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Full Length Research Paper

Analysis of factors related to complaints in medical schemes

Michael Mncedisi Willie

Council for Medical Schemes, South Africa. E-mail: m.willie@medicalschemes.com Tel: +27 12 431 0407. Fax: +27 12 431 0699.

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Medical schemes are insurance institutions that cover medical expenses in South Africa. These institutions reimburse their members for actual expenditure on health. The Medical Schemes Act (Act 131 of 1998) defines the business of a medical scheme as the business of undertaking liability in return for a contribution in order to make provision for obtaining any relevant health service. The Council for Medical Schemes (CMS) is an autonomous statutory body created by parliament to regulate the medical schemes industry in South Africa. The CMS handles complaints from members of medical schemes. The objective of the study was to assess factors that impact on the response time to complaints by members of medical schemes. Survival analysis techniques were employed to assess these factors. The regression models controlled for factors such as, medical scheme type, medical scheme size, severity of complaints and effects of the analysts. The model revealed the effect of analysts as a significant factor to response time to complaints. The findings of the study revealed useful results in terms of identifying analysts that take longer to resolve complaints. The study also revealed that the nature of complaints as an important factor to the response time. There is a need for the complaints department to be properly resourced and continuously train staff to ensure effective resolution of complaints in medical schemes.

Key words: Survival analysis, Kaplan-Meier, Tarone-Ware test, Cox proportional hazard model, log-rank test.

INTRODUCTION

Medical schemes are insurance institutions that cover medical expenses. These institutions reimburse their members for actual expenditure on health. Medical schemes coverage in South Africa has flat-lined since the early 90`s. At the time approximately 16% of the country's citizens were medical scheme beneficiaries and the same percentage was held at the end of 2009 (Gantsho and Willie, 2010) . The Medical Schemes Act (Act 131 of 1998) defines the business of medical schemes as the business of undertaking liability in return for a contributions or premium. The liability also includes in making provision for obtaining any relevant health service (Medical Schemes Act, 1998). Schemes may choose to be restricted membership schemes if they are attached to a large employer, union, or other defined group, but all others are open schemes that must freely admit anyone who applies for membership (McLeod and Ramjee, 2007; Willie, 2009).

The Council for Medical Schemes (CMS) is an autonomous statutory body created by parliament to regulate the medical schemes industry in South Africa. Its regulatory responsibilities include amongst others, the monitoring of affordability and access to healthcare within the medical schemes industry. Section 48 and 49 of the Medical Schemes Act provide that the council has authority to resolve complaints between members of medical schemes and medical schemes (Medical Schemes Act, 1998). This process requires that complaints to be made in writing to the registrar and he must then pass on the details of the complainant to the party that is subject to the complaint.

Many companies and government agencies around the world find that effectively handling consumer complaints critical as this impacts on their reputation (Stauss and Seidel, 2004). There are consequences when complaints from consumers are not promptly resolved and these include cumulative erosion of confidence in public or government agencies. Most complaints are due to

procedures and policies that do not meet customer expectations (Bennett, 1997). Specific examples of complaints that were dealt with by the CMS included cases where a medical scheme made it difficult for an applicant to sign up as a member or dependents. Some example included complaints where a medical scheme refused to pay for healthcare services rendered to a member. Several complaints also included cases where a medical scheme imposed waiting periods to members; these tactics by schemes are in contraventions of the Medical Schemes Act (CMS News, 2011).

Studies have shown that handling consumer complaints well can be a critical part of turnaround strategy (George et al., 2007). For example if complaints are handled well, it sustains and strengthens consumer loyalty and the company`s image as a leader and also promotes public confidence in the government (Blodget et al., 1995; Kitapci, 2009). A key feature of effective complaints management is responsiveness, and this is the ability of the organization or government agency to respond promptly to issues by the complainants (George et al., 2007). The objective of the current paper was to asses factors that impact on resolutions of complaints in medical schemes.

METHODS

The study was retrospective and considered all complaints that were evaluated by the CMS complaints handling department. The analytic time horizon was from 03 January 2010 to 26 February 2011. For the purpose of this report we considered new unique complaints that were received and evaluated in January and follow these to measure the response time to complaints. The sample size considered for this study was 414 unique complaints from open and restricted schemes principal members. When the complaints department/unit received complaints, they were then allocated to one of the seven analysts, the analyst would then determine the validity of such complaints. All valid complaints were then classified in accordance to pre-existing category (CMS, 2009).

We further stratified complaints into three categories. This was done to reduce duplicates as we also found categories that were analogous in the pre-existing list. The three main categories on severity of complaints are also reflected in Table 1. The outcome variable was defined as time to resolve a complaint and this was measured in days. Covariates include factors such as scheme type (open vs. restricted scheme), scheme size (small, medium, and large), effect of the analyst resolving complaints (Analysts 1 to 7) to resolve complaints, and lastly the type of complaint (also defined as severity of complaint). Table 1 gives the outcome variable and the explanatory variables in detail as determined by the analysts evaluating complaints.

Statistical significance tests were conducted at $\alpha = 0.05$ level ($p < 0.05$), 95% confidence intervals were also reported where appropriate. The data was censored at 26 February, 2011 as some of the complaints were not resolved. Median survival time to resolve complaint complaints was reported, this was the time at which half the complaints were resolved by the analyst. Kaplan-Meier plots were used to assess median response time to complaints on selected covariates (Kaplan and Meier, 1958). We employed the Tarone-Ware test to assess Kaplan-Meier plots of different groups (Tarone and Ware, 1977). Prentice (1978) illustrated that the Tarone-Ware test is always superior the log-rank or wilcoxon test (Prentice, 1978). The Cox proportional-hazard regression was computed to determine the effects of the covariates on time to resolving complaints (Cox, 1972).

RESULTS

Descriptive statistics for complaints data

Figure 1 depicts complaints evaluated by each of the seven analysts; these data were stratified by scheme type, this is whether complaints emanated from open or restricted schemes. There were proportionally more open schemes complaints across all the seven analysts; however analysts 1 and 6 evaluated considerably small complaints compared to the other five analysts, 10 complaints for both respectively. Analysts 4 and 7 evaluated significantly more complaints, 87 complaints for both analysts. Analyst 3 evaluated 85 complaints compared to analysts 2 and 5 who evaluated 62 and 73 complaints, respectively. These data showed that complaints were not evenly distributed amongst the analysts when controlling for scheme type.

Figure 2 depicts the percentage of complaints per analyst stratified by severity. We stratified the three main categories of complaints per analyst. Most of the complaints were in the ‘other’ category with the prevalence rate of 45% (187/414) compared to the ‘benefits’ and ‘unpaid accounts’ types of complaints with rates of 21% (88/414) and 34% (139/414) respectively. The data analyzed showed an uneven distribution of complaints severity per analyst. Analyst 1 evaluated 70% of complaints that were classified in the “unpaid accounts” complaints category and the remaining 30% in the ‘other’ category. A similar trend was noted in complaints evaluated by analyst 5, where 53% of the complaints were in the ‘other’ category followed by 43% ‘unpaid accounts’ and the remaining 4% were complaints in the ‘benefits’ category. Similar patterns were noted on analysts 3, 4, and 2.

Figure 3 depicts age analysis of complaints by analysts, 80% of the complaints resolved by analyst 1 were resolved in more than 120 days. There were no differences in the proportion of complaints resolved in >60 to 90 days and >90 to 120 days, 10% for both stratum. Complaints resolution rate by analyst 2 was 26% for complaints resolved in less than 30 days compared to the 27% of complaints that were resolved for both >30 to 60 and >60 to 90 days stratum. A significant small percent of complaints were resolved in >90 to 120 days by analyst 2. Figure 3 also illustrates complaints evaluated by analyst 4, only 46% of these were resolved in >30 to 60 days compared to 22, 8, 5 and the 11% resolved in >0 to 30, >60 to 90, >90 to 120 and >120 days respectively. Analyst 7 resolved 64% of the complaints in more than 120 days compared to the 13, 9, 7, and 7% that were resolved in 0 to 30 days, >30 to 60 days, >60 to 0 days and >90 to 120 days, respectively.

Table 1. Covariates under investigation: (Outcome variable= response time to complaints).

Variable	Description
Severity of the complaint	
Unpaid accounts	This category of complaints included all complaints that relate to accounts, examples included, reversal of payments by the schemes, instances where the scheme refused to pay either the member or the provider for services rendered.
Benefits	This second category included all complaints that relate product offered by the schemes, including benefits, exclusion of certain conditions, formularies, problems with designated service provider, etc.
Other	This category included complaints that relate to termination of membership, governance failure, where a scheme imposed waiting periods, and misrepresentation by the scheme, etc.
Scheme type	
Open scheme	schemes open were medical schemes that freely admits everyone
Restricted schemes	Restricted medical schemes were employer group schemes, these schemes only admits applicants belonging to a specific employment sector, examples include government sector, banking sector, mining sector, etc.
Scheme size	
Large	All medical schemes that had more than 30 thousand beneficiaries were classified as large schemes. Beneficiaries included both principal members and dependants belonging to a scheme.
Medium	Medium schemes were classified as all schemes that had more than 6000 principal members but not more than 30 thousand beneficiaries. Beneficiaries included both principal members and dependants of medical schemes.
Small	Small schemes were defined as all schemes that had less that 6000 principal members.
Analysts	(These are legal officer that assess and resolve complaints)
A1	Analyst 1
A2	Analyst 2
A3	Analyst 3
A4	Analyst 4
A5	Analyst 5
A6	Analyst 6
A7	Analyst 7
Age analysis	(The response time to complaints measured in days)
M1	0-30 days
M2	>30-60 days
M3	>60-90 days
M4	>90-120 days
M5	>120 days
Open	Complaints that were not resolved

Unresolved complaints

Table 2 shows the number of complaints that were not resolved and these were stratified by the analysts. There were 114 complaints that were not resolved and this represented 27% of evaluated complaints. The unresolved solved complaints were attributed to three analysts, namely analysts 3, 5 and 6. Analyst 5 evaluated 73 complaints in January and only 57 of these complaints were not resolved, this was 78% of complaints that were not resolved by analyst 5. Analyst 3 evaluated 85 complaints in January and 55 of these were not resolved,

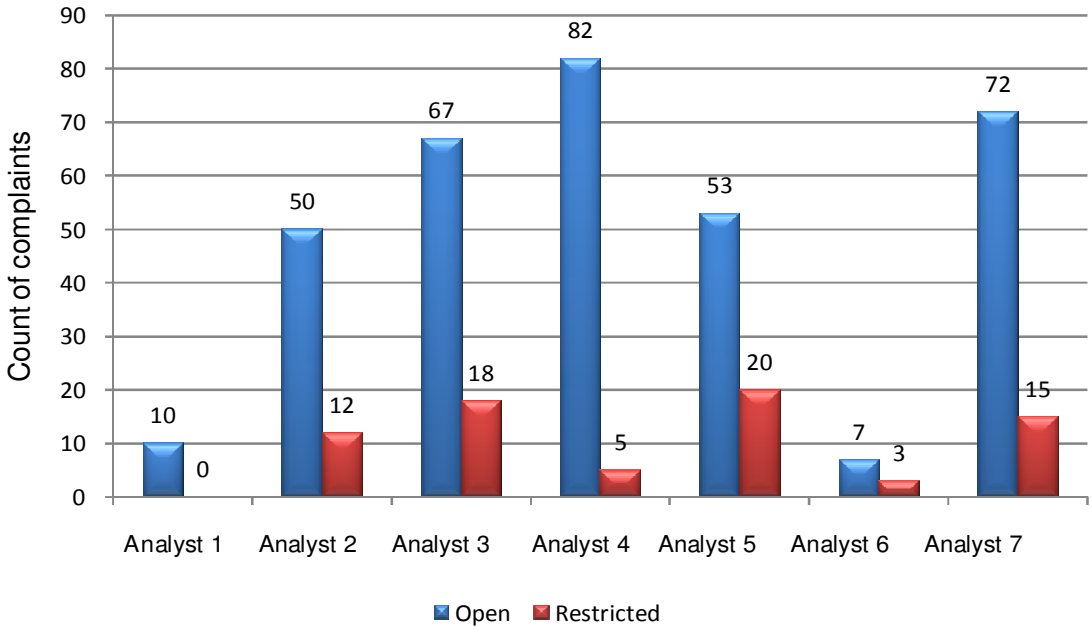

Figure 1. Number of complaints evaluated per analysts by scheme type.

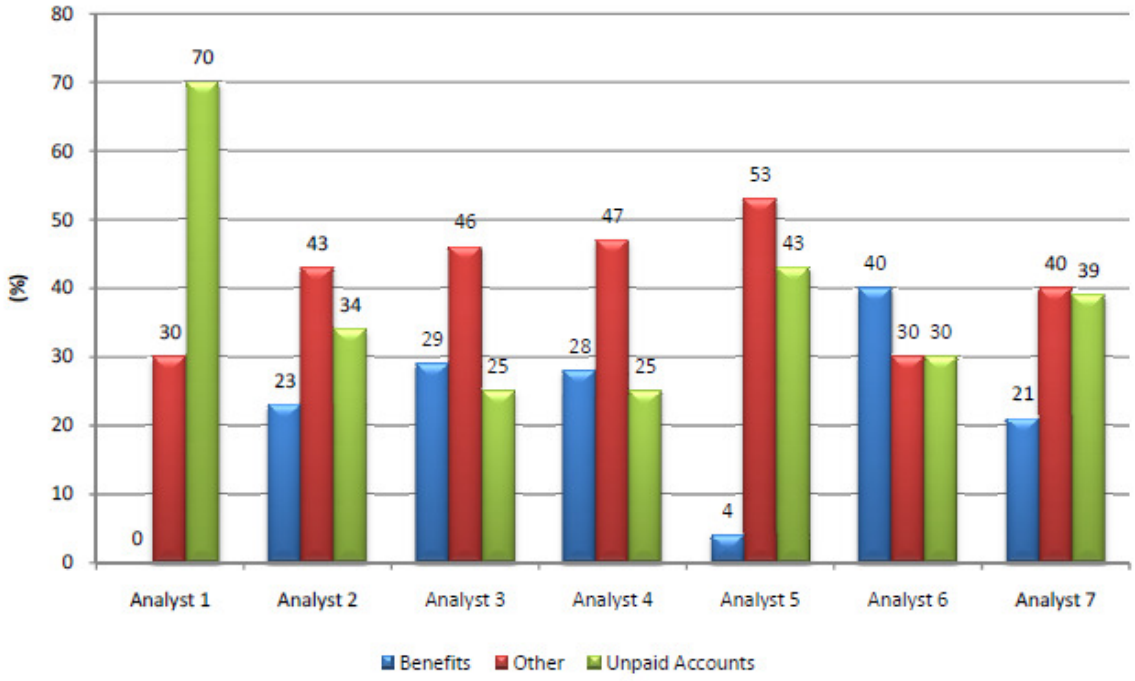

Figure 2. Severity of complaints per analyst (%).

this represented 65% of complaints that were not resolved by analyst 3. Analyst 6 evaluated 10 complaints in at the beginning of the study and only 2 of these were not resolved. This was significantly small at 20% of unresolved complaints by analyst 6 compared to analysts 5 and 3. In-depth analysis for unresolved complaints was beyond the scope of this study.

Median response time to complaints

Survival analysis curves were computed for comparison

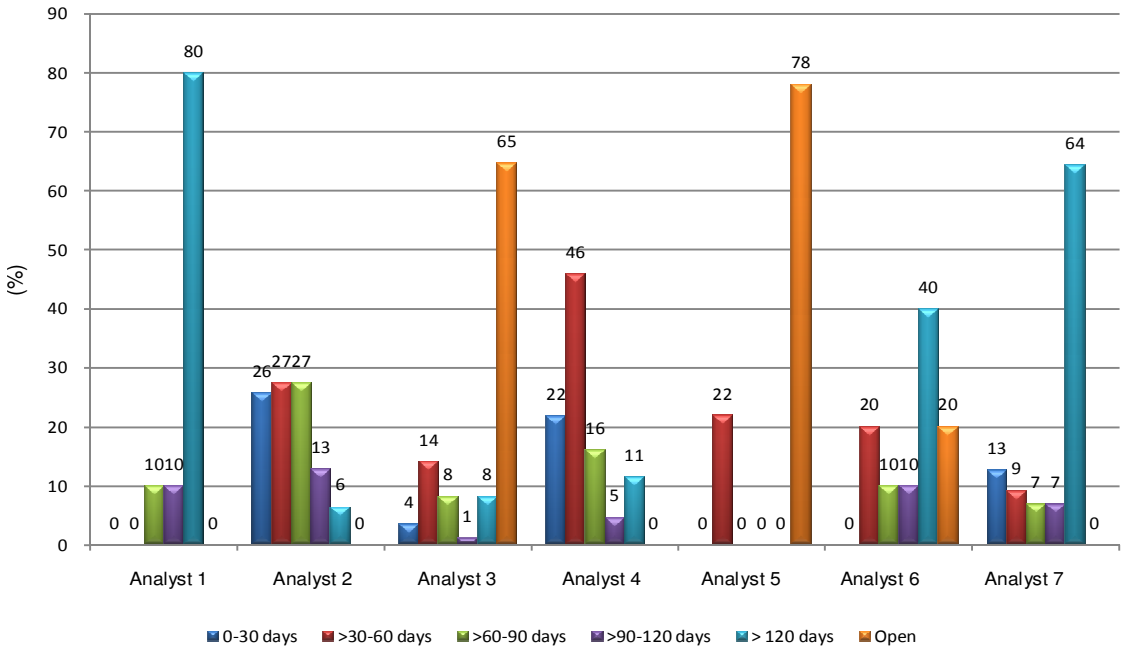

Figure 3. Age analysis of complaints per analyst.

Table 2. Number of complaints that were not resolved per analyst.

Analyst	Benefits	Other	Unpaid accounts	Total
Analyst 5	2	33	22	57
Analyst 3	19	25	11	55
Analyst 6	1	0	1	2
Total	22	58	34	114

of time to resolving complaints between open and restricted schemes. The median survival time to resolving complaints was 112 days 95% CI (86 to 125) and 116 days 95% CI (50 to 142) for open and restricted schemes, respectively. The two survivorship functions crossed which was an indication that the proportional hazards assumptions were violated. The results in Figure 4 indicated that there were no significant differences between the median survival time of open and closed schemes (*p = 091>0.5).* Survival rate for open schemes was 26.7 compared to the 31.5% of restricted schemes.

Median response time to complaints that relate to 'unpaid accounts' was 124 days with 95% CI (83 to 130) and for 'benefits' category was 99 days 95% CI (62 to 129). The median response time to complaints for the third category 'other' was 110 days 95% CI (78 to 125). The three survival functions crossed hence, the proportional hazard assumptions was violated, the Tarone-Ware test showed that there were no significant differences between the three survival functions (p = 0.91)>0.5. Survival rates for the complaint classification 'other' was higher than 'benefits' and 'unpaid accounts', with survival rates of 31, 25 and 24%, respectively.

The median survival time for analysts 3 and 5 was not computed, this was due to the fact that more than half of the complaints were still not resolved at the end of the study. The median survival time for analysts 1 was 138 days 95%CI (123 to 151), for analyst 2 was 55 days 95%CI (34 to 68), analysts 4 was 44 days 95% CI (39 to 53), analyst 6 was 124 days 95% CI (80 to 147) and analyst 7 was 125 days 95% CI (123 to 126). Similarly to previous exploration, the survival functions crossed hence, the proportional hazard assumptions was violated, the Tarone-Ware test indicate that there were significant differences between the three survival functions (p<0.001).

Modelling factors that impact on complaints

The Cox proportional regression model presented in Table 3 identified effects of the analysts to response time to complaints. Other variables which were included in the regression model but were not statistically significant were scheme size, scheme type, and the severity of complaints. The results illustrated that analysts 2, 3, 4

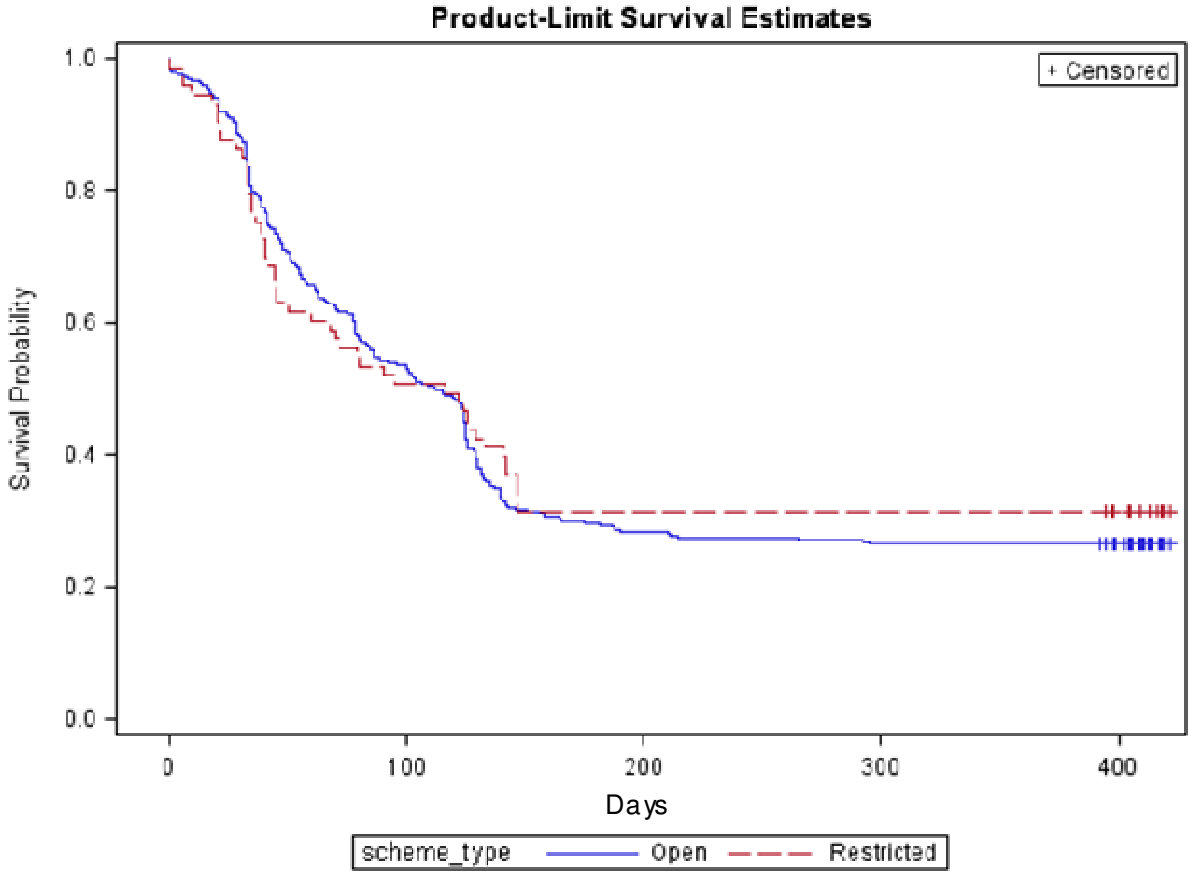

Figure 4. Survival probabilities for complaints stratified by open and restricted schemes.

Table 3. Cox regression model (Outcome = response time to complaints).

Analysis of maximum likelihood estimates						
Parameter	**DF**	**Parameter estimate**	**Standard error**	**Chi-square**	**Pr (>|=|)**	**Hazard ratio**
A2	1	0.78140	0.16442	22.5855	<.0001	2.185
A3	1	-1.58339	0.21541	54.0319	<.0001	0.205
A4	1	0.80659	0.14913	29.2529	<.0001	2.240
A5	1	-2.13377	0.27623	59.6689	<.0001	0.118

and 5 (reference group = analyst 7) were significantly associated to response time to complaints. Hazard rates for analysts 2 and 4 were (HR = 2.18, p<0.0001) and (HR = 2.20, p<0.0001), respectively. These results indicated that the response time to complaints for referred analysts was superior compared to the other analysts. These data showed that analyst 2 and 4 resolved more that 50% of the complaints in less than sixty days compared to the other analysts. The hazard rate of analysts 3 and 5 were associated to response time to complaints. The hazard rate for analyst 3 was (HR = 0.21, p<0.0001) and for analyst 5 was (HR = 0.12, p<0.0001) and these were significantly small which was an indication that these two analysts had the longest response time to complaints.

DISCUSSION

There were significant differences between open and restricted schemes in terms of demographics, number of beneficiaries, and benefit options. Some open schemes offered more than ten benefit options and this makes it difficult for the members to compare these products and see which offers best value for money. Most restricted schemes offered at most up to two benefit options which makes it easy for members to compare benefit options, thus the cost of providing benefits in restricted is lower than in open schemes (Willie and Nkomo, 2009). These different characteristics also explained the bulky volumes of complaints from open schemes members. Response

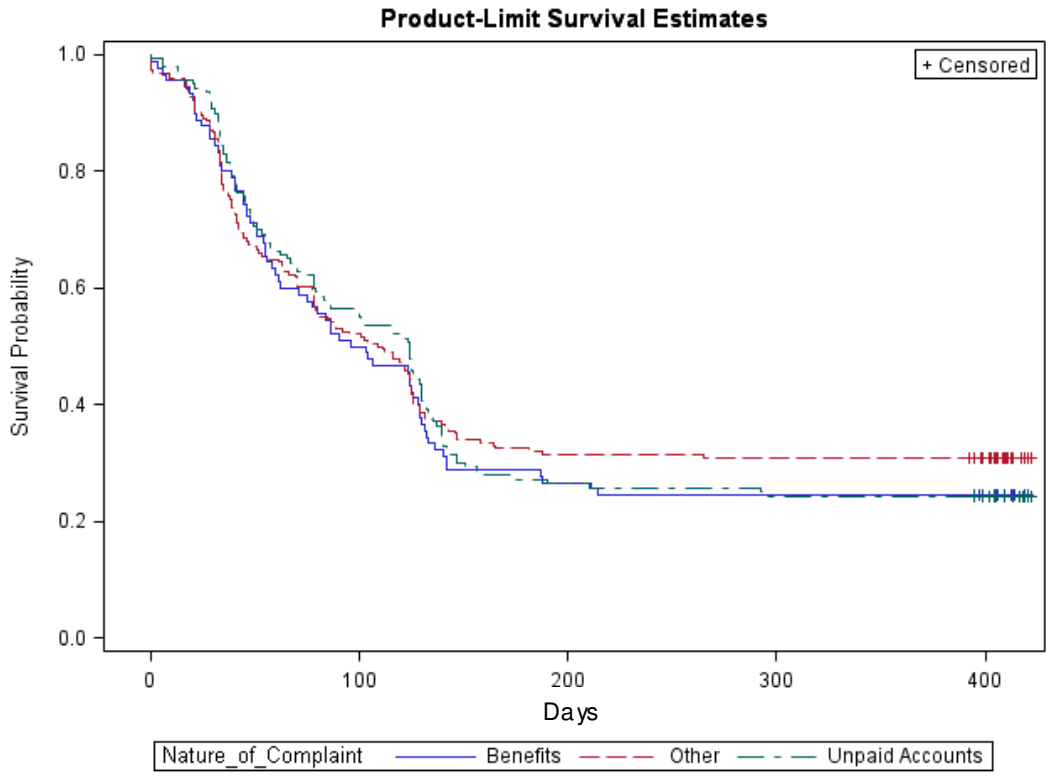

Figure 5. Survival probabilities for evaluated complaints stratified by nature of complaint.

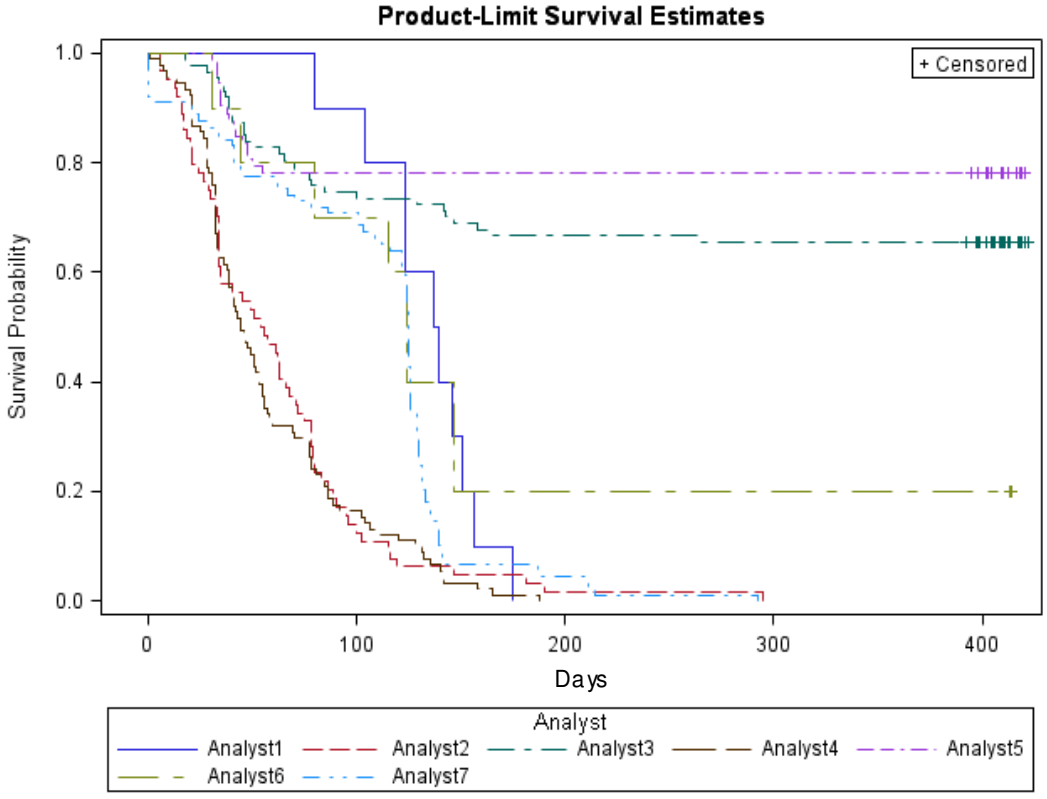

Figure 6. Survival probabilities for evaluated complaints stratified by analyst.

time to complaints for open schemes and restricted schemes members were not significantly different. Similar results were obtained when we looked the scheme size and this implied that similar type of complaints was noted across schemes irrespective of size or scale.

Severity of complaints was the deterministic factor to the response time in medical schemes complaints. Complaints classified as 'unpaid accounts' took longer to resolve than other types of complaints. The median response time for these was 124 days. This is slightly higher than the target response time of 120 days as stipulated in the Medical Schemes Act for a decision and ruling to be made on the complaint (Medical Schemes Act, 1998). This study illustrated challenges faced by the complaints handling department with regards to non-payment of accounts type of complaints. These types of complaints have major repercussion in the medical schemes industry, in particular to members of medical schemes.

When the medical schemes fails to pay the provider for services rendered, then some providers would hand over the account to attorneys. The attorneys would then demand payment from members and sometimes the member's assets or property are attached by the sheriff for the non-payment. In some instances a medical scheme would still deduct monies from members even after the date of termination. These types of complaints adversely affect the members and an improved resolution rate to such complaints could potentially benefit the members of schemes.

There were characteristic differences in the manner in which some of complaints were allocated to the analysts, as a result this somehow contributed to the response time to complaints. Some analysts responded to complaints quickly than others. These data showed that analysts 2 and 4 resolved more that 50% of the complaints in 55 and 44 days respectively compared to analysts 1, 6 and 7. Out of the 7 analysts resolving complaints, only two had a median response time less that target response time of 120 days as stipulated in the Medical Schemes (Medical Schemes Act 131, 1998). These results are in contrarily to the results of Regan (2008) who found no relationship between staffing and complaints. However, this study illustrated that adequate resources in terms of human capital is critical to effectively and efficiently responding to complaints. These results are in line with the best practice literature that complaints must be investigated by an employee who has the right attributes and sufficient competency (Goerge et al., 2007; NSW Ombudsman, 2006; Johnson and Mehra, 2002; Zairi, 2000).

LIMITATIONS OF THE STUDY

The current study only assed a select few factors that impact on response time to complaints, a more broader list of other factors can significantly improve the findings. The study did not investigate other key demographic aspects of the complainants and some of these include ethnicity, gender, and age. The data explored in this study was at aggregated level, thus, we did not investigate complainants by benefit options. Benefit option information is crucial and could be a good indicator of problems in medical schemes. The current study did not entail detailed analysis on the unresolved complaints in order to address the human resource issue in the complaints handling department. The study did not give in detail analysis on the complaints procedure, the post complaint behaviour resolution. These components of complaints are critical particularly for self-assessment of complaint management systems, in assessing intervenetions on complaints. Lastly the sample size for the study only considered all unique complaints that were evaluated in January 2010. We did not make reference to new unique complaints that were assessed from February to December 2010. More research is needed to explore the later, this would include an advance conditional survival analysis modelling.

Conclusions

Managing complaints effectively is essential to enhancing service delivery. A more proactive and inclusive approach is critical in this regard and this is determined by factors that impact on complaints. The objective of this paper was to assess factors that have impact on the complaints in the medical schemes industry in South Africa. The complexity of the complaint was a significant factor to the response time to complaints. Some complaints took longer to resolve than others and this was largely attributed to the nature of such complaints. The study identified human resources as the key factor in the complaints handling department. Indeed it is imperative that sufficient resources are allocated to training and support staff that handles complaints.

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