THE INSTITUTE OF ACTUARIES OF AUSTRALIA
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GUIDANCE NOTE GN 660
FINANCIAL PROJECTIONS FOR HEALTH INSURERS

1. INTRODUCTION

Application

1.1 The purpose of this Guidance Note is to provide guidance for actuaries preparing financial projections for health insurers. These projections may be made as part of a budget or forecast process, for use in pricing of new products or changes to existing products, for the purpose of supporting premium rate change notifications or in reporting on the solvency and capital adequacy position of a health insurer.

Legislation

1.2 The actuary may be asked to prepare, or provide information for inclusion in, the annual or quarterly PHIAC 2 returns to the Private Health Insurance Administration Council (PHIAC) which set out the solvency and capital adequacy position of the Funds. The relevant legislation is the *Health Benefits Organisations – Solvency Standard 2000, Health Benefits Organisations – Capital Adequacy Standard 2000* and *Health Benefits Organisations – Interpretation Standard 2000* under sections 73BCB(1) and 73BCG(1) of the *National Health Act 1953* (the PHIAC standards). These standards can be found at PHIAC's website *www.phiac.gov.au/ circularspublications/standards/index.htm.*

1.3 The actuary may also be asked to prepare, or provide information for inclusion in, a notification of contribution (premium) rate change to be submitted by a Health Insurer to the Department of Health. The Department of Health regularly issues circulars which set out the required financial information and the form of the actuarial certification. These circulars can be found at *www.health.gov.au/ privatehealth/providers/circulars.htm*.

First Issued

1.4 This Guidance Note was first issued in December 2002.

2. DEFINITIONS

2.1 **Average Benefit** is a measure of an amount of benefits or claims incurred divided by the number of claims incurred.

2.2 A best estimate or **Central Estimate** of liabilities is the expected value of the liabilities. In other words, if all the possible values of the liabilities are expressed as a statistical distribution, the Central Estimate is the mean of that distribution. This guidance note uses the term central estimate, while PHIAC Standards use the term best estimate. For the purposes of this guidance note, they have the same meaning.

2.3 **Claims** refer to benefit payments to or on behalf of the claimant under a health insurance contract.

2.4 A **Claims Group** is a homogenous group defined by product, type of claim or claims run-off pattern.

2.5 **Claims Ratio** is the sum of Incurred Claims, reinsurance payments and reinsurance recoveries divided by Earned Contributions.

2.6 **Department of Health** means the Department of Health and Ageing, or in the event of any change in Government Departments, the Department carrying responsibility for the conduct of private health insurance in terms of Part VI of the National Health Act.

2.7 **Drawing Rate** or claims rate is a measure of incurred claims (including or excluding reinsurance payments and reinsurance recoveries) per member or per SEU, and can be expressed as the product of the Utilisation Rate and the Average Benefit.

2.8 **Earned Contributions** is the amount of contributions that can be allocated to a particular time period. It takes into account movements in contributions in advance and contributions in arrears.

2.9 **Expense Ratio** is the ratio of expenses to Earned Contributions.

2.10 **Health Insurer** means a Registered Health Benefits Organisation registered under the National Health Act 1953.

2.11 **Loss Ratio** is the Claims Ratio plus the Expense Ratio.

2.12 A **Membership** is a policy that provides health insurance cover for one or more persons. A **Contributor** is the person in whose name the membership is registered.

2.13 The **National Health Act** means the *National Health Act 1953* as subsequently amended and includes all subordinate legislation arising from the provisions of that Act.

2.14 **Outstanding Claims** at a valuation date are equal to the value of claim payments to be made after the valuation date in respect of claims which arose on or before the valuation date for which the health insurer is expected to be liable. This will comprise claims that have been reported and have not yet been settled, claims which have been incurred but not yet reported (IBNR), and allowance for future adjustments of settled claims.

2.15 **PHIAC** means the Private Health Insurance Administration Council.

2.16 **PHIAC Standards** means *Health Benefits Organisations – Solvency Standard 2000, Health Benefits Organisations – Capital Adequacy Standard 2000 and Health Benefits Organisations – Interpretation Standard 2000* under sections 73BCB(1) and 73BCG(1) of *the National Health Act 1953*.

2.17 A **Provision for Outstanding Claims** is an amount set aside in the Health Insurer's accounts, to provide for liabilities for outstanding claims. This may include or be separate from provisions for other benefit entitlements that have been accrued in respect of past membership, such as loyalty benefits. It may also include the estimated cost of administering and settling these claims. For the avoidance of confusion a distinction is drawn between the 'provision' (the amount set aside in the accounts) and the 'liability' (the unknown actual value of the outstanding claims).

2.18 A **Risk Margin** (often referred to as a Prudential Margin) refers to the amount by which the provision for liabilities set aside in the accounts is greater than the Central Estimate. The purpose of the Risk Margin is to increase the probability of adequacy.

2.19 **Rate Protection** is a product feature provided by some funds, whereby contributors are protected from the financial impact of rate increases for the period for which they are paid in advance at the time of the rate increase.

2.20 The **Reinsurance Pool** is the trust fund constituted under Section 73BC of the National Health Act. In simplified terms, each Health Insurer with members resident in a state is required to contribute to the pool or is paid from the pool to equalise their hospital claims experience for claimants aged 65 and over and for claimants in other memberships that have more than 35 days of hospitalisation in the previous 12 months.

2.21 **Single Equivalent Unit (SEU)** is a standardised membership measure where memberships covering one person are given a weighting of one, and memberships covering more than one person are given a weighting of two.

2.22 **Utilisation Rate** is a measure of number of claims incurred per member or per SEU.

3. BUSINESS CONTEXT

3.1 Actuaries performing work for private health insurers in Australia should be conscious of general features of the industry which are different from those commonly encountered in other insurance industries in Australia and other health insurance markets.

3.2 These features include mandatory community rating, the Reinsurance Pools, the largely mutual nature and lack of ready access to external capital of many insurers, the importance of relationships with providers of health services and the extensive political influences in many aspects of the industry.

3.3 Financial advice to health insurers is given in an environment with typically large cash flows and small margins, while claims are influenced by the behaviour of health care providers. Claims experience can be volatile and can change quickly.

3.4 The actuary should be aware of and familiar with the relevant legislation and regulation governing the operation of a Health Insurer, especially the National Health Act and relevant subordinate legislation made by the regulators (PHIAC and the Department of Health).

3.5 The actuary should be familiar with the relevant aspects of the procedures for the administration of and accounting for the Health Insurer's membership, revenue and benefits.

3.6 The actuary should be conversant with the general characteristics of the Health Insurer’s membership and products, which may have a material bearing on the estimation of the liabilities. This includes familiarity with the contractual terms and legislated benefits payable under the rules of the Health Insurer as well as other attributes, such as product structure, membership year, membership movements, utilisation rates, seasonality of benefits, refunds, expenses and the impact of the reinsurance pools.

3.7 The actuary should also be familiar with the Health Insurer’s assets and investment policy.

3.8 The actuary should take reasonable steps to verify the overall consistency and reasonableness of any data with the Health Insurer's financial and other records. Where the data are inconsistent, unreasonable or not credible then the actuary should seek clarification or make suitable modifications based on judgement and disclose the quantifiable effect, and state any reliance or limitations as a result of data shortcomings in a report.

3.9 The actuary may be called upon to justify the work undertaken. The actuary should therefore compile and retain documentation that shows that the work conforms to this Guidance Note and any external requirements as appropriate.

4. FINANCIAL PROJECTIONS

Models

4.1 Financial Projections can be prepared for various purposes, including:

- supporting business planning
- budgeting for the Health Insurer
- as part of product development activities
- as part of a contribution rate change notification
- as part of the Renewal Option Reserve calculation under the PHIAC Capital Adequacy Standard
- as part of the determination of the unexpired risk reserve.

4.2 The actuary needs to develop or use a model that is consistent with the purpose of the projection. The complexity of the model will depend on the purpose, size and nature of the Health Insurer, data available and the level of detailed results required. The actuary must exercise judgement in determining whether the model used is sufficient for the purpose. The model will need to project the experience of the Health Insurer, including the solvency and capital adequacy position.

Data

4.3 In any projection it is important to ensure that the nature and the limitations of the data provided or derived are understood.

4.4 Checks should be performed to ensure that the data are complete and accurate. This is likely to include discussions with management as well as numerical analysis.

4.5 Should the data include projected values, such as future membership estimates, it is important to ensure that their derivation is understood and consistent with other elements of the projection.

Assumptions

4.6 The projection will require a number of assumptions to be made in respect of future experience. The complexity of the assumptions required will depend on the individual circumstances of the Health Insurer, the materiality of the assumption and the workings of the individual model.

4.7 Assumptions will generally be required in respect of:

Membership

- Membership forecasts – including joins, discontinuances and transfers between products
- Product mix of the Health Insurer
- Age and sex mix of the Health Insurer
- Membership category mix (singles, couples, families, single parents)
- Contribution payment method

Contributions

- Contribution rate of each table
- Future rate increase assumptions – timing and amount
- Discounts given
- Rate protection (if any)
- Incidence and amounts of Lifetime Health Cover loadings

Benefits

- Level of and change in Utilisation rate
- Level of and change in Benefit per service
- Level of and change in Drawing Rates
- Benefit seasonality
- Inflation of health costs, especially any periodic indexation and increase in hospital contracted rates, prostheses and medical costs.
- Mix of services provided, especially public/private hospital mix and same day / overnight mix
- Any benefit initiatives to be introduced in the future
- Level of and changes in the NSW and ACT ambulance levy rate

Reinsurance

- Average deficit per Hospital SEU for each state
- Hospital Benefits eligible for reinsurance

Management Expenses

Investment Income

- Asset mix of the Health Insurer
- Assumed earning rates by asset class

Solvency and Capital Adequacy

- Future capital expenditure – timing and amount
- Inadmissible assets
- Capital Adequacy Margin

- Balance sheet items, including provisions for outstanding claims and contributions in advance

4.8 The actuary may be involved in the determination of appropriate assumptions for use in the projection, or may be supplied with assumptions for this purpose by the Health Insurer.

4.9 If the assumptions are developed by the actuary, experience analysis and/or an understanding of any trends in historical data should be undertaken to support the assumption setting or review process commensurate with the volume of data available and the purpose of the projections being undertaken.

4.10 If the assumptions are supplied by the management of the Health Insurer, the actuary should discuss the assumptions and their derivation with the relevant personnel within the Health Insurer. For each assumption, the actuary should either state that the assumption is not inappropriate for the purpose for which the forecast is being prepared, or that the assumption is inappropriate, or that no opinion regarding the appropriateness of the assumption has been reached.

4.11 It is also important to note that a number of assumptions may be made implicitly, such as the proportion of business that are single members or the age profile of members. These assumptions should be documented and reviewed for validity.

4.12 As projected financial results (and projected solvency and capital adequacy requirements) are dependent on many assumptions, it is important to clearly specify the assumptions in any report prepared to accompany projections. The report should disclose the source of the assumptions and any relevant reliance and limitations in the use of assumptions.

4.13 It is advisable to conduct sensitivity testing around key assumptions and combinations of assumptions, such as membership, drawing rates and contribution rates. This will provide insight into the main drivers of the business, and the significance of the assumptions. It is likely that a number of assumptions will interact, and the sensitivity testing should take this into account.

Consistency with Business Plan

4.14 Projections will usually commence with the Health Insurer's business plan or most recent projection which may have been revised as part of a notification of changes to contribution rates. If the business plan was prepared some time ago, or actual results have departed significantly from the business plan, consideration needs to be given to preparing an updated projection.

Membership

4.15 Forecasting membership should involve projecting the expected sales and discontinuance experience of the Health Insurer. The actuary should also allow for future movement in product mix over time, including any transfers between products. Past performance as well as industry trends should also be considered when the projection is formulated.

Contributions

4.16 Projections should allow for future contribution rate changes reflected in the current business plan, making allowance for the impact of any rate protection given to current members at the time of the proposed rate change. They should also recognise the current and expected extent to which discounts are provided and the current and expected extent to which loadings will be earned, for example under Lifetime Health Cover provisions.

Benefit Claims

4.17 In projecting benefit claims, the actuary will need to allow for:

- historical trends in Utilisation Rates, Average Benefits and Drawing Rates
- phasing of claims expenditure, including seasonality
- likely indexation of hospital, medical and other benefits
- any new benefit improvement initiatives and proposed product design changes
- any relevant legislative changes

4.18 There are various methods that can be used to project benefits. Usually this will involve a projection of drawing rates for product groups and/or claims groups. The actuary should select the most appropriate method and the level of detail for the particular circumstance.

4.19 If the Health Insurer has members resident in NSW or ACT, the actuary should also estimate the likely Ambulance levy rate that will apply over the projection period.

Reinsurance

4.20 Reinsurance outgo and reinsurance income should be projected explicitly and separately. This will involve examination of the proportion of hospital benefits eligible for reinsurance as observed in historical data and hospital membership for both the Health Insurer and the industry at a state level, and any anticipated changes.

Management Expenses

4.21 Management expenses may be projected using an assumed expense rate or based on a more detailed analysis. The actuary should check for consistency with past experience. Allowance needs to be made for any future one-off expenses that are expected to be incurred.

Investment Income

4.22 The actuary should understand the current investment mix of the Health Insurer and any likely changes to the mix. Assumed earning rates for each asset class should be obtained from relevant personnel and assessed for appropriateness.

Taxation

4.23 Where the Health Insurer is subject to taxation, appropriate allowance for tax should be made in the projections. The actuary should also consider the impact of taxation on the elements of the Solvency and Capital Adequacy requirements. Specific guidance is given in the PHIAC Standards.

Dividends

4.24 Any allowance for dividends to be paid to a shareholder should take into account the Health Insurer's plans or dividend policy. The actuary should ensure such allowance complies with the Health Insurer's constitution and does not breach solvency or capital adequacy requirements.

Solvency and Capital Adequacy

4.25 In preparing projections on the Solvency and Capital Adequacy position of the Health Insurer, the actuary must comply with the requirements set out in the PHIAC Standards.

4.26 The actuary should understand the historical movement in the elements that constitute the Solvency and Capital Adequacy position of the Health Insurer, especially the financial performance, asset mix and seasonality of provisions.

4.27 In forecasting the Solvency and Capital Adequacy components, the actuary may need to make certain assumptions or estimates, which should be disclosed.

4.28 The following sections provide guidance for the determination and projection of specific Solvency and Capital Adequacy components.

Capital Adequacy Margin

4.29 The Capital Adequacy Margin allows for the uncertainty associated with the estimation of liabilities and future projections in the capital adequacy context.

4.30 The PHIAC Standards require consideration of the size of the Health Insurer, and stability of membership and claims experience in the selection of the appropriate Capital Adequacy Margin. Some guidance on the interpretation of these factors is given in the PHIAC Standards, however these are only a guide, and other factors should also be considered in determining an appropriate margin. The margin is to be determined by the Board of the Health Insurer after consideration of the qualitative factors specified.

4.31 The actuary may be involved in recommending an appropriate margin to the Board. In this situation the actuary should obtain relevant historical information:

- Membership numbers and movements
- Claims and utilisation information, subdivided into material Claims Groups if necessary

4.32 The actuary should obtain a copy of the relevant Board resolution approving the Capital Adequacy Margin for use in the calculations. PHIAC requires that the Board decide on this margin at least once per year as part of the annual return process.

Renewal Option Reserve

4.33 The purpose of the Renewal Option Reserve is to minimise the risk of loss to existing contributors and to continue cover in an on-going situation by adequate provisions to pay the claims and expenses of the Health Insurer for 12 months following the date of the calculation. The Renewal Option Reserve must make provision for the risks and potential costs in providing the right of renewal to members of the Health Insurer. The calculation of this reserve requires a best estimate projection of future contributions, claims, reinsurance and expense experience over the following 12 months, with the addition of a Capital Adequacy Margin.

4.34 The PHIAC Standards set out detailed requirements of the projection which must be taken into account in the calculation of the Renewal Option Reserve.

4.35 The actuary should be aware that this reserve can be particularly sensitive to small changes in the assumptions used.

4.36 Since the Renewal Option Reserve is based on a 12 month projection, the model will need to project for a period of 12 months beyond the period for which the projected capital adequacy position is required.

Unexpired Risk Reserve

4.37 The Unexpired Risk Reserve is a projection of the value of future claims, reinsurance and expense liability arising in respect of contributions received for future periods of insurance cover (contributions in advance).

4.38 The calculation of this reserve requires a best estimate projection of future claims, reinsurance and expense experience, similar to the calculation of the Renewal Option Reserve. This projected experience may be expressed as a Loss Ratio, being the sum of a Claims Ratio and an Expense Ratio. Care should be taken where projected contributions used in these ratios include the impact of future contribution rate changes. The PHIAC Standards set out the detailed requirements of the calculation of the Unexpired Risk Reserve.

Business Funding Reserve

4.39 The Business Funding Reserve is required if a projection over a three year period reveals a breach of the Solvency Standard.

4.40 The calculation of this reserve requires a best estimate projection taking into account planned business growth and the impact of business development strategies and plans. Such information would be obtained from the insurer's business plans and from discussions with management. The PHIAC Standards set out the detailed requirements of the calculation of the Business Funding Reserve.

Reasonableness Test

4.41 The actuary should perform reasonability tests on the projection results. These may include sensitivity analysis of key assumptions, a comparison of projected results with historical results, and scenario analysis.

Contribution Rate Change Notifications

4.42 Funds wishing to alter contribution rates need to submit a notification, usually including financial information, to the Department of Health.

4.43 Any financial information supplied would generally include:

- Monthly forecasts of contributions earned, benefits incurred, payment to (or from) the Reinsurance Pool, state levies, gross margin, management expenses, investment income and tax

- Capital position of the Health Insurer, including net assets, solvency requirement and capital adequacy requirement

5. REPORTING

5.1 The actuary should prepare a report that documents the assumptions and methods used in producing a financial projection. The level of detail contained in such a report will vary depending on the purpose of the financial projection.

5.2 Where the financial projection is carried out to support a contribution rate change, specific reporting requirements and actuarial certification are set out in relevant circulars from the Department of Health.

5.3 The report should describe the steps taken by the actuary to verify the accuracy of the data, any limitations on the extent or quality of the data and the extent to which the actuary has relied upon the Health Insurer or the Health Insurer's auditor for checking.

5.4 The assumptions and methods should be stated clearly and their derivation explained. Any qualifications should also be clearly stated.

5.5 Where:

- legislation, accounting standards, PHIAC guidelines or other rulings require the actuary to use specific assumptions or methods,
- an interpretation of legislation, accounting standards, PHIAC guidelines or other rulings supplied by the health insurer or its advisers is being relied upon, or
- the health insurer requires the actuary to use specific assumptions or methods

the actuary must clearly state the circumstances, express an opinion on the assumptions in accordance with paragraph 4.10, discuss whether or not the assumptions and methods are reasonable and consistent with this Guidance Note, and discuss the implications of divergence from this Guidance Note.

END OF GUIDANCE NOTE