

**1993 VALUATION ACTUARY
SYMPOSIUM PROCEEDINGS**

SESSION 12

Medical Products

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MEDICAL PRODUCTS
LARGE GROUP MEDICAL AND STOP-LOSS INSURANCE

MR. RICHARD J. NELSON: We will present the major results of our group's discussions on the practice notes for large group medical and stop-loss insurance. The members of our group are Paul Conlin, David Brodrick, Steve Meyers, and Mintu Pal.

Asset Risk

If cash flow is positive, then explicit asset-risk testing may not be necessary. However, asset identification is the norm, separate pools of assets are assigned, quality of assets is examined, and duration of assets is examined.

Investment Rate of Return

This rate of return is generally ignored for short-term medical products because claims cost and lapse rates are not dependent on investment rate of return. However, this may be considered if interest rates are guaranteed on claim reserves for large group policyholders.

Gross Premium Reserves

These reserves have not been commonly used on large group medical because of annual rerating of business; claims reserves have had significant margins in recent years; and premiums have been adequate in recent years. Also, the main risk on administrative services only business is administrative costs, which is not subject to the wide fluctuations that may be seen in medical claims.

Our committee felt that, if current premiums were insufficient, this would necessitate gross premium valuation. In this case we felt projection to the next renewal would be appropriate. Because of annual rerating, losses for renewal or new business are not projected. Also recapture of deficits through renewal rate increases on retrospectively rated business would reduce any additional liabilities indicated by the gross premium valuation if carried out past renewal.

1993 VALUATION ACTUARY SYMPOSIUM

A couple of areas where gross premium valuations should be considered are for multiyear rate guarantees and for blocks of group conversions.

Stop-Loss Insurance

This is usually tracked separately from medical insurance, and projection methods differ from medical insurance. One common method is policy-year development. This involves the following steps:

- Sort paid claims by policy anniversary.
- Calculate claim development factors by duration since policy anniversary.
- Project total claims by anniversary.
- Calculate total premium by anniversary.
- Project loss ratio by anniversary.
- Make claim reserve for an anniversary equal to projected loss ratio times earned premium minus claim payments.
- Compare reported claims (i.e., paid claims plus unpaid claims that have been received) to projected claims or alternatively it is possible to base claim development factors on reported claims.
- Maintain follow-up reports to check accuracy and conservatism of loss ratio projections.

MEDICAL PRODUCTS

MR. JAMES T. O'CONNOR: The Health Insurance Practice Note for small group medical business discusses a number of questions and issues regarding statutory reserve and asset analysis for small employer group business. The points I plan to discuss are the following:

- Definitions
- New business considerations
- Rating structures
- Small group reform "assessments"
- Adequacy of assets
- Methods for testing reserve adequacy
- Length of projection period

I encourage you to read the practice note for the other questions and issues discussed in it.

Definitions

There are two questions that need to be addressed before we discuss the issues presented in the practice note. The first is, "What is considered to be a small group?" and the second is "What is included as small group medical business?"

What is considered to be a small group? -- The criteria we chose for defining which groups are addressed in this practice note are the following:

- The group must be fully insured.
- The group must not be experienced rated with full credibility. It is acceptable if the carrier uses the group's experience for the purpose of determining a rating tier for the group.
- Specific state reform laws define a small group to which the laws are applicable. Generally, these are groups of under 25 or under 50 employees. Some of the discussion will apply only to these sized groups, although as laws change, larger groups could also conceivably be affected by them.

Many, if not most, of the issues discussed in the practice note will apply to insured groups of all sizes.

What is included as small group medical business? -- The practice note is intended to only address the medical coverage portion of a small employer benefit package. This is typically characterized as short-duration runoff business. However, ancillary coverages may need to be considered to the extent that they affect the choice of assumptions and the evaluation of the medical coverage. Of course, they do need to be addressed in your valuation work. But they are not covered by this practice note.

It should also be noted that the note does not directly address all the considerations necessary for evaluating reserves for HMOs and other managed-care products such as double- and triple-option plans. Certain managed-care risks that should be considered are referred to in the note.

New-Business Considerations

The first issue I would like to discuss is what considerations should be made for new business when opining on the adequacy of a company's reserves and liabilities. As you know, small group carriers have traditionally relied upon new business very heavily to generate most of its profits. However, the focus of the valuation actuary's responsibility must be on business already in force. Liabilities and reserves should be set for the in-force block so that the business can be self-supporting from a reserve adequacy perspective.

This can present a dilemma for the actuary when performing a cash-flow-testing or a gross-premium-valuation analysis. It is generally agreed that the analysis should be performed on an open-block basis, not on a closed-block basis. Clearly, assumptions would often be different on a closed block of business than on one for which new sales will occur. Accordingly, new-business expectations can influence the actuary's choice of assumptions for the analysis. Several items for which this is the case are the following:

- Expense and investment income assumptions may need to consider the impact of new business. A reasonable allocation of total expenses needs to be made in order to

determine projected unit cost assumptions for the in-force block. Clearly, most underwriting and issue expenses should not be included for business already in force and certain administrative functions such as claim handling may have different unit costs for new business and in-force policies.

- Selection wear-off (the aging curve) is sensitive to the duration of the business. Generally, the wear-off curve is very steep in the first policy year due to the immediacy of the underwriting and the effect of the preexisting condition provisions. In particular, the actuary should be aware of the variation of wear-off within the first policy year in setting projection assumptions.
- Perhaps the rate increase assumptions are the toughest with which to deal. If there were to be no new business, many companies would determine different rate increases than under an open block. However, many feel that the rate increase assumptions for adequacy review purposes should be set to be those increases that are actually planned with a consistent philosophy used for future projection years. Without the support of new business, this could result in less than favorable bottom-line results.
- The actuary should be aware of any rewrite, reentry, or exchange programs sponsored by the carrier. This is particularly important in understanding the data. You should understand how these programs are reflected in the data in terms of the issue date for the various data systems. For example, one company I have worked with codes the original issue date in its premium system, but the claim system has the new rewrite date as date of issue.

One other issue I would like to discuss regarding considerations for new business is the adequacy of the new-business rates. It seems that the line between determining reserve adequacy and surplus adequacy is blurring. Simply put, should business not yet written as of the valuation date be an item of concern regarding reserve adequacy?

Most actuaries maintain that the answer is "no," that this type of business is an item of concern only for surplus adequacy. The Standard Valuation Law, the Actuarial Opinion and Memorandum Regulation, and the Minimum Reserve Standards for Individual and Group Health

1993 VALUATION ACTUARY SYMPOSIUM

Insurance Contracts Model Law all clearly support this position. Accordingly, even if the street rates for this business are grossly inadequate, an additional reserve may not be required. However, the valuation actuary will want to be aware of such risk and should in most serious situations make company management aware of the situation.

Some people, however, believe that because the Actuarial Opinion and Memorandum Regulation requires them to make a statement regarding material changes, which occur between the valuation date and the date of the statement of opinion, they have some responsibility to consider business that has been issued during that period. They may feel that business sold during this period at unintentionally inadequate new-business rates, which may not be able to be changed on a timely basis, may need additional premium reserves established. Others may extrapolate this to business estimates to be sold after the opinion date before rates can be adjusted.

Rating Structures

Small group carriers employ a variety of rating structures for their products. Each presents varying degrees and types of risk to the carrier. Some of the rating structures used are the following:

- Individual attained age rates
 - Gender distinct
 - Unisex
- Banded attained age rates
 - Gender distinct
 - Unisex
- Family composition tiering
 - Four tiered: employee only, employee and spouse, employee and child, and family
 - Three tiered: employee only, employee and one dependent, and family
 - Two tiered: employee only and family
- Select and ultimate rates versus aggregate rates
- Entry (issue) age rates

- Modified community rates
- Pure community rates
- Rate guarantee periods

The pricing risk increases as the rates are based on increased combinations of case characteristics. Individual attained-age, gender-distinct rates generally carry less risk than pure community rates, which are based upon attainment of a specific demographic mix.

The use of a particular rating structure does not necessarily require reserves different than the use of another structure, provided that the underlying rating assumptions are realized on average. However, the likelihood of meeting the rating assumptions is lower for those structures that require a greater number of assumptions, such as community rating. Since more and more states are moving toward some sort of community-rating requirement, rating structure will become a more important consideration for the valuation actuary in assessing reserve adequacy.

The valuation actuary should be aware of potential risks for the other rating structures as well. For example, age-banded-rated products face a lapsation risk at the end of each band. To the extent that the age distribution within a band is not uniform, lapsation may vary from year to year and should be reflected in any projection as such.

Depending on the slope of the expected claim costs, individual aggregate attained age or entry-age-rated policies may require that a durational reserve be established. This will become less of a problem as guaranteed issue and portability provisions become more prevalent. Refer to the Individual Medical Practice Note for more discussion on durational reserves.

The impact of the competition's rate structures as well as their rate levels is also an important consideration in determining projection assumptions. For example, if you have unisex rates in an area where another carrier has introduced gender-distinct rates, you might expect greater male lapsation, resulting in an increase in your average claim costs and premium. Community rates

1993 VALUATION ACTUARY SYMPOSIUM

competing against age and gender-distinct rates is another example for which the actuary might need to consider the impact of the situation on projection assumptions.

Small Group Reform "Assessments"

Small Employer Reinsurance Programs -- Small group reform developments in many states have introduced another area of consideration for the valuation actuary. Many states have introduced small employer reinsurance programs that put the member carriers at risk for assessments to cover program losses. These assessments are usually structured on two levels. The first-level assessments are generally limited to 3 - 4% of small group premium, with second level assessments covering losses in excess of those covered by the first level. The actuary should be aware of this assessment situation for each state in which his or her company is exposed. Clearly, assessments that have already been made need to be accounted for. Additionally, the actuary will need to make a decision as to whether any reserves should be established for assessments that have not yet been made, but have either been announced or are likely. Projection assumptions should also recognize the possibility of reinsurance program assessments.

Minimum Loss Ratio Refunds -- Some states are requiring "return of premium" or "refund" programs based upon a statutory minimum loss ratio. For example, New Jersey is introducing a 75% minimum loss ratio requirement. Any carrier whose loss ratio for any plan in any calendar year is below 75% will be required to refund premium until the minimum loss ratio is attained. A reserve may need to be established to the extent that such a refund is required or is expected.

Risk Adjuster Premium Redistribution -- Another health-care reform item of which the valuation actuary needs to be aware is that of "risk adjusters." Risk adjusters are generally demographic or health status characteristic factors for an in-force block of business which measure the risk of the carrier's business relative to that of other insurers. They will be applied to determine a redistribution of premium among the carriers. The actuary should learn what the risk adjusters are for a given state, how they will be determined and applied, and how the premium redistribution is to take place in terms of timing, amounts, and methods. A reserve may need

to be established to recognize the carrier's liability for this redistribution or, alternatively, a reserve credit may be recognized to the extent the carrier will receive additional income from the redistribution. In either case, the actuary should be aware and consider the impact of risk adjusters in the reserves and in his projection assumptions.

Adequacy of Asset Determination

Under the new valuation standard, the appointed actuary is required to opine on liabilities "in light of assets" supporting the business. Although the investment income component of small group medical business is generally small relative to the premium, benefit, and expense components, we must still meet this requirement.

One way to fulfill this requirement is to use cash-flow testing and project the asset cash flows as well as the operational cash flows. However, because the obligation risk is of key interest and typically there is not substantial dependence on investment income to meet policy and contract obligations, other methods are acceptable. In fact, very few carriers used cash-flow testing for this type of business for their year-end 1992 work.

In making a decision on whether to use cash-flow testing or not, check the operational cash flow. Often the operational cash flow is more than adequate to cover claims and expenses. But keep in mind that this is to be done for in-force business only and not supported by the expected cash flows from future new sales. If the operational cash-flow projection is positive or near break-even, cash flow testing of assets may not be necessary, and estimated invested income can be projected using less sophisticated methods.

However, the assets allocated to the small group business should still be reviewed for appropriate duration, liquidity, quality, and yield. The actuary should make sure that junk assets or inappropriate assets have not been allocated to this line of business. It should also be noted that, if the operational cash flows are healthy, as they often are, it is quite acceptable and is often the case that the investments are of slightly longer duration than the claim runoff. But the relationship should still be reasonably close.

Methods of Testing for Reserve Adequacy

Actuarial standard of practice No. 22, No. 5, and No. 14 discuss various methods of testing for reserve adequacy. It is widely recognized that the obligation risks (or C-2 risks) comprise the major risks for small group medical insurance and that the investment risks are of lesser concern. Because of this the need to use cash-flow testing is not generally as great for small group medical business as it is for life insurance and annuities. Clearly, it is a method that can be used, though, and, in some cases, should be used. Several methods that are currently being used are the following:

- Cash-flow testing
- Gross premium valuation
- Reliance on premium review work (i.e., Rate increase analysis work)
- Reliance on the corporate financial plan work
- Claim liability review work

I have seen carriers use two approaches to their gross premium valuations. The first is a "scenario testing" methodology in which the gross premium valuation is performed for several different sets of moderately adverse assumptions. The results under each set of assumptions are then reviewed to see if additional reserves are needed.

The second approach I call a "break-even demonstration" method. For this approach, a set of assumptions are found that result in a break-even projection or slightly positive results. The actuary then demonstrates that the resulting underlying assumptions are much more adverse than any likely to occur.

It should be noted that, although the claim liability is usually the major reserve to establish for small group medical business, there are other risks besides claims. Premium adequacy is also a key risk as discussed earlier. In today's regulatory and competitive environment, a carrier cannot simply increase its rates or terminate its business at will without serious business or legal repercussions. This makes the job of the valuation actuary all the more important for this

business. Question 7 of the practice note Part 3 provides a list of many of the obligation risk considerations the actuary should make in reviewing this business.

Finally, the appointed actuary will need to justify and document his reasons in the actuarial memorandum that accompanies his statement of opinion for using the method(s) that were employed.

How Long Should the Projection Period Be?

There were differences of opinion among our practice note work group concerning the appropriate length of the projection period to use for cash-flow testing or for a gross premium valuation. One person thought 12-18 months would generally be sufficient because of the short duration, the volatility of the business, and the ability to change rates. Others thought three to five years would be more appropriate, particularly because of the need to model the phase-in of various health care reform legislation. The practice note draft currently states that the projection period should probably be no longer than three years. There was concern that substantially longer periods might introduce too much uncertainty into the projected results and cloud potential early projected-year problems.

Conclusion

In conclusion, I ask that you read the Small Group Medical Practice Note thoroughly, consider the ideas and practices presented in it, and provide your comments and criticisms of the note to me or one of the other working group members. The other members are Ms. Karen Bender, Ms. Marla Cellucci, and Mr. Lou Vedros. We look forward to hearing from you.

MEDICAL PRODUCTS
INDIVIDUAL MEDICAL PRACTICE NOTES

MR. THOMAS J. STOIBER: Most, if not all, health actuaries today would probably agree that the magnitude of future claim costs is the most volatile under medical-type insurance policies than under any health insurance product type. Most would also agree that for health insurance products, the obligation category risk, i.e., C-2 for those technically up-to-date, poses the largest solvency risk, of which morbidity without question comprises the largest part. However, all this does not necessarily mean that medical-type insurance products present the highest risk of solvency. There are other factors that play on that risk, namely the ability of the company to react to future adversities. This is where medical products have an advantage over other health products. Under most medical products, the company has the right to adjust premium at almost any time losses become excessive, where the losses generally are not long-tailed in nature for those that occur before the company has the chance to take rating action. Individual medical products have a little less advantage than group medical products have because of their obligations to stay in force many years more than a typical one-year term for group (usually renewable to Medicare eligibility age), and the more restrictive regulatory-based reasons to implement premium rate increases; however, they still retain more of an advantage over other individual health insurance types, like disability income and long-term care. These, like other individual products, generally are less volatile in claim costs, but a claim may take many years to run its course without the company having any recourse to finance adverse experience outside of surplus. While all these complicating characteristics make the case to examine reserve and asset adequacy analyses practices on individual medical products separately from other health-insurance-type products, there is one more relevant concern that strengthens that case further. The nature of individual medical insurance plans makes compliance with minimum reserve standards look easy for all other health insurance products. It is the only type for which contract reserves are required (particularly those following the NAIC model type regulation), and no morbidity table basis exists. So even those who feel their company does not require an adequacy opinion by the actuary, simply a compliance opinion, there are many issues that are not clear among practicing actuaries. That is why we feel the development of a practice

1993 VALUATION ACTUARY SYMPOSIUM

note unique for individual medical products is very timely for all valuation actuaries dealing with these product types.

This messy nature of the individual medical product in regard to adequacy of the reserves was clearly acknowledged in the development of the minimum standard reserves passed by the NAIC a couple of years ago. Ask the AAA Liaison Committee to the NAIC on the subject who developed this approach. Ask Bill Bluhm, Paul Barnhart, and Bill Bugg who headed that committee at one point or another, as to how much of their time was spent over the two-year development period on the topic of individual medical. I was a member of that committee during its development stages, and I can say that more than 90% of the time debating the issue of minimum reserves centered on the peculiar nature of medical products, particularly the individual or pseudoindividual types. Even now, only three states have adopted the standards, so that surely gives evidence as to how complicated the nature of this product makes the effort to establish the right, adequate reserve.

Some actuaries consider an individual major medical product as a series of annual renewable term products to age 65. Other actuaries consider the product more along the lines of a term life insurance product where premium rates are stepped annually to age 65. This latter view is not so uncommon in the world of those familiar with disability income insurance, while the former is common with those familiar with large group medical insurance. Then there is the view that any individual health insurance product that is not noncancelable can never be considered a surplus or reserve adequacy risk because a company retains the right to pay for future claims entirely from future premiums, thereby not requiring the contract reserves, even those that actuarially are attributed to past level premiums. Medicare Supplement policies are good examples of this. Since there are no cash values, or written contractual guarantees, to prevent a company from sometime in the future changing from a level premium structure to one of annually renewable term, the question arises as to what is the correct view for reserving the Medicare Supplement product. Can it be described as a level premium lifetime policy, or is a better description one that calls it a term product renewable for an indeterminate time, renewable for life after the end of that term?

We found in our effort to build these practice notes that practices regarding adequacy of reserves depended much upon the actuary's viewpoint of the product. It influenced how an actuary in practice establishes reserves adequate to cover future obligations. We also found that in some instances there were no commonly accepted practices to a single issue.

The purpose of this presentation is not to summarize the draft of the practice note. The full copy of the practice note on either individual major medical or limited medical policies is not so long that it would be difficult to read. My purpose also is not to educate or inform you of any right or wrong practices to the establishment of adequate reserves and assets. While I may make some personal judgments here, if we did our assignment well, you should not find any judgments in the draft practice notes themselves nor in the final version. My purpose is to open up a discussion of the issues, particularly those in which a variety of practices occur for a single issue. Ultimately, via such open discussions as this, we collectively as a profession will be able to provide good guidance to make those readers of the practice notes more comfortable in signing a Section 7 or Section 8 opinion (of the NAIC model regulation to the model Standard Valuation Law).

Note that I used the word *comfortable*. I did not use the words *safe harbor*, although I've heard that term used in earlier presentations at this symposium. I don't like to call these notes safe harbors because they are intended to be a listing of practices that are commonly utilized. It may be after further evolution, such practices will be deemed inappropriate. The actuary needs to use his or her professional judgment on interpreting which practice, if any, is "right" for his or her situation.

For the rest of my presentation it will help to keep three phrases in mind: reserve adequacy, asset adequacy, and minimum reserve compliance. In forming a Section 8 opinion, the appointed actuary is staking his professional license, at least his or her right to be "qualified," on the adequacy of reserves and assets signed off on. That means to me that the actuary is stating that there is enough money on hand along with future premium and investment income to meet all the future obligations called for in the policy contract on the part of the insurer, and

1993 VALUATION ACTUARY SYMPOSIUM

that money will become available in a timely and undiminished fashion. This latter phrase refers to the asset risks commonly identified as C-1 and C-3 risks. This is not an easy task given the nature of the individual medical product. Some may say that I'm wrong, that in fact it is a very easy task because of the insurer's unilateral right to change premiums or ability to nonrenew the business.

Similarly, in forming Section 7 opinions asserting to compliance with minimum standards, the appointed actuary is faced with a comparably difficult task. This is the case because the formula to comply with minimum reserve laws is a very difficult one to apply, much more so than for other forms of individual life and health policies and, for that matter, group health plans. I will get into more of the reasons for that later.

Before delving into a more detailed discussion, I want to make sure that everyone understands the scope of the remarks made in this presentation. My remarks refer strictly to medical products of the individual nature, not necessarily to those meeting the legal definition of "individual medical" products. I am speaking of all products sold, solicited, issued, underwritten, and otherwise treated as individual products. This would then include the "fresh air" breather trusts and association-type policies where certificates are sold and otherwise treated like individual policies.

The individual medical practice note working group had its most difficult time dealing with multiple practices for a single issue. One particularly troublesome issue of this kind was the selection of the period over which projections are being performed. We found that practices varied widely, depending on reserve components (premium reserves, claim reserves, and contract reserves) and the type of methods (gross premium valuation and cash-flow testing) used by the company.

I have categorized the components and types of methods by application into either Section 7 or Section 8. Remember that Section 7 deals with minimum reserve compliance, while Section 8 deals with adequacy. Unless stated otherwise, compliance in this discussion refers to the latest

NAIC minimum reserve standards for group and individual health insurance. While these minimum reserve standards have only been passed in three states, they are very important for a number of reasons. The Standard Valuation Law calls for an opinion to be based on laws in the jurisdiction where that business is located. That means, if one is working for a company that is not domiciled in one of these three states, but has business in them, the company will need to comply. More important, however, is that in those 18 states that have essentially no minimum reserve standard on the books, or those that have just a general one, such as only gross unearned premiums, the actuary probably will feel most comfortable by reverting opinions to practices and principles stated in the NAIC reserve models. So it is important that the actuary understand the implications of the latest reserve standards even though they may not be passed in all but a few states.

Those items I listed under the category of Section 8, are applied more often to reserve and asset adequacy analyses than to compliance through the two most common methods in use: the cash-flow-testing method and the gross-premium-valuation method. The gross-premium-valuation method overlaps with methods in the Section 7 category because, under the minimum reserve standards, it becomes the ultimate umbrella test for the sum of the other three components: premium reserves, claim reserves, and contract reserves.

I won't spend a great deal of time on premium reserves and claim reserves because these, for the most part, did not involve multiple practices for a single issue. For example, in our troublesome issue of projection periods as it relates to the calculation of premium reserves, the practices are fairly consistent by company. The period chosen considers both grace period and premium mode. We likewise found that selection of projection periods for claim reserves are fairly consistent by company. Actuarial practices on the subject of claim reserve adequacy is well-discussed in actuarial literature and probably doesn't require a whole lot of discussion at this juncture. That brings us to the third item, contract reserves. Some of you recognize this more under the name "additional active life reserves." This was the most controversial of all the items we discussed.

1993 VALUATION ACTUARY SYMPOSIUM

Considering only the issue of projection periods for now, our working group identified what factors seem to most commonly determine the projection periods for contract reserves. We concluded that there generally are two of them, one is the obvious, renewability, and the other is pricing. By renewability, I'm referring to the limits of the contract's renewability provision. For example, individual major medical and hospital indemnity products may generally be renewed to age 65, while for short-term travel accident, it might only be one year.

The most important consideration in the determination of projection periods is the one relating to the pricing period. I've listed four practices that address the various considerations. Under one practice, projection periods are not deemed applicable because contract reserves aren't calculated. We've found this to be the practice when the business is priced under a one-year group/aggregate method. This is the method where companies look at their costs for the following year, considering new business and termination of maturing old business. This method is very similar to that used in group, and for individual pricing used by some Blue Cross companies and some large commercials.

Another common practice also called for ignoring projection periods as an issue, the reason being the same as under the one-year group/aggregate method: contract reserves are not required. This is the approach used by companies using pricing methods similar to calculating life insurance policy premiums; however, the term of the contract is initially set to cover only the cost for the first one, two, or three years, recognizing only the limited underwriting selection period. Premium rates in policy years after that are assumed to be set equal to the costs in each future year, duration by duration. The reason that no reserves are necessary, even though the company may be spreading the cost of durational morbidity over the first three years, is because the minimum method of calculation allowed under the NAIC minimum is two-year preliminary term. Under such a method, terminal reserves in the first two years are zero, and for a term product of three years the final terminal reserve, of course, is also zero.

The rationale as to why no projection period, or reserves, are set for these first two practices relies heavily on the key fact that renewal premium rates for any given renewal year are

assumed to be set exactly equal to the claim costs for that year. Premium rates for each renewal year are set so that they exactly cover the cost in each corresponding future year, no more no less.

A third practice is one where a projection period is provided for. The practice calls for a projection period which may be as long as the lifetime of the product. This practice seems to be most common when the premium rate calculation method intentionally sets the scale of premiums by duration to be either level (ignoring trend for this discussion) or sloping at a lower rate relative to the slope of the claim costs by duration. The developers of the NAIC minimum reserve standards coined the term *levelized*, for this type of premium scale calculation. The levelization period could be less than the policy's lifetime because an actuary, like in the previous situation, could just levelize premiums over a limited period and then rely on renewal rates to cover renewal costs on an annual renewable term basis after the expiration of that limited period.

The problem in determining whether this practice is appropriate is sometimes very difficult, because it is difficult to determine exactly what pricing period is, in fact, in place. For example, it may be that a company marketing executive determines rates by simply targeting a large company's premium rates and undercutting them by a few percentage points. The appointed actuary needs to determine what the pricing period is before selecting an appropriate projection period for reserve or adequacy analyses. The policy contract may give a clue as to how level the premiums are and for what length of time, such as when the policy states rates will be based on entry age. However, even at that, there is no contractual guarantee that renewal rating might become other than level in the actuarial sense.

In some cases the lifetime of the products being valued is used for the projection period. This is most commonly used when the product is priced with a true level premium scale (other than for trend).

1993 VALUATION ACTUARY SYMPOSIUM

While the practices I've discussed so far refer to the projection period for the calculation of contract reserves, one must recognize that, under the new NAIC minimum reserve standards, contract reserves, in combination with premium and claim reserves, are subject to a gross premium valuation test, particularly if one is suspicious that renewal rates may be deficient. Application of a gross premium valuation as compliance to valuation laws (Section 7 requirements) overlaps as one of the most common methods used in forming a Section 8 opinion.

Different from our observations on premium reserves, claim reserves, and contract reserves, we concluded that practices in selection of projection period considered numerous factors common to the methods of gross premium valuation and cash-flow testing. Following is a list of factors that seem to influence how companies are selecting in practice the projection periods for the two Section-8-type methods: gross-premium valuation and cash-flow testing. I've attempted to list these by how common the consideration is. The factors seem to be primarily influenced by the regulatory environment, competitive pressures on renewal premiums, and company management rating philosophy. For instance, under the regulatory environment, the approval experience on premium rate increases by state may determine what the projection period should be. If for example, in Florida, the company has been consistently experiencing a lag of one or two years in being granted a rate increase that the actuary feels is adequate for the renewal period, even though the company is setting premium rates under a one-year term-pricing approach, a projection period of more than one year is probably appropriate. The projection period selected probably should extend through the period of lag. Of course, if that is your only problem state, and Florida business does not represent a material part of the company's overall population, then the need to project beyond the basic pricing period may be trivial.

- Regulatory Environment:
 - Approval experience
 - Loss ratio restrictions
 - Loss ratio guarantees
 - Premium refunds
 - Community rating

- Competitive pressures on renewal prices
- Management rating philosophy
- Materiality:
 - Medicare supplement -- 5 to 10 years
 - Dread disease -- 20 to 30 years
 - Short-term travel accident -- 1 year

Loss ratio restriction is another instance of regulatory influence being considered by actuaries in setting projection periods. Situations exist where blocks of business have had very good claim experience and therefore good cumulative historical loss ratios. In such situations, the company may currently be experiencing a period of high losses, possibly in the 80%, 90%, or even the 100% range. Unless the company had the forethought to predict this sequence and therefore fund for it, leading to a contract or gross-premium-based reserve, the company might be precluded from getting a rate increase on grounds that the company's low anticipated lifetime loss ratios may fall below the minimum to justify one for years to come. This restriction on the ability to provide future rates adequate to cover the future cost, at least in the immediate future, means that the projection period must be beyond a few years to recognize the period of deficiency.

Similar to the restrictions that can come about due to loss ratios, we have seen lately some state laws passing legislation taking that one step further, exchanging the filing approval process for minimum loss ratio guarantees. With such legislation a company is to take "corrective action" at a certain period of time if it appears that loss ratios may not exceed a minimum prescribed level. One of the corrective actions may even be a refund. The projection period may then recognize the period through which the corrective action is to occur.

With the adoption of federally required refunds for Medicare Supplement business, the issue of refunds as it relates to projection periods become a real issue to deal with. It is ironic that the extra complication to compute the refund amount, or demonstrate its lack of need, actually makes selection of a projection period easier. Within a year after it is determined that loss ratios

fail to meet minimums, refunds are to be made. This precludes any possibility that cumulative and lifetime loss ratios will fall below minimum anticipated lifetime standards, thus future rates are unlikely to be restricted to levels insufficient to pay future claims with the existing reserves. The projection period for the refunds might then be set at just one year beyond the valuation date. This, in practice, is a relatively minor point, since most Medicare Supplement policies have premiums levelized in some form, causing projection periods to be selected beyond the refund period anyway. How the refund requirement is factored into a gross-premium-valuation or cash-flow-testing calculation, however, is another matter, adding a great deal of complexity to it.

Community rating is another regulatory influence in the choice of projection periods. If one believes, as I do, that community rating might lead to antiselection spiraling of claims relative to premium (because it is difficult to set the community rate at a proper level when there are incentives for younger, healthier people to leave), one needs to use judgment to determine how long the antiselection period, and thus the projection period, might be. Unfortunately, community-rated business for individual health insurance is rather new, so there are not a whole lot of practices out there on which to report.

Along with the regulatory environment our working group identified competitive pressure on renewal prices as another factor that influences what projection period is used in practice. If the competition of the business a company is valuing is charging premium rates significantly lower than the renewal rates charged by one's own company, the situation arises where adverse lapsation can occur. Younger, healthier individuals may be prone to lapse creating a cumulative antiselection claim cost spiral. As is the common thread in all of the factors, the spiral leads to the potential that future premium rates will not be adequate to cover obligations on existing business. That means the selection of a projection period becomes a function of the period of time for which the actuary believes the antiselection will continue.

Another fact we identified which influences the selection of a projection period is related to the competitive pressures factor. It is what I refer to as management-rating philosophy. Instead of

renewal rates being high relative to competition's new-business rate, management may adopt a philosophy setting renewal rates the same as new-business rates regardless of what may be poor experience on older business at such rates. The need to keep rates at least close to the competitors' of the marketplace might mean the company is willing, possibly for a short time, or maybe longer, to retain business even at inadequate levels. In the case where the actuary believes such a management philosophy (that it is acceptable to carry a losing block of business) is being practiced, one needs to consider the philosophy in determining how long to set the projection periods.

In practice, materiality is almost always factored in for the determination of projection periods. We find that in practice some companies are setting Medicare Supplement projection periods from five to 10 years even though the potential is that the product liabilities and obligations could run 30 or more years. Another example is the practice on dread-disease policies, where the premiums are generally quite level and benefits more defined. Twenty- and 30-year projection periods on these are not uncommon. On the other extreme, policies, such as short-term travel accident, provide an example where only one year is the most commonly selected projection period.

There is another area I would like to cover in which our working group found multiple practices occurring on one issue. That area concerns choosing the sensitivity testing level on actuarial assumptions in the calculations that support the opinions. I've listed below a few of the assumptions. As before, these are in order of importance:

- Morbidity
 - Base cost
 - Trend
 - Durational (selection)
- Lapse
- (Expense and interest)

1993 VALUATION ACTUARY SYMPOSIUM

I've broken down morbidity into three components, the first being the base cost. The extent to which the company has performed morbidity studies and the volume of homogenous data that underlie the studies normally determines the degree of sensitivity tests the company performs on the base cost. The company that has been in business a long time and has a lot of experience on a product that has not changed very much over the years might test 5 - 10% variances. On the other hand, those that have not had much experience, or have recently installed untested product features, might try varying costs between 10% and maybe as much as 25%.

The trend component is the most important component to test for sensitivity. The experience the company has on the product will go a long way in determining what sensitivity tests are appropriate on trend. Any new major features, such as PPOs or other managed-care concepts, recently added to a product line may be a reason to test sensitivities of larger magnitudes. For example, if one is projecting at a 15% annual trend, one might try a sensitivity test with 20%, or possibly 25% if the product does not have a proven history with the company.

Let me point out that I could have listed another assumption that goes hand in hand with trend. That is the assumption of future premium rate increases. However, this is not an independent factor, and I don't believe it should be tested independently. For example, it makes no sense to test a very low premium rate increase risk if one is testing a very high trend assumption. If one believes that trend may be very high especially over a period of more than one or two years, it is an unlikely scenario that the company would not pass along a corresponding high rate increase. In a way, the risk that trend changes would diverge significantly from premium rate changes is immunized. There would be little value, except as an arithmetic exercise, to routinely vary both trend and premium increases independently.

The third component of morbidity has to do with the durational, or selection factor, influence on morbidity claim costs. The degree of sensitivity tests would be commonly determined by the same considerations that one chooses sensitivity tests on the base claim costs component.

Lapsation is another important assumption, at least we first thought. In trying to ascertain what the practices are out there, we've had a difficult time. For an unexplainable reason a 50% variance in lapsation seemed to be an acceptable practice. One plausible reason that comes to mind is the fact that the risk of loss on the products like major medical are not as nearly as sensitive to lapse rates as they are to the much more important assumption of morbidity.

It is not that the assumptions of expense and interest aren't important, but variations to these assumptions impact the overall obligation and asset risk in such a much smaller amount than morbidity and lapsation, that the necessity of performing these is almost nil, at least in the case of the typical individual major medical product. However, for products in which the premium is relatively level and liability tails much longer than major medical insurance, such as in the Medicare Supplement, the level premium hospital indemnity, or dread-disease type policy, this may not be true and in fact it may take on a higher importance.

In summary then, let me say it is not a simple matter to sign an opinion under Section 8 or Section 7 in the model regulations for individual medical products. For Section 7 opinions, the contract reserve rules are not clear for the individual medical type of product, because we find them to be a function of a pricing period that is not concretely defined. If there is any suspicion that future premium rates may be inadequate, a gross premium valuation is required. That in essence may require selection of projection periods outside the normal scope of formula-based reserves, commonly anchoring minimum reserve laws. Given the degree of reform that is occurring around the country, that suspicion is probably as high as it has been in recent years.

Section 8 opinions have made it no longer acceptable for the valuation actuary to rely on the fact that he or she complied with the minimum reserve rules, unless of course the appointed actuary is extremely comfortable, and able to demonstrate that future premium rates, in fact, will be exactly adequate to cover future claim costs. While this reliance might be common in group medical insurance, it is becoming increasingly less appropriate for individual medical insurance.

HEALTH PRACTICE NOTES REQUEST FORM

The Health Practice Notes for the Appointed Actuary were sent to all members of the Life Financial Reporting Section in January 1994.

If you are not in the Life Financial Reporting Section but would like a copy of the Health Practice Notes, please send this form to: Christine Cassidy, American Academy of Actuaries, 1720 I Street, NW, 7th Floor, Washington D.C. 20006

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