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INDIVIDUAL EXPERIENCE REVIEW AND PRICING

Moderator: EARL S. MAGNUSON. Panelists: DAVID S. COX, ANDREW M. PERKINS,
CATHERINE R. TURNER

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(This session also included a discussion on the paper, "The Individual Accident and Health 'Loss Ratio' Dilemma," by Joe B. Pharr.)

EXPERIENCE REVIEW

PROFITABILITY AND SURPLUS OBJECTIVES

MR. ANDREW M. PERKINS: In the marketing of many products, in this or any other industry, price is extremely important to the realization of production goals. As we must admit to our marketing counterparts, it is not enough to have a good profit assumption in the premium formula; you must charge a price that is reasonably attractive to the public. If a company fails in that regard, it is quite likely that antiselection and poor economics of scale will invalidate the claim and expense assumptions used.

In many situations price is based on the competitive environment, and then the business must be managed within the cost limits allowed by that price. If the expected profit is not sufficient, the answer isn't necessarily to increase the profit margin and raise the price. A better approach may be to change the product or the way it is administered.

Under this scenario the actuary must still decide whether the profit produced by this price and this set of assumed costs is adequate. But it is impossible to make a general rule as to what profit margin is sufficient. That depends on too many factors — including the company's size, the volume of sales on the product in question and the actuary's confidence in other pricing assumptions. Any margin in the rate cannot be purely for profit — it is also a cushion against the real possibility of adverse experience. Each company's risk situation and each actuary's evaluation of that risk is bound to be different.

In evaluating the contribution that a particular product should make, a decision has to be made about what is meant by "profit." One of the parts of that decision is the identification of those expenses which must be covered before contributions are made to profit. In any large company there are a number of administrative expenses of different types which are not directly attributable to any one product and others which do not increase or decrease in direct proportion to changes in the volume of a particular product. Because these expenses are not directly related to actual production, one might validly use different expense numbers under different sets of circumstances.

For example, a company's major medical product might be "unprofitable" when it is allocated a full share of all indirect and fixed expenses. But if those expenses will be incurred regardless of whether that product continues to be sold, it could be the wrong management decision to stop the sale of major medical policies. A reanalysis of the results for that product may show that it pays all of its own direct costs and contributes something to the general operation of the company. And its availability may provide support for the sale of other products with better profitability.

At our company (Travelers), as in many others, the last few years have been challenging ones in the management of individual accident and health insurance. This has led to a number of activities designed to better understand and better manage the experience under our various products. We have had to revise premiums on some forms and make changes in our underwriting. One of the most important actions taken is a claim review process participated in by members of many different functional areas within the company. We have a lawyer, a claim representative, a medical doctor, an actuary and an underwriter all reviewing long term disability claims which have reached the fourth month of payment. This claim review serves at least two purposes:

First, it has an impact on the administration or payment of the particular claims we review. The group's discussions may result in additional exams, inspections, or other actions on a given claim that would not have been taken by the Claim Department alone. The second result of this review, and in my opinion even more important, is an education for all of the people in our company who deal with individual disability insurance. What we learn by looking at the individual claims including aggregate statistics for all of the claims we have seen, is communicated to other members of the Underwriting, Claim, Actuarial and Marketing Departments. While it is

difficult to quantify our impact on financial results, there is almost universal agreement within our company that the time and effort spent on this process is well worth it. In fact, we recently decided to conduct the same sort of review for certain contestable period claims on our medical expense forms.

A second area that is receiving a lot of attention is an analysis of expenses. Considerable effort is being expended to make sure that we are getting the most accurate and reasonable allocation of expense dollars to specific products and product types possible. There are a number of questions about expense allocation for which there are no exact answers. But within the range of possible allocations, there is quite a difference in the bottom line results on a given product depending on how one chooses to distribute expense dollars. The changes we are seeing in some of the aggregate expense figures for different product groups is having a significant impact on our understanding of the profit potential for different product types.

Finally, to improve our profitability, we made a number of changes in our disability products a year ago. The definition of disability was changed from a long term regular occupation definition, to "the insured's regular occupation provided not engaged in any occupation for wage or profit." At the same time, we introduced a Social Benefits Rider which is sold in addition to the basic policy. The rider pays benefits whenever Social Security, Workers' Compensation and State Cash Sickness benefits do not pay. This is an attempt to reduce the impact of overinsurance. We no longer sell lifetime accident only, so that all of our waiting periods and benefit periods are now the same for accident and sickness. This eliminates some cases of antiselection and disagreement over the cause of disability.

The new policies include the Relationship of Earnings to Insurance Clause. This is an imperfect tool, but we feel it is useful for the extreme cases of excessive coverage. We also include a residual-type benefit, but I wouldn't be willing to say yet whether that is a feature that will improve profitability.

MR. DAVID S. COX: Before commenting on the specific items of today's agenda, let me quickly relate to you Provident Life and Accident's modus operandi.

Provident is a non-participating stock company utilizing several unique operating departments as separate sales/profit centers. Each department is somewhat autonomous in that each has its own sales force, product line and its own service sections such as underwriting, actuarial, agency, etc. Even though there are some five or six separate operations, the three primary operating departments are:

1. The Group Department operating in the large group market and generating the largest share of Provident's premium income.
2. The Life Department offering life-related products in the middle and high income markets. Our average size new policy is \$40-\$50 thousand of face value.
3. The Accident Department specializing in the sale of non-can and guaranteed renewable disability income products in the professional and business executive market.

My department, the Accident Department, operates almost exclusively on a brokerage basis through a branch office system. In 1977, the Accident Department was the leading producer of individual non-can disability income policies in the U. S. by having 37,686 paid-for policies representing \$14,372,708 of annualized premium. My comments today will be limited to the operation of our Accident Department.

Since the basic objective of Provident's operating philosophy is to achieve consistent long-term growth as a provider of insurance and related services and in doing so to generate earnings adequate to provide increasing cash dividends to our stockholders and increasing earnings per share for growth, we have an obvious concern for the profit and surplus margins built into our premium rates.

Our profit and surplus margins consistently are related to the degree of risk involved in the product being offered as respects coverage provisions, market, renewal guarantees, etc. Our premium rates usually allow for recouping our negative cash flow associated with acquiring new business at a yield rate 3 - 7 percentage points higher than the interest rate assumed in our asset share calculations. In addition to this margin, we normally incorporate a flat dollar profit objective per unit of exposure. Overall, what all this means is that our largest profit and surplus objectives are usually incorporated into the rates for our non-can products which require the larger negative cash flows during the first policy year when business is acquired and which offers the most risk to the company. This is the philosophy we followed for most of our products; obviously, as with any company, we must analyze the competitive forces in our market and adjust these margins where necessary.

Margins are often reduced in areas where there is a low risk and the first year negative cash flow is small or nonexistent.

In addition to these quasi-defined profit and surplus margins, we also have built into our rating structure margins in our morbidity assumptions. This is necessary because of the non-can or guaranteed renewable guarantees of most of our products. As many of you realize, a guaranteed renewable premium provision does not automatically insure that rate increases will be granted on a timely basis when adverse experience trends evolve; thus, the need for a morbidity margin. Again, we have the larger morbidity margins on our most liberal guarantees as far as the policyholder is concerned and at the more risky issue ages.

We constantly monitor trends in our loss experience to discover adverse sources of experience and take action as promptly as possible in the underwriting arena to avoid any future sources of business we consider to be detrimental to our overall profitability and surplus goals. This monitoring process is done not only by policy portfolio but also in many cases by individual office and source of business within an office.

We also have computer systems which have as their objective to point out brokers who are submitting what we believe to be adverse sources of business. Once we have identified such a broker we will attempt to change the direction of his market and selling approach. As a last resort we will sever our relationship with the broker.

Another means we are using to accomplish our profit and surplus objectives involves periodic repricing of our basic policies and optional riders. Also, we periodically review the overall profitability of our basic premium rating structures for our major markets. Our experience has been to not undertake a major repricing project any more frequently than every five to ten years on a basic policy series.

Another means we are using to maintain our profit and surplus objectives involves increasing our productivity both through computer and manual systems. In today's inflationary times, this function is a necessity in order for a company to continue profitable operations.

MS. CATHERINE R. TURNER: At Prudential we do not have any formal established surplus objectives but we have been guided by some general rules.

For non-cancellable disability insurance, we think it is appropriate to have an average unassigned surplus for each policy form equal to about 2 times the annual premium. For a policy form with long term benefits, such as sickness and accident to 65, the surplus objective might be 2.5 times an annual premium, and for short term benefits of 1 or 2 years, the surplus objective might be about 1.5 times an annual premium. Of course, it is not possible to reach our objective immediately; it will probably take at least 10 years from the date a policy form is introduced. Our policies are participating and, therefore, if the amount of surplus for a policy form subsequently gets too high, the excess surplus can be used to pay dividends. This type of objective also means that, when a policy form is no longer being issued and therefore the total annual premium for the policy form is gradually decreasing, the amount of surplus can also decrease and the objective will still be met.

There are practical problems with which we are faced. For in force non-cancellable business it will not be possible to improve the surplus portion if it is determined that premiums are deficient. If some policy forms have more than adequate surplus but other policy forms have a deficit then it is necessary to consider the overall position for all non-cancellable policy forms, as well as for all health insurance policy forms. And for policies currently being issued, it is essential that the current rate scale be at the proper level.

For guaranteed renewable medical expense business, a surplus objective for a policy form of about one year's premium seems adequate. Experience should be monitored each year, and if premiums are determined to be too low, immediate steps should be taken to increase premium rates on inforce business. If those steps are not taken quickly, it may be difficult to take sufficient corrective action in the future.

For our CHIP business, which provides comprehensive major medical expense benefits, premiums are yearly renewable term and the premium table is increased each year. Our surplus objective for this class of business in total is about 25% of the annual premium inforce.

For both our guaranteed renewable medical expense and our CHIP business, surplus objectives are realized primarily through the process of rate revisions.

MR. EARL S. MAGNUSON: While life insurance has used quite refined methods in establishing its profitability goals, health insurance (except for non-can) seems to generally rely on a percent of premium approach for profit. The great variety of contingencies insured against or benefits provided in health insurance and the lack of adequate statistical data have caused many companies to take a rather simple approach in the development of premium rates. What health insurance lacks in mathematical techniques in rating, it more than makes up in the area of statistics which are needed to monitor the experience. What is done after issue of policy to actually achieve the profit and surplus objectives in health insurance is more important than the goals initially established.

Profit and surplus objectives are now being influenced and changed by consumerist and regulatory goals. The minimum loss ratio regulations are a direct result of the consumerist and regulatory goals to provide for the return to the policyholder of a fair and seemingly constantly increasing portion of the premium dollar.

What is being done to achieve these various goals is an interesting area. Historically we have had the concept of dividends to improve the return to policyholders as the result of experience changes, but this has not been a very popular concept in health insurance. Sure, there are a number of companies using this approach, but not to the degree as is used in life insurance.

The right to adjust the premium after issue in health insurance has been used by many companies in the form of a rate increase to help achieve its profit or even solvency goals. A rate decrease to reflect improved experience is also possible but the impact of economic trends has caused more premium increases than premium decreases.

In health insurance there have also been benefit changes because of various reasons, including benefit increases or additional benefits reflecting improved experience.

Benefit changes will be a practical way of meeting the new objectives of minimum loss ratios since the main ingredient of these tests is the portion of the premium dollar paid to the policyholder.

Improvements in the expense ratios or investment return will continue to have a beneficial effect upon profit and surplus objectives, but these will not affect the loss ratio nor help companies meet minimum loss ratio requirements.

Many actuaries have always disliked loss ratios as a measure of experience and also as a goal or factor involved in premium rating. However, a number of states have already promulgated regulations and in a few instances enacted statutes for minimum loss ratios. These are the goals or objectives which we must achieve if we are to continue to be in the individual health insurance business.

Physicians Mutual has been involved in new marketing concepts or new coverages and we have not been able to use traditional experience studies in our rating philosophy. While our list of policies is not long, it includes some winners and losers. In the eyes of the regulators who ask us to meet the minimum loss ratio test, a "winner" is a policy with a high loss ratio

and a "loser" has a low loss ratio not meeting their objectives. These are not the usual definitions but they are becoming increasingly important as states review and evaluate experience.

From a product managing concept, the "winner" can be adjusted by a rate increase, if permitted, or the discontinuance of that form through replacement by a rerated policy with a higher premium.

However, what used to be categorized as profitable policies that were ignored or skipped over quickly during experience review sessions are now being called to the forefront by certain states. Companies are now being asked to justify the premiums for these policies and prove that the benefits are reasonable in relation to premiums. Actuarial memorandums stating the assumptions used to develop the policy or giving information that the experience reported is still in a select category will be a suitable explanation in many instances. If the policy continues to show a low loss ratio, the very real question of what to do to meet the objectives of a minimum loss ratio must be faced. It is a difficult question that goes beyond actuarial concepts as discussed in the past because of contract and administrative restraints. In the original development of a product, it is possible to set and even change the actuarial concepts used in rating; but once the policy is issued and in force, the legal, moral and practical restraints will tax the best health actuaries in finding a proper and reasonable solution. Let's review for a moment the possible solutions.

1. Discontinuance of the policy. For a state whose only recourse is disapproval of the form, this would work but it is a temporary solution that does not really solve the problem.
2. Reduce premiums on new sales. Again a temporary solution that creates an equity question since different classes or groups of policyholders are rated differently.
3. Reduce premiums on in force policies as well as new sales. This is a good solution for the minimum loss ratio but it creates problems on maintaining sufficient monies for expense loadings.
4. Strengthening of actuarial reserves. It is possible to increase the active life or benefit reserves but unless the reserves reflect the underlying claim cost assumptions, this will also be a temporary solution.
5. A benefit increase for new and in force policies. This is the most practical method of increasing the loss ratio on those forms which fail to meet the minimum loss ratio guidelines.

During the past ten years, there have been a large number of rate increase filings because of inflation, experience changes or, in a few instances, a failure to establish proper reserves in the early policy years. Rate increases will continue to be a means of meeting the actuarial or corporate goals of profitability and premium adequacy. There will also be a need for benefit increases in some instances to meet the goals of a minimum loss ratio regulation since all policies will be affected even though a company's total loss ratio exceeds the minimum.

MEDICAL EXPENSE EXPERIENCE

MS. TURNER: The vast majority of Prudential's experience is on our CHIP product -- a comprehensive major medical policy. We are not particularly concerned about trends in claim frequency or average claim size because we are able to set rates for the benefits offered without developing this detail. We are primarily concerned that we meet our anticipated loss ratio objective of 61% each year, and we have been fortunate to have been hitting this target almost every year since CHIP was first introduced. The key to our success in being able to meet our loss ratio objective has been our ability to develop trend factors which have turned out to be reasonably accurate. Under the guidelines of the Council on Wage and Price Stability we are restricted as to the maximum trend factors which we can currently use, and our current annual factor of 13.9% meets the requirements of those guidelines. The actual trend in medical care costs will depend upon the effectiveness of the actions taken by the providers of medical care to hold down the increases. Congress is considering legislation which would have the purpose of holding down the increase in hospital costs, but it might take some time before the effects of any such legislation are felt. Based on the recent reports of the general upsurge in the rate of inflation, not only for medical care but also for energy and food, which will affect the operating costs of hospitals, we have some doubts that the current trend factors we are using for CHIP will be high enough.

We watch expense experience as well as claim experience on CHIP. The 61% loss ratio objective allows us a maximum of 39% of the premium for expenses. CHIP was initially introduced in 1973, and over the period from 1973 to 1977 our expense rate was greater than that 39% figure. However, our expense rate in 1978 was about 35%, and as the block of business matures further, we shall soon reach an ultimate expense rate of about 33%. This should allow us to eliminate our present deficit in about 4 more years and then provide for a build-up of some reasonable surplus in line with the objectives mentioned earlier.

MR. COX: Although Provident is not noted for its individual medical expense market, during the 60s and early 70s a \$7 to \$8 million block of guaranteed renewable individual health care business did evolve. We no longer sell individual health care products as of the fall of 1977. I will spend a few minutes giving you the trends we have observed in our claim frequency, claim costs and loss ratios of our individual guaranteed renewable health care block of business. This business is about 85% individual major medical business.

The experience on our hospital indemnity and basic hospital policies has been in line with our original premium assumptions and has proven profitable. We chose not to continue this market, however, because of the enormous amount of regulations and mandated coverages we were being faced with from the various states. Our aggregate morbidity (for both major medical and hospital business) during the recent past has been as follows:

<u>Guaranteed Renewable Health Care Experience</u>			
	<u>Earned and Incurred Loss Ratio</u>	<u>Claim Frequency</u>	<u>Claim Cost</u>
1975	81.63 ₁	.1484	\$144.47
1976	77.18	.1471	159.41
1977	104.30	.1600	182.58
1978	91.83	.1549*	210.85*

*Including an estimate of the incurred but unreported claim liability.

The aggregate claim costs shown above have increased at an approximate 15% compound rate over the years indicated. Our individual major medical experience has been worse than this, however, increasing on the line of 20%.

DISABILITY EXPERIENCE

MR. PERKINS: A year ago a few people were talking about possible improvements in disability experience, optimistic that claim costs might have peaked. John Miller's Disability Newsletter monitors the aggregate non-cancellable loss ratio of 25 major writers. The May 1979 issue reports decreases in that loss ratio for the last two years. This is encouraging although we all realize the limitations of loss ratios. At our company, we have been doing regular tests of our claim termination rates for a number of years. Our volume is relatively small, but the aggregate figures have shown a steady trend, and I believe the numbers are meaningful. They support the contention that our problem has been one of increasing claim durations. Over the last decade the aggregate actual to expected claim termination ratio has dropped to less than half of what it originally was. I would like to be able to say that the results of 1977 and 1978 show some improvement, but unfortunately the last report showed a slight further slippage. The termination rates at the latest durations were extremely close to the ultimate mortality of the 1965-1970 Basic Table.

If there has been any improvement, or at least less deterioration in disability results, I am inclined to believe that it is not because of a change in the underlying experience. We have not eliminated overinsurance, even though our tables of issue limits have been updated. The trend in society is still towards an increasing sense of entitlement. I do not believe physicians are any less concerned about the possibility of mal-practice suits when deciding the date their patients should return to work. Certainly the regulatory and legal trends are still such as to increase claim costs (as well as expenses).

It is much more likely that any positive signs in disability experience are the result of the variety of efforts going on throughout the industry to write more sensible contracts, to underwrite the business more tightly, to administer claims more accurately and to manage the business with more care in every respect. Some companies have increased their rates or strengthened their reserves. Others have drastically reduced their sales in the more hazardous markets. With all of the efforts that have been going

on over the last few years, it would be quite alarming if the deterioration that we had been seeing in disability results was not reduced. This sort of careful management of disability will continue to be necessary in the future to counter the many factors which will continue to exert upward pressure on claim costs.

MS. TURNER: The loss ratios which we have had on our non-cancellable Disability Income business for the last four calendar years, 1975 through 1978, are 71 $\frac{1}{2}$ %, 73 $\frac{1}{2}$ %, 71 $\frac{1}{2}$ %, and 55 $\frac{1}{2}$ %. The sharp drop in 1978 seemed unrealistic, and we recalculated the loss ratio for these four years based on a reconciliation of the actual emerged claims in place of estimated liabilities and reserves. The reconciled loss ratios for the four year period were 67 $\frac{1}{2}$ %, 71 $\frac{1}{2}$ %, 64 $\frac{1}{2}$ %, and 59%. The results for 1978 are still subject to change, of course, as actual run-off claims emerge. Based on our reconciled loss ratio results, it appears that we reached a high point in 1976 and there has been a distinct improvement in 1977 and 1978. Some of this improvement can be ascribed to the premium rates on new issues, about 25% higher than the previous rates, which became effective in December 1976. At the same time we increased our minimum annual earnings from \$9,600 to \$18,000, and this probably improved our grade of risk.

To analyze the trend in claim costs, we also calculate ratios of actual to expected claim payments for the first benefit year of disability income claims. These calculations show a slight improvement going from 1976 to 1977 incurrals. However, these small claim cost improvements can account for only a portion of the entire loss ratio improvement.

MR. COX: During the last 10 - 15 years, we have relied more and more on our own experience for pricing assumptions. We still review industry and inter-company morbidity and take these data sources into account when we are developing new morbidity assumptions for pricing. For our more statistically valid experience cells, we develop ratios of our own experience to the 1964 CDT Table in developing pricing assumptions. Such assumptions were originally developed during the middle/late 1960s and were revised in late 1974. Based on recent experience we have found our actual experience changing from our 1974 assumptions. This change could lead us to reevaluate our overall pricing structure in the not too distant future. Our aggregate results have been favorable; however, there are segments where adjustments are needed.

The four exhibits which follow on the next two pages highlight the morbidity results of Provident's non-cancellable disability income line of business during 1975-1978. The 1978 claim cost data is still subject to validation. Also, the claim cost data for 1978 incurrals is subject to change because of the estimate for incurred and unreported liability.

INDIVIDUAL EXPERIENCE REVIEW

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NON-CANCELLABLE EXPERIENCE
ALL BENEFITS AND ELIMINATIONS

MEN AND WOMEN - ALL CLASSES

	<u>Earned and Incurred Loss Ratios</u>		<u>Claim Frequency</u> (2)	<u>Claim</u> (3) <u>Cost</u>	<u>Ratio of Actual to Expected Claim Cost</u> (2)(3)
	<u>Accident and Sickness</u>				
1975	41.46%	52.08% (1)	.0268	.16929	.974
1976	43.12	51.20 (1)	.0216	.18347	1.111
1977	40.49	52.57 (1)	.0204	.15182	.909
1978	43.38	56.13 (1)	.0190	.13781	.849
	<u>Accident Only</u>				
1975			.0083	.04369	.970
1976			.0071	.03807	.850
1977			.0064	.03567	.832
1978			.0057	.02682	.630
	<u>Sickness Only</u>				
1975			.0185	.12560	.961
1976			.0145	.11540	1.201
1977			.0140	.11615	.931
1978			.0133	.11099	.934

WOMEN - OCCUPATION GROUP I

	<u>Earned and Incurred Loss Ratios</u>		<u>Claim Frequency</u> (2)	<u>Claim</u> (3) <u>Cost</u>	<u>Ratio of Actual to Expected Claim Cost</u> (2)(3)
	<u>Accident and Sickness</u>				
1975	37.36%	50.67% (1)	.0406	.12518	.608
1976	26.95	27.90 (1)	.0287	.11782	.584
1977	30.06	24.61 (1)	.0325	.16042	.818
1978	36.48	30.48 (1)	.0246	.14190	.699
	<u>Accident Only</u>				
1975			.0066	.01110	.294
1976			.0070	.01637	.449
1977			.0089	.04558	1.289
1978			.0049	.03163	.890
	<u>Sickness Only</u>				
1975			.0340	.11408	.679
1976			.0217	.10145	.615
1977			.0236	.11485	.714
1978			.0197	.11027	.636

(1) Excluding the two most recent calendar years of experience.

(2) Excluding the first and second policy years of experience.

(3) Expected claim costs are Provident's 1974 modification of the 1964 CDT.

DISCUSSION—CONCURRENT SESSIONS

NON-CANCELLABLE EXPERIENCE
ALL BENEFITS AND ELIMINATIONSMEM - OCCUPATION GROUP I

	<u>Earned and Incurred Loss Ratios</u>		<u>Claim (2) Frequency</u>	<u>Claim (3) Cost</u>	<u>Ratio of Actual to Expected Claim Cost (2)(3)</u>
			<u>Accident and Sickness</u>		
1975	40.52%	51.11%	.0158	.15187	.947
1976	39.38	46.51	.0140	.17813	1.099
1977	38.23	51.25	.0131	.15152	.914
1978	42.37	55.20	.0145	.14647	.873
			<u>Accident Only</u>		
1975			.0047	.04214	.958
1976			.0044	.03352	.771
1977			.0041	.03788	.875
1978			.0036	.02256	.525
			<u>Sickness Only</u>		
1975			.0111	.10973	.944
1976			.0096	.11461	1.219
1977			.0090	.11364	.928
1978			.0107	.12591	.997

MEM - OCCUPATION GROUP II

	<u>Earned and Incurred Loss Ratios</u>		<u>Claim (2) Frequency</u>	<u>Claim (3) Cost</u>	<u>Ratio of Actual to Expected Claim Cost (2)(3)</u>
			<u>Accident and Sickness</u>		
1975	52.73%	57.53% (1)	.0593	.21630	1.169
1976	61.34	63.31 (1)	.0487	.22056	1.234
1977	68.91	70.32 (1)	.0460	.18659	1.066
1978	59.02	60.86 (1)	.0416	.18417	1.041
			<u>Accident Only</u>		
1975			.0293	.08459	1.149
1976			.0239	.09944	1.460
1977			.0207	.05909	.916
1978			.0194	.07210	1.121
			<u>Sickness Only</u>		
1975			.0300	.13171	1.183
1976			.0248	.12112	1.095
1977			.0253	.12750	1.155
1978			.0222	.11207	1.018

(1) Excluding the two most recent calendar years of experience.

(2) Excluding the first and second policy years of experience.

(3) Expected claim costs are Provident's 1974 modification of the 1964 CDT.

Our actual to expected aggregate morbidity for all classes, both males and females, has been acceptable during the past four years, 1976 being the only year when actual morbidity exceeded expected. On the surface, one would conclude that the duration of disability has increased since our frequency rate has decreased approximately 30% but our claim cost has decreased only 19%. During the past four or five years, we have discouraged elimination periods of less than 30 days and no longer offer 1st day accident coverage.

Our male occupational group II morbidity experience has exceeded our expected experience during each of the past four years but the trend is improving. Our male occupational group I morbidity has been very acceptable during 1975-1978 with the possible exception of 1976.

Occupational group I female morbidity has also exhibited favorable morbidity patterns during 1975-1978; however, the trend is upward. Our exposure in this area is too limited for any detailed studies by specific benefit and elimination period. Based on a more detailed analysis of our 1975-1977 experience, we have found that our actual morbidity has been higher than expected at the younger ages (primarily below 35) and for the shorter elimination periods of 15 and 30 days while at the older ages (45 and above) and the longer elimination periods, 90-180 days, our actual experience has been more favorable than our 1974 pricing assumptions. I should mention that our 1974 pricing assumptions originally assumed that our actual morbidity will be higher than the 1964 Table at the younger ages. However, what I am saying is that we have found it to be even higher than we originally anticipated.

We have had a residual, or proportionate, rider available for our class 1 and 2 loss of time policies since late 1974. Our residual rider requires a preceding period of total disability which varies with the basic sickness elimination period of the policy. There has to be 31 days of total disability on a 30 day or shorter elimination period policy, 61 days of total disability on a 60 day elimination period policy, and 90 days of total disability on policies with a 90 day or longer elimination period. There has to be at least a 25% loss of earnings in addition to the insured being unable to perform all the duties necessary to perform his occupation or to spend as much time as is normally expected to perform his occupation. Our 1975-1978 experience study of this rider has shown our actual claim cost to be well within our original pricing assumptions. This study involved compiling claim costs for the residual riders on our more popular benefit periods and elimination periods (to age 65 with 30 and 90 day elimination periods). In all, 31 residual claims of the approximately 125 actually incurred were included in this study. It is interesting to note that in the 45 to 55 age group, we had ratios of actual claim costs to expected claim costs which exceeded one but not by a very substantial margin. In all other age groups, we had claim costs which were considerably more favorable than originally anticipated.

For the 30 day elimination period policies, our actual claim frequency was a near perfect correlation with our expected frequency but our actual claim costs were lower than anticipated which leads one to conclude that the average duration of residual disability was probably overestimated when originally priced. For the 90 day elimination period policies, our actual to expected frequency ratios were somewhat less than our actual to expected claim cost ratios which indicates that we were too conservative on estimating frequencies but our estimate of the duration for residual disability was not as conservative.

To date, we have been very pleased with our residual disability experience. Such a rider is sold on the majority of our policies. We have recently introduced a new residual rider which still provides for a preceding period of total disability waiver of premium during residual disability. The premiums for the new residual disability rider are proportionately higher for these additional risks assumed.

RATE INCREASES

MS. TURNER: I mentioned CHIP rate increases earlier. The calculations are simple for an attained age policy. On our guaranteed renewable medical expense business we have found it necessary to increase premium rates on only two major medical policy forms, neither of which is currently being sold. Numerous rate increases have been made on each of these two policy forms, generally in every other year. Prior to our most recent rate increase, which went into effect in 1978 and 1979, we assumed rather optimistic trend factors much less than the rates of increase that had been actually experienced on these forms. Therefore, our poor experience continued to be poor. For our most recent rate increases we have used much more realistic trend assumptions which required very large rate increases. As a result, our experience has improved considerably, and if we continue to use realistic trend factors, we should be able to hold our deficits on these two policy forms to the current levels.

Our persistency has in most years remained relatively constant, whether or not a rate increase was implemented during the calendar year. The increased premium rate for an inforce policy is generally less than the rate would be for similar benefits under a new policy at the current attained age of the insured. So the old policy is still a good buy, even for those who are eligible for new coverage at standard rates. There are exceptions to any general rule though. In one case our rate increase exceeded 100% and the lapse rate the year that increase went into effect more than doubled.

MR. COX: During 1976, we increased rates on the majority of our individual major medical business. We did the same thing during the second half of 1978. Experience concerning rate increases on blocks of major medical business is as follows:

A. Lapse rates for all individual major medical business

<u>Policy Year</u>	<u>'76-'77 Policy Anniversaries</u>	<u>'77-'78 Policy Anniversaries</u>	<u>Ratio</u>
3	18.0%	16.6%	1.084
4	14.0	14.1	.993
5	11.8	11.7	1.009
6	10.4	9.4	1.106
7	9.8	9.1	1.077
8	8.7	8.4	1.155
9	8.1	8.5	.953
10	7.3	6.8	1.074

The 1976 rate increase was effective for some of these policies prior to the 1976 anniversary but the above statistics illustrate the effect of a premium increase on lapse rates.

E. Loss ratio experience after a rate increase:

1. Policy Form A (involving approximately \$3,000,000 of written premium)

<u>Year</u>	<u>Loss Ratio E/I</u>	<u>Rate Increase</u>	<u>Effective Date of Increase</u>
1978	73.0 $\frac{1}{2}$	40 $\frac{1}{2}$	8-1-78
1977	95.5		
1976	66.4	30 $\frac{1}{2}$	6-1-76
1975	63.5		
1974	47.2		

Policy form was effectively withdrawn for new business in 1975.

2. Policy Form B (involving approximately \$1,500,000 of written premium)

<u>Year</u>	<u>Loss Ratio E/I</u>	<u>Rate Increase</u>	<u>Effective Date of Increase</u>
1978	93.8 $\frac{1}{2}$	30 $\frac{1}{2}$	9-1-78
1977	97.9		
1976	68.8		
1975	75.8	30 $\frac{1}{2}$	11-1-75
1974	64.6		

Policy form was effectively withdrawn for new business in 1974.

MR. PERKINS: At our company we have found it necessary to increase rates on a number of our medical expense products, including major medical, as well as on some guaranteed renewable disability products. Some of the earlier increases ranged as high as 75% on a few policies, though most were much lower. All of these increases were on closed blocks of business.

The largest block of policies we have had a chance to observe under conditions of a rate increase is a block of medical expense business with almost \$10,000,000 of earned premium in 1975. Experience had been worsening steadily, including a large increase in the loss ratio from 1974 to 1975, and the rates were raised 20% in early 1976.

In 1976 the loss ratio dropped by 6%, and in 1977, when the increase would first be fully effective, it dropped to 85% of the 1975 level. While we may have had some help from a leveling out of the underlying experience, it appears that the rate increase had a substantial, favorable impact on the loss ratio. This was true even though lapse rates were more than half again as high as normal.

Larger rate revisions on major medical business and guaranteed renewable disability were followed by less predictable results. Loss ratios did not improve as much, and in fact, it would be difficult to guess when those increases were implemented based on a review of the loss ratio patterns.

But both of these blocks are subject to much more statistical fluctuation than the first form mentioned, and the results could not be interpreted to prove or disprove the effectiveness of the increases.

Lapse rates on the disability business nearly doubled during the implementation of increases, averaging about 35%.

MR. CLAYTON A. CARDINAL: I would like panel members to comment on the social adequacy and consumer efficiency of those policies that have undergone re-rating programs.

MR. COX: In Provident's case, I would say that the policies which have been rerated are socially adequate in the sense that our policies have very few inside limits. They are also consumer efficient in that the revised rates are generally always less, if not significantly less, than the rates for new issues.

MR. PERKINS: The policies which Travelers has found necessary to rerate have generally provided substantial miscellaneous expense or major medical benefits. I don't believe your question about social adequacy is applicable to the disability income forms we have rate revised. As regards the appropriateness of the rates after being increased, the revised rates have generally been reasonable in relation to the rates for new issues. In some instances the revised rates are higher than the rates for new issues, but this is rare.

MR. MAGNUSON: Throughout the industry there is a significant problem in maintaining the social adequacy of benefits on some policies. There are, for example, hospital policies still in force which provide small amounts of room and board or miscellaneous coverage. In some cases, because of inflation, it has been necessary to increase rates on these old forms or to non-renew the policies. Non-renewal is not a desirable solution and many companies have usually offered alternate coverage to insureds in these situations. At Physicians Mutual, we have offered additional coverage to policyholders on a nonselective basis up to current underwriting limits to maintain an adequate level of benefits.

MR. ALLEN T. PARK: I would like to ask Mr. Cox whether his company has considered requesting more frequent increases of lesser degree to possibly diminish the upward in lapses.

MR. COX: Provident has not found that to be economical or practical. In most states, we would not be permitted to increase rates on forms based on experience which had not yet reflected a previous increase. The state insurance departments will politely request that we wait for experience to develop on such forms. Thus, rather than implementing lesser but more frequent increases, which would be better for us and the insureds while also being more reflective of the conditions, we are obliged to request higher increases less frequently.

PRICING OF HEALTH CARE COVERAGE

MS. TURNER: As I indicated previously, the vast majority of our medical expense business is our CHIP business. Our CHIP rate filing consists of two tables. One is the basic company table which shows for each of seven similar plans the monthly premium rate based on the attained age and sex of the adult. A single rate applies for children's coverage, regardless of the age, sex or number of children. In order to obtain premium rates reflecting

the residence of the insured, the basic company rates are multiplied by the area factors shown in the second table. This second table shows percentages, currently ranging from 50% to 195%, based on the first three digits of the insured's ZIP code.

Premium rates are based on the actual CHIP experience. Each year the basic table is changed to reflect the actual experience by plan, age, and sex and then increased by the appropriate trend factor. The area factor for each three digit ZIP area is also revised each year to reflect the actual experience. Generally the change in the area factor for a given ZIP is limited to a 5% change in any year. Very similar major medical benefits are provided by CHIP and our small group plans. Our experience for each ZIP area is maintained separately for the three categories - CHIP, small groups of 2-9 employees, and small groups of 10-49 employees. It is interesting to note that results are very similar for each of these three categories in areas where there is a reasonable volume of experience. We therefore use the combination of the three categories' experience in setting our area factors, in order to obtain more credible exposure for the fine area breakdowns.

We currently use the same age slope by sex for all deductibles (\$100, \$300 and \$500). Up to now we have not had enough experience to be significant on the plans with the \$300 and \$500 deductible, but we believe we will have when we establish CHIP premium rates effective March 1, 1980.

CHIP experience is monitored quarterly, and an important facet of the trend analysis is having an accurate estimate of true incurred claims for each quarter. To accomplish this, we accumulate separately by quarter of incurral our claims paid through each calendar quarter. From these records we can develop factors applicable to claims paid through a given quarter for a particular quarter of incurral to obtain total claims incurred in that quarter. Except for the current quarter of incurral, this method works very well. Year-end reserves and liabilities calculated in this manner, including the hard to estimate final quarter, are nearly always within 5% of final reconciled figures.

MR. MAGNUSON: At Physicians Mutual the methodology of pricing health insurance coverage consists of calculating quinquennial asset shares which are then weighted by the expected distribution of business for those age groups which are combined in our rating schedules. The basic actuarial techniques used in the asset shares follow those used for life insurance but it seems that special adjustments are required to reflect experience trends so that health asset shares are unique in many ways. At our company, special calculations are made to reflect the expected experience on a month-by-month basis during the first policy year for both persistency and morbidity. After the first policy year, more general adjustments are made so that we can reduce the calculations to an annual basis.

Morbidity trends, be it for inflation, secular trends or other changes, must be provided for in the asset shares. Past history can give a clue but actuarial judgment is usually the final basis of trend factors. Each coverage will have some unique aspect which must be provided for in the calculations so that the asset shares must either provide for various adjustment factors or be capable of modification.

Premiums are usually assumed to be level but many companies are using some anticipated scale to reflect possible rate increases in the case of medical coverages. Calculations are also made on what I call a "break-even premium" at selected intervals. This amortizes the acquisition expenses over a short interval so that those lapsing in the early durations pay a proper premium.

My asset share calculations also include natural reserves based on the expected persistency, morbidity and interest so that these can be compared to the statutory reserves.

Data sources are extremely important in health insurance and while actual company experience is the most appropriate, new coverages or modification of existing coverage requires the use of general population data in many instances. Government publications are a good source but a great deal of research is needed to find something appropriate and then actuarial imagination is involved in putting the material into a suitable form for asset share calculations.

Lack of suitable data is a problem for many small companies as well as some of the large companies. The Inter-Company Studies are not as useful as they were in prior years. Don't misunderstand me, since I think the people working on these studies are doing a fine job and the companies contributing the data must also be recognized. However, it's about time we revised some of the concepts so that the information is both more timely and related to current practices. The recent paper on the 1974 Medical Expense Tables points out many areas where there was a lack of experience data. A considerable amount of business is being written in areas where the Inter-Company Studies provide no information. We've had some marvelous advances in electronic data processing but we seem to still be in the dark ages in certain statistical areas. Sure it is a difficult subject but if we want to stay in the individual health insurance business on a profitable basis, we are going to have to expand our base of knowledge so that we can better explain and anticipate experience changes instead of simply talking about them.

Analyzing recent experience is a recurrent task and different for each company depending on what data are available. At Physicians Mutual, our experience studies are by policy month so that we can be as current as possible without waiting for a policy anniversary. Some of the tabulations are lengthy and while it goes up to 84 months, we summarize experience after the first or second year on an annual basis. Our basic product is hospital indemnity issued on a nonselective basis so our experience characteristics differ somewhat from those shown in the Inter-Company Studies.

Earlier I mentioned the combining of various asset shares by weighting the individual ages based on expected sales. We utilize our most recent experience on a policy month basis through the first 12 or 24 months by summarizing this information into broad age groups to eliminate fluctuations. We then re-weight the original asset shares based on the actual sales distribution and are able to compare recent experience with revised expected experience. While it is possible to review each element of experience such as persistency, morbidity and expenses, it is a combined experience of all elements that is needed to determine profitability, both past and future, and compare this to the expected profit objectives.

Area rating is receiving more impetus in connection with rate increases than in connection with new product development. My experience has shown that both medical and disability experience varies by state and there is some justification for area rating. Yet there are also some disadvantages which must be considered.

Should a company area rate? That depends on the product and the rating concept. Coverages offered on an attained age basis where experience varies significantly by area and even by year because of inflation are those most often area rated. Policyholders are accustomed to area rating in casualty coverages such as automobile and fire so coverages offered on a similar basis can be area rated. At the other extreme are those coverages rated more similarly to life insurance on an issue age basis where the premium is intended to remain stable for some time. I feel that it is the rating concept that dictates if area rating is to be used and not the coverage provided such as medical expense or disability.

Rate changes, whether it be for reflecting experience trends or the moving of a policyholder from one area to another, are expensive to administer and are at times disruptive to policyholders. If a company does elect to area rate, then there is a moral obligation to do it properly and in my opinion that includes maintaining experience so as to adjust premiums, both in force and new sales, for changes to reflect experience and also the re-rating when an individual changes areas. Without the re-rating of the policy when a policyholder moves, a hypothetical example of two individuals, now neighbors, holding identical policies with premium rates varying three or four fold simply because the forms were issued in different states and affected by different rate increases could become a reality.

Some general information is available to justify area rating from group experience, population data and possibly other companies. That experience is appropriate only for the coverages which gave rise to the experience and is apt to be quickly outdated. A company's own experience is really the only appropriate experience for area rating.

Picking a single statistic upon which to base area rating is difficult since there are advantages and disadvantages to each statistic or to statistics for a particular coverage. Let's explore disability experience for a moment since this is one which has some unique variations by state according to comments by other actuaries, but it is difficult to quantify the reasons or even identify the reasons why experience differs by area.

Actual to expected ratios are the most appropriate basis for area rating but there is a question as to which ratio should be used. To mention a few, morbidity studies have developed the following ratios:

1. Frequency of disablement;
2. Average claim duration during the first year of disability;
3. One year claim cost;
4. Probability of claimants entering the second duration;
5. Average duration of disability that extends into the second duration; and
6. Disability continuance rates beyond the first year of disability.

The relative importance of each of these ratios differs by the type of policy being offered and therefore the area rating criteria would differ for each policy. Since a single combined ratio is desired, it is most likely that a model office technique utilizing an expected distribution of business would be used for combining the various ratios mentioned above. It is important to eliminate any bias in the statistics brought about by differences in the age, sex, occupation, duration since issue or elimination period so that there is no bias in the area rating from these various factors. These biases are the reason why premium and claims experience or loss ratio experience by itself is not a proper basis for area rating.

In medical expense it is easy to identify a number of reasons why the experience differs by area. These characteristics can be referred to as "medical practice" differences which are related to frequency or duration and can be combined as utilization. Cost differences are also recognized in different manners.

Similar factors are not as readily identified in disability insurance since many of the items are currently recognized in the rating practices. Social attitudes or the work ethic are probable causes for differences in disability experience by area but these nebulous terms are difficult to quantify or really identify as being the reasons for the variation.

DISCUSSION OF JOE B. PHARR'S PAPER

"THE INDIVIDUAL ACCIDENT AND HEALTH 'LOSS RATIO' DILEMMA"

MR. JOE B. PHARR: The paper is concerned with individual health insurance of the level premium type and the reflection of active life additional reserve changes in the development of loss ratios.

The current dilemma referred to in the paper may be contrasted by (1) published statements relative to loss ratios by highly regarded and nationally recognized health insurance actuaries, and (2) the current state insurance regulatory environment and movements. For example, John Miller in his paper "Disability Termination Rates" states that loss ratios developed in the Annual Statement are faulty indicators, especially for level premium policies. Furthermore, Edwin Bartleson in the Society of Actuaries' textbook Health Insurance Provided Through Individual Policies indicates that it should be recognized that loss ratios for accident and health insurance at best are very rough guidelines, that the loss ratio concept can be overemphasized, and that loss ratios are not the only guides for determining whether premiums are reasonable. These statements by actuaries can be contrasted with current state insurance department specifications and regulations as to minimum anticipated loss ratios and also actions by a state such as Massachusetts to study and make recommendations relative to insurance company financial reporting procedures for a better correlation between data ("loss ratios") filed with the state periodically and the subsequent data used to justify health insurance pricing and rate increases.

Further fuel to the "loss ratio" dilemma abounds in the present statutory Annual Statement. Changes in unearned gross premiums may affect premium revenue in the summary of operations, or may be shown as changes in reserves in the same summary of operations, or may affect incurred benefit figures if considered part of active life reserve changes in calculating supplemental loss ratios in Schedule H. Claim reserve changes are shown as

reserve changes in the summary of operations but as part of incurred benefits in Schedule H.

It has furthermore been observed that loss ratio calculations filed with state insurance departments have at least been developed under the following procedures:

1. Present value of future benefits compared to present values of future premiums based on pricing assumptions as to interest, mortality and persistency;
2. Similar present values discounted at 1958 CSO mortality at a relatively low interest rate in the 2% to 3% range; and
3. In some cases loss ratios simply represent the arithmetic addition of expected claim costs over the sum of gross premium revenues both without any discount for interest or lack of persistency.

In the above referenced paper, it is indicated that some of the major distortions in loss ratios, or the lack of meaning of such ratios, are traceable to the approach used to reflect active life additional reserve changes in such ratios when level premium business is involved. A pattern of incurred "loss ratios" is projected in the paper over a reasonable period of time for a level premium health coverage of the hospital indemnity type — this pattern is expected to be similar for disability income. Such projected incurred "loss ratios" are then modified for analysis purposes by changes in statutory active life additional reserves under different reserve methods, by adjusting for the interest rate assumption inherent in the additional reserve calculations and then by use of realistic assumptions in active life reserve calculations as to interest, mortality, morbidity, withdrawal rates and underlying selection.

Upon reflection on the paper, further observations are as follows. Although suggestions are made in the paper as to the development of useful and meaningful loss ratios, the suggestions are obviously those of only one actuary. Given the contrast between actuarial views on inherent limitations through loss ratio analysis and the state regulatory environment, the question is raised as to whether it is appropriate for the Society of Actuaries to seize the initiative and possibly assign the subject of what are appropriate and meaningful loss ratios (for level premium health insurance) to a task force of actuaries with coordination with interested parties from the HIAA and the NAIC.

One might argue that the level premium individual health insurance line of business today is too small in the insurance industry and such a declining segment of business for the Society to be concerned. However, are actuaries in a similar position on loss ratios to their experiences in the 1960s and early 1970s when actuaries had the opportunity to take the initiative on the actuarial aspects of GAAP reporting principles but did not take too seriously (or give priority to) the interest of regulators, accountants, investors and management in the subject? Even if an eventual solution is to require loss ratio certification by responsible and knowledgeable health insurance actuaries — in lieu of arbitrary "loss ratios" established by regulatory authorities — a professionally recognized common approach to the projections of "loss ratios" would be helpful guides to actuaries charged with such responsibilities.

MR. MACNUSON: I will take this opportunity to offer a few comments concerning Joe's fine paper. Written comments can also be submitted on this paper in addition to the comments made at this meeting.

The NAIC at its Chicago meeting this week acted on a revised Schedule H so that we now have three categories of reserves: First, premium reserves which include unearned premium reserves, advance premiums, and rate credits are to be an adjustment to the written premiums to produce earned premiums. Second, policy reserves including active life reserves and additional reserves for future contingent benefits are to be shown in a separate category as "Increase in Reserve." Third, loss reserves will include the present value of amounts not yet due on claims as well as the accrued benefits due but not yet paid. Separate ratios will be shown for incurred losses to earned premiums. When considered separately or in combination, these ratios will provide better analytical indices than those currently in use in Schedule H. Some of the serious objections will be eliminated with the revised loss ratios in Schedule H but many of the comments included in Joe Farr's paper are still applicable as far as the adjustment for interest and realistic assumptions are concerned.

This paper has shown that the adjustment for interest can be significant, especially in the later durations when loss ratios are high. Using the techniques outlined in the paper, it would be possible to go further and show the difference in loss ratios because of the use of a statutory morbidity table in place of assumed morbidity. Similarly, it would be possible to develop a gain from selection and show the effect on loss ratios from this element. While these could be interesting analytical tools, they are subject to misinterpretation.

The subject of this paper is very timely since there is a considerable amount of discussion about loss ratios throughout the industry, especially the regulatory portion. It is hoped that this paper will provide the needed technical assistance to properly describe the loss ratios incorporated in the various regulations and that the individuals charged with drafting the regulations will also see that certain aspects of the methods proposed in this paper are not applicable to the day-to-day operation of the health insurance business, and adjustments such as outlined in this paper should not be required to be submitted with rate filings.