. The general age distribution of medical scheme members in South Africa, according to the Council for Medical Schemes (CMS), has two peaks, one around 10-14 years and another around 30-34 years. The general distribution of membership, included in this analysis, shows a similar distribution pattern.

The age distribution of the total number of beneficiaries in 2005, included in this analysis, is illustrated in Figure 9,

while the age distribution of this 2005 sample versus the 2004 sample is illustrated in Figure 10.

FIGURE 9: Age distribution of 2005 membership

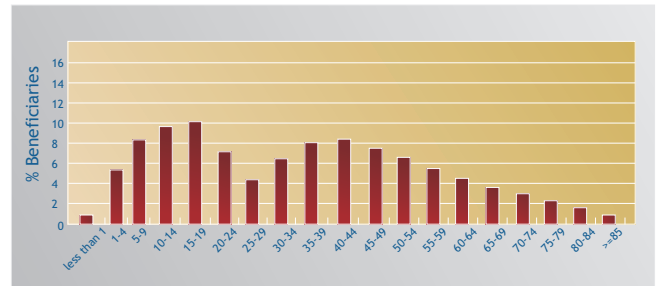
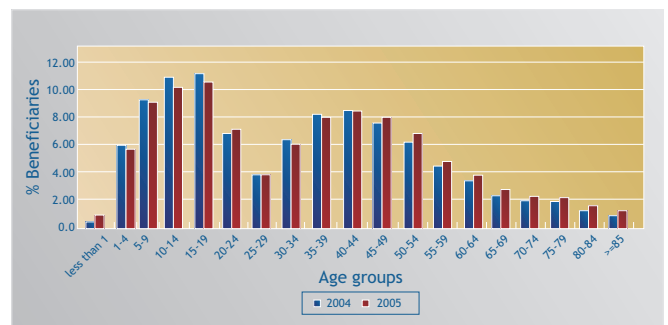


FIGURE 10: Comparison of age distribution of 2005 versus 2004 membership



The average age of the population under investigation increased by 5%, from an average age of 32 years in 2004 to 34 years in 2005 (Table 8). The proportion of younger members was slightly larger in 2004 than in 2005. The number of beneficiaries older than 65 years of age increased by 22% from 8.0% in 2004 to 9.8% in 2005.

Table 8: Summary of age distribution 2005 versus 2004

	2005	2004
<b>Beneficiary age</b>		
Average	34	32
Median	33	32
Mode	15	14

The expenditure and utilisation per age band are illustrated in Table 9. It is evident that an increase in age results in increased utilisation and cost.

Children make up a larger portion of total prevalence than pensioners, but utilise less items per patient and also less expensive items. The overall medicine utilisation and expenditure of children are therefore significantly less than that of older age groups.

TABLE 9: Medicine expenditure per age band for 2005

Age group	% of total expenditure	% of total items	Average cost per beneficiary (R)	Average cost per utilising beneficiary (R)	Average cost per item (R)	Average # items per beneficiary	Utilising beneficiaries as % of total beneficiaries	Average # items per utilising beneficiary
Less than 1	0.2	0.3	2.61	468.05	58.54	0.04	0.6	8.0
1 to 4	2.3	4.1	34.87	699.28	52.94	0.7	4.9	13.2
5 to 9	2.5	4.0	38.06	567.41	58.58	0.7	6.7	9.7
10 to 14	2.3	3.4	34.99	518.30	65.01	0.5	6.8	7.9
15 to 19	3.1	3.9	47.33	658.10	74.99	0.6	7.2	8.8
20 to 24	2.7	3.1	41.19	772.69	83.23	0.5	5.3	9.3
25 to 29	2.3	2.8	35.82	986.65	80.87	0.4	3.6	12.2
30 to 34	4.4	5.3	67.29	1,159.60	78.64	0.9	5.8	14.8
35 to 39	6.5	7.9	100.85	1,311.85	79.97	1.3	7.7	16.4
40 to 44	7.6	8.7	117.54	1,463.29	83.68	1.4	8.0	17.5
45 to 49	8.7	9.1	133.41	1,746.38	91.38	1.5	7.6	19.1
50 to 54	9.3	8.7	143.08	2,208.35	102.58	1.4	6.5	21.5
55 to 59	10.0	8.4	154.11	2,769.88	114.80	1.3	5.6	24.1
60 to 64	9.3	7.4	142.66	3,192.21	120.17	1.2	4.5	26.6
65 to 69	8.4	6.6	129.86	3,652.22	123.06	1.1	3.6	29.7
70 to 74	7.4	5.8	114.27	4,030.10	122.94	0.9	2.8	32.8
75 to 79	6.4	4.9	97.89	4,199.69	121.96	0.8	2.3	34.4
80 to 84	4.2	3.5	65.41	4,120.67	118.00	0.6	1.6	34.9
85 & older	2.6	2.3	40.24	3,780.20	109.74	0.4	1.1	34.5

## 2. The data sample

The data analysis performed for this publication was done on the medicine claims database of Mediscor PBM (Pty) Ltd. Different samples were used for the two types of analysis reported on. For the expenditure analysis of 2005, all medical schemes contracted to Mediscor PBM for the entire year were included. For the trend or change analysis between 2005 and 2004, only schemes contracted for both years were included.

Data relating to capitated medicine benefit options were excluded from this analysis. This approach ensured the inclusion of the utilisation data of approximately one million beneficiaries for the purpose of this analysis.

## 3. Cost calculations

The cost reported on in this document is calculated based on the following definitions:

- The cost used is the price charged for the medicine irrespective of how the payment is divided between the medical scheme and the patient. It reflects the **gross cost of medicines**, which is equal to the cost paid if no levies were implemented by the medical scheme.
- The gross cost includes the **VAT component** and **professional fees** normally payable.

The gross cost was chosen as a reference to ensure comparability of data for different co-payment/levy structures, associated with different medical scheme options. *When making comparisons with other data sources, one must remember to make allowances for these factors.*

In addition to using the gross cost, expenditure is reported on as per beneficiary per annum.

## 4. Trend calculations

Annual medicine expenditure, expressed as “rand per beneficiary”, can be broken down into two components, namely cost and utilisation.

$$\text{Total medicine expenditure} = \text{cost component} \times \text{utilisation component}$$

or

$$\text{Rand/Beneficiary} = \text{Rand/Item} \times \text{Items/Beneficiary}$$

The **utilisation component** is indicated by the “number of items per beneficiary” and can be divided into two sub-elements, the **intensity** and the **prevalence** of medicine usage.

**Prevalence** is measured as the proportion of utilising beneficiaries to the total number of beneficiaries and indicates the size of the pool of beneficiaries that are actively using their medicine benefits.

**The intensity of use** is measured as the “number of items per utilising beneficiary” and indicates the intensity with which the pool of utilising beneficiaries is using medicine benefits.

The utilisation component is illustrated as follows:

$$\text{Utilisation} = \frac{\text{Items}}{\text{Beneficiary}} \times \frac{\text{UB}^*}{\text{Total Beneficiaries}} = \frac{\text{Items}}{\text{UB}^*} \times \frac{\text{UB}^*}{\text{Total Beneficiaries}}$$

\* UB = Utilising beneficiary/ies

**The price component** measured as “rand per item” is influenced by the following factors:

- Inflation
- Units dispensed per item (e.g. amount of tablets, capsules, etc.)
- The mix of medicines used, e.g. relatively more expensive or less expensive products or the ratio of generic versus branded products

# Chronic Disease List and the Risk Equalisation Fund

## 1. The Risk Equalisation Fund (REF)

Whilst the PMB Regulations aim to ensure that beneficiaries have access to certain benefits, the REF aims to equalise the risk profile of each scheme in relation to age, chronic diseases, and maternity admissions. In its simplest form, the REF receives contributions from those schemes with a younger, healthier profile and pays amounts to those schemes with an older, sicker profile.

The successful implementation of REF requires that all medical scheme beneficiaries be:

- Identified and that a valid ICD 10 code is provided
- Fulfil the entry criteria as stipulated by REF
- Treated according to the algorithms of the Council for Medical Schemes (CMS).

With the start of the shadow reporting period on 1 January 2006, all medical schemes are obliged to implement the REF Entry and Verification Criteria for all new members. *(These criteria must be met by CDL cases before they can be included as beneficiaries in the Risk Equalisation Fund.)*

Mediscor ChroniLine™ applies the REF Entry and Verification criteria for all the medical scheme's beneficiaries on whose behalf we render the pre-authorisation services for the CDL PMBs and manages the patients according to the CMS treatment algorithms.

### Expenditure per CDL disease

The expenditure per CDL disease is summarised in Table 10.

TABLE 10: The average medicine expenditure per registered CDL disease, ranked according to the percentage of total CDL Cost, Quarter 4 2005

Registered CDL condition	Rank	% of total CDL gross cost	% of total CDL items	Gross cost per utilising beneficiary (patient) per month (R)	Gross cost per item (R)	% Prevalence	Items per utilising beneficiary (patient) per month (intensity)
Hypertension	1	28.7	37.5	120	103	6.4	1.2
Hyperlipidaemia	2	15.3	12.6	124	164	3.3	0.8
Diabetes Mellitus Type II	3	10.0	9.7	177	139	1.5	1.3
Asthma	4	6.8	4.9	184	186	1.0	1.0
Diabetes Mellitus Type I	5	6.4	2.2	572	384	0.3	1.5
HIV/AIDS	6	6.2	5.1	408	163	0.4	2.5
Coronary artery disease	7	5.8	8.0	122	97	1.3	1.3
Epilepsy	8	4.2	2.2	289	259	0.4	1.1
Chronic renal disease	9	2.0	0.4	1,206	746	0.04	1.6
Cardiac failure	10	1.8	3.5	118	69	0.4	1.7
Hypothyroidism	11	1.5	5.5	29	37	1.4	0.8
Glaucoma	12	1.5	1.2	147	169	0.3	0.9

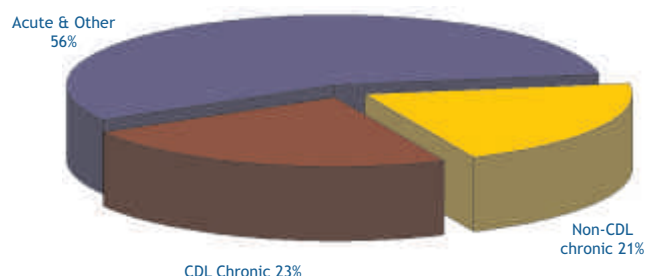
There is no doubt that the REF will focus the industry's attention on health risk management initiatives and challenge the application of existing managed care interventions.

Medical schemes will have a vested interest in making sure that all REF claimants are well managed and compliant. Thus the role of pharmaceutical benefit management and disease-state management initiatives, within the reality of an active risk equalisation fund environment, will increase dramatically.

## 2. The medicine cost of CDL conditions

Total chronic medicine expenditure, including the CDL diseases, constitutes 44% of the overall medicine expenditure. The CDL diseases constitute 53% of the total chronic medicine expenditure and 23% of overall expenditure.

FIGURE 11: CDL medicine expenditure as a percentage of total medicine expenditure, Q4 2005



Registered CDL condition	Rank	% of total CDL gross cost	% of total CDL items	Gross cost per utilising beneficiary (patient) per month (R)	Gross cost per item (R)	% Prevalence	Items per utilising beneficiary (patient) per month (intensity)
Parkinson's disease	13	1.5	0.5	456	416	0.1	1.1
Cardiomyopathy	14	1.3	2.3	147	75	0.2	1.9
Rheumatoid arthritis	15	1.2	1.5	166	110	0.2	1.5
Chronic obs. pulmonary disease (COPD)	16	1.2	0.8	240	193	0.1	1.2
Dysrhythmias	17	1.1	1.3	123	115	0.2	1.1
Multiple sclerosis (MS)	18	1.0	0.1	2,473	2,372	0.01	1.0
Schizophrenia	19	0.9	0.2	617	490	0.04	1.3
Ulcerative colitis	20	0.5	0.2	372	409	0.04	0.9
Bipolar mood disorder	21	0.5	0.2	323	341	0.04	0.9
Crohn's disease	22	0.2	0.1	312	333	0.02	0.9
Haemophilia	23	0.1	0.003	20,046	7,075	0.0002	2.8
Systemic lupus erythematosus (SLE)	24	0.1	0.1	135	123	0.01	1.1
Bronchiectasis	25	0.05	0.04	167	173	0.01	1.0
Diabetes insipidus	26	0.04	0.01	370	519	0.003	0.7
Addison's disease	27	0.03	0.04	100	96	0.01	1.0

The gross cost per CDL patient per month is illustrated in Figure 12. Haemophilia, not included in Figure 12, has a very high average cost per patient per month (R 20,046), but fortunately has a very low prevalence (0.0002%).

The average monthly medicine cost per utilising beneficiary (patient) per CDL condition is R151. Both hypertension and hyperlipidaemia, the two most prevalent CDL disease conditions, are treated for less than the average cost. The average monthly cost for a hypertensive patient's medicine is R120 and for patients with hyperlipidaemia the average is R124. It is thus extremely important to adhere to strict entry criteria for the treatment of hyperlipidaemia and to have limited access to the newer more expensive treatments for hypertension in order to manage the medical scheme's risk.

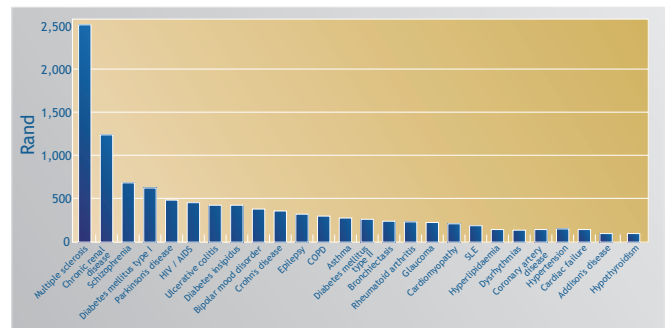
Interestingly enough, appropriate management of the most prevalent CDL diseases is likely to result in higher levels of savings than the management of low-prevalence, high-cost diseases. The data does indicate that it is worthwhile implementing disease management programs for asthma and diabetes mellitus patients.

### The cost of multiple CDL diseases

Notably, the increase in the medicine expenditure per patient is linear to the increase in the number of CDL conditions that a patient suffers from. Which differs significantly from the expenditure reported in the 2004 MMR.

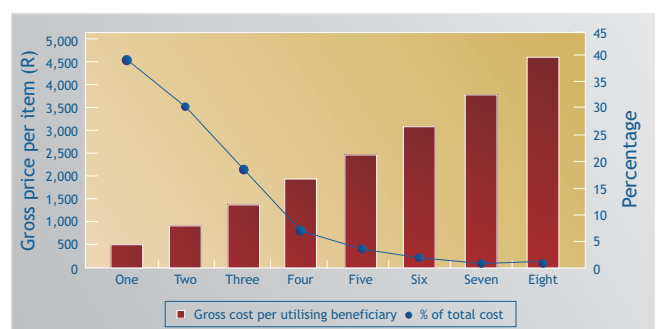
The cost per patient for two CDL conditions is nearly

FIGURE 12: The monthly gross cost per CDL patient, Q4 2005



double that for two single CDLs. The same rule applies for up to five CDL conditions. Only when a patient suffers from more than six CDL conditions, does the total medicine expenditure equal six times that of a single CDL condition.

FIGURE 13: Gross cost per utilising beneficiary versus the percentage of total gross cost, 2005

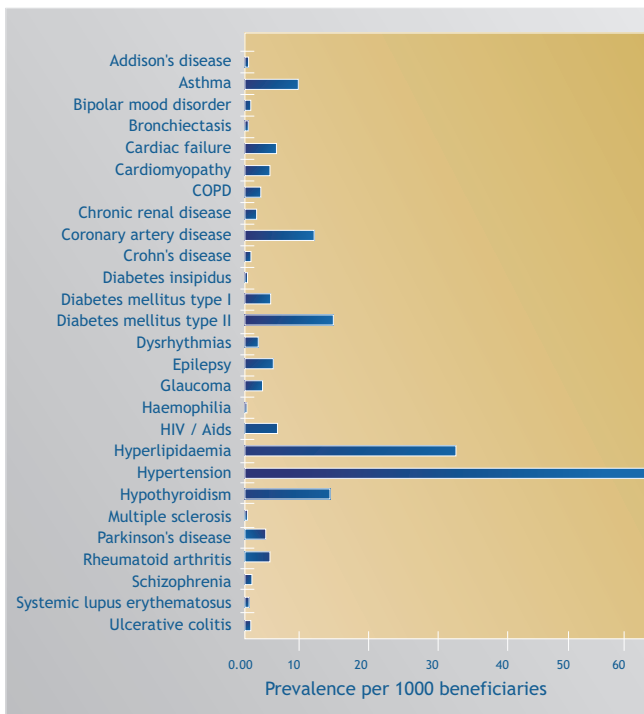


## 3. The prevalence of CDL conditions

The prevalence per registered CDL condition, as experienced in the Mediscor environment (Quarter 4 2005), is illustrated in Figure 14.

The overall recorded prevalence of CDL diseases for this population was 9.9%. This means that 1 in 10 beneficiaries has a CDL condition.

FIGURE 14: Prevalence of registered CDL conditions for Quarter 4 2005

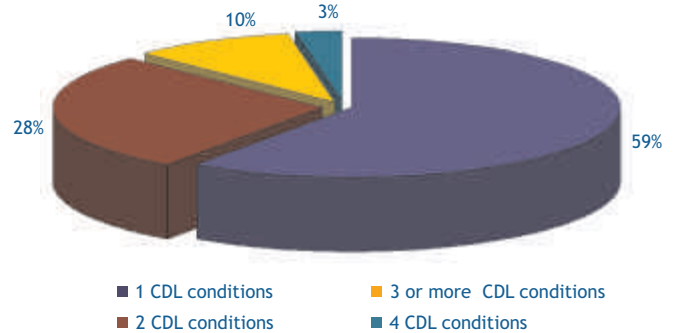


The top ten CDL diseases make up 92% of all CDL registrations. The five most prevalent CDL conditions constitute 78% of CDL registrations and include (percentage prevalence in brackets):

- Hypertension (6.4%)
- Hyperlipidaemia (3.3%)
- Diabetes mellitus type II (1.5%)
- Asthma (1.0%)
- Diabetes mellitus type I (0.3%).

More than 59% of patients with CDL condition/s suffer from a single CDL disease, 28% from two CDL diseases, 10% from three CDL diseases and 3% from four or more CDL diseases (Figure 15).

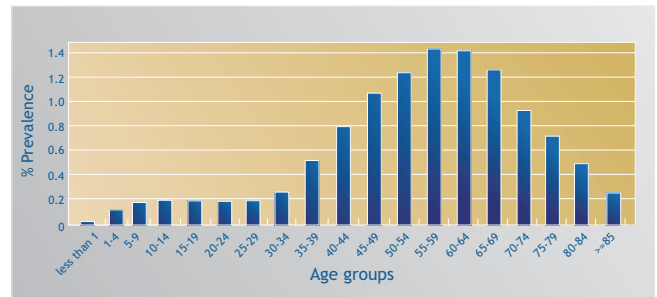
FIGURE 15: The distribution of single versus multiple CDL conditions, Quarter 4 2005



### CDL prevalence by age group

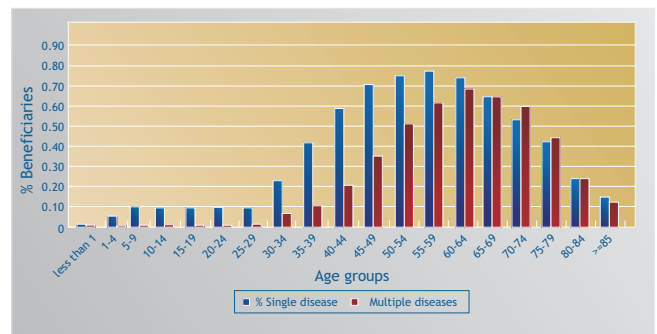
The prevalence for all CDL diseases per age group is illustrated in Figure 16. It is evident that the prevalence of the CDL diseases increases with age and is highest in the age group 55 to 59 years. The age profile of a population is one of the most important predictors of the CDL burden of that population and the scheme's risk.

FIGURE 16: The percentage CDL prevalence per age group, Quarter 4 2005



The prevalence of multiple CDL diseases is also higher in the older age groups and peaks at the age of 60 to 64 years. Between the ages of 65 and 79, the prevalence of multiple CDL diseases exceeds that of single CDL diseases.

FIGURE 17: Age distribution of single versus multiple CDL diseases, Quarter 4 2005



# About Mediscor

Mediscor PBM (Pty) Ltd is a South African pharmaceutical benefit management company that offers its clients a fully integrated, clinically intelligent, real-time pharmaceutical claims processing system.

Established in 1989, Mediscor PBM is an independent company with a 31,8 percent black economic empowerment shareholding. With over 120 years of collective pharmaceutical benefit management experience we offer our clients a unique combination of high performance technology, industry know-how and measurable results. Mediscor PBM provides medicine management services for 36 medical scheme and provider capitation plans including the South African Government Employees Medical Scheme.

The Mediscor PBM system processes line item medicine claims from community pharmacies, postal or courier pharmacies, primary care clinics and dispensing doctors at active ingredient level. Whether in a real-time or batch claim environment each new prescription claim is electronically assessed by our system's clinical intelligence and rules database against the patient's medical condition, age, gender, plan rules and the medicines currently being used by the patient resulting in appropriate and cost-effective patient care.

Mediscor PBM maintains multiple pricing rules that include permutations applicable to different pricing structures, reimbursement arrangements, provider networks, drug categories, manufacturer or product groupings, formularies, medical plan options, medicine benefit categories and beneficiaries.

Because we deliver services to a widely disparate client base with unique and varying needs, we have developed a highly flexible and efficient solution to satisfy all our client's individual requirements.

#### Mediscor PBM:

- Provides on-line, real time, line item processing of medicine claims;
- ensures that dispensed medication is both clinically appropriate and cost-effective;
- ensures that all protocols and formularies used in the plan's programmes are applied;



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- ensures the appropriate application of reference pricing;
- manages disease and medication regimes;
- limits fraud and prevents abuse and addiction;
- incorporates applications to accommodate policy regulations; and
- ensures the confidentiality of all clinical and patient information.

Mediscor's approach to medicine utilisation management dictates that we have a clear understanding of the effects that drug therapies and therapeutic policy have on both a patient's health and benefit fund expenditure. Because of this we have ensured that we have appropriately-trained staff to keep us abreast of latest therapies and utilisation rules.

Some management tools employed by Mediscor PBM include:

- Maximum days supply on medication
- Limitations on duration of therapy
- Refill frequency check
- Quantity limitations on certain therapeutic groups of medicine products
- Duplicate active ingredient check to prevent duplicate claims
- Clinical edits e.g. drug-to-drug interactions, drug-to-age, drug-to-gender, and dose checks.

Our track record in delivering an efficient and effective service encompassing all areas of medicine management and control is testimony to our systems as well as the expertise of our staff.

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