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Society of Actuaries' Long-Term-Care Intercompany Experience Studies

Track: Long-Term Care

Moderator: Gary L. Corliss

Panelists: Roger J. Gagne
Mark D. Newton
Kim H. Tillman

Summary: Results are presented from two SOA-sponsored long-term-care experience studies released in 2004: Life Insurance Marketing and Research Association LTC Persistency and SOA LTC Intercompany.

MR. GARY L. CORLISS: This particular long-term-care (LTC) session has to do with the LTC experience studies. If you wonder where some of your dues go that come into the SOA, one place is to sponsor research, and the SOA has sponsored this particular research activity for a number of years.

This morning we're going to share with you the progress that we've been making in coming out with the fourth intercompany study, and we will do that with four of the volunteer members of the committee, three others in addition to me. Mark Newton is going to cover some of the morbidity aspects of the study, both incidence and continuance. Mark has been involved in LTC insurance since 1990, and he's been involved in all four of the intercompany studies that have been developed.

Roger Gagne will be speaking about both persistency and total terminations. Roger's one of our younger members. He started in LTC insurance in 1988, and this is his second study. Kim Tillman will be speaking about some of the mortality findings and the cause-of-claim information. Kim has been involved since 1990, and this is her third report. The one person on the committee who is not presenting today is Jake Lucas. He had some other activities he was involved in. Kim will be covering the cause-of-claim work, for which he was primarily responsible.

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MR. ROGER J. GAGNE: I'm going to speak first on persistency. When we talk about persistency with these studies, we refer to voluntary lapse, and we define voluntary lapse for this purpose to be essentially any type of termination that was reported to the committee other than death. I thought it would be useful to put things in perspective by showing you the overall trend in lapse rates over the first 10 durations for three recent studies; from left to right they are in order of old to new (Page 3, Slide 1). The previous study done by this committee had experience through 1999, the current one we're discussing through 2001 and then a third study done jointly by the Life Insurance Marketing and Research Association (LIMRA) and the SOA that focused only on the latest experience from 2000 to 2001. So you can see there's a general older to newer flavor here, and in general you can see the lapse rates have decreased for the newer issues at most ages and at most durations other than a few early duration lapse rates.

This next slide (Page 3, Slide 2) tries to summarize the overall lapse rate experience by duration separately for group insurance and individual insurance, and there are a couple things to note about this. One is that the group insurance lapse rates do start out significantly higher here than the individual lapse rates, but then they end up tailing down to a lower level. So group starts out higher in our study and ends up lower. A second thing to note is that both for retail and for group, the lapse rates drop significantly initially from their early rates to an ultimate level somewhere around Durations 8 or 9 or so. The third thing to notice from this graph that the committee found interesting was the upward trend in lapse rates after Duration 9. This is consistent with the earlier study that we looked at.

There are several possible explanations for this. Some might include the effect of unreported deaths in the experience. As I said, anything that was a termination that wasn't reported as a death was recorded as a voluntary lapse. We have other evidence seen elsewhere in our study that shows strongly that there's a good possibility many of the terminations were, in fact, deaths but simply weren't reported as such since there aren't always death benefits involved in LTC insurance. That could be one reason for the upward trend. Others might include terminations to new policy forms, conversions to new policy forms for individual insurance or the older blocks. There could also be an element of lapse due to rate increases on some of the older individual blocks that we've heard about. We could not quantify the specific reasons, but I think those are all possibilities.

We also looked at lapse rates by issue-age group, and in this slide (Page 4, Slide 1) I've shown just first-year lapse rates. Recall in the earlier slide we had group insurance lapse rates early on—the first-year lapse rates—that were quite a bit higher than individual, and this slide shows that the group insurance lapse rates in the first year are higher than individual at all issue ages, not just on a combined basis. It's quite consistent. Another thing to note is that under age 50 for both individual and group, the lapse rates are significantly higher than they are at, say, 50 to 59. For some reason the youngest population in both individual and group insurance have higher lapse rates. But then the third thing to notice from this is

that other than the earliest issue ages, the lapse rates generally decrease with advancing issue age. I'm not sure what you all expected. We all know, of course, that insurance is more expensive at the older issue ages. It might make it tougher to pay that next year's premium every time, but here we've seen some evidence that perhaps that's part of that—that the older the issue age, the higher the lapse rates, with the exception of those youngest ages.

We also looked at lapse rates split by underwriting type, and I've got a couple of slides to show you on this. First, here's just the individual experience (Page 4, Slide 2). We looked at early lapse rates, and I show just the first six durations, since perhaps the effect of underwriting on lapse rates might be seen most clearly in the early durations. We can clearly see that the full underwriting has lower lapse rates early on than the so-called simplified underwriting experience that we received on individual coverage. In this next slide (Page 5, Slide 1) we also looked at group lapse rates, where we have not only full underwriting and modified or simplified, as it's called, but guaranteed issue, as well. Again a trend is seen in both of these, where the more rigorous the underwriting, the lower the early lapse rate. Conversely, the easier, if you will, or less rigorous the underwriting, the higher. I speculate that the reason is because it was a more rigorous underwriting process. For insureds to go through it, they must feel the coverage is valuable and worth the effort. This is a clear-cut pattern that we saw, like I said, both in the group insurance and in the individual insurance.

The LIMRA/SOA study, as well as the SOA study, tried to look at lapse patterns by size of maximum benefit period. We know there are different definitions of maximum benefit period. Sometimes it's just a number of dollars. This slide (Page 5, Slide 2) shows that sometimes it's defined as a time period. Sometimes there is no amount; it's unlimited. The clearest trend that we saw in the study was from this slide, which shows lifetime maximum benefits when defined as a number of dollars. Here it's clear that the higher the lifetime benefit amount in dollars, the lower the lapse rates at all the durations studied.

FROM THE FLOOR: What is this previous chart is showing? Is it showing rate by policy count?

MR. GAGNE: All of these charts so far show lapse rates by policy count or by group certificate, individual policy count. This is all a count, not a dollar amount. Some studies were done in the LIMRA study that tried to show lapse rates by dollar amount as opposed to by person. I would encourage you to look through the literature on that if you'd like to see that. But these are all by policy count.

Everything except deaths that are reported as deaths was recorded as a lapse, so there's conversion to nonforfeiture, expiration of benefits or using up all your benefits, as well as nonpayment of premium.

One could ask if the size of the premium and the richness of the benefits could affect the lapse rates. It's entirely likely. Someone with a low benefit amount might be a good candidate for an agent follow-up to say, "You've had your coverage for a few years. Hopefully you appreciated the protection. Maybe some new policy form has come in with better benefits and not much more in price. It's a good time to think about upping your coverage." If I were an individual agent, I would be doing that certainly for the people who have relatively low amounts of coverage. Interestingly, although there's a clear-cut pattern here in this summary by benefit amount, when we looked at experience split by everybody with unlimited versus everybody with something other than unlimited, this time we saw no clear variation in different lapse rates. However, in the previous study when we looked at that, we did see that people with unlimited seemed to have lower lapse rates than people with some type of limited. We also looked at time periods, five years or less versus more than five, and again saw no clear-cut pattern, not that it's not necessarily there, but it's just not coming through in the data.

FROM THE FLOOR: I assume we haven't gotten this yet, that there is a significant trend downward in lapse rates by calendar year of issue, so that, in other words, policies that were issued 10 years ago had higher lapse rates in any duration than policies that you do now.

MR. GAGNE: The answer is, yes, we did see some. I encourage you to go to the full study on the SOA Web site under the Health Section.

FROM THE FLOOR: My point was that you have to look at a lot of these things in light of that issue. For example, lifetime benefits have become more prevalent as the calendar years come closer to now. The daily benefits have been higher. There may be a lot of embedding of that calendar-year effect. I wonder if you try and sort that out by calendar year and by amount so you can tell what was actually from each source.

MR. GAGNE: Yes. We did try to look as best we could at interrelationships. With the amount of data and the amount of time, I think we were limited in doing that, but what I would encourage the readers of the study to do is to take the data in the appendices—they're all included on the Web site—and do your own studies if you have the time to try and uncover some interrelationships here, because there certainly are interrelationships on the different mixes of business over time, the different types of benefits that are sold today versus those sold, say, 10 years ago.

Moving on, one other item that we looked at was benefit escalator clauses. We looked at a number of them to try to see lapse rate patterns. I've shown only three of them in this slide (Page 6, Slide 1). If you can see that very light line that starts up here and goes down, that's the lapse rate line for policies that have no benefit escalator clause whatsoever. Then the line with triangles is sometimes called the automatic benefit increase (ABI), where the benefits go up every year and premiums stay level. Last, the future purchase option, voluntary, increases at an

extra cost every three years. There are a couple things to note here. One is that it looks as though the lapse rates for policies with no benefit escalator clause whatsoever seem to be either highest or second highest at all durations. Lapse rates for the future purchase option seem to be either lowest or second lowest at all durations. There's no clear pattern with the ABI.

Interestingly enough, one thing I've heard speculated is, especially with the future purchase option, since to keep your benefits current you have to keep buying more every three years and paying more, at your attained age there may be a trend toward increasing lapse rates with duration as people find they can't afford the coverage. So far we haven't seen that, although it's still early. There's no difference that I can see in the trend long term between the future purchase option and ABI, at least thus far.

This is just recording cases where the policy lapsed as opposed to where there are benefit increases. This is just reporting total lapses. I suppose people with a future purchase option, if they can't afford it, could just be keeping what they have and not lapsing that; that's a possibility. If people decrease their benefits, does that count as a lapse? My understanding is that it doesn't, unless they were to totally lapse one policy and buy another lower policy with a different company. Just the decrease in coverage doesn't count as a lapse.

I have a few more slides with a different breakdown for the lapse data. This slide is by marital status (Page 6, Slide 2). This was done by the LIMRA/SOA study, and I found it striking that the lapse rates are obviously so much lower for people who are married at issue versus people who are not reported as married at issue. That's the only differentiator here: are you married at the time of issue? The lapse rates seem to even diverge through Durations 12 or 13. There's a significant difference in married versus unmarried lapse rates. One reason I wanted to put this up is to offer a word of caution to pricing actuaries that the much lower lapse rates for married populations run counter to observations that there's a lower morbidity cost for those who are married, and that would somewhat temper that. You should be aware of these lower lapse rates that would tend to increase price when you consider pricing differentials between married and unmarried business.

One more selected breakdown of lapse rates is by distribution type. Again, the committee looked at a large number of distribution types. I've shown three in this slide (Page 7, Slide 1) that seem to show a trend. Notice that we have lapse rates for enrollers, the lower line with X's. Company agents are in the middle, the line with circles. Independent agents seem to be higher at all durations (line with squares). I thought there was a striking difference here between the different lines. The committee speculates that perhaps there's a long-term value in the amount of education given to an insured at the time of issue. Enrollers certainly spend some time going through some type of presentation to educate them on the need for LTC and what it is and what the solution is. Company agents would, too. Perhaps

independent agents might spend a little less time on that. There are other possible explanations, but the reader is encouraged to think up others.

Given that we know that mortality is going to be reported fairly low, it may be possible that the type of population signing up from enrollers is younger, and, therefore, the observed lapse rate might be partly or totally due to a lower mortality rate.

I have a couple of slides on total terminations. This first slide (Page 7, Slide 2) is the counterpart to the first lapse rate slide, again showing the three studies in chronological order from left to right. As expected, total terminations do drop as the data get more recent or include more recent data. The last slide (Page 8, Slide 1) shows total termination rates by issue age group. Earlier I showed first-year lapse rates by issue-age group, and we found that at ages 50 and over, the older the issue age, the higher the lapse rate. This shows total termination rates, not lapse rates, but it shows a similar pattern where as issue age gets older, the lapse rates get older. This begins in the first duration—it's pretty clear—but you can see it also stays, and, in fact, widens at the later durations.

If you'll note the over-70–over-79 issue age line, see how it skyrockets. Clearly, with total terminations, this is because of the impact of deaths as part of the total termination rate. Interestingly enough, and I didn't show it here, with time constraints, when you look at the lapse-only chart, it's similar to this one in terms of how quickly that age 79 rate goes up. It suggests strongly that much of the data, at least that are apparent for the 70-and-over issue age, have to be unreported deaths because lapses don't skyrocket like that, it would seem. One caution that the committee has for the readers is if you do use an industry mortality table as your mortality source, and you use your observed lapse experience as your lapse source, make sure your total termination rate isn't too high because perhaps your observed company experience or industry experience will have some deaths already in it. Use of an industry table might double-count them. Check your total termination rates to make sure they're not too high.

We did take a look at perhaps taking a reasonable mortality rate, backing it out and comparing it to our data, and seeing how the lapses look different. Again, it's in the full study. I don't know whether Kim has any comments on that, but we did at the end of the termination section and at the end of the lapse section back out what the implied mortality rate was if you subtracted our observed lapses from our reserved total terminations and came out with some ridiculously low mortality rates. This is clear evidence that some of them are already included in what we are seeing reported as lapses. That's a good exercise to do to try and validate your total pricing assumptions, especially if you're using your own observed lapse data.

FROM THE FLOOR: Did you look at the fraternal organization lapse rate versus other that in insurance companies?

MR. GAGNE: No. We haven't looked yet to see whether there's any differentiation in our lapse rates that we've noticed between policies with some kind of nonforfeiture benefit and some that do not, but that's something we should be looking at at some point. We have to figure out what we call a lapse and what we don't call a lapse in that case.

MR. MARK D. NEWTON: Not to belabor the point, but just to spend one more minute on the lapse versus mortality debate, we spent a lot of time asking questions and getting some answers on that. For people who are new to LTC, it is important to try to separate as best as you can the lapses versus mortality, because the question isn't really what the right thing to do is. The question is, What if I'm wrong? How much will it cost me if I'm wrong? When I price products, the only thing I know is that I know that I'm not going to be right, so I try to do as many stochastic scenarios as possible to test what the financial effect is when I know that I'm going to turn out to be wrong. If you've got the lapses wrong, that's not good, but it's a temporary thing, and you can get down to a level and understand it. But if you've got the mortality wrong and do some testing around that, you're going to be greatly surprised at how much that's going to cost you in the long run. That's the reason LTC actuaries spend a lot of time trying to tease out from the data the raw data, which are not necessarily good, what is a lapse and what is a death?

We're going to spend a little time on morbidity, which consists of essentially the incidence rates and continuance rates. I have a bunch of slides on incidence rates and only one on continuance at the end. Roger mentioned that we're trying to pick out things that would be interesting to show and try to be helpful to all kinds of people who come to the annual meeting, not just LTC experts in general.

Regarding incidence rates by attained age, there are a couple things that I find interesting about this slide (Page 9, Slide 1). The first is that it takes a long time before even one out of 1,000 people will be claiming for LTC. The incidence rates are very low at the younger ages, and for companies that have a lot of blocks of business, your claim statistics are fairly modest. Over time they will grow to be massive entities in your organizations, but for right now they're fairly modest because the incidence rates are quite low for a long period of time. They ramp up fairly rapidly, and I'll talk about that a little bit more in a second.

The other piece of good news in this slide is the older ages. The graph ramps up or seems to ramp up at a fairly regular pace, and then once you get to the old, you get this knockoff effect where the oldest people have somewhat lower incidence rates than you might have expected. Some of that is due to data, but I felt better about saying that in the previous two studies than I did this time because we are getting more data on the oldest groups, and so there actually are people in those categories, and we can start to see what is happening there.

At ages 85+ the incidence rate is still under 2 percent. That's two people out of 100 every year. I have a number of friends and neighbors who are in these ages, and they're quite healthy. Anecdotally and quantitatively, people are not claiming for LTC, which has got to be good news for all of us. I will also talk a little bit about continuance. I always thought that a lot more people would be in the incidence statistics when they're that old, but then they die relatively quickly, and we'll share with you some data about the older ages that is a little bit more good news.

FROM THE FLOOR: Although the data are clearly limited, did you try taking 85 to 89, 90 to 94, and 95 to 99 to see if you could sense where there's a plateau and what happens there?

MR. NEWTON: We definitely did that in the continuance data. I'll tell you the truth. I can't remember all the tables that are in the study for the incidence part of it. I just can't remember what is there, but, yes, in the continuance we got to separate out 90+ this time from before. Hopefully in the study there are some bands that you can start to look at on the incidence side, as well. There are a lot of data on incidence.

FROM THE FLOOR: Is this aggregated experience, so there's no attempt to remove the effect of underwriting yet on this slide?

MR. NEWTON: No, this is just experience at its most basic level. Throw it all in the pot and look at it. It's all in. The graph seemed to be nice and smooth as it was going up, at least until you got to the oldest age. Let's talk about how fast incidence rates increased over time because they start at a very low level. In this slide (Page 9, Slide 2) you've got two columns. Let me go through them for you. The left side is the annualized percentage increase from the prior bracket. I took the midpoint of 50 to 59 and midpoint of 60 to 64, looked at the incidence rates there and just did a cumulative growth rate over that period. The left column is just five years at a time: how fast do rates increase between each of those age categories?

The under-40 bracket is the same kind of calculation except it measures everything from the age-40 bracket instead of the prior bracket, and that can be looked at as a much smoother sort of averaging of the growth rates over a longer period of time, over a longer period of attained ages. The left column is somewhat of a faster moving average than the right column, and you can see the differences there.

It does make somewhat of a difference from the point of view of calculating the select period, because what we try to do in the study, in the data that you'll see on the Web site, is tease out from the data what a select period might be and how low the first-year select factor is and then how it grades into one over time. What we do is we try to remove from the increase in the incidence rates from those attained ages and durations, kind of the average increase that you see from age to age. If you remove some of the increase in incidence rates at 12.4 percent, you might get a different result of select factors than you would if you use 9.7 percent. In the

study we did use 9.7 percent, but you can get the data and do the calculations yourself if you're really interested in that. As I said, there's a 9.7 percent increase, about a 10 percent increase from attained age to attained age. It's virtually the same as in the last study. I think there it was 9.6 percent or 9.8 percent, or maybe it was 9.7 percent, but the data are very consistent.

The data in the tables that are out there are by duration, but they're not just by duration. I think it's elimination period and duration. There are a lot of tables, so you can look at different kinds of issue ages.

This slide (Page 10, Slide 1) compares select factors from this study to those in the prior study. As I just mentioned, these select factors look at the durational experience by attained age, and then they try to remove what the average increase in attained age incidence rates is so that you can get at some kind of net select factor in the end. That's one of the parts of the calculation that you need to understand. The second part that you need to understand is we need to pick a point at which we think the select period might be over with and that has data limitations, because there's only so far you can see in these data. The historical choice has been eight, and I picked eight again this time. This time we're a little bit able to look at 10, but we have a paucity of data issues around 10. When you assume that 10 years is the select period, you're starting with that as your ultimate rate. You have to back into it; that rate wiggles around a lot depending on whether or not there are many data in that cell. It's still difficult to tell whether the period is eight, 10 or 15. Everybody will have different opinions about that, but we chose eight more because of data issues rather than because we thought it made any sense.

There's not that much difference between the overall select factors in this study and the last. However, when we broke this down, we tried to drill down into it so that we could get this more by an issue-age look. In the prior study we did that, and we had fairly good success. In the current study we probably spent most of our time trying to figure out why it didn't work anymore. Unfortunately, I don't know if it was due to the carriers that are coming in now—different carriers this time than last time, group versus individual—but every way we tried to drill down into this, the only thing that made sense in the end was the flex factors from all the data put together. It's a strange phenomenon, so we decided to punt and not comment on it in the study itself. Maybe people who have more time can look at it themselves and get something out of the data that we weren't able to do in the time allotted. Only the totals make sense. If you drill down into the individual issue ages, it starts to make a lot less sense until you get into some of the older ages, where at least you can see the curve slopes in the right direction, as we would like to say.

Unfortunately I'm not able to give a lot of comfort around this. I'm not even comfortable with the way the data are shaped in the whole table. I'm left asking myself more questions than I have answers for. I think if you start to compare the data of the current study versus the prior study, you'll notice that the current study

numbers are bigger than the prior study numbers as you get into some of the four, five, six, seven, eight ranges. The overall incidence rates did go up from the last study to this study, but I don't know whether that's because of a different mix of data or different companies, but it bears watching. In a few moments I'll talk about differences between issue era, let's say.

In the old days we were all beginning in LTC. We had poorer underwriting, and you can see that the incidence rates are coming down by issue-year blocks. The question is why? Is that due strictly to underwriting, or is there something about morbidity improvement that we should be teasing out and trying to look at? What are the limits of that? Is it the fact that we've taken out as much of those bad incidence rates as we can, and now there's nothing left to get any better for, or is there still more to go? Is morbidity improvement one of these things that will last forever, and even our successors will be happy with experience in LTC? We'll look at that a little bit.

FROM THE FLOOR: I want to make a comment that because of the durational effect, the calendar-year effect and the changes in underwriting, especially over the past five or six years, you have a much different impact in duration six and beyond resulting from a different underwriting style with a much higher predominance of a different underwriting-style company out there as well as contributing to the data than there is if you look at the durations zero and one through four, for example. I think that you're getting a lot of distortion because of that calendar-year underwriting era effect in the data, and who is contributing most of the data to the older versus who's contributing to the newer.

MR. NEWTON: There's no question in the incidence rates, the lapse rates and everything else that these data span a long time, not so much in years. We're talking about 20 years or so. It's not that long a time, but in LTC from the beginning of time to about now, things were different back then. Maybe underwriting methodologies haven't changed that much in the past three or four years, but going back before that, into the 1990s, you can see a definite evolution of underwriting methodologies and underwriting tools. Even today there are still changes that are working their way in. It might be for drugs and things like that. There are different kinds of hits in data that you can get to allow you to take theoretically a more assertive view of an applicant than you used to be able to do. That kind of thing works its way in.

I'll also say that, having done this four times now, company data come in and out. Companies come in and out. Sometimes they're there, sometimes they're not. Sometimes they come back again, and they generally tend to write certain kinds of business or not write certain kinds of business over this long period of time, and those types of business do affect the numbers that you get out of this. It's probably useful to say at least that overall you have to view the data with a grain of salt, and always remember that certain companies are affecting the way the data look.

For female-to-male incidence rates, if you look at the top left-hand side of the slide (Page 10, Slide 2), moving all the way down to the bottom right-hand side, as you get older and older, the female-to-male incidence rate generally increases. I have a couple reasons why I think that might be. I'm not sure that men claim any more or less at certain parts of their lifetime than they do at others, but maybe it is that as we get older, we don't go on LTC. We just die. That's something to remember. Females live longer and, therefore, have a chance to claim the LTC, whereas the mortality rates for men are a different kind of animal.

FROM THE FLOOR: What do the column headings signify?

MR. NEWTON: The 0, 20, 90 and 100 are days of elimination periods.

FROM THE FLOOR: Did you have a chance to look at married versus single to try to get at that hypothesis? Because obviously you looked at, regardless of sex, only those claims that occurred while both were married. And you would sort out that issue, which I don't think is really males not receiving care, but the first person not receiving care because that person has the other person to take care of him or her.

MR. NEWTON: We did not look at this, that I recall, by married versus single. That's a good point. I think we should probably think about that for the next study. We would love to do that, but other than this particular round of asking for contributions, we don't have those data, so most of these numbers are under 100 percent. My general conclusion is either that there isn't any, or I don't see any yet.

This slide (Page 11, Slide 2) is the same sort of thing, except looking at it by daily benefit. This is the ratio of incidence rates for policies that have more than \$100 a day—these are simple categories obviously—to those that have exactly \$100 a day or less than \$100 a day. Except for the younger ages, once again I don't see any particular trend here other than to note that most of the numbers are under 100, and so I conclude that there is limited, if any, antiselection on daily benefit.

It's possible that the group business has a huge effect on this. As a matter of fact, this is probably the first study where you could say anything about that. In the past there weren't enough group data in the study itself to make any conclusions. This is a mix of group and individual data, and it's certainly possible that group is doing this to this slide because you would find group participants for the most part in the first three lines there.

Let's talk about issue-year group (Page 12, Slide 1). This goes back to the question of what happened in the old days of LTC versus what might be happening now. We changed the groupings a little bit between this study and the last study. I don't think that makes a big difference other than more data allow us to carve things up a little bit differently. I think we've gotten the general eras of underwriting changes fairly well-marked here. I think face-to-face interviews probably came in in the early 1990s, and so we chose 1992 to 1996 as a reasonable category. The

incidence rates generally decline. They decline rapidly over the period. A lot of this, I think, is due just to changes in underwriting over time, but there also might be morbidity improvement that's working its way through here.

A star on this chart indicates paucity of data, and so we had a limited number of data. If the number seemed to make sense, I included it and put an asterisk there to identify it for you. If the number made no sense at all or it was completely unreasonable in terms of data, I just left it blank. The question that I don't know yet is whether there is morbidity improvement and whether we can see it here; If we assume that we see it here, how long will it last and at what rate is it happening? I can't get that out of these data very well. You can have your own conclusions on that, and there are other data out there to help you support whatever hypothesis you think is right. Let's talk about continuance for a minute or two.

You might be able to tease this out by company, but I will tell you that the committee stays far away from any look at any company. The companies are identified by letter. I don't know the names, I don't even care, I've never even asked. In general we do not even go there and look at specific companies even to understand the data a little bit better. One of the things we like to talk about is to encourage companies to give us data, and so we stay away from anything that would ever appear that we were using the data improperly or that we were even looking at it.

FROM THE FLOOR: How about benefits, stand-alone versus combined?

MR. NEWTON: We didn't look at them. That's a good point, if you think about that. The continuance on claim (Page 12, Slide 2) overall in the past several years has been going up. Well, a number of actuaries got claim costs right, but that was only because they got incidence and continuance completely wrong. Incidence has been a lot lower than we expected, and continuance has been a lot longer than we expected in general. It's not true of every company. Continuance seems to continue to go up, no pun intended, and the differences between this study and the last study are fairly modest. But the trend is still in the same direction, and continuance continues to rise over time.

Here duration is in days, and the ages at the top are age at incurral. We were able to split out 90+ from 85 to 89 in this study, so you can get a sense. In the 90+ category people last longer for the short part of the claim, and then they start to rapidly die off as you get out a number of years, in your 90s, which is possibly not unexpected. However, given the number of moving parts in LTC, I'm not sure what I expect anymore. This was good news.

FROM THE FLOOR: If you put this into termination rates, how does it compare to the 1985 table?

MR. NEWTON: I don't remember how long it goes out, but there is comparison of termination rates in this study versus the 1985 one that you can look at in the study.

MS. KIM H. TILLMAN: As we've gone through our meetings, we've had a lot of teleconferences. A question that often comes up as we're deciding what to look at and what to write is, What would our reader want to know? What would an actuary working on LTC like to know? I patterned my slides a little bit in a Q&A format to bring out some of those questions that we thought might be of interest and then tried to answer them. These are the big questions. As with the others, I'll encourage you to go read the study. We've put more information here.

When I started on the committee and got put on mortality I thought, "Ohhh," because it used to be that no one cared much about mortality. You just threw something in there. But over the years as we've seen lapse rates fall and fall, mortality has become a bigger deal for LTC actuaries. Especially at the older ages it doesn't take long for the mortality to surpass the lapse rates, and it has become a big deal.

I'm going to do mortality first. The first question is, What's LTC mortality like? The answer is it's very low. Part of this, as we've mentioned before, has to do with not getting all the deaths reported correctly, but, even so, it's very low. This slide (Page 13, Slide 2) compares LTC mortality to three different mortality tables that we've heard are being used throughout the industry. The 1983 Group Annuity Mortality (GAM), I think, is commonly used as the mortality table for LTC. The Annuity 2000 Table is the second one. New to the study this year is a comparison to what I've called here the 2001 VBT, the new SOA Valuation Basic Table. It's been recently published using 1990 through 1996, the Experience Study, and the group that worked on it paid particular attention to the mortality at issue ages above 75 and attained ages above 90. It would be a good one to look at, sort of the same age group.

Another question that might come up is whether there is mortality selection. The answer is that there appears to be. These charts (Page 14, Slide 1) compare LTC mortality to the select period of the VBT. The previous graph was the ultimate portion. Especially on the male side, they follow up similarly. The female side is still creeping up, so there's the selection, but it's much flatter than the VBT.

FROM THE FLOOR: Do we have a suspicion in the data that the male mortality is more accurately reported because it's usually the first death, and since you have such a predominance of married numbers you get better death information on the first death than on the second?

MS. TILLMAN: That's an interesting thought. It could be that the males are the first to die, and you may know about them more. We haven't tried to look at that. That could be true.

The next question is, If there is selection, is that why we're seeing such low mortality rates, because, as an industry in general, LTC is pretty new, and the bulk of the data is in the select period? It appears to be part of the reason but not the whole reason. These graphs (Page 14, Slide 2) are graphs of ratios, so this is really actuarial. The bold line across the top is 100 percent. If the LTC mortality were exactly the same as the Annuity 2000 Table that this is compared to, our mortality graph would go right along that line. The fact that it's below says that LTC mortality is less than in the Annuity 2000. The line with diamonds is all the active lives, and then we took out the early durations. We took out the first nine durations saying that maybe that's something like a select period, and then that's the other line. You can see that bounces around a lot in the 60s, but once you get up into the 70s and on, it clearly does move closer there but still stays below.

FROM THE FLOOR: Looking at the male mortality comparison, again maybe thinking that it's got a little more direct relationship on the reporting issue, would it be fair to say from what's going on in the table that the LTC mortality appears more select and ultimate than the underlying mortality table it's referring to?

MS. TILLMAN: Yes. Now, this Annuity 2000 Table doesn't have a select period.

FROM THE FLOOR: Maybe selection is in the LTC, which makes it rise like that, making it appear to be closer to the table.

MS. TILLMAN: Yes, to get closer to the table, that's true, over time. The next thing we looked at is whether there's been a trend over time. This chart (Page 15, Slide 1) shows the mortality rates for the different exposure-year groups, and I want to emphasize that this is different from issue-year groups. If someone, for example, was issued in 1986, you'd see the first couple durations in the first exposure group, the line with diamonds, and then it would jump to the line with squares. As people stay in force through those periods, they switch groups, so it is a true exposure-year group. What we see here is that, other than the oldest ages, there isn't any trend over time. The oldest ages diverge, but I have a feeling that that's mostly due just to finally getting some data at those upper ages. That's actually going up, but like I said, I think that's just because of the data.

This has changed from what you saw in last year's study. I think that had charts that showed that some sort of mortality improvement was going over time. We have a new method for splitting them into these exposure years this year that I think is a better method, and that difference disappeared. I think that this is probably true or that there hasn't been any change in the mortality over time.

This is the last slide I have for mortality, and that's looking at whether the mortality varies by underwriting. I should mention that I looked at this chart for the issue ages 80 to 90, and I asked, How do we have guaranteed issue at those old ages? There isn't very much, but it's interesting that the pattern does hold. The eye-

opening finding from this is that the guaranteed issue is even lower than the full underwriting when it comes to mortality. This may say something about actively-at-work requirements that the guaranteed issue would have that the others don't. I should mention, too, that the guaranteed issue block is primarily employees. It was 85 percent-or-so employees. I know that sometimes they take spouses and whatnot, but it is mostly employees.

FROM THE FLOOR: Maybe the reason that we get low mortality and lapses that appear in the mortality is not just underreporting, but there may be a phenomenon in LTC insurance that would never occur in life or medical insurance. For example, lapses where if the insured doesn't expect to get out of the acute-care hospital and to survive the elimination period in a LTC situation, he has no interest in paying the premium. Technically you're getting lapses, but what's driving them is mortality. This may be a serious issue because this may mean that you can't separate effects of mortality and lapse in the assumptions, that it's not just a matter of improving the reporting, but that the terminal situations that drive mortality drive lapses, as well.

MS. TILLMAN: That's interesting, although on the other hand, if you did have some sort of health crisis, and you weren't on the verge of death, I would think you'd want to hang onto your LTC just in case. Then it's a question of how that gets reported.

FROM THE FLOOR: Does the study separate the disabled lives' deaths from the active lives' deaths?

MS. TILLMAN: Yes. That's a good question. It does, and most of the tables I showed here were active lives only. There are some data in the study about disabled lives that show hugely higher mortality than the active lives.

FROM THE FLOOR: What's the proportion, how many people, and/or how does that occur? How many go through a nursing home before they die?

MS. TILLMAN: I don't have the number at my fingertips here, but there are tables that show the number of deaths for each one.

FROM THE FLOOR: On the total terminations, are those active and disabled combined?

MS. TILLMAN: That would be everything combined, yes. I would note, too, that I suspect one of the reasons the disabled lives are so much higher is we probably are a lot better at knowing about those. If someone's on claim and dies, you probably know why the claim is terminating, and it's probably more accurately reported for the disabled lives.

FROM THE FLOOR: How did you treat people who went on waiver? Were they a lapse? Were they continuing to be premium paying?

MS. TILLMAN: I believe it continued; they stay in force. They change to a disabled life.

FROM THE FLOOR: So during the years if they're on waiver, they're considered to be in-force premium paying?

MS. TILLMAN: Is that correct?

PANELIST: Unless that company happened to record that as a voluntary lapse, which we would not expect them to from the instructions.

MS. TILLMAN: When you go into the study and read this section, you'll see a lot of new data and a lot of improvement. We got a lot more data this year with actual diagnosis information on it to study here. This is, I think, an area that you'll want to get in and read when you get into the study. This is also a section that I think is probably of particular interest for underwriters. You may want to send this message on to some of the underwriters at your company that it would be interesting for them as well to look at this section.

Continuing on with my Q&A format, the first one is, What causes nursing home claims? A quarter of them, as you can see from the chart (Page 16, Slide 2), are Alzheimer's, and this has been true through all the studies. In fact, it's continuing to increase in prevalence, and it's stayed the leading cause of nursing home claims through the whole period. Stroke and circulatory make up about the top half, and injury, arthritis and cancer make up about three-quarters. There aren't a lot of causes that make up a large proportion of the claims.

FROM THE FLOOR: Does non-Alzheimer's/senile dementia fit in with the others or with the Alzheimer's?

MS. TILLMAN: In with Alzheimer's.

FROM THE FLOOR: So that's kind of general cognitive rather than being specifically Alzheimer's?

MR. NEWTON: Yes, and if you look in the tables in the back, it tells you exactly which codes for the International Classification of Diseases, 9th Revision, go into which category.

FROM THE FLOOR: Is that strictly nursing?

MS. TILLMAN: This is nursing home and assisted living. I think that's one of the things in the data, that we don't have a split between the two. Nursing home

means facility care. One thing that we were talking about this morning is the showing up of nervous system claims as being big enough to show in the pie chart. This refers to diseases like Parkinson's, MS, ALS and things like that, and we're wondering—it will be something to keep an eye on in future studies—whether that is more prevalent in the guaranteed issue, because the actively-at-work would take care of a lot of things that come up fast, but with some of these slower things, a person would know about them and want to get in their insurance.

Next, is there a difference between what you would think of as younger nursing home residents and older ones? Here we have age 75 as the split (Page 17, Slide 1), and to me it was surprising that there isn't much of a difference in prevalence of these different causes. For the two largest, Alzheimer's and stroke, it's similar by age. If you look at the bars, you can see that the younger people have more cancer, and the older people have more arthritis, circulatory and injury, which is probably a lot of hip things. It's interesting.

FROM THE FLOOR: I know there's no way to know this, but it strikes me that Alzheimer's being that high relative to all claims under age 60 to 75 says that maybe people have to start paying a lot more attention in their 50s and 60s to cognitive stuff because that's got to be all antiselective. I can't believe that's just developing there, while in the later years obviously you get a lot of just onset after issue.

MS. TILLMAN: Yes, it's surprising how much there is. You don't think of Alzheimer's at those younger ages. Next we move on to home care (Page 17, Slide 2), and this is another part where this year's study has gotten a lot more data than in past years. I think Jake noted here that we have four times as many home-care claims as the prior study that had the diagnosis information. What are leading causes for that? Alzheimer's is big here, too, but it is more equal to arthritis and cancer, those three making up the top half. Stroke, injury and circulatory are still big in this, but other causes combined make up about three-quarters of the claims. Again we looked at this by age (Page 18, Slide 1). It isn't that different. Cancer is a big difference. That's the biggest one. It's interesting because I remember at the company I worked for, as the underwriting developed, there was a lot of discussion about cancer and whether we cared whether a person has a history of cancer. We can see that this is one area where maybe we do care that there are a few of the younger claims with that. Again, arthritis isn't too different between the age groups, but we do have a little more Alzheimer's in the old group.

FROM THE FLOOR: How did you treat a claim that became eligible for claim but never made it through its elimination period, so it never received a payment? Did you treat it as a nonclaim?

MS. TILLMAN: I think they're counted here.

MR. GAGNE: No payment, no claim.

MS. TILLMAN: Okay. But they do count. The next question is, What causes the longest nursing home claims (Page 18, Slide 2)? This does count from the beginning. The ones that don't make the elimination period didn't get in here, but once they do, these days do include the elimination period.

Eighty-seven percent of the claims that we studied are closed, so we can kind of look at the blue lines here. The open claims, the darker bars, show that the lighter lines are going to get taller before we're done, but maybe the relationships won't change too much. Not surprisingly, Alzheimer's are the longest claims. There's that nervous system showing up again, too, with quite a long claim.

FROM THE FLOOR: Both sets of those numbers are greatly understated, in effect, is what you're saying, right? Because the open claims by their nature are much longer on average, and the closed ones reflect only those who terminated early?

MS. TILLMAN: Right, although, as I mentioned, 80-some percent are closed. We do have a lot of closed, but, yes, those open ones are the longest ones. Once we get through all these, of the last 15 percent or so that close, how much would those light bars go up?

FROM THE FLOOR: I would suggest that the cancer is not going to move much.

MS. TILLMAN: That's probably a good point. We're looking at the same with home care (Page 19, Slide 1). On this one 83 percent of the claims studied were closed. You could see cancer was one of the highest prevalences of claims, but you could see it's one of the shortest durations here.

FROM THE FLOOR: Do you have any idea how you treated multiple visits, one day?

MS. TILLMAN: These says visits. I think they'd all be counted.

FROM THE FLOOR: Basically it's number of visits but no more than one per day.

PANELIST: It was based on the two end dates. This was one thing that we had to struggle with. The ending date and the beginning date help us get at the number of visits if we don't have something else that's more accurate.

FROM THE FLOOR: Could you explain your previous comment, why you don't expect much change in the cancer?

PANELIST: Because of the volume. I don't have the number off the top of my head, but I believe that the closure on the cancer is much higher than it is on Alzheimer's. In a relative way there's less that can have an impact, and you can see how low that number is.

MS. TILLMAN: The other item I picked out to show you today is, Is there antiselection? (Page 19, Slide 2). As I mentioned before, there are more data about these causes in the study, but this is a chart showing the number of claims for each policy duration. We're thinking that if the lines kind of slanting up are what you'd expect, in the early durations you'd have fewer claims because they were all just underwriting, and then as time goes on, the lines would slant up. For the most part that's what you see here on the nursing home slide—that most of them are slanting up—and we're not seeing a lot of evidence of antiselection.

On the home-care slide it's a different story (Page 20, Slide 1). First of all, you see that they jump all over the place. The Alzheimer's line, the line with squares, looks like you'd want it to, all except at the very end, but it's going up, so people aren't immediately claiming when they have those. There are several lines here. The arthritis and the cancer lines are all showing definite downward slopes, which might indicate that there is some antiselection.

FROM THE FLOOR: I think it's much more related to how the underwriter viewed the potential length of claim relative to issue.

MS. TILLMAN: That's a good point.

FROM THE FLOOR: I think there are a lot of carriers around who don't think there's a huge durational risk associated with the cancer, so they rate them up high and are willing to issue them where they wouldn't with the other cognitives.

MS. TILLMAN: With the cancer line it could be not so much antiselection, but the underwriters may not have looked at it so carefully. It seems that maybe arthritis and injury are some places where you might have some idea of how likely you're going to be to face claims.

MR. CORLISS: There was one thing that I did not show you at the beginning because we had decided this morning that we want you to be able to ask as many questions as you wanted, and I didn't give you the overview. There have been four studies. This is the fourth study. The different years of study are noted there (Page 1, Slide 2 and Page 2, Slide 1). You'll notice that in the beginning we had 14 companies. Now we're up to 24 companies. As was mentioned, not every company has contributed every time. There are some things that can happen because of that.

Our initial study had 800,000 policies. Now we're up to 3.9 million. In some way we have something on almost half the policies that have been issued. You'll see that the exposure years have gone from two million up to 12.5 million. The average issue age, which we did not calculate at the beginning, has continued to come down, and that's reported continually in the industry. Some of that is due to the group insurance business, but some of that is due to the fact that the average issue ages have just come down.

Claims is where reference was made to the fact that there's a significant increase in data available on claims. We had 13,000 claims the first time. Now we have almost 100,000 claims there. Originally we had about \$200 million in benefits being paid, and now we're at over \$4 million. If you wonder whether there might be some improvement, maybe this is a little key, that the average age of people going on claim is increasing even though the average age of people purchasing the policy is going down.

A question came up about the home-care claims. This still basically is a nursing home or a facility study. Eighty percent of our claims are due to payments made while in a facility, 15 percent solely in a facility. Fifteen percent are based on just home care, and then we have 5 percent that are a combination. We don't have enough yet to be able to do something about what has happened because both home care and facility care are in the program.

Reference was made to spotting things that have happened over time, and that's one of the reasons that we have the different years of study in the back appendices, which has grown rather large. Mark explained how we've tried to define it by what we think are different underwriting periods. The change we made this time was to move our period, so we not only sliced across an underwriting change that we perceived in prior studies, but also made a change for the tax-qualified aspects. We've got a line across there in 1996, the fact that not just companies but the plans being offered change over time.

There are certain cells that we can't look at. It is a promise by the SOA, and this has gotten into some significant legal work. In order for companies to contribute they want to make sure that their information is in no way uniquely identified. I think it was Mark who said there are company codes in there like ABC, but none of us looks at that information, and we certainly can't put anything out where somebody could look at that and say by that definition this is a fraternal or this is that group company. We have to stay away from those kinds of things.

There was a comment about the enroller information, and maybe one of the responses was that there was a difference between the fact that there were younger ages in the enroller group as a whole versus older ages in the nonenrollment group; we did consider that. To pick one set of numbers to compare against, you may remember in the group side that the first-year lapse rates were in the 14 percent range. If you go in and look at just the enroller category, and that should be a one-to-one, that number was four. That's a significant difference.

We talked about segmentation. When you see anything in our reports we are not trying to massage the data. We are trying to be faithful to the information that we get so that you don't see interpretation. When you see a label associated with a table, that's it. Nothing else has been done to that. If you have those questions such as, "What if you did this or what if you did that to look at it," that's where the

tables in the back come in. It's useful for you to get behind the data and look at those different segmentations.

One thing that continually came up was, for this event or this set of numbers or the way this chart came out, is there something about underwriting? Certainly we all have talked about that over time, that underwriting can have a great impact on it, but one thing I didn't hear anyone say that I think is equally important is, "What about changes in claim practices in organizations?" We know that there are differences in the way people process their claims, and one company may pay a claim that another one won't. It may be because their benefits are defined differently, or the contract is created differently. One may be a little more astute that it does have a difference in its particular information.

I think I will leave it at that for comments on things that I heard during the presentation. There is one more week in the review period. We have some reviewers who are looking at our report, from which these pieces were selected, and they are supposed to be back to us by next Friday. Jack tells me that whenever we turn it over to the SOA, it should take about one day, if we turn it over in good order, to put it out on the Web site. It will be at www.soa.org, and I believe it's still going to be under the Health Practices, which is where it has always been. The reason is there was no LTC Section when this whole thing started, and apparently a choice has been made to keep it in that particular place. That's what's coming out of this report and the voluminous appendix that's associated with it.

Early in 2005 there will be another request out with revised instructions. We try to improve those every time as we move along. That one will follow from 1984 to 2004 issues, follow through to June 2005. We'll be asking companies to make their contributions by September 2005 on all issues through to 2004, and if you haven't been contacted, and you're interested in participating, we'd like to hear from you. Many of you have heard from me a number of times, and you'll continue to hear from me, and we look forward to your participation. I think the SOA is using a portion of your dues very well to put together a study that has grown to almost four million insureds and 100,000 claims, and we're now on a roll of being able to put out a new report every two years. I think we're getting the methodology down, and one thing that you have seen is that the LIMRA/SOA studies use the same data collection basis, which is off the same collection source. The Evaluation Tables Group has been looking at the data that have come out of this same collection, so the SOA is putting these data to a variety of uses.

FROM THE FLOOR: In the claims information you said, "No payments, no claims." A significant fraction of our claims are for a sort of case management only that we take out, or the individual may contact us for an evaluation of a facility or just his or her state of affairs, and we'll pay \$200 or \$300 for that evaluation. Would that have made it in or not?

MR. CORLISS: That could depend. Some companies define that as a benefit, and if they report that as a benefit with a payment, it would show up. If they assume that it's a claim expense and have not reported it as a payment, it would not show up.

FROM THE FLOOR: That may be a good category for you to try to get into the data. That's become much more prevalent recently; I suspect that because, if it goes in as a claim payment, it gets better recognition in loss ratios. People are going to be likely to say that teaching somebody how to do care giving will turn into claims on this, and it will jump the claim incidence rates up.

MR. CORLISS: The fact is if it is a benefit and is recorded as a benefit, that is a value to the consumer, and it might change our incidence rates a little bit. We have used that approach for 15 years now. We have found that if you pay out some money for people to have an evaluation, they may not go on claim then, but we can usually be fairly certain in looking at that evaluation that they'll be coming. It may take them three months, it may take them four or five months, but most of those people will end up as a claim reported for other reasons and other benefits.