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Actuarial Review of Long-Term-Care Experience Studies

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Panelists: MARK D. NEWTON
P. J. ERIC STALLARD
Recorder: GARY L. CORLISS

Summary: The panelists review the Long-Term-Care frequency and termination rate studies published by the Society of Actuaries. The 1986–94 Intercompany Experience Study is discussed. The session concentrates on the following topics:

- *Actuarial review of the Society of Actuary study*
- *Important considerations in applying the study results to the pricing and valuation of Long-Term-Care contracts*
- *Other sources for frequency and termination rate data*

Mr. Gary L. Corliss: I chair the SOA Long-Term-Care (LTC) Experience Committee. If you went to lunch today, you heard that your dues are increasing next year. You might like to know how some of the dues are spent. The LTC Experience Committee is working on several projects. While the actuaries involved with the projects volunteer their time, your dues go toward supporting the data gathering and manipulation associated with those particular activities. In quite a bit of detail, we're going to cover two of those activities today. Before we get into those two activities, I'd like to describe for you the four different areas in which the Society's Long-Term-Care Experience Committee has been involved.

The first area that you will hear about today is the LTC Intercompany Experience Study. This effort was initiated several years ago by Sam Gutterman. He sought agreement from a number of LTC carriers to contribute their data. The first study was published in January 1995. That study included data for experience years 1984–91. More recently we've been updating that experience through 1993. We hope to have the 1993 report ready for publication in early 1999. The second area of investigation relates to noninsured data. You may know that a good deal of

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Note: The charts referred to in the text can be found at the end of the manuscript.

noninsured data were used in establishing many of the original LTC programs, both in the United States and in other countries. We've had a particular study under way that uses the National Long-Term-Care Surveys (NLTCs) for the years 1985 and 1989. A third area that has been under study is the niche area of continuing care retirement community (CCRC) experience. The fourth and last area that we've been making attempts at handling over the last several years relates to the NAIC LTC Insurance Exhibit.

It might be useful for you to know some of the individuals who are involved in these varying programs. Jack Luff is the Society liaison with all the subcommittees. I chair the Intercompany Experience Study Subcommittee, whose other members are Linda Ball, Patricia Fay, and Mark Newton. Bill McDonald, from the Medical Information Bureau (MIB) Center for Medical Actuarial Statistics, is the lead person for supporting the actual numerical data accumulation and layouts for us. Robert Yee heads the Non-insured Subcommittee. Eric Stallard has been his primary associate, with review by Linda Ball and Jim Robinson. The third area relating to CCRCs, was chaired by the late Hal Barney, who had done substantial work on this particular area. We originally had expected to be talking about some of that work here, but the activities associated with the CCRC study are rather fluid right now because of his unexpected and untimely death. The newest area that we're looking into, relating to the LTC experience exhibit, is chaired by Craig Shigeno.

We have two speakers who will be presenting materials relating to the studies in which they've been involved. Mark Newton will be making the first presentation. He's a senior associate actuary at John Hancock Mutual Life Insurance in Boston. He was involved in both the study released in 1995 and the current study, to be released in 1999. He's going to be covering a number of pieces of information, which fall into the three categories of claim patterns, incidence rates, and lapse rates. Our second speaker will be Eric Stallard, who is a research professor at Duke University. Eric will be covering three main areas: trying to help us understand the appropriate usage and the degree of confidence in the noninsured study that's been completed, how to utilize the particular model that was developed, and how to utilize the various types of supplementary data and tabulations included in that document.

Mr. Mark D. Newton: Just for my own benefit, how many actuaries here are familiar with the 1995 intercompany experience study? About three-quarters of you are. I will try to relate data from the first study and data from the second. I'll try to point out some nuances that may help you understand what's going on. The first study covered a fair amount of data from ten companies. Since then we've added five more companies, as well as much more data. The data cover more years and more companies. There is actually more employer group data this time around than

in the first study. So, one of the nuances you'll notice as we go along may be related to the addition of group, and younger age group, LTC experience that's mixed in with the individual information.

The first study covered a limited number of years, which Gary already mentioned. We've added two more years to that experience. Some of the curves will be additions to what we had before, and I think you will find some of the results to be rather interesting. However, some of the data are still questionable. When we did the first study, and we were sorting through the contributions from all the different companies, we really had quite a bit of difficulty with some of the coding. A lot of things that we found were quite unexpected. Some of the data had to be massaged just to get it into a useful format. Some of the data were actually excluded because they just didn't seem to make sense or weren't complete enough to do the study. The second time around we still have some of those same issues, and we are dealing with that as best we can.

I am going to preview some very basic results. I suppose that I know the limitations of these data better than anyone at this point. In the very near future the full subcommittee will be meeting again to go through the data, scrub it down a bit, and then work out the formal documentation. So, as we go along today, just picture this as a possibility for information that you'd like to see. If it's in this format and it happens to be useful, that's wonderful.

Let me just start with some caveats. In the first study, as well as the second, there is broad variation in the data. There was wide variation in the distribution systems that companies used. The product features are really quite different from carrier to carrier. As some of you know who have been in the market know the first study included the early years of LTC experience. As the years of experience accumulated, the products changed quite significantly. There were huge variations in premium rates, although I think they've been reduced somewhat. The underwriting and administrative rules have changed rapidly in LTC over the past several years.

A number of carriers have learned a great deal about how to underwrite this business, so you might consider that changes in underwriting over the period have influenced the results. As I mentioned before, the data quality is nonhomogeneous, cutting across a wide variety of companies and a wide variety of the queries we made. The data were aggregated over several years. In some cases, you can look at the data on an issue-year basis. That's helped me think about the data, and I hope it helps you, too. Most of the data we have still represents underwritten individual business. We've added some new companies, and a couple of them are rather significant, as they have large amounts of data. As I compare the old study data to

the new study, consider the fact that we're adding quite a bit of new data from brand-new companies.

Let's begin our review with incidence rates (Chart 1). Incidence rates in the first study were always shown by elimination period and attained age. We thought that was pretty central to any unbiased determination of the incidence rates. Within those two categories we split it out further by issue year, duration, and sex. The first study looked at broad aggregates, with incidence rates by attained age. The x-axis is attained age. The left side is attained ages of less than 60; the right side ends with attained ages of 85+. The y-axis is incidence rate per 100 insureds. In general, on the charts the diamond represents the old study, and the square is the new study. The exposure has increased by roughly 40% from the previous study. We have an increase from 2 million to 3 million exposure years, and the number of claims increased to 20,000 from 13,000 in the original study.

Attained age incidence rates are higher among the younger ages than they used to be. The easy way to look at that is to say the square line is greater than the diamond line, which is at the bottom. The crossover occurs at attained ages 70–74. The older age incidence rates seem quite a bit lower in the second study than in the first study. This is possibly a good example of improved data quality. The data has not been graduated in any way. We really need to take a look at some of the older age incidence rates due to the significant change. Behind the data on Chart 1, there has actually been a shift in the elimination period. Under the old study, there was a category of 15–30 days and a category of 60–150 days. The new study has a category of 15–45 days. We have new elimination periods and a separate one for 60–365 days. Thus you can see that there is a shift toward longer elimination periods in these data.

Chart 2 records incidence rates by duration. The x-axis is duration. It begins with policy year 1 and ends with the policy duration labeled 6+. So it goes 1, 2, and 3 policy years separately; then 4 and 5 policy durations are combined; and then 6+, which includes all years after 5. The y-axis is incidence rate per 100 insureds. As before, the diamond curve is the old study, and the square curve is the new study. The claims and exposure relationships are about the same in this chart as they were in Chart 1. The old study incidence rates at durations 4 and 5 showed a smaller rate of increase than they did at durations 1, 2, and 3. We speculated at the time that that might indicate a wearing off of selection. There appeared to be high selection in the first few years, and then it started to wear off in durations 4 and 5. This was a gray area which we admitted in the study. In durations 4 and 5 the old study had a great deal of duration 4 experience and not very much duration 5 experience. In the new study we have much more data. Duration 4 is really loaded up, but so is

duration 5. So relatively speaking, there's more duration 5 data in the 4 and 5 category in the new study than in the old.

At duration 6+ you can see the incidence rate increase rapidly. Most of the data are in the duration range of 6–7 years. There's really not much after that. When I say "most of the data," I'm really not talking about very much. Considering the numbers that are behind these durations, one needs to consider the credibility of these data. The exposure durations 6+ is less than one-fifth of that in durations 4–5. But, in general, we see a very rapid increase in incidence rates by duration.

Chart 3 records incidence rates by issue year. The x-axis is the issue year. It starts in 1986 and ends in 1992. The y-axis is incidence rate per 100 insureds. The incidence rates by increasing issue year have declined in both studies on a fairly regular basis. This is something that all of us probably hoped for over the years, so that's good news. I mentioned before that care should be taken, given the data from new carriers. I think you can probably see that in Chart 3. That is one of the big reasons why I think this chart is so different than it was last time. The data from the new carriers went back, basically, all the way to the beginning. Since we have so much more data this time than last, it's somewhat of an apples-and-oranges comparison between the two studies. Keep that in mind, as we will, but when you go through the results of this study, you'll be able to see differences in exposure. Differences in carriers may be affecting the results.

Also, the addition of group data may be affecting some of these results. I'm not as familiar with the introduction of large group LTC plans as some of you may be. However, you can picture your own group products and how they may affect some of the results of this study as the issue years increase. In general, though, there is very good news here. Let's hope it continues.

Chart 3, like many others, includes all policy durations and all issue ages in an attempt to simplify the presentation for a wide audience. When we actually break out the data in the study, it will be easy to see lots of data and tables behind this. In that way, you can look at some of the factors that might be affecting the data.

Chart 4 considers lapse rates by issue year and policy duration. The x-axis is the issue year. The y-axis is the lapse rate percentage. It starts at 0% at the bottom, with the top category at 20%. The curve at the top is duration 1 experience. The curve in the middle is duration 2 experience. The lowest and shortest curve is duration 3 experience. The curves indicate that termination rates have declined by issue year. There are many reasons why this may be so. I won't go into them in particular. Duration 2 and 3 lapse rates are much lower than duration 1 lapse rates, as expected. The duration 3 lapse rate reduces to 6.2%. I considered showing you

duration 4 and later, but the graph gets funky, so I just left that off. I'll just tell you that the duration 4 lapse rate was down to 5%. Although data for durations 5 and 6 data are sparse, the termination rates are higher in durations 5 and 6 than in duration 4.

We requested data separately for persistency and mortality. Some companies reported mortality separately. Some didn't. Where they didn't, it's in the persistency. Mortality is a tough one. I suspect most companies, including my own, just don't know. When people drop their policies, we don't ask them why they lapsed. We just report a total termination rate. From my own experience I believe this study probably best reflects more of a total termination rate than a lapse rate. As I said, the experience for durations 5 and 6 is pretty sparse. The numbers actually climb rapidly, and I'm not sure that means anything, so I left it out and decided not to present it at all.

Chart 5 presents lapse rates by issue age and duration. The *x-axis* is duration. It starts with duration 1 on the left and ends with duration 6 on the right. The *y-axis* is lapse rate percentage again, starting with 0% and topping out at 20%. The triangle curve at the top represents issue ages 70–79. The square curve in the middle represents issue ages 60–69. The diamond curve at the bottom is issue ages 50–59. I think these curves give a good picture of the decline in lapse rates by duration. Some of the lapse rates start out quite high, especially for the older ages, and then drop fairly continuously. I'm not sure why the diamond curve bumps up at the end. That would seem to me to be an anomaly, because that's not something that our company has experienced. There may be a good reason in the data, and we'll just have to analyze it. The data for duration 6 are somewhat sparser than in the rest of the curves. That could possibly mean that we need to look at that duration a little more closely. There could be something else that's going on, too. But in total, lapse rates decrease fairly rapidly by duration.

Chart 6 covers lapse rates by elimination period and policy duration. The *x-axis* is policy durations 1–6. The *y-axis* is lapse rate percentage, going from 0% to 30% this time. The diamond curve at the top is an elimination period of 0 days. The square curve in the middle is a period of 15–45 days. It is generally concentrated around the 20- and 30-day elimination periods. The triangle curve at the bottom is a period of 60+ days, which includes everything from 60 to 365 days. Generally speaking, most of the data in this latter grouping is in the range of 90–100 days. These curves demonstrate a picture of lapse rate declines by duration. Once again you will note fairly steady, regular drops by duration. There does seem to be more exposure moving toward higher elimination periods. That may influence some of the snapshots that we've seen, where the aggregate lapse rates by duration look less like the results for the 20–30 day range and more like the results for the 90–100 day

range. As we get the study together and we present more data in more refined forms, you should be able to make better judgments about whether and how to use them.

Chart 7 focuses on length of stay by attained age. The x-axis is attained age. The left side is for attained ages under age 65. All the way to the right is attained age 85+. The y-axis is the length of stay in days. It starts at 0 days at the bottom and ends at 600 days at the top. The diamond curve is the old study, and the square curve is the new study. The length of stay is higher for the new study, basically, because we have more data about the claims in the new study than we had during the last study. In the old study, all the claims were not closed. If they were open, we really didn't have enough information about them to do a complete length-of-stay analysis. So, we just left the lengths of stay as known but incomplete at the time and stated that fact. This still is the length of stay so far for known claims. We'll see what happens in the future. With the updated study we have more data on some of those claims that were open. Still, there are quite a number of claims that are open at the end of this study. So, any length-of-stay presentations you see here or in the study when it comes out are temporary. You should expect them to increase as we find out more and more information about the open claims that were in both studies. The fact that the square curve is higher than the diamond curve really doesn't mean anything that I can think of, except that there are more data available now than there were then.

I'd like to comment on a couple of things that I find interesting about Chart 7. At attained age 85+ the length of stay shortens significantly from that for younger attained ages. That may be because of the nature of the claims there. It may be because of the addition of some of the group exposure, where the diagnosis codes for some of the people that would fall under typical group coverages might be different from some of the diagnoses that you might find at older ages, such as more MS claims versus dementia claims. Throughout the middle ages of 65–80, the length of stay seems to me to be fairly flat, which I found somewhat surprising and interesting.

Chart 8 shows the difference in length of stay by elimination period. The x-axis represents the elimination period. It starts on the left with 0–14 days, which is basically 0 in most instances, and ends with 60 or more days, which is concentrated around the elimination period of 90–100 days. The y-axis once again is the length of stay in days. This is a very simple chart. I'm not sure it gives you a whole lot of information, except that the elimination period does seem to weed out shorter claims. The fact that the square curve is higher than the diamond curve is probably not due to anything other than the fact that we know more information about these

claims than we did before. When we do the next study, you'll probably see another curve that's going to be similarly shaped, but higher than this.

Finally, Chart 9 considers length of stay by the diagnoses of claim. The x-axis is the primary diagnosis. This chart records mental and nervous conditions all the way on the left and ends with injury and cancer claims on the right. The y-axis is the length of stay in days, starting at 0 and ending at 800. Along the bottom you can see the diagnosis, ordered by descending average length of stay, starting with "nervous system," "mental," and "hypertension." I can't figure out why hypertension would have a length of stay similar to that of its neighbors. The fourth diagnosis having a high average length of stay is "Alzheimer's." There is a noticeable swing between length of stay based on diagnosis. We've experienced the same at my company, and no doubt you have as well.

Mr. P. J. Eric Stallard: The title of my presentation is "NonInsured Home and Community-Based Care." The original charge when Bob Yee raised this question to me wasn't, Will you do it? It was, Could it be done? It is critical to realize that there was some uncertainty at the start of this project as to whether what we wanted to do could be done. After we decided that we could do it, then we wanted to know if anybody would be interested in the results. Was it any good? Could it be validated? All those questions, I believe, have been answered in the affirmative. The report that I'm describing today has been through its review process. It is hoped that in November 1998* the report will be finalized, and then either Jack Luff or Gary Corliss will expedite its distribution.

The report has nine sections and four appendixes. The first section is a fairly short introduction. The second section discusses the data source which is the National Long-Term-Care Surveys (NLTCS). This is a series of four related surveys, conducted in 1982, 1984, 1989, and 1994. Each survey gives data at one point in time, but there is the opportunity to view the same people five years later. How can we determine what happened to these people in between? We used a mathematical model to make that inference. Then we evaluated the results of that model to verify that the data comes together in a coherent fashion, giving a set of incidence, continuance, and prevalence estimates in which there is confidence. The third section provides an overview of the model.

Sections 4 through 8 are really the key elements of the report. I encourage anybody who seriously intends to use this report to closely review these sections. The model construction is fairly straightforward and refers ultimately back to an appendix, for anyone who wants to look at the detailed mathematics. Section 6 deals with the

***Editors Note:** Report is expected to be available in the summer of 1999.

table specifications. There are 112 tables. Section 7 goes into the computational steps. Section 8 is model validation. That section has actually been rewritten and revised to reflect some additional and more recent results. Our confidence in the model is fairly high. There are four appendixes. Appendix 1 is mathematical, concerning estimation methods. Appendix 2 is data issues. Appendix 3 is a diagnostic appendix. And Appendix 4 is a set of summary tables. All of the incidence and continuance results are summarized in one long table. There are 448 rows in each incidence and continuance table at five-year categories.

An auxiliary compact disc (CD) will be distributed, containing the entire set of logical steps from the baseline dataset all the way through to the validation. The thought behind the CD was to have a way to distribute the 112 tables. There are four sex groups: male and female groups, plus two sets of unisex tables. There are some survival process tables. There are incidence and continuance tables.

The basic data consists of a 560-byte record that contains all of the different analytic variables that were used. There are 30,308 records or individual people represented. There are almost 16,000 individual respondents for whom this information is coded. It's really a bit of a treasure. It's a sample survey from the entire U.S. population, including a sample of approximately 1 person per 1,000 Medicare enrollees.

In designing the survey, we wanted to measure disability among both institutional and noninstitutional, or community, people. We wanted to have an entire population coverage, unlike some surveys that only consider noninstitutional or purely institutional people. The survey is a complete representation of the elderly population. The survey itself is longitudinal in design, but at any selected target year you get a cross-sectional representation. So, it represents in the selected year what the disability "today" would be on any typical day.

The LTC survey is linked to Medicare, and because it's linked to Medicare there are some confidentiality considerations that the report will inform you about. We have the complete set of acute care expenditures for this sample of individuals on a billing basis. So, if they see a doctor or receive a health care service that Medicare pays for, we have that information.

To screen the people, the surveys use a standard set of nine IADLs and seven ADLs. The IADLs are light housework, laundry, meal preparation, grocery shopping, outside mobility, travel, managing money, taking medication, and making telephone calls. The ADLs are eating, transferring (into and out of bed), dressing, bathing, toileting, continence, and inside mobility; note that the first six of these are the standard ADLs from the Health Insurance Portability and Accountability Act of

1996 (HIPAA). The personal survey is a detailed interview. The survey is approximately one hour long and has been relatively consistent over time. Approximately 20,000 people per interview year are included in the survey. Between 4,500 and 6,000 of those 20,000 are disabled people in the community.

We also screen for cognitive impairment. We use the short portable mental status questionnaire (SPMSQ). It has questions such as, Who is the president? What's today's date? What's your mother's maiden name? Three or four errors are a low-level cut, indicating mild to severe impairment. Five or more is a high-level cut, indicating moderate to severe impairment. The SPMSQ is only given to people who are relatively responsive. They've got to be self-responders to take the survey.

We have a five-state model, with the requirement that each person in the survey is classified into one of the states unambiguously. The states run from "active" at the bottom end (state 1) to either "institutional" or "dead" (states 4 and 5, respectively) at the top end. In between is considered either "mildly disabled" (state 2) or "home-and community-based LTC" (state 3). The 112 variations of the model all have to do with shifting people's statuses between the second and third categories, "mildly disabled" and "home-and community-based LTC." We have the five statuses at end points in 1984 and 1989.

The sixth part of the report deals with the actual table specifications, which were done in two ways. One way describes all the factors we looked at: ADL triggers, cognitive impairment triggers, caregiver status (informal or formal care), level of ADL disability, and frequency of help. We also made a cut between "all of the time" "all or most of the time," "some of the time," and "only occasionally." We give all the different variations. You choose which ones you want to use.

We defined two possible elimination periods: either zero days or three months. For purposes of the tables, "three months" means that if you are disabled two months, you don't qualify. You're counted as not disabled. Under the tabulation rule, you would move from "home-and community-based LTC" down to the lower level, which is "mildly disabled."

The incidence and continuance tables come directly from the survival process tables. We run a 12-month process. We initialize the process where the initial population at risk or the exposed population is either those who are active or those who are mildly disabled. We try to determine what fraction of those within the next 12 months will convert over to the third level of disability and be eligible for home-or community-based benefits. The format simply tells you on an age-specific basis the probability that someone will make a transition within one year.

Continuance tables work on the supposition that we're looking at a one-year incidence following an exact birthday. The continuance table is assumed to be a midyear event. We included those from attained age 65 up to 90.5. The tables show essentially the continuance or survival for each status. We give the relative and absolute counts. We give the average length of episode and then the percentage of the disability time that's spent at or beyond the given dates. At age 65 the continuance turns out to be 1,317 days. This is about 3.6 years. At age 85 it's 970 days. The average length of stay or length of episode is simply the integral of the survival or continuance curve.

There are two formal tests of model validation. We used cross-sectional curves and mortality curves. The easiest way for you understand what we did is for me to explain it. We took the surveys from 1984 to 1989 and compared that mortality with published life tables for the three years surrounding 1980 and 1990. Then we evaluated how the predicted survival under the model matched up to those curves. It fell nicely right in between. I built nothing into the model that made it fall into any particular place. This seemed to be a fairly good validation, given that we didn't build it in, force it, or constrain it. The second type of validation is a cross-sectional prevalence matching. After we went through 20 or 25 years of projection of this population, we obtained a prevalence rate for this model that's very close to what we got in the actual surveys that were done in 1984 and 1989.

We also wanted to look at some external comparisons for further validation. We looked at numbers from the Valuation Methods Task Force report. From the task force comparisons, there were really three conclusions that I think were important. One is that the task force's incidence rates are significantly higher than the incidence rates that we derive. I think that's important. But it's also important to remember that the task force used surveys from earlier years (the 1982 and 1984 rounds of the LTC survey). However, there is an expectation that we ought to be able to compare both studies. The second conclusion is that the average lengths of episodes in the task force report were substantially lower.

The third conclusion is based on a rule of thumb that prevalence is equal to the product of the incidence rate and the average duration. Because one study was high and one was low, maybe the product (the prevalence) would be close and give us confidence. Significantly, there were some differences in the two analyses in the manner in which cognitive impairment was treated. We had a much broader inclusion of the cognitive impairment. The task force prevalence for males versus our prevalence for males was approximately 68% and for females, approximately 72%. That was a pretty poor comparison. Thus, we knocked all cognitive impairment out of our definition. In that situation, the ratio of the task force was only about 6% higher for males and about 9% higher for females. So, we felt that

there was a reasonable and fair bounding to both our works. My conclusion was that the later surveys show probably about 10% higher prevalence in disability days than would be estimated using the task force numbers.

Another external comparison related to the social health maintenance organization (SHMO). This was a demonstration project completed at four sites in the late 1980s, comprising 2,814 people. An assessment was performed when an individual joined the SHMO. If there was a health change, the individual had a reassessment. In order to get benefits, you had to have a reassessment to show what you were eligible for. One site had \$6,500 per year in benefits, while there was an unlimited LTC benefit at another site. Once individuals made a transition, they were followed closely, because if they had another health change, they would again be assessed. This provided essentially an exact date-to-date situation to determine when an episode ended to the nearest day. There is significantly more persistence in the SHMO data than there is in the LTC survey. Could it be that there's something special about people who, within a three-year period, make a conversion from zero ADLs up to one or more ADLs?

We did some supplementary analyses using 1982–94 data. A key point was that in viewing disability from a very broad perspective, there was a big decline in disability over time. A future question will be whether it will be useful to update the current analysis with the 1994 data, which became available in the middle of this study. We decided the logical thing to do was to complete this analysis, find out what its results were, and then establish expectations for an update. Overall, the observed declines in prevalence rates suggest that our estimates of incidence and continuance rates may be conservative from the viewpoint of the LTC actuary.

Mr. James M. Glickman: One of the observations I had on the first study was that the data were almost exclusively within the select periods. As such, there was a great diversity of underwriting style among the contributing companies, even within the durational parts of the study. Likewise, because of the fact that there's such a change in the average age of purchasers, especially as you extend the period out farther, I think there are some significant things that need to be considered in the use of the study for any of the aggregate type of incidence rates. Has there been any thought or attempt made to capture underwriting style and perhaps group some of the data that will be very valuable for select studies by degree of underwriting severity?

Mr. Corliss: We have asked for information in the data accumulation records relative to the type of underwriting. For our last study we ran out of time, so we didn't look at that particular item. The committee will be meeting shortly with two purposes in mind. One is to look at those things that are similar to what we

reported on last time to see if there's a message that's the same or different than we made last time. The second part is to look at those things that we think maybe should be changed.

Ms. Karen G. Adams: I was wondering if one reason there were higher incidence rates when you looked at the community data versus insurance-based data might be antiselection. Also, I wonder if you could comment on how genetic testing might affect incidence rates going forward.

Mr. Stallard: I thought the community rates were actually lower, not higher. Our group did not analyze incidence of institutional episodes. However, that information is on the disc and will be available for you to study. We did not include institutional data, because our study was specifically addressing the community levels of incidence. One of the things that would terminate a community episode would be admission into an institution. As far as the genetic testing, our group is noninsured and thus not underwritten. I think around 5% or 6% of the population has coverage for LTC. I don't believe there's any selection or antiselection in our estimates. When you applied these data to an insured environment, you would have to make an appropriate adjustment for selection and antiselection.

Mr. Newton: On the issue of genetic testing, I'm actually not aware of any company that is using genetic testing regularly in its underwriting for LTC insurance. So, it's hard to comment.

Mr. Mark E. Litow: I have a question on the first study. I found intriguing the comment on the length of stay. I wonder if there is a correlation to the drop in the incidence rates and an increase in the length of stay, especially with better control of the risk. I was wondering if you have some comments on that theory. I was expecting to see an increase in length of stay, especially once we get rid of the open claim problem. What are your thoughts on that?

Mr. Newton: One of the things that we didn't show you today is that the incidence rates have gone down over time. That implies that the underwriting is better. We have had some discussion within the subcommittee and generally believe (without final conclusion) that we are underwriting better. Therefore, we have healthier risks in our pool. Thus when they do go on claim, they're going to be a claimant for a longer period of time.

Were you saying that incidence rates should go down but length of stay should go up, because of better underwriting?

Mr. Litow: That's what I was speculating. The theory, I think, as Gary pretty well stated, is that if we're doing a better job of controlling the risk, if our benefit eligibility triggers are more definitive, and if the claimants are more seriously disabled, then they're going to have a longer length of stay or treatment period. I've noticed that result over the many years that I've been working on LTC. Incidence rates have tended to drop while length of stays have tended to go up. I was just wondering if there is a correlation. Is there some way to examine that issue in the data?

Mr. Newton: I'll offer you a couple of my own personal opinions. I think there should be some reduction in length of stay over time because of the weeding out of more dementia claims. Most of the underwriting changes that have occurred over the years in the companies that I've looked at have tended more toward a personal interview securing more direct information from the applicants themselves. To the extent we're successful in reducing dementia claims or mental nervous claims, which are actually the longest claims, I would expect some of the increases in length of stay to be mitigated.

Having said that, I'd like to report observations I've noticed while serving on the board of a couple of nursing homes in my area. They're seeing sicker and more health challenged people. Patients seem to have much higher ADLs when they arrive, all across the age spectrum. People are trying to stay independent longer. Maybe technology is helping them to stay independent. We've also noticed the average ages in nursing homes getting older. Even within the same ages, patients seem to be in much worse health than they generally used to be. So, I would expect length of stay to increase because of that.

Ms. Anna M. Rappaport: I think there is another factor that would affect nursing home experience tremendously, namely the growth of new types of care options. Where you have assisted living facilities, you have many people who would have been previously in nursing homes and are not that severely disabled. With the increasing range of care options, we are developing into a very different care marketplace. There's an article from a couple of years ago in the *Public Policy and Aging Report* from the National Institute on Aging that describes some of the options. I'm sure there's better literature that describes more of them, but the options are really changing.

Mr. Newton: I can only agree with that, Anna. There are a variety of other services that are available. Assisted living is certainly a very important one. It's part of the whole process. We noticed from our first study that almost 99% of all of the claims that we had were only for institutional care. That's because many of the policies back then had only one way that you could collect. We know that almost 12% of

our claims this time have some home care. If there are more ways that you can collect, such as assisted living and home care, there will be different lengths of stay solely because of that. So, we've got more things this time to look at.

Mr. Glickman: Did you do any analysis of the percentage of exposure compared with the percentage of claims? That is, did one or two companies representing 20% or 30% of the exposure data account for 70% or 80% of the claims?

Mr. Corliss: We did look at that, Jim, and I'm sure we'll look at it again. We did some quartiling of claims to explore this issue. The only thing that we noticed last time was that the available elimination periods by company led to quite different claim results. Obviously, companies that had more zero-day elimination period business had much greater incidence rates in total. We need to continue to analyze these types of possibilities.

Mr. Newton: Jim, I think the quartiling helps a lot when we are looking at the data. There are astonishing variances in virtually everything we looked at when companies were separated into quartiles. Sometimes there was so much variance that it didn't make sense. So, we left out certain information from the first study. But in LTC insurance, there are a few big companies and then lots of moderate-sized ones. So, the results can really be skewed by a few very large contributors.

Mr. Alan Y. Weiner: Did any of the data show that people who used home-and community-based care had shorter institutional stays, or vice versa?

Mr. Newton: I don't think we have looked at that yet. That was one of the big questions in the earlier study, because there wasn't much available home care in the policies back then. There may be more available to us now. I'm not sure how much information we can tease out of that. I really don't remember the data that well. I'm not sure whether we can analyze people in home care who then go to an institution.

Mr. Stallard: Let me just make a quick comment. We did not analyze this issue in the noninsured, noninstitutional study, but the data that you would need in order to study it could be put together. In fact, you could do it with the data sets made available to you from the LTC survey. The key way to do that would be to become linked to Medicare. Medicare has a home health benefit that, to a large extent, overlaps with some types of long-term home care. I think approximately half of the home care benefit now is thought to be kind of disguised LTC. You could see if there's a reduction in institutionalization for that subgroup of people who use home care. Perhaps those people end up having lower institutionalization rates than other people who have comparable medical conditions.

CHART 1
SOA LONG-TERM-CARE COMMITTEE
1986-1993 INTERCOMPANY EXPERIENCE STUDY:
INCIDENCE RATES BY ATTAINED AGE

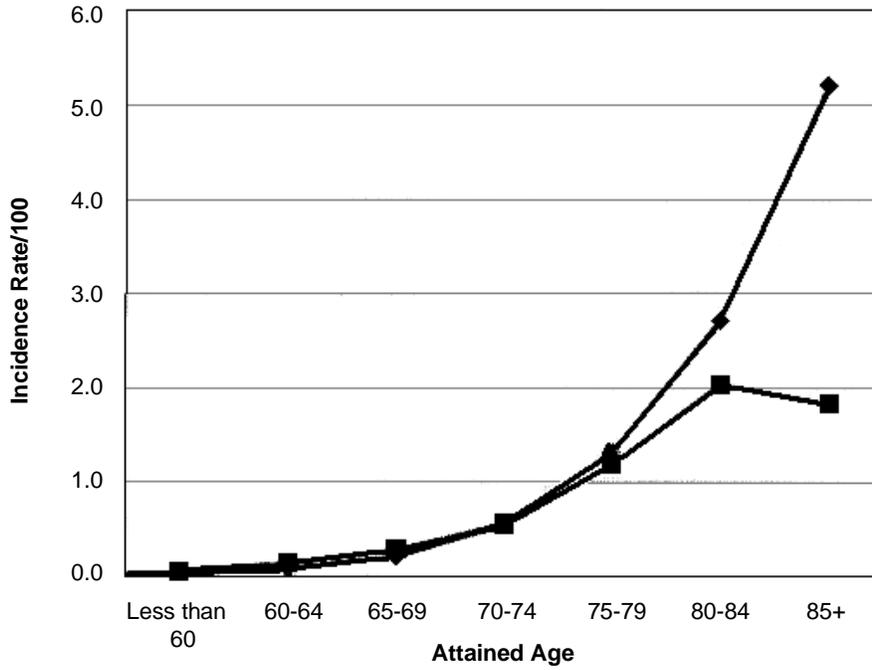


CHART 2
SOA LONG-TERM-CARE COMMITTEE
1986-1993 INTERCOMPANY EXPERIENCE STUDY
INCIDENCE RATES BY DURATION

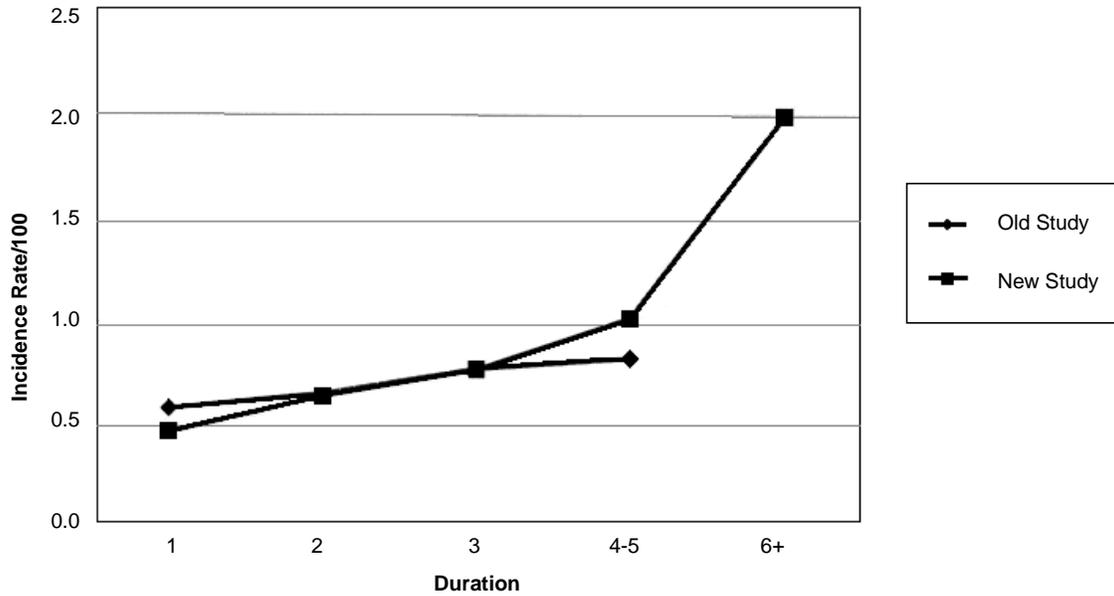
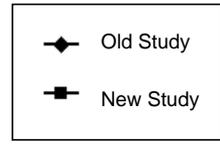
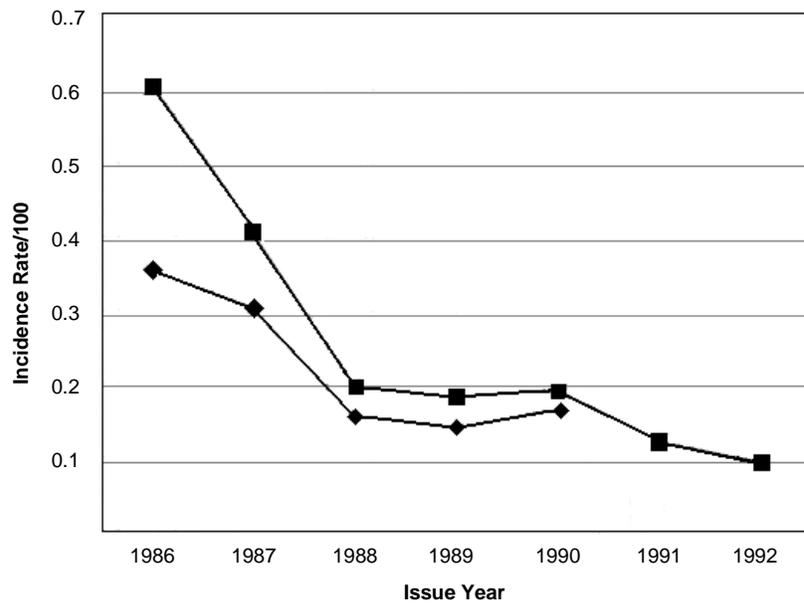
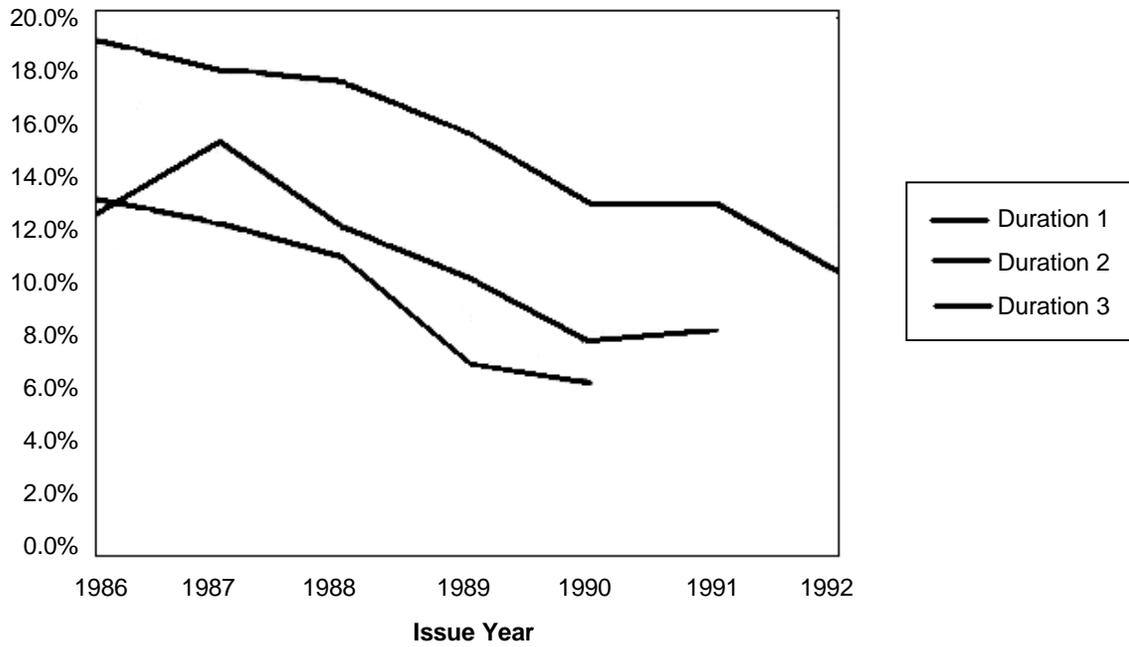


CHART 3
SOA LONG-TERM-CARE COMMITTEE
1986-1993 INTERCOMPANY EXPERIENCE STUDY



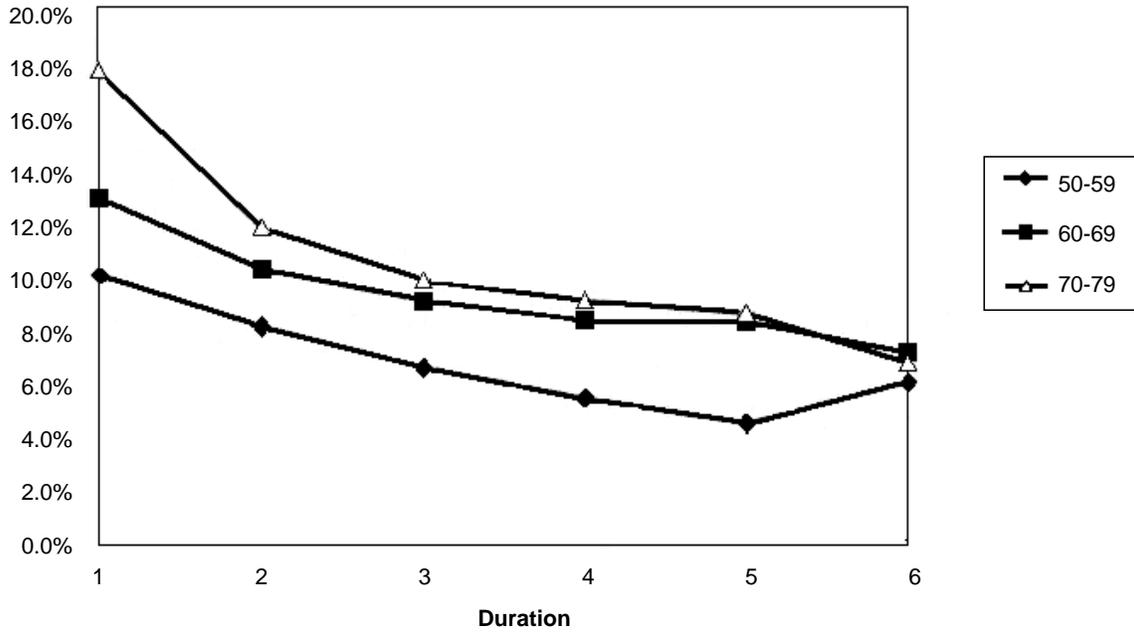
INCIDENCE RATE S BY ISSUE YEAR

CHART 4
SOA LONG-TERM-CARE COMMITTEE
1986-1993 INTERCOMPANY EXPERIENCE STUDY



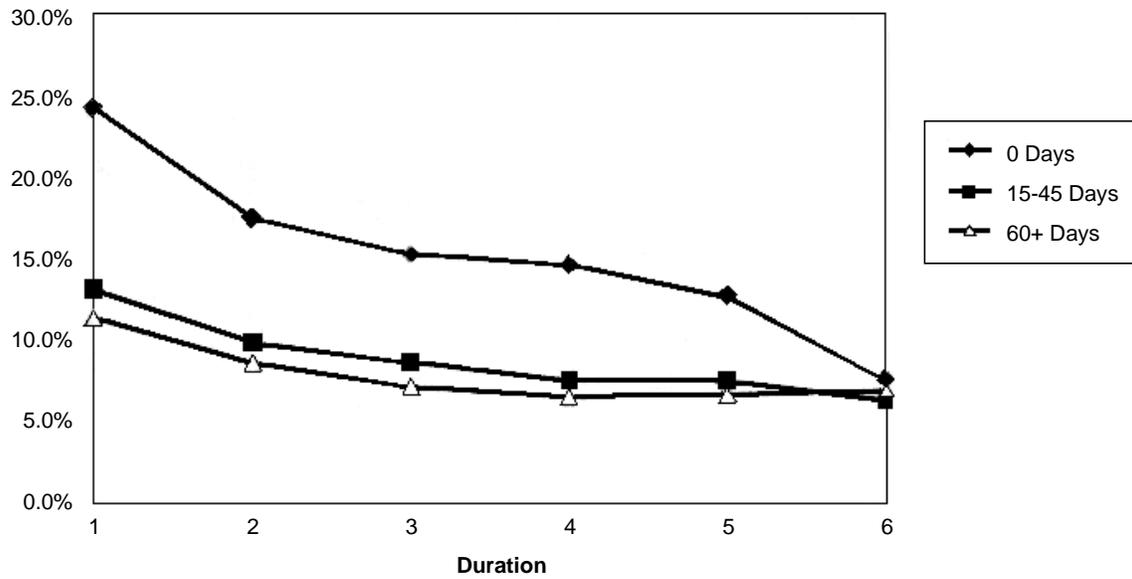
LAPSE RATES BY ISSUE YEAR AND DURATION

CHART 5
SOA LONG-TERM-CARE COMMITTEE
1986-1993 INTERCOMPANY EXPERIENCE STUDY



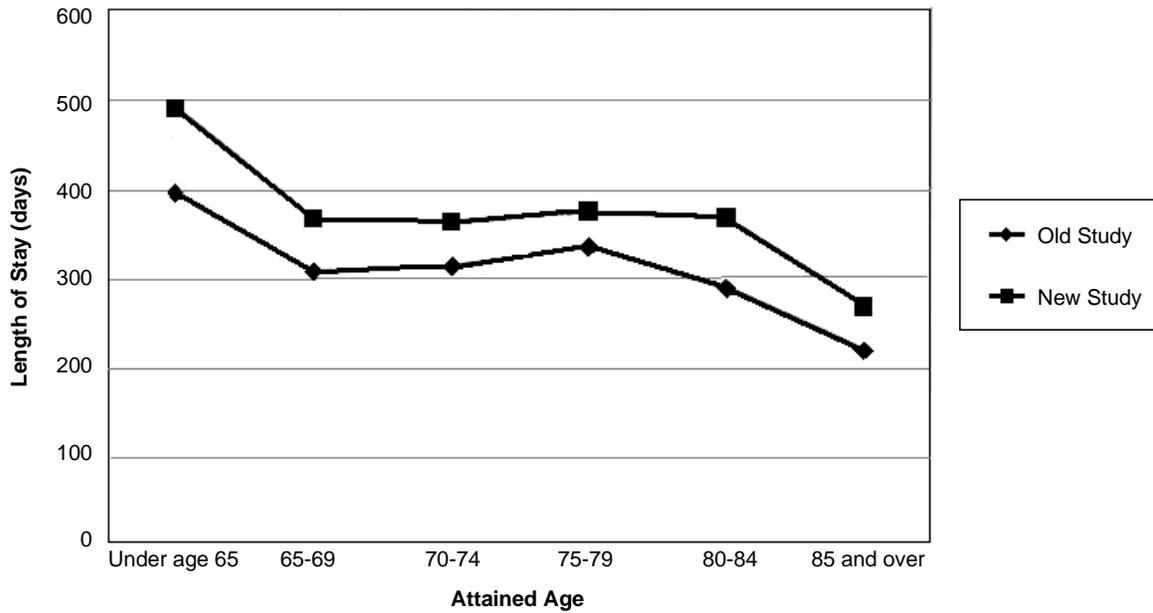
LAPSE RATES BY ISSUE AGE AND DURATION

CHART 6
 SOA LONG-TERM-CARE COMMITTEE
 1986-1993 INTERCOMPANY EXPERIENCE STUDY



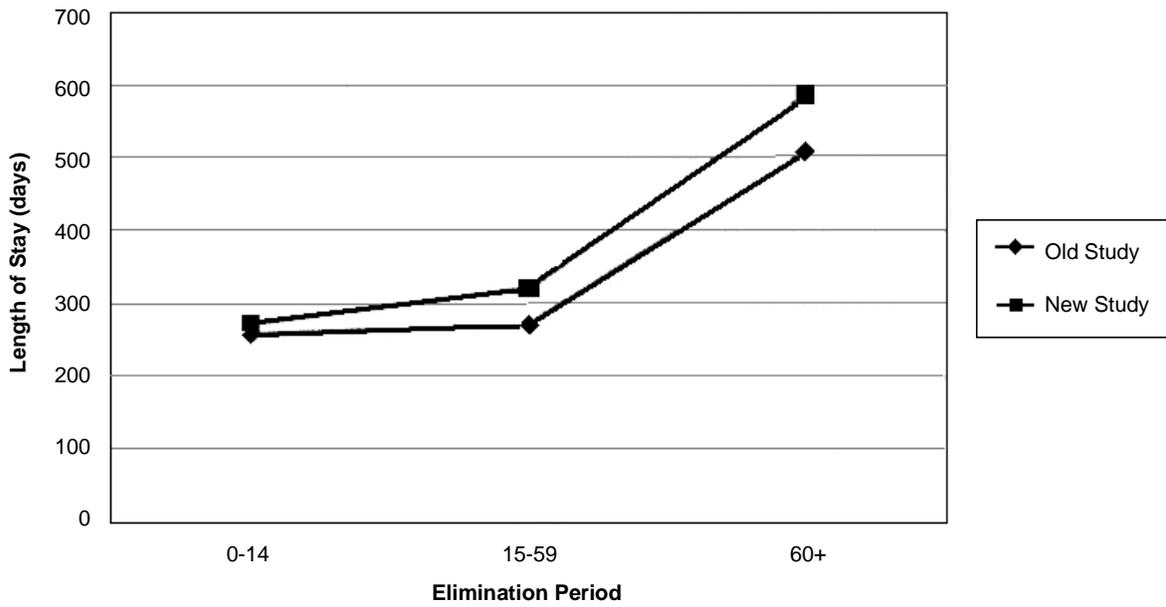
LAPSE RATES BY ELIMINATION PERIOD AND DURATION

CHART 7
 SOA LONG-TERM-CARE COMMITTEE
 1986-1993 INTERCOMPANY EXPERIENCE STUDY



LENGTH OF STAY BY ATTAINED AGE

CHART 8
SOA LONG-TERM-CARE COMMITTEE
1986-193 INTERCOMPANY EXPERIENCE STUDY



LENGTH OF STAY BY ELIMINATION PERIOD

CHART 9
SOA LONG-TERM-CARE COMMITTEE
1986-1993 INTERCOMPANY EXPERIENCE STUDY
LENGTH OF STAY BY DIAGNOSIS

