

RECORD, Volume 24, No. 2*

Maui II Spring Meeting
June 22–24, 1998

Session 32PD

Line-of-Business Management for Long-Term-Care Insurance

Track: Health
Key words: Health Care Reform

Moderator: ROBERT YEE
Panelists: DEBORAH ANN GRANT
ANDREW J. HERMAN
CRAIG T. SHIGENO

Recorder: ROBERT YEE

Summary: The potential for significant growth in the long-term-care insurance market underscores the need to emphasize and possibly re-evaluate overall company management of this line of business. Panelists discuss the characteristics of and impediments associated with effective management of this line of business, particularly as it relates to pricing, marketing, and underwriting.

Mr. Robert Yee: I'm an actuary from the long-term-care division of GE Capital Assurance Company and will act as moderator.

I'm going to ask the panelists to give you a personal long-term-care experience. About 20 years ago my wife's grandmother, who lived in Vancouver, was a very vibrant, energetic lady. We'd go up there to visit her every year, and she looked very healthy. Then about 12 years ago she started deteriorating, and in about 3 years she completely lost the ability to complete basic functions. She couldn't recognize anybody; she couldn't do anything. She had to go to a nursing home, where she stayed briefly for about two years, and then passed away. Of course at that time I had no clue what long-term care was all about. Shortly thereafter I was given an opportunity to enter this field and I jumped into it.

As far as my interest in long-term-care line-of-business management, one of the reasons this is so compelling to me is because it's a very complex business. A couple of characteristics of the business make it so: for one thing, it's a relatively

*Copyright © 1999, Society of Actuaries

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

new market. The individual insurance market essentially is a little bit over 10 years old. The group market is even a little bit younger than that, and the penetration rate is still fairly low. The market's been growing around 10–15% a year, so we have a lot of growth potential. Internationally, long-term care is definitely a global problem, and the United States has been the leading insurer so far—by far. We'll only talk about the domestic market in this session. Another reason for the complexity is, of course, that it is a very long-tail risk. There is a lot of uncertainty, with data not always readily available. The third thing, of course, is that the delivery system is unstable, heavily controlled, or influenced by the government's role in delivering long-term care. So, these three factors really make the product quite complex.

I'm going to talk briefly about some of the factors that affect the management of the product. The first factor is environment. There are regulations. There is definitely a utilization trend, something that we really cannot control or easily predict. We have tried to assess what factors could influence the utilization trend, but have not been successful. Providers are another big unknown.

The next factor is the marketplace. Consumerism has been more or less driving the market, and product features, through regulators and consumer groups. Distribution, how you deliver the product to the individual or the group, makes a big difference on the profitability and impacts your operation. Today's market is fairly competitive. My view is that about five or six insurers have products and features that are quite similar and fairly closely priced together within a range of 10–20%. You must consider product features. How you develop the product matters a lot. Risk management is another feature of the market. Once you've introduced the product, how do you look at the experience, re-price, and so forth? Compliance is a big issue, especially since the enactment of HIPAA. The fourth thing is internal operation, underwriting and claims. Lastly, we must look at service. All of these somewhat affect the risk that you get and how the risk persists.

All these factors that could influence the business obviously create a lot of opportunities and risk, and this is why this business is so challenging and can be rewarding for the company that does it well. What steps could we take that would help us look at this line of business more holistically, and manage it from more than one specific aspect? The first thing is to understand the interdependencies of all these factors. For instance, claims and underwriting definitely are related.

You need to adopt a total risk approach. Certain risks are really offsetting. You could argue that morbidity and investment are fairly large risks, and by putting them together, you could do certain things that you might not want to do on a separate basis. The first thing to do is expand your knowledge base. Data is king in this

business, so the better you are at managing your data and controlling the data accuracy, the better off you are. You must create an environment for teamwork. This is a product where all your functional departments must talk to each other. Above all, you should have a unifying vision. Figure out the whole team, what you're going to do, why you want to do this, and, hopefully, that will create a very successful organization.

The first speaker is going to be Andrew Herman, who has been involved with at least three of the largest long-term-care writers in the country. He's been doing a lot of product development work and financial reporting lately with Wakely Associates. He's going to talk about the marketing and distribution of the product. The next speaker will be Deborah Grant. Deborah is with Milliman & Robertson in Chicago. She's been in the insurance business since 1990, and is involved in quite a bit of small group health and senior product type of pricing. The last speaker will be Craig Shigeno. Craig's been with Tillinghast, Towers & Perrin, and Minnesota Mutual. Currently, Craig has been doing quite a bit of work on market entry strategy, plus expense analysis in accident and health products.

Mr. Andrew J. Herman: As Bob mentioned, I'm a long-term-care pricing actuary, and I got my introduction in the world of long-term-care pricing from Bob Yee at Amex Life Assurance before it was acquired by GE Capital. At first I was somewhat taken aback by all the complexities of long-term-care insurance: the lack of data with which to price, the constantly changing product designs, and the new benefit triggers.

I'll talk a little bit about long-term-care insurance distribution strategies, tools for generating long-term-care insurance leads, product and marketing considerations, and the role of the actuary. For long-term-care distribution channels, the most obvious ones are agent sales, which have been very successful in the individual marketplace particularly, and acquisitions, which is another distribution strategy. Employer groups seem to be a growing channel, so I'll talk briefly about employer groups. Finally, I'll touch on other miscellaneous distribution channels.

Agent sales could be classified as captive agents versus independent agents. Captive agents typically sell their company's products only. Usually just long-term-care insurance products have been the model in the long-term-care insurance industry. In this type of distribution channel, an effective lead generation process is absolutely critical because the agents make all of their commissions through long-term care. They'll starve if they don't have leads or tools for generating leads.

There are some clear advantages to using a captive system. One may not be obvious, and some actuaries didn't expect it to be the result, but the claims

experience for business written by captives has generally been very favorable. One might think that the underwriting would take care of distribution channel risk, but some of the carriers have experienced noticeably better claims with captive distribution systems, and it seems to make some sense due to the nature of the selection of the leads. If they're randomly generated, for instance, by direct mail, there's less of a tendency for antiselection. It seems understandable that a lot of the carriers have very good experience with their captive channels. The captive channel also tends to have lower not-taken rates, which helps with underwriting new business policy-issue type costs. Finally, with captive agents there's a great potential to ramp-up quickly. A couple of the large carriers have been propelled into the long-term-care marketplace by a captive field force.

There are in turn a couple of disadvantages with captive agents. There may be a large capital investment required to get that channel started. Some of those expenses could be incurred for opening offices, recruiting and training new agents, generating the leads, and overhead associated with captive agents, such as retirement or insurance plans for the selling agents. In addition to a large capital investment, successful direct mail lead generation really depends on company name recognition, and absent a brand name or some name that people recognize, it's going to be difficult to get a good response rate in getting the leads. I might characterize the name recognition as a disadvantage of the channel, but absent this hurdle, direct mail lead generation, following with a captive agent sale in the home, has proved to be a very successful distribution channel for more than one company.

Independent agents or brokerage agents are appointed with multiple companies and typically sell multiple products, not just long-term-care insurance. It's critical for a brokerage channel to have very strong home office sales and marketing support. A lot of these producers are occasional writers of long-term care who may only place one or two policies in a year. They are bound to have service questions about commissions or anything else, such as how long it's going to take to get the policy approved. Compared to captive agents, the brokerage channel requires less capital investment, and the company has access to a much larger population of producers, some of whom may be experts already. It's a quick way to get at a good population of brokers. They may have a better understanding of the marketplace and the competition, including knowledge of the various premium rates and underwriting classes of competitors. The brokers may know quite a bit about the overall business, which is an advantage. Like captive agents, a brokerage channel offers the potential to ramp-up quickly, albeit in a slightly different style.

Unfortunately, there are some disadvantages of the brokerage. Most notably, brokers tend to have less company loyalty because they're writing for many carriers, and it's very difficult to control a brokerage network. They also tend to have higher

not-taken rates. A broker may submit a long-term-care application with several different companies to try to get the most favorable underwriting class or even to get the application approved if the risk is questionable, to see whether it's insurable or not. As a result, a company may find it's getting low-placed rates or high not-taken rates, due to this phenomenon. Perhaps even worse is the practice of what I call "spreadsheets," where a broker will find a sell that you may have inadvertently underpriced, or just in general take advantage of the pricing structure. For instance, if you have age-banded rates on your issue age premiums, you may find that you expect a uniform distribution of sales within that band, but the brokers all put you in the highest age for the band so you have a skewed distribution, something you might not have expected at time of pricing which seems to happen sometimes in a brokerage. Clearly, there is another disadvantage with the higher potential for antiselection, which is not just on the part of the broker. It may also be on the part of the prospective insured too, who might walk into the broker's office knowing that there's a long-term-care insurance need.

I'll just mention briefly an acquisition strategy that has worked for some carriers. Typically, a company may just want to buy market share through an acquisition, an easy way to buy market share. After the acquisition, the company gains access to additional distribution networks and new products that the company might not have had access to before. I should also mention that even though companies have been married together after an acquisition, the marketing entities may not be married together. They may continue to compete against each other.

A growing strategy for new channels is employer groups, and typically in this market, employees, spouses, parents, in-laws, grandparents, retirees, etc., are targeted for sales. Usually there's some form of simplified underwriting, at least for the employee and the spouses. In the large group marketplace, which I don't have a lot of background in, I understand that some companies are looking at, or may already be doing guaranteed issue, which seems to be possible if the group is large enough, maybe 5,000 lives. There appears to be potential for some market growth with the very large groups, where commonly there's a payroll deduction process that would at least apply to the employee and the spouse.

What are some other miscellaneous channels? Most involve agents and function as strategic alliances. These could be affinity groups, endorsed associations, something like a Blue Cross plan or HMO, or managing general agents of some other insurance companies. Strategic alliances will work to add growth to sales. Private labels have been used by some companies, and not always successfully. In a private label, a company with expertise in manufacturing and developing a product will design and develop a long-term-care product for an unaffiliated distribution company. This seems to have caused some friction between the field

forces, or at least has in the past. Cross-selling is a great channel, and you might look for your life, annuity, or property and casualty clients and sell them long-term-care insurance. Financial institutions is another channel promising potential growth. The channel could be through bank depositors, bank representatives, financial planners, or stockbrokers. Finally, the last in the miscellaneous set: direct mail or mail order products. For long-term-care insurance, mail order can be a difficult sale. It's worked for some organizations with very strong affinity, but due to the nature of long-term-care policies being rather complicated and expensive, this can be a tough sale. One strategy might be to try to market a small policy, for instance, some minimal daily benefit like a policy with \$40 or \$50 daily benefit, and then try to follow up for add-on coverage at a later time.

In terms of generating long-term-care insurance leads, we talked a little bit about the captive agent approach or direct mail for lead generation. Some of the other lead ideas that I put together were targeting your existing clients that are approaching retirement, specifically targeting people who may be in their 50s or 60s and have an annuity or some other product, and then perhaps taking that a step further and developing referral leads through your existing clients. You may look for referrals from attorneys, accountants, other professional contacts, or your own family. I also suggest radio and television advertising as a way to get leads. People may not want to spend a lot on television advertising, but radio tends to be a good medium. For instance, an experienced agent writing long-term-care insurance might feel comfortable being a guest on a local radio show. There are ways to advertise through radio and television that aren't prohibitively expensive, but that can be a factor. Seminars through financial institutions or other types of groups has been a very key way for many agents to get leads in the long-term-care market, and the advice I've heard from producers is to try to go where the seniors are. They may be at a retired employee club, at a church, or the YMCA or other community center, and typically these groups will welcome a speaker. Such groups may ask a speaker not to make the sale right there during the seminar, but you could follow up and close the sale later. As a final way of generating leads, I have take-me boxes, boxes with brochures on your company or agency, which can be placed at a senior center or a bingo club. I've heard one person suggest placing it at a nursing home, but I personally don't favor that.

I'm not giving away any trade secrets by telling you to keep products as simple as possible. It's important not to make the contracts and marketing material unduly complicated. The definitions and the state requirements are complicated enough that companies designing these products should probably take the extra step and try to make the products as simple as possible. For marketing, you need ongoing brainstorming, whether they're product feature or service ideas. Brainstorming

sessions will usually generate some productive ideas that will help spur sales growth.

Creative feature and product naming can be a big contributor to success. I can think of some ancillary benefits that may not be that important to contracts. For instance, there's a benefit that is now being marketed as the "home for the holidays benefit." When somebody has a temporary absence from a nursing home, there's a cost to reserve the bed. It's also called, quite logically, a "bed reservation benefit," but if it's marketed as "home for the holidays," it has a positive connotation. This isn't a very expensive benefit, but it certainly sounds good when it's framed that way as a benefit worth the money.

Obviously, an up-to-date understanding of all the competitors' products is key, and I would also stress that efficient compliance and administrative functions are essential for good field relations. I don't think you can over-emphasize how important it is to be able to talk to the field force, particularly the underwriting department which needs to be able to explain adverse underwriting decisions. Actuaries can get involved as well in working with the field.

Let us look at some broken down considerations for group long-term-care marketing. Product packaging is necessary; it's sort of an extension of making the policy simple, but in this case packaging may be critical. Whoever is designing the packaging may just want to have three plans, a high, medium, and low benefit type. The key here is to avoid having the employees at the time of sale choose things like the daily benefit, but rather choose whether they want the richest plan or a lesser plan. In the group marketplace, human resources support is needed to administer a new benefit program. In addition to human resources support, the payroll department is a really important factor, and you can't overlook the considerations that you may have in trying to set up the payroll deduction administration. I think employee education and needs awareness are of primary importance, and the educational approach may be better than a hard sell approach in the employer group marketplace. My final comment is that successful group enrollment depends on the employer's support, which really needs to happen if the group is going to be successful.

Next let's turn to the role of the actuary, and what actuaries can do to support the marketing process. Obviously, pricing products soundly is very important, and having no past rate increases is an excellent marketing tool. There's at least one company represented here today and several more that may use that as a marketing advantage. Agents are obviously displeased when their rate increases. If you've been in the business years and years without a rate increase, that will certainly help future sales.

The actuary can also help in developing user-friendly agent rate guides or software in sales presentations. There are always a lot of numbers, and the extent the actuary can simplify the data to make it easy to use is a good contribution to the sales process. Actuaries should engage in frequent conversations with the sales force. It's very important to hear what the agents are saying in terms of what they need or what the competitors are doing. Another thing that actuaries can do is develop relationships with state regulators. For instance, in the long-term-care market, there may be a new type of benefit, something required by law, or just something that's prevalent in the industry, and one step in getting these types of benefits approved may be working with your regulators and being willing to share data such as output from asset shares or pricing runs. Helping the regulators understand what the industry practice is may help quite a bit in the approval process. Finally, actuaries should pay attention to the operation side as products are being developed.

I think the long-term-care marketplace is still exciting, with a lot of growth opportunities and new product opportunities. As actuaries, we can get involved and help the sales and marketing efforts as well as develop products. The risk elements inherent in long-term-care contracts do present special challenges to actuaries practicing in the field. For example, restoration of benefits is a feature that can be added to long-term-care contracts. Actuaries can help the industry by pricing the benefit soundly and contributing as much as they can to the sales process.

Ms. Deborah Ann Grant: I had eye surgery a couple years ago as an outpatient, and, as you probably know, you cannot take a cab home from the hospital. You have to go with a responsible adult. I'm single, and I don't have any family in Chicago where I live. I said, I really don't want to wait for a friend to get off work. I'm going to call a home health agency and get a home health aide to take me home, which I did. But the agencies have some rules. They had to come to my house first and interview me. They came in, and my apartment failed miserably. You had to climb a flight of stairs to get to it. It was built in the 1920s, so it has hardwood floors with a raised threshold in every room. There are scatter rugs throughout, and I had to agree to pick up the scatter rugs.

Then she started in on a mental status exam, and I realized I was being checked for cognitive impairment, but I cooperated. I made the mistake of admitting that I'm a diabetic, and that led us down a path that lasted about 20 or 30 minutes as I tried to convince this woman that, yes, I was having eye surgery, and I was going to be patched, but I was capable of delivering my own insulin and checking my blood sugars. Then we went through the glucometer, and I taught her a thing or two. She

picked me up at the hospital, and it worked out. It cost just about the same as a Chicago cab driver would have charged me.

My portion of line-of-business management for long-term-care insurance is titled “Special Underwriting Considerations For Long-Term-Care Insurance,” but it could be subtitled “What You Have to Consider About Underwriting When Reviewing Your Pricing.” I’m going to discuss typical assumptions used in pricing to model the effects of underwriting, and the consequences if actual underwriting practices do not match the model, or, in other words, what happens if the underwriting and marketing departments are not doing what you assumed they would do. I will also talk about the difficulty with long-term-care insurance, in contrast to Medicare supplement or underage medical business, in monitoring loss experience. My goal today is to worry you.

What are the underwriting tools currently being used in the long-term-care market? Typically, underwriting includes a medical application, which is a series of questions regarding the applicant’s medical history, and a paramedical examination, which means different things to different companies. It indicates some type of non-physician exam, such as a blood pressure check or blood testing. Companies’ practices vary in what they do for blood tests. It may mean cholesterol, HIV testing, and or liver function tests. One source I queried said the blood testing might mirror what a company is using for its life insurance, which meant nothing to me but may mean something to some of you. The point is that the blood tests used vary widely in the market today. Phone interviews are essentially a confirmation of the written medical application. Another underwriting tool is to obtaining the attending physician’s records or conducting face-to-face interviews. The agent’s comments are also very useful.

I have summarized the results of our internal surveys about the tools used in underwriting into three, rough categories of: liberal, moderate, and conservative. We all talk about this or that company having liberal underwriting or conservative underwriting. When a pricing project is started, there’s often an intention to follow one of these general styles, depending on marketing considerations and company philosophy. Let’s first consider the tools we’ve observed and used in liberal underwriting (Table 1).

TABLE 1
LIBERAL UNDERWRITING

Tools	Age of Applicant			
	<50	51-71	72-79	80-84
Medical Application	X	X	X	X
Paramedical Exam				
Phone Interview		X (maybe)	X (maybe)	
Attending Physician's Records				X (maybe)
Face-to-Face			X (maybe)	X (limited)

The companies that are performing liberal underwriting all use a medical application, and virtually no one uses a paramedical examination. There may or may not be phone interviews depending upon age.

What I'm calling moderate underwriting looks a little different (Table 2).

TABLE 2
MODERATE UNDERWRITING

Tools	Age of Applicant			
	<55	56-71	72-75	76-84
Medical Application	X	X	X	X
Paramedical Exam	X (if no medical records)			
Phone Interview	X	X	X	
Attending Physician's Records	Maybe (50% of the time)	Maybe (50% of the time)	Maybe (50% of the time)	X
Face-to-Face	Maybe	Maybe	Maybe	X

Note the emphasis on a phone interview, or, in the case of the older applicants, a face-to-face interview or attending physician's records. It is also interesting, and it makes sense clinically, that the paramedical exam is used for those younger than 50 years of age. I was a physician assistant before I became an actuary, so I like to point out that the types of screening tests done in paramedical exams are difficult to interpret in the older population and may not be as useful in underwriting as they are for younger ages.

Conservative underwriting drops the phone interview in favor of attending physician records and face-to-face interviews (Table 3).

TABLE 3
CONSERVATIVE UNDERWRITING

Tools	Age of Applicant			
	<50	51-71	72-79	80-84
Medical Application	X	X	X	X
Paramedical Exam	X (if no medical records)	Maybe		
Phone Interview				
Attending Physician's Records	X	X	X	X
Face-to-Face	X (if they haven't seen doctor in 2 yrs.)	X (if they haven't seen doctor in 2 yrs.)	X	X

Now let's analyze the three a little more closely. At this point, many of you are probably thinking that conservative underwriting could be achieved with a properly designed medical application, and that is true. Companies do perform conservative underwriting with just a medical application. It's also probably dawned on you that just the act of doing a face-to-face interview with your applicant doesn't automatically mean that conservative underwriting is achieved. If all your applications are accepted, you obviously have liberal underwriting, no matter what tool you used to get there. But what I've outlined so far are three, distinct underwriting styles, and we know that these different tools are currently used in issuing long-term-care policies. Companies have the intention of getting liberal, moderate, or conservative underwriting depending upon their goals, and roughly use these tools to achieve their goals.

Next we're going to price a long-term-care policy, assuming these three different underwriting styles, and I'm going to show you the effect on morbidity that different underwriting has. I want to show you the effect on claim costs, so I made the decision to show you expected loss ratios. I'm going to walk through the pricing of a long-term-care policy. We're going to do our pricing for the Good Health Insurance Company, and the benefits are a comprehensive nursing home and a home health care policy. It includes respite, adult day care, and assisted living facility, and excludes meals. The daily benefit is \$100 for each day of nursing home confinement and \$50 for each home health care visit. The pot-of-money approach is used. The pot of money or maximum dollar benefit is defined as opposed to defining the benefit period. The benefit period extends until the amount is paid. The pot of money is \$150,000, and that would equal a benefit period of 4.1 years if all the benefits were paid in a nursing home confinement. If there's some home health care benefit or all home health care, it's going to take longer in calendar years to use up that \$150,000. We have an elimination period of 90 days and a

benefit trigger of two or six activities of daily living or cognitive impairment. It's tax qualified. There are no rate classes or spouse discounts.

Lapse assumptions vary by issue age. In the first policy year, we would be looking at 8% in the less than 55 years old category, 12% in the age range of 55–64, and 14% for people age 66 and over. In the second policy year, the percentages break out to 6%, 9% and 11%. In the third year, we have 4%, 6% and 8%. For the fourth year and beyond, we should expect 3%, 4%, and 9%. I did code expenses into the asset shares I ran, but I'm studying the effect of underwriting on morbidity, so the expense assumptions used don't affect the results I've come up with. The following are the prototype long-term-care expense assumptions for Good Health Insurance Company: \$150 underwriting; 5% of the premium for the first-year expense, \$30 a year for maintenance, inflated 2.5% per year, plus 2% of the premium; 4% of claims; 2.5% premium tax rate; and 5% of paid claims for managed care. Expenses realistically should vary by age, which I didn't take the time to do in running these, and they also should vary realistically by underwriting style. The purpose was to get some realistic level of expenses into my asset shares, and these are not realistic. A managed care expense of 5% of paid claims is included in the loss ratio, and the claim cost that I used assumed a certain level of care management.

Commissions are the next aspect of pricing. I have figured 70% for the first year, 15% for the second through tenth years, and 5% for the eleventh year and beyond.

We have to calculate reserves: One year PTE at 5.5%; mortality is equal to the 1983 group annuitant mortality; the lapses equal the lesser of 8% or pricing assumptions; and select factors are used. I have provided the additional reserve basis which is based on the requirements of the National Association of Insurance Commissioners' model law. Also, we're going to use an issue age distribution typical of the individual market, which is no sales to persons older than 85 years of age. The average issue age of my illustrative model is about 70, and the distribution is 61% female. My model has an investment income earning rate of 6%. My pricing criteria is a 60% lifetime loss ratio, where loss ratio is defined as the present value of claims divided by the present value of premiums. In other words, I'm not going to include a change in additional reserves in my pricing criteria. Pricing for a 60% loss ratio without adding the change in additional reserves to the numerator results in a lower premium than if I had included the change in additional reserves in the loss-ratio definition. We're also sure to meet the regulatory requirements of all but a couple of states, and we will be competitive with companies that have tightened their belts on expenses and are tolerating a higher loss ratio than the regulators require.

I chose to illustrate 60% lifetime loss ratio because the variable that I'm testing, which is underwriting selection wear-off, directly affects the morbidity and loss-ratio curve. There are many other pricing criteria, such as the percentage of premium on a pre-tax or post-tax basis, return on equity, and loss-ratio definitions that include the change in additional reserves. The premiums that result from the different pricing criteria can vary significantly. The rate also varies with the different criteria between age groups. Usually, when you price a long-term-care policy, you should probably test all of the different criteria to see the effect.

The assumptions I have used didn't change in the asset shares I ran because we're testing underwriting. I've run asset shares, and we'll look at the results in a minute. For the three underwriting styles defined, holding the assumptions fixed, what varied by underwriting style were the rejection rate and the underwriting selection factors. Table 4 presents the underwriting rejection rate plus the policyholder not-taken rate for liberal, moderate, and conservative underwriting. These are based on observations from our clients and on Milliman & Robertson research.

There are two assumptions presented in the top half of Table 4: the rate that the company rejects the applicant and the rate that the policyholder rejects the company, or what's usually meant by the not-taken rate or brokerage operation. Both the reject rate and not-taken rates will vary by the marketing approach, underwriting style, and the age of the block of business. By age of the block of business I mean that, when a block is introduced, you can expect your field force to test your underwriting and submit some poor business initially. Initially the reject rate is going to be higher, and that could change over time; it might be in a constant state of change if your company is using both friendly and unfriendly agents. The rates of both rejection and not-taken will vary by the business being submitted, even when your underwriting is being held constant. The reject rate and the not-taken rate really don't have any effect on loss ratios but do affect the results and expenses of the company. Underwriting costs are incurred by the company for all those policies that are ultimately not issued. So, these assumptions are very important when evaluating your expected profit level.

TABLE 4
REJECT RATE PLUS NOT-TAKEN RATE

Issue Age	Underwriting Style		
	Liberal	Moderate	Conservative
<65	4.5%	8%	16%
65-69	7	15	16
70-74	9	20	27
75-79	11	23	38
80+	20	35	48
Composite	10	20	29

Along with the reject rates, selection factors were applied to the claim cost to model the effect of underwriting.

The selection factors are designed to model the pattern of selection wear-off and when observed with the reject rates that I'm showing here, are designed to be in balance. But, like the reject rates and the not-taken rates, selection factors vary by issue age. Selection factors will vary by the marketing approach, whether brokerage or captive. I chose selection factors to model each style of underwriting, but like everyone faced with the pricing of a long-term-care policy, I chose a set of factors that I believe in general will accurately model what my company will do for underwriting.

The point is that, at this stage, I can make an educated guess, but I don't really know. Table 5 shows the expected loss ratio curves for my three models and also the average premium for all issue ages.

TABLE 5
EXPECTED LOSS RATIO CURVES AND AVERAGE PREMIUM

Policy Year	Underwriting Style		
	Liberal	Moderate	Conservative
1	25%	18%	13%
3	44	41	36
5	64	60	60
7	78	76	78
Lifetime (cumulative, discounted to issue)	60	60	60
Average Issue Premium	\$2,664	\$2,261	\$1,998

The expected loss ratio curve is obviously a little flatter with liberal underwriting than with conservative. The bottom row shows the annual premium composite by the assumed issue age distribution that produces the 60% lifetime loss ratio, and we can see a decrease of about 15% in premium as you move from liberal to moderate underwriting, and another decrease of about 11% as you move to conservative. Since I'm pricing for loss ratio, the only assumption change that affects the premium is the selection factor. The premium that's derived here using conservative underwriting assumptions is 25% lower than the premiums using the liberal underwriting. The choice of selection factors is very significant.

Next I'll present the expected loss ratio curve and premium by issue age for liberal underwriting (Table 6).

I've also added three more pieces of information compared to the previous table. The lifetime change in additional reserves is a percentage of premium. The lifetime

investment income is a percentage of premium, and the amount of premium available for expenses and profit is what is left over. By expenses, I mean expenses such as commission and also profit. This table also illustrates another interesting point: It's impossible to price for loss ratio at the younger ages. Notice that the premium at age 42 that yields a 60% lifetime loss ratio is \$236. The amount of premium available for expenses and profits is only 24%. Expenses as a percentage of premium are higher here than at the older ages because fixed expenses are just higher for the smaller premium amount. You don't have any profit here. You either have to tolerate some of your issues having no profits at the younger ages, or have lower loss ratios at the younger ages, which means you must have higher loss ratios at the older issue ages to meet the regulatory requirements.

TABLE 6
 EXPECTED LOSS RATIO BY
 ISSUE AGE FOR LIBERAL UNDERWRITING

LIBERAL UNDERWRITING STYLE Policy Year	Issue Age			
	42	62	82	Total
1	11%	13%	31%	25%
3	16	24	56	44
5	21	37	80	64
7	27	49	92	78
Lifetime	60	60	60	60
Lifetime Δ in Add. Reserves	40	17	2	6
Lifetime <i>ii</i>	24	28	12	18
Amount of Premium Available for Expenses/Profit	24	51	50	52
Issue Premium	\$236	\$928	\$5,721	\$2,664

There are definitely problems with pricing for loss ratio. But we're going to do it anyway because that's what I'm in charge of, looking at underwriting. Let's look at the same breakdowns showing the results for moderate and conservative underwriting styles (Table 7 and Table 8).

TABLE 7
 EXPECTED LOSS RATIO
 BY ISSUE AGE FOR MODERATE UNDERWRITING

MODERATE UNDERWRITING STYLE Policy Year	Issue Age			
	42	62	82	Total
1	14%	9%	26%	18%
3	19	20	56	41
5	24	33	79	60
7	28	44	93	76
Lifetime	60	60	60	60
Lifetime Δ in Add. Reserves	37	18	2	8
Lifetime <i>ii</i>	23	30	13	19
Amount of Premium Available for Expenses/Profit	26	52	51	51
Issue Premium	\$208	\$800	\$4,734	\$2,261

TABLE 8
EXPECTED LOSS RATIO
BY ISSUE AGE FOR CONSERVATIVE UNDERWRITING

CONSERVATIVE UNDERWRITING STYLE Policy Year	Issue Age			
	42	62	82	Total
1	4%	6%	19%	13%
3	11	15	52	36
5	19	29	83	60
7	28	44	103	78
Lifetime	60	60	60	60
Lifetime Δ in Add. Reserves	42	20	3	9
Lifetime <i>ii</i>	25	31	14	21
Amount of Premium Available for Expenses/Profit	23	51	51	52
Issue Premium	\$185	\$729	\$3,980	\$1,998

What I want you all to be thinking about now is how different the premiums are and whether we've modeled the effect on underwriting in a reasonable way, based on what's been experienced by companies in the past. I want you to feel a little uncomfortable at this point. I want you to feel uncomfortable because we can see the results are very sensitive to the selection assumptions. The distinct possibility also exists that the company may not ultimately underwrite the way they planned to.

What happens to our loss ratio if we sell the policy and the premiums based on conservative assumptions but actually use liberal underwriting? (Table 9).

TABLE 9
EXPECTED LOSS RATIO BY ISSUE AGE
LIBERAL UNDERWRITING STYLE
ISSUE PREMIUMS BASED ON CONSERVATIVE UNDERWRITING STYLE

Policy Year	Issue Age			
	42	62	82	Total
1	14%	16%	45%	33%
3	20	31	78	58
5	27	46	110	83
7	35	63	124	100
Lifetime	76	76	83	77
Amount of Premium Available for Expenses/Profit	37	37	30	37
Issue Premium (Premium based on conservative underwriting, profit criteria of 60% lifetime loss ratio)	\$185	\$729	\$3,980	\$1,998

Table 10 shows that if we implemented a 50% rate increase in the fifth policy year, we go back to a 65% loss ratio. I assumed a 25% loss, a shock lapse and a 12.5%

claim antiselection in the calculations. My point is that a big increase is needed to get back to profitable levels, not that this is what you would actually do.

If 50% seems kind of drastic, let's look at something different in Table 11.

TABLE 10
 EXPECTED LOSS RATIO BY ISSUE AGE
 LIBERAL UNDERWRITING STYLE
 ISSUE PREMIUMS BASED ON CONSERVATIVE UNDERWRITING STYLE

Policy Year	Issue Age			
	42	62	82	Total
1	14%	16%	45%	33%
3	20	31	78	58
5	19	34	83	62
7	25	44	94	73
Lifetime	57	59	74	65
Amount of Premium Available for Expenses/Profit	53	53	37	46
Premium After Rate Increase	\$278	\$1,094	\$5,970	\$2,997

What's another way we might try to get back to profitability if we don't recognize until our fifth policy year that we have a problem? I show that with the 15% rate increase every other year in policy years 5 through 15, or with six 15% rate increases, it takes that much to get back to where we started. We're not quite there yet. Take a look at the age 82 premium. A person issued at age 82 is 97 in the 15th policy year. At age 97, he or she probably has a pretty good idea if he or she is going to use nursing home or not. In fact, I think only those receiving the waiver premium benefit are paying this \$9,000+ premium at this point.

If we wait until policy year five to rectify the underwriting problem, it requires pretty hefty rate increases to return the block to profitability.

TABLE 11
 EXPECTED LOSS RATIO BY ISSUE AGE
 LIBERAL WRITING STYLE
 ISSUE PREMIUMS BASED ON CONSERVATIVE UNDERWRITING STYLE

Policy Year	Issue Age			
	42	62	82	Total
1	14%	16%	45%	33%
3	20	31	78	58
5	23	40	97	73
7	27	48	100	78
Lifetime	49	56	77	66
Amount of Premium Available for Expenses/Profit	60	40	35	46
Premium After Rate Increase	\$428	\$1,686	\$9,205	\$4,621

I hope you all recognize that these are illustrative premiums, saying that these are the rate relativities between age and the different underwriting styles and what you would have to do to get back to profitability. The point is that you really can't wait until policy year 5 to get back to profitability. If you do, you're going to have a block of business that's losing money.

Table 12 puts the results of previous tables in one spot for you.

TABLE 12
COMPARISON OF PREMIUMS BY ISSUE AGE
BY RATE INCREASE/UNDERWRITING SCENARIO

Scenario	Issue Age			
	42	62	82	Total
Cons. Und./60% Lifetime LR	\$185	\$729	\$3,980	\$1,998
After 50% RI, Policy Year 5	278	1,094	5,970	2,997
After 15% RI Policy Years 5, 7, 9, 11, 13 & 15	428	1,686	9,206	4,621

If you have an underwriting problem, you have to recognize it early. What tools do you use to recognize the problem? For Medicare supplement or major medical insurance, you would carefully monitor actual-to-expected loss ratios, but in long-term-care insurance, a claim with a benefit period of 4.1 years is at least a 50% claim reserve in the first 2 years. And for a new block, the valuation actuary probably will set the claim reserve based on the expected loss ratios. Initially you get the pretty exciting result of an expected loss ratio of 1. I know because I carefully filled out an exhibit by policy year for a company with Medicare supplement and underage insurance, and it had some problems. As my boss was flipping through the pages and saying, "This looks bad," he flipped to the long-term-care page and said, "The long-term care looks pretty good." I had to respond, "We have to admit that the reserve is just set on expected loss ratios. That's why the results look so good."

So, what do we do to measure underwriting? One statistic to look at is the rejection rate, but the reject rate has many problems. One way to look at underwriting is as the filter that lets through policies with your issue criteria. What gets stopped on the upstream side of the filter are those who do not meet the criteria. Just how much is on the upstream side depends on the filter size, your underwriting, but it also very much depends on what enters the system. So, what enters the system is affected by underwriting. There's a feedback loop there, but what enters the system is also dependent on many factors other than underwriting. If you relied on reject rate alone to assess whether your underwriting is doing what it seems to be doing, you could run into some problems. Maybe you would want to keep statistics on reasons of failure to issue, or on the diagnoses that come up by age and agency type. We recently talked to a client who just entered the long-term-care market,

and its first five or six applicants were rejected because they were all activities of daily living (ADL) deficient and essentially ready for the nursing home tomorrow. If this company that was being tested is going to keep statistics on reject rate, it might have to cull its statistics a little bit. The company should probably keep statistics on the reasons for the initial claim, whether it be ADL or cognitive impairment, and also by diagnoses, where you can pick up some information.

One very useful statistic that we've been using is the expected frequency of claims (Table 13).

TABLE 13
EXPECTED FREQUENCY OF CLAIMS

Expected Frequency of Claims by Policy Year		
Policy Year	Nursing Home Comprehensive	Home Health Care Comprehensive
1	.0042	.0044
2	.0061	.0063
3	.0081	.0081
4	.0102	.0099
5	.0123	.0117

These numbers were easy to formulate because I've only priced this product for Good Health Insurance Company with one elimination period, a 90-day elimination period. Expected frequency has to be calculated for all the different types of benefits in your block of policies. It may be formidable, but it's important. Expected frequencies will vary by the age and sex of the insured and the elimination period. You have to calculate for your in-force business and not what you assumed your distribution would be. One question is, if we have 100 policies and one claim in the first policy year, should we panic? I don't think you have to panic, because it's only one claim. You can look at the underwriting file, and view the claim, and say, it's an accident. But if it's an accident because they were ADL deficient or they were cognitively impaired, I don't know how to interpret that. I hope that I'm leaving you with the idea that you should be worrying about how your underwriting department is doing because, if you find out too late that its not doing what you priced for, you cannot rectify the situation. I also hope I'm leaving you with the idea that expected frequencies of claims is a good statistic to monitor.

Mr. Craig T. Shigeno: I'm the youngest grandchild on both sides of my family, so I really only grew up with one of my grandmothers. Although she didn't speak English, I was the only grandchild who at least attempted to communicate with her. She died when I was in college, but while I was in high school, she was put in a nursing home. I got to watch how her lifestyle changed drastically from being very

independent, living by herself for so long, and being kind of fun and full of spirit, to going downhill.

There's been a great deal of interest in long-term care as of late because of shifting demographics. Probably because the product line isn't mature, a lot of companies are currently considering entering the market. We're getting a lot of calls now just talking about market entrance strategies. A lot of the focus has been on market share, and what I'll talk about today is the risk management side, or back to the basics. We'll talk about some actuarial concepts that you probably deal with day to day.

I'm going to discuss a morbidity risk management system. It primarily consists of what we call risk profiling and a frequency and severity analysis. I'll use some examples to illustrate these concepts, and then I'll finish by discussing some uses or benefits of implementing a system like this.

Even though a lot of the focus has been on market share, we all know there's a great deal of risk involved in this product line and the goal is to achieve rewards in line with these risks. We're recommending that you adopt a morbidity risk management system to track this kind of experience as part of your line-of-business management. Along with achieving rewards in line with your risks, this system can improve your profitability, enabling you to detect deteriorating situations before they become serious problems, much like Deborah was talking about earlier, identify and determine what the key drivers of your experience are, and, finally, evaluate the effectiveness of some of your insurance company functions, like claims underwriting.

What we're presenting here is a proactive management system, not a reactive one, and it will be important to the long-term survival of your company in this market. The first component is what we call risk profiling, and then I'll also talk about frequency analysis and severity analysis. In severity analysis we segment the two different components, analysis of continuance and analysis of the payment function, and I'll go into each of these in more detail.

Risk profiling is just a broad measure of profitability by risk variable. It is meant to be an early warning indicator to show when things start to get worse and when actual starts to deviate from expected. Risk profiling generally involves three steps: determining what the key drivers of your experience are, quantifying your exposure to the risk variables; and comparing actual-to-expected results as they begin to emerge.

Determining the drivers of your experience is complex because, as you know, long-term-care policies vary a great deal by what benefits they pay and what benefit triggers when benefits are actually paid. I'll list some of the more important drivers: elimination period, benefit maximums, benefit triggers, state of issue, cause of claim, and marital status. The list can go on and on, and you really need to analyze, based on your own products, which ones are important. That's the thrust of this exercise.

The next step is to look at exposure to these different risk characteristics, and we recommend using premium written as your first choice. If that isn't available and it's easier to get volume of daily benefit in force, that's what we would recommend as the second choice. The final and probably most important step in this process is calculating what we call the developed interest-adjusted loss ratio, which is what we use as a broad indicator of financial performance, and recommend. For a given incurral period and measurement date, we look at the incurred claims adjusted for the change in policy reserve divided by earned premium. An important part of this is calculating the developed or incurred claims, which is the present value of paid claims from the incurral date through the measurement date plus an estimate of future claims. As you go through different measurement dates, you can update the analysis to incorporate new knowledge and new experience. The idea is to calculate this on both an actual-and-expected basis, and then compare them. You're looking for absolute differences, where the actual to expected is greatly in excess of 1 or greatly smaller than 1, in other words, increasing trends or decreasing trends.

Let's consider an example to illustrate how this might be used in practice. Keep in mind that this is illustrative only, so don't price your policies based on this. The risk variable we're going to look at is type of coverage. Let's say, for instance, we have nursing home only, home care only, and comprehensive coverage. We'll be looking at claims incurred in 1995, and the loss ratio over successive measurement dates of calendar years 1995, 1996, and 1997 (Table 14).

TABLE 14
CLAIMS INCURRED AND LOSS RATIO

Risk Variable	1995 Exposed Premium	DIALR (1995 Calendar Year Incurrals)		
		12/31/95	12/31/96	12/31/97
Nursing Home	\$1,000	75%	55%	45%
Home Care	250	45	65	85
Comprehensive	3,000	85	85	85
All Business	4,250	80	77	76

You can note a few things from this: the decreasing trend of nursing home only, the increasing trend of home care only, and the level trend of the comprehensive line. We're assuming that our pricing or expected loss ratio is 65% here.

What can we surmise from looking at this graphically in Chart 1? If we look at nursing home only, you can see that there is a decreasing trend. What kind of implications might this have? The most obvious is that there's at least a potential for reserve redundancies here, since you price for a level 65 loss ratio and there have been improvements. If we look at home care only, you can see an increasing loss ratio which, in turn, may indicate that you have a reserve insufficiency problem. But maybe the more important, or the more intriguing, question is what doesn't this tell you? Keep in mind that the loss ratio is just an early indication warning system, and not a diagnostic tool.

Why is the high absolute happening? What we recommend is a frequency and severity analysis. It's been our experience that companies traditionally have only looked at claim cost, and we recommend splitting it into its components. Problems with frequency often have different management issues and solutions than problems with severity. Frequency really is just the incidence rate, or the probability of going on claim. Severity we again split into two separate components, the first being continuance or the probability of remaining on claim, and then the payment function, which again recognizes that there may be a difference between the benefit actually paid and the benefit that was initially issued.

Let's go back to our example (Chart 2) and look at how examining this in more depth might give us some additional information. I'm going to concentrate on nursing home only and home care only. If we look at nursing home only, you can see that again we have the decreasing trend, and if you look at frequency, you can see that it's right where we expected. We know that the problem isn't in the incidence of claims. From Chart 3, you can tell that the continuance is running much better than expected, and the payment function is running right at expected. Now you know that your trend is really a result of the fact that people are coming off claims much faster than you expected.

Now refer back to Chart 2, and look at home care only. You can see that there is an increasing trend, and our task is to figure out the underlying reason for that. If you look at the frequency rate, you'll note that the frequency is actually lower than expected. You have fewer claims than expected, so you have to surmise that the problem is coming through in the severity function. Let's return to Chart 3 again, and if you look at the continuance function, you'll note that it's running at unity. Under traditional studies, you can see that you might just stop at continuance,

which traditionally is what people have done. But if you look down below, the payment function is where the problem lies.

Chart 4 brings this home a little bit more, and demonstrates the importance in splitting the severity function into the two different components of continuance and payment function. In our particular example, where you saw an increasing trend with decreasing frequency and continuance that was running right at expected, there may be a question about why you're having a trend of that nature. We would like to point out that the payment function is an important part of your morbidity experience analysis.

That is really the nuts and bolts of the morbidity risk management system, and I'll summarize by sharing some of the benefits or uses of implementing a system of this nature. First of all, it helps you to identify what the drivers of your experience are, which we touched on in the risk profiling section. Also, it assists you in managing your in-force business, for example, maybe formulating reinsurance strategies. It helps you to evaluate some of the your insurance company's processes, things like claims, underwriting, etc. It also helps you in your product design and pricing. By splitting the morbidity into its components, you are in a better position to evaluate the impact of any new benefits that you price in and to make sure that the impacts are as intended. We've gone through an example of how you can use the tools that I've discussed above to note any problems in claim reserving. We believe that being very proactive in your management style is important in managing this line of business, and implementing something like this will give you the tools to address problems before they occur, or before they become severe problems.

Mr. Yee: Do we have any questions?

From the Floor: The premiums referenced were for illustrative purposes only, but, Bob, I think you mentioned that most companies' premiums are within 10–20% of each other. I was wondering if you could talk a little bit about the average premium by age band, the average age that financial planners are recommending their clients purchase long-term-care insurance, and whether any of those ages, particularly the younger ages with the lower premium, might lend themselves to direct response sales.

Mr. Yee: The average age I believe is in the 65–69 range, and financial planners or financial institutions are definitely recommending a purchase at, maybe, age 45. Direct response hasn't been very successful in long-term care for a variety of reasons, and one of them is, if nothing else, regulation is actually quite complex. The application is very time-consuming, because you're required to offer compound inflation protection and nonforfeiture benefits, and once you get past that, the line

of coverage does not really lend itself very well to even a two-step mailing for long-term care. So, I don't know any company that has implemented direct response very successfully.

Mr. Frank E. Knorr: When you were talking about marketing you talked about acquisitions and also group plans. I think there's something in between those two. When you have a group shopping around from year to year, you may have premiums going into a plan for three years under one carrier, and then they switch carriers. Is there any evidence of groups doing that, affinity groups, employer groups, or even continuing care retirement communities, shopping around after they've had a plan with a carrier for a few years?

Mr. Herman: I'm not sure. One way to get around such shoppers when you're designing a group plan is to design the group product so that you can have complete portability, and I think that's probably the best solution. Even if the policyholder cancels, the certificate holders could keep their coverage and just continue on with no transfer of reserves. That may be the most prudent way around that.

Mr. Yee: I have a question for Andrew. Are those companies that you're aware of utilizing multiple distribution strategies or are they focused on one distribution strategy?

Mr. Herman: I think a lot of the carriers will use more than one channel just to maximize sales. Typically there may be a leading channel, such as a captive agent, and the carrier will find that those agents don't market nationally, only regionally. So, the carrier might introduce brokers or networks to cover regions where the captives aren't operating. I think over time there will be continuing pressure for increased sales, so the carriers will look to expand and use all possible channels. Some of them will fail, but typically the one or two that they started out with will produce the majority of sales for the company.

From the Floor: Is anyone aware of companies using the Internet for marketing, and how would they use the Internet?

Mr. Herman: I think certainly companies use the Internet for advertising and getting their names out, but I'm not aware of sales actually being done on the Internet.

Mr. Yee: I have one question for Deborah. In your selection factors, do you assume an ultimate rate in the later years? Is that selection table actually an ultimate table?

Ms. Grant: I think what was interesting about that is the selection factors vary by age and not necessarily all ages.

Mr. Yee: Does an underlying assumption exist that there's really an ultimate morbidity rate?

From the Floor: I'll answer that, Bob. Actually we assume in the more liberal underwriting style that the ultimate factors are across the board. But as you get into the more conservative styles, the ultimate factors are less than 1; in other words, the conservative underwriting style is going to have a positive impact even on the ultimate morbidity because you're probably underwriting things like cognitive impairment, etc.

Ms. Kim H. Tillman: I have a question for Deborah. I was wondering if you would comment on how physical versus cognitive underwriting fits into the three styles—liberal, moderate, conservative. I know at our company, as years have gone by, it seems like we're getting more and more conservative with our cognitive screenings, but we're getting a little more liberal with some of our physical ones, for example the attending physical statement type things.

With the cognitive screening, when you get into some of the extra tools that are used with the conservative underwriting style, that's what many of those tools do. With face-to-face assessments, for example, or getting some of the attending physician notes (and not just medical records but attending physician notes) they'll often write that "Granny seemed a little disoriented today," or something like that. Those face-to-face assessments are critical to be able to analyze the cognitive impairment. We've seen that trend, too, and it's a reasonable trend, because that's where I think companies are seeing that they can get the greatest savings if they can take out those cognitive claims. But I think they're also seeing that an applicant who has some combination of morbidity events, some combination of acute conditions in his or her history, is not a very serious risk for immediate long-term care.

Mr. Ed Mahoric: I would like to add some more fuel to the issue on whether there is an ultimate table or not. I think one thing to consider is that this has been such a fast-changing product. If you think of ultimate as 10 years plus, the ultimate business that we have now was written with very different underwriting standards. Telephone interviews were starting to come in, but not all companies were using them yet. A lot of policies still were written with very few ADLs, and some even still had the three-day hospital gatekeeping at the time. So, what we're looking at is some ultimate experience that was not underwritten or didn't even have a benefit

design the way we're doing it nowadays. Whatever you have has to be taken with a grain of salt.

One thing you'd also think would affect it is your lapse level, where people tell me that higher lapses are better because then you don't have as high an ultimate claims experience and haven't really seen the evidence to prove or disprove that because the alternate thought is that the people who don't lapse are the ones who are likely to do a continued antiselection against you. Depending on the sales approach and everything else, there's a lot of variation there. There's still a lot we don't know about the long-term pricing in 10–20 years out.

CHART 1
SAMPLE RESULTS FROM A RISK PROFILE STUDY

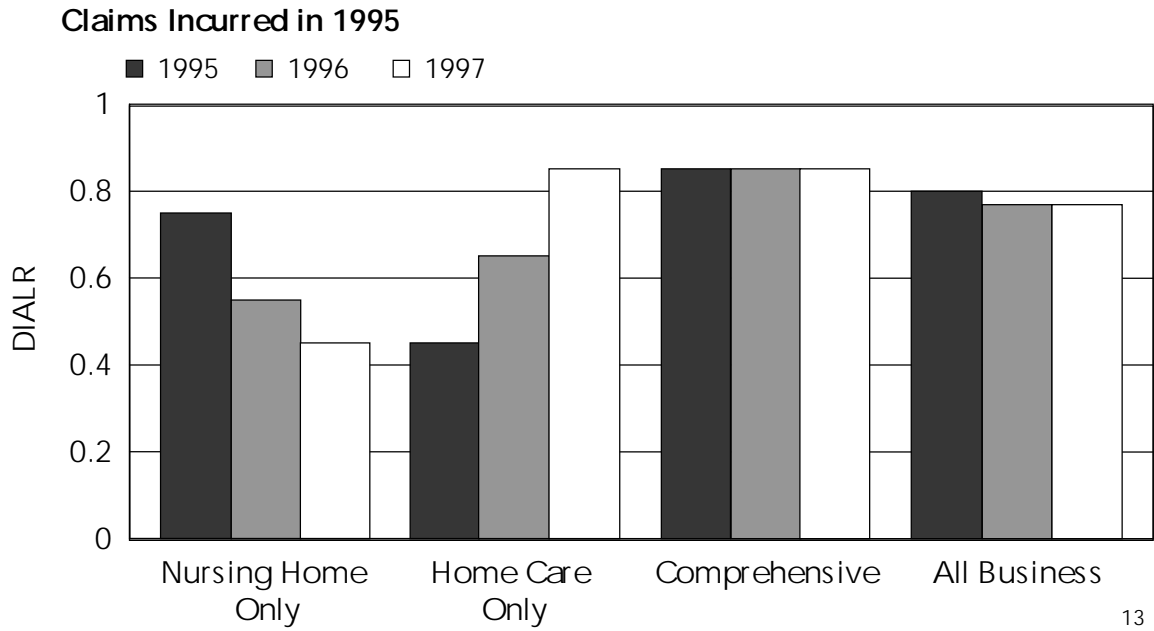


CHART 2
CLAIMS INCURRED IN 1995

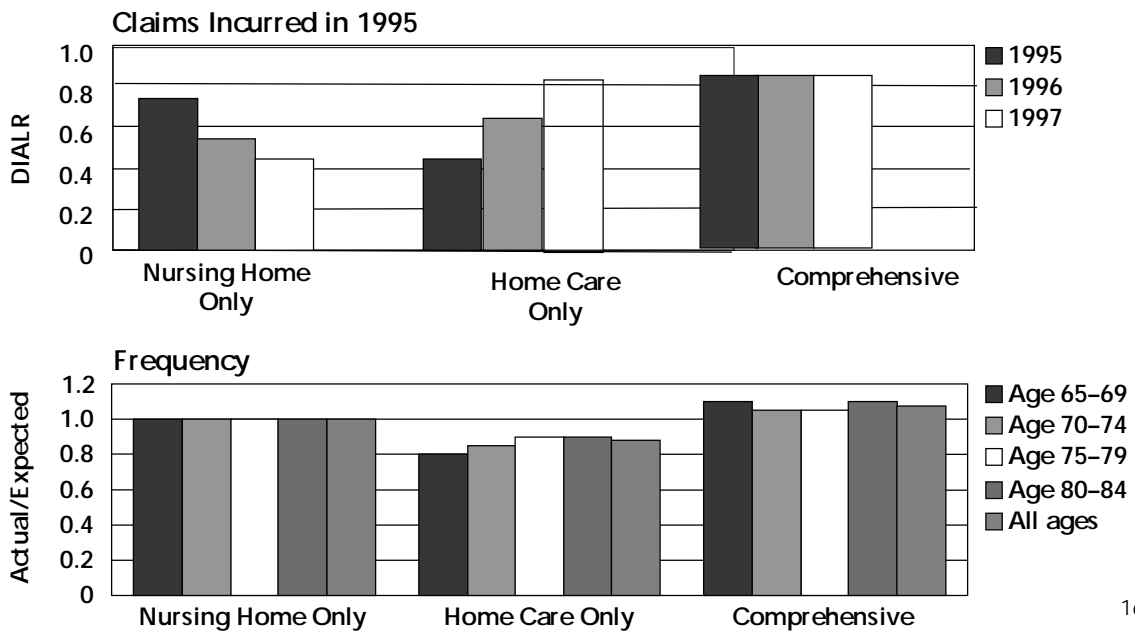
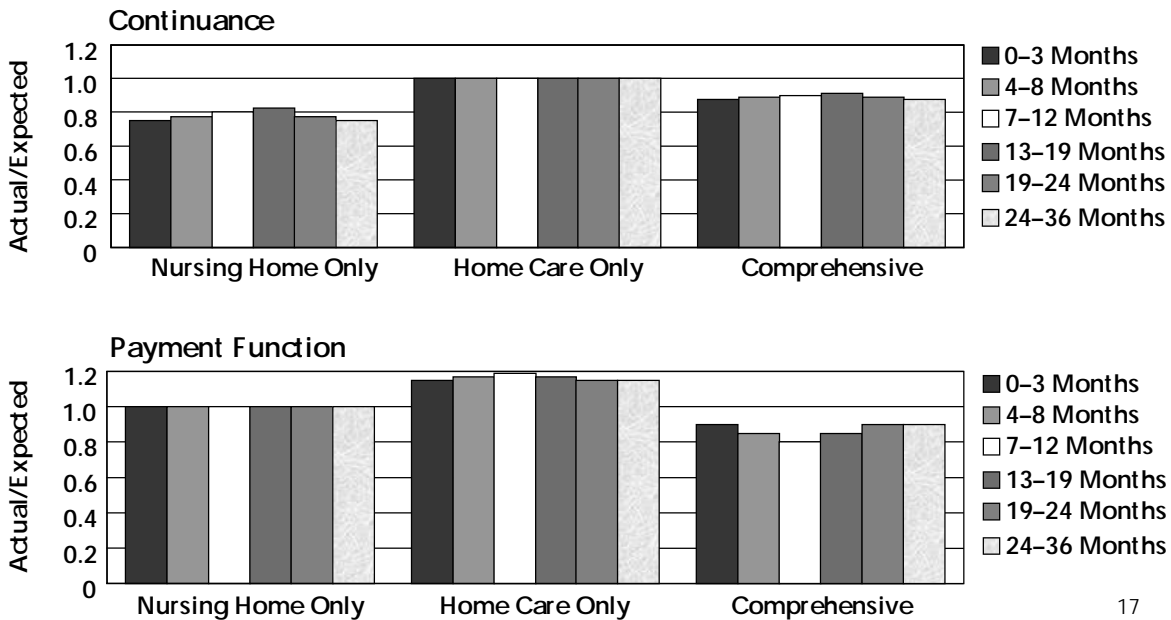
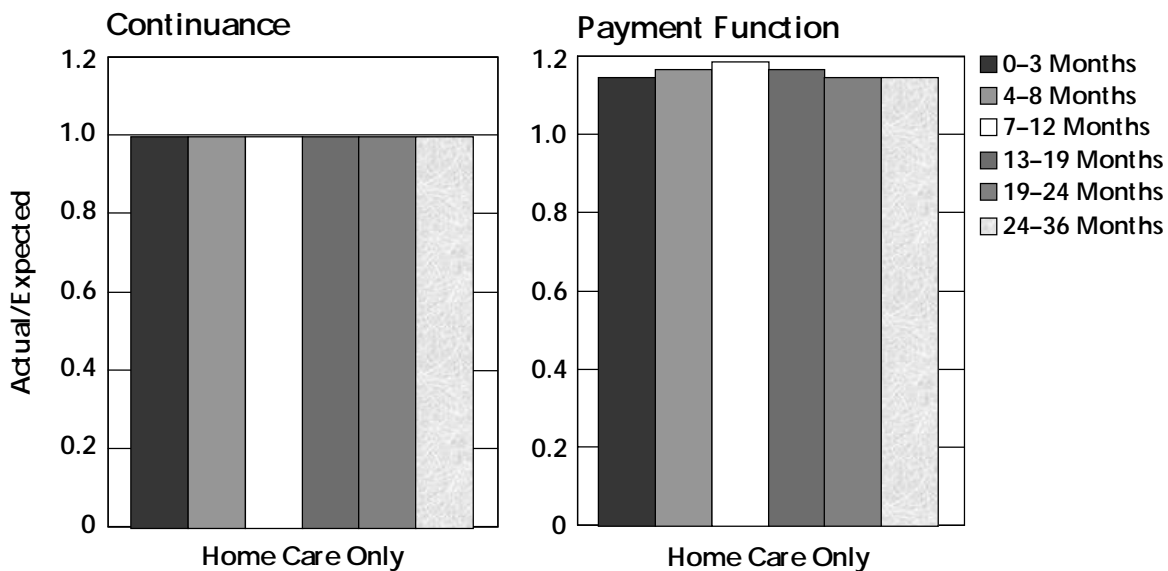


CHART 3
CONTINUANCE VERSUS PAYMENT FUNCTION



17

CHART 4
SPLIT SEVERITY FUNCTION



18