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Current Reserving Issues for Disability Insurance

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Summary: A number of industry groups are currently exploring issues related to reserving assumptions and methodology for group and individual disability insurance, including potential changes to the valuation morbidity tables. The panel updates participants on the progress of these projects.

Panelists address recent work by the SOA Task Force on Disability Reserving Issues, as well as by the American Academy of Actuaries and the National Association of Insurance Commissioners.

Mr. Vincent A. DeMarco: Joining me this morning are Ken Faig and Chuck Meintel, two very knowledgeable disability actuaries. Ken is manager of actuarial services for PolySystems. He is a member of the Individual Disability Income (IDI) subcommittee of the SOA task force to recommend new morbidity standards and a member of the Academy task force to revise the disability income (DI) health practice notes.

Chuck is the group long-term disability (LTD) actuary at John Hewitt & Associates, where he is responsible for pricing, product development, rate structure analysis, segmentation, and block buyouts. Chuck is also the author of John Hewitt & Associates' annual group LTD rate study.

I am the individual disability actuary for John Hewitt & Associates. Like Ken, I am a member of the IDI subcommittee of the SOA task force to recommend new morbidity standards and a member of the Academy task force to revise the DI health practice notes.

In January 1998, the NAIC's Life and Health Actuarial Task Force (LHATF) asked the SOA to review disability reserves specifically to address the adequacy of reserves and when it is appropriate for a company to use its own experience. The task force

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established two subcommittees, one for IDI and one for group LTD. Ken will report on the work and results of the IDI committee; Chuck will report on the group LTD committee. Chuck will also talk about the new health reserve manual and I will present the work and discussions of the Academy's DI Health Practice Notes Task Force.

Mr. Kenneth W. Faig Jr.: I want to talk about the work and recommendations of the Individual Subcommittee (IDI) of the SOA DI Valuation Task Force. I'll cover the process, results, impact, and steps ahead of us.

In January 1998, the LHATF delivered a charge to the SOA to look into the adequacy of DI tabular reserves. This resulted in the appointment of the task force chaired by Tom Corcoran. Regulatory concern stemmed largely from reports of ongoing deterioration in DI claim termination rates and claim reserve inadequacies indicated by the tests in annual statement schedules H and O.

The task force held an organizational meeting in Chicago in April 1998 and decided to split into individual and group subcommittees. I'll be covering the individual side and Chuck Meintel will be covering the group side.

The IDI subcommittee decided early on to limit its work to tabular claim reserves. We felt we could compile intercompany data on actual-to-expected (A/E) termination rates quickly using a survey technique. We felt that it would be much more difficult to compile claim frequency data using a survey technique. We solicited information on reserve methodologies and reserve adequacy through our survey and found that most of the companies surveyed agreed that current DI active life reserves are adequate.

The SOA office conducted the survey for us on a confidential basis. Of the 36 largest non-cancellable DI writers to which surveys were mailed, 15 responded with A/E termination rate data.

The IDI subcommittee consisted of Bob Meilander of Northwestern Mutual, who was our chair, Jack Luff, Carl Amick, Julia Philips, Tom Corcoran, Al Riggieri Jr., Vince DeMarco, Dave Scarlett, Tom Edwalds, Tom Stoiber, Donald Straffin, Marc Giguere, Diana Wright, Roy Goldman, Chris Zuiker, Tom Heckel, and myself.

Bob Meilander and his staff did the lion's share of the computational manipulations, and we enjoyed the participation of some of the leading actuaries in the DI field, including both company actuaries and consulting actuaries. Cooperation both from the contributing companies and the SOA actuarial staff was excellent. We also had the benefit of input from the SOA credibility task force.

Table 1 shows the companies that contributed A/E termination rate data and their gross annualized premium in force. The exposure underlying our survey results was significantly larger than the exposure behind the 1985 Commissioners Individual Disability Table A (CIDA).

Table 2 shows the A/E portion of the survey form. This was shared among subcommittee members on a company-blind basis. Table 3 shows the exposure section of the survey form. Only Jack Luff at the SOA office ever worked with these numbers. There were additional sections of the survey relating to reserve methodologies and reserve adequacy which I'm not showing here.

Next, I'd like to cover how the subcommittee worked with the A/E termination rate data. We found that companies had not submitted exposure data on a consistent basis. Some provided monthly exposure and some provided annual exposure. Most provided exposure by amount, but some provided exposure by count. We ended up weighting the company results based on gross annualized premium in force as published by the Life Insurance Marketing and Research Association (LIMRA).

After a lot of analysis, we decided that there was not enough difference between under and over age 50 experience to warrant separate adjustments. We used the all age experience. We used male age 45, occupational class 1, 30-day elimination period as our model cell and interpolated linearly between the A/E ratios. Because of the scarcity of data at durations six years and later, we decided to recommend adjustments to 1985 CIDA only at durations through year five.

Table 4 shows the wide variation of results among the 15 companies that submitted A/E data. This is the all age combined data. You can see the wide variation among companies; when we graphed this data, one subcommittee member observed that the graph looked like a plate of spaghetti. A zero entry indicates that a company did not contribute data to that cell. For analyzing company-specific results, we substituted intercompany averages where company data was missing.

Table 5 shows the intercompany experience A/E ratios by quarter for the first year of disability and annually thereafter for claim years two, three, four, and five. The adjustment factors shown in this table reflect the timing differences between the time increments used for our study and those used for 1985 CIDA (weekly for the first 13 weeks, monthly from months 4–24, and annually thereafter).

Our next major task was the addition of appropriate margins to the experience data. Why margins? Because the primary purpose of statutory reserves is to assure company solvency, valuation assumptions need to be appropriately conservative. The primary risks that need to be provided for are: (1) ordinary statistical fluctuations around the mean of a company's own experience, and (2) intercompany variation.

We set our primary margin objective as reserve adequacy for 85% of the participating companies. We had secondary objectives of adequate reserves for all benefit periods (two-year, five-year, and to age 65) for the median company in the survey and margins proportional to the observed variance of the underlying data. We decided that it was reasonable to assume a 1% investment rate spread in analyzing reserve adequacy. That means that for the long term you could earn a 1% spread above the maximum statutory valuation interest rate. For DI, the maximum statutory valuation interest rate is currently 4.5%.

As a first step, we determined the adjustment to the A/E ratios necessary to produce a variation of one standard deviation in the experience reserves. Table 6 shows the initial step of this process for sample claim durations. Then we back-solved for the percentage of this adjustment necessary for an 85% reserve adequacy. We agreed upon 40% of one standard deviation as the determinant for the final A/E ratio adjustments.

Table 7 shows the final adjustments to the A/E ratios based on 40% of one standard deviation. Now, there is some further manipulation to get from the period basis of our study (first four quarters, annually thereafter) to the period basis of the 1985 CIDA table (first 13 weeks, next 21 months, and annually thereafter), but these are essentially the final termination rate adjustments we recommended for NAIC adoption.

We wanted to analyze the impact of these proposed adjustment factors on reserves, so we asked four of our contributing companies to submit data to enable us to construct the model office for a claim in force. We ended up using the distributions by benefit period and claim duration that our four companies reported to us. For most of our analysis, we retained the same model cell that I mentioned earlier, and we used this model office to examine the impact of these modifications and termination rates on reserves.

Table 8 gives you a flavor of the model office. It shows the distribution of the claim in force by benefit period and by duration from disability. You'll notice that it's weighted rather heavily toward the longer benefit periods.

Table 9 shows the results of the reserve impact analysis by benefit period and on a composite basis. Based on the model office taking into account both the morbidity margin and the assumed 1% interest margin, we had an approximate 6% margin in the loaded table. We also analyzed the margin separately by the morbidity and interest components. Even without the 1% interest differential, there is about a 2% margin in the reserves from the morbidity component only. You may recall, I mentioned a secondary objective of reserve adequacy across all the benefit periods for our median company. Table 10 shows that we met that objective as well.

Table 11 shows some claim reserve comparisons between our loaded table and 1985 CIDA. All of these reserves are computed at 4.5%. You'll notice that the ratios are highest for the shortest benefit periods and for the shortest periods of disability. Also, for years 2 through 5, the loaded table is actually lower than 85 CIDA. In the aggregate, based on our model office, we would expect that most companies would experience an approximate 1% reserve increase.

With respect to the question of reserve adequacy, it's worth mentioning that the origination of the LHATF request, at least on the individual DI side, came primarily from the reports of deterioration in claim termination rates and, secondarily, from claim reserve inadequacies indicated by the schedule H and schedule O tests. In concentrating our attention on claim reserves, we certainly were not trying to signal that reserve adequacy is a matter that should be compartmentalized. In fact, based on the intelligence we were able to gather, we found that most actuaries

prefer to take a unified approach by looking at premium reserves, active life reserves, and claim reserves together. The techniques for evaluating reserve adequacy include margin analysis, gross premium valuation, and stochastic testing.

One of the other issues that the NAIC asked us to address was the use of own-company experience. The current NAIC model A&H reserve regulation allows you to use your own experience for the first two years of claim for DI, if that experience is credible. What are the reasons for this provision? The primary reason is the wide variation in DI claim termination rate experience that has historically been observed among companies. The potential sources for this include insured demographics, coverage differences, marketing and underwriting differences, and differences in claim administration.

Table 12 shows how experience reserves compare to reserves of the loaded table for the 15 contributing companies. You'll notice the ratio varies from 80–116%. For the companies at the top of this table, reserves based on our loaded table would be significantly superfluous, whereas for the companies at the bottom, the reserves would be inadequate. Our conclusion is that the right to use own-company experience for the first two years of disability remains a very important component of the regulation for DI.

What were our recommendations? We acknowledged from the start that our own work is a stop-gap, and we recommend that a full new IDI valuation table be constructed. I understand that the LHATF intends to submit a formal request to the SOA that this work be undertaken. The cuts may end up being very different from those that are in the 85 CIDA table.

We're recommending the interim use of our adjustments to the 85 CIDA termination rates for claims incurred on and after the effective date of any adopting amendment. To prevent financial discontinuities, we're recommending that these adjustments optionally be available for the valuation of claims that were incurred prior to the effective date of any adopted amendment. We're recommending no change to active life reserves pending the development of a full new DI valuation table.

The 85 Commissioners Individual Disability Table B (CIDB) was a functional approximation to the 85 CIDA. Its usage at the present time appears to be rather limited, and we are recommending that it be removed as a basis for the valuation of new claims after the effective date of any adopted amendments. And finally, we recommend that the optional use of own-company experience during the first two years of a claim be maintained for DI.

Where do we go from here? Bob Meilander presented our report to the LHATF in June where it was favorably received. The report appeared in the June 1999 LHATF mailing. It was further discussed by LHATF at a conference call at the end of July and is due for reconsideration by LHATF at the December 1999 NAIC meeting.

There's some perception that some of the regulatory community has a preference for adopting one uniform set of amendments affecting both individual and group, so

we have a possible bifurcation here, depending on the status of the group work in December 1999. It is possible, however, that the individual amendments could go forward separately if the group committee is going to require additional time for its work. There is currently a moratorium at the NAIC in relationship to Y2K. But after that moratorium expires, it's possible that the IDI recommendations could move forward. Certainly, the earliest possible effective date in terms of the state adoption, even given NAIC adoption in the year 2000, would be the first of the new millennium—January 1, 2001—at least the first of the new millennium as most actuaries would compute it.

It is my current understanding that the LHATF will wait for the group subcommittee to make its report during the course of 2000, with the aim of approving one consolidated set of revisions to the model A&H valuation regulation.

This is our 50th anniversary meeting, so I thought I might spend a few moments speculating about the more distant future. I do think that we will have a new full DI valuation table within the next five years. For the longer term, we're probably going to be finding actuaries using more sophisticated financial models for reserving. Tabular reserves have served us well, but we're already seeing a lot of work using multistate stochastic modeling. There's an excellent 1999 book by S. Haerman and E. Pitacco, *Actuarial Models for Disability Insurance*, out on this subject from Chapman & Hall.

It's amazing to think that many of the younger actuaries in the audience today will be at that 100th SOA anniversary meeting in 2049 to discuss the then state-of-the-art in DI financial modeling and reserving. Don't laugh—you young actuaries will be a mere 80–85 years old then. Just look at all the founding FSAs from 1949 whom we are honored to have among us among us at this meeting.

In many ways, it's amazing that we are able to quantify and insure an event with as many "gray areas" of potential friction as disability. I think that actuaries with broad social and business perspectives on disability and actuaries with strong financial modeling skills will both contribute strongly to the future of actuarial practice in disability income. An actuary who combines both of these skill sets is my idea of the ideal 21st century DI actuary.

My own expectation is that we will see a strong movement toward "best practices" in the DI business in the coming decades, with respect to both contractual provisions and administrative and reserving practices. This will help reduce the "gray areas" of DI and produce a long-term trend toward greater homogeneity among companies in DI experience. Continuing consolidation in the DI business will certainly play a role, although I expect to see strong new players and markets as well.

While the tools and techniques utilized by those 21st century actuaries who will attend the 2049 meeting will be substantially different from those used by today's actuaries, one of the principal objectives of the entire financial analysis and reserving process will still be to assure that companies underwriting DI set aside a

sufficient amount of funds on their balance sheets and income statements so that there is a reasonable expectation that contractual benefits can be paid.

So much for my crystal-ball gazing. If any of you have the good fortune to attend the centennial meeting in 2049, and remember this presentation from 1999, you'll have to see how far off the mark I was.

From the Floor: I have a quick question. The adjustment factor was 1.199 in the fifth year of claim, but then just dropped to 1 in year 6-plus. Did you look at extending the adjustment factors into later years of claim?

Mr. Faig: The data didn't justify an adjustment in the sixth year and later, so we do not recommend adjustment factors in the later years of disability.

From the Floor: Did you look at the data for the sixth and later years of claim?

Mr. Faig: We did. The lack of sufficient data was the primary reason we decided not to recommend any adjustments to the later durations.

Mr. Charles H. Meintel: I'm going to spend most of my time talking about the reserving guidance manual that's being developed, and then spend a few minutes talking about the new group LTD valuation table. The group LTD table is still in the evaluation stage of checking experience versus the proposed table. There's a lot more work to do on the group side, which we'll get into in a minute.

Relative to the reserve guidance manual, I'm going to talk about the background, the scope, the approach, and the process that was used to develop it. Then I'm going to talk about what's in the manual.

The NAIC wanted a reserving manual or a guide that could assist examiners in evaluating the statutory reserves. This manual is for statutory purposes. In a couple of minutes, I'll talk about the differences between GAAP and statutory. This manual is a joint project between the NAIC and the American Academy of Actuaries. In addition to assisting examiners evaluate the statement reserves, this guide will give valuation actuaries a feel for what the examiners are looking at and what they want to see. I think it's a document that fosters good communication.

The reserve manual is a statement of reserving principles for all health coverages, including medical, dental, long-term care, and disability. The manual covers both individual and group. Keep in mind that the standards in this manual are not legally binding, and that has a couple of implications. One implication is that the process to get them approved is much quicker and much easier. The ultimate test, as far as the valuation actuary is concerned, is that the reserves are adequate and sufficient, so you will still need to use your best judgment to ensure reserves are adequate and sufficient. If these principles do not give you that guidance, then you need to look elsewhere for that information.

As I said, the manual talks about many different types of reserves, in particular, claim reserves or claim liabilities. It also talks about contract liabilities, which are

basically the active life reserves for DI. On the group side, typically, there are no active life reserves. Provider liabilities are also covered in the manual. Those are mostly medical-type liabilities where an insurance company will owe money or have a liability to a third party like an HMO or a PPO. And finally, it talks about premium deficiency reserves—not to be confused with the deficiency reserves you might see in a term-life product, where the valuation net premium is greater than the gross premium. These reserves refer to a gross premium valuation where you're trying to assess the adequacy of the reserves that you're testing.

Prior to this manual, there were a large number of documents and resources to assist the valuation actuary, including:

- *Statements of Statutory Accounting Principles*
- *Actuarial Standards of Practice*
- *NAIC Health Insurance Reserves Model Regulation*
- *NAIC Examiners Handbook*
- *AAA Health Practice Notes*
- American Institute of Certified Public Accountants
- Financial Standards Board
- NAIC Annual Statement Forms
- *NAIC Actuarial Opinion and Memorandum Model Regulation*
- *NAIC Life and Health Valuation Law Manual*

This manual was created by a task force that went through all these documents and then interpreted them in light of the standards of practice that happened today in reserving for these health-type coverages. The manual is not intended to replace all these documents. The original statements and standards of practice still apply, but certainly it's a nice one-stop shopping type of document.

This manual is not the definitive guide to reserves. There are other manuals around. *The Health Practice Notes*, in particular, for group LTD is an excellent source that contains guidance on various aspects of reserving and valuation. I would encourage people not just to use one or the other, but use both as appropriate.

What's in the manual? The manual starts out by talking about data considerations. Obviously, when you're talking about evaluation, there are many things that have to be taken into account. As a group actuary, most of my comments refer to LTD, but obviously there's a ton of crossover with DI. It is critical for valuation purposes to know what your claims department is doing, for example, any changes in practices like advance pay and close claims, which tend to cause higher reopens. A valuation actuary must respond appropriately to any changes in what the claims department is doing.

The most important item in terms of data is knowing what data you used, how it was appropriate, how much you relied on other sources for that data, whether you audited the data, and how much you relied on the data in your valuation. In addition, it talks about having a statement contained in the actuarial opinion with your statement filing by the valuation actuary addressing the level of data review.

As I mentioned before, there's a whole section on active life or contract reserves and gross premium valuation-type work. I'm going to confine my comments to claim liabilities because, for group LTD, that's the majority of the liability. I encourage you, once the document is approved and published, to get a copy of it and read those sections.

As far as claim liabilities, the first thing it addresses are methods for defining the incurral date. Companies have different processes or standards to define when they first put up a case reserve or a claim reserve. The important thing is making sure there is consistency between your case reserve assumptions and your incurred-but-not-reported (IBNR) assumptions.

For example, if you first put up a reserve once a claim has been approved, then, when you calculate your IBNR, you'd better make sure to use that same assumption in your IBNR methodology. Once a claim reserve hits the end of the elimination period, then your IBNR methodology needs to reflect that. There has to be consistency between types of reserves.

There are special situations in LTD and DI as well, such as reserve buyouts. The question relative to incurral dates in this situation is which incurral date do you use—the date when you actually bought the liability or the date when the claim was first incurred. The guidance from the manual is to use the original date. Clearly, depending on how, for example, valuation interest rates change, that either could be a gain or a statutory drain at the time you put the reserve up.

The document goes on to define various reserve methods that are used. There is the "developmental method," which is where you take your claim triangles, paid claims, and projection of incurred claims, with the difference being your case reserves. Typically, in LTD, some form of the developmental methodology is used for the IBNR calculation. That methodology works very well when there's a very short tail liability like an short-term disability type of valuation. But, in terms of LTD, you have to make sure that you use the incurred claims in the development of your triangles, not just your paid claims.

The "tabular method" is the traditional present value of future claim payments that most people's case reserves or claim reserves actually use.

"Projection methods" are often used in combination with the developmental method, where you project the loss ratio for a given incurral year. Then, to the extent that you've paid claims, you'll subtract those from that loss ratio and that will become your claim reserve.

The final method in the manual is called "direct enumeration," which, for LTD, is virtually never used from a statutory perspective. Direct enumeration is an individual claim-by-claim look at a particular benefit or a particular claim. Someone, for example, in the benefits area, estimates the value of each claim liability. For LTD, and in all my consulting work, I've never seen anybody use that method for a statutory valuation. Where it does come into play is if you're pricing a reserve buyout on a large-case takeover where there are only three or four claims.

In such cases, you'll individually "underwrite" those existing claims when you price that buyout.

The next section in the reserve manual is about assumptions and reserve margins. The main point is that you should have different levels of conservatism for each of the various methods. For example, IBNR reserves should have more margin than tabular reserves because IBNR has incidence risk and termination risk. The assumptions used and the conservatism of those assumptions should be a function of which method you use and how accurate you think that method is.

The manual also talks about appropriate assumptions regarding offsets, including the amount of offset, the duration (how long offsets are good for), and the use of contingencies due to keeping or losing an offset. Assumptions regarding offsets is probably the one area where most group valuations are a bit soft in terms of the quality.

The assumptions for Social Security offsets are generally pretty good. All the other offsets are usually lumped into the same group and one set of assumptions is used. However, there is a big difference, especially in the duration of the offset, between various offsets. In LTD state disability offsets, for the states that have them, the duration will be either six months or one year. Workers' comp offsets have a much different duration. Therefore, it is important to keep in mind the duration of those offsets.

Reserves should account for other plan features. In particular, cost of living adjustments (COLAs) should be reflected appropriately—not so much through the valuation table, but simply in terms of the payment stream that you're going to assume as that present value of future payments.

The reserve manual states that it is appropriate to adjust reserves for different causes of disability, including AIDS and mental/nervous disorders. I believe it is OK to do that as well. However, if you start making exceptions, you have to be very careful and make sure you set up a monitoring processes. AIDS is the classic example. Originally death rates were huge, and it was appropriate to make adjustments to the termination rates for this disability. Now, with the new drug therapies, we're no longer seeing high death rates on AIDS claims, and the reserves on a block of AIDS claims is probably a source of inadequacy. Recognizing the nature of disability is appropriate, but you have to be very careful and make sure any adjustment is monitored on an ongoing basis.

For statutory reporting, other plan design features, including residual, partial, or limited own-occupation, are not recognized. Statutory authorities are concerned about reserve adequacy in aggregate, but they're not really concerned too much about the adequacy by segment. Therefore, you might use different reserves for GAAP or pricing based on more plan design features.

There are some items that are not in the manual. Typically, from a pricing perspective, you want each segment that you're pricing to stand on its own to eliminate the risk of a different mix of business in your portfolio. From a pricing

perspective, some of the reserve guidelines don't apply. Certainly, you can use them and they would be sound, but they're not going to be effective because you will end up with segments that are, in essence, mispriced. For example, long-term, own-occupation claims or high COLA claims are going to have a much different termination pattern than other segments.

The reserve guidance manual does not talk about tables or interest rates, but throughout the manual it stresses the importance of the valuation actuary. The valuation actuary is responsible for ensuring that reserves are sufficient and adequate for the liability. In order to do that, the manual suggests reserve testing. It has a section on the gross premium valuation or the "premium deficiency reserve," as the manual calls it. This section does not go into detail on how to test reserves or what the appropriate reserve tests are, though. I think that's one area where the manual probably should provide some more guidance.

The final draft of the manual is either at or going shortly to the NAIC. The NAIC Accident and Health Working Group will review and revise it. As I mentioned at the beginning, there's no formal approval that's needed by the NAIC. There won't be a protracted exposure period. This is a guidance manual for examiners to use, and it really doesn't need the same public scrutiny that it would if it were going to become specific standards and part of the law. After it is approved, it will be made available both internally to the NAIC examiners and to the actuarial public at large.

Next, I want to talk about the morbidity standards for the group side of the house. The Committee to Recommend New Morbidity Standards for Group LTD is taking a lot of the same approaches and using the same concepts as their DI counterparts. In particular, the group committee is using the same approach used for calculating the DI margin. The DI approach was examined by the group committee and deemed appropriate for group as well. I will not repeat what Ken Faig said earlier, but I will cover a few important things.

By way of background, the DI project and the group project started at the same time. There was a real concern on the part of the NAIC about reserve adequacy. However, the group side had just completed an experience table called Table 95A, which showed that, from a group perspective, the claim reserves had some redundancies in them. Therefore, the DI committee and the group committee, parted ways because of differences relative to adequacy or weaknesses in the current statutory morbidity tables.

The group LTD project plan is very similar to the DI plan. Steps include construction of a no-margin experience table, and then determination of interest and morbidity margins. For LTD, there may be a need to provide a little more clarity on what it means to use your own experience. Right now, companies are all over the map. Does "using your own experience in the first two years" mean you only can only use your own experience in that first two years and must use the standard table after that when calculating present value? Or can you use your own experience for the entire length of the present value calculation? There has also been a lot of discussion on the group side about how to use credibility in these calculations.

In terms of the group table itself, Table 13 compares some of the differences between the 87 Group Long-Term Disability (GLTD) table used currently and what's being called the "98 Table." There are more earned premiums in the 98 Table. This is somewhat of a change in the attitude toward overall adequacy for statutory valuations versus adequacy by segment, because the new table, at least as it's currently being envisioned, is going to have different assumptions for the own-occupation period, mental/nervous, and maternity. There is a movement on the valuation side to make sure reserves are more adequate segment by segment, and that's probably one of the biggest changes relative to the new table versus the 87 GLTD table.

The adjustments by segment are still done using the developmental process. The current thinking is there will be a single factor at the end of the own-occupation period by age and sex (see Table 14). For mental/nervous the current approach is a factor of 0.75 for all durations. The new table does not recommend any adjustments for AIDS, given the improvement in mortality. For maternity, there will be a constant factor for the first six months and then regular terminations after six months.

The group committee has asked 25 companies to participate in an exercise to validate the table—to determine the validity by company and how much variation there is by company. Only 10 companies have agreed to deliver data. If there is one thing that you take away from this talk it's that, if at all possible, you should ensure that your company jumps on the band wagon and helps validate this experience. It is critically important to realize that we're weakening the group standard. When you think about all the stuff you've seen in the press lately and our fiduciary responsibility to these claimants to make sure that we have an accurate assessment of what that liability is going forward, I, personally, would like to see the number of companies used to validate the table be a lot higher.

When the data is collected, more analysis will be done. If the analysis shows that other items should be included in the base table, similar to own-occupation, mental/nervous, and maternity, then additional factors would be decided upon at that time. Any adjustments needed to the proposed table or factors based on the validity study will also be done at that time.

The LTD committee is now in the process of validating the initial proposed table. More work needs to be done on developing the margins, both from an interest and morbidity perspective. Once the table with margins is constructed, the recommendations for using your own experience will be written and a final recommendation will be made. The time frame for the group process is very aggressive. The intent is to mimic the DI committee's time frame so that both tables are presented at the same time. The group committee is probably a year behind the DI committee unless the validation shows a good tight fit by company. Then the group committee has a chance to meet the same deadline that the DI committee is shooting for.

Mr. DeMarco: Use of own-company experience is a theme that runs through both IDI and group LTD. Although some of the concepts and discussion points I will

raise today may apply to group LTD as well, my presentation is based on individual disability reserving practices, discussions within the DI health practice committee, and conversations with other DI actuaries

In 1993, the American Academy of Actuaries formed a task force to create the *AAA Health Practice Notes*. The purpose of these notes is to describe what companies are doing regarding statutory reporting. The notes were updated in 1995 and, last year, a committee was formed on the individual disability side to review those notes and revise them in light of all the changes that were occurring in the individual disability marketplace.

When putting statutory reserves together, the first question one should ask is, "What are the morbidity standards?" I'm going to spend just a moment on what the morbidity standards are for individual disability. For active life reserves, the morbidity standard is 1985 CIDA. This table is based on experience from 1973 to 1979. The policies that made up this experience were loss of earnings and limited own-occupation policies.

As Ken mentioned earlier, for claim reserves, it will soon be based on termination experience from 1993 to 1997 with a mixed definition of disability. Although it has mainly a concentration of unlimited own-occupation and a large percentage of physician experience in it, you have active life reserves with one set of background and claim reserves with another.

Some of the major factors affecting morbidity experience are:

- Definition of disability
- Inside Limits
- Other contract provisions
- Risk management
- External factors

The definition of disability. Over the last 20 years, we've seen a tremendous number of definitions of disability used. From two-year own-occupation with activities of daily living (ADLs) thereafter to unlimited own-occupation combined with a loss of earnings provision or no loss of earnings necessary needed to attain benefits.

Inside limits. These are features where the benefits provided are changed or shortened due to some condition or some criteria. The two most widely used are Social Security offsets and two-year mental/nervous limitation. The DI industry is starting to see (I haven't seen it in anybody's filing yet, but at least individual disability companies are talking about it), the self-reported limitation, which group LTD carriers have used for a number of years. The self-reported limitation limits benefits, generally for a two-year period, for cognitive disability such as fibromyalgia or other diseases that are not identifiable with a certain medical test.

Other contract provisions. I think we touched on it earlier, but COLA benefits, lifetime benefit periods, and a partial-disability benefits all have an impact on

incidence and termination rates. I think we've heard suggestions from other speakers regarding lower termination rates for COLA benefits and lifetime benefits.

Risk management. The quality of underwriting, both field and home-office underwriting, and claim risk management are very important influences on the expected morbidity. Claim inventory practices also influence future morbidity. When is a claim IBNR or when is it reported? Does a company advance pay and close claims? How does a company inventory reopen claims or handle claims in litigation? Are claim practices and inventories consistent from quarter to quarter? Are personnel and management consistent in the adjudication of claims? All these have an impact on expected morbidity.

External factors. The economy has a direct influence on morbidity. I think everyone is aware of the changes in the medical market and the medical economy on disability. We also have heard about mergers and acquisitions and the impact that can have on morbidity experience. And the medical changes that Chuck alluded to earlier, such changes in AIDS drugs, has changed the slope of expected morbidity for AIDS claims. Think about all the changes in medicine since 1973 regarding cancer claims or cardiac claims. Also, types of disability, such as mental/nervous and depression claims, which were non-existent in the 1970s, are a major fact of life today.

When we put all the changes and influences together and compare them against the experience in the 85 CIDA table, what adjustments should be made? That's what I want to talk about. What are companies doing to adjust active life reserves or claims reserves due to these factors. I'll start with the active life reserves and the definition of disability.

The 85 CIDA table used limited own-occupation and loss of earnings experience as the basis. For contracts with COLA benefits, lifetime benefits, or unlimited own-occupation benefits, we're seeing a number of companies adjusting their active life reserve morbidity to reflect higher morbidity for these benefit provisions. And it may be appropriate to do so. In contrast, there are other benefits, like ADLs, which are more restrictive than what was in the basis for the 85 CIDA. For those contracts, it may be appropriate to lower reserves below the statutory standards.

Now, I realize that regulators may not approve using lower morbidity than the 85 CIDA standards for ADLs. One reason that companies are providing ADL benefits as a rider, rather than including it in a base contract, is that it's an ancillary benefit as a rider and, therefore, gives them more leeway to use own-experience or a percentage of the 85 CIDA for those reserves. But, just as it is appropriate to hold higher reserves for some features, it may be appropriate to hold lower reserves for others.

Social Security insurance and other insurance offsets are generally seen as a reduction in the amount you're going to pay out, rather than an adjustment in the underlying incidence or termination rates. Therefore, for contracts that have Social Security or other insurance offsets, it's general practice to say that it is a lower benefit amount and not a change in expected morbidity. Most companies calculate

reserves by adjusting the benefit amount they're going to pay out and, therefore, it is appropriate to hold lower than straight 85 CIDA because you're not adjusting morbidity, you're adjusting the benefit amount.

For other inside limits, such as the two-year mental/nervous and self-reported limitation, it is not really appropriate to adjust 85 CIDA. In part, this is because those disabilities were not a major contributor to the experience underlying 85 CIDA and, therefore, I think it would be difficult to justify to regulators holding reserves lower than 85 CIDA, based on these limitations.

Other contract features include COLA, lifetime, partial disability, residual, and some of the other features that we see in individual disability. It is appropriate to adjust the expected morbidity for those features. For active life reserves for COLA, you should come up with some sort of expected future inflation amount. In prior contracts, there were a lot of floors (generally a 3% floor or 4% floor) or fixed amounts (e.g., a 6% COLA inflation amount). For many of those contracts, an inflation rate equal to or greater than the floor was assumed.

A lot of contracts today have the increase tied to the CPI-U. What do you use for an inflation assumption going forward? I think it's appropriate just to use an inflation assumption and think of that in terms of the real interest rate and the statutory reserve rate you're using to calculate the reserves. It is appropriate to put one in. Another methodology that companies have used is to use a reserve discount rate lower than the statutory minimum interest rate to reflect the increase. Rather than using 4.5%, calculate reserves at 3% and assume that the 1.5% interest differential covers the COLA increases. The problem with this method is that the COLA increase pattern and the COLA morbidity pattern may not follow the change in interest rate. Although it's a methodology used by some companies, you have to be careful when using it.

Similar to active life reserves, it may be appropriate to adjust claim reserves for various features. Most companies currently adjust their claim reserves, mainly because, as Ken presented, the 85 CIDA termination rates are deficient for many companies.

Regarding the definition of disability, for two-year-old own-occupation and then ADLs thereafter, or any limited own-occupation period (two-year or five-year own-occupation), group LTD has historically used some sort of factor at the end of the own-occupation period. That has not been used for individual disability because most companies, in recent years, have used an unlimited own-occupation. But, because we've gone to a two-year or five-year own-occupation period, it may be appropriate to increase termination rates at the end of the own-occupation period similar to that done in group LTD.

Another method is to identify claims that are going to be own-occupation claims and calculate their reserve equal to the end of the own-occupation period. For example, someone might have a two-year own-occupation period and then an any-occupation definition thereafter. Your benefits department would identify that as a two-year benefit period because, after the two years are up, the person would not

be disabled under the any-occupation definition, and hold reserves equal to a two-year benefit period.

The problem with this method is ensuring that you carefully monitor that those claims don't turn from a two-year benefit period to an age-65 or lifetime benefit, depending on what the any-occupation period is. It may be appropriate to hold a two-year benefit period if it has a two-year own-occupation benefit, but it might also be appropriate to hold an additional reserve in your reopens, your IBNR, or a percentage of that reserve to account for the fact that some own-occupation claims will turn into any-occupation claims.

With Social Security and other insurance offsets, like active life reserves, if someone has received a benefit to reduce the amount you're paying out, then it is appropriate to adjust the benefit amount used in the reserve calculation. As Chuck mentioned earlier, if it's a state sickness benefit or workers' comp, make sure that you don't do it for the entire duration. You should only adjust the benefit for the duration of the offset. If the offset is a state cash sickness, then you should offset for six months or a year, rather than for the entire length of the claim.

It is also appropriate to assume that some claims, which have not yet received Social Security or state compensation benefits, will do so in the future. Depending on your contract, you may want to consider adjusting reserves for the fact that you'll have a negative accrued liability if they receive back benefits. You also may want to assume that some claims that are receiving full benefits today may not receive full benefits in the future. It may be appropriate to adjust for that as well.

Unlike for active life reserves, where it may not be appropriate to adjust for inside limits and for claim reserves, with inside limits, it is appropriate. If you have a two-year mental/nervous limit or a two-year self-reported limitation, it may be appropriate to adjust claim reserves for those limitations in the same manner as for the limited own-occupation benefit.

Similar to active life reserves, it is appropriate to hold COLA reserves and to assume some sort of inflation rate for COLA. It also may be appropriate to adjust termination rates for COLA or lifetime benefits.

In Ken's presentation, we saw reserves using company experience vary anywhere from 80–116% of the modified 85 CIDA table. When you combine your contract features and claim management practices, it is appropriate to adjust morbidity standards within the first two years. It may be appropriate to adjust morbidity standards after the two-year period for all these things as well.

The first thought that I want to leave you with is that it is appropriate to adjust morbidity both up and down based upon your contract, experience, underwriting, claims, and product features. But I have only talked about morbidity and, although it may be appropriate to adjust for morbidity, you also need to keep in mind a couple of other things. One is the interest margin and its impact on reserves. The other is lapses, especially for active life reserves.

For statutory active life reserves, you do not include lapse assumptions, which creates a margin in the active life reserves. That is one of the reasons why the Task Force to Recommend New Morbidity Standards and the industry feel that the active life reserves for individual disability are adequate, whereas the claim reserves may not be.

The other thing to keep in mind is minimum reserve standards and reserve adequacy. Although it may be appropriate to adjust morbidity standards down for one block and increase them for another block overall, one must keep in mind that you need to hold reserves that are above minimum standards in aggregate. Reserves that are redundant for one block may be offset against deficient reserves for another as long as reserves are sufficient in aggregate.

The second item I want you to take away is that, in the individual disability marketplace, we have contracts and liabilities that are significantly different by company and by generation. And, even though the 85 CIDA is an aggregate industry table, one must carefully consider whether that aggregate table is appropriate—not only for your company, but also for each block of business within your company.

Mr. Atkins: I have a question for Mr. Meintel. What direction do you think the new table will take in terms of comparison to Table 95A and GLTD? Is it going to be significantly different?

Mr. Meintel: Table 95A produces reserves about 20% below the GLTD table. Table 95A is an experience table, so you need a margin on top of that. I would say it's somewhere between those two numbers. Where it's going to end up, I don't know.

From the Floor: Can you provide some additional comment concerning the use of "own-company" experience?

Mr. Faig: For shorter term coverage, the impact of our recommendations would be rather stark. However, a company with credible experience is still entitled to hold reserves based on its own experience for the first two years of disability, so a company writing exclusively short-term coverage with its own credible experience might not be affected by our recommendations at all.

One issue relating to the use of own-company experience that concerned us a little bit was whether or not the model regulation should continue to have a "cliff" type of criterion for the use of own-company experience, that is, full credibility or zero credibility, with nothing in between. Allowing for partial credibility, might be a more scientific approach. For now, we have recommended retaining the present "cliff" approach.

Another issue that troubled us was the fact that the standard for the use of own-company experience under the existing model A&H reserve regulation differs for individual and group disability, in terms of both the years during which own-company experience may be used and the criteria for using own-company

experience. It's possible that the task force as a whole may offer some further suggestions on this topic. The appropriateness of the standards for use of own-company experience was one of the charges the task force received from LHATF.

From the Floor: What's an appropriate percent for claim expenses reserves?

Mr. DeMarco: It varies significantly from company to company. I've seen anywhere from 2 to 10%.

From the Floor: Is anything in that range appropriate?

Mr. DeMarco: It depends on the company. The level of claim expense reserves is dependent on a number of factors, including the expense structure of the company, the age of the claim block, and the size of the claim block. I think it's appropriate that it varies significantly from company to company.

From the Floor: Did the IDI Task Force review creating a whole new valuation table?

Mr. Faig: There has been a lot of discussion within the IDI task force about creating a new table. However, given our charge and the extent that it was claim reserves only, we thought that it was appropriate to modify 85 CIDA rather than create a whole new table. Our recommendation was to replace 85 CIDA eventually with a new table. And, hopefully, with that, we'll see some of the modification factors, such as own-occupation that we see in LTD. We did discuss creating a new table, but felt it was inappropriate to do it at this time, given the task force's charge.

From the Floor: How were differences between accident and sickness disabilities handled in the work of the DI subcommittee?

Mr. Faig: We looked at accident and sickness disabilities on a combined basis in performing our analyses. We didn't perform separate analyses for accident and sickness. Whether accident versus sickness will remain one of the "cuts" for a new DI valuation table remains to be seen.

TABLE 1
CONTRIBUTING COMPANIES AND THEIR PORTION OF THE DATA
BASED ON LIMRA ANNUALIZED PREMIUM IN FORCE STATISTICS

Company	1997 Annualized Premium In force (000)	% of Data
Berkshire Life	39,851	1.69%
Equitable Life Assurance	140,712	5.98
Franklin Life Insurance	21,448	0.91
Lincoln National Reassurance Co.	22,008	0.94
Lutheran Brotherhood	22,368	0.95
Massachusetts Casualty Ins. Co.	67,436	2.87
Minnesota Mutual Life	63,595	2.70
Monarch Life Insurance Co.	67,444	2.87
Mutual/United of Omaha	42,723	1.82
New York Life	110,166	4.68
Northwestern Mutual Life	463,393	19.70
Principal Financial Group	54,853	2.33
Provident Companies (includes Paul Revere Experience)	791,400*	33.65
Royal & SunAlliance Financial Services	89,447	3.80
UNUM Life Insurance Co.	354,874	15.09
Total	2,351,718	100.0%

* estimated based on annual statement data and the LIMRA report

TABLE 2

I. Actual to Expected Termination Rates -- Ideally, the observation period should cover terminations in 1993 - 1997, but please provide us with whatever you have. (Note the observation period in any case.) Individual year data within the observation period will be welcomed. (Use separate sheets.)

Duration of Claim	Actual-To-Expected Termination Rate	
	Under age 50 at claim	50 or older at claim
1 - 3 months		
>3 - 6 months		
>6 - 9 months		
>9 - 12 months		
>1 - 2 years		
>2 - 3 years		
>3 - 4 years		
>4 - 5 years		
More than 5 years		

TABLE 3

- I. Termination Rate Exposures -- These numbers will be used to provide a weighted industry table but confidentiality will be maintained. This page will not be shared among companies. Weights will be adjusted so that no one company will have an inordinate effect on the industry table.

Duration of Claim	Termination Ratio Exposure	
	Under age 50 at claim	50 or older at claim
1 - 3 months		
>3 - 6 months		
>6 - 9 months		
>9 - 12 months		
>1 - 2 years		
>2 - 3 years		
>3 - 4 years		
>4 - 5 years		
More than 5 years		

TABLE 4
ACTUAL TO TABULAR RATIOS BY COMPANY
USING 1985 CIDA AS THE BASE

Claim Duration	Comp 3	Comp 5	Comp 8	Comp 12	Comp 13	Comp 18	Comp 11	Comp 15	Comp 16	Comp 1	Comp 4
1 - 3 months	0.327	0.739	0.398	0.517	0.833	0.489	0.345	0.530	0.530	0.530	0.520
3 - 6 months	0.302	0.695	0.356	0.538	0.700	0.483	0.727	0.505	0.505	0.505	0.520
6 - 9 months	0.456	0.630	0.479	0.693	0.654	0.635	0.729	0.619	0.619	0.619	0.520
9 - 12 months	0.781	0.669	0.444	0.734	0.911	0.896	1.129	0.825	0.825	0.825	0.520
1 - 12 months	0.472	0.700	0.420	0.627	0.764	0.612	0.731	-	0.865	0.734	0.520
1 - 2 years	1.041	0.891	0.575	0.717	0.851	1.454	1.725	0.903	0.798	1.223	0.950
2 - 3 years	1.931	1.439	1.143	0.739	1.242	2.151	1.483	1.558	0.983	2.124	1.050
3 - 4 years	2.017	0.854	1.231	0.574	1.225	1.752	1.259	0.776	0.986	1.259	1.259
4 - 5 years	0.982	0.897	1.238	0.391	1.737	1.846	1.307	1.197	1.307	1.307	1.307
Years 6+		-	1.539	0.627	0.949	1.493	1.187	0.710	1.187	1.187	1.187

TABLE 5
CALCULATION OF EXPERIENCE BASED CONTINUANCE TABLE

Claim Duration	Actual/Tabular Ratio	Adjustment Factor*	Adjusted Average
1 - 3 months	0.484	91.1%	0.441
3 - 6 months	0.475	82.3%	0.391
6 - 9 months	0.599	97.5%	0.584
9 - 12 months	0.741	98.8%	0.732
1 - 12 months	0.590		
1 - 2 years	1.028	109.0%	1.120
2 - 3 years	1.541	100.0%	1.541
3 - 4 years	1.332	100.0%	1.332
4 - 5 years	1.339	100.0%	1.339
more than 5 years	1.300	100.0%	-

* to adjust for differences between quarterly/annual A/E ratios and monthly/annual termination rates

TABLE 6
RESERVE TARGETS WITH MARGIN AND A/E REDUCTION NEEDED TO MATCH
(durational values are per \$100 monthly indemnity,
weighted values are per \$100,000 monthly indemnity)

Duration of Claim	Experience Based Reserve	Standard Deviation	Target	Needed Reduction in A/E Ratio
1 month	3,256	732.01	3,988	0.05
1 year	6,955	934.76	7,890	0.25
2 year	8,414	714.35	9,128	0.43
3 year	9,100	383.33	9,483	0.32
4 year	9,325	188.90	9,514	0.35
5 year	9,360	0	9,360	0
6 year	9,152	0	9,152	0
7 year	8,876	0	8,876	0
8 year	8,547	0	8,547	0
9 year	8,190	0	8,190	0
Wtd. all durations	7,785,087	347,731.13	8,132,818	n/a

TABLE 7
EXPERIENCE A/E RATIOS, MARGIN, AND LOADED A/T RATIOS

Month of Claim	Experience A/E Ratio*	Margin	Loaded A/E Ratio
1 through 3	0.441	-0.020	0.421
4 through 6	0.391	-0.020	0.371
7 through 9	0.584	-0.020	0.564
10 through 12	0.732	-0.020	0.712
13 through 24	1.120	-0.100	1.020
25 through 36	1.541	-0.172	1.369
37 through 48	1.332	-0.128	1.204
49 through 60	1.339	-0.140	1.199

TABLE 8
MODEL OFFICE CLAIM DISTRIBUTIONS
BASED ON FOUR COMPANIES' DATA

Benefit Period:	Less than 2 years	8%
	2-5 years	5
	Greater than 5 years	87
Duration From Disability	First quarter	5.03
	Second quarter	6.88
	Third quarter	5.80
	Fourth quarter	5.27
	Second year	16.24
	Third Year	10.82
	Fourth year	9.56
	Fifth year	7.98
	Sixth and later	32.43

TABLE 9
MODEL OFFICE COMPANY RESERVES BASED ON LOADED TABLE

Benefit Period	Model Office Company Reserve (per \$100 of monthly indemnity)		Margin
	Loaded @ 4.5%	Experience @ 5.5%	
2-year	\$ 344	\$ 337	2.1%
5-year	1,445	1,386	4.2
To Age 65	9,005	8,527	5.6
Composite	7,934	7,514	5.6

TABLE 10
RELATIVE MARGINS FROM MORBIDITY AND INTEREST
BY BENEFIT PERIOD – AS A PERCENTAGE OF RESERVE

Benefit Period	Morbidity-Only	Interest-Only	Both
2-Year	1.6%	0.5%	2.1%
5-Year	2.7	1.4	4.2
To Age 65	1.9	3.6	5.6
All	1.9	3.6	5.6

TABLE 11
 COMPARISON OF CLAIM RESERVES PER \$100 OF MONTHLY BENEFIT
 Age 45 at Disability, Interest Rate = 4.5%
 Elimination Period = 30 days, Occ. Class = 85 CIDA Class 1
 Loaded Table versus 85 CIDA

	2-Year Benefit Period		5-Year Benefit Period		To Age-65 Benefit Period	
	Loaded Reserve	Ratio to 85 CIDA	Loaded Reserve	Ratio to 85 CIDA	Loaded Reserve	Ratio to 85 CIDA
3 Mo.	\$1,166	174%	\$2,275	184%	\$4,982	187%
6 Mo.	1,203	122	2,674	122	6,263	120
9 Mo.	1,147	106	2,954	104	7,364	102
12 Mo.	996	102	3,072	99	8,139	96
18 Mo.	566	100	3,122	96	9,361	94
24 Mo.			2,856	96	9,828	94
36 Mo.			2,117	99	10,513	98
48 Mo.			1,136	99	10,739	99
60 Mo.					10,759	100
Average*	909	119	2,425	107	9,142	101

All Benefit Periods* Loaded Reserve Ratio to 85 CIDA
 \$ 8,652 101%

TABLE 12
 COMPARISON OF CLAIM RESERVES PER \$100 OF MONTHLY BENEFIT
 Age 45 at Disability, Interest Rate = 4.5%
 Elimination Period = 30 days, Occ. class = 85 CIDA Class 1
 Loaded Table vs. Company Experience
 Claims within the First Two Years of Disability

Company	Reserves Based on Company Experience	Ratio-to-Reserves Based on Loaded Table
A	\$ 5,447	80%
B	5,455	80
C	5,457	80
D	5,519	81
E	5,725	84
F	5,928	87
G	6,214	91
H	6,309	93
I	6,915	101
J	6,948	102
K	7,164	105
L	7,167	105
M	7,489	110
N	7,656	112
O	7,888	116

TABLE 13
COMPARISON OF 87 GLDT AND 98 TABLE

Table Variables	87 GLDT	98 Table
Elimination Period	90, 180, 360	30,60, 90, 180, 360
Own-Occupation Period	None	Single Factor at End of OOP
Mental/Nervous	None	Factor of 75% for All Durations
AIDS	None	None
Maternity	None	Constant for first six months

TABLE 14
OWN-OCCUPATION TERMINATION RATE MULTIPLIERS
PROPOSED FACTORS FOR USE WITH TABLE 98

Age	Male	Female
22	5.6	3.1
27	5.1	3.1
32	4.6	3.0
37	4.0	2.9
42	3.4	2.8
47	2.8	2.6
52	2.1	2.3
57	1.7	2.0
62	1.3	1.7
67	1.2	1.4