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**MANAGING THE GROUP HEALTH LINE: TECHNICAL
APPROACHES TO ANALYZING, MONITORING AND
PROJECTING GROUP HEALTH EXPERIENCE**

Moderators: ROBERT H. DOBSON AND PHYLLIS A. DORAN

A teaching session dealing with techniques for improving management information in the group health line, to cover:

- Financial analysis and projections
- Experience studies
- Analysis of claims trends
- Monitoring of experience rating formulas

MS. PHYLLIS DORAN: I would be willing to bet that most of you think you don't have anything in common with the comic strip character Cathy. But if you take a look, maybe you will find that she has some problems that you can identify with. She says, "It used to be a bad day if I didn't get in my study time; then it was a bad day if I found out the claim reserving data was going to be a week late; now, it isn't a bad day unless the group renewals are two weeks behind, our largest group account cancels, and I have to explain the latest financial results to senior management. I've set higher standards for myself." Now I do confess to having altered this a bit to suit the purposes of this session, but I think there is a ring of truth to it. A lot of group actuaries are finding themselves in situations that are quite hectic, quite complex, due to the competitive environment, and they are finding a lot of problems that maybe they didn't feel they were well enough prepared for. Bob Dobson and I feel that we have had a unique opportunity as consultants to be able to observe a wide variety of group health operations, sometimes at a fairly close range. Based on this, we have put together a list of what we consider to be some common characteristics of a group actuarial operation, as shown here:

COMMON CHARACTERISTICS
OF A
GROUP ACTUARIAL OPERATION

- Emphasis is on production (rate renewals, financial statements, etc.), with little time available for analysis of results and patterns.
- Limited amount of staff with broad group experience (although there may be an adequate clerical staff).
- Data limitations:
 - Difficult to obtain claims and income summarized by rating categories

- Little if any useable exposure data
- Paid claims data may be extensive, but claims data by incurred month is more limited

The types of information commonly requested by senior management cannot be readily obtained.

Examples:

- Where did the reported gains or losses occur, and why?
- Why did reported results vary from forecast? What is the likely range of future financial results, given that these variations have occurred?

We don't intend this to be a description of every group actuarial operation. Rather, what we are saying is that some of these characteristics are common to many group operations. I wonder how many of you feel that your own situation is an exception to this -- you feel that these characteristics really do not describe the operation that you are dealing with? In general, it appears that the audience agrees that this describes the environment that we are working in. Some of you may be surprised at this. I know that sometimes in our consulting work we are surprised at the extent of some of these problems, and the fact that they can be observed so consistently in operations of different sizes, different types of company environment, and so forth. I think it is important to realize that the group actuary needs to have procedures and strategies that are going to work in this kind of environment. It will not do any good to set up systems that will work only under ideal conditions if we are not operating under those conditions.

There are a number of factors that make group actuarial work unique, and for this reason the traditional approaches often just don't work. The concepts that we are dealing with in group insurance are simple. There is little, if any, higher mathematics involved and we do not have to deal with computation functions; I like group insurance for some of these reasons! On the other hand, the problems that we must deal with are extremely complex. We are operating in an environment that is constantly changing, and is affected by factors that are external to our operation and are very difficult to predict. As a result, the group actuary has to do more than just look to the past for answers. He has to learn from experience and he has to have strong decision-making and problem-solving skills. He needs to obtain the best information possible, and it is never going to be perfect, and then work with that information and attempt to make sound decisions.

For purposes of our discussion we are assuming that everyone here is a manager. If not a manager of people, you are a manager of your own responsibilities. That reflects the type of operation we are working with. The group actuary needs to evaluate, analyze, and make decisions. I believe that information is really the key to the work that we do. With good information, this is a very difficult business to operate in successfully;

MR. DOBSON: The first thing that I want to say is that I am worried about giving the impression that everything in our shop is perfect. As Phyllis mentioned, I used to be in consulting and when I was, I wondered why people on the inside of companies seemed to spend so much time on things that didn't seem very important. Well, now that I have been inside a company for almost two years, I am probably the worst example there is of spending my time on the least important things and not getting to the most important things. I definitely sympathize and understand the problem. The point of this session is to make us all think about what the most important things are so that when we get back to our own jobs, we can spend more time on them.

I want to start with a few definitions.

- MANAGE:

Handle, control to achieve one's purpose

- MANAGEMENT:

Use of means to accomplish an end

- TECHNICAL:

Special, usually practical, knowledge, especially of a mechanical or scientific subject

Marked by a characteristic of specialization

Our title is "Technical Aspects of Managing the Group Line". I got out the dictionary and looked up these words. Manage is, of course, just handle, control to achieve one's purpose, or use of a means to accomplish an end. We are all managers, whether it just means our own functions or our own time, or whether we are managing others to accomplish those things. I was particularly interested in the definition of technical. I have often said there isn't enough technical training in health insurance. But technical doesn't really mean as much as I have thought; it says special, usually practical, knowledge, especially of a mechanical or scientific subject, marked by a characterization of specialization. I think that you cannot manage the group line at all without being technical. Technical and manage go together when you are talking about the group health line.

The next thing that I would like to discuss are what I have titled Five Postulates.

FIVE POSTULATES

1. People don't understand our business.
2. There is not time to do everything.
3. There will always be crises.
4. Our business is cyclical.
5. Stress fundamentals in turbulent times - Drucker.

To me, these are key things that apply to our subject. In the first postulate, I am talking about people in the field, our customers, and in a lot of cases, our bosses, and our co-workers. There are a lot of people that do not understand the business we're in. Second, there is no way we can possibly do everything that we want to do, or really should do. The third is, as long as we have bosses and as long as we have big customers, there are going to be crises. It is impractical to make plans not assuming there will be. It doesn't do any good to lay out a plan of what you are going to do and expect to have all your time available. Fourth, our business is cyclical. Right now we are in a bad period and have been for a couple of years, but someday it will be better, and someday after that it will be bad again. The fifth is to stress fundamentals in turbulent times. I guess I consider the group health business pretty turbulent all the time. So a lot of what we're going to talk about today is fundamentals. Speaking of fundamentals, if any of you attended the Health Section meeting yesterday you heard me say that I feel pretty strongly about the need for Education in the health area. One of the things that we're trying to do today is lay a little ground work for the Health Section Education Committee. We have a mixed audience; not all of what we present will be meaningful for everybody, but this is a start. We're going to pass out an evaluation form at the end. We can't make progress on the whole issue of education without getting your comments back. We have got to find out whether this session did any good and if not, what kind of session would. So please turn them in. Finally, the last definition I have before we start the case studies is optimize.

- OPTIMIZE:

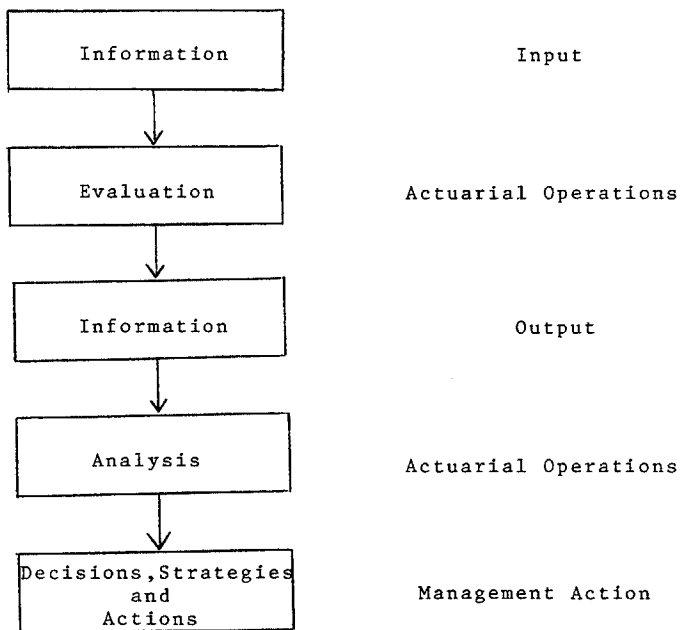
To make as perfect, effective, or functional as possible.

Phyllis mentioned adding knowledge where we didn't have information. Really, what we need to be doing through all of this is optimizing and the definition is to make as perfect, effective or functional as possible. So, what we are talking about in all of this is to optimize and be able to make the best possible decisions with the least possible information. Sometimes, actuaries can get too much information and not be able to reach a decision.

MS. DORAN: This first case study that we will present this morning deals with the topic of forecasting. Imagine that you are the group actuary for the Ideal Life Insurance Company and it is now July, 1982. You have just obtained the company's most recent financial results. Summarized here are the financial results for the group health line for 1980, 1981, and the first half of 1982:

without adequate information, we have to question how well we can succeed. Shown here is a flow chart that illustrates the flow of management information in a group actuarial operation:

MANAGEMENT INFORMATION FLOW
IN A
GROUP ACTUARIAL OPERATION



We will be referring back to this chart at times during our presentation because there are a number of important points made here. First of all, we can see that information is a key element. The step that we call "evaluation" is intended to include a lot of the functions that we view as actuarial functions - the calculations, the computations, the more traditional actuarial work. Information is an input to that step and also an output. We are working with information and we are generating more information. There is another step that is part of the actuarial operation which we call "analysis". This is an extremely important step. Unfortunately, it is often the one that is bypassed. Depending on what we are working with, this may be the step where we should be spending more than half of our time and effort, but in practice we often do not have enough time to spend on it.

MR. ROBERT H. DOBSON: Phyllis, I think that is an important point. The evaluation phase is where most of the work gets done and where really so much of our time is spent. We put too much time into that step and do not really spend any time in the analysis.

MS. DORAN: Evaluation means actual calculations. An example might be in the process of trend analysis. If we have adequate data to calculate some actual experience trends, this can be considered the evaluation step; using the experience data we are performing certain calculations and producing information as output. It is the next step that is really important; that of reviewing the results and thinking about them and considering all of the other factors that affect them.

Another point that we can see from this chart is all of these steps are important. The final result is management action -- "decisions, strategies, and actions". Information is not the result -- actions are the result. Those decisions and actions can only be as good as the prior four (4) steps, the analysis can be no better than the information that flows into that analysis. Yet our actions are affected by the quality of our analysis. I think that is an important point.

We have already discussed the fact that we do not work in an ideal environment. This chart presents two important points that we wish to emphasize here this morning.

DEALING WITH IMPERFECT INFORMATION
AND
LIMITED RESOURCES

1. Identify and document all known problems as well as potential problems -- substitute knowledge and imperfect information for perfect information.
2. Allocate limited resources by assigning priorities to information needs -- direct resources to produce that information which is most critical to the realization of financial and other company objectives.

The first point is that we need to substitute knowledge and imperfect information for perfect information. By knowledge we mean an understanding of what we are working with, what factors affect it, and also what information we are not working with -- What is the hidden information that we do not have? That knowledge is very important; it should be made a part of the routine actuarial operation to generate such information in addition to carrying out more routine calculations.

The other point is that we often must work with limited resources, and therefore need to allocate those resources by assigning priorities. We should decide what steps are the most important in meeting our objectives -- our financial objectives and our other objectives -- and constantly evaluate how we can best spend our time and direct our resources. If we go back to the previous chart for a moment, we can put in another arrow to represent the flow of knowledge into the analysis step. That is where such a substitution needs to be made and the balance must be struck between substitution of that knowledge and the first three steps of generating the more routine information. The proper balance will depend in part on the quality of the information available. If that information is of poor quality, then it is important to concentrate more on the development of additional knowledge. The last page in this handout is a list of examples of desired management information.

**EXAMPLES
OF
DESIRED MANAGEMENT INFORMATION**

INFORMATION CATEGORIES	TYPES OF REPORTS
A. Financial Results	<ul style="list-style-type: none"> • By rating category/coverage cell • Reported vs. restated
B. Financial Forecast	<ul style="list-style-type: none"> • Projected results by rating category/coverage cell • Summary of forecast assumptions • Actual results vs. forecast
C. Paid Claims Information	<ul style="list-style-type: none"> • Monthly claims paid by incurred month • Payment dates and total amount paid by type of benefit • Claims inventory statistics • Documentation or descriptions of changes in claims processing procedures
D. Enrollment	<ul style="list-style-type: none"> • By rating category, area, age, product type, etc. • Employee and dependent • Gains and losses, and sources of each
E. Marketing Results	<ul style="list-style-type: none"> • By group size, product type, etc. • New cases written • Percentage of renewing cases sold
F. Claims Trends	<ul style="list-style-type: none"> • By rating category, type and level of benefit, etc. • Average cost and utilization • For moving 12-month (and other) periods
G. Claims Experience	<ul style="list-style-type: none"> • By age/sex, type of benefit, area, etc. • Actual vs. expected claims
H. Benefit Patterns	<ul style="list-style-type: none"> • By rating category • Shifts in type of benefit coverage • Summary of enrollment by major benefit plan
I. Operation of Rating Formula	<ul style="list-style-type: none"> • Effective rating trends vs. actual trends • Assumed margins vs. actual margins • Impact of credibility functions • Distribution of rate increases (by group size, first year vs. all others, etc.) • Claim reserve factors vs. actual claim runout
J. Operation of Retrospective Rating Provisions	<ul style="list-style-type: none"> • Distribution of experience refund balances • Net change in experience refund balances • Allowances for rate credits, deficit recovery
K. Expenses	<ul style="list-style-type: none"> • Functional unit costs • Allocated by major line of business • Actual and projected • Allowances reflected in earned income

FORECAST CASE STUDY
 IDEAL LIFE INSURANCE COMPANY
 REPORTED FINANCIAL RESULTS - GROUP HEALTH
 AS OF JUNE 30, 1982
 (MILLIONS)

		<u>EARNED INCOME</u>	<u>INCURRED CLAIMS</u>	<u>EXPENSES</u>	<u>UNDER- WRITING G/(L)</u>	<u>INVEST- MENT INCOME</u>	<u>G/(L)</u>
<u>1980</u>							
1ST	HALF	\$ 5.2	\$ 4.9	\$.5	\$ (.2)	\$.1	\$ (.1)
2ND	HALF	<u>5.5</u>	<u>4.5</u>	<u>.5</u>	<u>.5</u>	<u>.1</u>	<u>.6</u>
	TOTAL	10.7	9.4	1.0	.3	.2	.5
<u>1981</u>							
1ST	HALF	5.9	5.4	.5	--	.1	.1
2ND	HALF	<u>6.4</u>	<u>5.5</u>	<u>.6</u>	<u>.3</u>	<u>.1</u>	<u>.4</u>
	TOTAL	12.3	10.9	1.1	.3	.2	.5
<u>1982</u>							
1ST	HALF	6.9	7.0	.6	(.7)	.1	(.6)
<u>1982 FORE- CAST:</u>							
		\$15.7	\$13.7	\$ 1.4	\$.6	.2	.8

If we deal with the underwriting gain or loss column, the reported 1982 results are a loss of \$700,000. At the bottom there is a summary of the forecast for calendar year 1982. You prepared this forecast last fall -- say, November, 1981 -- and the forecast underwriting gain was \$600,000. Given these reported results, senior management is now asking you to re-evaluate your forecast -- how do you feel about the forecast, and what can be expected for the rest of this year?

If you look at what was reported in the two prior years, you can see that actual results were less favorable in the first half of the year. This is a pattern that you have observed continuously and you know there are reasons for it. One of these reasons is the fact that there is generally a higher level of incurred claims earlier in the year. This is due in part to general hospital and medical utilization patterns. In addition, a portion of your company's business is major medical-type coverage for which incurred claims tend to get allocated toward the beginning of the year because of the way the incurred dates are assigned.

You are supposed to prepare a response to management's questions. Let's take a look at this forecast you have developed and the assumptions you have made. Those are summarized below.

FORECAST CASE STUDY
IDEAL LIFE INSURANCE COMPANY
SUMMARY OF 1982 FORECAST ASSUMPTIONS
(PREPARED NOVEMBER 30, 1981)

INCOME

- ENROLLMENT:
 - 1981 -- CONSTANT AT 1ST HALF 1981 LEVELS
 - 1982 -- 10% INCREASE OVER 1981

- AVERAGE PREMIUM RATES:
 - 1981 -- 10% INCREASE, 2ND HALF 1981
OVER 1ST HALF 1981
 - 1982 -- 15% INCREASE OVER 1981

- TOTAL INCOME:
 - 1981 -- 210% OF 1ST HALF 1981 INCOME
 - 1982 -- (110%) x (115%) = 127% OF
1981 INCOME

PANEL DISCUSSION

SUMMARY OF 1982 FORECAST ASSUMPTIONS (CONTINUED)CLAIMS

- CALENDAR YEAR LOSS RATIOS:
 - 1980 (REPORTED) = 88%
 - 1981 (PROJECTED) = 87%
 - 1982 (PROJECTED) = 87%

EXPENSES

- AS % OF INCOME -- 9% ALL YEARS

INVESTMENT INCOME

- AS % OF INCOME -- 1.5% ALL YEARS

FORECAST FINANCIAL RESULTS (MILLIONS)

	<u>1981</u>	<u>1982</u>
INCOME	210% x \$ 5.9 = \$12.4	127% x \$12.4 = \$15.7
CLAIMS	87% x \$12.4 = \$10.8	87% x \$15.7 = \$13.7
EXPENSES	9% x \$12.4 = \$ 1.1	9% x \$15.7 = \$ 1.4
UNDERWRITING G/(L)	\$.5	\$.6
INVESTMENT INCOME	1.5% x \$12.4 = \$.2	1.5% x \$15.7 = \$.2
G/(L)	\$.7	\$.8

Some aggregate increases in enrollment and average premium rates have been assumed to derive total increase in income for calendar year 1982. For claims, you looked at the reported loss ratio for calendar year 1980 -- you prepared this in the fall of 1981 and did not yet have complete information for 1981. Based on the 1980 results and the fact that you were optimistic about rating actions which had recently been taken, you projected a loss ratio of 87% for 1981 and 1982.

Given this information, what you can do now is to update this forecast. I would be inclined to say that there is not much that you can do. The way that these assumptions have been developed, we really do not know too much more now than we knew at the time they were put together. They are all based on calendar year results, they are aggregate type assumptions. If we have not studied them more closely up until now and if we were taken by surprise when the June financial results came out, there may not be a whole lot we can do now in a short period of time. So what we are going to do now is go back and take a look at what we might have done differently in developing this forecast. We are going to assume here that we have better information -- not ideal information, but better. We are going to go back to November of 1981 and look at a different way we could have developed this forecast. Shown here are some alternate forecast assumptions.

FORECAST CASE STUDY

IDEAL LIFE INSURANCE COMPANY

SUMMARY OF 1982 FORECAST ASSUMPTIONS--

ALTERNATE VERSION

(PREPARED NOVEMBER 30, 1981)

ENROLLMENT

	<u>EXPERIENCE RATED</u>	<u>SMALL GROUP</u>
1981 - 1ST HALF (ACTUAL)	62,295	20,100
- 2ND HALF	62,500	20,500
1982 - 1ST HALF	62,500	20,500
- 2ND HALF	62,500	20,500

AVERAGE PREMIUM RATES

1981 - 1ST HALF (ACTUAL)	\$73.70	\$65.00
- 2ND HALF	78.86 (+7%)	68.25 (+5%)
1982 - 1ST HALF	\$84.38 (+7%)	\$71.66 (+5%)
- 2ND HALF	90.29 (+7%)	75.25 (+5%)

PANEL DISCUSSION

SUMMARY OF 1982 FORECAST ASSUMPTIONS (CONT'D)

<u>CLAIMS</u>	<u>EXPERIENCE RATED</u>	<u>SMALL GROUP</u>
• 1980 AVERAGE PURE		
PREMIUM:	\$60.32	\$52.96
• ANNUAL % INCREASE,		
1981-1982:		
MOST FAVORABLE	12%	8%
BEST ESTIMATE	14	10
LEAST FAVORABLE	16	12
• PROPORTION OF CALENDAR		
YEAR CLAIMS:		
1ST HALF	.53	.53
2ND HALF	.47	.47
 <u>EXPENSES</u>		
• AS % OF INCOME:	8%	13%
 <u>INVESTMENT INCOME</u>		
• AS % OF INCOME -	1.5%	ALL YEARS

These are more specific. For one thing, we have taken the business and split it into its two major rating categories - the experience rated and the small group. We have specific enrollment assumptions for a six month period and corresponding average premium rates. These premium rate assumptions were derived from actual experience and they reflect the company's actual and anticipated rating actions. We have assumed that a greater portion of the claims are incurred in the first half of the calendar year based on an analysis of observed patterns in prior years. The following two exhibits summarize the basis for our claims trend assumptions.

MANAGING THE GROUP HEALTH LINE

IDEAL LIFE INSURANCE COMPANY

EXPERIENCE RATED GROUP - TOTAL		PERIOD: 1/79 - 6/81			
MONTH ENDING	EXPOSURE	CLAIMS INCURRED	PURE PREMIUMS	ANNUALIZED TRENDS	
	3 MONTH	3 MONTH	12 MONTH	3 MONTH	12 MONTH
3/79	30869	1654861.	60.049		
4/79	30869	1626934.	52.704		
5/79	30852	1666040.	54.001		
6/79	30836	1601123.	53.221		
7/79	30823	1656199.	55.084		
8/79	30817	1625775.	52.756		
9/79	30816	1611641.	52.299		
10/79	30825	1655198.	53.697		
11/79	30857	1640831.	53.175		
12/79	30894	1575303.	50.991	54.141	
1/80	30943	1673998.	60.563	55.016	
2/80	30963	1906100.	61.561	55.379	
3/80	30967	2071135.	6099202.	55.050	1.114
4/80	30950	1807742.	6973137.	56.444	1.108
5/80	30941	1862445.	7035351.	56.929	1.115
6/80	30941	1832207.	7090286.	57.356	1.113
7/80	30944	1852333.	7189271.	56.136	1.120
8/80	30953	1833798.	7243174.	56.548	1.123
9/80	30964	1817499.	7296144.	56.951	1.122
10/80	30992	1839900.	7373973.	59.550	1.106
11/80	31036	1827318.	7429661.	59.968	1.107
12/80	31086	1756007.	7476048.	60.318	1.108
1/81	31120	2117213.	7611064.	61.426	1.117
2/81	31150	2225408.	7748959.	62.461	1.128
3/81	31127	2432176.	7837889.	63.149	1.131
4/81	31136	2121272.	7930718.	63.059	1.131
5/81	31153	2118412.	8004936.	64.415	1.131
6/81	31160	2108196.	8113876.	65.253	1.142

1982 FORECAST -- ASSUMED EXPOSURE (ANNUAL):
 1981 124,795
 1982 125,000

1982 FORECAST -- ASSUMED TRENDS:
 MOST FAVORABLE 12%
 BEST ESTIMATE 14%
 LEAST FAVORABLE 16%

SMALL GROUP - TOTAL	EXPOSURE		CLAIMS INCURRED		PURE PREMIUMS		ANNUALIZED TRENDS	
	3 MONTH	12 MONTH	3 MONTH	12 MONTH	3 MONTH	12 MONTH	3 MONTH	12 MONTH
MONTH ENDING								
3/79	8953		49395.		55,221			
4/79	9000		418024.		46,536			
5/79	9050		427672.		47,257			
6/79	9095		424163.		46,637			
7/79	9137		432534.		47,339			
8/79	9185		439272.		47,425			
9/79	9235		439131.		47,551			
10/79	9292		445608.		47,965			
11/79	9358		434899.		46,473			
12/79	9427		417700.	1775309.	44,309	46,363		
1/80	9493	36922	531806.	1828852.	56,021	49,533		
2/80	9542	37135	547856.	1849699.	57,415	49,610		
3/80	9599	37556	599811.	1800805.	62,487	50,308	1,132	
4/80	9645	37567	497542.	1907370.	51,585	50,778	1,109	
5/80	9693	37778	510690.	1932917.	52,707	51,165	1,115	
6/80	9728	37949	496588.	1953230.	51,047	51,416	1,095	
7/80	9772	38202	503159.	1977140.	51,287	51,756	1,086	
8/80	9825	38418	496301.	1990026.	50,522	51,799	1,056	
9/80	9877	38631	497188.	2011287.	50,338	52,064	1,059	
10/80	9931	38841	504823.	2036331.	50,633	52,427	1,060	
11/80	9984	39044	499285.	2054412.	50,009	52,618	1,076	
12/80	10037	39241	484746.	2078333.	48,296	52,983	1,090	1,095
1/81	10021	39369	617765.	2122310.	61,649	53,908	1,100	1,088
2/81	9994	39496	648916.	2155472.	64,931	54,574	1,131	1,096
3/81	9976	39618	697633.	2176155.	69,931	54,928	1,119	1,091
4/81	10028	39752	580068.	2204036.	57,845	55,465	1,121	1,092
5/81	10067	39690	580381.	2224963.	57,538	55,777	1,092	1,090
6/81	10132	40022	580786.	2260355.	57,322	56,478	1,123	1,098

1982 FORECAST -- ASSUMED EXPOSURE (ANNUAL): 1982 FORECAST -- ASSUMED TRENDS:

1981 40,600 MOST FAVORABLE 8%
 1982 41,000 BEST ESTIMATE 10%
 LEAST FAVORABLE 12%

Perhaps this type of claims information is more detailed than what a lot of actuaries here are used to being able to work with. Average claims costs for moving 3 month and 12 month periods are summarized in the two right hand columns. The exposure unit is the number of employees. To calculate the annualized trend for 6/81, the average claims cost, or "pure premium", for the period ending 6/81 is divided by that for the period ending 6/80. Based on that pattern of 12 month trends, we have assumed a range of forecast trends. We did not just use the most recently observed trend. Rather, we looked at the pattern of historical trends and identified a range of likely future trends.

There are many factors which should be considered when looking at actual claims experience in this manner. One factor is whether the block of business being studied is stable enough so that there have not been extensive changes in benefits or enrollment which would make these trend percentages meaningless. On the other hand, if we know what changes have occurred in the mix of benefits, geographic area, average age, etc., it may be possible to adjust for these or at least make appropriate allowances for them in our analysis. We do not want to discount or ignore the importance of evaluating these changes. If we do not take such factors into account, we may not only have inaccurate information, but misleading information.

MR. DOBSON: If you want to go back to the flow chart for just a second, the computer run that you just saw would be the evaluation phase. The analysis phase is where the final trend numbers were developed. Looking at the numbers, taking into account things you know about them, and making the assumptions -- that is what we mean by the analysis phase.

MS. DORAN: Yes, and we are assuming that there is some basis for each one of those assumptions -- that there is a specific rationale that has been documented and, hopefully, explained to the users of the forecast.

The following exhibit summarizes the actual forecast itself - the calculations.

PANEL DISCUSSION

SUMMARY OF 1982 FORECAST ASSUMPTIONS (CONT'D)FORECAST FINANCIAL RESULTS (MILLIONS)

● EXPERIENCE RATED:	<u>1981</u>	<u>1982</u>
INCOME	\$9.5	\$11.0
CLAIMS (BEST ESTIMATE)	8.6	9.8
EXPENSES	.8	.9
UNDERWRITING G/(L)	.1	.3
INVESTMENT INCOME	.1	.2
G/(L) - BEST ESTIMATE	\$.2	\$.5
- LEAST FAVORABLE	.1	.2
- MOST FAVORABLE	.4	.8
● SMALL GROUP:		
INCOME	\$2.7	\$ 3.0
CLAIMS (BEST ESTIMATE)	2.4	2.6
EXPENSES	.4	.4
UNDERWRITING G/(L)	(.1)	--
INVESTMENT INCOME	--	--
G/(L) - BEST ESTIMATE	\$(.1)	\$ --
- LEAST FAVORABLE	(.1)	(.1)
- MOST FAVORABLE	--	.1
● TOTAL:		
G/(L) - BEST ESTIMATE	\$.1	\$.5
- LEAST FAVORABLE	--	.1
- MOST FAVORABLE	.4	.9

Now that we have developed the forecast on this basis, what can we do in July? Let us assume that we were not surprised by the financial results that emerged, because we have been continually monitoring the company's actual experience relative to each of the forecast assumptions.

The first step that we will want to take when we obtain the reported financial results is to restate them based on what we now know about actual incurred claims compared to what was reported; that is, the actual claims runout compared with the liability that was set up and reflected in the financial statement. Note that there may be other steps involved in the restatement process; for example, if the company has an experience rated refund liability, we might want to attempt to restate that item. As you can see in the following chart, if we go back and take into account the actual restated incurred claims, we observe a different pattern of results.

FORECAST CASE STUDY
IDEAL LIFE INSURANCE COMPANY
RESTATEMENT OF FINANCIAL RESULTS
AS OF JUNE 30, 1982
(MILLIONS)

	--- REPORTED ---		--- RESTATED ---	
	Loss RATIO	UNDERWRITING G/(L)	Loss RATIO	UNDERWRITING G/(L)
<u>1980</u>				
1ST HALF	94%	\$ (.2)	96%	\$ (.3)
2ND HALF	<u>82</u>	<u>.5</u>	<u>84</u>	<u>.4</u>
TOTAL	88%	.3	90%	.1
<u>1981</u>				
1ST HALF	92%	\$ --	98%	\$ (.4)
2ND HALF	<u>86</u>	<u>.3</u>	<u>84</u>	<u>.4</u>
TOTAL	89%	.3	91%	--
<u>1982</u>				
1ST HALF	101%	\$ (.7)	97%	\$ (.4)

1982 FORECAST -- 1ST HALF:
(ALTERNATE VERSION)

MOST FAVORABLE	94%	\$ (.3)
BEST ESTIMATE	97	(.4)
LEAST FAVORABLE	100	(.6)

In the first forecast, we looked at the calendar year 1980 loss ratio and said it was 88%. If we had at that point in time gone back and restated the calendar year 1980 loss ratio, we would have seen that it was in fact slightly higher than that. The reported results showed a significant deterioration in the first half of 1982 over the same period in 1981; the loss ratio was 101% compared to 92% in the previous period. On a restated basis, we see that in fact the 1982 loss ratio is quite consistent with the prior two years. We can compare the 1982 forecast for the first half of the year with the actual results and see that, in fact, the reported results are right in the range of forecast results.

The following table presents the same information broken down by rating category:

FORECAST CASE STUDY
IDEAL LIFE INSURANCE COMPANY
FINANCIAL RESULTS BY LINE OF BUSINESS
As of JUNE 30, 1982
(MILLIONS)

RESTATEd RESULTS:

	--- EXPERIENCE RATED ---				--- SMALL GROUP ---			
	EARNED INCOME	% OF INCOME			EARNED INCOME	% OF INCOME		
CLAIMS		EXPENSES	UND. G/(L)	CLAIMS		EXPENSES	UND. G/(L)	
<u>1980</u>								
1ST HALF	\$ 4.0	97%	8%	(5)%	\$ 1.2	95%	12%	(7)%
2ND HALF	<u>4.3</u>	<u>84</u>	<u>8</u>	<u>9</u>	<u>1.3</u>	<u>78</u>	<u>12</u>	<u>10</u>
TOTAL	8.3	90%	8%	2%	2.5	86%	12%	2%
<u>1981</u>								
1ST HALF	\$ 4.5	99%	8%	(7)%	\$ 1.3	98%	13%	(11)%
2ND HALF	<u>5.0</u>	<u>84</u>	<u>8</u>	<u>8</u>	<u>1.4</u>	<u>83</u>	<u>13</u>	<u>4</u>
TOTAL	9.5	92%	8%	--%	2.7	90%	13	(3)%
<u>1982</u>								
1ST HALF	\$ 5.4	95%	8%	(3)%	\$ 1.5	102%	13%	(15)%
<u>1982 FORECAST -- 1ST HALF:</u> (ALTERNATE VERSION)								
MOST FAVORABLE	\$ 5.3	95%	8%	(3)%	\$ 1.5	88%	13%	(1)%
BEST ESTIMATE	5.3	98	8	(6)	1.5	92	13	(5)
LEAST FAVORABLE	5.3	101	8	(9)	1.5	95	13	(8)

Here we can see that in the experience rating category, the actual results are really at the more favorable end of our range, whereas the results for the small group line are significantly worse than our least favorable forecast. This information is significant; if we had looked only at the aggregate results, we might take too much comfort from them and fail to consider this apparent deterioration in the small group line. This is an example of the analysis phase -- taking a look at the results and thinking about what we are looking at. Summarized in this last exhibit is a comparison of actual results and the forecast assumption. This is a very important step in the monitoring of actual financial results -- to continuously compare what is happening to what we had forecast was going to happen, so that we can continually re-evaluate the forecast. This summary shows that actual enrollment is quite close to forecast. The average premium rates that have emerged are actually slightly higher than what we had expected on the experience rated category. The claim trends for the experience category were at the high end of the range, but given that the average premium rates were higher than forecast, the financial results are in the forecast range. We can see the problem in the small group line; claims trends have been higher than we had expected.

Summarized here are some of the objectives of forecasting, many of which have been illustrated in this case study.

FORECASTING: OBJECTIVES

INFORMATION PRODUCED

RANGE OF LIKELY FUTURE
FINANCIAL RESULTS,
WITH SUMMARY OF ASSUMP-
TIONS UNDERLYING EACH

DECISIONS, STRATEGIES
AND ACTIONS

- DECIDE FUTURE PRICING
AND MARKETING STRATEGIES
 - IDENTIFY NECESSARY CORREC-
TIVE ACTIONS
 - DEVELOP BROAD CORPORATE
STRATEGIES AND POLICIES
-

MONITORING OF ACTUAL
EMERGING RESULTS WITH
FORECAST ASSUMPTIONS

- REVISE STRATEGIES AND
POLICIES AS NECESSARY
-

ANALYSIS OF VARIATIONS
IN ACTUAL EXPERIENCE
FROM FORECAST ASSUMP-
TIONS, AND THEIR CAUSE

- IDENTIFY AREAS WHERE
CORPORATE OBJECTIVES
ARE NOT BEING MET
- IDENTIFY ANY ADDITIONAL
CORRECTIVE ACTIONS
NECESSARY

What information do we want to produce? The first item is a range of likely future financial results, with a summary of the assumptions that underlie each. A forecast is not a prediction; it is an illustration of what will happen, given that certain assumptions materialize. Therefore, it is very important to document all forecast assumptions so that the users of the forecast know what assumptions have been made and the rationale for them. The range of results is also an important idea here. We consider a range of claims trends only, but we could actually put ranges around any of the assumptions. It is important that these ranges represent the degree of uncertainty that we feel about our assumptions.

What is the forecast used for? The company may use it in deciding its future pricing and marketing strategies and to identify necessary corrective action; the forecast is likely to influence corporate strategies and policies in general. I do not think this is an overstatement. And if we really think about this, what could be more important than having an adequate financial forecast? An adequate one and a meaningful one, with meaningful referring to something along the lines of the second illustration as opposed to the first illustration. This is very important given the environment that we are operating in today. We talked about the fact that we do not have perfect information. Often we are not going to have this type of detail and information that we showed in the second illustration. That is where we go back to making substitutions and compromises. There are some things we could do to develop a forecast that is somewhere between the two illustrations that we looked at. One would be to take into account the concentration of claims in the first half of the year. Another is the restatement of financial results; to go back and look at the actual pattern of the incurred claims compared to what was reported. It is always preferable to split the financial results by rating category to better analyze them. In summary, a number of the concepts that were illustrated in the case study might be taken into account even if it is not possible to complete all of the detailed analysis. Note that what we have done here is very simple mathematically: it could be carried out on a worksheet. If, in fact, we have access to fairly complex forecasting systems, they can be a helpful tool. On the other hand, if the information we have with which to form our assumptions is not accurate, no computerized information system using extensive statistical techniques is going to help us; that is a point that I think may be misunderstood by people that are not familiar with our business. Sometimes, the idea of doing something fairly simple on a worksheet has its appeal. For one thing, it might be easy to go through and change it every month in view of the emerging results. Once we have the basic information, then a computer can be very handy to look at ranges of assumptions or to use more detailed forecast cells.

SPEAKER FROM FLOOR: It is equally important to recast and analyze income as well as incurred claims.

MS. DORAN: Determination of the category of business cells is a very important point when we are talking about the need to restate income as well as claims, in particular with regard to the impact of refund provisions. It is very common to see a completely different pattern when we restate either claims or income. Obviously we want to look at the best information that we can when making decisions about future actions.

SPEAKER FROM FLOOR: The first point you are making is that when you create the forecast, you should break down the group block of business into manageable pieces. The other item that you are suggesting is that in the forecast process you arrive at most likely, least favorable, most favorable. That seems to be ok, but looking from the management standpoint, what management is looking for is what is the plan going to be for next year? Not what is the range of expected, but what is the expected? There are two corresponding questions, one of them is what change in the plans for this year can we expect on account of the experience of the first half? The second one is, with a deviation in profit between what we expected at the end of the first half and the actual, what are the reasons for that deviation? In the case of the restatement of the prior year's results, for example, that may give you a good handle on how to project the rest of the year, but the explanation to management is that we made estimates of claim reserves in previous years and now we are sitting here at June 30 of the current year and saying those estimates were not exactly correct; part of the loss experienced this year is really a loss we should have recognized last year. I think that is one of the end results of this process.

MS. DORAN: You are carrying this one step further. How do we use this information and in particular, how do we present it to those who are observing the forecast and using it? It is necessary to explain that and also to explain that a restatement should not always be considered the correction of an error; rather, the original liability was an estimate and we now have better information and therefore an improved estimate. Also, you made an important point about taking a look at those results and saying not only what happened, but why did it happen, and how might it change what we are going to do?

SPEAKER FROM FLOOR: How would you go about determining expenses, breaking them down between fixed and variable expenses and incorporating those in the forecast?

MS. DORAN: If we do not have detailed functional costs and are not able to allocate expenses accurately by line of business, we do not want that to prevent us from attempting to look at claims and income by line of business. If we can do nothing more than look at loss ratio by line and develop some concept that we might want to call a margin or an excess of premium over income, then we are substituting knowledge and imperfect information for perfect information. Obviously, if we have accurate expense allocation techniques, meaningful ones, then we want to incorporate them.

SPEAKER FROM FLOOR: Did we reach the conclusion that the forecast in this case study was adequate?

MS. DORAN: I think that before doing that I would want to see what additional information was available. In particular, when we looked at the aggregate restated results we saw that they were within the forecast range. However, when we took a closer look, we saw that one category of business was much worse than forecast. I would want to develop a revised forecast varying the assumptions for each line of business to take into account what had actually been observed.

MR. DOBSON: The next area is financial analysis. What Phyllis just talked about had a lot of financial analysis in it -- restating of the claim liabilities and such. When I started thinking about the financial analysis subject, I tried to think about what the words meant and I went back to the dictionary. This is what I found for analysis: an examination of a complex subject, its elements, and their relationships.

In the case studies I am going to show for financial analysis, we will be looking at broad-based, big-picture kind of numbers, and see what we can learn from them. These are based on my own company. They are simplified, but they are supposed to be examples of financial analysis - examples of what looking at a balance sheet and an income statement can tell you.

I see Dick Sieben in the audience, so I suppose I should give him credit for the first case study.

PANEL DISCUSSION

FINANCIAL ANALYSIS CASE STUDY #1

BALANCE SHEET
(000 omitted)

RECEIVABLES	\$ 50,000	UNPAID CLAIMS	\$ 70,000
ADVANCES TO PROVIDERS	30,000	RETROACTIVE SETTLEMENTS TO PROVIDERS	30,000
BUILDING	10,000	EXPERIENCE RATING REFUND LIABILITY	<u>10,000</u>
INVESTMENT FUND	<u>130,000</u>		110,000
	\$220,000	SURPLUS	<u>110,000</u>
			<u>\$220,000</u>

INVESTMENT FUND SHOULD BE:

SURPLUS	\$110,000
LESS: BUILDING	- 10,000
PLUS: EXPERIENCE RATING REFUND LIABILITY	+ 10,000
PLUS: UNDERWRITTEN SHARE OF CLAIM LIABILITY (50%)	<u>+ 35,000</u>
	\$145,000

In this particular balance sheet, we have \$50 million of receivables, \$30 million advances to providers (that is typical of Blue Cross - we have advanced that money, primarily to hospitals), a \$10 million building, and a \$130 million investment fund. Our regular unpaid claim liability is \$70 million but we also have a \$30 million liability item for retroactive settlements due to providers. That means we have paid the claims, but we have not paid the final settlements to the hospitals. Next, we have a \$10 million liability for experience-rating refunds. This gives us a surplus of \$110 million.

Now, the problem was that it did not seem like we were getting the advantage of enough float from our business. So, we tried to determine what we should have had invested. Typically, you would expect to have the surplus invested (that is \$110 million), but you have a building, so we take that out of the investment fund. Of course, the building itself is an investment, but it is not considered part of the investment fund in this case. We should be investing the experience-rating refunds that we are holding, and on the business that is underwritten, we should be investing the claim liability. Half of the business in this case is underwritten, the other half is cost-plus. The cost-plus business accounts for the \$50 million receivable (half of the \$70 million and half of the \$30 million). That receivable is just an offset for the claim liability on cost-plus business. Looking at this analysis, we thought the investment fund should be somewhere in the neighborhood of \$145 million. This is 1981 and interest rates were high enough all year that it would have been nice to have that extra \$15 million invested. It would have doubled our addition to surplus during the year.

The problem was that the receivable from cost-plus groups should be an offset to claim liability monies that we are holding. In the case of the reserve for retroactive settlements to providers, however, we are not really holding the funds - we have advanced them to the hospitals. Since the monies are in the hands of the providers, we should have billed the groups for this amount. On underwritten business where we collect premiums in advance, it doesn't really matter though you will see that we only included the basic unpaid claim liability in the calculation of the investment fund.

The result is that we are going to be making some changes in how we book those monies that go out to the providers. If we book them as claims, we can bill them to the cost-plus groups and improve our cash flow. The whole point of this case study is to give an example of looking at the balance sheet, the big picture, and to see what you can learn and what it can tell you about how to manage the business.

The next case study is based on analysis of an income statement.

The second financial analysis case study has to do with a projection of sorts, but it is not really a forecast. It was more a goal that was set for us by the Chairman of our Board. He said he thought it would be nice if we broke even on our underwriting in 1982. Some people might say it was a dream rather than a goal, but, anyway, that was the goal. We looked at the business and broke it down into categories to see what we would have to do. We had projected total revenue of \$1.1 billion if you consider the claims that we pay for Medicare as revenue. Essentially, we are counting all dollars going through the house. The total expense budget was \$44 million. We broke down the pieces, leaving experience-rated for last as balancing item. We wanted to see what we would have to do on the experience-rated business for the goal to be realistic.

Our reserve broke down as follows: the Medicare contract \$550 million, claims reimbursement (cost-plus and ASO-type business) \$300 million, complementary (Medicare supplement) \$30 million, other non-group \$20 million, and small group \$50 million. Over in the next column is the excess of revenue over claims that we figured we could get. Medicare is a fixed dollar reimbursement, so we were pretty confident of getting that \$13 million. On claims reimbursement, we thought we could average 6%, or \$18 million. When we got to experience-rated - the balancing item - it turned out we only needed 1%. That is not a 1% gain, but 1% income over claims. That certainly should have been realizable. Somebody (me) went out on a limb and told the Board that we thought we could reach that. Now, here's what really happened.

The first two categories were fine. On the next three, we did not get the margin we thought we could get, but the amount of the swing was not dramatic. The big swing was in the experience-rated category, where we actually had a loss ratio greater than 100%. The point of this exercise is to see where we should direct our management attention - the experience-rated category. We cannot really control the Medicare contract - we are going to get those dollars no matter what. The claims reimbursement area, of course, are the larger groups - it is very competitive. There is not a lot we can do there. The next three categories involve insurance department filings in our case, There is not a lot we can do there during the year. We make an annual filing. The only real place we can manage and affect our bottom line gain is the experience-rated category. Part of the reason the experience-rated category was looking so bad is that we are not calculating the refund liability in a sophisticated enough manner to reflect losses that are accruing during any policy year. But we also need to get into this category and figure out why the claims are running so high and what aspect of the experience-rating formula is not producing the proper income.

MS. DORAN: We should point out that these are specific examples of financial analysis, where we define that to be: take a look at the results and analyze them; try to find out more about what is actually occurring. We could discuss many more examples of this process. One in particular is that of the refund liability;

FINANCIAL ANALYSIS CASE STUDY #2
INCOME STATEMENT

GOAL: BREAK-EVEN ON UNDERWRITING

REVENUE: \$1,100,000

EXPENSES: \$ 44,000

EXPECTED EXCESS OF REVENUE OVER CLAIMS:

	<u>REVENUE</u>	-----EXCESS-----	
		<u>%</u>	<u>AMOUNT</u>
MEDICARE	\$ 550,000	FIXED	\$ 13,000
CLAIMS REIMBURSEMENT	300,000	6%	18,000
COMPLEMENTARY	30,000	15%	4,500
OTHER NON-GROUP	20,000	10%	2,000
SMALL GROUP	50,000	10%	5,000
*EXPERIENCE RATED	<u>150,000</u>	1%	<u>1,500</u>
	\$1,100,000		\$44,000

*BALANCING ITEM

FINANCIAL ANALYSIS CASE STUDY #2 (CONTINUED)

(000 omitted)

ACTUAL EXCESS OF REVENUE OVER CLAIMS:

	<u>%</u>	<u>AMOUNT</u>
MEDICARE	FIXED \$	\$13,000
CLAIMS REIMBURSEMENT	6%	18,000
COMPLEMENTARY	5%	1,500
OTHER NON-GROUP	0%	0
SMALL GROUP	5%	2,500
EXPERIENCE RATED	(5)%	<u>(7,500)</u>
		\$27,500
EXPENSES		\$44,000
REVENUE LESS CLAIMS		<u>27,500</u>
UNDERWRITING LOSS		\$16,500

there are a lot of things we can find out by just looking at the pattern of this item over time. For example, if there are a lot of groups with accrued deficits, we should expect less stable financial results in the future than if we have a lot of groups with fairly high refund liabilities set up as buffers. Tracking the actual balances of groups over time might help in analyzing the reported results and trying to understand what has actually happened. The actual process of financial analysis will be unique to each company; it involves thinking about what specific items should be analyzed in more detail.

MR. DOBSON: It is also an exercise in trying to optimize results by prioritizing. Obviously, we are not going to get much out of spending a lot of time on some of those categories, but if we spend time on the experience-rated category, we might get a very high return with relatively little time and effort.

The next section is monitoring. Monitoring is very simple. It just means to watch, observe, or check. And of course, that is something we are doing all of the time. I am going to talk specifically about monitoring of the experience-rated formula and show a couple of case studies of things we might monitor. I suspect that all companies are doing something in this area. It is more difficult to do if you do not have an automated renewal-rating system, because monitoring requires accumulating certain information from all the monthly renewals. But it still can be done.

Some examples of the parameters of a rating formula that should be monitored are trend (that is a whole subject in itself), retention, functional expenses (and again, that is a big area), credibility, and pooling charges, claim liabilities; these are all things that should be checked within a rating formula. The case studies that I am going to talk about relate to the claim liability and to the aggregate vs. average rating action. Of course, the refund formula is something that could be monitored. I am sure we could come up with other things to add to this list.

One of the things that makes monitoring difficult is the fact that the renewals are spread out during the year. If you accumulate data by renewal month and then try to compare it to corporate-wide data at any given point in time, it is not going to be comparable. You are going to have mixed experience periods in the data by renewal month.

RATING FORMULA MONITORING

PARAMETERS

TREND

RETENTION

CREDIBILITY/POOLING CHARGES

CLAIM LIABILITIES

GENERAL

REFUND FORMULA

AGGREGATE VERSUS AVERAGE RATING ACTIONS

FORMULA MONITORING CASE STUDY #1

CLAIM LIABILITY

<u>RENEWAL MONTH</u>	<u>EXPERIENCE PERIOD INCURRED CLAIMS</u>	<u>CLAIM LIABILITY FROM RATING ACTIONS</u>	<u>(LIABILITY)/ (CLAIMS)</u>	<u>(CORPORATE CLAIM LIABILITY)/ (12 MONTHS CLAIMS)</u>
JANUARY	\$24,000	\$3,600	.15	.20
FEBRUARY	9,000	1,800	.20	.23
MARCH	9,000	2,100	.23	.23
APRIL	11,000	2,500	.23	.24
MAY	10,000	2,600	.26	.25
JUNE	11,000	2,400	.22	.24
JULY	13,000	2,100	.16	.19
AUGUST	9,000	2,000	.22	.23
SEPTEMBER	15,000	3,000	.20	.23
OCTOBER	21,000	4,000	.19	.21
NOVEMBER	9,000	2,100	.23	.23
DECEMBER	9,000	2,000	.22	.21

What we have done in the first example is kept track of the incurred claims coming out of each month's renewals; that is the experience period incurred claims for the groups renewing in the month shown. We have also kept track of the claim liability that was included in those incurred claims. We cannot just add those numbers up and compare the sum to the corporate claim liability at any point because of things like seasonality, changes in processing time, etc. We have to compare to the corporate claim liability at the end of the month of the experience period. In this case, I have used a ratio to accomplish this. We have divided the liability produced by the rating formula by the incurred claims in the experience period for each month's renewals. Then, in the final column, we have compared that ratio to the ratio of the corporate claim liability to the previous 12 months incurrrals for the same time period. These ratios differ because one is produced by factors that are being applied on a group basis, while the other one is calculated in the aggregate.

What this means, if you look at the difference in the ratios, is that the factors being used in the rating formula are not producing high enough average claim reserves. This means that something is wrong. It is also true that some of the biggest deviations are in the heaviest renewal months, particularly months like January and October. That could mean that the underwriters are not spending enough time on analysis on the groups renewing in those heavy months because they are too busy. It could also mean that there are some big groups renewing in those months that are getting concessions in their rate increase. There are a lot of different things that looking at this kind of information can lead you to.

The final monitoring case study is again a very simplified version of accumulating information on a renewal month basis, summing up the results, and then comparing those results to what the rating formula would produce if you had renewed your entire experience-rated category as one group. We see that the sum of the monthly results resulted in a 27.6% rate increase over the 12 month period. If we take the experience period incurred claims times our trend factor, divided by one minus the average retention for all groups times adjusted income, we come up with an increase of 32%. This could result from the same causes we discussed before - underwriters making judgemental adjustments downward, concessions for large groups, or any number of causes. The point is that the rating formula is not doing what you would expect it to do, because you are not producing enough income on a month by month basis compared to what would be produced if you renewed all the business at once.

FORMULA MONITORING CASE STUDY #2

AGGREGATE VS. AVERAGE RATING ACTIONS

(000 omitted)

RENEWAL MONTH	ADJUSTED INCOME	SUM OF RATING ACTIONS	
		AMOUNT	%
JANUARY	\$ 21,000	\$ 4,000	19.0%
FEBRUARY	11,000	1,000	9.1
MARCH	9,000	2,000	22.2
APRIL	11,000	2,000	18.2
MAY	10,000	3,000	30.0
JUNE	10,000	4,000	40.0
JULY	13,000	2,000	15.4
AUGUST	9,000	2,000	22.2
SEPTEMBER	13,000	6,000	46.2
OCTOBER	19,000	8,000	42.1
NOVEMBER	10,000	3,000	30.0
DECEMBER	9,000	3,000	33.3
	<u>\$145,000</u>	<u>\$40,000</u>	<u>27.6%</u>

$$\frac{(\text{EXPERIENCE PERIOD INCURRED CLAIMS}) \times (\text{PROJECTION FACTOR})}{(1 - \text{RETENTION}) \times (\text{ADJUSTED INCOME})}$$

$$= \frac{\$150,000 \times 1.18}{.925 \times \$145,000}$$

$$= 1.320$$

MS. DORAN: I think it might be worth repeating the fact here that this is quite simple in concept. Comparisons like this are based on information generated in the renewal rating process. It is just a matter of arithmetic: add up certain information for all groups and compare it with aggregate information. This process also generates information that is useful in forecasting.

MR. DOBSON: It is simple if you have had people get the information as they go through the renewals. If you have to go back and get it, it is virtually impossible. So that is another point - to get this as you go along.

MS. DORAN: If you have an automated rating system, of course, it is actually quite simple to get this information.

MR. DOBSON: The adjusted income would be something you would have accumulated from all of the groups, too. That would be the sum of the adjusted income for all 12 months renewals. The adjusted income is simply current rates times exposure during the experience period. The adjustment is to reflect the fact that the rates in effect at the end of the period probably went in 3 or 4 months after the beginning of the experience period.

MS. DORAN: The last topic on today's program is that of trend analysis. I have to admit that I feel a little less comfortable with this topic within the context of using imperfect information. I am going to start out talking about the objectives, which deal with the ideal situation. I think this may be the area where we have the largest gap between desirable and actual information. The following chart outlines the objectives of trend analysis:

TREND ANALYSIS; OBJECTIVES

INFORMATION PRODUCED

DECISIONS, STRATEGIES
AND ACTIONS

HISTORICAL EXPERIENCE TRENDS

- ESTABLISH RATING TRENDS

UNPAID CLAIM LIABILITY ESTIMATES,
BASED ON ASSUMED RECENT TRENDS

- DETERMINE REPORTED FINANCIAL STATEMENT LIABILITIES
- DETERMINE CORPORATE ACTIONS BASED ON REPORTED FINANCIAL RESULTS

FORECAST OF FINANCIAL RESULTS,
BASED ON ASSUMED TREND FACTORS

- DECIDE FUTURE PRICING AND MARKETING STRATEGY
- IDENTIFY NECESSARY CORRECTIVE ACTIONS
- DEVELOP BROAD CORPORATE STRATEGIES AND POLICIES

What are we trying to do? The most important and obvious answer is that we are trying to establish rating trends. That is actually a two-step process: first we will look at actual historical trends and then make decisions as to what the future trend assumptions will be. It is that first step that gives a lot of group actuaries problems because of the limited data and the change in experience base that we are constantly dealing with. The second point listed here is that depending on how unpaid claim liabilities are estimated, trend assumptions may have an impact on them, which would in turn have an impact on the reported financial results. The last point is that trend assumptions are used in the forecast process as we illustrated earlier.

I have some examples here that take the claims trend information we looked at earlier in the forecast case study and presents it in more detail.

IDEAL LIFE INSURANCE COMPANY

MANAGING THE GROUP HEALTH LINE

MONTH ENDING	EXPERIENCE RATED GROUP - TOTAL		CLAIMS INCURRED		PURE PREMIUMS		PERIOD: 1/79 - 6/82		ANNUALIZED TRENDS	
	3 MONTH	12 MONTH	3 MONTH	12 MONTH	3 MONTH	12 MONTH	3 MONTH	12 MONTH	3 MONTH	12 MONTH
3/79	30849		1854861.		60.049					
4/79	30849		1626934.		52.704					
5/79	30852		1666040.		50.001					
6/79	30836		1641123.		53.821					
7/79	30825		1636199.		53.004					
8/79	30817		1625775.		52.756					
9/79	30816		1611641.		52.899					
10/79	30825		1655198.		53.697					
11/79	30857		1640831.		53.175					
12/79	30894	123435	1575303.	6682928.	50.891	54.141				
1/80	30943	123460	1873998.	6792389.	60.563	55.016				
2/80	30963	123489	1906100.	6636746.	61.561	55.379				
3/80	30967	123513	2071135.	6899202.	66.882	55.058				
4/80	30950	123541	1807782.	6973137.	59.400	56.444	1.114			
5/80	30941	123578	1862445.	7035151.	60.193	56.929	1.108			
6/80	30941	123618	1832207.	7090286.	59.216	57.356	1.113			
7/80	30944	123662	1852333.	7189271.	59.861	58.136	1.128			
8/80	30953	123714	1833798.	7243174.	59.245	58.548	1.123			
9/80	30964	123766	1817499.	7296144.	58.697	58.951	1.122			
10/80	30992	123829	1839900.	7373973.	59.367	59.950	1.106			
11/80	31036	123893	1827318.	7429661.	58.877	59.968	1.107			
12/80	31086	123958	1756007.	7476848.	56.889	60.318	1.108			1.114
1/81	31120	124006	2117213.	7617188.	68.034	61.426	1.117			1.128
2/81	31130	124060	2225408.	7748969.	71.468	62.461	1.128			1.128
3/81	31127	124118	2432176.	7837889.	78.137	63.189	1.168			1.131
4/81	31136	124192	2421272.	7930714.	68.129	63.659	1.168			1.131
5/81	31153	124272	2116412.	8049936.	68.000	64.415	1.130			1.131
6/81	31160	124345	2108196.	8113878.	67.640	65.253	1.142			1.138
7/81	31164	124416	2144568.	8222953.	68.607	66.092	1.149			1.137
8/81	31155	124474	2136664.	8307802.	68.582	66.743	1.158			1.140
9/81	31142	124533	2181664.	8440037.	68.835	67.779	1.173			1.150
10/81	31147	124571	2148608.	8532641.	69.815	68.496	1.163			1.150
11/81	31173	124611	2137248.	8617732.	68.561	69.157	1.164			1.153
12/81	31215	124652	2094060.	8778080.	67.085	70.421	1.168			1.167
1/82	31161	124612	2435332.	886052.	78.001	70.989	1.197			1.156
2/82	31076	124557	2547986.	891150.	71.591	71.591	1.137			1.146
3/82	30983	124508	2701592.	907496.	87.196	72.666	1.116			1.151
4/82	30956	124432	245532.	9160112.	76.871	73.615	1.155			1.153
5/82	30940	124352	2469096.	9267804.	79.782	74.529	1.173			1.157

EXPERIENCE RATED GROUP - FAMILY

PANEL DISCUSSION

PERIOD: 1/79 - 6/82

MONTH ENDING	EXPOSURE		CLAIMS INCURRED		PURE PREMIUMS		ANNUALIZED TRENDS	
	3 MONTH	12 MONTH	3 MONTH	12 MONTH	3 MONTH	12 MONTH	3 MONTH	12 MONTH
3/79	15140		1246411		62,326			
4/79	15103		1100967		72,697			
5/79	15064		1122851		74,539			
6/79	15024		1106753		73,666			
7/79	14992		1103550		73,609			
8/79	14964		1096936		73,305			
9/79	14942		1079589		72,252			
10/79	14924		1104364		74,001			
11/79	14915		1093246		73,299			
12/79	14907	60013	1049445	4462196	70,399	74,667		
1/80	14902	59921	1235907	4544806	62,936	75,657		
2/80	14869	59632	1257233	4570270	64,480	76,385		
3/80	14866	59739	1367979	4603766	92,021	77,065	1,116	
4/80	14860	59658	1203300	4647141	81,055	77,896	1,112	
5/80	14816	59584	1236207	4683626	83,437	78,605	1,119	
6/80	14800	59515	1231116	4709129	81,900	79,155	1,112	
7/80	14794	59450	1223666	4767357	82,790	80,194	1,125	
8/80	14769	59389	1213066	4802494	82,321	80,965	1,123	
9/80	14755	59328	1207029	4836569	81,805	81,523	1,132	
10/80	14746	59272	1216492	4879665	82,496	82,327	1,115	
11/80	14742	59216	1203541	4912787	81,660	82,964	1,114	
12/80	14737	59158	1138789	4945913	78,631	83,605	1,117	1,119
1/81	14734	59088	1363342	5027102	84,126	85,112	1,122	1,125
2/81	14693	59020	1453447	5111001	99,357	86,598	1,173	1,134
3/81	14662	58954	1566968	5164902	108,237	87,609	1,17	1,137
4/81	14637	58887	1393648	5219448	95,201	88,635	1,174	1,136
5/81	14617	58821	1369916	5264710	95,069	89,504	1,140	1,139
6/81	14600	58754	1360892	5333676	94,582	90,780	1,155	1,147
7/81	14584	58687	1405440	5400922	96,369	92,039	1,164	1,148
8/81	14567	58619	1397072	5445976	95,907	92,905	1,165	1,149
9/81	14548	58547	1398736	5525385	96,146	94,375	1,175	1,158
10/81	14530	58471	1400816	5585246	96,409	95,522	1,160	1,169
11/81	14514	58391	1395568	5638003	96,153	96,556	1,178	1,164
12/81	14502	58312	1362708	5729304	93,967	98,253	1,195	1,175
1/82	14438	58191	1551636	5751340	107,469	98,639	1,161	1,161
2/82	14364	58062	1606564	5789120	111,847	99,706	1,151	1,149
3/82	14289	57939	1724392	5866728	120,600	101,257	1,115	1,156
4/82	14254	57806	1574132	5932024	110,434	102,620	1,158	1,158
5/82	14225	57670	1592040	5991244	111,918	103,888	1,177	1,161
6/82	14194	57533	1571400	6057236	110,709	105,247	1,177	1,161

IDEAL LIFE INSURANCE COMPANY

MANAGING THE GROUP HEALTH LINE

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PERIOD: 1/79 - 6/82

EXPERIENCE RATED GROUP - SINGLE

MONTH ENDING	EXPOSURE		CLAIMS INCURRED		PURE 3 MONTH	PREMIUMS 12 MONTH	ANNUALIZED TRENDS	
	3 MONTH	12 MONTH	3 MONTH	12 MONTH			3 MONTH	12 MONTH
3/79	15749		608450		36,634			
4/79	15766		525967		33,361			
5/79	15788		543189		34,405			
6/79	15812		534370		33,795			
7/79	15831		532649		33,646			
8/79	15853		528837		33,359			
9/79	15874		532052		33,517			
10/79	15901		550814		34,640			
11/79	15942		547583		34,348			
12/79	15987	63422	525858	2200730	32,893	34,700		
1/80	16041	63539	634091	2247521	39,779	35,372		
2/80	16074	63657	648867	2268476	40,167	35,636		
3/80	16101	63774	703156	2295436	43,672	35,993	1,130	
4/80	16110	63883	604442	2325996	36,410	36,410	1,125	
5/80	16125	63994	626238	2351525	37,520	36,836	1,129	
6/80	16181	64103	620091	2381157	38,417	37,146	1,137	
7/80	16180	64212	628367	2421174	38,844	37,714	1,156	
8/80	16184	64325	617992	2460680	38,185	37,943	1,145	
9/80	16209	64438	610470	2495375	37,662	38,170	1,124	
10/80	16246	64557	623400	2494308	38,373	38,637	1,108	
11/80	16294	64677	623777	2516874	38,283	38,915	1,115	
12/80	16349	64800	597218	2530935	36,529	38,058	1,111	1,126
1/81	16402	64918	731871	2568086	44,621	38,867	1,127	1,127
2/81	16437	65040	769961	2637968	46,843	40,559	1,136	1,136
3/81	16485	65164	845208	2672987	51,334	41,019	1,175	1,140
4/81	16497	65305	727624	2711270	44,106	41,517	1,140	1,140
5/81	16536	65451	728496	2740226	44,055	41,867	1,134	1,139
6/81	16564	65591	727304	2780300	43,894	42,347	1,141	1,141
7/81	16584	65729	739128	2822831	45,869	45,934	1,134	1,134
8/81	16580	65855	739392	2861826	44,566	45,456	1,145	1,145
9/81	16594	65976	744912	2914842	44,890	44,177	1,157	1,157
10/81	16617	66100	748742	2947415	45,062	44,590	1,154	1,154
11/81	16659	66220	741680	2979729	44,521	44,997	1,103	1,158
12/81	16713	66340	731352	3048776	43,759	45,957	1,108	1,177
1/82	16723	66421	878968	3094512	52,560	46,589	1,178	1,169
2/82	16712	66495	918232	3128000	47,041	47,041	1,160	1,173
3/82	16694	66569	977200	3160768	56,536	47,782	1,140	1,165
4/82	16702	66626	861200	3228046	51,563	48,451	1,169	1,167
5/82	16723	66682	877056	3276560	52,446	49,137	1,174	1,174
6/82	16741	66742	874712	3328176	52,250	49,866	1,190	1,176

I have repeated here the trends for the total experience-rated group category; then, on the next two pages, that information is broken down into what is called single and family. Exposure units are number of employees. The point illustrated here is that the actual measured trends for the total category are somewhat lower than the measured trends for either of the other categories separately. This same concept might apply if we split claim data in any number of ways: if we are able to separate the data by actual type of benefit, by geographic area, by demographic categories, etc., we might find more meaningful patterns. It is possible that by aggregating data, we are obscuring some of the actual underlying trends.

In practice, it is often difficult to obtain data split out in this manner or to adequately adjust for it. If it is not possible to obtain ideal data, it can be valuable and worthwhile to take a look at whatever limited trend data is available. This might consist of experience for one small category of business where good exposure data can be obtained. It might be possible in such a case to adjust for actual changes in mix of benefits, perhaps by using a manual rating basis that takes into account the actuarial relationships between different benefits. Then we could adjust either the exposure or the claims data to a consistent benefit basis so as to measure actual underlying trends. Another possible approach is to study a segment of the experience rated business that has been fairly stable in terms of benefits and enrollment - perhaps isolate some large groups and measure their trends. Some carriers do not have much exposure information of the type that we have used in these examples; some might not even have any meaningful exposure data, which is a big problem. However, I do not think any of us would argue the fact that the trend assumptions that are used in rating have a very direct impact on financial results, so this step is an important one and may warrant some effort to improve information systems.

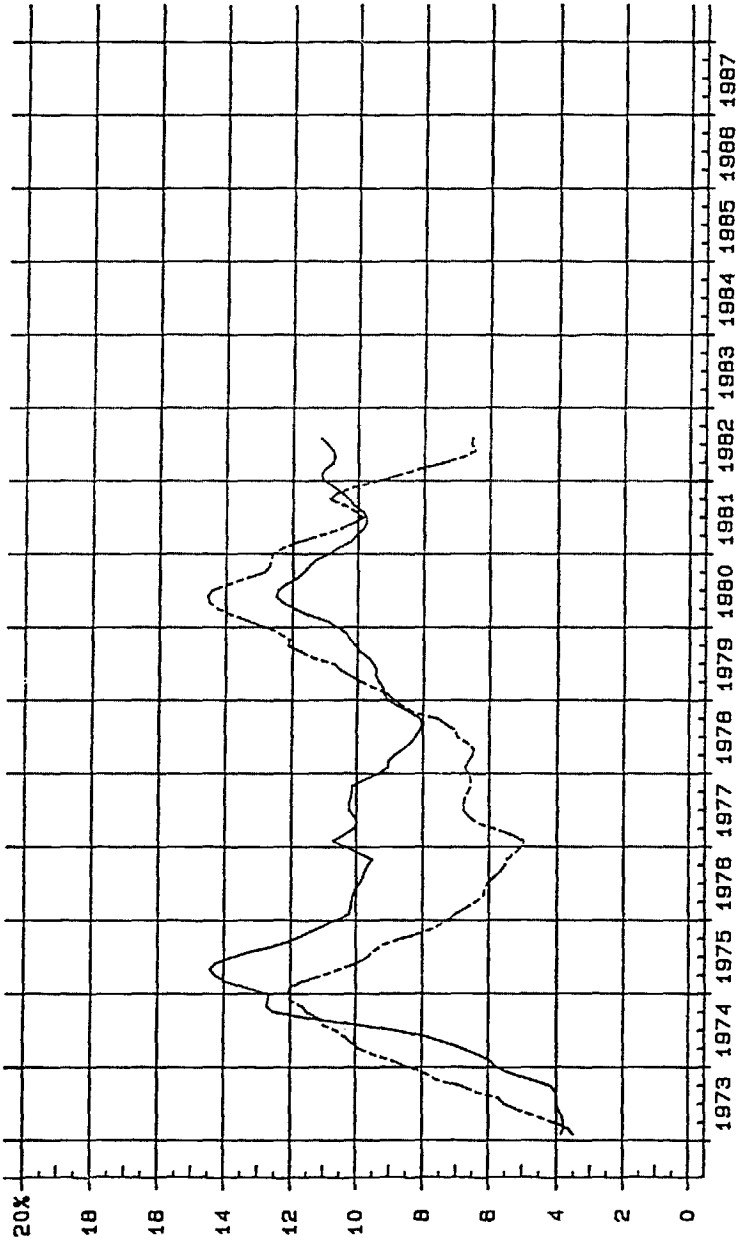
MR. DOBSON: I find it particularly scary that the total could be a lower trend than either of the pieces. That obviously would lead to understating the trend factors used in rating.

MS. DORAN: Here we have looked at trends in average claims costs. If we could also obtain data on utilization rates and average costs per case, we could analyze these in the same manner.

An additional point is that it can be helpful to monitor trends on a shorter term basis such as three months; in addition to annual trends. The shorter term patterns sometimes can be helpful in indicating the recent direction of trends; however, those values are more volatile, and they tend to peak at higher levels and bottom out at lower levels. They should be viewed as a tool in analyzing trends rather than an indicator of the actual magnitude of trend values. In this process a graphical approach can be very useful, to observe the long term patterns. At any point in time, we are looking at historical information while making decisions about rating actions to be taken in the

future. Therefore, the more we can look at the long term trends and get a perspective as to how these behave over time, the more helpful it can be. That type of perspective is important in the second phase, which is actually making assumptions about future rating trends. The following graph charts the CPI for medical care services against all items CPI.

——MEDICAL CARE SERVICES (CPI)
-----ALL ITEMS (CPI)
ANNUAL % CHANGE OF 3-MONTH MOVING AVERAGE



It illustrates the long-term cyclical nature of these trends, a pattern that can be observed in the hospital and other medical components of the CPI. In addition, a comparable cyclical pattern often occurs in the group medical claims cost trends of carriers that are able to measure them on a meaningful basis over a long-term period.

Because there can be a lag of several years between the trend observation period and the rating periods now being evaluated, it does not make sense to measure the trends from last year and apply to those directly in the future. If we know anything, we know that the trends are going to change; they will increase and decrease over time. The process of establishing rating trends is one of analyzing information and forming judgements and decisions. It requires an anticipatory view.

