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## Session 28PD

### Long-Term Disability Experience Committee Update

**Track:** Health Disability Income

**Moderator:** ROGER L. MARTIN

**Panelists:** THOMAS M. CASALENA  
RICHARD CARLSON LEAVITT

*Summary: The Group Long-Term Disability Experience Committee of the Society of Actuaries has been collecting data and performing an intercompany morbidity study on recent LTD experience. This study will ultimately serve as the basis for a new industry morbidity table. In this session, committee members provide an update on their progress and share some preliminary results from their work. Attendees have the opportunity to ask questions about the study design and results, as well as to see the latest available information on industry LTD experience.*

**MR. ROGER L. MARTIN:** With me this afternoon is Rick Leavitt from the Smith Group and Tom Casalena from Reliance Standard. Rick and Tom are going to do pretty much all of the heavy lifting through this presentation. I'm going to open it up, give a brief status of the experience table development of the Experience Committee work, and then we will get into some of the challenges that the Experience Committee is currently facing, some of the thoughts around developing a valuation table versus an experience table. Rick will cover those topics, and then Tom will talk about measuring and monitoring claim experience results. Both Tom and Rick will discuss the challenge of interpreting the results. Hopefully, you will hear a lot of thought-provoking material in this presentation.

The first agenda topic is on the recap of the experience table development. This has been a project that's been going on now for a couple of years. We had gone through the steps of collecting all the data, auditing the information, going back

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**Note:** The chart(s) referred to in the text can be downloaded at:  
[http://handouts.soa.org/conted/cearchive/neworleans-june05/028\\_combined\\_new.pdf](http://handouts.soa.org/conted/cearchive/neworleans-june05/028_combined_new.pdf).

and forth with the contributing companies to work through the mapping of the information and cleaning up a lot of the issues associated with collecting data and organizing it. We had to put it in a fashion where we can run through an experience table development process. We spent the later part of last year putting together some preliminary results, which we shared in a session similar to this at the annual meeting in New York City. Since then we've been working with the committee, trying to scrub through the remaining data and put it together so we can go through the next round of analysis, which is really to develop the experience table.

A lot of that work will take place over the summer. Those of you who are either on the committee or who have contributed data to the committee should be expecting during the next several weeks to receive from the committee and the vendor (Solucient) a couple of pivot tables. Those pivot tables would include a summary of the actual-to-expected results. I'll get into some of the information in a few minutes. We'll look at the industry results relative to Table 95a, and then a second pivot table with your own company's information. What we're looking to do is to have each of the companies, the ones that are closest to their own information, really go through and scrub that information. We'd like them to look through the mapping and what the committee and the vendor did to put the information together. We'll feed it into this experience table. We'd like the companies to give feedback to the committee with any modifications that we need to make, either to the mapping or to the raw data itself, so that we can make sure we're representing your information properly.

We have the industry participating in this study. If you look at the companies that are participating, they represent the large portion of the industry in terms of business. The actual Experience Committee members are a very strong representation. Even in the last six months we've had committee members join to make sure that we have fair representation of all the companies that really have contributed data. If there are others out there who have contributed information and want to participate, please feel free to see Rick, Tom or me, and we'll be sure to get your name added to the committee. Again, I think the next round of heavy lifting is going to happen toward the second half of the summer and into the fall as we start to get the information back from the companies.

To give you an overview of what we're looking at here, there are 19–21 companies that are participating. We have more than 1.7 million claims that were submitted to the study. We're using about 1 million of those claims. The primary exclusion of the 700,000 claims has to do with looking at information by calendar year. We've found that, as we've gone back in time, the data tends to be not as clean. You tend to be missing more information on the terminated claims. Obviously the numerator of your termination rate makes it a little more difficult. Another component was that companies submitted claims with no payments, where a claim recovered during the elimination period, and those claims at this point were eliminated from the study.

We have 25 million months of claim exposure over 10+ calendar years, and you would think with 25 million months of exposure you'd get some fairly stable results. You'll see in a couple of minutes that even with all of the 1.1 million claims, we still have lots of volatility and variability among the companies and the results. If you think about what impacts claim termination rates or recovery rates might have, you think about claim administration practices, mix of business, types of claims, policy provisions, etc. So on the one hand it doesn't surprise you that there is that variability in volatility, but when you see some of the results, it was quite surprising and amazing to me.

As we go through this and we go through the experience of developing the experience table, we will be applying dampening factors to the information on a company-by-company basis to make sure we're getting a sort of fair and close-to-equal weight representation across the industry. The top two or three companies would have dampening factors applied that would actually reduce the exposure of those companies. The majority of the companies would have very little impact, and then some of the small companies would have some increase in the weighting of their claims that were contributed to the study. The initial variables that are reviewed that you will receive as part of this pivot table or a subset of these and the initial pivot table are age, gender, elimination period, duration, diagnosis, definition of disability and gross benefit amount. Finally, we'll be looking at some of the raw recovery and death rates along with some actual-to-expecteds where the expected basis here was Table 95a. Once we have that capability built to do those actual-to-expected calculations, we can consider some other expecteds, but at this point we're looking at Table 95 percent.

Slide 7 is one of those charts that shows the variability of the raw recovery rates, and let me explain what you're looking at. What you have by claim duration and months is the actual recovery rate, and by company you're looking at the minimum recovery rate, the 25<sup>th</sup> percentile, the median, 75<sup>th</sup> percentile, and the maximum. Each one of these data points was done independently. So, the top row, the maximum, is not always the same company, and quite interestingly and maybe not surprisingly is that when you have companies that tend to be the max maybe in the early durations, you'll see them down toward the middle or the bottom in the later durations. Just think through that, and obviously the variability widens as the duration lengthens. The expected recovery rates or actual recovery rates tend to get smaller in absolute magnitude.

When you look at these recovery rates, how do they compare, let's say, to a Table 95a curve? Slide 8 shows the actual-to-expected recovery rates for a 180-day elimination period. This is all ages and both genders, I believe, and you can see the blue line represents the actual recovery rates, and the red line is when you apply the Table 95a expected rates. For the most part, the actual recovery rates are higher than Table 95a in the early durations. Actual recovery rates tend to have a bigger own-occupation jump at the end of the own-occupation period there, and

then as you go out in duration, actual and expected recovery rates are running fairly close together. Actual rates are running fairly close to Table 95a.

There are a couple of things to think about here. This information is still preliminary. We're still looking for companies to validate their information, and when you look at the information by cell, you get a sense of some different patterns, which make you want to go back and ask some more questions. One of those is out in the tail, and when you look at some of the rates out in the tail you can see that for certain companies we get some pretty high actual-to-expected recovery rates. So there'd be some good thoughts there. We need to go back to ask some questions about whether we are including maximum benefit expirees or is there other noise. Are settlements factoring into the recovery rates?

Slide 9 takes a look at the death rates. This should not be surprising to most of us. You can see that the actual death rates are running below the expected rates, and you'll see in a moment that they're running between 70 and 80 percent of Table 95a. I would point out my favorite own-occupation deaths. There you see them coming through around the end of that own-occupation period. This is another area where, as the companies get their information back, we'll be looking to clean up some of that information.

Slide 10 shows the actual-to-expected recovery and death rates themselves relative to Table 95a. The top, or the blue line, is the recovery rate. Again, you have duration in months and then years going across the bottom. Then the red line is the actual-to-expected on the mortality or the death side. Over on the right-hand side are the aggregate results across all of the durations. You can see in aggregate with this information that we're looking at, we have a combined recovery and death rate of 97 percent over the whole 10-year study relative to Table 95a, with recoveries at 103 and deaths at 84. Here's where you can see the last three durations from a recovery perspective. They're 140 percent, 141 percent and 160 percent. You have to wonder and think about whether we're getting maximum benefit expirees here included as recoveries.

The initial intent was to try to show some trends over time. The interesting phenomenon, from my perspective, is when you look at the first year, which is the red, dotted line on top (Slide 11), you see a trend down in the early 1990s. Then, starting in the mid-1990s, that gradually increases. If you look at all of the other duration buckets, you tend to see a gradual increasing overall recovery rate. If you think about improvements in claims-management practices and some of the contemporary adjudication practices that we have in place, it's not a surprise that we would be seeing increases in recovery rates. Again, when you look at 1998 and you ask yourself what's driving that drop-down in some of those durational buckets, again, as we go back and validate the information, we'll find that it's maybe one company that has some bad information that's contributing to that calendar year. We may ultimately have to throw that calendar year away for that company.

Slide 12 shows the aggregate death rates, and, again, I don't think this is a surprise to anybody. It trends down over time, although in the last year a couple of those lines tended to take up a little bit. But, in general, it's a declining recovery trend. In terms of kind of the overall experience results and where we go from here, we do have a lot more detail that the committee is working through. Committee members have the pivot tables and can work through and look through that information. But, again, the next step is to get the information back to the contributing companies and ask you all to go through the information and help us to identify those anomalies in the information. This will provide us with some better results that can form the base of our experience table.

I would caution everybody that these results are preliminary. The committee continues to work through them. Obviously, the information is out there. Companies want to use the information, and I think directionally, it's in pretty good shape. But when you think about the tail, and you see those increasing rates, you think about some of the calendar-year volatility that we saw. You think of the volatility by company that's being contributed. It's very important that you really step back and you think about if you are going to even consider this preliminary information. You do it in light of knowing where we are in the process, which at this point continues to be pretty preliminary. Our goal is to have an experience table completed by the end of 2005. We have a fairly aggressive schedule that we'll be working toward. We're going to move on to the challenges that the Experience Committee faces.

I think with the top line, the blue line, you're looking at recoveries, and that comes out at the 103. I think we have to think about how much those early durations are contributing to that from a recovery perspective. There's also little exposure when you get out into the tail. When you look at the scale, you see the 140 out there, but again, you have recoveries above 100 percent and the deaths or mortality below. So when you look at everything in aggregate, it comes out at 97, or the black dotted line, pretty close to Table 95a.

I'll turn it over to Rick.

**MR. RICHARD CARLSON LEAVITT:** Thank you, Roger. For those of you who have seen this, it is the very same information as six months ago. This is probably not so exciting, and we're basically repeating what we showed six months ago, which is why Roger had Tom and I be here as filler for the rest of the presentation. If you haven't seen this stuff, this is probably pretty fascinating. We should be spending time on that. But, nonetheless, I'm going to talk about two different things. I think Roger's right in the sense that we have quite a lot of work in front of us if we want to produce an experience table by the end of this year. I tried to articulate some of the issues that we're going to encounter, and I don't think I've captured all of the issues but a few of them. Some of them are kind of nitty-gritty, so I hope you'll bear with me in walking through that. They're probably things that'll be most interesting only to people actually doing reserve valuation. So I apologize to

everybody else who's not quite as thrilled about it as I am, but I do try to go into a little bit of detail.

Now, Roger articulated that what we're going to be providing is really a pretty robust pivot table that's going to allow you to test your results by a number of different segments. That's a long way from an experience table, and I'm trying to give a little bit of a sense of what the road is that needs to be traveled between that information and eventually what we produce. Then the goal here is to have a valuation table that can be adopted by the NAIC and used by states for purposes of setting reserve standards. That really is quite a long way between the experience table and the valuation table. I want to try to articulate what I think some of the issues are that we're going to confront going from one to the other.

Raw experience rates are what we have now, no smoothing. At this point, there's correction for any of the types of errors that might occur. So, we're really going to have to convert those raw experience rates into an actual table, and there's going to be a certain amount of work associated with that. It sounds pretty good on the face of it. As Roger said, more than 1 million claims, 25 million months exposed. Of course, a lot of that is in the early durations. The exposure is a lot less in the later durations. The results are still quite volatile in spite of all of that, and this is just a sampling of it. These are, in fact, all diagnoses. Now, one of the things we've discussed is actually producing different tables for seven different categories of diagnosis. I think they make sense from a point of view that you're going to get a different termination pattern across those diagnoses, but these results, with all of their bumps and ups and downs, are really a combination of those seven. Any volatility that you see here is going to be amplified when we try to split that down into the individual categories.

Slide 14 shows you how variable the results still are even with all of these companies participating. This is a five-year group of ages, male, a 90-day elimination period, all diagnoses, and you can see a little bit of ups and downs. Amplify that a little bit more by taking a look at some of the later durations. Slide 15 shows one diagnosis, cancer, but now I've grouped all the elimination periods. So, again, I'm still cheating a little bit from what we'll actually be looking at when we try to construct the table. It's pretty volatile. It looks like you could fit a curve through there relatively easily. If you look at the death rates, it looks like a nice, declining slope. I don't think a lot of those bouncing up and down capture real phenomena. So part of the challenge that we're going to confront is: How do we do the smoothing? How much smoothing do we do? And what's the process that we're going to go through to do that?

Here's a comment on the recoveries. There are even periods of zero recoveries. So, we're going to have to make some decisions about grouping durational groups in later durations to get enough information in there to really fit a curve to it.

I went back to my study notes for graduation, something that we all went through, and there's a very good point right at the start, which is something to bear in mind when we're thinking about this question of smoothing the information. Graduation is not merely smoothing, but is a more general process of estimating true rates, which actually prevail in the population. So I think that's a pretty good guiding principle for how you should go about doing it. The issue boils down to the fact that there is a great deal of volatility in the information. The question is: Do we try to make the table match the experience that we've observed or do we try to fit a smooth curve in here for something that we think reflects the actual expectation? And those are the choices we're going to have to make. The level and nature of smoothing has not been decided now by the committee and really hasn't been even discussed in a whole lot of detail. So that's one of the things that we're going to be working through this summer and into the fall.

This is just a little example here to show how all of these claims still are going to produce some volatility. Generally, we've been talking about 12 age categories, two genders, seven diagnoses, three elimination periods, 96 durations, and we may try to group that, two definitions of disability, unlimited and limited. Now, there are probably going to be more buckets than that, but that corresponds to over 95,000 segments that we hope to look at, and we have 380,000 recoveries and 127,000 deaths to fit into those 97,000 buckets.

**FROM THE FLOOR:** If I recall, 95a had different diagnoses.

**MR. LEAVITT:** That's correct. The 95a had maternity, AIDS and mental/nervous, which we retained as buckets. What we're proposing here is to break out the fourth bucket, which would be four different categories: cancer, musculoskeletal, general sickness and something else.

**FROM THE FLOOR:** So you'll break that out, and then later on you may end up deciding ...

**MR. LEAVITT:** Exactly, and in that decision we preliminarily chose those seven buckets, but, in fact, we felt for purposes of what's going to be presented in these pivot tables that it might make sense to break it out even further. If we're not constructing a table, there's no harm in breaking it out into 15 different buckets. I think the pivot table information's going to have 13 or 15 different diagnosis categories. Ultimately, for a valuation table, they may all be grouped into just a few. Whatever the case, this is just an idea to point out that even though we have quite a lot of claims and quite a lot of terminations, there are still going to be many cells in our analysis. They're going to have one, zero or two recoveries in them, and that poses difficulties when it comes to actually doing the table construction. This is nothing. For anyone who has done table construction before, we're in much better shape than any individual company doing it with their own data. We're really in better shape than any other LTD study ever. We have five times as many claims as

Table 95a, and all of these issues were worked through for that table. So we have no doubt that we'll be able to do it. It's just the challenges that yet remain.

And then there are some other considerations. One is: How do we handle settlements? Since Table 95a was constructed, there's been an increasing use of claim settlements, especially in the later durations among many carriers. This is where you pay the claimant off, terminate them at that point in time. But you've given them a lump sum, which is some fraction of what you'd expect to pay out in the future, probably helping your company's finances, but for the actuary wanting to understand termination rates and termination tables, it's terrible. You remove them from the stream. You have some fractional recovery or duration where you've pulled the recovery forward a few durations. It definitely screws things up a little bit in the later durations. We need to decide how we're going to handle that, how to handle the change in definition that's changing from an own-occupation definition to an any-occupation definition. Roger's already referenced this, but we need to decide exactly how we're going to handle that. How do we handle the 24-month mental/nervous limit? What about additional data validation? There's still evidence that there are quite a lot of errors or issues associated with the data, and we need to decide exactly how we're going to handle that.

Side 18 is just an example of what we'll be confronting with the own-occupation test. The way Table 95a handled it is it used a single table for both definitions of disability. But at the transition from an own-occupation definition to an any-occupation definition, it provided a recovery bump in that single month. This is evidence to suggest that, in fact, it needs to be something a little bit different from that. We see a fairly different recovery pattern before and after the change in definition. One proposal that's been floated is to have different termination tables for limited own-occupation versus unlimited own-occupation, and there's some sense to that. Maybe those tables merge after three or four years. So, at some point, the recovery rates are going to be the same. But maybe prior to that you have different tables, but now you're talking seven diagnoses, three elimination periods, two definitions of disability and two genders, and it just adds another dimension to it, which is going to complicate the process. So no decision has been made about how to handle that, but it's something we'll have to confront.

Slide 19 gives you a look at what the settlement activity is. It looks fairly uniform over the durations and is not immaterial, less than recoveries and deaths. The dark blue is recovery. That's higher than the settlements. On your handout they probably look the same. So you might want to notate which is which, but settlements are roughly half of recoveries in the later durations, which means they are fairly material. At this point we're just breaking them out. So for the raw experience rates, which are going to be provided to you, you'll get to see settlement rates, but, of course, of anything that's dependent upon carrier practice, settlement rates is going to be very strongly dependent on carrier practices. There are going to be some carriers that don't settle claims at all. Then it's inappropriate to use a table that has some settlements built in, whereas other carriers have a



very aggressive settlement practice. We haven't like filtered them into the recovery rates. At some point we're going to want to do that and have to confront the question of where exactly we put them. At this point, if a claim settles in Duration 72, it appears in there as a settlement in Duration 72. So we haven't tried to meld the recovery rates and the settlement rates together, but eventually that's something that we're going to have to confront.

They are not in the recovery rates at all. In fact they appear as a separate decrement in the information that's provided.

**FROM THE FLOOR:** Why would the settlements be just taken out? They're not recoveries, but on a going-forward basis you don't know anything about the exposure.

**MR. LEAVITT:** Well, financially they function as a partial recovery in the sense that there's some financial benefit from the claim at the time of settlement. No decision's been made about how to handle it. One suggested approach is to just take them out, expose them to recovery up until the time they settle, and then don't count them as a recover but take them out of the exposure.

There are a few different proposals as to how to handle them. I think they need to be accounted for somehow in a termination table. We just haven't decided exactly how to do it. One way is to just take them out, which doesn't reflect the financial impact of it. The other is to count it as a fractional recovery in the month in which it settled. And then the other is to extend the exposure until when it would have closed based upon the amount that's paid out. In terms of the financial impact, the closest is the fractional recovery in terms of getting reserves, which reflect your future liability accurately. That's the one that's going to do it the best, but, again, no decision's been made about how to handle them.

**FROM THE FLOOR:** They don't take into account the settlements at all.

**MR. LEAVITT:** They do not take into account the settlements, and so, again, in terms of the high termination rates—recovery rates in the later durations—if you put some fraction of the settlements in there, the situation's going to produce even more variance from Table 95a.

I don't need to dwell on Slide 20. This is just data-quality issue. Roger already referred to this. I just blew it up a little bit so you could see it more clearly. These are raw death rates for all claims for 90- and 180-day elimination periods. Clearly, we have own-occupation deaths appearing in our data, and suicides aside, our interpretation of that is likely that it's miscoding. Again, if we'd asked or been able to get Social Security numbers, that would have been helpful because then we could actually determine what's a death or not based upon the Social Security death master file. But many carriers felt that that was an invasion of privacy to

provide that information. So we do not have Social Security numbers, and we cannot do an independent check to determine whether the claimant is dead or not.

So that's it for the discussion of producing the experience table. The next step is to produce a valuation table. Now, truthfully, I've been going to these meetings for many years now. I've been involved in LTD valuation for many years also, and this question of the difference between an experience table and a valuation table has always been a little mystifying to me. Everyone always talks about it, references it. I don't know exactly what that means. So what I'm really doing is I'm giving you my own interpretation of what I think some of the issues are in going from an experience table to a valuation table. This is clearly just my point of view and may, of course, differ from anyone else on the committee.

One of the questions, and clearly the biggest difference between the experience table that was produced back in 1987 and the Commissioner's Group Disability Table (CGDT), is that there's margin in the reserves. The decision was made to use 90 percent of the experience table termination rates as the only difference between those two tables. That produced a table that we all know and love that is used for statutory purposes and has excessive margin in it. Most people seem to think that. So, we will also. I want to propose a table with some margin in it. But there needs to be discussion of exactly how much margin and exactly how to do it. Is a reduction of the termination rates the right way to do it? Is there some other way to do it? That's just an issue that we haven't really dealt with at all.

Table 95a never went from the step of experience table to valuation table and, as such, has no margin in it. It's based solely on experience. Eventually the experience table that we'll produce probably by the end of this year out of this committee will likely contain no margin in it. Then they'll need some discussion about how much margin actually goes in the valuation table. So that's probably the most important difference. There are other differences, and it's these other differences that get bandied about, and I'm never quite sure what people mean. Everyone has his interpretation of what you mean by an experience table and a valuation table. So I tried to articulate a little bit. There are really three different types of reserve tables that you might want to use. You use valuation tables to set your reserves on a block of claims, and, again, there are different purposes for that reserving, statutory or GAAP, or tax or so forth, but the table is what's going to set the liability for an existing block of open disability claims. The pricing table is a little different in the sense that it's trying to capture the claim cost, given incidence. So the terminations that are built into your pricing table have to be consistent with how you define claim incidence, and I'll talk about that in a little bit. An experience table, of course, is exactly what it is. You do a study, and the experience table was designed to match the termination rates, which are consistent with your study methodology. There's no reference at this point to setting reserves based on that. It's really just saying here's how we decided to define terminations and exposure. The experience table is what's consistent with those definitions.

I'm not going to cover all of the different things I can think of that are different between experience and valuation tables, but I'll try to just throw out a couple of examples to give you a sense of how I was thinking about it. Here, I guess, is where you get a little nitty-gritty, and I apologize if you're not really that interested in valuation, but here's the question that you confront. When tabulating termination rates, should you expose claims from the beginning of the benefit period or from the date the claim is submitted? The reality is there are quite a number of claims that are submitted after they've already satisfied the elimination period.

If a claimant begins getting benefits at the 90-day point but doesn't actually file a claim until three months later, should we, as the committee, be exposing those claims to termination between the point when it became eligible for benefits and when we actually knew about the claim? Well, it depends. It depends on a lot of things. Do you hold a reserve on claims in the elimination period? Then that affects whether you're going to use those claims in your study. Do you hold a reserve for claims that are, in fact, not approved for payment? That'll affect what claims you use in your study. And then also do you include in your termination study claimants who return to work before submitting a claim? That's a little paradoxical at first, but, in fact, it's a fairly common occurrence.

Here's what actually happens. Somebody goes out of work for, say, five months, comes back to work, and the benefits department or somebody else tells him, "Did you file for your disability benefits while you were out?" I'm sorry, what? So then he goes to file to get that two months of payments that he's entitled to. So to the insurance company it appears as a claim that's submitted and closed. He's already back at work, but a payment goes out.

But you did pay out two months' worth of benefit. It's that particular example that points out this issue between whether your exposed claims from the beginning of the benefit period are from when they were submitted. From a valuation point of view, I'm not sure you necessarily want to expose those claims to termination because you're never going to hold a reserve on them. They're going to start right off being closed. And if you build the terminations that you get from those claims into your termination rates for those claims for which you do hold a reserve, you'll have too high an expectation for termination. Those of you who have thought about valuation before are all nodding. Those of you who haven't are probably wondering what I'm talking about.

So, there are a couple of different ways of thinking about this, and, again, I want to stress that for your own purposes it depends on exactly how you define these things. It gets a little bit picky. You have to specify what you're talking about. So here's one way of doing it. We're not going to hold a reserve on any claims in the elimination period. Those are going to be captured in our incurred but not reported [claims] (IBNR). We're going to hold reserves for pending claims so they're potentially out of the elimination period, but haven't yet been approved. We're going to hold a reserve for them with a denial factor or pending factor given the

chance that they'll be denied. The termination study is only going to include claims with payments, and that's important because that's, in fact, what this study does. It does not include any claims that have not been paid. It only includes claims with payments. From a pricing point of view, I want to expose all claims from the benefit begin date because any claim, even if it submits after it's already terminated, is going to incur some cost. I want to reflect that cost when I'm actually figuring out how much cost my claim incidence produces. That pricing view is, in fact, how this experience study is done.

So we expose claims from the beginning of the benefit period, not from when the claims were actually submitted. From a valuation point of view, that's going to overdo it on the terminations because we have terminations associated with these very short-term claims. So for valuation purposes, I would do it differently: expose claims from the submit date and do not include claims that are closed when submitted. That's just important to understand—if you were going to take this experience table and use it for valuation purposes, you may be off on very early duration claims.

I'm not going to wallow in this example. If you want to do it on your own Excel spreadsheet and test it out to make sure I'm not lying to you, go ahead. Slide 26 shows some assumptions about termination rates. The termination rates really came from this study, and the reporting pattern comes from the Table 95a study. Given the reporting pattern, I'm guessing that about 7 percent of all claims close before they report. This would be the difference in the claim termination rates from the valuation point of view and the experience or pricing point of view. They're the same after Duration 7, 8 and 9. But in the early durations, there's a fairly significant difference. In the impact on the reserve factor, you can see that there's a fairly significant difference, and that difference in the early durations is exactly that—claims that submit after they've already reported, and in one case you're including them. In the other case, you're not.

**MR. LEAVITT:** I think this is more pointing out that if you are going to construct your own valuation based upon this information, this is one of the things that you have to think about. Again, most valuation people have thought this through, I would hope, and it's probably not a surprise. This is just an example of what the difference might be, and, again, no decision being made, but you're not going to go manipulate experience rates based upon some expectation about reporting pattern. If you have the hard-and-fast data, then maybe there's some argument that you might want to do it. But without the submit date we're clearly going to be providing an experience table that's been manipulated through reserve margin to become a valuation table. It's unlikely that there'll be additional manipulation, but, again, no decision's been made on that.

Anyway, this pretty much summarizes what I just said. Now, the reality, of course, is more complicated than that because, in fact, this whole argument was based on the fact that your chance of recovery in a given duration was independent of when

you submit the claim. The reality is your chance of recovering is higher if you're in the few months after you've just submitted the claim because that's the time in which the benefits area is examining the claims. There's some complicated interconnection between the submit date and early duration recoveries.

So, anyway, there's that issue. There are a few other issues. I'm going to go in a little bit of detail on this one, but not too much. This is a real issue, I think, in the sense that many companies have a practice of actually closing out a claim with a lump sum payment covering the next few months, and this is a good claims-management practice. If someone is expected to go back to work in three months, the best way to ensure that he goes back to work in three months is to give him three months of benefits. Then the claim is essentially terminated at that point. So it tends to be used not for financial management. It's a claims-management practice, and the question really is should these claims be exposed to when they close or at the end of the benefit period?

So if you pay out an extra three months and close a claim, do we, in constructing this experience table, expose the claims until the benefits are paid out or do we expose it to when it's actually closed? This is very similar to the settlement question, but it's a little different. Sometimes you're paying out five years of benefits. So it's quite a long period. This is a different practice, and most carriers wouldn't characterize this as a settlement. They would characterize it as advanced paid and closed, and the question is how should we expose that? There are two different answers based upon whether you're talking about experience table or valuation table. For an experience table, we really don't care when the claim was closed; only how much was paid. I really mean pricing table at this point. It doesn't matter to us whether we closed the claim three months early if we made that three months extra of benefit. Now there is a little bit of an issue about exposure to death that you're missing in that period between the time when you advance paid and closed it. So in reality, the right way to do this is probably to expose the claim until the claim is closed for purposes of your death rates. But expose the claim until when the claim's benefits were paid out for purposes of your recovery rates. That was not done as part of this study.

For this study we exposed the claims until the end of the payable benefit period, counting it as a full termination at that point in time. If that's your practice, and you're going to set valuation by that, you're going to end up under-reserving the claims that remain. Because you're no longer holding a reserve for that claim, but you have built in to your recover expectations the expectation that that claim will close, that there will be a closure two or three months hence. So the remaining claims will actually be on your reserves. If you do this practice for a material selection of your claims, when you actually come to set your reserve valuation, there should be some sort of adjustment for that. You're essentially pulling recoveries out of the future and taking them now as far as your valuation occurs.

I suggest that, for valuation purposes, there are actually two different ways to handle it. First, and this is not very desirable from a financial point of view, but hold

the full reserve until the end of the paid benefit period. Use it as a claim-management practice, but it doesn't actually give you a financial benefit until you've actually paid out the benefits. Then your termination rates are consistent with the reserves you're holding, or, alternatively, you release the reserve when the claim is closed. For purposes of setting your termination rates, you count the claim as a fractional closure. So you're not getting the full benefit of that. Either way, it's a slight increase of your reserves to account for these properly.

So it would be in that category, kind of like the early-submitted claims, I guess, and, again, I think that you have to be careful. If you're setting your valuation table based upon observed termination rates, and you're never going to have held a reserve for that claim, I think that those terminations do not count in your termination rates that you use.

It is a practice that some carriers use, of not counting in their termination studies claims for which there was never a reserve held, but, again, it gets kind of complicated pretty quickly in terms of the actual impact.

I was going to show you a couple additional examples. I'll not go into details. There's one example where a claim closes, is closed for a while, reopens, appears. This study is done as a snapshot with a time lag between the end of the valuation period and the study date to give time for most of the claims that would reopen to reopen. So within the study period if a claim closes for a period of time and then reopens, then it's counted as exposures throughout that entire period. It's counted as exposure during the time when it was actually closed. We lagged the study nine months to give time for any claims that appeared as closed to actually have reopened.

It's based upon the current status of the claim. The other consideration that we need to think about in terms of valuation is what do you do about claims that were actually closed at the time of the end of your study period, but you didn't know that, so there are terminated but not reported claims? And, again, from an experience point of view, you really want to just do the best estimate of terminations based on your current knowledge of the claims. But if you're actually using termination rates for valuation, you may want to use terminations that reflect your knowledge at the time of the valuation date. So, again, there's a little bit of a difference there in how those would be handled between experience table and valuation table. But enough about that, and I'll turn it over now to Tom.

**MR. THOMAS M. CASALENA:** Back in 1993, I was hired as the LTD actuary responsible for both pricing and valuation assumptions. My roles have changed since then, and I guess today you could call me the performance metric actuary who is responsible for establishing and designing the various performance metrics for the company, with a special focus in the disability claim metrics. The purpose of this portion of the session is to introduce some of the metrics that we use at RSL in connection with managing and monitoring results in connection with LTD reserves.

If you view the LTD reserve as a product of, say, the reserve factor times the net benefit, you can see that the first two metrics, the actual-to-expected termination rates and your net closure rates, tie into the reserve factor development. The last metric that we're going to be talking about, the percentage of claimants receiving Social Security awards, which is commonly referred to as your Social Security approval rate, that ties into the net benefit calculation.

What I'd like to do is give you a background about what these metrics mean, talk about their uses and also discuss some claim-measurement techniques. We'll follow with some examples of reports and design considerations for your information. The actual-to-expected termination rate is probably the most commonly used metric among LTD actuaries today. It has a wide scope of applications. Not only is it used to evaluate the appropriateness of termination rates, which affect that valuation, but it's also used in the development of your claim cost assumptions for pricing purposes. It's also used for setting reserves in your analysis, your loss experience analysis.

With respect to valuations, we compare our actual termination rates to our GAAP valuation assumptions. Obviously, we're concerned about not only adequacy in total, but also by duration. Primarily, we take a look at the unearned over 24 months. With respect to pricing and loss experience analysis, we modify our expected terminations. We basically strip out the valuation margin, and we do make finer adjustments relative to our valuation assumptions when it comes to treating special situations like going from the any-occupation to the own-occupation. We also adjust termination rates for salary, for diagnosis and other plan design features.

The next measure we're going to be talking about is the net closure rate. We defined this on two bases. It's defined typically as the number of claims terminating during a calendar period as a percentage of the number of claims open at the beginning of that period. Its major application is to assess claim-management performance. We also look at it on a reserve-weighted basis. It'll be the reserve changes on closed claims, and all this is net or reopened claims, as a percentage of the reserves open at the beginning of the period, and, again, we look at that for the purposes of analyzing changes. It's important to note or at least be aware of the subtle differences between the net closure rates and the actual termination rate coming out of your actual-to-expected ratios. They're related, but really there are subtle differences. As an example, when we're really assessing claim-management performance, we're looking at real-time occurrences because we want to try to tie into what's going on.

Some other subtleties are really in your numerator and your denominator. For example, the net closure rate will not count termination for claims that open and close during the calendar quarter. It may not count any reserves that were never reserved for, like there might be a subset of paying closed claims that we don't set up for. It may count, unlike the actual-to-expected, terminations due to reaching

the end of the mental nervous period or the end of the benefit period. Even the definition of duration is different under the net closure rates. The clock starts after the elimination period for your net closure rates where the actual-to-expected metrics start measuring duration from the date of disability. The last measures that we'll be talking about are the percentage of claimants receiving Social Security awards. This is the number of claimants receiving SSDI benefits as a percentage of the total claimants receiving LTD benefits who are also eligible to receive those benefits. That last part of the requirement might be a little tricky in terms of your data capabilities, but you should make some kind of a simplifying assumption, otherwise you may understate your metric there.

In terms of its uses, there are obviously some uses with respect to setting your reserve calculations when you're estimating Social Security offsets. You could use the Social Security approval rates as a basis of probabilities applied to your estimated amounts when they're being reflected in your reserve calculations, but the focus of what I'm talking about today is more from a financial management standpoint. Are we maximizing savings from the Social Security approval process? Are we benefiting from crediting the payment stream earlier through enhanced Social Security representation? And there's also this issue of overpayments. Going through Social Security advocacy, would that help us incrementally in recovering some of these overpayments? Now here are some of the questions that we're asking. Right now, due to limitations, we don't have metrics designed that really measure the effectiveness of our process, and I invite anybody here to share your experiences on this particular topic. We're open for some ideas. But at the very least I think the first step where we are right now at RSL is to establish benchmarks, and you'll see some examples later on on of what we're doing.

In terms of the sample templates, Slide 37 is the first template in connection with the actual-to-expected termination rates. So the shaded regions identify some of the interacting parameters of the report. We look at actual-to-expected results either on a claim count basis or on a net benefit basis. We had the flexibility to do that, but primarily we look at everything on a claim count basis. If we want to make adjustments by net benefit, we would just alter the selection parameter to either net benefit or gross benefits just to look at what those relativities might be. The other thing is that we have the observation period ending at the end of 2004, and the databases as of the first quarter of 2005. That's to account for claims processing. And we also look at various observation periods: one-year, four-year and six-year periods. We make any adjustments to pricing our valuation assumptions. We tend to look more at the four-year observation period. It's a lot more stable compared to the one-year, especially.

Slide 38 is really tracking the trends of your actual-to-expected results over time. For example, if you just look at the one-year observation period, just to clarify the interpretation, the observation period ending year-end 2003 covers the entire calendar year of 2003. The next row where the observation period is ending March of 2004, and that's since the first quarter of 2003 dropped off, and you're picking



up the new quarter for 2004. One of the interesting things to know is you might get some patterns. We track these patterns over time, and even though there might be credibility considerations for your one-year observation periods, you might get some interesting patterns where your actual-to-expected trends might be flat for a while. All of a sudden it dips, and then it might come back up a little bit. Maybe part of the explanation, at least numerically, is your expected terminations are rising at a rate faster than your actual terminations. What could be possibly explaining that is maybe your company is in a growth mode. Maybe you assume an average lag of three months. Maybe the lag is more than three months, and there might be some catch-up in processing termination claims. So that might be something to consider when looking at these results.

Obviously, breaking down the actual-to-expected results, you could look at it in the aggregate (Sides 41 and 42). We have our primary classifications, and if we want to try to understand some of the underlying drivers of the aggregate results, we have the ability to slice and dice, keeping in mind some of the considerations regarding credibility. You like to have a nice amount of exposure in each of the sub-classifications. We also align the breakpoints within the selected parameters to be tied with our pricing breakpoints.

With respect to net closure rates, you can see results based on either account basis or on a reserve-weighted basis. One of the things that is missing from this exhibit is we do like to compare the net closure rate trends relative to a benchmark, and it's important to always establish a benchmark to the extent that you can. We use our 2002 net closure rate as a benchmark for future net closure rates, and notice a footnote at the bottom.

Template 2 really begins to slice and dice the net closure rates and the individual parameters. One of the differences noted in this particular template when compared to Template 1 is that you'll see a total com and a normalized com. The total com is just a composite closure rate. It's independent of duration. But if you have the desire to compare, for example, if the selected parameter was claim office, and you wanted to compare Claim Office A's closure rates to Claim Office B's closure rates, you probably wouldn't want to use the composite rates on a total basis to make that comparison because of the underlying mix of business.

Maybe relative to Claim Office B, Claim Office A might be a higher content of white collar, might even have a higher female content. Maybe the diagnosis mix might be more pregnancy-related, etc. The bottom line of what that does is it weights the exposure to the earlier durations, which drives up the net claim cost. What the normalized approach does is it applies the same weighting to the net closure rates for each of the offices. Instead of using the denominator as a basis for comparison, we use the closure rates by duration combined as your weights, and you could probably get a much more meaningful comparison. It neutralizes the effects of the underlying mix. One of the key variables that we tend to focus on is by claim office.

As I had indicated before, what we're starting to do is track our approval rates over time. This shows the aggregate result over time and also split by gender and duration. Down below, depending on what our objective is, if we're trying to establish probabilities for the basis of estimating Social Security offsets, we will just include actual terminations. Part of our standard practice is to maybe take credit for an offset that's very likely to occur, but we may make exceptions to that process. Maybe the claimant's crying hardship or whatever it might be. We may not always do that. So, just to track by office what the frequency of us actually estimating the awards, we have the ability just to track that by itself.

And, again, slicing and dicing aggregate results in the selected parameters, we might want to focus in on a specific sub-classification. Recently, we are working with an outside vendor to assist us in the Social Security approval process, basically as a pilot working with one of the specific claim offices. So when we look at results, we can just see maybe what the impact of that advocacy has on results. And then if this is successful, we'll probably be expanding it to other offices. But we'd like to do some kind of a parallel test to see what the impact might be.

Before I move into the next section, the purpose generally was just to give you guys a sense of the metrics that are related to this general theme of LTD reserves. There are many more metrics that we can talk about, but I think this ties in nicely with the panel discussion. The next key topic for conversation is dealing with the potential challenges in interpreting results. You could do everything right in the sense that you established your assumptions, your reserving practices. You come up with these great reports. Now the fun part begins, the part where you analyze results, but the challenge is what happens when you can't explain these actual-to-expected results. That's where we are, I guess. But what I will be focusing on is primarily the internal/external reasons that you may want to consider when looking at the challenges. Rick will pick up some of the other key considerations under this particular topic.

Step zero in the process, in any analysis, is having good data. I don't know how many times you may have to eliminate a significant portion of your database because the data elements were either missing or unreliable. You look at your claim systems, especially if your administration system is relatively old. It wasn't really designed to conduct actuarial expected studies, and your claim examiners are looking at it from their perspective. So, it's not surprising that you have to be encountered with some of the data-quality issues. One of the things that we suggest doing is (this may sound like common sense, but there is a due diligence to it), on a periodic basis, familiarize yourself with the database. If you view your claims administration as a warehouse of critical information, you may have to do some spring cleanup in a sense. Take a look at the stuff. You'd be surprised at some of the data that's coming in there that could really distort your results. Data audit checks are tied to specific or critical data elements that affect your specifications. That's key, to develop those particular order checks. For those companies that have participated in the Society studies, if you ever had the

opportunity to talk to committee members about validating your data, I found that conversation to be very insightful because it had to identify things that you may have missed in the process.

Another critical consideration is changes in the administration system. During the last 10 years and even recently, there have been significant advances in systems-development technology. Today your systems are interactive. Screens are user-friendly, which may cut down on data entry error. But behind the scenes, today's systems are probably very complex and comprehensive. There are a lot of interactive and moving parts, and there's a chance for something to go awry. We're in the middle of a change in our administrative systems. We're actually changing a lot of our systems applications, and everything's going to be integrated. I think some minimum recommendations, in order to facilitate a smooth transition in your systems, are obviously to have a good action plan with respect to design specifications, and even a good parallel-testing plan. Obviously, this is a company objective, and all the critical departments should be represented. The other thing not to lose sight of is training. It may take the claim examiner so many months to get used to the systems, and that may result in some short-term processing lags and follow-up by some kind of a cleanup. So you might be expecting some blips along the way.

I already discussed changes in the business mix. Depending on where we are in the business cycle and in conjunction with your specific business mix, economic forces will obviously play a role in your pattern of actual-to-expected results. We don't have tools in place to analyze or isolate them. So, the economic forces analyze correlation analysis and termination rates with some of the key economic metrics such as interest rates, unemployment rates and employee growth rates. What we do tend to take a look at is aggregated actual-to-expected recovery rates and also break them down over your broad industry sector. Look at wide observation periods over your periods of recovery and recession to kind of get a sense of how things are changing, and take a look at some of the industry sectors such as manufacturing, wholesale and retail trade. Those are the types of sectors that are very sensitive to the economic forces.

There are other action steps that I haven't already mentioned. I guess obviously for credibility it's very important not to overact to credibility. When we make our adjustments through any of our termination tables, we do some kind of a credibility check. We may do a weighted average of the experience relative to our expected results. And especially with the cells that are not credible, even your specific criteria could come into play and really distort results. The last thing is, to the extent that it's possible, it's very important to include industry benchmarks. If your metrics are deemed to be unfavorable, yet it's an industry pattern, it's prevalent throughout the rest of the industry, it may not be as critical of an issue with respect to your company.

**MR. LEAVITT:** We did not have this presentation out on the Society's site prior to the meeting due to tardiness, but it will be out on the site after the meeting. One of the biggest issues the Experience Committee faces is a significant variance across carriers in the termination rates that are observed. We don't have any charts to this effect because the committee members are not supplied with individual company results. But as part of our due diligence of the results, we observed different experiences by carriers with the identity of the carriers blanked out. What was quite striking is the variance in termination rates across carriers. Some of it certainly is real, having to do with differences in claims management and business mix. Some of it may be data issues. It may be that we're observing incorrect termination rates from some of the carriers. Being able to make the distinction between those two is going to be one of the important challenges that the committee will still face. But the important outcome of that is, given the observation of this wide variance, your individual company results may not at all be consistent with the aggregate study. So it may not be appropriate, depending on your own claim practices and your own business mix, to simply adopt termination rates as a result of this study.

In general, that was one of the issues with Table 95a. Table 95a has proven, I think, relative to this date, to be fairly consistent with the average industry experience. The problem is it's not necessarily consistent with your company's experience, and no doubt the same is going to be true of this table. So, it's the thing to bear in mind as we make use of this table and as you interpret results.

That being said, I wanted to just very briefly talk about a specific challenge in actually interpreting something that you're going to see. You're going to see your termination rates either using metrics like Tom described relative to some internal benchmark of our own or relative to the industry. Sometimes that can be a little bit challenging to interpret those. For purposes of judging the impact of the terminations on your reserve adequacy, I would advocate something like an adequacy-weighted termination report. I'll talk a little bit about what I mean by that, but here's the central problem. Here are two different termination reports. Maybe they're different periods or different segments of business, and I give the actual-to-expected terminations by year of duration. One of them has a total termination of 109 percent. The other has a total termination of 87 percent.

The question you have to answer as valuation actuaries is: What are the adequacy implications of these two reports? If you expected your experience to match Termination Table 1 or Termination Table 2, should you be raising or lowering reserves? Are reserves OK? Should you be raising or lowering reserves on new claims for purposes of setting your pricing level or for your entire block of claims? Up or down? Can you tell by looking at those? A short answer is it's a little difficult to tell by looking at them because of the variation in the terminations across duration. Clearly, terminations are high in the early durations, but they're kind of low in the later durations. And what's the overall impact on adequacy of that?

Report 2 is kind of variable. It's up and down. I can't tell, and the unfortunate thing is that these termination reports are used to report to management to get some sense of reserve adequacy. With Termination Report 1, you might be telling management, "Well, you know what? I think our reserves are a little weak, but, of course, our total termination is 109 percent." That's a hard concept. Those two things seem to be contradictory to each other, and that's the whole point of this adequacy-weighted termination report. Wouldn't it be nice for purposes of reserve adequacy to have a report where the sum total number on it indicates whether your reserves are strong or weak?

The fact is that the impact on adequacy varies depending upon whether your terminations are high or low in different durations. Across the top of Slide 53 is the duration of an adjustment I'm going to make to my termination rates. Down the rows there is actually the impact it'll have on duration of claims. I think the easiest thing to understand is for the cells that are blank, if you're going to make an adjustment in duration for claims in Duration 1, clearly that's going to have no impact on claims that are already in Duration 11+. So if you can understand why some of the cells are blank, then you'll understand the table.

I will give a caveat here that I do not at all recommend making adequacy changes to your reserve level based purely on termination table information. I think you need a more detailed study that indicates how your reserves actually run out, given all of the things that impact it, including Social Security, adequacy of data and termination. So, I do not recommend making quarter-to-quarter changes in the level of your reserve based upon your termination reports. I'm simply trying to produce a report that gives some indication of whether the terminations indicate that your reserves might be weak or might be strong.

In Slide 54, I'm going to get the percent impact on your reserve level based on variances in your termination rates. So that entire block table there in the center says that a 10 percent variance of your termination rates has a 0.13 percent impact on your entire block's adequacy if that impact occurs in Duration 1. So it has a relatively minor impact on your entire block, and you can look and see where variances in your terminations have the greatest impact on your overall block adequacy. If you look at that entire block table, the biggest impact is in the latest durations. If your terminations are short in your early durations, that only affects claims that are in your early durations. But if your terminations are short in your later durations, that affects all claims because they all pass through those later durations at some point in time.

The second table there is for claims in year one. So it's a little bit of a different pattern depending upon whether you're talking about new claims or you're talking about your entire block. So I can figure out what those impacts are based on testing my termination rates, and then I can use those impacts to match up against my termination reports to get the impact. So for Termination Table 1, I take those impacts, I match it against the actual observed termination variance, and I indicate

that the terminations observed in Table 1 indicate that reserves are 5 percent. So that report, which had a 9 percent total actual-to-expected, indicates that for your entire block your reserves are not adequate. So that's the disconnect I'm trying to get a handle on. For new claims, the high termination rate produces reserves that are slightly strong.

Slide 55 shows the results for Table 2. Here was the one where you had a weak actual-to-expected, and it corresponds to reserves that could be slightly higher. Slide 56 is a chart that shows the impact by duration for the entire block and for the new claims, so you can get a sense of what the impact is of variances in your termination. The whole point here is to try to make some connection between the observed termination rates and actual reserve adequacy. It varies by duration and is different for your entire block versus new claims. I did this up as an example to demonstrate the process of how you would do it. I would not use those percentages from the prior pages on your own block. You have to do the study yourself. This is purely for illustrative purposes.

Just to summarize, the total termination actual-to-expected does not always align with reserve adequacy. That's the main point. It does not always align with reserve adequacy, and those of you who have been in a valuation reporting role are well aware of that because you've had to deal with that issue, that your terminations are high, but your reserves are weak or vice versa. Claims in the termination report also may not be consistent with the claims that are used in an actual run-out study. And, of course, there are a number of other considerations where the future doesn't always match the past, and that's probably the biggest challenge we face as valuation actuaries. Everything's backward-looking, but we're really trying to make some projection in the future. So, reserve adequacy depends on more than claim terminations, but claim terminations do have an impact on reserve adequacy. Run-out tests are the best method to ensure reserve adequacy, not termination reports, but this is a way to interpret the termination reports.