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## **Session 132OF Disability and Group Life Experience Studies: What Have We Learned?**

**Track:** Health Disability Income

**Moderator:** THOMAS R. CORCORAN

**Panelists:** ROBERT W. BEAL  
ROGER L. MARTIN  
SUSAN R. SAMES

*Summary: Major new experience studies have been underway for individual disability, group disability and group life. This session covers the results of the studies to date, implications of the results and the future direction of the studies.*

**MR. THOMAS R. CORCORAN:** I think this will be one of the most interesting sessions that we'll have in the meeting. This is experience studies—the individual disability experience study, group disability experience study and group life experience study. We have three speakers. First will be Sue Sames from Tillinghast. She's a consultant in the Simsbury office specializing in group life and disability. She's also chair of the Group Life Experience Committee. Roger Martin is chief actuary of UnumProvident. He's worked in individual disability income (IDI) and group disability insurance for his entire career, starting with Paul Revere, then Provident and now UnumProvident. He's chair of the LTD Experience Committee. Bob Beal is a consulting actuary with Milliman in their Portland office. He specializes in IDI and, I think, has been an IDI consultant most of his career.

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I think we can safely say that probably more preparation has gone into this session than any other in the meeting, literally years of work behind each presentation, so we'll let them get to it. We'll start off with the group life experience study.

**MS. SUSAN R. SAMES:** I guess the most important thing to note about the group life study is that even though years of work have gone into it to bring us to this point, we still have quite a ways to go. When we originally scheduled this presentation, we actually were somewhat optimistic that we would have at least some preliminary numbers to share with you today, but we are not at that point yet.

The Group Life Insurance Experience Committee has been working on two studies simultaneously. We've been working on the mortality study, which is an incidence study that's going to support pricing. That's an update to the 1985–1989 study that was published back in 1995. The other study that we've been working on is the update to Krieger, a waiver reserve study. It's a claim termination study, and it measures deaths and recoveries. There's a lot of interest in that table. Krieger, as you probably know, was published in 1970 or 1971.

The committee did a lot of work. We issued the call for data back in the fall of 2002, and we were receiving submissions well into 2003. We received a few company submissions in 2004. What we've been doing so far has been auditing the data, and there's also been some downtime while the IDI and group LTD studies were being worked on. I'll go into the whole audit process in a minute. One of the things that I have learned is that it's very dangerous to commit to timeframes, but I did decide that I needed to do that here. We're really working on getting the remaining data issues resolved this year. Some of that's going to mean getting new submissions from the companies. Some of it's going to mean that there are some submissions that we just won't be able to use. We're just about at the process where we can give some preliminary results of the audit test that we've been doing back to the

company. I would say that sometime early to mid-2005 is when we will be releasing the study results. After that point, there might be some other implications that might follow on to that in terms of actually looking at valuation tables for the waiver.

For the mortality study, it's taken a lot of time to go through the data audit process. It's a fairly complex study, as opposed to the other three studies that will be talked about. It involved multiple files from each contributor and then a process of linking those up. We really had thought that logically it made a lot of sense to do it that way, to provide people with some more flexibility in how they submitted the data, but as it has turned out, that's just made things very complicated. Probably we would have done ourselves more of a favor by making the structure a little bit tighter so that people didn't have that level of flexibility.

We were pleased with the amount of participation that we got. We had about 20 companies that submitted data. Just to give you an idea of what some of the key issues were, we haven't gotten very much self-administered data. We've gotten a lot of claims on self-administered data, but they have been concentrated in a few very large companies. Many companies had a lot of difficulty providing the waiver provision. As you probably remember from the other study, we need to go in and look at the data by what type of waiver provision it had, whether it was lifetime or to age 65 or didn't have waiver at all, because there's usually quite a bit of variation in the mortality rates for that. A lot of companies did have problems, mostly dealing with their own systems in getting us those data. We did ask for accidental death and dismemberment data. We haven't really done a whole lot in looking at that yet, but we'll be adding that wherever we can.

We do have a couple of contributors that are so large that they kind of overwhelm the rest of the results. We are going to be applying dampening factors to those contributors so that no company is more than, say, 25 percent of the total results.

Next I'll discuss the basic structure. We're collecting lives and volume information for both the claims and exposure. We have the ability to create pivot tables across a number of different parameters—gender, age and waiver provision. We're hopeful that we can get some distinctions between basic, supplemental and optional. I think some of that's going to depend on how the data come out once we go through this audit process. We also would ask people for a group size indicator, so we could split it that way. We would ask for group effective date, as well as the traditional standard industrial classification (SIC) code.

It would have been nice to have been able to provide actual data here, but I thought I could at least give you a look at what some of the report formats are. The pivot table report format that we have (Sames slide 7) is very, very flexible, so people can go in and create their own reports and look at things in different ways. The companies that submitted data are going to be able to look at their data in tandem with the industry data.

The waiver study is a little bit further along, but it's also essentially at the data audit stage. It was less complex because there's only one file. Twenty-three companies submitted data. We segregated those into two databases following Krieger's format, because Krieger is forming the basis of the expected values that we have for that. So the two different databases are claims up through 10 years and then claims and durations 10 and beyond. The first one is going to be by age of disability and length of disability, similar to how Krieger was set up, and then the ultimate period is by attained age.

One of the issues that we've come up with on this was that our original study period was 10 years and companies had submitted claims that were on disability for that whole time period, but actually they might have only been able to submit to us their waivers, deaths or recoveries for, say, the last five years. So we've gone back in and actually truncated the exposure for, say, the first five years. We've needed to go in company by company to look at that.

With both of these studies we have a lot of company-specific results that we're going to put together and give back to the contributors so that people can see what their own results are. There are some things that are obvious, like this truncated exposure when we had zero claims. With zero recoveries and zero death claims, it was pretty easy to tell that probably we didn't want to use the exposure for that period. But there are some things that are a little bit less obvious. Companies should have a good idea of the impact of their systems changes or the various cleanup efforts that they've done. I think we're at a point where we need to go back to the contributors to get their input on that.

We have the lives and volume information. Krieger was done on a unisex basis, because with the data that he had from the 1950s and 1960s, there weren't nearly as many women in the work force. I think one of the interesting things that we'll be able to tell with this is just what the impact is of males versus females. We also have age of disability and duration of disability. We tried to capture things like diagnosis, but not enough companies were able to supply those data for us to be able to use that.

As I mentioned, our initial strategy was to allow for more flexibility in the structure of the submission, and as it turns out, that probably created more problems. It was a good idea, but it created more problems than we would have liked. The data audit process has taken a lot more time than we had initially thought, but I think it's very important for us to go through that. As I said, we're just at about the point where we're going to be going back out to companies to have them get more involved in that.

**MR. RAYMOND J. MARRA:** On the term life study, are you going to have the ability to look at both dollar amounts as well as counterclaims?

**MS. SAMES:** Yes. There were some companies that were able to submit lives only,

so we're actually going to have three categories—total number of lives, volume and then the lives that had volume information with them. The difference between those last two will give you an idea of what the impact is with the volumes.

**MR. MARRA:** Will there be an active-retired split?

**MS. SAMES:** Active versus retired was something that we tried to get, but most companies weren't able to determine that.

**MR. MARRA:** I would just think that at some of the early retirement ages you might see different mortality between active and retired, but believe me I understand all the data constraints that you're dealing with.

On the premium waiver study, is there any distinction being made in terms of the definition of premium waiver? I know a few years ago some companies were linking the waiver definition to the LTD definition, and I don't know if there's any need to sort of clean that or if it's going to be one of those things that would be nice to have.

**MS. SAMES:** Well, we didn't ask for it. It's one of those things that would be nice to have, but we didn't think that people would have that information. What we were looking for was information on claims that were open any time during that 10-year period, and we just didn't think that companies could get us that information on the older claims. Some of those are 30 years old.

**MR. CORCORAN:** Do you have any idea what percentage of the top 10 companies are participating in the study?

**MS. SAMES:** Particularly for the waiver, we had an awful lot of interest in that. I think for companies, particularly on the self-administered side for the larger carriers, there are still a lot of issues in getting those data. But certainly there's a

lot of interest in companies in getting the results, and, as I said, it's hard for people to commit the resources and the systems just don't always support what we're looking for.

**MR. ROGER L. MARTIN:** We're a little further along than Sue in the group life side. I'll caution you that the results are preliminary; there are still some data issues. We still need to do some higher-level analysis and scrubbing of the data to clean it up. The purpose of throwing out the results today and sharing them really is to generate some excitement and commitment from the participating companies to take a look at their information, the data that they submitted. We'll be supplying some information back to them to work through cleaning up that analysis. Please, before we go into it, don't walk out of here thinking you're going to draw conclusions from the information, because it will change. The data will move around a little bit, and the results will change.

**Participating Companies**

AIG/American General	Lafayette Life
American United Life Insurance Co.	Liberty Mutual
Anthem Life Insurance Co.	MetLife Insurance Co.
Assurant	Mutual of Omaha Insurance Co.
CIGNA Group Insurance	Principal Financial Group
CNA Insurance Co.	Prudential Financial
Florida Combined Life	Reliance Standard Life Insurance Co.
Genworth	Safeco Insurance Co.
Guardian Life Insurance Co.	Standard Insurance Co.
Hartford Life Insurance Co.	States West
Jefferson Pilot Financial	UnumProvident

There are 22 companies in total that participated in the data. If you look down the list, we do have a very good cross section of the top 20 companies. They probably make up (I'm guessing) about 70 to 80 percent of the overall industry results, if not more than that.



**LTD Experience Committee**  
**Experience Committee Members**

Edd Bailey—Assurant	Paul Hitchcox—ULR
Warren Cohen—Reliance Standard	Rick Leavitt—Smith Group
Tom Corcoran—Tillinghast	Allen Livingood—UnumProvident
Peter Doucette—Hartford	Jack Luff—SOA
Pat Fay—MassMutual	Roger Martin—UnumProvident, Chairman
Deb Fredricks—MetLife	Chuck Meintel—JHA
Steve Garfield—Standard	Eric Poirier
	Ray Siwek—Prudential

I would like to mention a special thanks to Todd Fuhs. Todd led the committee prior to my taking it over earlier this year, so really Todd did a lot of the heavy lifting in getting companies involved and scheduling a lot of the meetings. Then I'd like to thank Steve Atkins, who recently left the committee to take a new position. We are working with an independent vendor, Solucient, and Perry Beals and Julie Havey are helping us out as well on that committee. I'll talk about some of the obstacles that we have with working with an independent vendor and the need to keep the company information blind to the committee. It's the right thing to do, but it does create obstacles.

These committee members really have committed themselves. A lot of time and energy has gone in with multiple meetings. There was a point where we were meeting every other week. We've had two face-to-face meetings in Cincinnati and Portland, Maine. We've had at least one Web-based meeting to share information. There will be more meetings as we go through the rest of 2004 and into 2005, where the real work will continue in terms of detailed analysis.

The focus of the committee and the study as of this point is on a paid claim termination study with a separate analysis for recoveries, mortality, max-outs or

benefit maximums and settlements. We're not doing an incidence study. You'll see in the group life and IDI study that they've done an incidence study. Here we are able to measure and analyze death separately from recoveries and settlements from a total termination perspective.

Let me give you a timeline. Initial data requests went out early in the summer of 2003. A good chunk of time, eight months or more, was spent on data analysis, mapping, validation and resubmission for several companies. The committee split into two subcommittees. There was a data subcommittee and a formula subcommittee, and both had detailed tasks that they had to complete. Clearly the data committee had the heavier of the two tasks in terms of all the work that needed to get done. We worked with Solucient to develop audit tests and test scripts back and forth with the companies. You'll see as we go through the results that we're still not clean. There's still more data mapping that we have to go through.

This is a place where that issue of blind analysis comes in. You have a data committee that can look at audit tests and results of data, but it's only after the data have been mapped by Solucient. It's only after the data have been summarized, with counts removed and working in terms of percentages and mixed differentials. It just makes it more difficult. It's the right thing to do from an overall industry perspective, but folks need to recognize that it takes more time, and it actually puts more of an onus back on the participating companies. If you folks here all belong to companies that are participating, please, when you get your data back, go through it, think about the mapping definitions and the rules that you put forth and work through trying to help clean up the information so that we get the best study that we can get.

The next steps are to share the initial results with the participating companies and then in 2005 to develop the experience report and the experience table. It looks like right now that in New Orleans in June we'll have another session where we'll go

through a similar set of results, and we'll be able to update the industry on what has changed and where we are. Finally we'll consider valuation table implications probably in 2006, so that is still a ways away.

We'll go through the initial review, and I want to point out the word *initial*; the results are preliminary. This is just a warning in terms of drawing conclusions. More than 1.7 million claims were submitted, with more than 1 million currently in the experience study. The key drivers in going from the 1.7 million to the 1 million are, first, it's a paid claims study, so there were claims that were submitted that were within the elimination period or no payments were made. We had to back those out. Then, second, not all data submitted by each company were in sufficient detail to be included in the initial review. The most notable exclusion was by calendar year. There were lots of companies where we had to go through the results, and it was very obvious where you had exposure and no claims or you had claims and no exposure, or all the terminations were bucketed into the other category. This is an area where we may have introduced a bias. We have to go back, and we have to double check that to see in this initial review, in addition to some of the data-cleansing issues that you'll see, whether or not we introduced a bias. We're looking at a 10-calendar-year study, 1992 to 2002, 25 million months of claims exposure. Dampening factors are not applied at this point, but they will be to reduce the influence of those companies applying the largest exposures. You'll see when we apply the dampening factors that it will reduce the exposure of the top three largest companies and raise the weight of the rest of the companies.

The results you'll see in a moment are of recovery in death rates, actual to expected, relative to table 95A, and this is done on a count basis, not an indemnity weighted or a gross or net monthly benefit. It was also done at a summarized level, age group, gender, elimination period, duration and key diagnoses categories. The expected was not developed on a claim-by-claim basis, so that's an enhancement we'll have to go through so we can get exact age and do the analysis in a more refined manner on a claim-by-claim analysis.

This chart (Martin slide 6) gets into some of the dispersion of the recovery rate results. For purposes of this analysis and this study going forward, we took recoveries, other terminations and unknown and lumped them into recoveries. In some instances the recovery ratios could be overstated a little bit. Again, this is one of those data issues we'll have to go back and clean up.

This chart shows the results by claim duration and recovery rates. We looked at the top 13 companies and looked at the minimum recovery rate, 25th percentile median, 75th percentile and maximum. Now, the companies move around in this analysis, so the same company is not always the maximum or the minimum. The results in the tail are clearly statistically different; even though the rates are a lot smaller, the variation among the monthly durations is statistically significant. This is just an example of the wide disparity of recovery rates that are being experienced out there.

This next chart (Martin slide 7) shows mix comparison to table 95A. This initial study that we're looking at is about five times the size of 95A. The charts down at the bottom show the age mix comparison as well as the elimination period mix comparison. The T04S study is this initial study we're looking at here. You can see it has higher 180-day elimination periods and is skewed toward the younger age and a little bit more in terms of females.

This next chart (Martin slide 8) shows actual raw recovery rates. This is the 180-day elimination period, and you can see the line with squares is the actual recovery rate and the other line is expected recovery rate based on 95A. The 90-day elimination period chart is similar. It's actually a better fit, so the 180-day tends to have the wider dispersion relative to 95A.

The death curves are shown in this chart (Martin slide 9). This is in aggregate by elimination period, but the fit is roughly the same for the 90-day elimination period

versus the 180-day elimination period. I don't think these results are surprising to anybody in that the actual death rates are lower than expected in table 95A. You can see one of the data issues we have. I like to call it the own-occupation deaths. You can see that around month 28 through month 36. This is one of those areas where we'll have to work through and clean up the information.

This chart (Martin slide 10) shows overall recovery actual-to-expected ratios. Again, these are count-based; they're not developed at the claim level, so they're done at the summary level. The 90- and 180-day results, which you'll see in a minute, are relatively clean. With the below-90-day elimination period, the data were all mapped to that 60-day elimination period, and there's a little bit of noise there, so we didn't show those results. Overall, on the right-hand side you can see the aggregate across all durations running at 84 percent of table 95A, again with the spike in the third year. Then the line with diamonds is the actual-to-expected recovery rate line being on the top of the chart, coming out at 103 percent of 95A and in total at 97 percent of 95A. Again, I caution you that in years 8+ where you see the actual-to-expected ratios jump, this could be a function of the underlying expected table. It also could be a function of another data issue in the sense that we have claims that are maxing out in terms of maximum benefit expirees, where they're being coded as recoveries.

This chart (Martin slide 11) shows 90-day results. You can see a better fit to table 95A relative to the aggregate of the 180-day. You do see at the three-year point the 138 percent actual-to-expected ratio. The own-occupation factors within table 95A are applied here, so this shows that, at least for the 90-day, the own-occupation adjustments in table 95A are probably not sufficient to adjust for the recoveries at that period. The 180-day chart (Martin slide 12) is less of a fit when compared to 95A, and then again here in the tail where the actual-to-expected results really increase.

If you look at the results here (Martin slide 13), for males and females, there are

similar patterns to the overall results. The own-occupation spike in year three is higher, more pronounced, as well as the long duration results. Again the fit didn't seem as tight for males as it did for females here on this chart (Martin slide 14). You can see the fit looks a little bit better in the overall results. The surprising element for me here was on the mortality side: on the death side how the female results coming in total at 94 percent and really beyond year three coming in a lot closer to 100 percent of 95A.

Let me spend a minute with this chart (Martin slide 15) to set it up for you. What we have here in the bars are actual-to-expected recovery ratios by the diagnosis buckets. You can see the diagnosis categories defined in the table below with the percentage of claims within each of these categories. The line with diamonds is the mortality actual-to-expected ratios. The way to look at and understand the bars and how they're grouped is this: table 95A had four diagnosis buckets, so this first diagnosis bucket is maternity; the 06 is mental/nervous; and then 11, which is AIDS/HIV. Then everything else was lumped into the "all other" category. If you take a look at sort of the fit of maternity and mental/nervous, it looks pretty good. I don't think anybody's surprised in terms of the AIDS/HIV and the resulting actual-to-expected recovery ratios there.

What I did want to spend a few moments is with all the other buckets, the shaded bars. When you look at those relative to table 95A, they all get compared to that 95 other bucket all the way over on the right-hand side. You can see in aggregate, the actual-to-expected recovery ratio is 104, and actual-to-expected death or mortality at 89. You look at that in aggregate, and you say to yourself it's a pretty good fit. You kind of go across the buckets, though, that get lumped into that, and you see that there are only two categories, cancer and neoplasms, that are within plus or minus 10 percent of the overall 95A other bucket. The remaining buckets show some pretty wide disparities. If you look at buckets two, three and four, they're running close to 125, 120 to close to 150. In bucket seven, you have the emergent disabling conditions where the results are materially below. There is an opportunity

here to refine our thoughts around diagnosis groupings as they result in termination analysis.

This chart (Martin slide 16) shows the recovery rates by calendar year and duration. The top line is the first-year termination rate, and that will go to the right-hand side on the scale. Everything else is keyed off of the left-hand side on the scale. Again looking at the results, this is where I wonder if we had introduced any bias in terms of analysis when we went through company by company and decided where to start their analysis in terms of calendar year. Here you can see it looks like in 1998 there was a dip, whether it was caused by one company or a group of companies, whether that's where a lot of companies started including information or we might have had a series of companies in the 1990–1997 time period and then a different set of companies contributing in 1998 and later, which could have caused that disconnect. If you think about some of the contemporary claim management practices that started in the late 1990s, you can see general improvements in the results during this later period. Death rates by calendar year and duration generally declined over the study period pretty much across all durations. I don't think anything was surprising there.

In terms of the next steps and where we're going, the first step we're going to do is work with the vendor to build the actual-to-expected functionality relative to table 95A directly into their capabilities and tools, so that we can do the analysis on a sort of claim-by-claim level analysis. I think these results given the data we have are pretty close, but we just want to refine and get to that claim level analysis. The second step is to build company-by-company data sets and pivot tables. We found that the best way to look at this is using Excel pivot tables. Most companies have at least a couple of people who know how to use that and can use Excel pivot tables to move the data around.

What we'll be doing is generating a data set for each participating company so that they can look at their results, and they can look at the aggregate results. We're also

going to give each company their audit results and their mapping rules and ask them to go back and work independently with Solucient and the committee members to see if we can get further cleansing and cleaning up of the data. To sort of gain a level of education across all of the participating companies, we'll hold a Webcast to educate them on what they're looking at and how to use the information. We're hoping that companies can scrub their data and get those back to us. I'm hoping we can do it by the end of the year, but it will probably be more like the end of the first quarter. As Sue said earlier, it's very difficult to try to put time tables on these studies, but we do have a stake in the ground, which is that health meeting in the spring in New Orleans, where we do want to produce an update to this analysis.

**MR. JUSTIN N. HORNBERG:** Both of you mentioned using dampening factors, and I think I understand why. You clearly explained it, and I know you said you haven't done it yet, so I'm not going to ask you exactly what you did. But what are the kinds of things you think about in terms of what's the appropriate factor to use? It almost seems like a judgment call. Is there any science behind it, or what's the balance between art and science when picking that factor?

**MR. MARTIN:** I'll speak from the LTD Committee. I'm sure there's a science to it somewhere. We didn't use the science. It really was judgment. We looked at the range of exposures and results by company, and really what we wanted to do was take those midsized companies and sort of give them a little more weight. What we didn't want to do is take a company that had 1 percent of the overall exposure and turn them into 15 percent. That didn't make sense to us, but the mechanics of what we're doing was we wanted to limit any one company's exposure to about 25 percent. That will dampen the top three companies from an LTD perspective, raise the middle group of companies a little bit, and while it raised some of bottom-level companies in terms of small exposure, it didn't raise them enough that it created a material impact on the overall results. Again, it was not a science from our perspective, more of an art in terms of where we wanted the results to be in terms



of trying to reflect a better distribution of all of the participating companies.

**MR. ANDREW S. DEITCH:** One of the things I remembered about the table 95A results was that, in trying to come up with a valuation table from 95A, a lot of companies were concerned about deficiencies in the tail. I guess I was kind of surprised to see some of the slides that you had there that showed very high actual-to-expecteds in the tail relative to 95A, so I'm just wondering, were the company's fears ill-founded before, or should there be a concern now going forward based on this? I know it's preliminary, but I'm just wondering if you had any thoughts or reactions to that.

**MR. MARTIN:** Absolutely, and it was a surprise to me at least and I'm sure to other committee members in terms of the actual-to-expected results in the tail. I would not at this point draw any conclusions in terms of whether we should change our views on the tail of 95A. I think it's still too preliminary. I think if we go through the cleansing exercise and really scrub the data and come out with the results that continue to look like this, then we can think about changing our views. But at this point I do think there's some noise out there, and I think it's important to recognize a few claims bucketed in the long sort of bucket would be enough to move the results from 90 percent to 110 percent of table 95A.

Also remember that we included for purposes of this analysis in recoveries those terminations that were bucketed as unknown or other, and it could very well be that those are max-outs or something else. That could be driving the results down as well. I think if you go back here and you also look at the dispersion of the results in the tail, it gives you another indication that we do need to understand a little bit better what's going on out here yet. I wouldn't change views just yet.

**FROM THE FLOOR:** What were the elements you lumped together under recovery in your chart (Martin slide 6)?

**MR. MARTIN:** It was those claims that were coded as recoveries, those claims that were coded as unknown and those claims that were coded as other. Let me give you the other buckets, because I think that's important—settlements, max-outs and deaths. So settlements, max-outs and deaths were not included in the recovery bucket.

**MR. CHUCK MEINTEL:** Roger, on your one chart (Martin slide 16), do you know if there's a difference in the distribution by ICD9? You see the termination rates increasing from that 1998 to 2002 period, but do we know if there's a difference in the make-up of the claims from the early 1990s versus the late 1990s?

**MR. MARTIN:** We have that information, and we can look at it by calendar year and diagnosis, but I don't know off the top of my head. I'll turn it over to Bob to go through the individual stuff.

**MR. ROBERT W. BEAL:** My job here today is to present the results of the Individual Disability Experience Committee, which, of the three, is the farthest along in the process of analysis and developing the table. For the study period, we focused pretty much on 1990 to 1999. Some companies submitted data beyond that, but we felt overall we were able to get a good snapshot over that period of time and not get into the issue of incurred but not reported, understating incidence and terminations. That's a very fascinating period of time for this business, so it's very worthwhile to study it.

I'm estimating that we captured about 80 percent of the industry experience here. We have Paul Revere, Provident, Unum, MassMutual, Northwestern Mutual, the Berkshire, Illinois Mutual, Trustmark and Principal. I probably missed a few others. I think about 12 companies total have contributed to our data. Results are measured relative to the 1985 CIDA table, which was developed a long time ago and based upon experience in the late 1970s and early 1980s. In fact, a lot of the termination experience after two years was a group long-term disability, so I think we're going

to be doing a lot to improve on those. But our results to date are relative to that table in terms of incidence and terminations studied separately.

One of our goals initially was to look at claim cost where we were combining incidence and terminations into a total claim cost. We won't be at that point for quite a while, but I think the results will be still quite worthy when we just look at incidence and termination separately. Most of the results I'm going to share with you today are relative to indemnity. We can do relative to count as well. As you would expect, the incidence is higher when you measure by indemnity versus count in general, and terminations are lower. I think understanding differences by indemnity is probably a better indicator.

Let me give you a little quick history. The current committee started around January 2000 meeting and figuring out what we wanted to do. Among all the things we had to do, not only design the study and find out the contributors, we had to find the software vendor. In fact, we're the ones who found Solucient initially, which the other two studies have been using. We went out and started collecting data in the spring of 2002, and it took quite a while. I think by the end of the year we really had everyone in. In the spring Society meeting in 2003, we first presented some preliminary results, preliminary because we were still scrubbing our data, but we felt as though there was enough interesting information coming out of that, that we felt comfortable with that we could report on. Over the next year we tried to scrub the data.

There were a couple of companies we kicked out because we felt as though their experience was outliers. We wanted to take more time to make sure that there wasn't any problem in the data gathering. There wasn't; it just happened to be the nature of their business, and so we brought them back into the group.

We now can analyze experience by contract type, accident and sickness (A&S), typical traditional disability insurance (DI), individually sold business, overhead

expense (OE) and disability buyout (DBO). Those have different characteristics altogether, so we can separate those out. We have a pretty good handle on data by occupation, not that all contributors could give us data by occupation, but the majority were able to do it, and we went through a process of grouping them into some generic categories. This is the first time we ever had any industry data with specific occupations versus the old 85 CIDA occupation classes per se.

We can look at claim termination experience by diagnosis and get some interesting results, which I'll share today. Then we also can actually evaluate experience, disability versus total and residual-type business, incidence and terminations, although the results are only so high. I would expect that the incidence on the total and residual would be generally higher than for total disability. It isn't. I can't see a real pattern, but we can break it out and study it.

As far as next steps, we will have a report of our results hopefully the end of November, if not the first of December, certainly by Christmas, and that's just the report relative to the 85 CIDA. It's very lengthy. We have it about two-thirds written. We're working on finishing this up. It's going to be probably 50–60+ pages, but I think these are good results. The next step for us is we want to build an incidence table and a termination table, and we have plans to present these at a special seminar the day before the New Orleans meeting. It will be totally dedicated to our results and a table we're floating. It isn't going to be a table we're presenting to the NAIC. We want to show, based upon our analysis using Whittaker-Henderson and whatever else we can do, what we think a reasonable table would be based upon that 10-year period of time, and discuss issues and implications on reserves, active life, claim reserves, etc. If you're in this business, I think it would be something well worthwhile for you to attend.

Now I'll go into some of the major lessons that we've learned from this study that we're seeing, and then I want to get into some graphs that support some of these observations. One, we've seen a significant improving trend in claim incidence over

those 10 years. It does vary whether you talk about medical-type occupations versus nonmedical occupations, but you do see a nice improving trend. Relative to the 85 CIDA table, we find that the blue/gray-collar occupation classes, which in CIDA terms are two, three and four, versus one, which is a white-collar professional, have had better favorable incidence experience relative to the CIDA table than the white-collar/professional occupation classes, which are lumped into occupation class one in CIDA terms. We'll see some drafts on that.

We do see some substantial claim incidence improvements in the business written since 1996. That is only a few years. I'll show you how the experience has been dramatically improved in just that group of policies. We've seen a wide disparity of incidence results by occupation particularly in occupation class one. We'll see some results in that. We've seen excellent incidence experience from executive/managers, accountants, engineers and teachers.

No great surprise, but it's the first time that we have been able to quantify the differences in the industry level. We see, not surprisingly, poor incidence from physicians, dentists, nurses, insurance agents, stockbrokers, chiropractors, and podiatrists, essentially most of the medical occupations and a few nonmedical occupations. Obviously medical occupations have been a major part of the individual disability business in exposure. They're probably represented here in 30 to 40 percent of the exposure. The big question is: How have they been improving? We know that the experience back in around 1993 and 1994, particularly with physicians and surgeons, created a lot of problems and a lot of losses for this industry. Has the experience in those occupations improved? I have a graph on that. Unfortunately, I don't think it's improved dramatically.

We're studying lifetime benefits very carefully. As you'd expect, claim termination experience on claims with lifetime benefits is not as good as something shorter, but what is really dramatic is that claim incidence is significantly worse for contracts that have lifetime benefits. You think that's not surprising, but none of the tables

that we've had really tried to take lifetime benefits (back when we used to price lifetime benefits) into account. We probably never even took into account that incidence is probably worse too.

Geographically we find that California has uniformly worse experience than the other states, and when I say uniformly it doesn't matter how you cut it, although we are seeing some positive signs in the business written since 1996 and later. That's when I think companies, in the whole process of clamping down on their underwriting and contracts, clamped down a little extra hard in that particular state. The other state that has been notable in poor experience with a lot of companies is Florida, where we find the very poor experience in the white-collar, high-elimination periods. But I'll show you a graph of these other segments where the Florida experience has been actually quite good, and I think that makes it a little different from California. California is just uniformly bad. Florida depends upon specific markets or occupations you're looking at that would make a difference.

For multilife, I say it does not always have lower incidence than single life. That's kind of a negative statement, and actually when we put these together, when I was studying multilife, we had combined, I think inadvertently, employer-sponsored multilife with association-type multilife. It really understated the difference between employer-sponsored multilife and single life. Generally companies now believe that employer-sponsored multilife is better than single life, and it is. The incidence is probably at least 80 percent of single life pretty much across the board.

In claim termination experience, it has been much more difficult to see any kind of improvements. In fact, it's kind of working a little bit differently over that 10-year period than incidence. We are able to quantify that the longer the benefit period is, the more likely the claim termination rates are going to be lower. Claims with cost of living will have lower termination rates.

We were able to look at some different terminations by diagnosis. That's something

we haven't been able to do before for IDI. I'm not going to show too much on residuals, because the best I could tell residual benefits have claims, but claim termination experience is a little bit lower than those that don't have it for various reasons. My report is going to go into that in a little more detail, but still it's not as dramatic as I was hoping to see.

Those are some of the major lessons. Let me just get into some kind of hard data here. Just in terms of numbers, there are three numbers for claim incidence. For the traditional DI or A&S, overall claim incidence was 102 percent. That varies by elimination period, occupation class or whatever, but if you want to hang a number out there, 102 percent of 85 CIDA. In the aggregate, the table wasn't that far off, but obviously there's a lot that goes into this. OE was 63 percent. That's a totally different market, maybe a similar market in terms of whom you're selling to, but different types of contracts and different types of disability needs. We expect that the incidence on OE is lower. That represents only 5 to 10 percent of the A&S business. Then even smaller is the market for DBO contracts. There the incidence is 119 percent. Now you make some judgments. Maybe DBO experience hasn't been so good, but you have to keep in mind that the DBO elimination periods are 180 to 360 days. One is that the 85 CIDA table, I think, understates just generally elimination period incidence 90 days and later anyway, so those are very small incidence rates.

To take a block of business that represents probably 2 percent of the market out there and say you're 19 percent of 85 CIDA actually means it's a pretty close fit to that expected base. Actually for a lot of companies' individual experience on that, usually those are the contracts where the loss ratio is down around 30 percent and the states are writing you every year for you to explain why your loss ratios are so low.

This chart (Beal page 4, slide 2) shows the incidence experience for the A&S business by calendar year. It supports my observation about the improving trends.

I broke it out by occupation class one, and then I aggregated two to four. With occupation class one, you see that it bumped up around 1993 and 1994, primarily due to medical occupations. After that, it generally improves. Overall for the occupation classes two to four, you can see how the ratios started around 75 percent and have been just gradually down below 60 percent by 1999. Those are just overall improvement trends, no bumps there. Probably a lot of that is driven by a favorable economy, as well as tighter underwriting on the new business.

This chart (Beal page 5, slide 1) shows experience in two dimensions, one by year of issue and one by policy year. You couldn't just study issue year by itself and policy year by itself, because if you study things by issue year, you're looking at business written in the 1990s, prior to 1990, much older, longer, and if there is a select and ultimate period going on, you're not sure where you are on that scale. You can't compare them easily without looking at year of issue and policy year together. It also gives us a sense of the select and ultimate pattern that might exist in this business if there is one. The wide line represents all issue years combined. I separated it into prior to 1990, 1990–1992, 1993–1995 and 1996 and later.

One of the things you can see if you look at the wide line is see how it starts out in year one and two being significantly lower than years three and later. It's not a bad guess that it's the contestable period that's driving that. What you'd find afterwards, though, is it jumps up in years three out to 10, and it really stays quite level, and then it kind of drops down after that. I don't know what's happening in years 11+, looking at different generations of business going into that. If someone asks me what the select period is on IDI, I'd say, Well, you can bank on two years, but nothing after that. This is for occupation class one, which is obviously most of the business out there.

One of the things you should observe, though, is that for 1996 and later, that line with crosses at the bottom, you see how much better that experience has been relative to the business written even earlier in the 1990s. That's where you have



the tougher underwriting going on and tighter contracts as well being sold.

This chart (Beal page 5, slide 2) is the same graph, but it's for occupation classes two to four. One of the things that sticks out here is you hardly had a select and ultimate period with the occupation class one; it's even flatter with occupation classes two to four. There are very small differences relative by policy year. You still see some decreasing trends there by policy after you get out beyond year five, but it's really generally flat.

This chart (Beal page 6, slide 1) goes back to looking at incidence experience by calendar year, looking only at the medical occupations. I've broken it out between physicians and surgeons and all others, and you can see physicians and surgeons are the great bulk of that. You can expect these lines are fairly parallel. This is occupation class one only, but what specifically is interesting is that starting out in 1990 and 1991, they're at 160 percent plus of 85 CIDA. Sometimes when people are trying to explain what happened to the doctors out there, it's an assumption that the doctor market—the medical market—was a preferred market until 1993–1994, that experience was really good. Relative to the 85 CIDA table and relative to the nonmedical occupations, it is not a preferred group of occupations. Medical occupations are not preferred: 160 percent. In nonmedical occupations, they were down around 100 percent or lower. It only got worse for the medical occupation. You see how it jumped up in 1993 and 1994 to 180 to 200 or 190 percent and has stayed up there and only gradually come down, with a little bump in 1997, and 1998 and 1999 look like maybe experience had improved enough to look like it did when it first came into the early 1990s, but it's not preferred. Maybe we're over the worst of it for now in that particular group of occupations, but it's not a preferred occupation. It's not a preferred group in terms of lower morbidity. I think there is some good news here that maybe it has stabilized. Companies probably have been pricing this market, the medical occupations, more appropriately and given them contracts that are more appropriate, doing more appropriate underwriting, so it's probably a viable market out there, but it's certainly one with different

expectations.

This chart (Beal page 6, slide 2) shows the nonmedical occupations. I separated out executive managers, which are the bulk of them, and you can see how that has just generally improved over the 1990s. A lot of that is probably associated with the improving economic period. It's going to be interesting to see when we finally pull data in for 2000 to 2003 and 2004 if there's a shift in this experience in that period of time.

I mentioned earlier about the claim incidence on lifetime benefits. This chart (Beal page 7, slide 1) shows this relative to the 85 CIDA table: incidence on policies without lifetime benefits and those with. I separated the nonmedical occupations and medical occupations because when I first explained this, someone who was quite knowledgeable asked, "Is that just the doctors?" You know all the doctors bought lifetime, so when you just look at the experience between those with and without lifetime, you probably have factored in the poor doctor experience. This breaks that out. What we see is that having the lifetime benefits in your contract really increases your incidence. It's not just incidence at the later ages when people really think about retirement; we're talking about incidence in the middle and younger ages as well, and we're seeing this difference in all occupations. You actually see it in teachers, lawyers and executives, as well as doctors.

This chart (Beal page 7, slide 2) shows just the geographical differences, going into the point I made earlier between California and Florida. This shows the occupation class one actual-to-expected incidence. I broke it up between elimination periods under 90 days and elimination periods 90 days and over. What we see is that California is uniformly bad. Florida, though, for elimination periods under 90 days, actually is not that bad. After 90 days, why I'm not sure, is a key segment, but it's interesting to dig further into understanding that relationship.

I'm not going to discuss the difference between multilife versus single life (Beal

page 8, slide 1), because while the comparison is important, the differences are dampened. That multilife experience includes association business. For elimination periods 90 days and higher, the ratio between incidence of single life and multilife as I grouped them was about 85 percent. Actuaries said when you pull the association business out of the multilife, you're going to see something more like 80 percent or better. It's pretty consistent. You actually see the differences in the lower elimination periods as well. This does not really portray the differences between employer-sponsored multilife and single life business as well as we will in our report that will be coming out.

Let's talk about claim termination experience for a while. This chart (Beal page 8, slide 2) shows the average experience in 1990 to 1999, although I broke it out by year of disablement and the various lines. I broke it down into those who were disabled prior to 1990, 1990 to 1992 and 1995. I did this rather than just by calendar year because what happens to a cohort of claims early on is, if they have low termination experience, they're apt to have higher termination experience later. I think it's important to look at the experience by cohorts. What we're seeing is that the experience isn't that different here. Maybe the experience on claims disabled early in the 1990s is a little bit higher, particularly in the first three or four years of disablement, than the others, but it's not dramatic.

One thing to keep in mind is that with the claims that were disabled in the last half of the 1990s, the incidence was low. I think when the incidence is low, it means those who go on claim are going on probably longer duration claims by nature, so that could be contributing here. Someone on my committee said we put that out there; it looks like all these companies invested so much money in their claims department and it hasn't paid off, and you're not seeing the experience here. I think that's probably an incorrect conclusion because you have tougher claims probably coming on in the later 1990s, as well as probably a lot of the claims resources may be a factor in why your claim incidence is actually lower in the 1990s. You're getting more people on top of claims early on, so you're not paying as many claims. Maybe

you're denying claims more frequently.

This chart (Beal page 9, slide 1) splits that experience between male and female by incidence. We're starting out around the first year in the 40 to 50 percent range of 85 CIDA. At year two, we're getting up to around 80 percent; year three, we're getting up to 100 percent. Then actually things between male and female are splitting. No matter how I cut it, I saw this difference that the 85 CIDA female termination rates are kind of understated at the longer durations, whereas the male rates are coming in around 80 percent or so.

This chart (Beal page 9, slide 2) shows the differences in claim termination experience by benefit period. The top line is the short benefit periods; you also have to age 65–70 and the lifetime. This is something when we grow the table that we're going to have to take into account. Right now the 85 CIDA table aggregates all benefit periods, and there are significant differences. I think we need to take that into account.

This chart (Beal page 10, slide 1) is a pretty important table in that it addresses an issue that we're going to have to wrestle with, and that is the tail of the termination rates. You get out beyond year 11+, where really it's just a mortality difference out there. These are claim durations 11+ by attained age and relative to 85 CIDA. I show just a number of claims we're dealing with, which is not a lot, but one of the trends you see is that whereas claims start coming down pretty quickly when you get out beyond age 60, you're down around 50 to 60 percent of 85 CIDA. We don't have a lot of data out there, so we're going to have to wrestle with that. I'm hoping to borrow some of the data coming from the group LTD study, because with the primarily disabled mortality out there, as Roger said, we cannot split our experience between deaths and recoveries. A lot of individual carriers do that, but not all, so we couldn't get consistent data.

Why is this important? It's because you have a lot of lifetime policies and claims out

there with lifetime benefits, and we need to zero in on what that tail is and get the right valuation for those claims. A lot of companies, I think, that are valuing those claims out there are using 100 percent of 85 CIDA. I think this tells you that's probably an overstatement of the termination experience and is going to have to back off. Whether we're coming in at 60 or 70, I'm not sure, but certainly we have to wrestle with that.

This chart (Beal page 10, slide 2) shows some diagnosis experience and differences. Here we have back, musculoskeletal and other injury. The solid line without a symbol is all diagnoses, not just those three, but all combined so we can see some differences out there. Musculoskeletal clearly on the long term over at least the first 10 years has experienced significantly less than the average. Just the back claims are a little bit different.

This chart (Beal page 11, slide 1) compares cardiovascular, cancer and immunodeficiency or AIDS primarily. What's interesting here is that, of course, the scale changes, it gets a bit flattened out because we have the AIDS out there with the high mortality. But with the cancer you see much higher termination experience, which I assume is attributable to higher mortality associated with the other ones. Cardiovascular is a little less, but more in line with average experience.

This chart (Beal page 11, slide 2) looks at mental, nervous and alcohol and drugs. What's interesting is that the nervous, the musculoskeletal and the Parkinson's disease-type claims are significantly lower than the regular termination experience. Not a great surprise, but at least we can quantify that. I found the mental numbers to be very interesting. Keep in mind, unlike the group world, that a lot of companies now have 24-month mental nervous limitations, but probably in these data it's not very prevalent, so we're not seeing a lot of that type of result that you might in group insurance where after 24 months they're going to terminate because there's no claim out there.

The line for mental is significantly lower than the average up to about year three, and then it crosses over and actually has higher termination experience than the base line. Overall, probably on a present value basis, the mental claims have a much higher present value than the others, but with the termination experience it looks like the main difference is only in the first three years, and after that actually it could be even higher. The alcohol and drug category is interesting. Apparently people get into rehabilitation and are able to recover and move on with their lives, as might be indicated here.

That's kind of a quick walk-through of this. You can see there's a lot of data we're trying to put in this report. That's one of the reasons why we're taking so long getting this together.

**FROM THE FLOOR:** How do you handle settlements?

**MR. BEAL:** Settlements have been a difficult problem in any claim termination study. The way we handle settlements, one, is that we ask companies to identify what were settlements and what weren't, and then as we looked at some of those, we said, well, we think there are some differences in what one company calls a settlement and what one company doesn't. We said maybe there's a way: let's see if we can use some arbitrary approach just to identify a settlement. We looked at the total payments on a claim relative to what you'd expect given the monthly indemnity and how long the claim was exposed. We looked at those ratios, and we said arbitrarily that after studying the experience, if that ratio is 150 percent or more, we're going to call it a settlement. That was a reasonable break-off point. Then we said if you are a settlement, we're going to give you exposure through the end of the benefit period or the study period, whichever comes sooner, which is usually the study period, and we'll give you exposure, but we will not treat you as a claim termination.

**FROM THE FLOOR:** How did the LTD study do it?

**MR. MARTIN:** We separated them out completely.

**MR. BEAL:** You gave it exposure up to the time it terminated.

**MR. MARTIN:** Yes, that's something we'll have to go back and look at.

**MR. BEAL:** So they gave it exposure up to the point they terminated, whereas we kind of said it's a long-term claim. Typically a settlement will be a long-term claim. Otherwise you should let it run out. Given that, if you didn't settle it, it would probably be longer. We tossed some different ideas around. Let's look at how much they paid out, see how much the companies paid and try to come up with an imputed termination date. But that didn't work, we didn't have enough data, so we had to work with what we had.

**MR. SCOTT C. THORNTON:** I'm wondering about one point. There was quite a bit more detailed analysis by diagnosis than in the earlier studies, both in the individual and group studies. Is that likely to work its way into the claim reserving tables where you'd start having a different reserve based on the diagnosis?

**MR. BEAL:** It could work its way in. I'm not sure we have enough data yet to make that difference. I think probably that initially it's going to be more to give companies an aid in terms of understanding their claims a little bit more. My guess is that what we float for a table out there ultimately to replace the 85 CIDA probably will not have a diagnosis in there.

**MR. MARTIN:** On the group side we looked at 13 or 14 different buckets for diagnosis for experience analysis purposes. I don't anticipate when we get to a valuation table that we will have that number of buckets. I think we will have some, but I think it will be materially less.

**MR. THORNTON:** Do you think this would impact the practice for companies in the first two years where there's more freedom to vary the reserves?

**MR. BEAL:** I think it could affect them. They could take out the results that we do provide and layer that on to their own experience, because they don't have credible data, and use that for the first couple of years. I think that's a reasonable approach.

**MR. MARTIN:** We expect companies to continue to use their own experience, but will factor in some of these new aggregate results, similar to what Bob said.

**FROM THE FLOOR:** I have a couple of questions. One is the group table showed distribution by company. I don't know if you saw any variations in overall performance or spread or a range around results.

**MR. BEAL:** To tell you the truth, I have not looked at that.

**FROM THE FLOOR:** That might be something that would be interesting in a report to show variations.

**MR. BEAL:** Yes.

**FROM THE FLOOR:** Maybe this is something for the future, but there is no death rate split yet for the individual table.

**MR. BEAL:** Right.

**FROM THE FLOOR:** Was it maybe impossible to get at this point?

**MR. BEAL:** That's the problem. We originally asked for that, and some contributors were able to do that, some of the larger contributors as well, but some of the larger ones couldn't.



**FROM THE FLOOR:** It may give us an indication of trends in death rates.

**MR. BEAL:** Right.

**FROM THE FLOOR:** I don't know if own occupation was attempted or not, but I don't know if it's influencing the results.

**MR. BEAL:** Own occupation was one of the variables that we attempted to try to get at, and we were not able to do that. Companies did not capture that electronically. I was hoping that maybe we could go back to the companies and give them the list of their contracts and policy form numbers and they then could tell us what the definition of disability was. It turned out that we couldn't get an appropriate mapping on that.

**FROM THE FLOOR:** That's maybe something for the future again.

**MR. FRANK E. KNORR:** I have two questions. One is related to accident and sickness. Has the distinction between accident and sickness become obsolete? The other question is that something that came up in the long-term-care session about claims relating to obesity. Is there any kind of sign that there is a trend there?

**MR. BEAL:** For the second question regarding obesity, we don't have any data that could be relevant on that. In our table we are measuring accident versus sickness relative to the 85 CIDA, and that probably will be the basis for the new table. In fact, I've done some preliminary work with the Whittaker-Henderson, and you get some interesting results. I'm sure my committee will probably tell me it's for naught and go back to square one. There are some really interesting differences out there. There are also some interesting differences in occupation classes.