



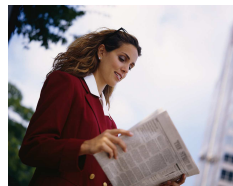
Insights and Commentary on the Reinsurance and Insurance Markets  
*from Ruark Consulting LLC and Ruark Insurance Advisors, Inc.*

March, 2008

Famous or Not So Famous Quote:

***You only learn who has been swimming naked when the tide goes out.***

**-Warren Buffett**



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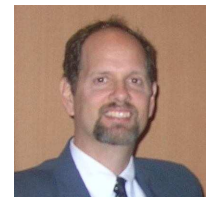
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### First RCL Variable Annuity Industry Mortality Study

By Timothy Ruark, FSA, MAAA



Ruark Consulting frequently conducts mortality, lapse, and other studies for our reinsurance clients. Through market research, we realized that most insurers do not have useful studies for mortality, so the goal of our VA Industry Mortality Study was to provide a broader range of companies with an understanding of their own mortality experience as well as how their own results compared to the industry. Thirteen companies agreed to participate in the mortality study.

Mortality levels are typically expressed relative to a standard industry table. Annuity mortality tables are dated and based on underlying data that may not be comparable to current insured populations. So, our study examined whether current experience relative to a standard industry table varies by sex and also by age, the key components of most industry tables. Analysis was provided for comparisons to the 94 MGDB table as well as to the A2000 table.

Various other factors were explored to evaluate whether they have an impact on mortality levels. The factors included duration, policy size, qualified status, richness of death benefit, and inclusion of a living benefit.

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*VA Mortality - continued from page 1*

Each company provided monthly inforce files for 2005 and 2006, and information on deaths incurred during in the same time period and reported through at least the first quarter of 2007. RCL extensively scrubbed all the data files to find and resolve any inconsistencies. To provide the truest picture of mortality experience, RCL included an analytical process to estimate incurred but not reported death claims.

Here are a few of the study highlights, using ratios and percentages based on incurred deaths and on account values, rather than number of contracts.

**Overall Experience**

Overall industry experience was less than 65% of the 94MGDB table, with results heavily influenced by ages 75+. It showed a definite trough pattern by age, which was also seen in the results of most companies. Mortality ratios were lowest between ages 60 and 74, increasing significantly for the ages outside this range.

**Male vs. Female**

Industry data also produced a female mortality ratio more than 25% higher than the male ratio [female ratio/male ratio >1.25]. Of course, this doesn't mean that females die at a higher rate than males, the opposite is actually true; but it does mean that using the same percentage of the 94MGDB table for both genders will tend to overstate deaths for males, and understate deaths for females.



**Normalizing for Age and Sex**

In looking at results by other attributes, RCL recognized that differences could appear simply because the distribution by age and sex varied between groupings. Results were restated by applying standard age and sex weights and in many instances this reduced or even eliminated differences between groups. For example, industry data produced a significant difference between Qualified mortality and non-Qualified, which narrowed by a third after adjusting for age and sex.



**Impact of Living Benefit Riders**

RCL believes it is important to assess mortality separately for insured lives that choose a living benefit, versus those that do not. Many living benefits, by definition, provide benefits that improve with longevity. Therefore, it is reasonable to expect that the mortality results during the annuity's deferral period will be better for insured lives that choose a living benefit.

Industry data showed a modestly lower mortality ratio for contracts with living benefits than those without living benefits. The industry data was dominated by the GMIB living benefit, although the GMWB and GMAB results were also fully credible. Once adjusted for demographics, the difference between contracts with GMIB and those with no living benefit disappears. But even after adjusting for demographics, the GMWB and GMAB ratios are lower by more than 10 percentage points than the ratio for contracts without living benefits. These differences are significant, and they suggest that companies can expect lower mortality experience on contracts that include the GMWB and GMAB.

If at this point you're thinking "tell me more", I encourage you to participate in our next study to gain meaningful insights into both your own and industry mortality experience.



## 2006 Ruark Consulting Dental PPO Network Study

By Ruth Ann Woodley, FSA, MAAA

Ruark Consulting completed its third annual *Dental PPO Network Study*, and findings show that dental networks and the discount savings they provide continue to grow steadily. Preferred Provider Plans (DPPOs) have been the most popular dental insurance product for the past several years, and dental carriers continue to push to increase the breadth of their network offerings and the depth of those networks' discounts.

### *In-Network Discounts*

Nationally, carriers increased their fees to in-network dentists by an average of 3%, a result similar to that seen last year. Those increases are not given consistently to all network providers. Instead, companies are differentiating fees by market or even by office, to address the specific gaps in their network or needs of their customers. And with average dentist charges increasing at between 4% and 4.5% for the last few years, carriers can afford to make these increases in their payment rates for in-network claims while still increasing discounts 1-2% per year.

*Since a majority of DPPO claims are still from non-participating dentists, the depth of that in-network discount is not the only important metric to watch.*

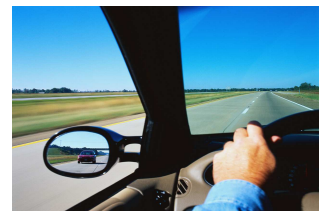
### *Effective Discounts*



The increases in discounts over time mean more savings to employers and patients, but only on visits to participating dentists. And since a majority of DPPO claims are still from non-participating dentists, the depth of that in-network discount is not the only important metric to watch. Even more meaningful is the effective discount, or total percentage discount on all claims regardless of whether they come from a participating dentist. This number provides the best indication of what overall savings the network provides and is a direct driver of overall cost and premium. As carriers grow their network to realize discounts from more dentists, and particularly as they focus on adding the particular offices their customers use the most, they are driving larger increases in effective discounts than can be realized through increasing the in-network discount alone.

### *In-Network Utilization Rates*

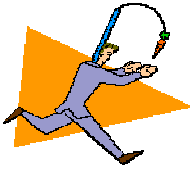
Driving utilization into the network is a critical component of higher effective discounts and total DPPO savings. In fact, analysis of the carriers with the highest effective discounts in each market suggests that the in-network utilization rate is even more important in their success than the in-network discount.



Benefit design is an important determinate of in-network utilization. For years, Dental PPO sales primarily consisted of passive benefit plans, where all benefit parameters like coinsurance, deductible and annual maximum are the same for in-network and out-of-network claims. This type of design provides

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*Dental PPO - continued from page 3*



little to no incentive for an insured to actively seek out an in-network dentist, limiting network savings to those people who already happen to use those dentists and making network recruitment more difficult for carriers.

This pattern has shifted recently, with passive business now representing less than half of the total book of business across participating companies. Almost all participating companies showed passive plans to be a smaller percentage of their business in 2006 than in 2005. Active plan designs, which increase at least one of the benefit parameters on in-network claims, now make up 40% of these carriers' business.

These plans vary by whether they offer incentives to use the network for basic and major services, or keep coinsurance and deductibles for preventive and diagnostic services the same whether performed in or out of the network.

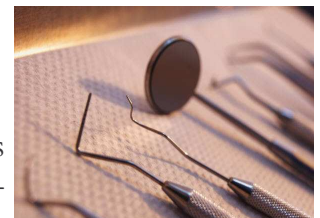
*...the in-network utilization rate is even more important in their success than the in-network discount.*

Most plans still cover out-of-network charges up to a “reasonable and customary” (R&C) fee amount, but MAC, or Maximum Allowable Charge, plans have also become significant. These limit the plan's reimbursement for all claims to the in-network fee schedule used; insureds who go out-of-network pay the discount difference out of pocket.

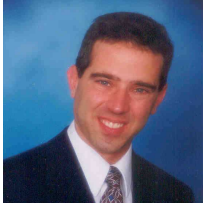
The plan can dramatically influence effective discounts by both increasing the number of in-network claims and by reducing the insured portion of out-of-network claims. Savings on out-of-network claims within R&C plans average only 3%, but MAC plans realize the full in-network discount. MAC business is a small part of most companies' portfolios (less than 10%), but there are a few carriers who specialize in this low-cost plan design.

**Conclusions**

As the dental insurance industry matures, carriers have become increasingly sophisticated in the tools they use to improve the value provided by their PPO networks. It is no longer enough to show customers the lowest in-network fee schedule or a large number of access points to demonstrate network savings. It is also important to track and use metrics like in-network utilization rates to demonstrate that contracted dentists are convenient and accepted by members, and the number of unique dentists in the network to support the quality of access points.



Perhaps most important is measuring effective discounts to demonstrate total savings, or the balance between having low in-network costs and having a network that is widely utilized. To stay competitive, PPOs cannot just hold fees low and grow the network count as high as possible. They must monitor their competitive performance across all of these parameters and use that information to develop specific strategies to optimize their network development in each target market.



## Indexed Annuity GMWB – Pricing Considerations & Reinsurance

By Richard Tucker, FSA, MAAA

Guaranteed Minimum Withdrawal Benefits (GMWB) are appearing with increasing frequency on indexed annuities. How should insurance companies evaluate the potential cost of offering this benefit?

A cost arises for the insurance company if a policy's account value is exhausted, yet the company has guaranteed that a periodic payment will continue to the owner.

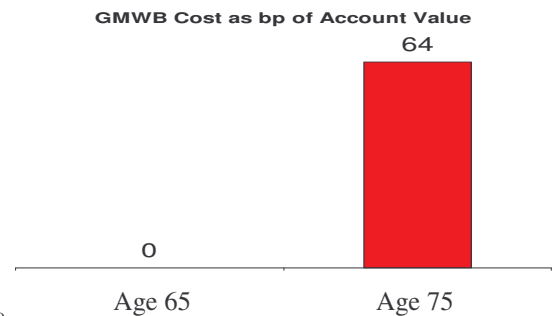
The risk comes down to:

- How well does the account value perform?
- How large is the periodic payment that is guaranteed?
- How long will people be around to collect the guaranteed payment?

A simple starting point could be to look at an issue age 65, male, 5.5% guaranteed lifetime payment, annual total S&P 500 return of 8.0%, with a normal lapse assumption. The benefit cost in this instance is projected to be zero, as the credited interest always exceeds the guaranteed payment.

But what happens if:

- The account value performs poorly.
- Buyers of the benefit are older, because the guaranteed payment increases with age.
- The valuable benefit causes more people to stick around longer.



The projection is now changed to be an issue age 75 male, 6.5% guaranteed lifetime payment, annual total S&P return of 3%, with no lapses. The benefit cost goes up dramatically, to a projected cost of 64 basis points of account value annually.

The projected benefit costs are dramatically different, but neither scenario is unrealistic. This simple example illustrates the risks inherent in evaluating the expected cost of a newly created benefit. Index linked performance is not under the insurance company's control. The benefit is inherently more valuable, and costly, as age increases, which can lead to a higher average age among those electing the benefit. The existence of the benefit can alter historical lapse patterns.

A more dynamic pricing exercise should include consideration of:

1. Stochastic modeling – The use of hundreds or thousands of randomly generated equity returns, which are used to generate the level of the indexed credited interest.
2. Lapse rate sensitivity testing – Could involve testing a variety of selected lapse levels, or developing a dynamic lapse formula that automatically reduces lapses as the value of the GMWB benefit increases.
3. Demographic risk – This is the actuarial term that means that you could end up selling more to high cost people than you originally anticipated.

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*Indexed Annuity GMWB - continued from page 5*

4. Tax qualified business – Since most benefits allow withdrawals to be larger if such is needed to satisfy Required Minimum Distributions, costs could be higher for tax qualified business.
5. Mortality levels – The people who utilize a GMWB may be in better general health than people who don't elect the benefit, resulting in higher guaranteed payments.
6. Joint life payouts instead of single life – Most GMWB's provide an option for guaranteed payments to continue as long as at least one of the two people are alive. This should be tested separately.



Reinsurance support is available as a risk management tool for the direct writers of these benefits. The most classic use of reinsurance for a direct writer is to substitute certainty for uncertainty, and this is of course the case here. Reinsurance of the GMWB is available in the marketplace. The direct writer can achieve a known and guaranteed cost of providing the benefit.

Another common reinsurance tradition is for the direct writer to receive a ceding commission from the reinsurer. That is, the cost of the reinsurance is less than the retail charge for the benefit, leaving a balance with the direct writer to cover expenses and contribute to profit. Based on the retail pricing that I've observed on GMWB's and reinsurance levels available, most direct writers should be able to reinsure their GMWB and retain an amount to cover their expenses and contribute to their profit.

GMWB for indexed annuities are rapidly gaining acceptance and availability from various direct writers is spreading. Competition will typically lead to improved benefits for the consumer, often accompanied by lower fees. If the GMWB follows this typical course, expected margins will reduce over time. Reinsurance is available today, but I wouldn't exactly call it abundant. So, the development of capacity and relationships now, while the environment is favorable, is likely to pay dividends in the future when the margins are more difficult.

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**RIA Client Conference** - Our 4th client conference is scheduled for May 13 –15 in Bermuda. Annuities are the main focus of the conference with topics including GMWB reinsurance programs, FAS 157, designing experience studies, LTC combinations, and the implications of refined vs. unrefined assumptions for pricing and valuation. If you haven't received an invitation and are interested in attending, please let us know.

**RIA RCL New Location** -We've moved to 530 Hopmeadow Street, still in Simsbury. Ruark Properties, LLC purchased this building, which combines both office space and an indoor tennis facility! Well, at least we finally found a friendly landlord. Our offices are not located in the courts, but we do pass by them on the way to the coffee machine.

**Retirement Industry Conference** - Susan Murray will be attending this conference on April 9-11 in Las Vegas.

**Golf Fore the Kids** - June 26 in Hebron, CT. As you may be aware, on August 23rd the inspiration for Golf Fore the Kids took on a new meaning when Sally's son, Jacob Aaron Osit, passed away surrounded by his family. Even if you can't attend the tournament, donations to Golf Fore the Kids are always appreciated and benefit the Jimmy Fund and Connecticut Children's Medical Center. Go to [www.golfforethekids.com](http://www.golfforethekids.com) for more info.