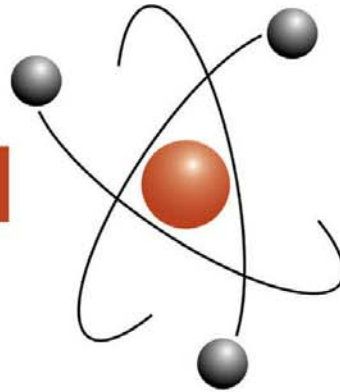


S U S T A I N



A B I L I T Y

ACTUARIES AND THE FUTURE

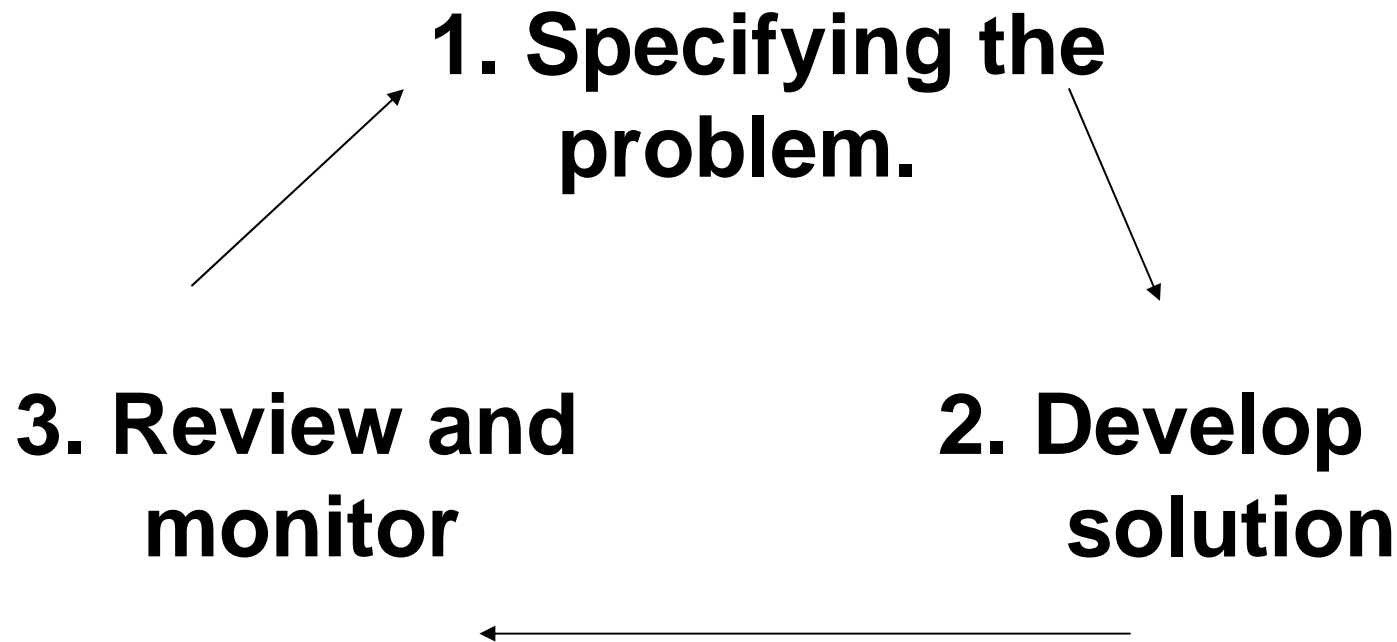
Applying the actuarial control cycle in private health insurance

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Actuarial Control Cycle – A brief overview



Objective of this paper

- Focus of this discussion paper
 - Analysis of surplus
 - Reviewing the provision for outstanding claims
- Motivations
- Target audience

Part 1 – Analysis of surplus

Analysis of surplus – objectives

- $\pi_a = \pi_e + (\pi_a - \pi_e)$
- Provide a check on the valuation
 - Identify the source of the unexpected surplus
 - Isolate and
 - quantify the unexpected surplus

Formulae

See discussion paper...

Simplifying assumptions

- Only 1 hospital product.
- The number of services eligible for reinsurance is based on the proportion of reinsurance benefits as a percentage of total benefits.
- Contributions have no discounts or rate protection provisions.
- Total assets are used to determine of investment income and other income.

Practical example – 1

Results for 1 quarter (\$'000s)

	<i>Actual</i>	<i>Projection</i>
Contributions	7,100	7,000
Incurred benefits	(5,100)	(5,000)
Reinsurance	(700)	(800)
State levies	(120)	(100)
Gross margin	1,180	1,100
Management expenses	(820)	(800)
Investment income	300	250
<i>Surplus</i>	<i>660</i>	<i>550</i>

Practical example – 2

Other Assumptions

	<i>Actual</i>	<i>Projection</i>
Average SEUs	11,000	10,000
Services	52,000	50,000
Gross deficit	850,000	700,000
Calculated deficit	1,550,000	1,500,000
Investment assets (t = 0)	17,000,000	17,000,000
Investment assets (t = 1)	17,660,000	17,550,000

Practical example – 3

Analysis of surplus for 1 quarter (\$'000s)	
<i>Profit item</i>	<i>Profit</i>
Projected surplus	550
Change in membership	61
Contributions	(550)
Benefits	
Change in average benefits	96
Change in utilisation rate	271
Reinsurance	
Gross deficit	
Total benefits	(61)
Greater than expected gross deficit	134
Less than expected average state deficit per SEU	92
State levies	(9)
Management expenses	55
Investment income	22
Incurred surplus	660

Practical implementation issues

- Reported results are not always the same as actual incurred results.
- A check on the provision of outstanding claims is required to ensure that the actual reported results reasonably reflect the actual incurred results. (hence section 2 of the paper)
- The state average deficit per SEU is notoriously difficult to project.

Further development

- By product, benefit type, scale, group, state etc.
- Appropriate allowance for “new business”
- Discounts, Rate Protection, Levies and Commission
- Benefit assumptions
- Indirect expenses
- Exposure instead of SEUs
- Tax
- Other

Timing of review and Level of detail

- Frequency of review
- Period of review
- Level of granularity

Part 2 – Provision for outstanding claims

Quick background

- **Components**
 - Gross
 - Administration
 - Reinsurance
- **Determination methods**

Sufficiency

- Actual Vs Expected
 - Provision
 - Incurred claims
 - Historical trends

Bias

- The estimate of the provision should not be biased i.e. the estimate of the provision should be greater than the actual amount 50% of the time and less than the actual amount 50% of the time.
- A measure of the bias could be the measurement of cumulative tolerance (plus and minus) on a rolling 12-month basis. Over time this should be close to zero.

Variability

- The volatility of the estimate of the provision around the actual should be as small as possible and not increase over time.
- The standard deviation over time should be monitored to ensure that:
 - The standard deviation is not too high (i.e. the estimates are reasonably close);
 - The volatility of the estimate is not increasing over time.



Questions???