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GROUP MAJOR-MEDICAL EXPENSE INSURANCE

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THIS paper deals with what we in the Prudential now call Group Major-Medical Expense Insurance, or what the insurance trade journals have been calling "catastrophe coverage." The term "catastrophe coverage" has been applied to a multitude of plans, and does not convey the same meaning to every one. The type of coverage that will be dealt with here is a broad form of group disability insurance designed to provide protection against substantial expenses arising from hospital care, surgery, doctors' treatments, nursing care, medical supplies, etc. Early this year the Prudential decided to go ahead with the development of such a group plan, and I believe that our thinking and the specific statistical material developed provide a worth-while record for anyone now contemplating the issuance of this new form of coverage.

Under present day hospital, surgical, and medical expense insurance plans, the emphasis has been on insuring against the little expenses which might more properly be handled by the family budget rather than by the mechanism of insurance. Furthermore, these plans which are designed to take care of small bills are limited by rather low maximum amounts so that little protection is provided in the event of a really costly illness. The traditional approach has been to provide a modest scheduled benefit for a fixed premium, with the result that the claim experience under such coverage is not too much influenced by the amount of charges made by the hospitals or doctors, or by increases in the cost of services due to monetary inflation. In view of these considerations we felt that one of our objectives should be a plan which was not subject to these low maximums and which, wherever possible, covered the cost of services rather than providing fixed benefits.

If we could completely retrace the steps of the industry, our best approach to this form of coverage would undoubtedly have been through closer past cooperation with doctors and hospitals so that service type plans such as the Tennessee or Wisconsin medical plans, representing a joint effort on the part of doctors and the insurance industry, could have been made to fill the bill more generally. The further development of such plans may yet be the final answer to this whole problem, but this solution is one which unfortunately is not available at the present time. It would, therefore, seem that the insurance companies would have to run the risk

of proceeding on their own if they are to provide any kind of an answer now. By this, I do not mean to imply that we should ignore the doctors and the hospitals in our development of this form of coverage. On the contrary, it will only be through the understanding and cooperation of these people that we will be able to successfully provide this type of insurance.

PRELIMINARY CONSIDERATIONS

Long before our thinking began to crystallize as to a specific type of plan, we had in mind the over-all objective of taking care of the bulk of the expenses incident to a serious illness, and we turned our attention to the questions of what weaknesses there would be in such a program and what controls might be practical and effective. One of the most difficult factors is the matter of monetary inflation. As has already been indicated, there is a vast difference between providing a type of service for a fixed premium and writing a fixed benefit for a fixed premium. Unless a premium is completely redundant initially, the steadily increasing cost of medical services will produce a claim rate which cannot be supported by the premium income. This is one problem to which I do not think there is any satisfactory answer. On a group insurance basis, we hope that it will be possible to sell such a plan by educating the purchasers to the fact that they are essentially buying services rather than fixed benefits and that the premiums will be raised from time to time in keeping with any increase in the cost of such services. This is something that will have to be understood from the outset, and insurance companies in their rerating of this type of benefit program may find it wise to anticipate the increase in claims due to the trend in the cost of medical services rather than to wait upon the resulting losses.

Another problem of extreme importance is the type of service which an insured may select and the fact that the cost and utilization of medical care is often related to ability to pay. It seemed to us that a program which made it a matter of indifference to the insured whether a surgical bill was $200 or $500 would be bound to increase the over-all cost of medical services in the long run. As an answer to this, one insurance company which is currently marketing this type of coverage has introduced the concept of coinsurance, that is, the insured pays a percentage of the charges. The purpose of the coinsurance, of course, is to identify the interests of the insured and the insurance company in incurring only those charges which are absolutely necessary. This idea of coinsurance is fine in principle, but is obviously not fool-proof. If a doctor should be willing to settle for the insurance company's share of the bill, the purpose of the coinsurance would be to a large measure defeated. This is one reason why

I stated above that it would be important for the insurance industry to work closely with the doctors if this form of coverage is to succeed. On the whole, we are counting on the support of the doctors to make this form of private insurance work. Many doctor groups throughout the country have already shown considerable interest in this problem of providing medical care at reasonable cost, as is evidenced by the number of grievance committees now existing throughout the country for the purpose of hearing complaints in connection with fees. If this form of coverage assumes the importance indicated by the interest it has already aroused, it would seem very much worth while for the Health Insurance Council, which has been so successful in its efforts to promote understanding between the hospitals, doctors and insurance companies, to turn its efforts to winning the doctors' help in the operation of this type of plan.

Complete coverage such as we had in mind becomes extremely costly if extended to cover small medical bills. This is due not only to the increased utilization of medical services which would be experienced in connection with minor illnesses, but also to the high expense rate which would result. The idea of a deductible amount which has already been used by some companies offering this type of insurance seems therefore to be necessary.

Each particular type of medical service presented its own peculiar problems and our initial thinking was to try to impose separate controls on different services where possible. With regard to insurance for hospital expenses, for example, we know that a person has a wide choice in the type of accommodation which he may elect. The daily room and board charge might vary from $6 for ward accommodations to $20 or more for a private room. We did not feel we could allow this latitude in the plan without charging a premium which contemplated use of the most expensive type of accommodations by a high percentage of the claimants. For this reason, some limitation on this daily room and board benefit was indicated. We eventually decided that we would not put any limit on room and board charges unless private accommodations were chosen. In the matter of charges made by a hospital other than for room and board, we felt that although coinsurance was a desirable factor, it was probably less essential here than in the field of medical or surgical care.

Again in considering the problem of providing surgical coverage, we were disturbed by the wide choice of services available to the insured. Fees charged by a specialist might be considerably more than those charged by a general surgeon. Also, we were concerned about the practice of doctors to charge fees in accordance with a person's ability to pay. We considered the development of a special surgical schedule which would accord the doctor rather generous treatment and we even contemplated

granting benefits beyond that schedule, subject to a coinsurance factor, in order to take care of the problem of the specialist. Our final conclusions, however, were that any such approach would be too involved and that as a practical matter we would have to be satisfied with an increased amount of coinsurance on the excess of surgical bills above a fixed amount.

In the field of nursing care, we were faced with the fact that usage of nursing services, even where recommended by a physician, was very much subject to the discretion of the patient and his ability to pay. For this reason, we felt that it would be desirable to impose higher coinsurance percentages on the cost of home nursing care above a certain amount in the same way as for surgical expenses.

Although the expense of drugs is usually a small item in the aggregate medical bill, there are some situations where the cost of drugs can amount to a major portion of the medical expenses. For this reason, we felt that we could not neglect this type of protection. Here our problem seemed to be one of ensuring that we would not find ourselves paying for such things as liquor, vitamins, cosmetics, etc. The only control we were able to devise short of an itemized list of exclusions was a provision limiting coverage to drugs and medicines which must be prescribed by a physician and dispensed by a licensed pharmacist.

SOURCE OF STATISTICS

In the midst of all of this preliminary thinking on the problem, we became aware that, even if we should agree on a specific plan and decide to go ahead with it, we were completely stopped by the fact that we had no statistics available on which to base our premium rates. Mr. E. B. Whittaker, who was the motivating force in our research into this problem, conceived the idea that we conduct a survey of the medical expenses for the last few years of a segment of Prudential employees as a basis for providing some material on which we could determine our rate structure. The Prudential has some 40,000 employees divided between the Home Office and the Field, and the first question we had to decide was how to select our sample. Up to that time indications had been that the initial interest in this plan would be among salaried and supervisory employees earning $5,000 or more per annum. Lower paid employees have been thoroughly educated to the idea of a plan which takes care of the small bills, and we felt that it would be a more difficult job to win acceptance of the idea of a plan with a deductible amount among the lower paid employees. Furthermore, we felt that there was probably some tendency for the cost of medical care to increase with income. There would therefore be some element of conservatism if we were to eliminate the lowest paid em-

ployees, especially since, once a plan was initiated, the cost of medical care to such persons would tend to increase to that for other groups. Lastly, as a practical matter, we felt that we would experience the highest degree of cooperation by confining such a survey to our supervisory staff. What we finally settled on, therefore, was to send out questionnaires to all persons of a certain job level and higher who were located throughout the United States and Hawaii. We did not ask our Canadian employees to participate since they were very much occupied with the problems of setting up a new Head Office. This job level was selected so as to include all of our Agency Managers and Assistants, as well as all Home Office employees of Assistant Manager rank and higher. Almost 100% of the employees included in the study on this basis were males.

We began our work of designing the questionnaire with the help of our Agencies Research Division which is particularly experienced in this type of operation. Considerable attention was given to the drafting of the questions so as to avoid ambiguity. One particular difficulty was the fact that we were quite unsettled in our minds as to the final details of our plan, and we had to face the possibility that the form in which we would obtain the information would not be completely adaptable to the plan ultimately chosen. However, since we expected to be guided in our final conclusions by the results emerging from this study, there seemed no alternative but to proceed as best we could. Therefore, the questionnaire, a copy of which is reproduced in the Appendix, is not completely logical from the standpoint of the coverage as we finally developed it. As can be seen from the copy of the questionnaire, it was broken down into two parts. Part I was intended to supply us with the necessary exposure information with respect to all persons to whom the questionnaire was sent, and Part II was intended for use only by those persons who actually had illnesses to report.

There were certain basic things that we had to take into account. First of all, it seemed too arduous a job for people to report all of their medical expenses. Besides, in the reporting of small expenses, the memory factor would play too important a part. We, therefore, asked for a report only on those illnesses occasioning an aggregate of at least $100 of expense. Also, we could not ask people to search back too far in their memory or records and, therefore, we requested only a report of expenses incurred during the calendar years 1949 and 1950. Lastly, since we were interested in getting a measure of an incurred claim rate, we decided that we would have to do this on the basis of illnesses *completed* during the period of our study. At that point of time, we had not determined what we would do about pre-existing conditions, but it seemed that some information in this regard would be necessary. This is the reason for the segregation of the reporting

of medical expenses in question 8 of Part II of the questionnaire between columns A and B.

It will be noted from the information appearing in Part I that we had sufficient information available, such as year of birth of the children, year of marriage of the employee and children, so that we could make the necessary adjustments in our exposure should a dependent become ineligible during the period of our study. Actually, after our study was completed, these factors were relatively so unimportant that it was not worth while to go into such refinements in determining exposures.

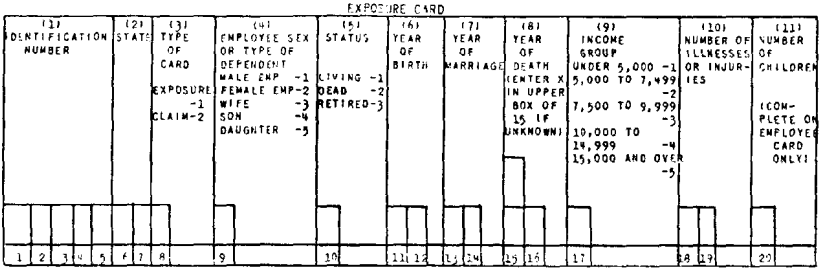
Prior to sending out this questionnaire, a test run was made with about 25 employees with respect to whom we knew from our Home Office records that there had been illnesses in the family during the period of our study. In this way we were able to eliminate many sources of ambiguity in our original draft which would have otherwise caused a lot of difficulty in the final returns. Each of the persons tested was later interviewed and questioned on the difficulties he experienced in completing the form. Prior to making this test, we were quite hesitant about sending out such an elaborate questionnaire, but the people tested assured us that we would get a satisfactory response. Mr. Shanks, the President of our Company, has been extremely interested in this project from the start, and the excellent response was undoubtedly due in large measure to the letter from him which accompanied each questionnaire.

In order to assure ourselves that our results would not be distorted by withdrawals from the exposure during the period of our study, questionnaires were sent out to employees who had retired during the years 1949 and 1950, and who would otherwise have been included in the study. This was done since it was felt that in some cases impaired health might have been the reason for retirement. With respect to employees who died during the period of the study, an attempt was made to reconstruct the medical expenses of such persons, at least for their final illness, and the expenses of such illnesses were included in the study. This was done from the disability records of the Company and the various death claim papers in our files. Questionnaires for employees on disability were directed to the employee's home with an explanation of the importance of securing data on persons who were disabled. In practically all instances, reports were obtained from such persons. Those who had left the employ of the Company for reasons other than retirement or death were not included in the study, and it was felt that this would not introduce any bias into the results.

Each questionnaire was checked off as it was received and reviewed for omissions and apparent inconsistencies. We attempted to fill in missing information from Company records, and if this was not possible this in-

formation was requested from the employee. After about one month, approximately 82 percent of our questionnaires had been answered. At this point of time, we sent out a follow-up letter. About one month after this follow-up letter had been sent out, we had received approximately 92 percent of our questionnaires, and at this time a second follow-up letter was sent out. About ten days after this second follow-up letter had been sent out, we cut off our returns on the survey and began compiling our final results. At that time about 97 percent of the questionnaires were in.

The results reported on Part I of the questionnaire were transcribed to handwritten exposure cards such as that shown below. One exposure

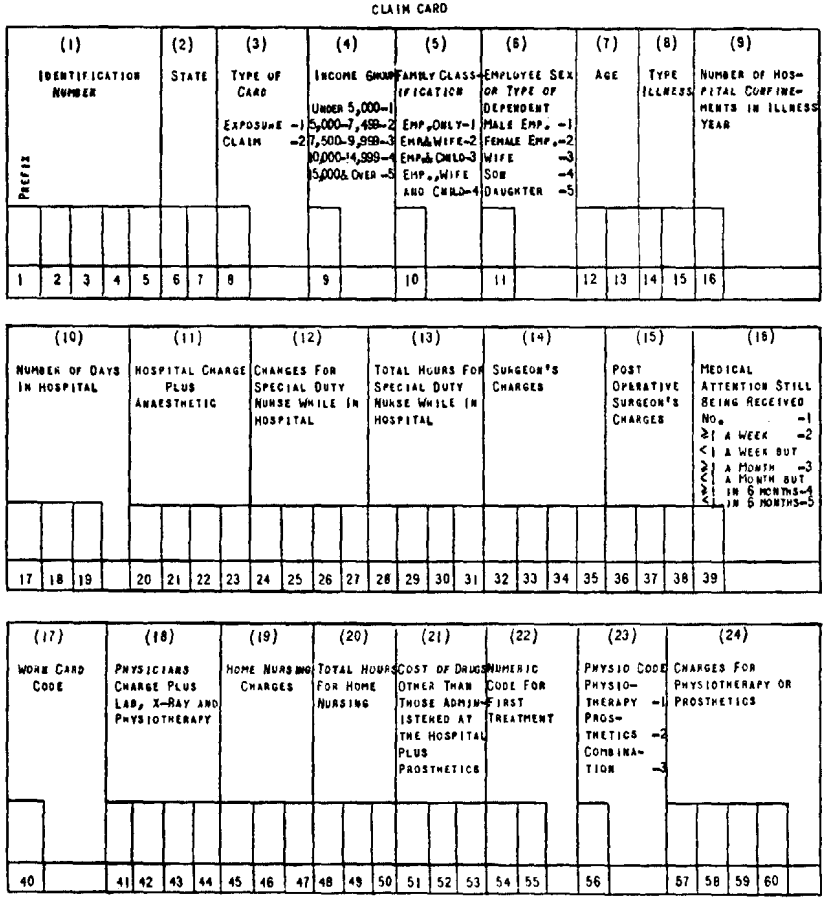


card was prepared for each employee and one for each dependent member of the employee's family. The Report of Illness information was transcribed to a claim card such as shown on the following page. One of these claim cards was prepared to show the expenses for each period of 12 months for a given illness. The information on these work cards was then punched into I.B.M. cards which were used as a basis for obtaining the necessary tabulations for the statistical studies made. As will be seen from an inspection of the claim work card, certain items appearing separately on the questionnaire were combined for ease of handling. The "Work Card Code" used in column 40 indicated in what calendar year the illness was completed and whether the card was prepared for the first, second, or subsequent year of illness. The "Numeric Code For First Treatment," appearing in columns 54 and 55 of the claim card, permitted us to arrange the claims in sequence by date of first treatment.

PRELIMINARY STATISTICAL RESULTS AND FIELD OPINION

When we had received 82 percent of the returns under our survey, we decided to make some preliminary test runs to see in what direction we were headed. We felt that income would be an important factor in the cost of a plan and, with this in mind, conceived the idea that from the standpoint of the controls needed and for the purpose of stabilizing cost by in-

come group it would be desirable to take income group into account by providing a deductible amount of two weeks' earnings and a coinsurance factor which increased by income. In our test plan we used a coinsurance factor of 10 percent for employees earning less than $5,000 per annum, increasing to 30 percent for employees making $15,000 or more. At the same time we developed figures on another plan which provided a flat deductible



amount of $300, but with the same coinsurance factors increasing by income. The result of this preliminary study was to show us that on the plan where the deductible amount was kept constant at $300, the monthly claim cost rose sharply by income group, the cost for the $10,000 to $15,000 income group being roughly double that for the $5,000 to $7,500

group, and this in spite of the increase in the coinsurance factor by income. On the other plan in which the deductible amount increased with the amount of income, the net claim cost was stabilized so that it remained about the same for all income levels.

Another factor that we became aware of, as a result of these preliminary calculations, was the wide range in claim cost by territorial region. For example, one plan which developed approximately a $3 a month net claim cost in the North East region, showed a net cost of approximately $4 in the West, $2 in the South, and about $2.50 in the North Central area. Likewise, a breakdown of expenses by type of medical care showed a sharp rise in the cost of surgical coverage and home nursing by income group, thus highlighting the fact that these forms of coverage require a greater amount of coinsurance than other types of medical expense.

The material developed from these preliminary computations was used to work up a set of charts which illustrated our findings. We felt at this point that we should have some reaction from the people who were going to have to sell this product before we went much further with our work. For this purpose, we met with about a dozen prominent insurance brokers and, with the aid of our charts, explained our ideas and findings. The brokers stressed the fact that any plan which attempted to reflect the factor of income both in the deductible amount and in the coinsurance amount would be overly complicated and difficult to sell. They suggested that possibly the coinsurance factor should be increased as the amount of claim increased. We made some tests along these lines and found that this accomplished very little towards stabilizing cost by income group; and, in the opinion of many we talked to, an increase in the amount of coinsurance by amount of claim made the plan quite unattractive. These ideas were also presented to our own group insurance salesmen, and the comments of these men were given careful consideration in the final determination of our plans.

DETAILS OF FINAL PLANS

As a result of our preliminary statistical results and our discussions with the people who would have to market our product, our final plans began to take shape. First of all, we were agreed that there should be some deductible amount in connection with the coverage in order to bring the cost down to a point where the plan would be salable. Secondly, we felt that we must regard this plan from the standpoint of the employee's ability to budget for medical expenses. From this point of view, we came to the conclusion that there should be an over-all deductible amount applicable to all expenses rather than any separation of deductible amount

by type of expense. In line with this same thinking, we concluded that a plan would not be entirely satisfactory if a separate deductible amount were imposed with respect to each illness. This seemed particularly true in the case of family coverage. For example, if a man is involved in an automobile accident while out riding with his family, consisting of his wife and three children, he might incur $1,500 of expense before he could collect under a plan imposing a $300 deductible for each illness. We decided that it would be more understandable, from the standpoint of the person's ability to budget for medical expenses, if the deductible amount were to be $300 for the whole family rather than for each illness. Furthermore, it was felt that a person could budget a given amount each year and, therefore, that the deductible amount could be on an annual basis rather than on a one-time basis for each illness. We considered this last point to be an important concept for other practical reasons. If a deductible amount were imposed with respect to one illness and without time limit, a person suffering from some chronic condition might take several years to accumulate expenses amounting to the deductible amount and from that time on would be covered. It was our definite feeling that a plan should not be designed to cover such expenses, since after a while such a person could anticipate and budget for his expenses for the purpose of treating his chronic ailment.

This weakness appears to exist in some of the plans that have up until now been offered for sale. Also, there is the very practical claim problem of trying to reconstruct details of medical expenses going back over a long period of time in order to establish the deductible amount. Likewise, it had become evident to us from an inspection of our questionnaire returns that many people continued on with visits to their doctor for a long period of time not only because of chronic conditions but also following a serious illness, and therefore, if there were no final cut-off point, the results would be payment of trifling claims and an extremely large pending claim file in our claim department. Having adopted this concept of an annual deductible amount, we had to fix a point of time when the year's coverage would commence. We discarded the idea of reimposing the deductible amount following either a calendar year or policy year because of the fact that it would give too much dissatisfaction to persons whose claim commenced toward the end of such year. The concept we thought was most likely to be acceptable to an insured person would be one under which the year of coverage began with the incurrence of the first expense which was used towards satisfaction of the deductible amount. This method admits some antiselection on the part of the insured, since he can change the date of commencement of his benefit year to his advantage by failing to report

small expenses which might be incurred at the commencement of an illness. It seemed to us that this antiselection was probably the lesser of the two evils. We decided, however, that once expenses were reported for the purpose of establishing a benefit year, an insured could not go back and request a change in the effective date of the benefit year.

We experienced considerable difficulty in working out a satisfactory answer to the family deductible approach which we wished to follow. We came to the conclusion that if all small medical expenses throughout a year which a family might incur were allowed to accumulate toward the family deductible amount, the cost of the coverage would be much too high. Also, the reporting of all these small amounts would constitute a considerable nuisance from a claim administration standpoint, as well as partially defeating the purpose of the plan which was to take care of major costs. Therefore, we concluded that it did not seem practical to put into effect our idea of a family deductible amount in connection with plans having a deductible amount of less than $300. Furthermore, we decided to consider only the expenses in connection with what we termed "major illnesses." A major illness was defined to be one which involved expenses of more than $25. In order to satisfy the family budget deductible amount, a person could use all expenses (including the first $25 of expense) incurred with respect to major illnesses by insured members of his family. As soon as such expenses in any one family equaled or exceeded the family budget deductible amount, a family benefit year would be established starting on the date of incurrence of the first expense used toward satisfaction of the deductible amount. Benefits would then be payable with respect to any further expenses incurred during the remainder of the family benefit year in connection with major illnesses. No benefit would be payable with respect to the first $25 of expense in connection with any one illness. The plan featuring this type of deductible amount we called the "Family Budget Deductible" plan.

Another general area of agreement that we came to was with respect to coinsurance. We concluded that in addition to a deductible amount there should be some form of coinsurance, not only to keep the cost of medical care from rising unnecessarily, but also to control claim losses. On our Family Budget Deductible plan, we decided to impose a 20 percent coinsurance factor. This factor is independent of income. However, it was increased to 30 percent on any portion of charges for surgery or home nursing care which was in excess of $500. To take care of the demand for a deductible amount of less than $300, another plan which we termed the "Each Illness Deductible" plan was devised. Under this plan, a new deductible amount would be imposed with respect to each illness.

As in the case of the Family Budget Deductible, the benefit year concept was used. In both plans, if an illness continued beyond the end of a benefit year, benefits again became payable with respect to that illness once the deductible amount was again satisfied and a new benefit year thus established.

We decided to make the Each Illness Deductible plan available with a $100 deductible amount. It was our thinking that this lower deductible amount would make the plan more attractive to lower salaried employees and have a broader appeal. Also, to further this idea and having in mind that coinsurance was needed most in regard to the extremely high bills, we decided that we would experiment on this plan with having no coinsurance on the first $300 of expense in excess of the deductible amount and 25 percent coinsurance on the balance. In other words, on any really expensive illness, the plan would pay three-quarters of the total cost.

With this broad outline in mind, it then became necessary for us to tackle the details of our policy coverage, and some of the problems we encountered are, I believe, of sufficient interest and importance to mention here. First of all, there was the question of maximum limit. Our first idea was to provide a maximum amount of coverage for each illness. Some concern was expressed concerning this liberal an approach for persons age 60 and over. Also this concept gave us considerable difficulty in defining the term "illness." From the standpoint of reimposing a deductible amount under our Each Illness Deductible plan, there had to be some reasonable definition of separate illnesses. On the other hand, any such definition might make it possible for a person suffering simultaneously from, say, arthritis and heart disease, but who was in fact receiving overall treatment from his doctor for his general debility, to claim that under the contract these were separate illnesses and that he would be entitled to a separate maximum for each cause of disability. This possibility was quite disturbing to our Claim Department and we finally decided to solve both this problem and that of limiting benefits at the high ages by applying the maximum to each individual rather than to each illness. We did provide, however, that a person who had exhausted his benefits could be reinstated to full coverage on furnishing satisfactory evidence of insurability.

We spent a good deal of time working over a suitable definition of the term "illness." Our first approach was to define illness as being any state of impaired health due to accidental bodily injury or disease. However, upon considering the problem more carefully, we realized that there were many situations in which a person with some chronic condition could contend that he was continually more or less in a state of impaired health

and thereby argue that all of his expenses incurred over a period of time were in connection with one illness even though in the normal sense they might be quite unrelated. We therefore finally adopted the definition shown on the first page of the Policy Provisions appended to this paper.

One particular problem that worried us was the matter of covering those persons who were suffering from conditions existing prior to the effective date of coverage. Under Group Insurance, it has been more or less traditional to avoid exclusions based on medical requirements or pre-existing conditions except for such persons as might be totally disabled. We were somewhat disturbed about taking this approach on Major-Medical Expense Insurance, but decided that it was probably necessary in order to avoid a considerable amount of employee dissatisfaction. It is simple enough to withhold coverage for an employee who is totally disabled by imposing an "actively at work" provision. However, it is a little bit more difficult in the case of a dependent. In deferring the effective date of coverage on a dependent who was totally disabled, it became necessary to provide a definition of total disability which made reference to other than the inability of a person to engage in gainful occupation. For this purpose, total disability was defined to exist "(1) in the case of a child of the Employee (other than a child who is either employed for wage or profit or enrolled in an educational institution), if the dependent has any disabling bodily injury or sickness, and (2) in the case of any other dependent, if the dependent, by reason of bodily injury or sickness, is prevented from performing his regular or customary work or duties (including work or duties of the household or for a nonprofit organization, club or other social organization) or from attending his school regularly. For the purposes of this provision, a child shall not be considered enrolled in an educational institution during school vacation periods."

Another matter to which we devoted considerable attention was the problem of our liability existing upon termination of insurance either by reason of cessation of active employment or termination of the policy. If a person's employment terminated and that person was not disabled, we felt that his insurance would have to cease immediately. Also, if a person ceased active employment because of disability, we felt that there should be some limitation on the period of time that the employer could continue insurance for such a person on a premium-paying basis since this coverage was not intended as a long-term total and permanent disability benefit. It was decided that if the employer were permitted to continue coverage for such a person for a period of two years after the person ceased active work reasonable coverage would be afforded. We agreed, however, that once insurance coverage was finally terminated, either by reason of dis-

ability or termination of employment or by termination of policy, some coverage should be continued with respect to any total disability existing for an employee or his dependent at the time of termination of insurance. The effect of the extension adopted is to continue coverage with respect to such total disability to the end of any benefit year established within three months after the termination of insurance. This extension does not in any event go beyond the date the person ceases to be totally disabled. Such an extension provision seemed to us to be consistent with the conditions which we imposed with respect to total disability at the inception of the coverage. The most important aspect of this portion of the coverage is the fact that some clear-cut definition as to the insurance company's termination liability is essential. To be silent in the matter and leave room for a broad interpretation as to incurred liability might well be disastrous on this form of coverage. Also, any extension which would be much broader in scope than that which I have outlined above would result in a very large pending claim liability which would require at least initially a much higher premium than would otherwise be necessary.

Included in the Appendix to this paper are excerpts from the policy which will, I believe, serve to explain how we resolved other details of the coverage. In particular, the section headed "Excluded Charges" shows what risks we felt it necessary to exclude. The provisions shown are those applicable to the Family Budget Deductible plan rather than the Each Illness Deductible plan since there were relatively fewer problems to resolve in connection with the latter plan.

INTEGRATION WITH OTHER COVERAGE

The question of how this new coverage might be integrated with basic welfare plans already in effect providing Hospital, Surgical and Medical Expense benefits was not an easy one upon which to reach agreement. Where the Prudential was the insurer of the basic coverage, the problem could be simply handled in either of two ways:

1. Exclude as covered charges under the Major-Medical Expense Insurance charges covered by the basic plan. This simply means that the insured must satisfy the deductible amount with out-of-pocket expenses.
2. Permit charges covered under the basic plan to be included as admissible charges under the Major-Medical Expense Insurance but only to the extent that such charges did not exceed any deductible amounts specified in the Major-Medical coverage.

Under this second method of integration some undesirable situations may arise since unnecessary utilization of basic coverage is encouraged in

order to satisfy the deductible amount, and we have adopted it only in connection with our plans imposing a deductible amount of $300 or more and then only because we believed there would be a considerable demand for this type of integration.

Where the basic coverage is underwritten by another insurer the problem of integration becomes very difficult. Precise integration is contractually overwhelming and, even if a high deductible amount is imposed in order to largely avoid an area of duplication of benefits, there is an undesirable excess of claim handling, since reports on the same items of expense would be required by the two carriers. Such an uneconomical approach cannot be justified and would probably not be tolerated by a policyholder for very long. We were aware that, initially, while there were relatively few companies issuing these new benefits, there would likely be a considerable demand for this dual company coverage. We decided, however, to refuse to write business on this basis on the grounds that this uneconomical approach would be bound to give rise to dissatisfaction and to the placement of the entire coverage with one company. Further, it would probably be a very temporary situation, quickly corrected as other group writing companies began offering comparable plans.

There was, however, one field of integration with other than Prudential basic coverage which we thought might properly be handled. Where the only plan of coverage already in effect was one providing hospitalization insurance, we decided to offer Major-Medical Expense Insurance excluding from coverage all charges made by a hospital. This avoids the problem of duplicate claim reporting. It did not seem practical to offer this method of integration to groups having other than Hospital Expense Insurance.

CLAIM ADMINISTRATION

For those persons who may be interested in our handling of the administrative claim problems, there is little that we can report at this time. Our big problem will be reconstructing proper evidence of expenses incurred to satisfy the deductible amount. We think we have minimized this problem by providing coverage which goes back at most 12 months in this respect. We do not believe it is practical to expect people to have claim forms completed the first time they go to a doctor in anticipation that at some time in the future such forms may serve toward establishing a claim under their group coverage. Our Claim Department has devised a fairly simple set of forms for getting the information deemed necessary and hopes to work out as smooth a system as possible as our actual experience develops. At the outset all claims will be paid from our offices and

we do not plan on having the employer administer claims on this coverage, at least until we have had some experience ourselves.

FINAL STATISTICAL MATERIAL

The final statistical material developed from our survey turned up some interesting facts—the age factor was one in particular to which we had not previously given full weight. Before getting into these statistical results, however, I think it might be worth while to comment briefly on certain inadequacies which are inherent in the statistical method used. One of the things that we were most concerned about in our conduct of the survey was the fact that we might find an unduly high percentage of

TABLE 1

CRUDE MONTHLY CLAIM RATES BY PERCENTAGE OF QUESTIONNAIRES RETURNED
COMPLETE COVERAGE—NO COINSURANCE
Per Family (Based on Employees with Wife and Children)

No. of Follow-ups	Questionnaires Returned		"Each Illness Deductible" of		
	Number*	% Returned†	$100	$300	$500
0	2,991	82	$5.17	$2.65	$1.56
1	3,350	92	5.29	2.70	1.57
2	3,561	97	5.56	2.87	1.69

* Includes only those questionnaires returned by employees with wife and children.
† These percentages are based on returns from all employees regardless of family status.

claims among the persons not returning their questionnaires. If this were true and we did not get nearly all of the questionnaires back, we realized we could place little reliance on our results. With the idea in mind that this method of analysis might again prove useful under circumstances which did not produce as high a percentage return as we were able to get, we coded our returns as they were received in such a way that we could take off our experience on the basis of successively higher percentage returns with a view to determining what effect there was on the indicated claim costs. Table 1 demonstrates that the net claim cost tended to rise as the percentage of returns increased. I believe that this was due primarily to the fact that it was relatively simple for the person without claims to complete the questionnaire as compared to those persons with claims. However, many persons who had experienced claims were motivated by their interest in the matter to send in their questionnaires

promptly. It will be seen that the monthly net claim cost for the plan shown in this table increased about 10 percent from the time that we had received 82 percent of our questionnaires to the point of time that 97 percent returns were in. Most of this increase occurred as a result of our second follow-up which increased our returns from 92 percent to 97 percent. In order to get some idea of the experience on the 3 percent not returning the requested reports, we went to the claim records of our existing Group Hospital and Surgical coverage and from those were able to satisfy ourselves that our claim costs would have been increased by not more than 5 percent additional had all returns been submitted. The figures shown in Table 1 are on a family rather than an individual basis and have been prepared from the experience exhibited by those employees with wife and one or more children. Most of the other tables that follow have also been prepared on this basis, since it was felt that the figures reflecting a family experience would be most meaningful, and this report would become much too voluminous if figures for employees, wives and children were reported separately in each instance. In addition to the understatement in our results due to the 3 percent not returning questionnaires, it is likely that there is some understatement in the claim rate due to people forgetting to report illnesses. Any estimate of this factor is entirely a guess, but when making use of these results we assumed that there was another 5 percent due to this cause. *It is important to note that neither of these adjustments has been made in the figures shown in this paper nor has any adjustment been made on account of inflation since the period of our study.* Another important consideration is that these employees and their families were insured only under the usual type of Group Hospital and Surgical coverage and therefore greater utilization and possibly higher charges are likely to be experienced under broader coverage such as Major-Medical.

Table 2 exhibits the number of years of exposure in our study by age, income and region in the form in which this material was used in arriving at our net costs. It should be noted that only the age of the employee is shown and not the ages of the wife or the children. Although this latter material was available, it was felt that there would be little gained in tabulating results on the basis of the ages of the dependents since, as a practical matter, this material would probably not be available for the basis of a rate quotation. It will be seen from this table that our study involved 10,878 life years of exposure on employees, 10,414 years of exposure on wives, and 7,142 years of exposure on children. In this table, we have not shown the years of exposure separately for each child, but have treated all of the children in any one family as a unit since this was the basis upon which we were interested in arriving at our rates. The 7,142

years of exposure on families with children actually represented a total of 14,182 child years of exposure.

The most noteworthy fact that we developed as a result of our final tabulations was the pronounced effect of the increase in age of the employee. It is not too difficult to rationalize the cause. On the conventional type of plan, all the small bills which are common to both young and old

TABLE 2

NUMBER OF YEARS OF EXPOSURE

	Employees (With and without Family)	Employees with Wife (With and without Children)	Employees with Children (With and without Wife)	Employees with Wife and Children
Age of Employee:				
<35	1,880	1,742	1,496	1,496
35<40	1,798	1,738	1,580	1,572
40<45	1,974	1,910	1,620	1,616
45<50	1,854	1,810	1,332	1,330
50<55	1,572	1,516	746	742
55<60	1,082	1,014	268	266
60<65	596	576	92	92
65 and over	122	108	8	8
Annual Income:				
$ 4,000<$ 5,000	1,810	1,648	1,196	1,192
5,000< 7,500	6,664	6,428	4,434	4,422
7,500< 10,000	1,290	1,252	852	852
10,000< 15,000	868	844	506	502
15,000 and over	246	242	154	154
Region:				
South	1,168	1,122	832	832
North Central	2,670	2,594	1,712	1,710
North East	5,734	5,450	3,764	3,746
West	1,306	1,248	834	834
Total Exposure	10,878	10,414	7,142	7,122

alike are insured against. Furthermore, on the conventional plan, there is a fairly low maximum which restricts the effect of age. Now, if a deductible amount is imposed so as to eliminate the small claims, the more expensive ones which are more frequent at the older ages are left, and furthermore, if the maximum is removed, the lengthy claims incident to old age are given additional weight. It follows too from this rationale that the effect of increasing age should become more pronounced as the deductible amount is increased.

Table 3, which analyzes the net claim cost by deductible amount and

age group, strikingly brings out this effect. Under the $100 deductible plan, the cost for an employee in the age group 35 to 50 is roughly twice that for an employee under age 35, and that for an employee age 50 and over is about 4 times that for an employee under 35. On the other hand, for the $500 deductible plan, the cost for an employee age 50 and over is almost 6 times that for an employee under 35. A similar although somewhat less pronounced trend is exhibited in the case of wives. The cost of

TABLE 3

MONTHLY CLAIM FREQUENCIES AND CRUDE MONTHLY CLAIM RATES BY AGE*
COMPLETE COVERAGE—NO COINSURANCE
Per Employee

AGE OF EMPLOYEE	RATES FOR	YEARS OF EXPOSURE	"EACH ILLNESS DEDUCTIBLE" OF					
			$100		$300		$500	
			Claim Frequency	Claim Rate	Claim Frequency	Claim Rate	Claim Frequency	Claim Rate
<35	Employee Only	1,880	.0043	$0.95	.0015	$0.43	.0006	$0.25
	Wife Only	1,742	.0071	1.82	.0029	0.89	.0013	0.51
	Children Only	1,496	.0066	1.83	.0023	1.08	.0007	0.84
35<50	Employee Only	5,628	.0056	1.79	.0030	0.96	.0014	0.55
	Wife Only	5,460	.0079	2.58	.0041	1.43	.0021	0.81
	Children Only	4,534	.0079	1.41	.0022	0.54	.0008	0.28
50 and over	Employee Only	3,370	.0114	3.73	.0052	2.20	.0027	1.44
	Wife Only	3,212	.0112	4.39	.0056	2.83	.0032	1.96
	Children Only	1,112	.0056	1.31	.0025	0.53	.0007	0.22
All Ages	Employee Only	10,878	.0072	$2.25	.0034	$1.25	.0017	$0.77
	Wife Only	10,414	.0088	3.01	.0044	1.77	.0023	1.11
	Children Only	7,142	.0073	1.48	.0023	0.65	.0007	0.39

* Claim Frequencies are based on number of claims. Claim Rates are based on amount of claims.

children's coverage tended to decrease with the age of the employee and this can probably be attributed in part to the fact that the average number of children young enough to be included in the study was less for the older employees.

The results produced in Table 3 led us to analyze our material further by age, breaking it down into five-year age groups above age 35. Table 4 shows the result of this analysis for different deductible amounts both on the Each Illness Deductible plan and on the Family Budget

Deductible plan. The figures shown are the result of a graphic graduation of the crude net claim costs. It will be observed from this table that the cost at age 65 on the $100 Each Illness Deductible plan is almost 6 times the cost for persons under 35. On the $300 plan, the increase from the under 35 group to age 65 is more than 7 times, and on the $500 deductible plan the increase is nearly 10 times. The rate of increase in these figures by age group is quite comparable to that exhibited by death rates under a mortality table and we concluded that it would be just as inappropriate to ignore these results in setting premium rates for Major-Medical Expense coverage as it would be to ignore the age factor in determining

TABLE 4

GRADUATED MONTHLY CLAIM RATES PER EMPLOYEE BY AGE
COMPLETE COVERAGE—NO COINSURANCE
Rates for Employee Only

AGE OF EMPLOYEE	YEARS OF EXPOSURE	"EACH ILLNESS DEDUCTIBLE" OF			"FAMILY BUDGET DEDUCTIBLE" OF	
		$100	$300	$500	$300	$500
<35	1,880	$0.97	$0.47	$0.25	$0.58	$0.28
35<40	1,798	1.27	0.60	0.31	0.69	0.34
40<45	1,974	1.82	0.96	0.55	1.05	0.58
45<50	1,854	2.40	1.34	0.81	1.50	0.91
50<55	1,572	3.04	1.76	1.11	2.01	1.29
55<60	1,082	3.77	2.24	1.47	2.60	1.76
60<65	596	4.62	2.80	1.91	3.30	2.34
65 and over	122	5.62	3.46	2.45	4.14	3.05
All Ages	10,878	$2.25	$1.25	$0.77	$1.44	$0.89

Group Life Insurance premium rates. In fact, in view of the probable limitation of the sales market initially to supervisory employees, the consideration of age distribution will likely be even more important than on the average Group Life plan. We therefore developed a rate system which was similar to that used on Group Life Insurance, except that in lieu of rates for individual ages, we used age groupings. Employees under age 40 were put into one group, and rates for employees age 40 and over were determined by quinquennial age groupings. An actual age distribution is obtained for each group of employees and an average rate computed. Since the average rate produced for the entire group will be relatively less advantageous for the younger employees than for the older employees, it is our intention to encourage employers to contribute to the cost of such a program such portion of the premium as may be in excess of a stipulated

employee contribution not varying by age, similar to the practice followed in the case of Group Life Insurance.

Because of the importance of the age factor, we felt that our rate structure would become so complicated as to be impractical if we introduced the factors of income and region on too elaborate a basis. Table 5 indicates how the net claim costs tend to rise with income. Since there is a greater than average age among the people earning the higher incomes, the information in Table 5 was analyzed by age group and the results set forth in Table 6. This table shows that the trend toward higher net claim cost by increase in income group is exhibited within each age group as well as on the over-all basis suggested by the preceding table. Approximately

TABLE 5

CRUDE MONTHLY CLAIM RATES BY INCOME
COMPLETE COVERAGE—NO COINSURANCE
Per Family (Based on Employees with Wife and Children)

ANNUAL INCOME	YEARS OF EXPOSURE	"EACH ILLNESS DEDUCTIBLE" OF		
		$100	$300	$500
$ 4,000<$ 5,000	1,192	$ 4.58	$2.37	$1.51
5,000< 7,500	4,422	5.09	2.52	1.40
7,500< 10,000	852	6.00	3.20	1.93
10,000< 15,000	502	9.20	4.79	2.69
15,000 and over	154	12.48	8.68	6.72
All Incomes	7,122	$ 5.56	$2.87	$1.69

10 percent of our sample were employees who earn $10,000 or more. We concluded that we could allow a certain latitude in distribution by income group if age was properly reflected in our rates, but that if more than a fixed percentage of persons earned $10,000 or more, in the group we were asked to underwrite, an income loading would have to be imposed.

Table 7 exhibits monthly net claim costs by region and annual income. In addition to demonstrating that the trend toward higher rates by income was independent of region, this table confirms the geographical results referred to previously.

Certain subsidiary information derived from the study, exhibited in Tables 8*a*, *b*, *c*, 9, and 10, will, I believe, be of some general interest. Tables 8*a*, *b*, *c* show the relative importance of different causes of disability by deductible amount, separately for employees, wives and children. A comparison between Tables 8*a* and 8*b* shows that disorders of the brain and nervous system have about twice the importance for wives as for

TABLE 6

CRUDE MONTHLY CLAIM RATES BY INCOME WITHIN AGE GROUP
COMPLETE COVERAGE—NO COINSURANCE
Per Family (Based on Employees with Wife and Children)

AGE OF EMPLOYEE	ANNUAL INCOME	YEARS OF EXPOSURE	"EACH ILLNESS DEDUCTIBLE" OF		
			$100	$300	$500
<35	$ 4,000<$10,000	1,466	$ 4.43	$ 2.31	$1.57
	10,000 or more	30	5.52	1.78	0.42
	All Incomes	1,496	4.45	2.30	1.55
35<50	$ 4,000<$10,000	4,090	4.97	2.41	1.28
	10,000 or more	430	7.24	3.61	2.01
	All Incomes	4,520	5.19	2.52	1.35
50 and over	$ 4,000<$10,000	910	6.87	3.79	2.32
	10,000 or more	196	16.62	10.89	7.69
	All Incomes	1,106	8.60	5.05	3.27
All Ages	All Incomes	7,122	$ 5.56	$ 2.87	$1.69

TABLE 7

CRUDE MONTHLY CLAIM RATES BY INCOME WITHIN REGION
COMPLETE COVERAGE—NO COINSURANCE
Per Family (Based on Employees with Wife and Children)

REGION	ANNUAL INCOME	YEARS OF EXPOSURE	"EACH ILLNESS DEDUCTIBLE" OF		
			$100	$300	$500
South	$ 4,000<$10,000	774	$ 3.89	$1.93	$1.24
	10,000 or more	58	4.87	1.29	0.27
	All Incomes	832	3.95	1.89	1.18
North Central	$ 4,000<$10,000	1,582	4.89	2.42	1.37
	10,000 or more	128	14.09	9.13	6.78
	All Incomes	1,710	5.58	2.92	1.78
North East	$ 4,000<$10,000	3,372	5.46	2.81	1.62
	10,000 or more	374	8.15	4.39	2.44
	All Incomes	3,746	5.73	2.96	1.70
West	$ 4,000<$10,000	738	5.33	2.60	1.39
	10,000 or more	96	14.63	8.92	6.09
	All Incomes	834	6.40	3.33	1.93
All Regions	All Incomes	7,122	$ 5.56	$2.87	$1.69

TABLE 8*a*

CRUDE MONTHLY CLAIM RATES BY CAUSE OF DISABILITY
COMPLETE COVERAGE—NO COINSURANCE
Claims on Employees—10,878 Years of Exposure

CAUSE OF DISABILITY	"EACH ILLNESS DEDUCTIBLE" OF $100				"EACH ILLNESS DEDUCTIBLE" OF $300			
	No. of Claims	Claim Rate	% of Total		No. of Claims	Claim Rate	% of Total	
			By No.	By Rate			By No.	By Rate
Disorders of Brain and Nervous System	37	$0.13	4	6	18	$0.09	4	7
Circulatory Disorders:								
Heart Conditions	128	.35	14	15	62	.21	14	18
Other Circulatory Disorders	43	.07	5	3	16	.02	4	2
Respiratory Disorders	79	.12	8	5	27	.05	6	4
Digestive Disorders:								
Gall Bladder Disorders	33	.13	4	6	20	.10	5	8
Ulcers	62	.16	7	7	33	.09	7	7
Hernias	39	.09	4	4	27	.03	6	2
Appendix Disorders	54	.13	6	6	38	.05	9	4
Hemorrhoids	53	.09	6	4	27	.03	6	2
Other Digestive Disorders	49	.11	5	5	23	.06	5	5
Digestive Disorders not fully described	14	.02	1	1	3	.....	1	.....
Disorders of Genito-Urinary System:								
Male Disorders	33	.06	4	3	14	.03	3	2
Kidney and other Genito-Urinary Disorders	39	.10	4	4	19	.06	4	5
Glandular Disorders:								
Diabetes	23	.04	2	2	5	.02	1	2
Thyroid and other Glandular Disorders	13	.02	1	1	6	.01	1	1
General Disorders:								
Disorders of Muscles, Nerves, and Joints, including Arthritis	49	.09	5	4	16	.05	4	4
Tumors	54	.19	6	8	31	.13	7	10
Injuries and Orthopedic Conditions	60	.13	6	6	23	.08	5	6
Other General Disorders	77	0.22	8	10	35	0.14	8	11
All Causes	939	$2.25	100	100	443	$1.25	100	100

TABLE 8*b*

CRUDE MONTHLY CLAIM RATES BY CAUSE OF DISABILITY
COMPLETE COVERAGE—NO COINSURANCE
Claims on Wives—10,414 Years of Exposure

CAUSE OF DISABILITY	"EACH ILLNESS DEDUCTIBLE" OF $100				"EACH ILLNESS DEDUCTIBLE" OF $300			
	No. of Claims	Claim Rate	% of Total		No. of Claims	Claim Rate	% of Total	
			By No.	By Rate			By No.	By Rate
Disorders of Brain and Nervous System	68	$0.26	6	9	36	$0.18	7	10
Circulatory Disorders:								
Heart Conditions	47	.15	4	5	15	.11	3	6
Other Circulatory Disorders	72	.15	7	5	27	.08	5	5
Respiratory Disorders	83	.20	8	7	24	.12	4	7
Digestive Disorders:								
Gall Bladder Disorders	58	.18	5	6	42	.11	8	6
Ulcers	21	.06	2	2	14	.03	3	2
Appendix Disorders	32	.07	3	2	19	.03	3	2
Hemorrhoids	33	.05	3	2	12	.02	2	1
Other Digestive Disorders	47	.16	4	5	27	.10	5	6
Digestive Disorders not fully described	11	.02	1	1	5	.01	1	1
Disorders of Genito-Urinary System:								
Female Disorders	243	.65	22	21	145	.33	26	18
Kidney and other Genito-Urinary Disorders	37	.09	3	3	17	.05	3	3
Glandular Disorders:								
Diabetes	13	.03	1	1	4	.02	1	1
Thyroid Disorders	22	.06	2	2	15	.03	3	2
Other Glandular Disorders	7	.01	1	.....	3	.....	1	.....
General Disorders:								
Disorders of Muscles, Nerves, and Joints, including Arthritis	83	.20	8	7	37	.11	7	6
Tumors	103	.45	9	15	61	.32	10	17
Injuries and Orthopedic Conditions	53	.12	5	4	21	.07	4	4
Other General Disorders	65	0.10	6	3	21	0.05	4	3
All Causes	1,098	$3.01	100	100	545	$1.77	100	100

TABLE 8c

CRUDE MONTHLY CLAIM RATES BY CAUSE OF DISABILITY
COMPLETE COVERAGE—NO COINSURANCE
Claims on Children—7,142* Years of Exposure

CAUSE OF DISABILITY	"EACH ILLNESS DEDUCTIBLE" OF $100				"EACH ILLNESS DEDUCTIBLE" OF $300			
	No. of Claims	Claim Rate	% of Total		No. of Claims	Claim Rate	% of Total	
			By No.	By Rate			By No.	By Rate
Disorders of Brain and Nervous System:								
Poliomyelitis	10	$0.13	2	9	6	$0.11	3	16
Other Disorders of Brain and Nervous System	18	.10	3	7	12	.06	6	9
Circulatory Disorders	18	.04	3	3	5	.01	3	2
Respiratory Disorders:								
Disorders of Tonsils	134	.08	21	5	2	.....	1	.....
Pneumonia	32	.04	5	3	5	.01	3	2
Other Respiratory Disorders	39	.07	6	5	15	.02	8	3
Digestive Disorders:								
Hernias	22	.05	4	3	9	.01	5	2
Appendix Disorders	100	.24	15	17	47	.05	22	8
Other Digestive Disorders	19	.05	3	3	9	.01	5	2
Disorders of Genito-Urinary System:								
Kidney Disorders	17	.11	3	7	9	.08	5	12
Other Disorders of Genito-Urinary System	10	.03	2	2	4	.02	2	3
Glandular Disorders	14	.03	2	2	6	.01	3	2
General Disorders:								
Skin Disorders and Allergies	28	.03	4	2	3	.....	2	.....
Disorders of Muscles, Nerves and Joints	19	.08	3	5	11	.05	6	8
Rheumatic Fever	10	.03	2	2	3	.02	2	3
Eye and Ear Disorders	23	.05	4	3	9	.01	5	2
Injuries and Orthopedic Conditions	91	.24	15	17	33	.13	15	18
Other General Disorders	19	0.08	3	5	8	0.05	4	8
All Causes	623	$1.48	100	100	196	$0.65	100	100

* This figure is based on number of families with children. Actual number of Child Years of Exposure is 14,182.

men. On the other hand the reverse situation applies with respect to heart conditions. Female disorders amount to about 20 percent of the net claim cost for wives. This of itself largely accounts for the claim rate differential between wives and husbands. Table 8*c* also indicates that for children injuries and orthopedic conditions are about 18 percent of the total claim cost. The significance of poliomyelitis in the total claim cost for children, amounting to 9 percent for the $100 deductible plan and 16 percent for the $300 deductible plan, is also of interest.

TABLE 9

DISTRIBUTION OF CLAIM PAYMENTS BY TYPE OF EXPENSE
% of Total Claim Payments for given Deductible Amount

TYPE OF EXPENSE	CLAIMS ON EMPLOYEES			CLAIMS ON WIVES			CLAIMS ON CHILDREN		
	"Each Illness Deductible" of			"Each Illness Deductible" of			"Each Illness Deductible" of		
	$100	$300	$500	$100	$300	$500	$100	$300	$500
Hospital	42.9	46.8	49.7	36.5	38.4	39.3	38.4	42.4	50.1
Surgery	20.2	22.2	20.6	22.5	24.3	23.6	27.0	23.2	15.6
Physician*	24.8	19.5	17.1	22.4	18.2	16.1	22.1	20.6	19.1
Physiotherapy	.2	.2	.1	.6	.6	.6	.5	.7	1.0
Nursing in Hospital	3.8	4.9	6.6	5.8	7.4	9.5	2.6	3.2	4.4
Nursing at Home	.2	.3	.3	2.2	2.7	3.3	.4	.3	.2
Drugs†	7.7	5.9	5.4	9.6	8.0	7.2	8.4	8.9	8.5
Artificial Limbs, Surgical Appliances, etc.	.2	.2	.2	.4	.4	.4	.6	.7	1.1
All Types	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Excluding Surgery, but including charges for X-ray examinations and laboratory tests not covered by Hospital Bill.

† Excluding those covered by Hospital Bill.

The fact that hospital charges account for almost half of the medical expenses of a male employee is brought out in Table 9. Also, this table shows that wives make considerably more use of nursing care, both in the hospital and at home, than do their husbands. It is quite possible that the percentages shown in this table will be changed materially under an experience based on an insured plan, since utilization of such things as nursing care will be encouraged by the coverage.

Table 10 was derived from all of the claim material used in the study and is therefore not specifically applicable to any given plan. It does, however, furnish a rough idea as to the significance of long duration hospital confinements.

TABLE 10

DURATION OF HOSPITAL CONFINEMENTS

Duration* of Confinement (Days)	Number of Claims	Total Number of Days	Total Charges	Average No. of Days	Average Charge per Day
	Employees—10,878 Years of Exposure				
<10	361	1,832	$41,876	5.1	$22.86
10<32	247	4,122	78,048	16.7	18.93
32<71	36	1,519	24,877	42.2	16.38
71<365	13	2,133	16,825	164.1	7.89
365	2	730	4,428	365.0	6.07
All Durations	659	10,336	$166,054	15.7	$16.07
	Wives—10,414 Years of Exposure				
<10	400	2,058	$47,654	5.1	$23.16
10<32	311	4,502	83,018	14.5	18.44
32<71	24	1,118	16,931	46.6	15.14
71<365	18	2,208	28,395	122.7	12.86
365	1	365	1,040	365.0	2.85
All Durations	754	10,251	$177,038	13.6	$17.27
	Children—7,142 Years of Exposure†				
<10	375	1,449	$31,089	3.9	$21.46
10<32	93	1,309	19,869	14.1	15.18
32<71	11	463	6,483	42.1	14.00
71<365	7	1,403	15,358	200.4	10.95
365	.....	.....	.....	.....	.....
All Durations	486	4,624	$72,799	9.5	$15.74

* For any claim with more than one period of confinement for the same illness within the same benefit year, the Duration of Confinement was taken to be the total number of days for all such periods of confinement.

† This figure is based on number of families with children. Actual number of Child Years of Exposure is 14,182.

CONCLUSION

A great deal of the credit for making this study possible is due to the many persons who contributed their help, including the more than five thousand persons who carefully completed our questionnaire. In addition to our Home Office staff, our group sales representatives and insurance brokers contributed many valuable ideas. In particular, I should like to express thanks to Mr. J. A. Singer, who so ably supervised the statistical studies in connection with the questionnaire.

Having presented all of this material, I cannot help but conclude with a word of caution. Although we have attempted to step into this unknown field on as enlightened a basis as our studies would permit, the surface has only been scratched and the practical testing of this coverage through actual administration may revise much of our present thinking.

Also, there is a much greater lack of positive control under this type of plan than under any other type of Group coverage previously offered, and it will be only through the persevering efforts of insurance companies, employers, doctors and hospitals that the plan will be made to work successfully.

APPENDIX

Survey of Medical Expenses

Number.....—PART I

This survey will be used as an actuarial basis for determining the type and cost of coverage needed. It is essential that *every* questionnaire be returned. An identifying number has been placed at the top of this sheet so that we may be sure your questionnaire is received. We have not used your name in order to keep your identity confidential and apart from the people working on this survey.

First, we'd like some background data. This information is desired with respect to you and your dependents (if any) who were living with you at any time between January 1, *1948* to January 1, *1951*. Include only dependents of the type listed below.

1. Please tell us

About	Year of Birth	Sex		Now Living		Year of marriage
		Male	Female	Yes	No	
YOU				XXX	XXX	
Your WIFE		XXXX	XXXXX			XXXXXXXXXX
Children born 1929 or later						If child now married, show year of marriage
1st child						
2nd child						
3rd child						
4th child						
5th child						
6th child						

2. Would you please check YOUR personal income group for *1949*. (Please include income from all sources. If you received earnings for only a portion of the calendar year, check the group applicable to your annual rate of earnings.)

☐ Under $5,000
☐ $ 5,000 to $ 7,499
☐ $ 7,500 to $ 9,999
☐ $10,000 to $14,999
☐ $15,000 or more

3. Did you or any dependent included in Question 1 have any illness or injury for which all or part of your expenses were incurred between January 1, *1949*, and January 1, *1951*. (Please exclude dental or maternity care, since statistics are not needed on these items.)

☐ Yes ☐ No (*If "NO,"* stop here and mail the Questionnaire to Mr.....)

4. Did any *one* of these illnesses or injuries involve expenses of $100 or more, including any expenses incurred prior to January 1, 1949? (Please consider as an expense all charges even though covered by insurance.)

☐ Yes ☐ No (*If "NO,"* stop here and mail the Questionnaire to Mr.....)

5. How many illnesses or injuries were there for which you can answer "Yes" to *both* questions 3 and 4?

.....
(Number of Illnesses or Injuries)

PLEASE COMPLETE ONE OF THE ATTACHED FORMS FOR *each* SUCH ILLNESS OR INJURY.

Three report of illness forms are included. If in your case this supply is insufficient, you can obtain additional copies from any Field Office Manager or from Mr.....

Please return all completed questionnaire(s) in the enclosed envelope.

Number.....—PART II. REPORT OF ILLNESS OR INJURY

A separate copy of this Report of Illness or Injury form is to be completed for *each* illness or injury reported in Question 5 of Part I of this questionnaire.

Do *not* report on this form any expenses for medical attention received on or after *January 1, 1951.*

Expenses are to be reported whether or not covered in whole or in part by insurance.

The value of this study depends entirely on the accuracy and completeness of your report. Please be sure that each question is answered completely. If accessible, please refer to actual bills. If such records are not available, please estimate as closely as possible the figures requested.

1. Please give us the following information about the person whose illness or injury is covered by this form:

Date of Birth (Month) (Day) (Year)	Sex ☐ Male ☐ Female	Relationship to YOU ☐ Yourself ☐ Wife ☐ Child

2. Please describe the illness or injury:.....

3. Did this injury or illness require hospital confinement?

☐ Yes ☐ No (*If "NO,"* skip to Question 5)

4.

PLEASE COMPLETE THE FOLLOWING TABLE FOR EACH PERIOD OF CONFINEMENT DUE TO THIS INJURY OR ILLNESS:	First Period	Second Period	Third Period	Fourth Period
Date *left* hospital (month and year)				
Number of days in hospital				
Charges while in hospital for: Total hospital charges except for Special Duty Nurses.....	$.....	$.....	$.....	$.....
Charge while in hospital for Special Duty Nurse.....	$.....	$.....	$.....	$.....
Total number of hours of Special Nurse care while in hospital....	..... Hours	..... Hours	..... Hours	..... Hours

5. Were any Surgical Operations performed?

☐ Yes ☐ No (*If "NO,"* skip to Question 8)

6. Please describe each operation:.....

7. Please complete the following table for each such operation in connection with *this* illness or injury:

	Operation 1	Operation 2	Operation 3	Operation 4
Date operation performed.....	..... Mo. Yr.	..... Mo. Yr.	..... Mo. Yr.	..... Mo. Yr.
What was the amount of the surgeon's fee for the operation (include any fee for an assistant surgeon but not any separate fee for administration of anaesthetic)?....	$.....	$.....	$.....	$.....
Were there any additional charges made by the operating surgeon for post-operative care?.....	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
IF YES: What was the amount charged for this care?.....	$.....	$.....	$.....	$.....
IF YES: Approximately how many visits did this charge cover?.....	..... visits	..... visits	..... visits	..... visits
Check which of the following administered the anaesthetic: *a.* Hospital anaesthetist (In this case, you would be charged by the hospital and the amount would be reported as part of Question 4).....	☐	☐	☐	☐
b. Your surgeon.....	☐	☐	☐	☐
c. Other doctor.....	☐	☐	☐	☐
If you checked Part *c*, what was the amount of the charge?.....	$.....	$.....	$.....	$.....

8. PLEASE NOTE: If this illness or injury was *first* treated *on or after* January 1, *1948*, complete Column A of the following table. If it was *first* treated *prior* to January 1, *1948*, complete Column B.

	A		B		
	First treatment on or after 1-1-48		First treatment prior to 1-1-48		
	For Service or Treatment		For Service or Treatment		
	During First 12 Months	After First 12 Months	Before 1949	During 1949	During 1950
a. Were there any charges by a physician other than reported in Question 7?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
IF YES: What was the total amount of such fees?	$.....	$.....	$.....	$.....	$.....
IF YES: Approximately how many visits did these fees cover?	..... visits	..... visits	..... visits	..... visits	..... visits
b. Was there a separate charge for X-ray examinations or other laboratory tests other than while in the hospital as a bed-patient and not included in the fees mentioned in Part *a* above?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
IF YES, for what amount?	$.....	$.....	$.....	$.....	$.....
c. Was the care of a registered nurse required (other than at the hospital)?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
IF YES: What was the total charge for this service?	$.....	$.....	$.....	$.....	$.....
IF YES: About how many hours of nursing care did this charge cover?	..... hours	..... hours	..... hours	..... hours	..... hours
d. What was the approximate cost of drugs, dressings or medicines prescribed by a doctor (other than those administered while in the hospital as a bed-patient)?	$.....	$.....	$.....	$.....	$.....

9.

a. When was medical attention FIRST required for this illness or injury? ..... (Month) (Year)	*c.* Is medical attention *still* being received for this illness or injury? ☐ Yes ☐ No (IF "NO," skip to Question 10) IF "YES," how often are you now receiving medical treatment? ☐ At least once a week. ☐ Less often than once a week, but at least once a month. ☐ Less often than once a month, but at least once every six months. ☐ Less often than every six months.
b. When was medical attention LAST received? ..... (Month) (Year)	

10. Was any medical attention received for which no charges were made? (For example: free X-rays, blood transfusions from donors, etc.)

Yes ☐ No ☐

IF "YES":

Please describe the service or treatment, giving approximate date of each item:.....

11. Please describe below any other expenses (not previously reported) incurred with respect to this illness or injury. Show date incurred, amount, and nature of expense for each item. (For example: physiotherapy treatment, braces, wheel chair, artificial limbs, etc.).....

THANK YOU FOR YOUR HELP

Please return all completed questionnaires to Mr......

Excerpts of Policy Provisions

MAJOR-MEDICAL EXPENSE INSURANCE BENEFITS

The Insurance Company will, with respect to the excess major illness charges defined below which are incurred during each family benefit year, pay to the Employee, subject to the provisions hereinafter stated, benefits in accordance with the following table:

Table

None of the excess major illness charges incurred during each family benefit year which are included in the family budget deductible for such year.

80% of the remainder of the excess major illness charges incurred during each family benefit year, except that under the circumstances described in the sub-section "Reduced Percentage" the percentage shall be 70% and not 80% in the case of Employees of Class A and their qualified dependents.

Illness.—An illness shall be deemed to mean a bodily disorder, mental infirmity or bodily injury. However, all bodily injuries sustained in any one accident shall be considered one illness, and all bodily disorders existing simultaneously which are due to the same or related causes shall be considered one illness. Furthermore, if an illness is due to causes which are the same as or related to the causes of a prior illness and there has been no recovery from the prior illness, the illness shall be considered a continuation of the prior illness and not a separate illness.

Major Illness.—An illness shall be deemed to be a major illness during a family benefit year only when the charges included under the provisions of this Rider which are incurred in connection therewith during such year exceed $25.00. The charges included under the provisions of this Rider are described under the section "Charges."

Excess Major Illness Charges.—The excess major illness charges shall be all customary charges for major illnesses which are included under the provisions of this Rider, excluding the first $25.00 of such charges incurred during each family benefit year in connection with each such illness, and which are necessarily incurred, in the case of illnesses of the Employee, while he is insured under said provisions with respect to his own illnesses, and, in the case of illnesses of qualified dependents, while the Employee is insured under said provisions as to illnesses of the dependents incurring such charges.

Family Benefit Year and Family Budget Deductible.—Upon receipt of written proof by the Insurance Company that $300.00 or more of the following charges have been incurred within a period of not more than twelve months, a family benefit year shall be fixed for a period of twelve months commencing with the day of the incurrence of the first of such charges. The charges referred to above shall be all customary charges for major illness included under the provisions of this Rider which have not been incurred in any previous family benefit year

but which are necessarily incurred in the case of illnesses of the Employee, while he is insured under said provisions with respect to his own illnesses, and, in the case of illnesses of qualified dependents, while the Employee is insured under said provisions as to illnesses of the dependents incurring such charges. The first $300.00 of such charges used to establish a family benefit year shall be referred to in this Rider as a family budget deductible. After the expiration of any family benefit year, a subsequent family benefit year may be established in the manner provided above on the basis of charges incurred after the expiration of the previous family benefit year.

Reduced Percentage.—In the case of Employees of Class A and their qualified dependents, the percentage set forth in the above table shall be modified to the extent that it would apply to certain charges as described below:

(*a*) If charges of more than $500.00 have been incurred (whether during the same family benefit year or otherwise) for a physician's services for performing any one surgical procedure, the percentage applicable to the portion of such charges which is in excess of the $500.00 shall be 70% where 80% would otherwise apply. For the purposes of such determination, the following shall apply. Two or more surgical procedures performed through the same abdominal incision shall be considered one procedure. Likewise, all surgical procedures which are normally performed as a multiple-stage procedure shall be considered one procedure. Furthermore, any post-operative care rendered within fifteen days of a surgical procedure by the physician performing the procedure shall be considered as a part of the services of performing the surgical procedure.

(*b*) If charges of more than $500.00 have been incurred (whether during the same family benefit year or otherwise) for the services of a Registered Nurse (R.N.) rendered other than in a hospital in connection with any one illness, the percentage applicable to the portion of such charges which is in excess of the $500.00 shall be 70% where 80% would otherwise apply.

Individual Maximum.—Not more than $5000.00 (herein called the Individual Maximum) shall be payable by the Insurance Company under the provisions of this Rider with respect to any one person. In the event that benefits to the extent of the Individual Maximum become payable, the insurance pertaining to illnesses of the Employee or qualified dependent with respect to whom the maximum becomes operative shall automatically terminate as provided by the section "Termination of Individual Insurance."

Physician.—The term "physician" as used in this Rider means a physician or surgeon licensed to practice medicine and perform surgery.

Hospital.—The term "hospital" as used in this Rider means an institution operated pursuant to law for the care and treatment of sick and injured persons, with organized facilities for diagnosis and major surgery, and twenty-four-hour nursing service.

A charge shall be deemed to be incurred as of the date of the service or purchase giving rise to the charge.

Payment under the provisions of this Rider shall be conditioned upon the Insurance Company being furnished with written proof satisfactory to it that all charges affecting claim hereunder were incurred as stated above.

The insurance under this Rider is not in lieu of and does not affect any requirement for coverage by Workmen's Compensation Insurance.

CHARGES

The term "hospital regular daily services" as used herein shall be deemed to include hospital room and board.

The term "immediate family" as used herein comprises the Employee, the Employee's spouse, and the children, brothers, sisters and parents of the Employee and of the Employee's spouse.

The following charges actually made to Employees or qualified dependents on account of their illnesses are included under the provisions of this Rider:

Hospital Regular Daily Services.—Charges made by a hospital for hospital regular daily services, except that for any day of confinement in a private room then only charges for hospital regular daily services up to $10.00.

Other Hospital Services.—Charges, other than charges for hospital regular daily services, made by a hospital for medical care and treatment exclusive of charges for professional services.

Ambulance Service.—Charges made for professional ambulance service for transportation to and from a hospital.

Surgery.—Charges made for the services of a physician for performing a surgical procedure.

Doctors Services.—Charges made for medical care and treatment by a physician.

Nursing Care.—Charges made for nursing care by a Registered Nurse (R.N.), other than a nurse who ordinarily resides in the Employee's home or who is a member of the immediate family, provided the nursing care is deemed to be necessary by a physician.

The following charges actually made to Employees or qualified dependents on account of their illnesses are included under the provisions of this Rider when not under any of the foregoing charges:

Anaesthetic.—Charges made for the cost and administration of an anaesthetic.

X-Ray and Laboratory.—Charges made for X-ray treatments and examinations (other than dental X-rays), or any microscopic or other laboratory tests or analyses made for diagnostic or treatment purposes and deemed to be necessary by a physician.

Physiotherapy.—Charges made for treatments by a physiotherapist, other than a physiotherapist who ordinarily resides in the Employee's home or who is a member of the immediate family, provided the treatments are deemed to be necessary by a physician.

Medical Supplies.—Charges made for the following supplies deemed to be necessary by a physician:

Drugs and medicines requiring written prescription of a physician and which must be dispensed by a licensed pharmacist.

Blood plasma.

Artificial limbs or eyes.

Casts, splints, trusses, braces, and crutches.

Oxygen and rental of equipment for the administration of oxygen.

Rental of a wheel chair or hospital-type bed.

Rental of an iron lung or other mechanical equipment for the treatment of respiratory paralysis.

Excluded Charges.—The following charges shall not be included under the provisions of this Rider:

(*a*) Any charges incurred in connection with a bodily injury arising out of, or in the course of, any employment for wage or profit, or disease covered by a Workmen's Compensation Act or similar legislation;

(*b*) Any charges for an eye examination for the fitting of glasses;

(*c*) Any charges incurred in connection with dental care and treatment;

(*d*) Any charges incurred in connection with pregnancy or resulting childbirth, abortion or miscarriage, except as provided below;

(*e*) Any charges made by a hospital unless the hospitalization is recommended or approved by a physician;

(*f*) Any charges incurred while confined in a United States Government hospital, any charges incurred while confined in any other hospital which neither the Employee nor a qualified dependent is legally required to pay, and any other charges which neither the Employee nor a qualified dependent is legally required to pay because the person with respect to whose illness such charges are incurred is a veteran of the armed forces of any country.

The exclusion set forth under (*d*) above shall not apply to charges for the performance of an intra-abdominal surgical procedure in connection with a pregnancy and any charges incurred thereafter in connection with such pregnancy, provided the pregnancy has its inception, in the case of an Employee, while she is insured under the provisions of this Rider and, in the case of the wife of an Employee, while the Employee is insured under said provisions with respect to his wife.

DISCUSSION OF PRECEDING PAPER

CHARLES E. PROBST:

This paper is the first comprehensive report on a very timely topic, and the investigation it covers was well organized and soundly conducted. The subject of Major Medical Expense or Medical "Catastrophe" insurance is by far the most important and most talked-of development in the Accident and Health field today. As Mr. Thaler points out, previous approaches to the problem of Accident and Health insurance have adequately taken care of only the average hospital-surgical-medical cases. Moreover, improvements have been made only along the lines of expanding the average-cost area with the result that hospital-surgical-medical coverages are in danger of deteriorating into a minor-bill-paying service.

The industry has been criticized because of the large area of major medical expense which has been left "uncovered" in most Accident and Health insurance plans. In fact, the trend of Group insurance plans has been so far in the direction of minor-bill-paying service that one of the most difficult ideas to sell in presenting a Catastrophe plan is that of *not* paying *all* medical expenses. It takes a little thought on the part of most field men and most policyholders before they agree that a Medical Catastrophe plan should ignore minor costs and concentrate on real financial disaster. This new coverage should be regarded in the nature of life insurance or total and permanent disability insurance where the claim frequency is relatively low and where the amount of the claim is high. Once the impracticability of comprehensive and complete cradle-to-grave, A to Z, medical-bill service is recognized, and medical catastrophes viewed in about the same light as a death claim or as a total and permanent disability, a Catastrophe plan usually gets a very enthusiastic reception, and the principle of having "deductibles" and "coinsurance" is accepted.

Mr. Thaler's data were based on approximately 10,000 employee life-years of exposure which, combined with the life-years on dependents, made an aggregate exposure of about 30,000 life-years on all types of individuals. Most of his data concerned medical costs for only the higher-income groups. In fact, more than 83% of the employees concerned had incomes in excess of $5,000. Therefore, the results are probably not indicative of experience on general industrial groups or on workers paid on an hourly basis in the lower income brackets; but the various tables are milestones in this new field. The resultant approach to Medical Catastrophe, or Major Medical Expense insurance, is a coverage confined to selected

individuals (definitely not "select" in the underwriting sense) or to very limited groups. I am not sure that this is the best way for this coverage to develop.

However, it is hard to argue a definite opinion on this topic. The coverage is new. We are all searching for the ideal plan that will control "luxuries" and voluntary minor expenses either by deductibles and coinsurance, or by excluding them altogether, and still pay any necessary expenses that threaten the claimant with financial disaster. I question that Catastrophe plans, high in cost, and limited only to certain individuals, are the answer. Some objections to this approach are:

1. Sociological criticism. Contrary to any opinions which I have heard, I do not believe that low-salaried employees are indifferent to this type of insurance provided they can get a satisfactory coverage at a price they can pay. The old criticism that private insurance cannot serve the individuals who need it most will crop up again.
2. There is less chance for experimentation or for obtaining complete statistics to extend the coverage.
3. The limited premium may prevent an adequate spread of risk.
4. It will be necessary in most cases to "sell" a high contribution to the individual participants. This may be difficult.
5. Heavy antiselection by individuals cannot be easily avoided.
6. The group insurance principle of setting a minimum size on cases, commensurate with the claim frequency of the coverage, will be difficult to adhere to under the high-cost, selected group, approach.

In addition, plans intended only for high-salaried employees already show a tendency to eliminate the "full deductible" area when integrated with Group plans. Under our present situation where the industry has not worked too closely in conjunction with those providing the hospital-surgical-medical services, this development is questioned. Deductibles and coinsurance are, at best, a crude way to control anticipated or potential "abuse" of a medical care plan. An ideal Catastrophe plan would have little need for coinsurance and deductibles. However, the industry feels that at present this is the best way to control "luxury" coverage and voluntary minor-service charges. The real solution to medical catastrophe coverage, as pointed out by Mr. Thaler, is full cooperation with those providing the hospital-surgical-medical services. To accomplish this we will have to provide broad coverage of many individuals so that those providing the services will be able to handle cases uniformly and to derive real benefit from the fact that insurance exists on a wide scale.

Under present conditions, and at the current stage of development of Hospital-Surgical-Medical insurance, I should like to propose some basic principles for Group Medical Catastrophe coverage.

1. *The plan should be simple* as to:
   a) *Premium and age restrictions.* Wherever possible, complications not presently in Group Hospital-Surgical-Medical plans should not be introduced into Catastrophe plans.
   b) *Exclusions.* Numerous or involved exclusions invite criticism and dissatisfaction with the plan. Many exclusions probably do not cost as much as it is feared they will cost. As an example, most plans avoid covering maternity claims in the catastrophe area. A tabulation from the experience of some of our large country-wide policyholders shows that less than 7% of the claims on maternity cases involve total charges in excess of $300. The average excess charge noted was $81. Even allowing for increasing costs if benefits are liberalized, as under a Catastrophe plan, the claim cost appears to be controllable.
   c) *Coinsurance formula.* Coinsurance provisions which vary with each type of expense should be avoided. The plan is likely to be misunderstood when sold, both by the field and by the policyholder.
   d) *Deductibles and benefit paying periods.* The deductible amount should be easily understood and the period over which benefits are payable should be easy to figure.
2. *Broad coverage of large numbers of individuals* is most desirable. This will give maximum spread of risk and gain acceptance of these plans quickly. Unless all members of a group are insured it will be harder to progressively improve the plan and to interest the medical profession and others who supply medical service. The minimum size group should be quite large. It is preferable to be conservative as to coinsurance and deductible amounts initially rather than to restrict the coverage to small groups of individuals.
3. *Income should be recognized as the largest single factor in costs.* When major medical costs are studied, income and age have marked influences on expenditures for medical care. I personally feel the effect of income is greater than that of age. Moreover, salary, to some degree, takes care of variations in costs due to location.
4. *The plan should cover catastrophes only* and should not be a full-payment medical plan. An insurance that is, in effect, only a small-bill-paying service, covering budgetible items, costs the insured individual disproportionately more than if he budgets these bills himself. After all, insurance is a specialized service whose basic function is the spreading of risks over certain individuals. If the items insured against are fairly uniform and common to all individuals, there is very little point in hiring an insurer to perform the scientific risk-spreading service. It should also be recognized that in the event of other catastrophes such as death or total and permanent disability, the claimant or the beneficiary does not escape with no costs. The average death claim probably goes only a little way toward compensating a beneficiary for the actual loss suffered. The same is true of any major insured hazard. Major medical expenses are no exception.

5. *There should be a deductible* on a full-pay basis at some stage before catastrophe reimbursement begins.
6. *There should be coinsurance* throughout the entire "area" covered by the catastrophe plan.
7. *"Repeat" deductibles in any form are undesirable.* No plans developed to date have avoided this entirely. The "benefit year" approach may force a claimant to pay another deductible right in the middle of a catastrophic claim and the "each disability" approach may require more than one deductible in a short space of time due to the fact that the claimant may suffer more than one illness.

In view of the above principles, a plan has been developed in the Connecticut General on the following basis:

A. The Group Medical Catastrophe plan will be integrated with the basic Group plan with no overlapping of benefits. In fact, our plan requires a full-payment deductible between the area covered by the basic plan and the area covered by the Catastrophe plan.
B. We will add the plan only to a Connecticut General Group Hospital-Surgical-Medical plan for much the same reasons advanced by Mr. Thaler.
C. We will require some minimum basic Group plan before Catastrophe coverage will be added. This minimum will take into consideration the locality, industry, wage level, and the hospital-surgical-medical facilities available to the group. In this way we hope to control cost variations due to geographical location, industry, and availability of hospital-surgical-medical services.
D. Our deductible, which will be in addition to the benefits provided by the basic plan, will be 5% of the claimant's annual rate of salary. However, the 5% will operate between some maximum and minimum amounts. Contrary to first impressions, this is not a high total deductible on the average claim. This amount is reasonable. The net effect is to approximate the apparent definition of a medical catastrophe used by the U.S. Treasury Department in allowing deductions from gross income for income tax purposes. Mr. Thaler's studies indicated that when deductibles and coinsurances were varied by income a decided leveling effect on benefits was accomplished. We believe that if the benefits to high-salaried individuals in a group can be tied somewhat to salary, then the major problem in cost control can be solved.
E. We require 25% coinsurance by the claimant throughout the catastrophe area and we will allow a maximum benefit under the Catastrophe coverage of $5,000.
F. Our deductible and maximum payment amount are on a "per disability" basis rather than on a benefit year basis.
G. To take care of intermittent periods of disability all from the same cause, we will consider any charges incurred from the date that an employee is disabled and for 6 months after his return to work, with the over-all provision that expenses incurred more than 2 years after the onset of the condition causing disability will not be considered. This means that the condition could cause

the claimant to be disabled for several intermittent periods and we would consider expenses incurred up to 6 months after the end of the latest period of disability, provided that the "covered expenses" cannot extend beyond 2 years from the date of the initial onset of the condition.

H. We intend to cover only an entire group, and hope that the experience gained will enable us to adjust deductible amounts, coinsurance percentages, and premiums much faster than on a limited group.

Our preliminary discussions with policyholders and field men have produced very favorable reactions. So far the Connecticut General has about 20,000 employee lives covered under this type of plan. Claim costs have been very low, to date, but we all recognize that claim experience on Group Medical Catastrophe coverage will take a long time to develop and will require considerable reserves for claims due or accrued but not yet paid.

WILLIAM W. KEFFER:

It is apparent that the type of coverage described by Mr. Thaler is attracting a great deal of interest. This interest no doubt arises in part from a realization that development of catastrophe insurance will meet a real need and serve to answer some of the criticisms of this country's system of private medical care and voluntary health insurance.

The argument that such coverage may be unsalable to the ordinary employee group because of high cost or benefits reaching only a small proportion of those covered seems weak as a reason for limiting experimentation to the higher-salaried classes. Certainly ability to meet medical catastrophe by means other than insurance, such as by drawing on savings or through borrowing, is less for the average wage-earner or lower salaried individual. Hence his need for this protection is greater, and an effort to solve the problems of providing it on a broader basis than that proposed seems desirable.

One of these problems is the determination of the premium required to introduce the plan, or the probable cost in a particular case. Mr. Thaler brings out clearly the difficulty of finding a starting point for cost estimates. However, his Table 9 indicates that hospital, surgical, and other physicians' charges made up 80% to 90% of total costs in the catastrophe area, and since considerable information is available to group-writing companies in this field, one approach might be to analyze experience under these particular benefits, and add margins, admittedly based on less reliable information, for covering the broader benefits to be provided. Statistical records of group casualty claims make it possible to tabulate total charges for hospital, surgical, and medical services combined for cases where these benefits have been insured under regular group plans. From

Table 9 in the paper it appears that an additional margin for other benefits expressed as a percentage of known costs or total costs under the deductible plan might be appropriate. For employees these miscellaneous benefits made up 12.1%, 11.3%, and 12.4%, respectively, of the total under the $100, $300, and $500 plans in Mr. Thaler's data.

Of course, the cost of hospital, surgical, and physicians' charges in excess of $100, $300, or $500 of such charges is not the same as the cost of these charges in excess of the first $100, $300, or $500 of *all* covered medical benefits. If 20% of known charges were considered the appropriate write-up, for example, the net costs of the deductible plans could be estimated by adding 20% to the excess of known charges over $80, $240, and $400 respectively; or by adding a somewhat higher amount, representing the maximum cost of the miscellaneous benefits without deduction, to the excess of known charges over the full deductibles. The modifications required if part of the deductible is defined as the basic insurance coverage, or if a coinsurance feature is introduced, can be estimated in similar fashion.

These methods are subject to criticism, but they do permit arriving at an estimate of costs for an existing policyholder, making use of what information, specifically applicable to him, may be available. As Mr. Thaler points out, however, the additional effect of differences in claim control, benefit utilization, and future economic conditions must be considered. On an average employee group of all income and age levels, the distribution of costs may prove different from that indicated by Mr. Thaler's tables. However I think it is safe to assume that this relatively unknown area of costs will not make up any major portion of medical catastrophe expenses.

WALTER L. GRACE:

Mr. Thaler is to be congratulated on his excellent paper on this timely subject. There is no doubt that this paper was read very carefully by all actuaries concerned with group insurance. I should like to confine my remarks to a few general comments on one important phase of this subject—the basis upon which the maximum benefit is to be paid.

The first method that might come to mind would be to relate the maximum benefit to "each illness." Presumably, it would be necessary to use the phrase "and all conditions related thereto," as we already do on some coverages. It is on this point that our claim administrators raise objections. The problem of determining the interrelation of the various claims which arise is tremendously complicated and very expensive to administer. While we have been able to live with this method under our Comprehensive Medical Expense coverages, which may involve the keeping of

records over a long period of time, but which involve relatively small sums of money, is it not probable that our relations with the claimants will be considerably more strained when amounts up to $5,000 may be involved? The most serious objection to this method, however, is the volume of complicated records that would have to be kept by the claim administrator. We would have to contemplate keeping for each employee during his lifetime a set of records showing for each of any number of illnesses the employee may have incurred the accumulated amount of benefits paid therefor. Furthermore, when each new claim is received our claim men would have to wade through a mass of medical jargon to determine to which "illness" the current claim should be posted. Despite these serious objections, the "each illness" type does fulfill one of the purposes of Major-Medical Expense insurance—that of providing a maximum benefit for an acute illness, while still not providing a total and permanent disability benefit for the chronically ill.

One method which avoids the objections of the "each illness" type is to base the maximum on the "period of illness." The period of illness would commence on the date the individual incurs the first medical expenses which go to make up part of the first deductible amount, and would end when the individual submits evidence of full recovery or when the maximum amount has been paid. In no case could a new period of illness commence until evidence of complete recovery has been submitted. The difficulties of this method revolve around the submission of such evidence of recovery and the fact that the claim files would have to be kept open for many years on a number of cases and perhaps even indefinitely for a few individuals. The expense of handling the individual's evidence of full recovery might be appreciable, even though any medical examinations required might be at the individual's own expense. While the employee could in many cases be expected to submit the required evidence as soon as recovery takes place, there would be a number of cases where such submission would be delayed for one reason or another.

Two devices might be used under the "period of illness" method to cut down abuses and reduce administrative expenses. One such device would be to limit the length of the "period of illness" to, say, two years. This would again be in line with the expressed intent of Major-Medical Expense insurance—to pay for acute illnesses while limiting payment for chronic illnesses. If such a limitation were not applied, it would be possible for some of the chronically ill to receive continuing benefits, for there are certainly cases where "full recovery" could be certified but where by the very nature of the illness future relapses could be expected. Another device which could be used to prevent abuses of the maximum would be

to attach a recurrent claim period on the end of the period of illness. Any expenses incurred during the recurrent claim period on account of the illness causing the preceding "period of illness" would be counted as having been incurred during such "period of illness" for the purpose of determining the maximum benefit payable thereon.

Mr. Thaler has mentioned a third method of dealing with the problem of the maximum, that is, applying the maximum to the individual. This method is certainly the simplest from a claim administrator's point of view, for he does not have to concern himself with the cause of illness, except perhaps in the administration of the extended insurance benefit. The problem of the nonrecurrent acute illness is solved to some extent by allowing the individual to be reinstated to full coverage on furnishing satisfactory evidence of insurability. Also, it would seem only fair to allow the individual to apply for reinstatement before the full maximum benefits are paid. One company is planning to allow such application when 50% of the maximum benefit has been paid, and another company is considering the idea of allowing such application after $1,000 has been paid. It would seem that no matter what level is set, there would always be pressure to reduce it. The level an individual company would be willing to consider would, of course, be tempered by a desire to avoid the numerous reinstatement applications that would occur after small claims were paid.

One theoretical objection to the "per person" type is the fact that the same premium would be charged for an individual newly insured for, say, $5,000, as would be charged for an individual who has already used up, say, $4,000 in benefits. This objection is somewhat mitigated if reinstatement is allowed at a reasonable level. If the "per person" type is used, it will be relatively easy to control benefits to the chronically ill, although we will have to resist the temptation to reinstate with a rider excluding the previous illness.

At this time, group-writing companies are using all three of the methods outlined in this discussion. One company is using the "period of illness" type, where the period is the one during which total disability exists. The "each illness" type certainly has its advantages if the difficulties in claim administration can be solved. Note that Mr. Thaler uses the "per person" type of maximum benefit with both his Each Illness Deductible plan and his Family Budget Deductible plan.

GEORGE N. WATSON:

On reading this paper I was struck by the fact that this coverage has been designed principally for persons earning say $5,000 annually or more. In addition, the two pillars on which the insurance rests are (*a*) a deductible amount and (*b*) a coinsurance provision.

From the paper we learn that one of the underwriting rules is that the deductible amount may be covered by insurance in the same company, but not by a policy issued by some other company, the reason for this being that the company carrying the catastrophe insurance would not, in the latter case, be able to control the total amount received by the employee as a result of any one illness, nor could the deductible amount be established as readily. However, it may not be possible to make a restriction of this kind from the practical standpoint. If the plan was issued where no basic coverage existed it would be impossible to prevent the purchase of such basic coverage at a later date from some other carrier; or if the basic coverage was in effect at the time the catastrophe coverage was installed it could later be canceled and replaced with cover in another company and little control could or is likely to be exercised over such a step.

The other comment I would like to make is that the coinsurance provision which may be of the order of 25% of the medical charges is largely canceled out, if we are considering persons earning say $5,000 annually or more, by an income tax provision which allows medical expenses over and above 4% of income to be deducted from taxable income.[1] In such an event (having in mind that 4% of $5,000 is approximately the deductible amount being used by some companies) the insurance company will pay 75% of the bill and the Government will pay a substantial proportion, if not all, of the balance, at present tax levels.

It, therefore, appears to me that the basic theory supporting this form of insurance is weakened by the two forces described, but the same wouldn't be true if we were considering persons in a lower income group. It is all very well to talk about a deductible amount eliminating nuisance payments and it is possible for some people in our income bracket to regard $200 as a nuisance, but we should keep in mind that there is a very large segment of the population who would regard a medical or hospital payment of $25 as quite another type of nuisance. They might even, I submit, regard it as a catastrophe from the standpoint of balancing their budget that month.

I would, therefore, ask the question: If this insurance is feasible for the higher income groups, is it not feasible for the lower income groups? If the basic theory on which it rests is sound for large payments, is it not also sound for smaller payments? If it is a good thing for a small part of the population, why is it not a good thing for the whole of the population? It

[1] This is the current provision of the Canadian Income Tax Act. A similar provision is now in force in the United States based on 5% of income, but an adjustment for medical expenses paid by insurance policies is made, preventing, to a large extent, the situation described here.

would seem to me that the coinsurance provision is somewhat weak in theory for the higher income groups, but that the same weakness wouldn't apply in the smaller income groups. It would seem to me that the deductible provision could be abused when large, but wouldn't similarly be abused when small.

If we are on the right track in this development, if we can make this kind of insurance work satisfactorily without raising the cost of medical and hospital care, we must realize that one result which may flow from it is that the complicated pattern of benefits which we now offer may thus be fused into one simple type of benefit and that group casualty insurance in the future may have a totally different aspect than any of us now dream is possible.

HAROLD V. LYONS:

Mr. Watson presented a few problems regarding the issuance of this plan where there may or may not be other coverages. We studied this problem very carefully in our Company. We came to the conclusion that a company of our size could not restrict itself to our own policyholders or to prospects that do not have any regular hospitalization coverage.

For this reason we have decided to issue two plans. One is to be a policy and is to be written where there is no hospitalization coverage with our Company. The other is to be a rider and is to be written in conjunction with basic hospitalization coverage.

If the prospect has no other hospitalization coverage, we would be willing to issue the policy with a reasonably low deductible amount. However, if the prospect has other hospitalization coverage with another company, we intend to determine the deductible amount so that it will exceed the average amount of claim that would be payable by the other carrier. There may be an occasional claim on which there will be some double coverage but we feel that we shall be protected very adequately on the average.

Mr. Watson was worried about the possibility of the policyholder later taking basic hospitalization coverage which would eliminate the deductible amount. In the first place, we do not believe that this is very likely to happen. Nevertheless, if this does happen, we hope that our field representatives will keep in close enough contact with our policyholder so that we shall have an opportunity to quote on the case ourselves. Since we already have the present coverage, we shall have a competitive advantage over the other companies. If the policyholder insists on placing the new coverage with the other carrier, we would recommend a revision of our plan. If the policyholder objects to this, our only action would be to

increase the rates at the next renewal to take account of the possible increase in claims because of the lower amount of coinsurance involved in the combined plans.

The smaller companies such as ourselves should be very grateful to these larger companies like the Prudential for making their studies available to us. Unfortunately, we do not have enough experience ourselves to devise our own rates and have to base our rates upon the experience of these larger companies. Our rates, at least temporarily, are going to vary with the age, the income, sex, basic coverage, and the maximum room and board benefit.

Before I close there are a couple of questions which I should like to ask Mr. Thaler. Firstly, his paper does not indicate the effect of varying the maximum on the cost. I know that this variation will be small but I would appreciate seeing some figures that Mr. Thaler may have on this subject. Secondly, I received the impression from his paper that the variation in cost by area was due mainly to the variation in the hospital room and board charges. Is this true? In other words, can we take account of most of this variation by varying the premium by allowable maximum room and board benefit?

EDWARD A. GREEN:

It might be well to re-emphasize what both Mr. Probst and Mr. Watson have already pointed out, namely the possible danger that in major medical expense coverage we may be accentuating the theory behind and practice of charging for medical services in accordance with ability to pay. We should be very careful not to improve the ability to pay of those who already have it and at the same time do nothing for wide areas where they do not now have the ability to pay. If we cover the executive class only, who can usually in one way or another manage to pay their bills, and leave without coverage the people for whom the doctor does charitable work in event of major illness, we won't have his sympathy or his cooperation, the need for which Mr. Thaler so well points out, in making these types of plans work.

W. RULON WILLIAMSON:

This paper represents research.

It gets down to the individual in that research.

It indicates, for example, such things as (*a*) that the deferred heavy old age impact of death may be duplicated by major medical bills at higher ages and (*b*) that people with more money are "fair meat" not only for the official tax collector, but for the collecting agency or agencies called by the shapers of Social Security legislation "vendors of medical care."

In the Casualty Actuarial Society, these Accident and Health discussions have been pretty well crowded out of the proceedings by the more popular Workmen's Compensation and Automobile Liability insurances. In the Society of Actuaries, the Syllabus has dropped personal Accident and Health. It is the more cheering, then, that so many companies are filling the gaps in our knowledge in this manner.

I hope to see more of this type of research, fully as important for the individual as for the employer or insurance company. It would be even more important for the Federal Government's agencies.

RUSSELL L. WAGNER:

My remarks on this subject are not in the nature of a discussion of the various aspects of Group Major-Medical Expense insurance but rather are for the purpose of presenting some data to supplement those contained in the paper.

My Company does not write insurance covering hospital, surgical or medical expenses, but for several years has operated a program of Hospital and Surgical Expense insurance covering all of its employees and their dependents. When first introduced, the plan was similar to many then in existence providing reimbursement to employees of $5 per day for hospital room and board, allowances for hospital services other than room and board, and a $150 maximum surgical benefit schedule. Benefits for dependents were on a slightly reduced scale.

While this plan was satisfactory at the time it was introduced, it later became apparent that because of increased costs and other factors it was no longer providing adequate coverage of the hospital and surgical expenses of our employees. In 1948, steps were taken to liberalize the plan. Rather than increase the amounts of scheduled benefits under the plan, it was decided to enlarge the coverage by providing reimbursement for costs in excess of our former liability on a coinsurance basis.

To accomplish this aim, the plan was amended as of May 1948 in the following manner.

1. The amount previously reimbursable under the plan was termed the "basic liability" and, of course, was still payable.
2. Additional payments were to be made in the amount of 75% of the excess of all *insured* costs over the basic liability, subject to a maximum additional payment in the case of employees of an amount equal to the basic liability. A similar limit was devised for dependents of employees.

The net effect of this change was to provide full coverage of costs at a moderate level and to provide coverage of additional costs on a 25% coinsurance basis subject to the maximums described. Because the maximum

limit was applicable to the total payment rather than the reimbursement for individual items, the increased cost of the liberalized plan was somewhat greater than would have resulted from applying a similar formula to the individual items of coverage. In addition to having a variable maximum, our plan differs from the catastrophe type of coverage currently offered or under consideration by a number of companies in that it insures against hospital and surgical expenses only, omitting such costs as physicians' charges other than surgical fees, nursing service, drugs, etc., which account for 30% to 40% of claim payments in Mr. Thaler's study (cf. Table 9).

We have now had three years of experience under this program with a total exposure of 18,651 years, 4,873 of which are on employees without dependents, and 13,778 on employees with dependents. For the three-year period ending June 30, 1951, the monthly claim cost was $1.16 for employees without dependents and $4.43 for employees with dependents; claim payments were 85.8% and 75.7% respectively of the actual hospital and surgical charges made to our employees in these two categories.

The experience under our plan is of particular interest because it is not limited to employees in the higher income groups and because it includes the experience on employees without dependents. Of the group of employees without dependents, 87% is composed of females, most of whom live in the South. The data on employees with dependents are also weighted with a somewhat higher proportion from the South than from any other section of the country.

Both groups have a younger average age than the data used by Mr. Thaler, as shown by Table 1.

As mentioned earlier the experience is not limited to the higher income groups. Table 2 shows the distribution of covered employees by income groups.

Time did not permit an analysis of this experience in as complete a manner as that of Mr. Thaler. However, an analysis of costs on the basis of "each illness deductible" amounts of $100, $300 and $500 as used by Mr. Thaler was possible, and in addition claim costs using $25 and $50 as the deductible amounts were completed. The resulting monthly claim rates *per employee* for complete hospital and surgical expense coverage (no coinsurance) are set forth in Table 3.

Although no direct comparisons with Mr. Thaler's results are possible, the claim rates from the two studies appear to be consistent when reasonable allowance is made for the additional expenses included in his study (*i.e.*, physicians' charges for medical care, nursing service, drugs, etc.) and for the differences in income levels and geographic regions.

TABLE 1

PERCENTAGE DISTRIBUTION OF EXPOSURE BY AGE GROUP

Age Group	Employees without Dependents	Employees with Dependents
Under 20	23%	.....
20–29	51	29%
30–39	11	37
40–49	9	23
50 and over	6	11

TABLE 2

PERCENTAGE DISTRIBUTION OF EXPOSURE BY INCOME GROUPS

Income Group	Employees without Dependents Percentage of Total	Employees with Dependents Percentage of Total
Under $3,000	91%	39%
$3,000–$5,000	8	47
$5,000 and over	1	14

TABLE 3

HOSPITAL AND SURGICAL EXPENSE MONTHLY CLAIM RATES PER EMPLOYEE COMPLETE COVERAGE—NO COINSURANCE

"EACH ILLNESS DEDUCTIBLE" OF	MONTHLY CLAIM RATE	
	Employee without Dependents	Employee with Dependents
$ 25	$1.05	$4.12
50	.86	3.89
100	.61	2.61
300	.11	.61
500	.02*	.22

* Only seven claims in this group.

(AUTHOR'S REVIEW OF DISCUSSION)

ALAN M. THALER:

The discussion of this paper has indicated that some impression may have been conveyed that the intention is to provide coverage only for persons in the higher income groups. That is far from the idea that was intended and it is certainly the purpose of my company to provide this coverage to as broad a cross section of the public as possible. It so happens that the demand for this type of coverage at the present time seems to come primarily from the higher income groups. This may be due in a large measure to wage stabilization rulings which in 1951 have made it difficult to obtain an employer contribution toward a group insurance plan. Without such a contribution the high cost of this coverage makes the plan relatively unattractive to lower income employees. The fact that wage stabilization has slowed up the sale of this coverage at least has the advantage of giving companies a better chance to become acquainted with the problems of this new business before they are confronted with any large volume of it.

Mr. Probst has indicated that he does not regard maternity as a proper exclusion under this type of plan. We gave careful consideration to this problem and decided to eliminate coverage except for pregnancy requiring intra-abdominal surgery. Although it is true that on a nation-wide basis charges for normal maternity hospital and obstetrical care would not exceed $300, actual results under a Major-Medical Expense policy might be considerably different. Certainly in high-priced metropolitan areas this benefit could prove to be a costly one. Furthermore, a company might frequently be called upon to pay for home nursing care following the hospital confinement.

Mr. Watson expresses concern about other coverages being superimposed on this plan thus creating overinsurance and destroying the coinsurance principle. This problem, while perhaps of greater importance on this type of coverage, also exists with respect to other forms of Group coverage. The insurance company's best protection against such difficulty is the normal community of interest on the part of the employer and the insurance company in maintaining the Group plan on a sound basis. In any event, the insurance company maintains a large measure of control through its right to increase premium rates.

The difference, as mentioned by Mr. Watson, between the income tax situation in Canada and that in the United States may require the use of

higher deductible amounts and a higher percentage of coinsurance in Canada than may be necessary in the United States.

Mr. Lyons has asked how the cost of a plan is changed if the maximum amount of benefits is increased, say, from $3,000 to $5,000 or $10,000. The limited figures that were available to us indicated that only a small percentage increase in the premium would theoretically be required for such increases. However, this does not take into account the practical reasons for limiting the maximum nor the effect of antiselection. Just as it is not considered good practice to provide a $10,000 maximum for a small group of employees in the case of life insurance, it would likewise appear unsound to provide such a high maximum under this type of coverage where it is issued to a small group of employees.