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INDIVIDUAL HEALTH INSURANCE

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1. Revisions in Guaranteed Renewable Gross Premiums:
 - a. Basis and methodology for justifications of revised gross premiums.
 - b. Problems of getting rate increases approved by the state insurance departments.
2. Adequacy of current policy and claim reserves:
 - a. Have changes in the level or distribution of claim costs created situations where reserves may be inadequate?
 - b. How should the actuary test for such situations?
 - c. Alternative approaches to strengthening reserves.
3. New valuation tables.

MR. ERNIE FRANKOVICH: Most of you know the distinguished members of the panel. Tony Houghton, Bob Shapland and Pete Thexton are frequent panelists at these sessions. Thus, I will not take valuable time from the discussions to give their many accomplishments. We will start by discussing revision of guaranteed renewable gross premiums. I'd like you to welcome Pete Thexton.

MR. PETER M. THEXTON: For about a year, a task force of the NAIC and an HIAA sub-committee have been wrestling with the problems of the basis and methods for justifying higher rates under guaranteed renewable, conditionally-renewable and optionally-renewable policies. The effort is to allow state insurance departments to take approval or disapproval actions promptly and thoroughly. I will share with you today some of the tentative conclusions of the HIAA sub-committee.

The committees are discussing justifications of revised premium rates. We are not talking about submitting to state insurance departments the rate development data, rating methods, or the details that actuaries go through in trying to determine the new rates. We're talking about justifying the new rate level to an insurance department. However, the detail must be described in a general way - how the rates are put together and what the basis is, and an outline of the formula so that arithmetic can be checked by the insurance department. According to the standards that the sub-committee is putting together, the data submitted must be reconciled with published statutory annual statement data, especially the policy experience exhibit. In submitting this reconciliation, it is not necessary to be precise, but the data must be convincing. I note that Massachusetts has called for reconciliation of rate filing data with annual statement data to be submitted formally at the annual statement time. We are trying to resist this trend.

The HIAA sub-committee guidelines provide for an actuarial certification saying that premiums are reasonable in relation to benefits, to the best of the actuary's knowledge and judgement. The actuary is expected to take account of all the usual things that are a part of the success of future

rates. Interest must be included if it is relevant. For instance, the question of interest is less relevant for 2 year YRT rates than for lifetime level premiums. A discount for lapse would be included if it is relevant to the particular set of rates. In general, the actuary must use a realistic set of assumptions. The NAIC task force asked that we include the criteria for reasonableness in the guidelines, but the committee is resisting. We feel that it is the professional responsibility of the actuary to use reasonable assumptions, and the standards might be different from form to form and time to time.

The loss ratio is the basic measure of reasonableness of premiums in relation to benefits. With all of its faults, the loss ratio has been used for many years and is well understood by everyone. It is difficult to try to get away from it as the basic regulatory tool. Companies should be encouraged to add things such as actual to expected ratios, but the basic regulatory tool will still be the loss ratio. The anticipated loss ratio is defined as the present value of expected benefits divided by the present value of expected premium over the entire period for which rates are computed to provide coverage. The last clause is something the sub-committee thought of fairly recently. It makes good sense to project for just two years if you don't expect the rate to last more than two years.

The basic regulatory tool is the minimum loss ratio. The minimum loss ratio is the loss ratio which a reasonably well-managed company could expect to experience and still break even, or make a small amount of profit. It is not the expected or the best, but the minimum. The document that we are working with has three parameters for determining the minimum loss ratio. The first is the renewal clause, so that the minimum loss ratio will take into account differing guarantees. A non-cancellable policy obviously would be expected to have more margins, and would, therefore, have lower loss ratios than an optionally-renewable policy. Secondly, medical expense loss ratios should be higher than disability loss ratios. We have a five point differential at the moment. Public policy regulators want medical expense insurance to have as slim an expense margin as possible, to allow wide distribution and affordability. The third parameter is average annual premium per policy. A low average annual premium policy needs more margin for expenses. We have, at the moment, three bands, breaking at \$100 and \$200 average annual premium. The average annual premium is for the entire policy form based on a reasonable distribution by age, sex, dependent status and occupation clause. The fractional premium loading should be eliminated from the calculation of average annual premium. These are assumed to be self-supporting. The NAIC task force feels that there should be a fourth band breaking at a substantially higher average premium level, so that we are ready for higher rates which will inevitably develop with inflation.

The next point I want to discuss is an innovation in these guidelines which is now being given fairly wide distribution for the first time. I mentioned already the minimum anticipated loss ratio for the future, graded by three factors. In addition, when revising rates for an inforce form, a second standard must also be met. The combination of the actual past experience under the form with the expected future experience under the form must meet the same minimum loss ratio standards. The past actual premiums and benefits accumulated to the current dates must be respectively added to the expected future premiums and benefits. This loss ratio must also meet the minimum loss ratio standards. This standard will be especially important for coverages subject to cyclical trends, under which favorable experience periods

in the past will serve to limit future premium increases. On the other hand, very unfavorable experience in the past will not be recoverable under this standard, because the future premiums must still meet the same minimum loss ratio. It is quite possible under this standard to have new business on a form at a higher rate than renewals of inforce policies.

The precise minimum loss ratios are still under study. Among the things still to be considered more seriously by the committee are differing inflationary trends for expenses than for benefits. The actual range of the loss ratios in the committee's draft at the present time is from 35% for a low premium, non-cancellable form to 60% for a high premium, optionally-renewable form.

Finally, I'll mention that the guidelines we're trying to put together still leave room for flexibility. It is a band system after all, and if a premium is a little bit more to one side than the other, a point or two in the loss ratio should not be a cause for disapproval. Debit business has its own peculiarities which may require somewhat different standards than regular business. Other examples of needs for flexibility are very large deductibles or elimination periods. These policies may require somewhat lower standards than I have mentioned here.

MR. HOWARD ROSEN: I have a question about the loss ratio guidelines. Will all riders attached to policies also be required to meet this guideline, even if the riders are not necessarily the same type of coverage? For example, a medical rider on a disability form?

MR. THEXTON: Riders will be considered with a form or separately, at the company's option. If they are considered with a form, then they would be included in the calculation of the average annual premium per policy. Our intention is that rider forms which are normally a part of the same filing will create an entity that, as a total, must meet the loss ratio guidelines. If it is a disability form with a medical rider, the whole thing must meet the disability standard, and vice versa.

MR. WILLIS W. BURGESS, JR.: I'm a member of the HIAA sub-committee. As Pete pointed out, the intention was to treat the policy and all rider forms as one entity in determining the average annual premium level. However, the coverage component of the loss ratio could be determined separately or combined for the basic policy and riders, at the option of the company. One may feel that the company will take the option that gives them the highest minimum loss ratio. This is not necessarily true, since some companies only keep experience separately or combined. The purpose of the regulation is to allow a company the choice of reporting experience separately or combined.

MR. WILLIAM C. WELLER: Is there recognition, within the guidelines, of varying premium rates by states?

MR. THEXTON: The Commissioners asked us to consider that. I anticipate that we will try to avoid any requirements of separate loss ratios by state. Even if a company has different rates by state, it is desirable to be able to combine all experience. Rate increases will then only apply where appropriate. The Vermont problem is unique, and we haven't found a good way to deal with their situation. Similar requirements are no doubt going to be made in other states, and when we think of a good way to head them off, we will certainly include it in the guidelines. At the moment, we are trying to stay as flexible as possible.

MR. W. KEITH SLOAN*: I would like to relay one question to the group developing the proposed guidelines. This question was asked repeatedly at a meeting at the Minnesota Insurance Department, which is in the process of developing an emergency set of guidelines to serve until the final NAIC guidelines are available. This question is, "When you submit the guidelines, will they be accompanied by a report showing the rationale of their development and the reasons for differences?"

MR. THEXTON: We will have to make some kind of report with as much of the reasoning as we can put together.

MR. FRANKOVICH: Pete, you mentioned 35% as the lower range for minimum loss ratios and 60% for optionally-renewable high premium forms. What types of changes in the loss ratio would be based upon the renewal provisions? Secondly, what type of product would be receiving a 35% minimum loss ratio, and what types of policies and renewal characteristics would have a 60% minimum loss ratio?

MR. THEXTON: I knew I was in trouble as soon as I mentioned a specific number! A 35% loss ratio applies to a non-cancellable form with an average annual premium of less than \$100 a year. That might be a hospital indemnity form issued primarily for younger ages, without a maternity benefit, in amounts of \$30 a day with simplified underwriting and administration. A high premium optionally-renewable form might be a comprehensive major medical with a \$100 deductible or no deductible, hospital and surgical with no maximum, 80% co-insurance and maximum out-of-pocket of \$1,000 a year per family. The average annual premium under this form is about \$600 a year, and going up at about 17% a year. The loss ratios are 45%, 50%, 55% and 60% for disability going from non-can to optionally-renewable. The ratios are reduced five points if the premium is between \$100 and \$200, and another five points if it is under \$100. The medical expense ratios are the same for optionally-renewable and conditionally-renewable forms, and five points higher for guaranteed renewable and non-cancellable forms. We have been asked to get some justification for these ratios. We're in the process of gathering some answers from actuaries as to what the per policy expenses are at well-managed companies to set the minimum loss ratios. Again, we're trying to set numbers which will be minimum loss ratios, not the best.

MR. MORTON B. HESS: How do the loss ratio standards prepared by your sub-committee compare with the current standards of insurance departments? If they are lower, do you expect the states to accept them?

MR. THEXTON: The 45% non-can ratio is lower, because hardly any state has established a rate of less than 50%. On the other hand, for conditionally-renewable and medical forms, 55% or 60% is probably higher than is required in most states. We were asked, by the way, to make a complex grid. It was not our idea in the sub-committee to have all these different numbers with grading for this and grading for that. We were asked to be more complicated. The state examiners need more complete guidelines so that they can be more flexible. The technical task force specifically asked us to come up with something with more cells in it so they'd have better standards for their non-actuarial personnel to look at.

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MR. BURGESS: It is very important for everyone to realize that there are two different committees considering this question. The HIAA sub-committee is representing the industry. Its charge is to determine reasonable loss ratio guidelines from the standpoint of insurance company management. The NAIC task force is charged with determining reasonable guidelines from the standpoint of protecting the public. Actuaries are on both of these committees, and, of course, they are trying to do the best professional job. But, there is definitely room for differing opinions. These bodies need input from all the various interests - industry, regulatory, etc., to help them reach conclusions.

MR. FRANKOVICH: Pete, you mentioned taking past benefits and premiums and combining them with future expected benefits and premiums to determine if the form meets loss ratio standards for rate revisions. Is the sub-committee considering using interest on past premiums and benefit payments before combining them with expected future experience?

MR. THEXTON: The guidelines as they now stand say to accumulate past premiums and past claims. Interest should be used to the extent that it gives a more truthful and accurate representation of the past experience. That is really a professional matter for the actuary to determine. Clearly, inclusion of interest will tend to reduce the historical loss ratio. The reduction may be excessive if the expenses are not also considered in this type of calculation. Use of interest is not specifically addressed in what we're doing, but left to the professional judgement of the actuary.

MR. FRANKOVICH: In studying the experience, are reserves to be included; and if so, on what basis? Are increased reserves included in determining the expected benefit ratio when applying for rate increases?

MR. THEXTON: Again, the guidelines do not specifically say what kind of reserves to use. You should use the reserves you find appropriate to the form. As to whether or not reserves for the future should be increased according to the increased morbidity level, that would depend on the premium assumptions you want to use. The guidelines are not specific. We want to give the actuaries room to use their best judgement and, of course, whatever is practical. Another flexibility that is being allowed is to include active life reserves as a benefit rather than a premium. We know that is theoretically wrong, but as a practical matter, it may be a sound substitute for smoothing out the experience. That would be permissible as long as the whole thing is laid out in full and the department can understand what you've done.

MR. FRANKOVICH: Thank you Pete. I'd like to turn the podium over to Bob Shapland.

MR. ROBERT B. SHAPLAND: The first part of my discussion will be limited to policy or active life reserves. In addition, many of my comments do not apply to non-can insurance.

While the basis for current active life reserve standards for accident and health business is similar to that for life insurance business, it seems to me that this may be inappropriate and deserves study by our profession. I feel that accident and health reserve standards should take into account both the legal and environmental differences between accident and health and life insurance. These differences include the following:

1. The lack of nonforfeiture values under A&H (making lapse rates more important in the funding process).
2. The right to raise rates and/or cancel under many A&H policies.
3. The deterioration in accident and health claim experience due to inflation, changing work ethic, changing medical care practices, increases in social insurance benefits, etc.
4. Possible differences in the effect of initial underwriting as well as different levels of such underwriting under A&H.
5. Lack of industry uniformity or standards regarding the pre-funding of ultimate costs via the initial rate structure on other than non-can forms.
6. The lack of industry uniformity or standards regarding the pre-funding of ultimate costs when premiums are raised.
7. State regulation of initial and renewal premiums.

The ultimate practical result is that current A&H active life reserves do not represent company liabilities in the normal sense. They do not represent the excess of future claims and expenses over future premiums. Such determinations would have to take into account persistency, cost trends due to inflation, aging, etc., as well as future rate increases as limited by state regulators and as affected by anti-selection. All of these factors would make such calculations extremely speculative at best. Assuming that regulators would rather approve rate increases than let companies become insolvent, it may be that all companies are adequately reserved (with the possible exception of non-can).

The complexity of the principles applying to reserve standards for A&H is compounded when one considers what adjustments should be made in initial reserve tables for the following:

1. Future claims are projected to be higher than anticipated.
2. Past premiums have been insufficient to fund the initial reserve structure.
3. A rate increase is implemented.

Where does all of this lead one? Possibly to the conclusion that active life reserves for A&H have to be redefined - their purpose thought out anew. One possible redefinition is that a reserve for A&H (other than non-can) is simply the amount of pre-funded future costs that have been contributed for this purpose by the policyholders. This is seen to be a retrospective as opposed to a prospective viewpoint. Under this system, reserves would be established only if policies are intended to remain in force for many years, higher future claim costs and/or expenses are anticipated, and the early premiums actually include margins intended to fund the higher costs. This approach is supported by our inability to accurately forecast future claims, expenses and persistency and our reliance on our rights of rate adjustment and/or cancellation. A second approach is to establish reserve tables at issue based on future expectations. This second approach immediately raises questions as to whether or not such reserves should be based on current claim costs, take into account expected inflation, take into account persistency, take into account rate increases, etc. In answering these questions, it seems that one must first establish how gross premiums were determined, since it is the level of gross premiums which establishes the intent and ability to accumulate reserves. In other words, reserves should not be established independently of gross premiums.

If the NAIC is to adopt new reserve standards, then the premise for such reserves should be understood by all. If reserves are to be based on a prospective basis then, in essence, the NAIC is establishing the level of margin in gross premiums over current costs which is to be used to fund future higher costs. All aspects of such a funding system should be widely understood by companies, regulators and the public in general. Also, if such reserve or funding standards are to be realistic, they should consider taking into account the effect of:

1. Initial underwriting, if any.
2. Initial and renewal expenses.
3. Aging.
4. Persistency.
5. Premium margins to cover anticipated future cost increases due to inflation, etc.
6. Premium adjustments after issue and the basis thereof.
7. Premium margins related to renewal guarantees.

Before considering adoption of new tables for minimum standard purposes, the reserving principles involved should first be established. Naturally, those principles should take into account and reflect the environment under which accident and health insurance exists. While the proposed tables reflect more current costs by age than the tables currently in use, I feel that they should not be adopted before these other matters are discussed and finalized.

In order to take a look at the impact of some of the environmental factors that I have mentioned on prospective reserves, I have developed some examples which hopefully are realistically related to today's environment. These examples examine the effect of underwriting standards, select vs. ultimate experience, persistency, and inflation on reserves.

The reserve example I have utilized for this purpose is based on the calculation of net level reserves for a \$10 daily hospital benefit issued to a male, issue age 45, where premiums are calculated to be level to age 65. I have assumed that one company applies full health underwriting in the issuance of such business while another company sells this same benefit nonselectively (with a 1-year waiting period for preexisting conditions). I calculated net level reserves for the first company using 3% interest, the proposed table, and 1958 CSO mortality. For the second company selling this insurance nonselectively, I used the same basis for calculating reserves except that I have assumed that claim costs after the first year will be higher because of the nonselection. For this purpose, I assumed that the nonselective costs at age 45 would be 88% higher than the proposed table and that this percentage would grade to 31% higher at age 64. A comparison of the two reserve tables shows that the reserves for nonselective issues reach a low point of 91% of the proposed table at the end of the 19th year.

Using the same example for the company selling insurance on a selective basis, I have assumed that the proposed table should be adjusted to reflect deteriorating experience due to the wearing off of initial underwriting and the anti-selection process that takes place on each renewal. Here, I have assumed that the first year claim costs are 70% of the proposed table and reach 132% by the end of the 20th year. The interjection of this select or durational assumption increases the reserves to a maximum of 186% of the proposed table at the end of the 1st year.

Using the same selective room and board example as before (without durational adjustment), I have compared reserves based on the use of persistency vs. mortality only. Here, the persistency assumption used graded from 71% in the first year to 94% the 20th year. The reserves using persistency reached a maximum of 124% of the proposed table by the end of the 19th year.

To test the effect of inflation, I started with the proposed table for the \$1,000 miscellaneous hospital benefit. Since there may be some disparity in the approach companies take in the setting of initial premium rates to cover anticipated cost increases due to inflation, I have made two additional reserve calculations. The first additional table was similar to the proposed table except that initial net premiums assume that 10% annual inflation will be effective for 4 years following issue with no inflation thereafter. The other table is similar except that premiums are based on the 10% inflation continuing for the full 19 years following issue. Under these calculations, the 5th net level terminal reserve under the 4-year inflation assumption is 218% of the proposed table while the 5th net level terminal reserve under the full 19-year inflation assumption is 958% of the proposed table.

The conclusion I draw from these examples is that the factors I have studied can have a much greater impact on reserve levels than the changes brought about by modernizing claim cost assumptions. Therefore, these factors and possibly others should not be ignored when adopting reserve standards under the prospective approach.

In discussing the adequacy of claim reserves, I will limit my remarks to the adequacy of claim reserves on long term disability claims. This is because I have seen no unusual development in claim run-out or lag factor reserving which would lead me to the possibility of reserve inadequacy for hospital-medical claims.

In studying the adequacy of reserves for long term disability claims, we are really talking about studying the adequacy of the 1964 Commissioners' Disability Table. In examining this adequacy, I have limited my studies to the experience of my company and that under Social Security benefits. In my own company, our studies indicate that our actual continuance exceeds the 1964 CDT after the third or fourth year of disability. It also shows that this relationship increases as the length of disability increases. Because of this experience, our company has modified the 1964 CDT for reserving purposes.

Because the Social Security Administration recently published graduated disability termination rates, I thought it might be of interest to compare these termination rates with those of the 1964 CDT. The graduated Social Security tables are based on the experience for 1973 through 1976. I made comparisons over a spread of ages and at 1, 3 and 5 years after qualifying for benefits. These studies show that the annual Social Security termination rates are far below those for the 1964 CDT. For males, the Social Security termination rates are approximately 40% of the 1964 CDT and for females approximately 30%. This means that the 1964 CDT would be inadequate as a reserving basis for Social Security. This does not necessarily mean however that the 1964 CDT is an inadequate reserve basis for the insurance industry since its experience may differ from Social Security experience.

MR. FRANKOVICH: If I understand what Bob said, he feels that the reserves should be based on realistic gross premium assumptions. Is there any provision for using the preliminary term approach currently in existence as a statutory minimum?

MR. SHAPLAND: First of all, I did not propose that active life reserves be based on premium assumptions. I said that they should be based on more realistic assumptions, only if a prospective viewpoint is the way to set up reserves. I have very serious reservations about whether that is right. I do agree that reserve liabilities should recognize early expenses, if that is the question.

MR. E. PAUL BARNHART: What seems to be happening in the U.S. is a decrease in confidence on the part of regulatory authorities in the professional competence and judgement of actuaries. We need to think about this very seriously. It is highlighted all the more by the fact that, in Canada, the opposite trend seems to be occurring. New regulations in Canada recognize the existence of a valuation actuary who is relied upon to a much greater degree than here in the U.S. to establish sound actuarial assumptions for evaluating a company's liabilities. Back in the first few months that the technical advisory committee that I chaired was working with the NAIC task force, it became evident that the regulatory people on the task force were anxious to see a very exact, very detailed set of valuation assumptions so that a person in an insurance department, without a great deal of actuarial training, could apply these rules and determine whether or not the company reserves met the minimum standards. For a while, we tried to take the position that we are setting aside the judgement of a professional actuary too much if we try to write out a set of automatic valuation standards. Our first reaction was that the regulatory authorities should put a little more reliance on the judgement of the professional actuary. And, then we began to realize that they had real justification for not doing that. A lot of us should spend a year or so in a state insurance department and look at the kind of assumptions and attempts at justification that come across the desk of the insurance department actuary. We would develop a good deal of sympathy for the regulators lack of faith. This ought to cause us some very deep reflection on just why it is that governmental authorities appear to be leaning in the direction of relying on a set of objective minimum standards in preference to relying on the professional actuaries.

I challenge everybody here to think very deeply about this issue of what is happening to the credibility of the professional actuary in the eyes of regulatory people. Also, if, in the U.S., we move too far toward reliance on a catalogue of minimum acceptable interest, morbidity and other arithmetic kinds of standards, then I think that the public is in still further danger. Simply because they are promulgated as regulatory standards, people tend to put a rather false faith in their adequacy and reasonableness.

MR. HESS: I would like to thank Paul for saying things that come better from him than me. In something over 10 years dealing with Accident and Health premiums and rate increases through the New York Insurance Department, I got more experience on rate increases in one month than most actuaries in individual health might get in 5 years with their own company. We were very reluctant to establish particular standards either for premiums or rate increases, but we found that it was better to have objective published standards which company actuaries could use in making their presentations.

One thing I would like to say is that for certain Accident and Health policies it is totally inappropriate to use a level premium approach. Yet company after company persists in attempting to sell on a level premium basis.

MR. FRANKOVICH: Everyone in the insurance industry knows that a policy will have increasing claim costs because of a deterioration of health. Therefore, I believe that even a step rated policy should have some type of prefunding to meet future renewal guarantees.

MR. SLOAN: Speaking as a former member of the task force which has been the subject of most of this afternoon's discussion, I would like to furnish a little more background to the situation Paul reported. It is, unfortunately, entirely too true that too much of what is submitted to a state insurance department does not reflect the level of professionalism we would like. (See my comments in the Academy's Newsletter for May, 1978, Volume 7, No. 3, Page 2). However, this was not the reason for the apparent move away from reliance on the actuary's judgement. The fact is that the task force was originally established by the C-3 (Life insurance) subcommittee. In the early sessions, the task force, particularly John Montgomery and I, favored more realiance on the individual actuary and less rigidity as to standards. This is reflected only in our "alternate method" (Proc. NAIC 1974 Vol. II, p. 526), since it appeared to be opposed by all industry representatives and at least one task force member. Later, when the task force became involved in health insurance, the subject did not come up. I would like to point out, however, that the rate guidelines we have been discussing and the model regulation pertaining to health insurance reserves are not statutory in nature. The actual statute relating to health insurance reserves does rely on the actuary, since it requires basically that they place "a sound value" on liabilities.

MR. FRANKOVICH: At this point I'd like to turn the podium over to Tony Houghton to make the formal presentation of his paper.

MR. ANTHONY J. HOUGHTON: Many of the reasons for creating and circulating in published form a set of medical expense reserve tables with underlying claim costs have already been stated in the paper "Development of the 1974 Medical Expense Tables". Some repetition of these reasons occur in our "Author's Review of Discussions". Nevertheless, they must be repeated here at least briefly.

1. The state requirements for accident and health insurance in many states provide minimum table standards for certain benefits, but leave the reserves for other benefits subject to the requirement that "each company is required to establish reserves that place a sound value on the liabilities under such benefit".

Therefore, where there are gaps in published tables such as for cancer benefits, we perceived a need to fill that vacuum.

2. The NAIC actuarial certification further requires an actuary to certify that the reserves used are adequate, as well as, meet the legal statutory standard. Therefore, when we are aware that a current statutory table is no longer adequate, we believe that we must use a stronger table.

We believe that is the situation with regards to many of the reserve tables generated by the 1956 Intercompany Hospital and Surgical Claim Costs.

Several people have brought up arguments that for benefits which change with inflation, the traditional static morbidity table using the current level of charges is inadequate. The proper solution to this problem is difficult as a

practical matter and my personal opinion is that policies providing benefits which grow with inflation such as full service major medical plans should be written on an attained age basis rather than guaranteeing the original age will be used in any recalculation of rates. Many of the comments we have seen indicate that the actuaries want to dilute this renewal guarantee by making the increased morbidity an addition to the original level premium.

In our opinion if one wants to calculate reserves for benefits which increase with time there are three alternatives.

1. Use a static table, but replace such a table periodically.
2. Use a table that incorporates some inflation trend for a short period (5 year or less) and assumes a level premium.
3. Use a table that incorporates inflation over the life of the policy with assumptions as to premium revisions consistent with such inflation and intend to keep such a table unless the inflation assumptions and premium change assumptions are substantially inaccurate.

As a practical matter, we believe the first alternative is most suitable. On an actuarial and technical level, my firm can conform to either of the other two alternatives, but these present difficulties to companies and insurance departments and are expensive to administer.

A few people in discussing our paper suggest major medical insurance is so diverse because of the markets companies serve, their underwriting, claim practices, etc. that no single table should be established as a minimum, but methods or procedures for calculation based on sound actuarial principles should be used to develop reserves consistent with the gross premium calculations.

Of course, this same argument can be advanced for every form of health insurance including disability income, hospital indemnity, etc. Mr. Shapland in his presentation gives an example of two hospital indemnity plans with expected claim costs that vary because of underwriting. Following his assumptions, he produces results that suggest the reserves ought to be substantially different for each plan. I may accept his arithmetic, but I reject the conclusion that no minimum reserve standards are desirable because some company may need greater reserves to be adequately funded or alternatively some company may be asked to establish reserves which are somewhat higher than they need.

It should be clearly understood that minimum reserve standard does mean "minimum" and no competent actuary has ever suggested that a company limit its reserves to that minimum level if they actually require greater reserves. In fact that is exactly what our paper is all about. We conclude in many cases the statutory minimum is inadequate, and we recommend reserves which will be acceptable because they are higher than minimum statutory values. When an actuary has additional information about his company's morbidity for a book of business that suggests higher reserves, there is no restriction on using such reserves.

When we determined that new reserves should be established, we assumed that they would be applied prospectively to business written after the reserves were published or at least to policies first valued after the reserves were published. This would mean policies issued in 1977 and subsequent under the first approach and policies issued in 1975 and subsequent under the second approach.

For some policies such as cancer a company might not have had any reserves previously or the reserve basis was so unsatisfactory that a retrospective replacement is the most sensible course of action.

The review of our claim costs which involves combining basic data, using or disregarding trends, graduations, and extrapolations at high ages, and other techniques produced recommendations from other actuaries which were meritorious in several instances. We believe that our recommendation for adjustment factors for miscellaneous benefits other than a \$200 maximum should be replaced by factors which are by age and sex as well as on a composite basis and such a table appears in our Author's Review. We also acknowledge the need for a modern continuance table to replace the table mentioned in the Olson and Bartleson paper of 1957. Mr. Barnhart's discussion included such a continuance table and it should be very useful to health actuaries.

There were some recommendations which I believe are impractical to implement and others which are debatable as to the most preferable approach. An example of this is the recognition of a trend for an indemnity type benefit where the trend is possibly reversible or cyclical. In the case of maternity, the TSA reports show downward frequencies. We used the average frequencies of the 5 year period 1968-1972.

Alternative approaches could have been:

1. Use only the 1971-72 frequencies.
2. Project the 1968-70 and 1971-72 frequencies to the probable 1977 frequencies.
3. Project the 1968-70 and 1971-72 frequencies to the probable 1977-97 frequencies.

We did not use 3) because we do not know what a proper projection factor would be. We probably could have done 1) or 2) if we were convinced that this was preferable to the 5-year average. We took the position that the maternity frequencies now at an all time low level may increase in the future and therefore, the published 1968-72 experience is a reasonable basis for claim costs, premiums, and reserves. Certainly this point is arguable.

We note that a new disability table is scheduled to be produced by a Society Committee. The latest TSA report shows a trend in claims over each two year period. As an example, in Table 10 page 164 for male occupation 1, the annual claim cost for \$1 of monthly benefit, 1 year maximum, 0/7 elimination period is:

1968-69	.160
1970-71	.184
1972-73	.186
1974-75	.207
1968-75	.184

What value should be in the newly constructed disability table? Should the Committee assume the 1974-75 experience is typical of future experience and use that level or should they project forward to even higher levels or ought they use the average experience with suitable margins?

The point involved is that no table can be constructed which would avoid every potential problem or satisfy all the personal preference of all other actuaries with an interest in such a table.

We believe our 1974 Medical Tables are a distinct improvement over the 1956 Intercompany Hospital and Surgical Tables and fill a vacuum with regard to other popular plans such as cancer and medicare supplementary policies. The question about the reserving of major medical benefits transcend the specifics of any particular major medical valuation table.

In conclusion, I might mention some of the dates leading to the publication of our paper and the accompanying discussions and our Author's Review.

July-October, 1976	Preparation of values
December, 1976	Books available from printer
April, 1977	Paper submitted to Society
August, 1977	Paper accepted
February, 1978	Galley proofs sent to members
July, 1978	Discussions received
October, 1978	Paper discussed at Society meeting
April, 1979?	Printed copy of paper and discussion

If we had decided to delay publication and use of our values until after publication of the paper, the time frame would have increased almost 3 years. Obviously, there is value to obtaining as much discussion as possible about tables of this type, but there is also the balancing of this factor with the time factor.

Our judgement was that the actuaries in our firm needed a more up to date standard for medical insurance which could not wait. We knew our values could never be completely current because of the time lag in reporting experience (1973 and 1974 data is currently available) and the conflicting opinions about actuarial approaches would always have some actuaries favoring alternatives in valuing benefits.

We hope that the majority of health insurance actuaries will find the tables helpful.

MR. LEE A. ZINZOW: Tony and Ron are to be commended on their excellent work in putting forth a paper of this magnitude in an area which has heretofore attracted relatively little research. Most of my comments, relating to the derivation of cancer values, have been presented in a discussion to the paper and will not be repeated here. However, I would like to offer some additional thoughts, prompted by the Author's Review of the discussions and subsequent conversations with the authors which I hope will enhance the value of their work and provoke further thought.

In the Author's Review of my discussion to their paper they mention that they consider the majority of costs comprising cancer claims to be in the nature of indemnities whose amounts are defined to be the maximums provided for by policy inside limits. While recognizing that this principle does not apply to all benefits, the authors apparently feel that it is not inappropriate to incorporate this concept into their derivation of cancer claim costs. To the extent that costs always, in fact, exceed inside limits the authors' implicit assumption that the nature of the admission has no bearing on the expected level of costs, except to the extent that length of stay may vary, is indeed correct. However, their procedure in deriving cancer costs from all-cause costs still seems to be predicated on the presumption that costs are exactly proportional to length of stay, and this is clearly not the case if inside limits are always reached.

The standard cancer expense benefit as defined by the authors, for instance, provides for room and board benefits of \$50 per day for the first 7 days of hospital confinement and \$30 per day thereafter. If this is the basis for deriving all-cause costs, and if the average cancer stay is longer than the average all-cause stay, it would appear that a method whereby all-cause costs are converted to cancer costs by means of hospital utilization ratios will give undue weight to the higher costs incurred during the early days of confinement. (Similar logic applies to most other components of the standard cancer expense benefit - drugs and medicine, surgical, anesthesia, blood and plasma, and ambulance - since the maximum payout for all of these benefits is greatest during the early days of confinement.)

In my discussion I illustrated the dramatic effect of claim cost inflation on reserve levels. The authors, in their reply, mentioned that they understand my projection of claim cost inflation to be attributable to increases in claim frequency. To a large measure this is true, but it should also be recognized that where maximum scheduled benefit amounts are not always paid, inflation in medical expenses must also be considered. Also, it appears that certain benefits, i.e., radiotherapy, chemotherapy, extended benefits and perhaps others, i.e., transportation, may come into more frequent use as the result of advances in technology and treatment procedures. In any event, it would appear that a variety of factors are likely to contribute to a secular increase in claim costs, and it would seem to me incumbent upon the actuary to recognize the possible effects of such inflation when establishing reserves which are to be deemed adequate to account for the excess of future expected claims over expected premiums, especially if future rate adjustments are not anticipated. It may be that incorporation of lapse assumptions into reserve calculations would serve to reduce reserve levels more than inflation would increase them, and the actuary may feel comfortable with reserves developed without such adjustments, but these factors should at least be considered.

One other factor which should be considered in establishing proper premiums and reserves is the geographical distribution of risk. Statistics have shown that expenses related to cancer claims vary significantly by area and that rural areas enjoy better experience than large cities. If a particular block of business to be valued is situated in a "high cost" area, the actuary might wish to incorporate additional contingency margins into the claim costs.

The authors suggested that I publish the claim frequencies and amounts used to obtain the values presented in my discussion. Cancer incidence rates and benefit amounts I would consider appropriate for the schedule of benefits defined by the authors, and which were used in deriving the values shown in column 3 of the Table of my discussion, are as follows:

<u>Age</u>	<u>Incidence Rate</u>	<u>Benefit Amount</u>
22	.000697	1213
27	.000795	1237
32	.001544	1359
37	.002498	1440
42	.004175	1417
47	.005792	1708
52	.008084	1655
57	.012252	1928
62	.014012	1796

<u>Age</u>	<u>Incidence Rate</u>	<u>Benefit Amount</u>
67	.017155	1801
72	.022619	1878
77	.027616	1910
82	.027616	2103
87 & Over	.027616	2777

MR. BRUCE R. DARLING: I think it is a bad concept to have a minimum reserve standard apply to every company across the board for all types of major medical policies. Industry experience may not be appropriate. We have a very limited major medical policy with many inside limits, and the proposed tables produce reserves that are much too high for our block of business.

MR. HOUGHTON: Occasionally, I have seen policies which are so limited that they can be valued better by piecing together the room and board, miscellaneous, surgical, etc. It is true that you will find enormous variations in experience. Some companies have quite low levels of claims, particularly with special policy provisions. At the same time, there must be others that go exactly the other way.

MR. SLOAN: For the record, I would like to report that shortly after the proposed cancer insurance tables were released, I had the opportunity to test them as to their representation of claim costs against a total of 12,500,000 life years' experience with exactly the same benefits. I found that in the aggregate the proposed table produced the benefits actually incurred and that the margins described in the Houghton-Wolfe paper are sufficient for their purpose. I recommend to the Technical Task Force that they be adopted as a valuation standard for this line as quickly as possible.

The following continuance table, based on a sample of 16,000 insured cancer claims, may be of help to those who attempt to value benefits which do not quite fit the conversion chart in the published tables. This is a unisex table, and is based on a population which is almost evenly divided by sex.

Days	Number Con- fined at Least n Days	Number of Days of Confinement through nth Day	Days	Number Con- fined at Least n Days	Number of Days of Confinement through nth Day
1.....	1,000.0000	1,000.0000	26.....	127.8812	11,458.0896
2.....	928.0558	1,928.0558	27.....	118.5098	11,576.5994
3.....	862.3399	2,790.3957	28.....	111.1175	11,687.7169
4.....	806.2863	3,596.6820	29.....	103.8416	11,791.5585
5.....	755.3550	4,352.0370	30.....	96.5075	11,888.0660
6.....	710.9429	5,062.9799	60.....	18.1024	13,200.8118
7.....	663.2130	5,726.1929	90.....	5.2968	13,493.8253
8.....	610.2444	6,336.4373	120.....	2.0372	13,597.2581
9.....	558.2072	6,894.6445	150.....	0.8731	13,634.1683
10.....	504.3655	7,399.0100	180.....	0.4074	13,651.6285
11.....	461.5250	7,860.5350	210.....	0.3492	13,666.7023
12.....	421.5948	8,282.1298	240.....	0.1164	13,670.7181
13.....	380.7916	8,662.9214	270.....	0.1164	13,674.2101
14.....	346.6239	9,009.5453	300.....	0.1164	13,677.7021
15.....	312.9220	9,322.4673	330.....	0.1164	13,681.1941
16.....	287.7764	9,610.2437	360.....	0.1164	13,684.6861
17.....	262.5727	9,872.8164	390.....	0.1164	13,688.1781
18.....	240.2212	10,113.0376	420.....	0.1164	13,691.6701
19.....	221.1292	10,334.1668	450.....	0.1164	13,695.1621
20.....	202.0954	10,536.2622	480.....	0.1164	13,698.6541
21.....	184.3422	10,720.6044	510.....	0.1164	13,702.1461
22.....	168.5681	10,889.1725	540.....	0.1164	13,705.6381
23.....	157.1594	11,046.3319	570.....	0.1164	13,709.1301
24.....	146.4493	11,192.7812	600.....	0.0582	13,712.5639
25.....	137.4274	11,330.2084	630.....	0.0582	13,714.3099

MR. SHAPLAND: I want to ask Tony a question regarding his viewpoint on the reserve tables. I understand that the proposed tables are minimum standards to measure liability. He says in the beginning of his paper, "Each company is required to establish reserves that place a sound value on the liabilities under such benefits". Is this liability the expected future amount of excess claims and expenses over premium, taking into account future rate increases?

MR. HOUGHTON: The reserve is the present value of benefits, minus the reserves on hand now, minus future premiums (which may not be the premiums being charged now). If you are considering inflation in the present value of the future benefits, I don't think there is any type of major medical calculation that can be made without also assuming future premium increases. However, I think people have taken the position that calculating future benefits using the current level of charges and premium will also be satisfactory. The present level of benefits will go up, but the premiums will also go up. That has always been the implied qualification in saying that a major medical reserve is adequate. If it is not understood that way, I don't think any major medical reserve is adequate. I don't claim that ones we establish with these tables would be adequate over a lifetime for a company.

If a reserve is known to be inadequate now, I think there must be a qualification that the reserve is only adequate with the premium rate I am legally entitled to file for and expect to get. But, if rate relief is denied, and we know that the premium rate cannot possibly pay the benefits, we would have to recognize the current deficiency.

MR. HESS: Could you comment on the appropriateness of your tables to calculate gross premiums for the various benefits and, in particular, how they will relate to qualifying forms under minimum anticipated loss ratio standards?

MR. HOUGHTON: We did not put margins into the hospital claim costs, except for the fact that we used ultimate experience. I don't know if they are appropriate for any single company, but since they are intercompany ultimate experience, one wouldn't find them to be completely inaccurate. But, to calculate premiums, selection factors, lapse factors, realistic interest rates, and so on should be included. On a miscellaneous benefit, you would run into a problem because inflation beyond 1977 is not built in. On surgical, I have noted that there has been a trend upward. We did not include a trend, but used a 5 year average. We should be very careful in looking at trends before pricing surgical. Certainly, I don't think you can use the cancer numbers, although we put in some specific margins that were called attention to in the paper. In general, I would suggest not using the tables for gross premiums. By coincidence, some tables may come close to final pricing assumptions. There may be elements which are useful in gross premium calculations. For example, the cancer adjustment tables have relationships of one plan to the next that are realistic. But, to use the tables for gross premiums without considering adjustments would certainly not be proper.

MR. FRANKOVICH: We will conclude this session now. I would like to thank Tony Houghton, Bob Shapland, Pete Thexton and you, the audience, for your excellent participation.