Ruark Reports

Insights and Commentary on the Reinsurance and Insurance Markets
from Ruark Consulting LLC and Ruark Insurance Advisors, Inc.

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Famous or Not So Famous Quote:

Success is a lousy teacher. It seduces smart people into thinking they can't lose.
Bill Gates

Variable Annuity Mortality – Minding Your P's and Q's

By Michael Loftus, FSA

Management of the guaranteed minimum death benefit (GMDB) risk has typically concentrated on the investment side. However, properly quantifying and understanding mortality levels are also very important. Wrong mortality levels will directly affect the financial profile shown to management. If a hedging program is utilized, the assumed mortality level impacts the notional amount to be hedged. Long term differences between actual and expected mortality will create either over-hedging (paying for unneeded derivatives) or under-hedging (derivative payoffs being insufficient to cover death claims). Even if actual-to-expected mortality is accurate long term, a hedging program may seriously underperform if period-to-period mortality results are volatile.

At RIA, we frequently perform analyses of variable annuity (VA) mortality experience, as most of the VA programs we've placed with reinsurers have some type of a guaranteed minimum death benefit. We believe it is critical to develop a disciplined approach for initially establishing and then monitoring mortality levels to ensure GMDB pricing and risk management assumptions accurately reflect emerging mortality experience.

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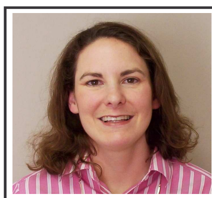

RCL Continues to Study Dental Industry with ASO Fee Survey

by Ruth Ann Woodley, FSA

Ruark Consulting has followed up its unique Dental PPO Network Survey with a new project surveying Administrative Services Only (ASO) fees as of January 1, 2006 for Dental PPO insurers and TPAs. The ASO Survey was specifically designed to overcome difficulties in comparing carriers' fees, with each of the 12 participating companies contributing sufficient detail to enable RCL to normalize results for differences in group size, services provided, and new versus renewal status.

One primary focus of the survey was to represent the rates carriers have actually *sold*, rather than just manual or book rates, since these "street" rates represent the competitive reality and are often lower than manuals.

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ASO Fee Survey --Continued from Page 1

...significant variance in how companies "slope" their rates for cases of different sizes...

The survey also took pains to collect data on the features included in each company's standard service package (for example, are ID cards and printed Summary Plan Designs provided), and on how companies adjust their fees as these features are added or removed at a customer's request. We found a wide variety of responses for what each company includes in a standard package. The rates for each company were then adjusted to come as close as possible to one consistent set of features, so that they could be directly compared.

In the end, we saw a wide range of fee levels, even on this consistent basis. There was a difference in the absolute level of fees, as well as significant variance in how companies "slope" their rates for cases of different sizes, with the latter usually reflecting how much of the carrier's expenses are considered fixed rather than variable costs. There was also a split in how companies price new business relative to renewing accounts. Just fewer than half the carriers gave lower rates to new business (presumably trading some profit for growth), while half responded that they use the same rates for both. One company actually uses higher rates for new business, perhaps to reflect that larger account set-up costs in the first year usually make it more profitable to renew an account than to write a new one.

Along with the different combinations of standard features provided by each carrier, the fees charged to provide some of these features (or the rate reduction given to exclude them) varied widely. The cost of ID cards, or the Network Access Fee at one company could be several times another company's cost for the same feature.

Results were quite different by the size of the carrier. Since the larger carriers typically target larger sized cases, those carriers with the most members showed a much steeper rate slope by case size, averaging much higher rates for the small cases but providing greater discounts with increasing size. The larger companies also had lower annual rate increases, perhaps because their large size enables them to hold their expenses down, or because of their focus on the largest customers where negotiations are tougher.

RCL continues to look for ways to provide companies with this kind of competitive data, and we're now working on a second study of dental PPO discounts. If you are interested in either of these projects, or have other ideas, please contact me at 860-651-6236 or ruthann@ruarkonline.com.

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- Rich Tucker and Tim Ruark returned from Bermuda earlier this month, optimistic their latest rounds of discussions with new reinsurers will increase VA reinsurance capacity.
- Peter Gourley will be presenting on the impact of principle based reserves on product development at the Product Development Symposium, June 26-27 in Las Vegas.
- Ruth Ann was interviewed as an industry expert by journalist Jonathan Cohn, a senior editor of the New Republic, for his upcoming book on the U.S. healthcare system.
- The less than stellar performance of his handler, Rich, caused 2-year-old Sheltie, Doogie Tucker, to fall short of a passing grade on the Novice Obedience Test.
- Tar Heel Ruth Ann is starting to rebound from the early round, crushing defeat of her alma mater's men's basketball team.

P's and Q's—Continued from page 1

A common benchmark for variable annuity mortality is the 1994 MGDB table. Actuarial Guideline 34 requires the use of the 1994 MGDB for the valuation of guaranteed minimum death benefits. The 1994 MGDB is based on group annuity mortality experience for retired lives for the 1986-90 experience years. This table is more conservative than that for individual annuitant mortality; the 1983 IAM mortality rates are 20-25% lower than the 1994 MGDB for ages 60 through 100. The conservatism makes this table a reasonable standard for reserving the minimum death benefit.

For GMDB pricing, a more realistic mortality level is appropriate. It is still common to use the 1994 MGDB table as the basis, but to use less than 100%. Absent client specific data, RIA typically assumes 70% of the MGDB when evaluating VA benefits payable upon death. A 2005 study by RIA based on aggregated client experience over the exposure period July, 2000 through December, 2004 showed actual experience equal to 67% of the 1994 MGDB by policy count and 70% of 1994 MGDB by GMDB dollar amount. Some interesting results of the study were as follows:

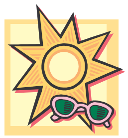
- Mortality results by GMDB amount were worse than by number. Results worse by amount than by number can be indicative of anti-selective behavior (where the higher amount contracts who believe they are at higher risk of death are more likely to persist), although the difference in this study was not very wide.

Reinsurance remains the best risk management option for covering the mortality risk as well as the investment risk.

- Female experience was worse than male experience. (71.3% of the MGDB verses 63.2% by policy count, and 79.8% verses 63.2% by GMDB dollar amount.)

- The experience curve for both males and females became steeper than the table at older ages. Specifically, in the case of GMDB dollar amounts, experience increased from 64% of table for ages 75-79, to 72% for ages 80-84, 83% for ages 85-89, and 96% for ages 90-94 (exposure beyond age 94 was not credible)

- Claim experience by individual company was volatile year-by-year (when company results were not smoothed using credibility factors). Aggregate results over all companies were less volatile.



- A seasonal mortality pattern was apparent. Winter and Spring (December through May) exhibited experience that was 15% worse than Summer and Fall (June through November).

- There was a lack of any durational impact. It is intuitive to expect a selection effect on VA mortality (someone healthy enough to purchase the contract should have better mortality than average). However, this study showed that effect to be weak.

Note that although the above study supported RIA's current pricing assumption, the results are based on the aggregation of client data. As each client's risk profile is different, companies should perform their own studies.

The general study methodology utilized by RIA is to calculate total exposed contracts and exposed GMDB amounts and turn these exposures into expected deaths by applying age/sex specific rates from

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the 1994 MGDB to the exposures. Some items to consider when performing a VA mortality study include:

- Death claims should receive a full unit of exposure for the exposure period. For example, if the exposure period is based on policy years, full exposure would be given to the end of the policy year of death, even if this extends beyond the study period.

...70% of claims are reported within 3 months of the date of death...

- Reported claims should be adjusted by completion factors in order to include the impact of incurred-but-not-reported (IBNR) claims. Use of separate completion factors by number versus GMDB amount may be needed, as our work indicates that larger claims are reported faster. At RIA we typically include claims incurred in the study period and reported through the three months after the close of the study period, and then apply completion factors to estimate IBNR. We've found that 70% of claims are reported within 3 months of the date of death, 92% within 12 months and 96% within 24 months.

- Special treatment of joint life policies is required. If the volume is low, they can simply be excluded from the study as we did with our aggregated study. If included, the expected death calculation needs to be derived using the joint first-to-die mortality rate formula involving the age and sex of each owner.

- Groupings by categories (e.g., age, sex, product) and companies with smaller amounts of exposure will be prone to more volatile results. RIA uses a practice of assigning full credibility at 1,500 expected deaths. Care should be taken not to overreact to the results, good or bad, if exposure amounts are not credible.

- Unlike life insurance, the owner can be changed on a VA contract or a joint owner added at the current owner's discretion, changing the insured lives under the GMDB. Depending on contract terms, this could occur at any time, so the calculation of exposure should recognize that the age or gender may change in the middle of a policy year.

- Reinstated contracts should receive exposure for the period between surrender and reinstatement.

Our recent studies show that actual mortality levels and volatility are far more complicated than the typical pricing assumption of a level percentage of the 1994 MGDB table. The interaction of investment, mortality, and behavior risks makes the study of GMDB experience both interesting and challenging. The extent to which investment performance causes healthy people to behave differently from those in poor health will have an impact on the underlying mortality experience. As VA mortality is monitored over longer periods of time with diverse investment returns, we will better understand the interplay. In the meantime, reinsurance remains the best risk management option for covering the mortality risk as well as the investment risk.

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