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THE HEALTH VALUATION ACTUARY

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Recorder: ALAN R. HOLCOMB

- Group medical
  - -- Actuarial Standards Board
  - -- Reserving for extension on termination
  - -- HMO reserving methods
- Individual medical -- active life reserve issues
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    - Changing reserve bases
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    - Products/risks
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MR. NORMAN J. ZWITTER: Our first speaker will be Darrell Knapp. Darrell is an actuary with Ernst & Young in Washington, D.C., and prior to that was with a group insurer in the financial reporting area. Darrell will be speaking on topics of reserving for group A&H products and on some of the new issues that have come from the Actuarial Standards Board (ASB) standards, and particularly on extension of benefits in group coverages. He will also talk briefly on reserving for HMOs, which is a new topic for the health actuary.

Our next speaker will be Tom Stoiber. Tom is an actuary with Time Life in Milwaukee. Tom will be talking about active life reserves for individual health products, particularly the new NAIC standards for setting up active life reserves. Tom was on the NAIC Committee that developed these standards, so I think you will get some valuable insight.

Our third speaker will be Bob Laux. Bob is an actuary with UNUM Life in Portland, Maine. Bob will be talking about some of the new reserving NAIC standards for reserving LTD products, both individual and group, and how you analyze those blocks of business and reserve for them.

Finally, I am Norm Zwitter. I'm an actuary with CNA Insurance in Chicago, and I'll speak briefly about reserving for long-term care products.

MR. DARRELL D. KNAPP: In terms of looking at the health valuation actuary on the group liability side, given the general short-term nature of the liabilities, my presentation is going to concentrate primarily on the liability side and more or less ignore the asset position. This isn't to say that there aren't important questions on the asset position. It's just that in a short presentation, we've got to decide what topics we want to cover.

I think one of the most crucial questions faced on the asset side right now is how different companies are doing their cash flow projections. Given that almost all of the medical insurance liabilities run out within a very short period of time, instead of holding your cash flow in a position to exactly fund those liabilities, to what extent is it acceptable to assume future premiums coming in or maintaining a given level of liability? That seems to be a big issue, and the people we've dealt with haven't had a lot of clarity as to how they want to approach it.

In preparing for this session, I did a survey of a few companies that we have at Ernst & Young as audit clients and of a few other people that I know in the business to see what their practices are. I also went over the actuarial standards of practice and where this topic fits into that. I feel that the document that the ASB put together gave a good outline of these topics, so I'm going to follow that. In addition, I hope to cover some differences and similarities that we find in looking at HMO valuations.

One thing that I'd like to give those of you who have further interest is a couple of recommended readings. One that should be an absolute must on your reading list, of course, is the ASB Recommendations & Interpretations concerning the health care liabilities; the second is a paper in Volume 41 of the *Transactions* by Mark Litow on modified development methods for deriving health plan reserves.

In addition, I believe it was Chuck Fuhrer who put together an extensive bibliography on reserve development methodologies, primarily from the property and casualty side of our profession, dealing with the type of questions that we look at in terms of the health plan liabilities.

One of the interesting things about being audit support to several companies is you get to see their reserve methodologies, and they are much more diverse and creative than I would have ever imagined before starting to work with Ernst & Young. The most common methodology that we see is some sort of standard utilization of claim completion factors to project unpaid claims. Then that's coupled with a projection of recent months based on some sort of exposure basis, be it premiums, lives, or something else.

Important considerations to look at in developing that methodology include a thorough understanding of the claim coding procedures. It's essential that you understand exactly what those procedures are and how the definitions are set up. This includes definitions of such things as paid date and incurred date. You would be surprised by the creativity involved in what you would think is a fairly definite date. What is the amount paid? This gets into how the claims are handled with respect to void checks and refunds and how all that information goes in. Exactly what is a claim -- is it one episode of care, is it one check to a provider, or exactly how is a claim defined? Try to understand the whole processing methodology, as well as the methodology of tracking claim processing backlog.

Another important consideration is understanding the seasonal patterns. What's frequently discussed is the seasonal pattern of claim incurrals, but you also will find a strong seasonal pattern in the actual payment of claims. Both during the summer months and during the holiday period in November and December you find, and it's quite obvious when you think about it, that you've got a lot of people off work. You

have a fairly significant slowdown in the actual claim processing, as well as in the more widely known incurral patterns. Of course, you've got to have a thorough understanding of the plan provisions and any plan changes that you may be dealing with.

In order to try to organize this whole presentation, I'm going to go through the actuarial standards and recommendations as put together by the ASB. Their first recommendation was that the liability should include a provision for both reported and unreported claims. They allow it to be done either separately or combined. In our survey, we found that most of the carriers using a completion factor development method developed their reserves combined, and then they split out, to the extent that they wanted to do so, reported from unreported. They did it either by defining reported as what's in the door and unreported as one minus what's in the door, or else they did an even more arbitrary split. They just said that, out of their total reserve, X% was going to be reported or unreported. I think that under the completion development method, it's an arbitrary split.

Their second recommendation was that the liability should recognize plan provisions and practices. This includes interpretations of the contract, administrative practices, and regulatory requirements. This is a fairly short recommendation, but I think there's a lot behind it. In terms of looking at interpretations and the administrative practices, you need to recognize any plan changes or administrative changes during the experience period, any benefit changes, or any changes in counting the work flows.

Here are a couple of areas where we've seen big misses on the development of reserves. One was by a carrier that brought in a new computer system, and it caused a big discontinuity in the whole development of the claim patterns. They tried to use the same development that they had used previously and had a fairly significant miss because of the extended time of claim payment that was caused just by the transition process to the new system. Another miss we found was by a carrier that had made an administrative change in the way they counted the work flow and the backlog. They made the same adjustment for backlog without knowing that they had made a change that essentially created a 40% increase in the count for the same number of pieces of mail. They just increased their reserve by 40% because they were splitting the claims before they counted them as opposed to after they counted them. They created a big miss on the reserve when they went back and looked at it.

Another thing that comes in under this recommendation is to define the incurral date as the point the claim actually becomes a liability of the plan. This brings up what is probably the most contentious issue that we discovered, and that is, reserving for extension of benefits liability.

By the extension of benefits, I'm referring to the plan provision that basically says that if a person is disabled as of the date of plan termination, that the carrier has a liability for that disability for some period of time. We found that the practices for this were really all across the board. We found only one carrier that was explicitly including it in the definition of a claim. By that, they instructed their claim examiners to code the incurral date to be the first date of disability for every given claim. As an actuary trying to deal with this issue, I always felt (fairly naively from sitting behind my desk and looking at

computer runs) that is obviously the way you should do it and would produce better results for an actuary to use.

When you get into real operations and you suggest to the claim managers that they try to go back and figure out what the first date of disability was, you find a whole different story. I think that, practically, you are going to have the coding be a service date and as an actuary, you are going to have to try to make some adjustment.

Another method we found was that carriers were explicitly including an add-on to their reserve that they had developed through completion factors. The add-on was, I think, in the range of 1-5%, so there wasn't a great deal of science to the whole thing; it was a recognition of some liability. The carriers that had studied it indicated that what they tried to do was look at, as a percent of the total claims that they paid on a group the year prior to termination, what claims were paid after termination. The ones we talked to only did the study for groups that actually terminated. So even for some large carriers, it was a small study over a long period of time. I don't think anyone that we've talked to has great numbers.

What we commonly found in the Blue Cross/Blue Shield plans, not uncommonly in insurance companies, and almost always in HMOs, was just no reserve, and it was for one of two reasons. Either they didn't recognize the liability, or they made the argument that since in the majority of cases they would get increased premium for the liability, they had a better match of revenues and expenses by putting it in the period where the service date actually was.

Then we had one very interesting carrier that made an explicit exclusion, and by this, I mean that they did a study. Their scheme was to code, for a hospitalization, the first date of the hospitalization as the incurral date. Likewise, for a series of physician visits, they would code the date of the first visit as the incurral date. They studied all of the claims that had a service date in one month, how much of those expenses were actually incurred in the following month, and then they made an explicit adjustment to their reserves to take those dollars out and put it into the next month. I think that the adjustment worked out to be 25% of one month's hospital charges and 4% of one month's physician charges that they moved from December, in a year-end instance, into January. That was an interesting approach. I'm not sure I agree with the concept.

As you can see, the practice we saw was really all across the board. Being from Ernst & Young, I guess I have to try to look at this from an accountant's viewpoint also. The accounting rules essentially say that you need to recognize the liability when two things happen. One is when it's probable, and the second is when it's reasonably measurable. In terms of incurred but unreported claims, an extension of benefits liability is as reasonably measurable as the other side is. It's all pretty much of an estimate.

Then in terms of looking at the probability, I like to look at it as a decision tree; you've got a disabled claimant out here and you've got one of two things that can happen. Either the policy remains in force, and then you've got the liability being active; or the policy terminates, and you've got the claim liability under the extension of benefits provision. The obvious conclusion from that is that the liability is certain. So in terms

of looking at the accountant's rules, I think you could reasonably conclude that you've got to show some sort of liability because it's both probable, and under our definitions, reasonably estimable.

I liken the question in this issue, for those carriers that are either not setting up a reserve or explicitly excluding it, to the question that the entire industry is looking at in postretirement benefits and having to set up a liability. It's a big number, or not that big a number, but it's a number out there that's going to impact your bottom line. You don't necessarily like it, but I don't think that you can really deny that the liability is there.

There is one other thing that we found at a few organizations -- at the end of the year, there is an added problem to claim coding. Say somebody goes into the hospital on June 28 and stays through July 4. I think that the most common thing would be to code the incurral date as being June 28, and therefore, that whole claim will show up as a claim incurred in June. However, in a lot of systems, in order to deal with calendar year deductibles and calendar year stop loss, that happens all during the year, except in December where they actually break up the claim. If someone goes in on December 28, they will code three days worth of claims to December and then set up a new claim in January. So you may be even increasing the problem by that method, because you aren't getting the people that were actually in the hospital through the whole time.

The next recommendation from the Society is in regards to data requirements and assumptions. It talks about data and assumptions that are required regarding claim history, exposures, claim filing and processing, and so on. It's got a long laundry list of the data you've got to have and the assumptions you've got to make in terms of setting the liabilities. It does allow different assumptions to be used for different purposes, which I think gives us some freedom as actuaries to recognize that there may be more appropriate assumptions, depending on what we're looking at.

We found in our survey, in terms of different assumptions, that a lot of carriers were using some sort of an explicit margin built into the claim reserve. Probably the majority of insurance carriers, half of the Blue Cross plans, and a minority of the HMOs were using some sort of an explicit margin added on to the most likely guess on the reserves. That's great for statutory. In fact, I think that state regulators would probably prefer seeing some margin there. For GAAP requirements, there's more of a concern in terms of the true GAAP adjustment that they would look for -- the best estimate as opposed to having a margin. So there is some recognition of allowing for different assumptions.

Another requirement, and this gets back to the extension of benefits question we talked about earlier, is that the claim incurral date has to be reconciled to the contract. This is not necessarily the claim incurral date that comes out of your claim expense system.

The recommendations also require you to use the most recent data available, including any development since the valuation date. That suggestion seems to be obvious, although we did see one carrier that was setting their year-end liabilities by doing a thorough test of their September 30 liabilities and then rolling it three months forward based on exposure. It sounds like an obvious thing, but I think that this happens in

practice. The ASB tells us to watch the impact of large claims. They indicate that we can supplement plan experience, if there's insufficient data, first from similar programs, if available, or as a last resort we can use pricing assumptions for setting reserves.

Other recommendations include a recognition of trend and of exposure. These become important in the method where you're trying to project the most recent months' claims, and you need to make sure you recognize trend and exposure in the most recent months you project.

Although the ASB specifically required that there be some recognition of claim settlement expenses, our survey found there were several carriers that were not doing it. Most often, when there is some recognition, it is done by taking the unit cost of processing claims and multiplying that by the claim liability. You must set up some recognition of the fact that you actually have an adjudication expense, usually being somewhere between 2% and 4% of claim dollars, for the claims that you haven't yet paid.

The next recommendation is for follow-up studies, including reserve tests to evaluate and revise the methodology you have. Recognize that follow-up studies are also an effective management tool. Our survey showed that either people were doing them on a regular basis or they weren't doing anything at all. For those of you who aren't looking at reserve tests, I think that it's a valuable method of assuring yourself that your reserve methodology is working, as well as a good management tool. Six months later, you can pinpoint exactly what your incurred claims were in a given period, whereas looking at it now, it's fuzzy.

Then the last recommendation, of course, true to the actuarial profession, is to verify the reasonableness of the results. You've got to recognize that you're making a lot of assumptions through the whole plan, and once you get to the end result, you need to take a look at the reasonableness.

I'd like to tell you what we found about reserving for HMOs. Some of you, I'm sure, are doing regular reserving for HMOs. Others of you may be faced with it at some point in your career. Generally, we found that HMOs are most often reserved for using a similar completion factor development methodology with a couple of exceptions. The most common exception is that through utilization controls and concurrent review, they have a much better feel for what their incurred but unreported hospital days are. In fact, a lot of the HMOs we've dealt with can tell you at the end of the month what their hospital days are going to be for that month, with the exception of the few days they have in an out-of-area type of service. Given that they have access to that information, a lot of them are using some sort of a tabular method for doing their inpatient hospital claims reserve. They're calculating the historical cost per inpatient day for recent months and then multiplying that times the inpatient days they actually have outstanding, because they have strong evidence of exactly what their unreported claims are.

The second exception that we see in HMOs is that it's very important to consider the provider reimbursement arrangements. You need to be aware of any capitations or maximum limits that may be there. You obviously don't want to set up a reserve that shows claims greater than the maximum liability in the provider contracts. You also

need to be aware of any withholdable liability or refunds that may have to be paid to the providers, as well as any bonus arrangements payable. One of the difficult things in setting that up is that you get a chicken and egg type of problem. You've got to look at your reserves to model what the physician payments may be, but then the physician payments come back and may change what your reserves are. Every once in a while, if you've got a very complex plan, you may have to do two or three circular iterations before you come up with a reserve number that's acceptable in total.

Another provider reimbursement issue brings us back to the recommendation that you've got to look at actual practice, as opposed to the contract. We found that HMOs, in order to maintain provider relationships, will pay a withhold or a bonus to the providers when they don't have the legal liability to do so. If they feel that they let the providers down in utilization management, or for any number of reasons, they will actually give back a withhold when they don't have to. It's important when you're doing that reserve that you understand not only what the legal requirements are, but what is anticipated to be done in practice as well.

The extension of benefits question on the HMOs is going to come to the forefront this year. The American Institute of Certified Public Accountants made a specific statement of position that said you've got to set up a liability for GAAP statements recognizing the liability for benefits after contract termination. The most common extension of benefits liability in HMOs seems to be that, if someone is in the hospital, they will cover it to the end of the hospitalization. It's not the 30-day or one-year extension that's more common in the insurance environment, but a lot of the HMOs weren't even setting that up. They will have to deal with this specific requirement now if they're doing GAAP statements.

Reserves for claim settlement expenses are required for HMOs, because the ASB paper applies to HMOs as well. This is where the actuaries and the accountants can't get it together, though, because the accountants don't require a reserve for it. Every time I do an audit, I have to deal with our accountants on this. Basically we come to a point where I say it should be there, and they say it's not required. There isn't any consistency here, and most of the HMOs are going without any sort of claim settlement liability.

Our survey found that HMOs carry little or no explicit margin for adverse development of the claim liabilities, either.

MR. THOMAS J. STOIBER: I'm not a consultant like my counterpart here. I haven't had the opportunity to visit a number of other companies to examine their ways of doing business, but I have spent 90% of my professional career over the last 14 years dealing exclusively with the individual major medical business. Over that time, I've sensed a laissez faire attitude on my counterparts doing the active life reserves for individual major medical. The typical major medical plan that you see today, the type of health plan your neighbors talk about, is a policy where rates are changing every year, subject to inflation, with few inside limits. Generally, they're either conditionally renewable or renewable each year at the option of the company. Few of these policies are still guaranteed renewable.

So why do I say laissez faire attitude? Too often, actuaries say they just don't need these reserves. They cite the National Association of Insurance Commissioners (NAIC) models which have been passed in most states, which only require active life reserves on guaranteed renewable or noncancellable, and only if it's a level premium policy. That excludes the type of policy I'm talking about. For GAAP, it also has been ignored, maybe because it's an immaterial line of business, or because they felt they could default to the statutory law for major medical.

Today, that's really old-fashioned thinking under the new NAIC model that was passed a year ago. I know that it has passed in the state of Wisconsin where we're domiciled. That was last December, and I'm not sure where it stands in other states, but watch for it. Let me assure you that it was not the disability income tables that drove the NAIC model draft to receive more comments than any other model draft up until that time. It was the fact that, for major medical business, the regulators were concerned that there was not enough prefunding going on for something that should have been known -- that is, the deterioration of health over time.

Let's first establish whether there is a liability and under what conditions, and then I'm going to illustrate. First, when I say "reserve" or "liability," I'm talking about two different things. A reserve is the estimation or quantification of a liability. A reserve is a number, and a liability is another animal. The specific liability I'm talking about is the promise or obligation regarding the future claims that exceed the available future premium. When I say available, you might want to substitute the word net valuation premium or something like that.

So under the strictest examination of the product we're talking about, there really doesn't seem to be a liability. Certainly, there's no contractual liability because the premium is always going to be raised. Regulatory constraints which could create a liability really aren't very typical unless you're filing under guaranteed loss ratio standards, or the loss ratios are falling below minimum. Not too many people that I've talked to are having problems with loss ratios being too low on major medical business. It's usually the other way around.

I think we need to look at this in a broader context. What I've done is pulled something out of the NAIC model, which I'd like to read to you. This is important. It says, "Contract reserves are required for all individual and group contracts with respect to which, under the gross premium pricing structure at issue, the value of future benefits at any time exceed the value of the appropriate future valuation net premiums." It goes on to define the valuation net premium and says that as it's used under each contract, it must, "have a structure consistent with the gross premium structure at issue of the contract as it relates to the advancing age of the insured contract duration and period over which gross premiums have been calculated." Notice there's no reference to a requirement that it be guaranteed renewable or level premium. Instead, the determining factor under the new NAIC law is the relationship of the gross premium structure to the claim cost curve. That's the requirement.

Now, on the GAAP side, I pulled something out of the old audit guide which formed the basis of FAS 60, I believe. Here it says, "Costs are to be allocated to premium

recognized over the current and expected renewal period. Such reserves represent the present value of future costs, less the present value of expected future valuation premiums." Then it further says for "collectively renewable," and in the standards it defines collectively renewable as that type of policy which insurers can cancel by state if they wish, which is the type I'm talking about, "The estimation of future premium should, in some cases, consider the anticipated premium increases and their effect on lapses and anti-selection." These are familiar terms. This time, they add the word "should" to the definition.

Here is a typical example. You, the valuation actuary, know that your management intends to rerate the policy for trend. And you also know that since this business is being underwritten in the usual way, there is going to be a steep select curve. So you cannot allow the profits in the early policy years to fall to the bottom line at the expense of the later policy durations.

In fact, not only auditors say you can't do it, but consider Actuarial Standard of Practice #8. Although this refers to filing an addition, it also refers to financial projections for health plans, which you do when you reserve. Let me read from a section. This is a provision of that standard and relates to the requirement of consistency between the business plan and the assumptions used in the filing. Here it says, "The actuary should obtain a knowledge and understanding of the business plan for the health plans addressed in the filing." It goes on to say, "The actuary should be satisfied that the assumptions used in the health plan are consistent with the business plan." Now in the business plan, it says, "May include, but is not limited to," then it itemizes a few, and I've picked out the pertinent ones: "Expected characteristics of the insured population based on underwriting practices"; "Planned method of sale and renewal"; and "Expected timing and magnitude of rate increases."

Again, we see familiar terms -- "expected," and "planned," not what the contract requires as far as obligating payments. It's just not good enough to simply rely on the language of the policy any more when you're doing reserves on an active life or contract reserve basis.

In spite of all of this, there are still going to be arguments that say you don't need a reserve. Some of them are valid and some of them aren't. Let me go through the more common ones I hear.

One is that since this policy has gross premiums that vary by attained age, you don't need a reserve. Well, I think I've just shown you that's an oversimplification; you still need to satisfy yourself that there is absolutely no prefunding going on in the curve of the intended rate increases.

In fact, the only time you don't have to set up a reserve is when your pricing is on a pure select and ultimate basis. I'm sure that not many companies are pricing on that basis on the individual side, maybe even on the small group side.

One of the more difficult arguments to combat comes from one-year type pricing, group-type pricing, or community-type pricing, where a company says, "Here is our

experience based on our mix of business. We are going to charge the rate necessary to fund next year's liabilities on the whole aggregate group of business." In fact, the NAIC model originally had a specific exemption for this type of pricing, and in our discussions, we said, "Isn't this redundant? The mathematical calculation of this type of formula would give you zero reserves anyway. Why put it in there?"

Let me caution you that you have to be very careful if you run into one of these situations. In fact, ask yourself three questions. First, go through a test and say to yourself, "Are the rates in the first policy year of that contract exactly equal to the first year morbidity cost plus the higher expenses that you're going to have? Is the rate increase for the year immediately following that contract going to increase by more than trend?" You're going to have a wear-off of selection because you have mixed business.

If you're satisfied with that, ask yourself about the midyears of this program. "Is it the intent that the gains in the early policy years of this mix of business, along with their higher expenses, are going to exactly offset the higher losses in the later mix of business, along with their lower expenses?"

If you're happy with that, ask yourself the next question. "Is it the intent that you're going to rerate this policy after it closes off in those final years of a block (no block is infinite), and the rerate is going to be greater than the trend rate?" Because you're going to have no first year select business to offset the cost.

In fact, I'd worry so much about question three that I'd get it in writing from the manager who is responsible for pricing that is their intent -- to leap out of the business when you no longer have the select business. You might worry about question two a little bit, too, because there are some people who say that that's really not an appropriate pricing method. That talks about subsidy between policies within a group, but that's pricing, and we're not talking about pricing today.

My conclusion is that additional active life reserves are always required, unless you satisfy yourself that there's not select and ultimate pricing. The simple way to determine that is to take a look at your actuarial memorandums. A good one will give you two indications. You'll have selection factors in your morbidity section of that filing, and you might have expected loss ratios by duration. If your selection factors increase at the same rate, along with an adjustment for attained age rating, as your gross premium structure, then you have select and ultimate pricing and no need to reserve. If they're exactly equal to each other and exactly equal to the anticipated lifetime loss ratio, you've got select and ultimate pricing. There's no future funding intended. Again, I can't overemphasize the word, "intended".

How do you calculate this? Well, the safest way to calculate this is seriatim, just like you do with life insurance. Now, nobody is going to be too excited about me saying that, but the NAIC specifically suggests this method. Let me read, again, a continuation of where I started in that model. It refers to the first section. It says, "Valuation net premiums under each contract must have a structure . . . ," so it's referring to each contract. There's another paragraph that was added that says, "Contracts for which tabular morbidity standards are not specified in Appendix A shall be valued using tables

established for reserve purposes by qualified actuaries and acceptable to the commissioner." Well, it says if you don't have a tabular table, which you won't because there is none, you've got to make one up and you have to use one.

Now, nobody does that. I shouldn't say nobody because somebody on this panel does. You might cite another section of that model which says, "Alternative methods are allowed," but it does say that you have to demonstrate that the, "Reserves on all contracts are not less than the amount determined by the standards above." Well, you're going to have to do this test every few years, if you don't do it every year. So it does suggest that seriatim is a safe method.

Let me give you an illustration of reserving for a couple of types of pricing that are out there. Typically, Chart 1 shows what happens with your claim cost curve. I've thrown out a net claim or net premium. This is an age 42, $500 deductible policy. For simplicity, I've calculated a level net premium. In reality, what's happening is that the two curves would be sloped at the same ratio as the ultimate years of claims are sloped. The point is that even if I did that, I'd still have an inconsistent matching of claim cost structure to gross premium structure. Of course, the net premium has to be, by definition, equal to the gross premium structure, at least the slope of the two do.

Chart 2 shows how that reserve builds up. Sometimes people get this confused with regulatory liability. This is my big argument -- regulatory liability is not creating this reserve. We already have the standards that give this reserve curve, and this is what happens. You can see by the second year that it's already funding half of a year's net premium. So it's not a small item if it's priced this way.

I talked a little bit about select and ultimate. I'm not saying that select and ultimate pricing doesn't exist. In fact, it does, and the mathematical computation of select and ultimate would give a zero reserve for every year. Then you ask the question, "Is there something in between select and ultimate pricing and a typical product's lifetime pricing?" Theoretically, why not? If we do lifetime pricing, why can't we do something in between? In fact, it had been a practice for some time to look at a three-year type pricing. You never know when a national health program could come into place. The higher expenses in the first years are going to be lower after a few years, so why not just price it for three years?

In Chart 3, you can see that it's a little cheaper in the first years and then higher in the later years. I'm not actually suggesting you price ART, but I just assume that after the three-year period that you just price one year at a time. You're beyond at least the steep part of the selection curve. Of course, that generates lower reserves, but I only need to calculate a reserve under this method for the first three years to see I really am getting a different type of reserve.

You might be asking yourself, "Well, what rules allow me to change my reserve method just because I changed my pricing method?" What I said earlier, if you remember, was that the NAIC specifically said, "Calculated over the period for which premiums have been calculated." That's how you compute reserves. For select and ultimate, you calculate it over one year; for this example, you use three. Under GAAP, the NAIC also

PREMIUM AND CLAIM RELATIONSHIPS

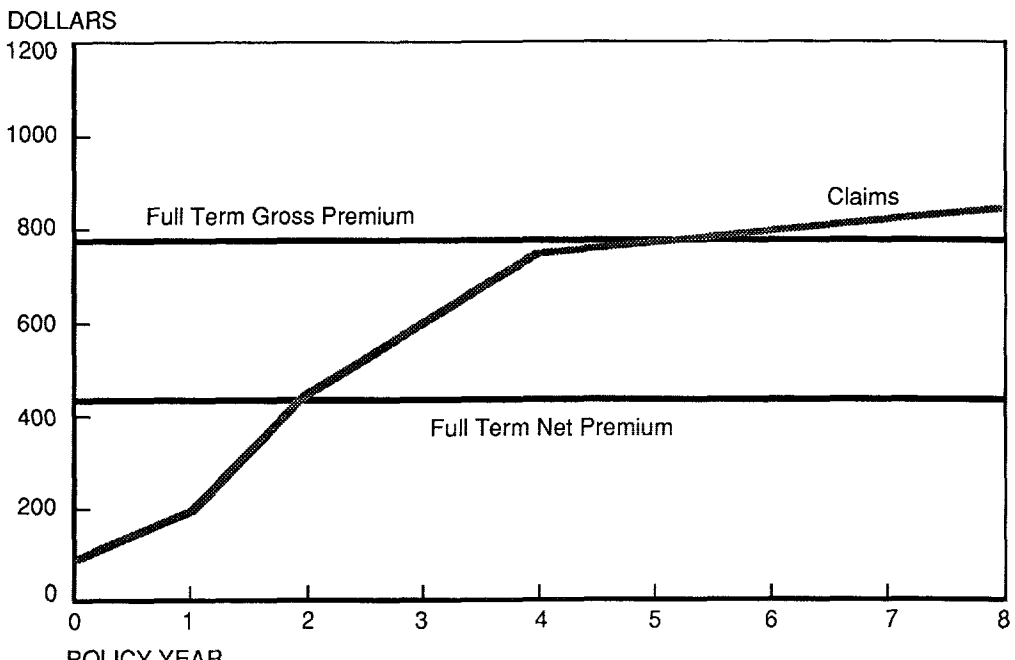
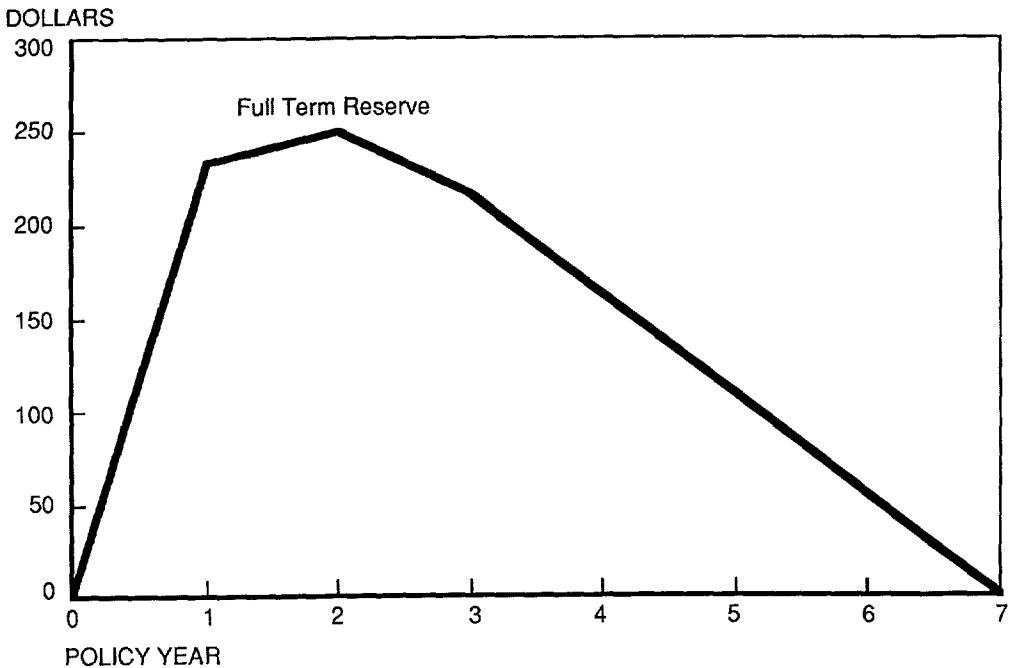


CHART 1

CONTRACT RESERVES



Net Premium = $453.91

PREMIUM AND CLAIM RELATIONSHIPS

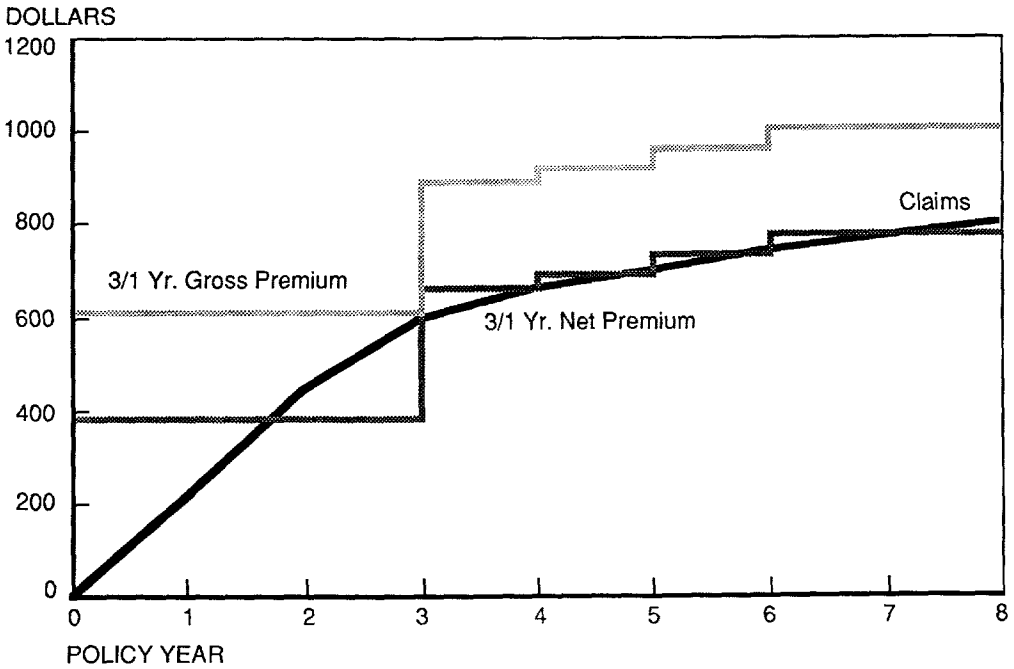


CHART 3

said, "Over the anticipated rate increase period." Select and ultimate anticipates one, and this anticipated three. In fact, that's what the intent was.

My biggest challenge as a valuation actuary (and pricing actuary) has been what to do when the experience is worse than you expected, and management says, "We're not going to wait for three years to put the rate increase through." Of course, there are trend increases throughout. You can still put those through, but in this case there was adverse experience. Chart 4 shows the adverse experience. I took that first chart and I said, "Well, let's say claims were really 20% higher in duration two." You can see what would happen with the claim cost curve.

Let's say management decides we're not going to wait three years, we're going to charge a premium for third-year claim costs alone, and the market will bear that. Do you still need reserves? Chart 5 is a little off. Where the dotted line is, that should have been in duration three, not duration four. In fact, I've decided to change my net premiums after duration two, and price it ART. So the line that is up there by itself is really the net premiums because I was going to calculate ART and, of course, that net premium slices right through the middle of the claim cost for that particular duration.

What happens? What do you do with your reserve? You just built it up over two years. I obviously don't need it because I calculated that rate increase to actually fund that year all by itself. What do I do with it? Well, the answer lies in the pricing intent. I intend that the premiums will fully fund the claim cost in the third year, so I don't need the reserves. Now, I could have had a lower premium, because I don't need to fully fund that claim cost in the third year, because I have some reserve built up that was intended to fund that year. In reality, I wouldn't have gone for a 50% rate increase. I probably would have gone for something like 30%, and used some of the existing reserves. Then I would have a different reserve pattern.

What goes through our minds when we do this is are we violating some GAAP principles, particularly the lock-in. I think that if you look at it closely, you're really not. The purpose of the lock-in principle under GAAP is to recognize the variances of actual experience from the assumptions. Now, that's to be done during the course of the pricing period, not at the beginning of the policy, not when the policies are all terminated, but during the period.

I'm recognizing the reserves will not be sufficient at the end of the second year. Not only am I recognizing it, I'm so overt in my recognition that I'm changing the rates on my policyholders. Second, my variance occurred in the year that I'm filing my rewrites. Now, by the standard, I need to recognize variance. That variance is not only the adverse morbidity, but I've changed my actual pricing period from the three years that was intended to two years.

Some people are saying, "Well, now you screwed up. You're matching expenses with revenue. You can't do that under GAAP." I'm going to answer that with a quick example and show you what happens on Table 1.

CONTRACT RESERVES

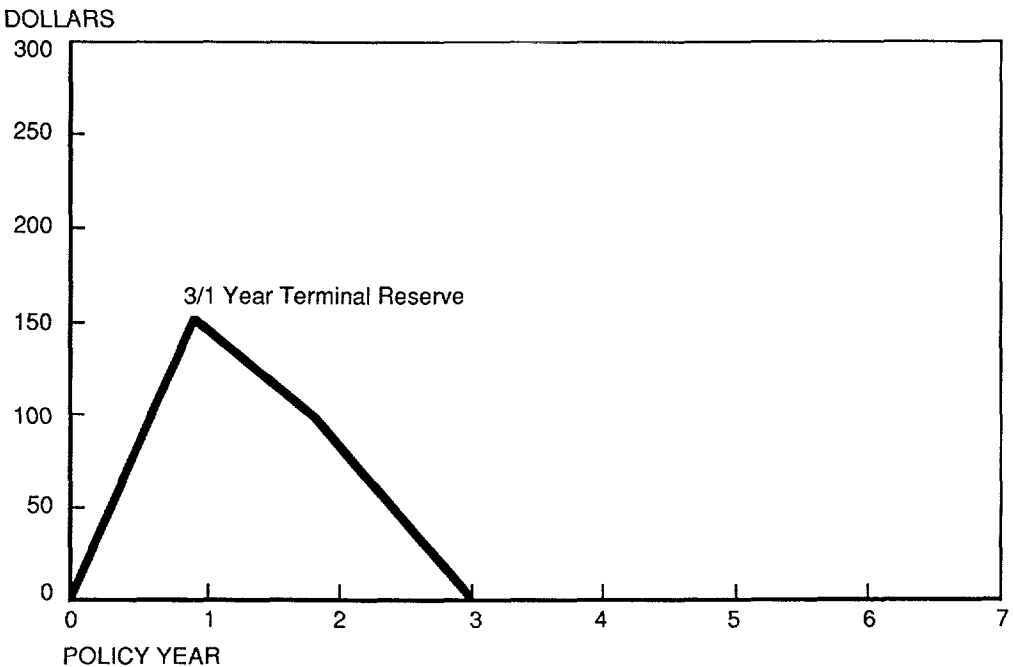


CHART 5

3-YEAR INITIAL PRICING – RERATE YEAR 3

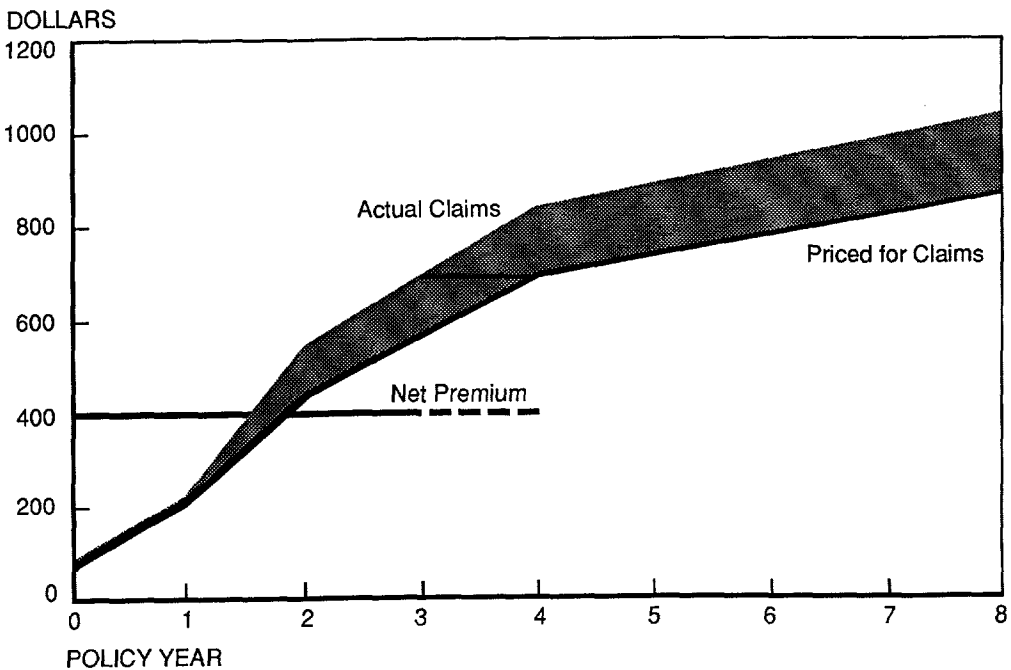


TABLE 1

Description	Year	Earned Premium	Loss Ratio	Reserve	Profit
Original Priced for Expectation	1	$613	37%	$151	11%
	2	429	73	100	11
	3	300	93	0	11
	Present Value	$1,270	60%	--	11%
Claims Deteriorate 20% After First Year	1	$613	37%	$151	11%
	2	429	88	100	-5
	3	300	112	0	-9
	Present Value	$1,270	68%	--	2%
ART Rerate in Year Three	1	$613	37%	$151	11%
	2	429	88	0	18
	3	523	64	0	11
	Present Value	$1,462	59%	--	13%

The first section is just what was intended, and as you can see, if everything goes as intended and you calculate reserves over three years, you can get a nice, level percentage of premium and beautiful matching in each year. Take a look at the last column. I've got my 60% loss ratio right there.

The second section has the adverse deviation in claims, but I didn't change my premium rates. Under the lock-in principle, I can't change my reserves. I've got to let the reserve column, second from the right, stay the same. In fact, I recognize the loss in that the adverse claims buy a percentage of the premium. Now, that's what you have to do.

In the third section I have two deviations. I have an adverse deviation to claims and I have a favorable deviation in the pricing period of the policy. Therefore, I believe, you're allowed to release the reserves and recognize both deviations in the year they occurred. As you can see, I've got a lot better matching. In fact, my loss ratio is still within my limits. There was nothing illegal in what I did from a rating standpoint. I didn't need the reserve at the end of the second year, and I probably would not have put such a big rate increase through; I probably could have had much better matching.

I think you get a sense of what we go through in a company that spends more than half of their time and money on major medical business.

MR. ROBERT J. LAUX: I'm going to talk about the disability insurance valuation actuary. Like Tom, I don't work for a consultant, but you will see my company name on a couple of the charts, and I apologize. I intend to talk about group and individual disability insurance, so this will be an overview of most of the market. Specifically, I'll be talking about the risks that insurers take on when they write this kind of insurance. I'll also be talking about the reserves, the reserve standards, the NAIC and other

standards, and company practice and how that differs. Finally, I'll talk about changing reserve bases, when and how often to approach that issue, and how to do it.

There are some risks to consider. I think of claim incidence first. Obviously, that's the risk of having more claims than you expect. That could be either random chance, due to a small sample size, or it could be due to a change in the underlying trend of the business. This is what we've had in the 1970s and 1980s, a steadily increasing trend. Or, it could be due to some catastrophic event, a catastrophe that causes a lot of disabilities -- an earthquake or a hurricane or a major fire.

Another key risk is claim recovery. Like claim incidence, it has a random component, a catastrophic component, and a trend component. My experience in comparing the relative sizes of these two risks is that the incidence risk contributes maybe two or three times the amount of deviation that the recovery risk does.

Another risk is expenses, and by that I really mean unit expenses. It can be driven above the level in the pricing assumptions due to a lower than expected sales volume. Unit expenses could be out of line due to high lapses or the administrative expenses of servicing the business.

The next risk is interest, and by this I mean more of a C-1 type risk rather than a C-3 -- C-1 being the risk that we don't earn the interest rate that we assumed in the pricing or in the reserves. This is a long-term product. Individual insurance is often written on a noncancellable basis and interest assumptions often carry you a long way. Even on the group disability product, once somebody goes on disability, it could go to age 65.

Next is the risk of competition. This was a big risk for group and individual disability business in the 1970s and into the 1980s, where companies were leapfrogging each other in the disability marketplace, liberalizing the policy provisions, and cutting premiums.

Finally, there is a C-4 type risk, which I'll summarize by calling management incompetence. Management may be preoccupied with something else going on and not pay enough attention to this business. This can easily happen in a multiline company where this is a sideline type of business. Another risk is that one of the other five occurs, and management feels compelled to take decisive action which turns out to be decisively wrong in hindsight.

Let me give you an example from my current company of this risk. UNUM, my current company, announced in 1984 its intent to convert from a mutual to a stock company. That exercise proved to be a lot more difficult and more time consuming than we had expected. Almost three years later, at the end of 1986, we finally were successful in completing this transition. Unfortunately, it appears in hindsight that management was paying a lot of attention to the conversion and not enough attention to running the disability businesses. Both group and individual turned down in late 1986, and it took a while to turn them around.

Actually, the key thing a valuation actuary is here to do is to protect solvency of the organization. Most of the disability insurance risks are C-2 risks, I believe. Maybe, if

you define it broadly enough, they include C-4 risks also. I believe that you need margins in reserves to cover part of the risk, and surplus to cover the balance. This is the theory that I subscribe to here -- that margins in the reserves should be adequate to cover fluctuations 90% of the time, and companies should have surplus to cover the additional risk to the 99+% level.

Put another way, reserves and reserve margins are here to protect against risks due to changes in the long-term trend, and surplus is here to absorb random fluctuations in the business or catastrophic events. The reason why you have margins in the reserves is it might take a while before you determine which is which. In the meantime, you have a margin.

Specifically, let's talk a little bit more about reserves and reserve standards. These are for group and individual disability insurance. The 1964 Commissioner's Disability Table is sort of the standard for both. It's been around quite a long time, although fewer than half the states have approved it as a minimum standard. Many companies use it for their individual or group active life and claim reserves.

The Commissioner's Individual Disability Table A and Commissioner's Individual Disability Table B were promulgated in the mid-1980s and recommended by the NAIC. So far, they've been approved as minimum standards in six states. However, companies not in those six states can perhaps persuade their regulators to allow them to use this table.

The Commissioner's Group Disability Table has been approved so far in only one state -- only 49 to go. Wisconsin is the one state. That is the minimum standard for group disability insurance. It's a fairly conservative table, but the model law and the law adopted in Wisconsin says that you can modify the first two years of disability reserve factors if necessary, or to fit your company's experience.

Good and sufficient is the reserve standard in most states. Remember, the 1964 Commissioner's Disability Table is the standard in less than half. Good and sufficient is what most states say for disability insurance, particularly group disability insurance.

Finally, extra reserves for AIDS. This has become a hot issue in some circles, and in the Society of Actuaries in particular. The reason for this is that AIDS is a cause of disability that was not in the study period of the 1964 Commissioner's Disability Table, or the 1985 Commissioner's Individual Disability Table A, or the Commissioner's Group Disability Table. It's a newer illness. So far, however, from what I've seen, very few companies have set up any provision for AIDS in their reserves. So far, it's a lot of talk, but maybe we'll see some action.

Those are some of the reserve standards. Here are the reserve practices of many companies. A common method is using the 1964 Commissioner's Disability Table modified. Of course, in some cases it's modified beyond recognition. That's how it is for UNUM's group reinsurance disability line of business. We modify it a great deal. One way to modify it would be to take a percentage of the termination rates, such as 110%, and calculate the claim reserves based on that, for group or individual. Another way to

do it would be to calculate the actual reserves by duration, and multiply the reserve dollars which reach each duration by a factor. It might be 125% in the first year, 110% in the second year, and 100% thereafter, for example.

Another method is to use company experience. This is almost exclusively done for valuing incurred but not reported reserves. You need to come up with company experience for the reporting lags. Some companies with a large amount of experience may even produce their own disability table from scratch with which to value their reserves.

Still another way to value reserves in practice is to use what I call implicit offsets. Use the 1964 Commissioner's Disability Table unmodified, with perhaps a 3% interest rate. This is a deliberately low interest rate, but it's paired with a weak table for claim reserves. Another offsetting technique sometimes used is to apply the 1964 Commissioner's Disability Table to active life and claim reserves on an individual disability block of business, the thought being that you're redundant for the active life reserves and possibly on the weak side for claim reserves. In aggregate, no problem.

Now let's look at when to change reserve bases. Earlier I said that reserve bases, in theory, should have some margin in them so that they can be adequate 90% of the time. This implies that you may not react immediately to what appeared to be changing trends, because it could be a statistical blip or a series of small catastrophes; it's perhaps best to wait until it becomes clearer that it's statistically valid, the beginning of a trend, and not just a random fluctuation.

With that, let's look at some claim cost trends on Chart 6. It shows the loss ratios taken from the NAIC annual statements. For UNUM, I'm going back to 1970 because that was easy for me to get. The four other major individual disability writers go back to 1981.

The point of this chart is that its overall trend appears to be up, due to the competition decreasing premiums and liberalizing benefits. This chart is also useful in determining trends and when reserves should be strengthened. Sometimes when you strengthen reserves, it shows up here as a blip upwards in loss ratio. That's certainly the case in 1974 for UNUM. I wish I could say we strengthened reserves in 1984 also, but we didn't. Unfortunately, that's real. We did strengthen in 1983. My point here is that reserves and reserve margins should reflect the long-term trends of what's happening in the business, and you should not re-set your reserves every time you get a blip up or down, or even a catastrophe. Those can best be handled by surplus.

MR. NORMAN J. ZWITTER: For the products we've already talked about, the methodologies that actuaries use to value them are fairly well-established.

For long-term care, though, we've got a product that's new. It's changing rapidly, and I don't think a base of techniques has been developed. It's a different situation for an actuary valuing long-term care. Particularly, the plan designs have changed. The products that you have any experience on in your own blocks tend to be the plans that fill the gaps of Medicare, cover skilled nursing, and have prior hospitalization. The new plans we're seeing now have almost no similarity to these older types of plans.

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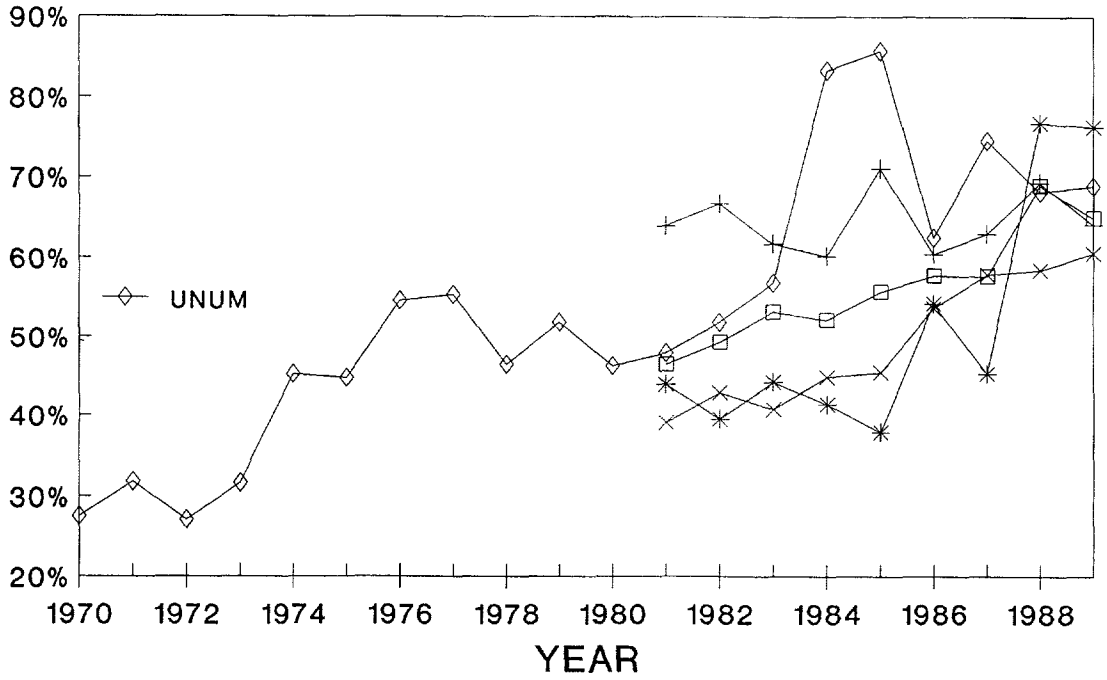

Long-term care products now are stand-alone products that provide close to full coverage for time in a nursing home. Also, we're seeing benefits that have never been provided before. Home health care is a good example. That's a major benefit that's now being offered not only along with long-term care, but also as a stand-alone product. We're also seeing long-term care written as a group coverage, and that's come about in the last couple of years. All of these things are basic changes in the plan design from what we've had historically.

The older plans, even just for long-term care, started out as two-year benefits. Now, I think many are in the 5-10 year range, and I think we'll be seeing lifetime benefits being offered in the future. So we're seeing a great expansion of the benefits that are being provided. They are also adding a lot of peripheral benefits, what I call bells and whistles -- side benefits that are coming into vogue on the pricing side -- things like respite care, which provides payments to the families so they can go off on vacation and hire a nurse to take care of the disabled person for a home health type benefit.

These obviously present great challenges to the pricing people, but even greater ones to you on the valuation side as you're trying to decide what you want to reflect in your reserving bases. This is the kind of environment that you're working in as a valuation actuary with long-term care.

As I get into a discussion of methods, I'd like to go over a couple of issues that we found at CNA as we tried to tackle long-term care. You might find them to be of interest, and they're probably common. One of the issues in group insurance is that because the policy is guaranteed renewable, it's not a typical group product. The insured can continue to pay premium after he leaves the group by sending the money directly to you, so in essence, the policy is guaranteed renewable group insurance. You have to have an active life reserve, and that presents several different issues.

One is an education process with your field force and the operating area. They're not used to thinking about active life reserves on the group side. I'm not sure that the individual side is either, but it's definitely a new thing for the group people to work with that concept. They have to work it into the discussions with the employer, because if you do an active life reserve, you need listings of people. It's hard to do an active life valuation on bulk census data or group data. It's possible, but it obviously makes it much more difficult. So you have to develop some way in the administrative area to capture the data, but still keep it relatively cost effective to administer. You have a challenge in that regard that you don't have in most of the traditional group products.

The other issue is how you look at it internally, mostly for reserving, but also for claims handling. It's not clear, because different companies have different wording for their policies, whether or not you can look at the long-term care product as disability insurance. It's paying a benefit for each day disabled, so it looks like a disability benefit. Or is it more of a medical reimbursement benefit, because you're paying out so much per day if you have medical bills, like a major medical policy? Particularly for your claim system, there could be a big difference with how and what type of data you get, as an actuary trying to do the valuation. The methodologies for getting open claims and the data you need tend to be more available on the disability side. It's set up for that, but

not necessarily so on the medical side. You have to be working with the claim area to make sure they have those definitions down pat so that you're going to get the data you need to do the valuation.

At CNA, when we are looking at a claims reserves, we consider it to be a disability coverage and are setting up tabular reserves as we would for LTD. The NAIC model bill is very broad in its definition of long-term care. It defines actuarial principles and techniques, and what is actuarially sound, but there's no standard way to reserve it. I'm not sure that the model bill has been approved in any state, so there's no minimum standard. As an actuary, you can't say if I value it this way, I'm safe. So you're left to rely on what's been done on the pricing side. I think for most companies, the basis has been the 1985 Nursing Home Study as the starting point. Then you add your judgment about the plan design you have, and what little experience you have on your own blocks.

We use the LTD statutory interest rate for statutory valuation, the whole life interest rates for discounting on the claim reserve side, and pricing assumptions as appropriate for the active life reserve. The problem we have in looking at experience is that there's very little. The product has changed quickly, so doing studies is difficult. Even within the last two or three years, the plans have changed drastically, so you have little experience to work with. For individual business, you've got a few more claims because you're issuing policies at around age 70, whereas on the group side, the average issue age is 45. We have a fair amount of group business but not enough to generate a lot of claims. So with a handful of claims, it's hard to do an in-depth experience study.

In looking at long-term care, you have a product that you're evaluating, and you're still in the stage of trying to determine the most appropriate basis. Probably the thing we do most is to make sure that we notice what's going on and try to evaluate it. I think it's going to be an ongoing process of trying to develop reserving bases.

MR. DONEL C. KELLEY: My question relates to medical insurance, and I'd welcome comments from anyone on the panel. We heard the concept of liabilities and reserves on the claims the manufacturers take into consideration, about the importance of a margin on that, and about deficient premium. I wonder if any of you have taken into consideration the need for another reserve, relating to the underwriting cycle that's been in the literature, which has pretty well shown that we have three years of profits followed by three years of losses, and it has been this way for 25 years. If you have given it some thought, how would you put that into a reserve?

MR. KNAPP: I have two thoughts on your question. One is that in my life prior to becoming a dreaded consultant, I worked for a company where we tried to do something along those lines. To be real honest, we used the underwriting cycle as an excuse. Basically what we were trying to do was manage earnings, and we were trying to set up some liability for the underwriting cycle. We did a little model, so it looked legitimate and so we could get it by the auditors.

My second comment is that there are a lot of companies, both stock and mutual, that set up a receivable or a negative reserve on their experience refunds or dividends. For the cases they have in deficit, they will actually set up a negative dividend liability. We've

got one carrier that does the dividend liability calculation on its block of small group business as a whole, so they work through the cycle in that way.

I don't know of anyone, in trying to manage earnings, that's taken a good, hard look at going through the cycle and trying to reserve for it.

MR. ZWITTER: I was going to say the same thing. I've seen, from my experience with a couple of different carriers, that it's easier to hold heavier reserves when the cycle is favorable. So you tend to be a little more conservative when it's easy to be conservative. Then when the loss ratios go up, you tend to be at the spot where you should be on the reserve whether you manage earnings or not. You tend to do that, but I don't know if you explicitly say that I'm holding so much more, although sometimes you do that too.

I've also heard of other companies that have held, in essence, assets for future deficit recovery. I'm not too sure that's appropriate, but I have heard of others doing that.

MR. THOMAS P. EDWALDS: A very quick question. What are the six states that have adopted the Commissioner's Individual Disability Table?

MR. LAUX: I thought somebody might ask that question. I've got a list here. Commissioner's Individual Disability Table A and Commissioner's Individual Disability Table B have been approved in Kentucky, Utah, Washington State, Wisconsin, Alabama, and Kansas.

MR. JAMES EDWARD OATMAN: I have a comment and a question about AIDS reserves. As we at Time looked at the issue of AIDS reserves, especially on small group and individual medical, we came to the conclusion that AIDS would rapidly accelerate the already steep durational slope to our claim cost curve and that we needed to do something special about AIDS. In fact, we started setting up claims reserves on a case basis from the date of first medical service on AIDS claims. In addition to that, I've put up some fairly significant active life reserve increases for AIDS.

I wondered, Darrell, if you've seen anything similar to that in your work with other companies. What are other companies doing to deal with that? Are they just waiting for that point of service down the road when it comes? I think our conclusion was that if you did that, then you would have a lot of difficulty pricing in the full cost at point of service down the road, and have some real deficiencies.

MR. KNAPP: I think that, on the group side, most of the companies I've dealt with have basically tried to encompass that by saying they will handle it through their general management and their definition of prospective trend levels, and then price for it in future years. That's in conflict to what Tom was mentioning, in terms of really looking at future premiums under your expected premium method versus expected benefits.

I have seen a couple of organizations that are trying to look at it explicitly, but I think most of the work to date on AIDS seems to be focused on the life side rather than the health side, in terms of setting up explicit additional reserves.