ACTUARIAL SOCIETY OF SOUTH AFRICA

APN 304: IBNR LIABILITY VALUATIONS OF SOUTH AFRICAN MEDICAL SCHEMES

Classification

APN 304 is an Advisory Practice Note (APN) and compliance with it is advisory. APN 304 replaces PGN 304. Where legislation or other documentation refers to PGN 304 it should be interpreted as APN 304.

Abstract

This Advisory Practice Note sets out the considerations that pertain to an actuary's professional work in assessing the IBNR reserves for a medical scheme.

Purpose

It is intended to describe a minimum level and quality of actuarial attention that is necessary in performing such a calculation.

Application

This Advisory Practice Note applies to all members of the Actuarial Society of South Africa ("the Society") that perform an IBNR liability valuation for a medical scheme, irrespective of the purpose of the valuation.

The term "actuary" used hereafter must be considered to apply to all members of the Society.

These guidelines must be applied consistently throughout the year by the actuary to assist the trustees in medical scheme management.

Status

This APN is effective from 6 February 2008.

1 DEFINITIONS

1.1 Incurred but not reported (IBNR) claims reserve:

This Advisory Practice Note relates to the outstanding claims reserve made for the estimated cost of claims that were incurred before the end of the measurement period but were not reported to the medical scheme by that date. This reserve is also known as the outstanding claims reserve (OCR).

Sources of these unreported claim payments include:

- Benefit changes,
- Unknown, unreported claims,
- Closed claims that will later become reopened and have additional payments.

The actuary should be aware of the distinction between claims incurred but not reported and claims that have been notified but not yet settled and ensure that the methodology adopted does not double-count or omit these elements.

The actuary must be consistent in the application of the definition used to ensure that the data, assumptions and interpretation of the results are appropriate.

It is important to note that different professions use different definitions. For example, accountants generally refer to provisions and claims whereas actuaries generally refer to reserves and losses. This document aims to advise an actuary when placing a value on any IBNR liability contained within the definition above.

1.2 Treatment Month and Payment Month:

Treatment month, also known as month of service or incidence month, is the month in which the claim occurred, i.e. the month in which a medical scheme beneficiary received treatment.

Payment month is the month in which the actual claim was paid by the medical scheme to the member and/or service provider.

It is usual practice that an IBNR calculation places a value on claims (incurred but not reported) at a specific date, for specified treatment months prior to that date.

1.3 Factors to be considered:

The following are important factors that the actuary could consider when determining the IBNR liability.

This list is not necessarily complete and the actuary must apply his/her mind to additional factors that need to be considered, given the specific circumstances of the scheme.

The points below are in themselves important, but the actuary must also give due consideration to changes in these factors. Any additional knowledge at the time of valuation must be allowed for in the calculation.

Where there is insufficient data or experience for any of the factors, the actuary must apply his/her mind to the inclusion of appropriate margins.

1.3.1 **Homogeneity:**

The actuary should strive to group together those claims exhibiting similar characteristics, such as frequency distributions, severity distributions, reporting and settlement patterns. For example, the actuary should group in-hospital and out-of-hospital claims separately.

Such groupings ensure that the claim characteristics inherent in a group are projected forward appropriately and accurately. Heterogeneity in the data is caused by variations in factors such as, but not limited to, benefit categories, demographic profile and behaviour and information collection processes. This causes errors in the projection of claims incurred but not yet reported, as the factors would not be projected forward correctly. Depending on the extent of this, an IBNR calculation could effectively be invalidated.

1.3.2 **Credibility:**

The degree of homogeneity achieved must not compromise the credibility of the data. Over-grouping of data can lead to cells of information that are too small, with regards to quantity of data, to reliably establish development patterns and hence project claims forward. The actuary must evaluate each situation and determine a suitable balance between homogeneity and statistical reliability. Naturally this results in more groupings being possible for large schemes than for smaller schemes. Where a small group of claims is involved, the actuary may use collateral information such as industry aggregates, to assist in the IBNR estimation or to validate the calculation result. Particular care must be taken with the occurrence of the very large claims (outliers) in very small schemes.

Claims data received for the exposure months closest to the IBNR valuation date may be misleading due to the volatility experienced in the first and possibly second run-off months of a particular exposure month. The actuary must consider the credibility of this data and may in some cases choose to omit it as it could lead to inaccurate results. The level of credibility to attach to this data will vary by scheme according to the actual experience and data availability of the specific scheme.

The actuary must consider the credibility of data of a particular scheme where such data is received from different sources (e.g. if a scheme appointed new administrators, the payment patterns applying to the first administrator may not apply to the second).

1.3.3 **Emergence and Settlement Patterns:**

The delay between the occurrence, notification, payment and recording of claims may be affected by a number of factors, including type of claim, member and provider behaviour, method of claims submission (paper/EDI) and administration processes such as frequency of cheque runs, speed of claim verification and computer and process changes.

The actuary must also consider the number of payment runs in a month and any change in monthly claims processing cut-off date as this could have an impact on run-off patterns.

The actuary must continually review claims handling and other administrative procedures and allow for deviations from the norm, where appropriate, within the IBNR valuation. The actuary must also ensure that he/she is familiar with the factors that impact on a scheme's emergence and settlement patterns. Should any changes in these factors occur over the period to which the data or the projection relates then the assumptions and parameters within the IBNR model must be adjusted accordingly.

1.3.4 **Seasonality:**

Seasonality variations experienced within a scheme may influence the IBNR valuation. Run-off patterns may differ depending on the month/season within which the claims occur. It is also useful to check, once the final IBNR calculation is completed, that the total claims figure per month is consistent with the scheme's seasonality experience.

1.3.5 **Potential Re-opened/Adjusted Claims:**

The actuary must consider the propensity for previously closed claims to become re-opened and assess to what extent this item could impact the final IBNR result. More often than not this factor is allowed for implicitly. Claims can be reopened for a number of reasons including judicial opinions, legislation and changes in scheme procedures, which can also exaggerate the effect of a reopened claim on the IBNR figure. Re-opened claims must not be considered as new claims.

1.3.6 **Membership size:**

The actuary must consider the effect that changes in the volume of members per benefit option has on the calculation method selected. It is recommended that calculations be made on an average per beneficiary or per family basis to ensure that distortions due to changes in the volume of membership are reduced.

1.3.7 **Benefit Structures:**

For certain types of options, aggregate option limits or limits on the overall benefit structure will restrict the total claim liability. The actuary must consider to what extent limit ceilings have been reached and adequately adjust the IBNR projections to account for this.

Similarly, for certain types of benefit options claims accumulate towards a threshold. The actuary must consider to what extent claims have accumulated towards the threshold and adequately adjust the IBNR projections to account for this.

The actuary must also consider the impact of changes in benefit design/structure as well as changes in the use of savings accounts and co-payments, as these could alter the underlying claim distribution and lead to changes in development, which in turn could impact the IBNR model assumptions.

1.3.8 **Contractual arrangements:**

The actuary must consider the impact on the IBNR calculation of contractual arrangements with service providers, managed care organisations and other external parties. For example, IBNR may not be required in respect of capitation fees payable in advance.

1.3.9 **Claim Handling Expenses:**

These expenses include the scheme administration costs of the claims handling department, which are normally assumed to remain at their current level. Certain situations such as wind-up may require the actuary to make explicit allowances for this factor, but usually it is ignored for IBNR valuation purposes.

1.3.10 **Demographic Profile:**

The actuary must consider changes in the demographic profile of members. These include, but are not limited to, changes in: number of beneficiaries; type of beneficiary (main member, spouse, child dependant or adult dependant); age; gender; income; family size; chronic conditions and applicable benefit option.

The actuary must also consider the effects of demographic profile change and membership size separately.

1.3.11 **Disease Profile, Treatment and Member Behaviour Patterns:**

The actuary must consider the impact of changes in disease profiles and treatment methods on utilisation and cost. For example, changes in treatment or frequency of occurrence of HIV/AIDS, Cancer, Hypertension, Tuberculosis and Malaria.

The actuary also needs to consider the impact of changes in costs of services, medicines, equipment, etc. Changes in overall provider behaviour and/or member behaviour patterns must also be considered in determining the IBNR.

1.3.12 **Risk Transfer Arrangements:**

The actuary must consider the impact of risk transfer arrangements on the final IBNR value. These arrangements include, but are not limited to, reinsurance and capitation structures.

It is advisable that the IBNR figure be considered both before and after allowance for these types of arrangements. The total IBNR figure (gross IBNR) will need to be shown in the accounts and it is suggested that a debtor is raised to allow for that part of the IBNR that will be accommodated by the scheme's current risk transfer arrangements.

Quota Share reinsurance can be allowed for by applying the retention percentage to the gross IBNR figure. Non-proportional reinsurance structures need more detailed consideration.

Some IBNR provision may be appropriate where there is a retrospective risk sharing agreement. The access to the contracted party's data may be a requirement for such calculations and the actuary must advise the scheme accordingly to ensure that data requirements are incorporated into contracts.

1.3.13 **Medical Savings Accounts:**

IBNR specific to those claims in respect of medical savings accounts is not required to be disclosed in a scheme's financial statements.

2 RESULTS

2.1 Disclosure requirements:

The actuary must be guided by the ASSA Code of Conduct in the presentation of results. Such reporting must include (but is not limited to):

- Data sources and validation conducted,
- A list of the assumptions used,
- The reasoning behind the assumptions used,
- How and why deviations in the assumptions and/or data were or were not allowed for,
- The methodology used, including any changes that have occurred since the previous valuation,
- The reasoning behind process and method chosen as well as quantification of results, and
- The details around the sensitivity analysis performed.

The actuary must consider which aspects are material to the interpretation of the IBNR valuation and disclose these aspects in his/her final report/submission.

The report must specify the purpose of the report and state who the client is. The report must also state that it should only be disclosed to other parties in an unabridged format.

2.2 Sensitivity Analysis:

The actuary must perform a sensitivity analysis to indicate to the client the possible variations in the IBNR provision should actual experience turn out different to the original assumptions. This is done by identifying the likelihood/probability that the IBNR will be sufficient and by explaining the reasons why, or the events that could occur to cause, the IBNR to be insufficient. By changing the IBNR assumptions, parameters and/or the IBNR method of calculation itself, the actuary can ascertain the sensitivity of the IBNR provision.

The actuary could also comment on trends and their impact as part of the sensitivity analysis.

3 REASONABILITY

3.1 Useful checks:

The actuary may carry out one or more of the following simple checks to ensure that the IBNR figure is reasonable and calculated as accurately as possible:

- Usually very few claim payments arise after three to four months from the original exposure period. It will be useful to check that the IBNR projection reflects this.
- An analysis of the development factors per month of service included in the calculation as determined with reference to the latest estimate of ultimate claims will give an indication of the stability of the development factors, particularly in the first three months.
- The estimated ultimate claims divided by the number of claims should approximately equal the average claim size experienced in the past by the scheme, allowing for factors like inflation. This average claim size can also be compared to industry figures, where available.

- Very few settled claims are reopened more than six months after the date of incidence. If such claims are present within the IBNR valuation, it will be worthwhile investigating the reasons for their inclusion and to double check that their size was appropriately reflected.
- By deducting actual payments for each month of treatment from the estimated total claims figures per month of treatment contained within the annual budget, at the end of a specified reporting period, the actuary is provided with a guideline IBNR value. This value should be compared to the IBNR that has been calculated in accordance with this Advisory Practice Note to assess reasonability of the IBNR.
- It is useful to check that any approved pre-authorisations for which no or partial claims have been received are allowed for in the final IBNR figure and / or in the data provided to the actuary.

3.2 **Retrospective review:**

After a given period for which an IBNR valuation was completed, the actuary must carry out a retrospective investigation comparing the IBNR estimate to the actual claims that finally materialised in this regard. This provides the actuary with useful insight into the accuracy of the original estimate. It can also be used to ensure that the appropriate methodology was followed and that assumptions were adequately determined.

The Actuarial Society of South Africa - Healthcare Committee
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