

**PANEL DISCUSSION**

**THE STUDIES OF THE SOCIETY'S COMMITTEES ON MOR-  
TALITY AND MORBIDITY UNDER GROUP AND  
SELF-ADMINISTERED PLANS**

*Moderator:* EDWARD A. GREEN, General Chairman

*Panel Members:*

RICHARD D. BALDWIN, Member, Group Insurance Mortality

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To what extent and in what way are the regular reports of the Committees on Mortality and Morbidity under Group and Self-administered Plans and the special studies based on data gathered by them useful in rate-making, coverage design, claim-loss control, underwriting, or meeting the needs of regulatory or tax authorities? What other uses do they have? What are their shortcomings or limitations for any of these uses?

Do variations in underwriting standards, coverage details, and administrative procedures from company to company seriously impair the value of the studies? Should the scope of activity of the committees be expanded or contracted? In what ways can the organization be improved? Are the costs of the reports and special studies in manpower and dollars out of line with their value to members?

EDWARD A. GREEN:

When asked to conduct this panel, I requested permission to use some visual aids in order to add both interest and emphasis to the presentation. As you can tell by the darkened room and the sound of the slide projector fan, the request was granted.

Unless both my memory and my researcher have failed me, there has never been a general discussion of the purposes and activities of the Society's Mortality and Morbidity committees even though they do constitute one of the major activities of the Society measured in terms of number and time of members and total expense involved. In the Group and Self-administered Plan area alone, there are twenty-eight members of the Society serving as members of the four committees. Many more members take part in the preparation and submission of data by the contributors and in the collecting, processing, and interpretation of data by the compilers.

The work of the group committees results in an average of 75 pages of text and tables annually in the *Reports* number of the *Transactions*. In addition, more than a dozen papers in recent years have been based in whole or part on committee data. These include many classics, such as Mr. Miller's development of the Commissioners' 1960 Standard Group Mortality Table and the 1947-49 Basic Morbidity Table, Mr. Peterson's development of the 1951 Group Annuity Table, Mr. Gingery's investigations of hospital expense insurance, Mr. Miller's study of surgical expense insurance claims, the Gingery-Mellman and Burton-Pettengill studies of major medical and comprehensive medical expense insurance, and Mr. Levinson's development of excess mortality costs of group conversions.

Incidentally, the only intercompany group experience appearing in actuarial publications until 22 years ago was in papers such as these. They include the well-known works of Mr. Cammack in the group life field, Mr. Fitzhugh in the group accident and health field, and Mr. Stark in the group annuity field. The first such paper was presented in 1918 by Mr. Cammack and Mr. Morris reporting on the joint experience under group term life insurance of the Aetna and Travelers. In 1921 Mr. Cammack reported the results of an investigation conducted by an informal committee of the experience of six companies willing to submit their data. Subsequent intercompany experience up until the disbanding of the Group Association was gathered by that organization and reported to the Society's predecessors in papers such as those previously mentioned. The first report on such experience by a committee of an actuarial organization concerning group life appeared in the *Transactions* in 1943, those concerning group accident and health and group annuities in 1948, and that concerning self-administered retirement plans in 1953.

Turning back to the magnitude of the committees' current undertaking, we find that eighteen companies contribute data to one or more of the intercompany studies and a number of consulting firms provide data for the study of experience under self-administered retirement plans. Of the eighteen contributing companies, six provide data for three studies, four for two studies, and eight for one study.

I have made a rough estimate of the aggregate annual cost of the committees' activities, by whomsoever incurred, and the result is startling. The cost includes those of the preparation and submission of data by the contributors and the unreimbursed work of members of the Society in the compiling companies as well as the clerical and machine costs of the compiling company and the costs of the publication. The aggregate cost determined in this way amounts to nearly \$500,000 a year, an amount approximately twice the Society's annual budget.

As you may know, the clerical and machine costs of the compiling company and the costs of publication are paid by the Society and billed to companies employing one or more Society members in proportion to their volume of business of the type covered by the study. Hence, this part of the estimate is determined exactly by formula. The estimates of the costs of the contributors and of professional work in the compiling companies have been based on extensions of cost figures developed in my own company, which contributes to three of the studies, and on discussion with committee members associated with compiling companies. Of the total amount, only about 5 per cent is in the categories that are paid by the Society and billed to the companies. The other 95 per cent represents the costs incurred by contributing companies in submitting data and volunteer work of members of the Society.

Undoubtedly because of the magnitude of the operations, in 1962 the Society's Executive Committee voted that the general chairmen of the group and of the individual committees should determine by inquiry among the major contributors toward the expense of the various investigations of these committees if they were satisfied that the results justified the expense involved.

Following this vote, Mr. Webster, who was then general chairman of the committees concerned with lives individually insured, and I prepared a joint letter inquiring as to whether the costs were out of line with the value of the results, inviting suggestions regarding ways in which the studies could be made more helpful, and soliciting any other comments concerning the work of the committees. It was sent to the thirty-four companies which bore the largest assessments for the compiling and publishing of the reports. Since all the companies contributing experience for the studies were included in the list, the replies presumably reflected not only the evaluations of the assessment but, perhaps more importantly, the evaluation of the cost of contributing experience as well. Suffice it to say that there was almost universal agreement that the studies were worth while, and a number of valuable suggestions and comments were received. It is interesting to note that some wanted more detail to aid them in their day-to-day problems, while others wanted less detail to cut down on the work of the contribution of data.

While the 1962 survey was of real value to the committees in planning their activities, it was a limited one in the number of companies contacted and even within its limits may not have reached all who are closely concerned with the results of the committee studies in their immediate responsibilities. So we hope that today's panel discussion will not only result in a broader understanding of what the group committees are doing but

also provide a broader response to the questions "To what extent are the committees' studies meeting the needs of the Society members?" and "How might they be modified to better meet these needs?"

Obviously, a product costing half a million dollars annually must have reasonably extensive use to warrant its production. In evaluating the committee reports, consideration should be given to the special studies presented in the form of papers which utilize data gathered by the committee. The members of the panel plan to touch briefly on the usefulness and limitations of the studies in various areas. The five most obvious ones are (1) rate-making, (2) coverage design, (3) claim-cost control, (4) underwriting, and (5) regulation and taxation.

We hope that the discussion following the panel presentation will bring out many ways in which both the regular and the special reports can be used in these and other areas as well as any suggestions as to modifications which would make them more useful.

I would like to take a minute to trace the flow of data from their original source to the committee report. The basic ingredients for an experience study are claims and exposure. Any classification that is to be studied separately for either of these items must be determined and recorded by the insurer at the time of claim or enrollment. Let us take, for example, a hospital expense claim. Any information concerning the accident or sickness causing the hospitalization, the amount and type of treatment and charges, or the characteristics of the claimant to be used subsequently in the study must be recorded at the time the claim is processed. The raw materials would presumably be the hospital bill and the claim form. The data from these forms must be transferred to a tape or card for mechanical handling. Periodically the tapes or cards must be processed into appropriate format for transmittal to the compiling company. This may or may not be a by-product of other intracompany processing of data by the contributor. When the material of all contributors is in the hands of the compiling company, it is checked for completeness, collated, and processed into form for inclusion in the report. Then the report is written and, after review by committee members and incorporation of suggestions they may make, submitted to the Editor for inclusion in the *Reports* number of the *Transactions*.

It can be seen from this description of the flow of material that there can be a conflict of interest with regard to the extent to which the committee studies go into detail. As one member of a committee put it in an exchange of correspondence, the principal hindrance to adequate statistical research in the health insurance business is lack of money. He stated that this lack shows up in two different ways. One is the unwillingness

to spend the money required to maintain sufficiently elaborate claim and exposure records to yield the information that might be desired for any particular study, and the second is the unwillingness to process such data as are available. It was the opinion of the author of the comment that the first of the two obstacles was more serious since it tended to involve operations over which the actuary frequently had little control. Some of you may have been faced with the same situation with which I have been faced from time to time in the advanced planning and budgeting process when several of us with varying responsibilities were examining the advantages of discontinuing our contribution of data to the inter-company studies and spending the same amount on something like opening an additional group field office. One reply to the 1962 survey stated, "The Society committees, for the most part, have been helpful in confining their wants to information that can be furnished without additional efforts on our part. We hope they will continue to avoid studies that would be expensive even though interesting but probably inconclusive or impractical of application."

One may ask if upward of half a million dollars a year outlay on the group and self-administered plan studies indicates a lack of money. In aggregate it is an impressive figure, but it is sufficiently divided so as not to put an undue burden on anyone. To put the figure in perspective, it involves approximately six thousandths of 1 per cent of the aggregate premium income for the coverages studied; that is, six cents out of each \$1,000. I think that you will agree that this is a relatively modest figure, especially if it relieves the companies of some research and development expense that they would otherwise incur in internal studies. Our studies may well be limited both in scope and cost compared with what I hear is being planned under the Medicare program.

A factor other than cost may have a bearing on the question as to whether the scope of activity of the committees should be expanded or contracted. In a report to the Board of Governors a few years ago, it was stated by a committee chairman that "As companies have changed their statistical systems from small scale to large scale computers they have found it necessary not only to reduce or eliminate their contribution in the year of changeover but to require more time to submit less data thereafter." This may be due, in part, to the orientation of machine programs more toward the accounting and administrative functions and away from the research and management control function and, in part, to the difficulty of securing descriptive data from employers, claimants, hospitals, and doctors which are not absolutely essential in determining the benefits to be paid or the amount of the premium.

I am sure that there is no need to introduce the panel to you. Mr. Crimmins and Mr. Bassett are chairmen of the Group Annuity and Self-administered Plan committees, respectively. Mr. Gingery, a former chairman and presently a member of the Morbidity Committee, has kindly consented to fill in for Mr. Pettengill, who has been pre-empted for tomorrow morning's panel on social insurance programs. Mr. Baldwin, a longtime member of the Group Life Committee, has been most co-operative in filling in at the last minute for Mr. Wood, who was unavoidably detained in Hartford.

We hope that you will take notes and participate in the informal discussion period following the panel presentation.

RICHARD D. BALDWIN:

As our moderator told you, I am filling in for Milton Wood. Mr. Wood's personal experiences with these studies date back more than thirty-five years. My own cover a period of about fifteen years. My remarks today were composed to a large extent by Milt Wood; I have added some comments of my own.

In his opening, Mr. Green has given some interesting history on the background of group mortality studies, which date back to 1918. In the early days, all the exposure and claim data were prepared in handwritten form on work sheets which were at least four feet square and the stack of papers was then delivered to the Aetna for compilation. I believe that this procedure was actually followed until the early 1940's, when we changed to punched cards for submitting the data. However, the contributing companies were still faced with substantial clerical work in preparing the exposure and claim data until recent years. Now many of the larger companies obtain the data from electronic tapes, and this works fine once we get through the growing pains of adjusting the programs to accommodate such specialized studies.

In preparing for this discussion, I have found it most interesting to review the variety of material which has been produced during this forty-seven-year history and some of the vital information which has proved to be of very important value to our companies. I would like to cite the most outstanding examples of this nature.

For rate-making, the series of reports has presented the basic experience by age for death claims and for the various types of disability claims. For companies using the New York minimum rates, this experience has been the foundation for establishing such rates at adequate levels, proceeding over the years from the T-rate to the U-rate to the N-rate and to the Y-rate bases. This use culminated in 1960 when an Industry Ad-

visory Committee used the experience developed by the Group Mortality committee for the period 1950-58 to develop the 1960 CSG Table as the basis for the Y minimum rates made effective in 1961. This application is ably described in Morton Miller's paper in *TSA*, XIII, Part 1, 586. Presumably, this will serve as a precedent when the passage of time calls for a new rate basis.

The *Reports* are also of great assistance in setting extra premiums for hazardous industries. Over the years they have displayed extensive experience on death claims, disability claims, and accidental death claims for about 130 separate industries. It is probable that this material has also been useful to some companies for dividend and experience rating purposes in establishing the normal expected claims for the industry classification to be weighted on a credibility basis with the actual claims, especially for groups of medium and small size. It would be very interesting to hear from you on these or other uses which your companies have made of the experience by industry.

There was one time when this experience proved to be of very great value to the companies on a rather dramatic basis. This was during the early 1930's, when the depression caused the maturity-type disability claims to skyrocket to about two and one-half times the 1925-26 level. This was one of the important signals which caused the industry to discontinue this type of disability provision on new issues effective in 1932 and to institute means for withdrawing it on many existing policies with bad loss records.

The heavily substandard mortality on group conversions has always been a cause of concern, and experience has been reported out every sixth year from 1930 to 1960. This mortality experience, with a twenty-year select period in recent *Reports*, has furnished many companies with the basis for computing the charge-back to the group policyholders for the expected losses on the actual group conversions under their policies. As a further aid to such computations, these studies have also included the intercompany withdrawal rates on a select and ultimate basis. The *1960 Reports* for the first time showed a separation of the mortality and withdrawal experience by sex, where such coding was available, which has been of some benefit to our more sophisticated members. Ed Green has already mentioned the very valuable application of this material which Lou Levinson developed in his paper in *TASA*, XIV, 450. According to schedule, the next group conversion study will be incorporated in the *1966 Reports*, and I am sure that all of you are looking forward to this with more anticipation than the compiling company.

I would also call attention to the *1949 Reports*, which included the one

historic study of disability claims under the premium waiver clause. Information was developed, of course, on both death and recovery rates on the available data for eleven select years based on 5,460 actual claims. Disability claim reserves developed from this experience amounted to about \$550 at the inception of the claim, increasing to some \$750 after ten years. I might add that the Group Mortality Committee is now considering the advisability of a call for data for another premium waiver study within the next year or two.

In 1964 the availability of up-to-date group mortality experience proved of great value when the IRS was preparing regulations concerning the value of any group life insurance in excess of \$50,000 which the individual must add to his taxable income. Morton Miller was again a central character in this action, and he has agreed to tell the story later during the discussion period.

So much for the history and useful applications of the various committee reports. I will now turn to some of the problems which the committee has been facing and which we are trying to solve if we are to improve the quantity and the quality of the information which is reported out. First, I would point out that our companion Morbidity Committee has always been quite well informed on sex, at least on a percentage basis, even though they have paid little attention to age distributions. By comparison, the older Mortality Committee has always been quite precise on experience by age but has never been able to show the sex differential in its basic studies. This situation has been explored with the contributing companies during the past year, and it appears that there is some hope of developing future information by sex on as much as 50 per cent of the experience contributed. Here I would note that we may find that a large part of the differentials in experience by industry may be due to differences in the relative mixes of males and females in the various occupations.

Another major difficulty in the experience by industry has been the widespread diversification of many corporations into fields which have little relation from the viewpoint of industrial hazards. This, of course, introduces more and more nonhomogeneity into the experience by industry, which the committee does not find easy to control. However, we do try for as much separation as we can get, and the feeling has been that it is better to have some imperfect information by industry than to have none at all.

It should be noted that the Mortality Committee's array of industry codes dates back to the original 1918 study, with additions and separations as found necessary over the years. Admittedly, it is somewhat out of date in many areas, but the committee has found it very difficult to



make changes which could not be applied to the past experience on an accumulated basis. Therefore, the old coding will be used in the *1965 Reports* on group life experience. However, the committee, in conjunction with the Group Morbidity Committee, has adopted the Federal Standard Industrial Classification codes, as reported in Dun and Bradstreet's service, for all submissions in future years, and the next following report in 1970 should be on the new basis.

During the discussion period I hope that many of you will feel inspired to tell us about any special applications of the *Reports* which have been of value to your companies. More importantly, we would like to have your suggestions for improvements which should be considered for future *Reports*. Such information, either now or in later correspondence, would be much appreciated by the committee.

STANLEY W. GINGERY:

The objective of this committee is to present a picture of the current level (and any trend in it) of claim costs for a wide variety of plans of health insurance benefits. To accomplish this, it conducts two types of studies: (1) the regular annual study and (2) special studies which are undertaken as the need for them becomes apparent.

The committee has, in recent years, adopted the concept of a "Tabular" as its method of studying and presenting experience annually. The Tabular is a net annual claim cost for a particular portion of health insurance experience against which to compare the actual annual claim costs. To the extent possible and practical, the Tabular considers all possible features of the plan of benefits and of the covered group by which we feel that the experience varies or by which we wish to study the variations in experience. For example, the Tabular for a hospital coverage considers:

1. The daily benefit, both the dollar limit and the duration (in days or in "times").
2. The miscellaneous benefit maximum, in dollars or as a multiple of the daily benefit.
3. Any maternity benefit.

For an employee coverage, the female per cent of the group is considered.

A calculation of a Tabular is similar to a manual premium calculation. However, in the latter, further consideration might be given to area, family composition of a dependent unit, and, recently among some companies, age. For the Tabular these are not considered.

Generally, the Tabular for each coverage is based on a special study conducted by the committee and reported as a paper in the *Transactions*. For example, the Tabular for weekly indemnity is based on Mort Miller's

"Group Weekly Indemnity Continuation Study," in *TSA*, III; the Tabular for hospital coverages on my "Reinvestigation of Group Hospital Expense Insurance," in *TSA*, XII; and the major medical Tabular on the Pettengill/Burton "Development of Expected Claim Costs for Comprehensive Major Medical Benefits," in *TSA*, XV. For the printed record of this meeting, I plan to include a list of the bases and sources of Tabulars currently being used. (See Appendix.)

The results of the studies conducted by this committee are presented in the *Reports* number of *TSA* annually, because of the more rapid changes in the level of claim costs under the health insurance coverages. Under life insurance, where claim costs are more stable, results may be, and are, published less frequently.

For each *Annual Report*, the most recently available three policy years of experience under each coverage are included by plan of benefit. For the hospital and surgical coverages, maternity and nonmaternity experience is presented separately. For each coverage, the latest policy year is also presented by plan of benefits, excluding the jumbo groups which might unduly influence these smaller volumes of insurance.

In addition, experience year by year for the recent past is presented in broad plan groups, to indicate any trend in the level of claim costs. Note that the use of a Tabular allows us to combine the experience under various plans of benefits within a coverage.

For each coverage, results of all plans combined are presented by area, metropolitan area, state, or region. A group is assigned to a metropolitan area if 75 per cent of its volume is within that area; otherwise it is assigned to a state or to a region if 75 per cent of its volume is within that state or region. Note that the determination of the Tabular does not consider area but does consider the benefit level, which varies by area. This type of study by area assumes that each group is covered by a level of benefits appropriate for its area.

Presentation of results under a coverage split by plan of benefits serves as a test of the Tabular and as an indication of trends which differ by certain features of the plan; for example, an increase in average miscellaneous charge benefits would have more of an effect on a 20X plan than on a 10X plan, whereas a change in frequency would affect each similarly. These results would be an indication of the need for updating Tabulars.

Less frequently than annually, in order to collect sufficient volume for it, results by industry are presented for each employee coverage.

The use of the Tabular has been adopted by the committee because of certain advantages that it has over the former plan of presenting results of the regular annual study. (These had been in the form of annual

claim costs per unit of exposure.) The Tabular allows us to include more plans of benefits in the study, because it allows the combination of plans and thus the inclusion of many plans covering insufficient volumes to study separately. In this way a greater total volume may be included in the study. The use of a Tabular has made the study of the major medical coverage possible (although all problems in a study of supplementary major medical expense have not been solved, and thus this coverage is not yet included in our studies). The Tabular avoids some distortions present in the old form of presentation; for example, claim costs per dollar of daily benefit units of exposure failed to consider the fact that the cost of the miscellaneous benefit does not vary directly as the daily benefit.

However, the Tabular still has certain weaknesses and disadvantages. Results cannot be presented in a form that will give separately any indication of frequencies, average durations, room and board-miscellaneous benefit splits, and so forth. These basic elements of claim costs cannot be examined separately, and so the reasons behind any trend in claim costs are not revealed. An attempt is now being made to split the claims under the hospital coverages reported to us for the regular annual study, thus enabling us to present results separately for the room and board and for the miscellaneous benefit claim costs.

Many factors which influence claim costs, e.g., number of dependents in a family unit, cannot be studied. Note, however, that the study must be limited by the splits of the basic data which are available to us. Cause of claim, for example, accident or sickness, is not studied.

The study is limited to those coverages for which a sufficient volume of data is available. Thus there must be a delay in revealing costs under extensions of present coverages or new plans of benefits or coverages, for example, intensive care or home care under the hospital coverage, long-term disability (a study of which is now under way), or dental insurance.

We realize that the concept of a Tabular is a new development and all the deficiencies have not yet been overcome. However, we feel that it is a step toward studies of greater value.

Currently, ten companies contribute to these studies (who are, incidentally, the Group Mortality and Morbidity Committee members), who account for about two-thirds of the total United States industry coverage under group health insurance. However, because of the limitations on the groups to be covered and the plans to be included, none of them can contribute anywhere near 100 per cent of its total in force. (For example, we included 17 per cent of our weekly indemnity, 5-15 per cent of our hospital and surgical, and 33 per cent of our basic comprehensive major medical.) A small fraction of the total industry is in-

cluded in the studies. Thus, it appears that an intercompany study is necessary in order to collect volumes approaching significance for meaningful results.

In general, non-United States groups and trustee-association cases are excluded from the study. Employee coverages in industries rated by the contributing company are included only for the periodic study by industry and are not included in the regular annual results. Dependent coverage in all industries regardless of rating is included. Experience of plans written under state cash sickness laws is excluded.

Only a limited number of standard plans can be included in the studies (although the use of a Tabular has removed some limits on what we may consider "standard"), and in group insurance, especially among the larger groups, a "standard" plan is apt to be the exception. Actually, one troublesome factor is the number of groups (usually the larger ones) which provide different plans for different parts of the group (e.g., hourly and salaried), the experience of all of which is combined; this group cannot be handled in the study.

The so-called special studies are undertaken by the committee when finer splits of data are necessary than are available in the regular studies. The weekly indemnity, hospital, and major medical studies mentioned previously are examples.

In general, a special study involves a detailed examination of claims paid under a liberal plan of benefits, not only of the benefits themselves but of the expenses or other circumstances behind them; for example, duration of disability, duration of hospital confinement, room and board charge rate and total charges, miscellaneous charges, amount and type of medical expenses, surgical procedure, and so forth. One major use (and purpose in the future) of the special studies was the construction of Tabulars for the regular annual study.

In addition, the special studies furnish information not otherwise available on which many underwriting decisions can be based; for example, rate-making, coverage design, claim-cost control, and so forth.

Currently the committee has plans for a "Special Annual Hospital and Surgical Study" which will collect detailed claim information for a limited number of liberal benefit plans. It is hoped that this study will avoid some of the need for special studies of hospital and surgical in the future.

I should mention at this point the LTD study which has just been undertaken by the committee. This should produce the basic elements of claim costs: frequency and continuation. It will cover the period 1962-64 with results available, hopefully, at the end of 1966. Further years of experience will be added as available. For additional volume, an invita-

tion to this study will be extended beyond the committee and beyond the Society.

In using the results of any of the studies, we must not overlook a general phenomenon underlying the experience. That is, the claim level experienced by a group varies by the type of group covered, and likewise the choice of plan varies by the type of group; therefore, the difference in results appearing in the study between two plans of benefits does not necessarily represent only the difference in claim costs between these two plans. For example, the cost appearing for a thirteen-week weekly indemnity plan is not equal to the cost of the first thirteen weeks of a twenty-six-week plan because of the difference in type of group whose experience was included in the thirteen-week plan of study and the type of group for whom a twenty-six-week plan is provided. Depending upon the use of the results, this affects the value of the study; for example, the LTD integration credit for a thirteen-week plan as compared to the credit for a twenty-six-week plan. In this example, we must further realize that an LTD coverage is the choice for even a third type of group, where neither the thirteen-week nor twenty-six-week plan results might be appropriate.

What use can be made of the results of the studies? Certain purposes have been suggested for discussion here.

For claim-loss control the Tabular could be considered a standard against which the experience of a company or an individual group can be tested. However, the Tabulars as published do not show the several elements of claim costs, for example, frequency and continuation. Therefore, they provide only a standard for the total level, and not even an indication of the cause, of claim costs. The results of the most recent studies, in the form of ratios of Actual to Tabular, will give an indication of the modification necessary to bring the Tabular up to current levels but, again, without revealing those elements of the cost which have changed since the last special study. Furthermore, this test cannot reveal information by age, cause of disability, and so forth.

For rate-making purposes the annual study will give merely an indication of the level, and annual rate of change in level, of claim costs. The special studies, particularly the split of charges (as opposed to benefits), are of more detailed value. Actually, we at the Prudential feel that of all the studies of the Morbidity Committee, the continuation information and the splits of medical expenses are of most value to us.

As an aid to coverage design, only the special studies are of much value and even this is limited. This is because the annual study is limited

to plans in existence and can only with difficulty be projected to plans not yet conceived.

The level of experience varies between insurance companies because of variation in practices or objectives. This variation is present, but its extent is not presented in the results. Thus the averages which appear in the study results must be considered as subject to this limitation.

Often the committee has been requested to produce results which could be used for the purposes of regulation, for example, a base for conversion policy rates under Russo legislation. Generally, a special study must be designed for the specific need. For this particular example, the committee has collected experience under conversion policies and made and kept the data available for this purpose.

The timeliness of the results of the study presents unavoidable problems in their use. Consider the interval from the date of incurral of a claim to the end of the policy year in which it will be considered in the experience records of the case, to the end of the calendar year during which other similar cases are completing policy years, through the collection and process of the data, to the contribution to the study, through the compilation and publication of the results, to the period of experience for which the results will be used, for example, as a guide to rerating. Thus to retain its value the study must reveal trends which can be projected into these future periods of use.

In like manner a considerable period of time is necessary between the introduction of a coverage, the amassing of experience, and the collection, compilation, and publication of data. Dental insurance is currently an example of a coverage whose experience we are anxiously waiting to see in the form of reliable claim costs.

In its request for experience, the committee has followed the principle that for the regular annual studies it may ask contributing companies for data only of a form and to the extent that would otherwise be available. This accounts for the limited form of the results under the study, with the lack of detailed information, since not all companies feel that they can justify the split of claim information which Ed Green outlined in his introduction. Note, however, that, in the absence of an intercompany study, these data would have to be made available and studied by the individual companies. Thus, each contributing company's share of the \$500,000 cost of the studies mentioned earlier is, to a large extent, a substitute for and not an addition to the expenses of its normal operation.

Generally, in group insurance detailed splits of claim information are not made and thus cannot be contributed to the regular annual study.

For this, the special studies are necessary, and for these studies the contributing company can justify the expense, to some extent, as a substitute for studies that it would otherwise have to conduct for itself. It is interesting to note that it is generally the larger companies who contribute to these special studies, but also it is these studies of the committee's total output that are of most value to these larger companies.

Often the question arises concerning the HIAA's Statistical Committee. Their interest is in the collection and presentation of statistics of a general nature, excluding the purely actuarial, such as claim costs. Thus they are interested in characteristics of benefit plans being issued or in force, presently or for past periods, and in the extent of coverage. Their field goes beyond the industry and their information is of interest to government agencies, outside research groups, and so forth, besides to the industry. These areas are not within the scope of our committee's objectives. Because of the limit on our collection to standard plans of benefits, our study cannot be used for these broader purposes. A clear line must be drawn between the two committees' fields to avoid misinterpretation of either's results for the other's purpose. For example, recently an attempt was made to analyze the industry in force on the basis of our regular annual study results, to an obviously disastrous end, except that the two committees were able to co-ordinate their conclusions in time.

#### APPENDIX

##### LOCATION AND BASIS FOR TABULARS

###### *Weekly Indemnity*

*1962 Reports*, Table 15, page 101.

Basis: Morton D. Miller, "Group Weekly Indemnity Continuation Table Study," *TSA*, III.

###### *Hospital, Employee and Dependent*

*1960 Reports*, Table 15, page 140.

*1961 Reports*, Table 10, page 143.

Basis: S. W. Gingery, "A Reinvestigation of Group Hospital Expense Insurance Experience," *TSA*, XII.

###### *Surgical, Employee and Dependent*

*1961 Reports*, Table 15, page 150.

*1964 Reports*, Table 12, page 174.

Basis: Morton D. Miller, "1957 Study of Group Surgical Expense Insurance Claims," *TSA*, X.

###### *Comprehensive Major Medical, Employee and Dependent*

Pettengill-Burton, "Development of Expected Claim Costs for Comprehensive Major Medical Benefits," *TSA*, XV.

JOSEPH B. CRIMMINS:

*Description of the Group Annuity Mortality Study*

This is a continuing study of mortality experienced under group annuity contracts. It was commenced in 1938 as an intercompany activity. It was suspended during the war and then reinstated as a Society activity in 1948. A report has been made to the Society each year since 1948.

There are currently sixteen contributing companies. The number of life years of exposure added each year is approximately 500,000. The data summarized go back to calendar year 1924.

A regular study is made each year of the experience on matured annuitants. It is subdivided into three major categories:

1. Annuitants retired on and after the normal retirement date.
2. Annuitants retired prior to the normal retirement date.
3. Annuitants retired under plans with no stated normal retirement date. This category also includes the experience on any single-payment contract under which annuities are purchased for a closed group of existing retired employees.

The experience in each of the three categories is summarized by sex, age, and calendar year. Ratios of actual to expected based on the Group Annuity Table for 1951 are shown by number and amount. In addition to the current year's experience, the study summarizes the data in recent years by quinquennial year groupings to indicate the trend in mortality over the years.

Two special studies have been made by the committee in recent years. One in 1956 was a study to show the experience by duration from retirement date on early retirements. The second, completed in 1962, was a study to examine the effect on mortality experience under contingent annuitant options of different waiting periods in the election of the options.

*Usefulness of the Study*

The regular study is always up to date and is therefore a valuable index against which the mortality bases currently in use for valuation, rate-making, and cost-estimating can be measured.

The data by calendar year and groupings of calendar years are useful for observing the mortality improvements and providing a rough standard for comparison with projection factors in general use.

The experience on early retirements and the results of the special studies are useful in a crude sort of way as a guide in arriving at under-



writing requirements for certain options and in deriving appropriate option factors.

Perhaps the most important by-product of the committee studies is the availability of the crude data for use in preparing new mortality tables for group annuity business, as was done by Mr. Peterson in constructing the Group Annuity Table for 1951. This table is widely used by insurance companies and consulting actuaries, and by the states as a permissive standard of valuation for group annuity reserves.

The shortcomings of the study flow from the limitations of the data available. Mortality on annuitants after retirement is only one element in group annuity costs. Other elements such as preretirement mortality, turnover, salary changes, disability, timing of retirement, and options available are also important elements in group annuity costs.

#### *Availability of Data and Problems of Contributing Companies*

The procedure for preparing the annual contributions to the mortality study was carefully set up a few years ago on a basis which greatly simplified the work of the compiling company. It was also designed to provide the basic data from each contributing company as a by-product of its valuation work. In the case of my own company, at least, it is relatively inexpensive to maintain. We see no great problem in continuing the regular study on an annual basis, so that the published data would always be up to date.

Any significant change or addition to the data now compiled would, of course, introduce problems of cost v. relative value and also problems of manpower.

#### *Integration with Committee on Self-administered Plans*

Because of the basic similarity in data and purpose that exists between the Group Annuity Committee and the Committee on Self-administered Plans, a suggestion was made by Jack Dyer, during his chairmanship of the latter committee, that an integration or co-ordination of the efforts of both committees be considered, so that in effect there would be one joint committee. Discussions between the membership of the two committees pointed up some advantages but also some difficult problems.

A decision reached last year is currently being implemented by having an overlap in membership, with the chairman and one other member of each committee included in the membership of the other committee. In this way, it is hoped to get an interchange of ideas, some possible extension or co-ordination of the work of the two committees, and in any case an assessment by actual experience of the integration proposal.

*Some Questions for Consideration*

If we could speculate on how the committee might expand its activities, here are some ideas:

1. Should a continuing or special study of mortality on active lives be made? Is it necessary or desirable? Where do we get the data for deposit administration cases?
2. Should studies be made of other decremental elements that enter into pension cost estimating, for example, withdrawals, disability retirements, salary scales, and so forth?
3. Should we try to introduce an industry or occupational grouping, or a grouping by geographical area, into the present study?
4. Should we make more special studies to show cost or effect of electing the many options which are being made available more commonly, or at least have data accumulated for future study?

PRESTON C. BASSETT:

What I have to report on self-administered pension plans is quite similar to what you already have heard from Joe Crimmins on group annuities.

This committee was formed in 1953 with the idea of collecting and analyzing statistical data on self-administered pension plans. We felt that the place to start was with retired lives, not getting involved in the many other facets that enter into the valuation of pension plans. It is on this basis that the committee has submitted reports. The reports have been published about every four years, the last one in 1962. By that measure we hope to put out a report next year.

The mortality on pensioners covers basically several separate, large self-administered pension plans. The studies are by sex, age, and calendar year. We measure the mortality against the GA 51 Mortality Table, and its purpose is to measure current mortality that we are experiencing and to note any trends.

We hoped that we could measure any variation of mortality by industry, but to date the statistics have not been sufficient to make any worthwhile analysis along this line. We have noted some differences but they were of hardly any significance.

In a way, these studies more or less supplement the studies that Joe Crimmins makes. These studies have generally confirmed the results shown in the group annuity studies. The trend is to lower mortality rates, and female mortality is lower than male. The improvement in mortality has been greater among the females than among the males.

In the fifteen years ending 1956-60, the ratio of actual to expected

decreased some 9 per cent for male lives and 22 per cent for female lives in one of the largest groups we studied. There were corresponding decreases in the intercompany study of 14 per cent for male lives and 34 per cent for female lives.

Our firm, like many others, is using the 1951 Group Annuity Mortality Table with a projection. It gives me confidence in our table when I review these statistics periodically. These studies can justify the use of the tables we are using or indicate when changes should be made.

I think that another of the values in this is that we are able to see that the tables we are using do not get too far out of line into the area of providing for settlement options of actuarial equivalent values. I have become particularly concerned that the mortality table is reasonably correct with regard to lump sum settlements.

This next year we will be working closer with Joe Crimmins and his committee when we start collecting the data from the individual companies. Our biggest problem, of course, is in getting others, be it clients or consulting actuaries, to submit data for the study.

There are a limited number of self-administered pension plans where the volume of data on retired lives is significant by the time we break it down by sex, year of birth, and year of exposure. Some of our client companies are reluctant to have their data published. Some of the companies are reluctant to go to the expense of collecting data for us. Many actuaries are reluctant to ask their clients to collect the data. Finally, many of the consulting actuaries do not have the time to do the necessary work for this study.

Even so, we hope to continue and expect to have a report again next year.

EDWARD A. GREEN:

At this time Morton Miller will make the report mentioned by Dick Baldwin, which will deal with IRS regulations concerning the taxable value of any group life insurance in excess of \$50,000.

MR. MORTON D. MILLER: The first thing I would like to say is to compliment Ed Green on his presentation here earlier. I think this is the first time, at least in my experience, where visual aids have been used by one of us at a Society meeting to lend color, interest, and effect to a presentation, and I think that Ed succeeded extremely well in the story that he told us about the activities of the Society Group Mortality and Morbidity Committees through the years, and I compliment you, Ed, for everyone.

I have been asked to tell you about the application of group mortality data to the development of the costing factors that are to be applied to

the amounts of group life insurance in excess of \$50,000 to determine for tax purposes the employer's contribution toward the cost.

In the Congressional Hearings leading up to the enactment of the bill which was being considered and discussed, the table used for the evaluation of pension trust life insurance cost for tax purposes was used to illustrate the kind of costing factors that might be applicable to group life insurance. The point was made in the testimony that this table was quite out of date. It was based on the 1939-41 census material, and it was, I think, promulgated in 1955.

The reports on the bill made reference to the fact that the Treasury should study the matter of an appropriate level of cost factors related to more current mortality standards, so several of us were chosen to discuss this matter with the IRS people. We were able to show them the study that went into the 1960 Group Table, and I think that they were impressed by the professional way in which that work was done and the body of material that was available in developing it, as well as its use by the commissioners for rate-making purposes and our own uses otherwise.

Their choice was to use either a revision of the census material to a more current basis, such as 1961 census data, or to use something based on the group statistics that we already had. They preferred the latter, which was clearly pertinent to our problem, the evaluation of the cost of group insurance. We were, therefore, very pleased to start with the 1950-58 group experience.

The experience was not used directly, because the law refers only to the death benefit cost, as distinct from the disability benefit cost, and one of the adjustments that we urged them to make and which they did make was to eliminate the value of disability claims. This adjustment was readily available from the tables we had developed. Another adjustment was needed because of the considerable and continuing mortality improvement since 1950-58.

Data for 1960-62 furnished by the Travelers, the compiling company, supported the point of view that we were expressing. It showed roughly a mortality improvement of about 1 per cent a year in the period that ran from 1954, the mean of 1950-58, to 1961, the mean of the other three years. Thus, the factors that they finally evolved recognized these two considerations—the elimination of the disability cost from the basic data and the improvement of the data at the rate of 1 per cent a year for the intervening years.

Actually, again at our suggestion, they projected improvement into the future, to 1966, because their concept was that this was a table that

would be revised from time to time. They look upon this initial table as commencing in 1963 and continuing for, say, a five-year period.

There were two elements in our discussion on which we were not able to give them adequate information. One of these elements was information which would differentiate the mortality of males and females. The other was that this particular group of insureds—those insured for more than \$50,000 of group life insurance—was of the executive type which might be expected to experience better mortality than the average of the inter-company studies, containing blue-collar workers and a variety of industries. Of course, we could not support that position statistically, and it suggests the need, perhaps, for a large-amounts study.

There were other considerations, such as an allowance for expenses and interest, but, all in all, we were pleased with the results which I am confident could not have been achieved in the absence of the Society's group mortality studies.

**MODERATOR GREEN:** An item which has come up in the Group Insurance Mortality Committee from time to time concerns the question of whether or not to undertake a study of group mortality experience on Canadian lives. Dick Baldwin will report on this subject, after which the meeting will be open for general discussion.

**MR. BALDWIN:** The Canadian Institute of Actuaries has in the past expressed a desire to have a study of group life mortality of Canadian policyholders.

The Society studies do include Canadian mortality, but the proportion is probably 2 or 3 per cent of the total. Therefore, the Mortality Committee of the Canadian Institute of Actuaries decided to proceed with a study of group life insurance mortality in Canada, and we canvassed all the companies that have any volume of business in force. We were able to get out a short report on the experience in the calendar year 1963, about the end of 1964. We should have our 1964 report ready very shortly.

There are twelve companies contributing to the study, and they have 65 per cent of the total group life in force in Canada. I believe that there are some 20 billion dollars of group life in Canada. Two more companies will enter next year.

This first report was based on about 6,900 claims, as against 43,000 claims per annum in the Society study.

One of the reasons for doing these studies separately in Canada rather than as a part of the Society's study was that the Canadian com-

panies would like to see mortality by geographic areas and by size of policy, particularly small policies. The population statistics show that the mortality varies to some extent by province. We also secure our experience on union business, which has not been studied by the Society, and experience by amounts, which is also not otherwise being studied, and, finally, experience by sex.

It appears that this Canadian study, while it covers a broader range than the Society study, will not really be of too much use for another year, perhaps two years, until there are more data.

MR. DANIEL W. PETTENGILL: The Group Health Insurance Committee is interested in seeing whether anything can be done to separate out Canadian experience. We are starting with the loss-of-time coverage, and it is hoped that this year we can persuade a number of companies to submit their Canadian loss-of-time experience separately, so that in the space of two or three years we might have accumulated enough to be able to publish a report on it. We would like to see whether there is a distinct difference between the United States and the Canadian experiences, as far as the loss-of-time benefits are concerned.

MR. JOHN K. DYER, JR.: It seems to me that the pursuit of joint experience studies under pension plans, especially those which are not subject to full insurance company guarantees, is rapidly becoming one of the most important challenges facing the actuarial profession.

It has been amply clear at this meeting that the private pension plans are going to be subjected to much closer scrutiny by government authorities than has been the case heretofore.

I feel certain that the great majority of those here do not welcome this prospect. However, I do not think that many of us here can believe that some form of control beyond that which we now have will not be imposed within the next few years. Faced with this prospect, I see at least two important and closely related reasons why the continuation and broadening of the work of Mr. Bassett's committee are of vital importance.

First, it will be impressive evidence that the actuarial profession is making a conscientious and co-operative effort to arrive at sound and realistic measures of pension costs and liabilities. Second, it could lead to reasonable bases upon which funding or reserve standards may be imposed, if they are imposed.

May I urge, therefore, that all of you, especially the consulting actuaries among you, co-operate fully with Mr. Bassett's committee.

An important aspect of such co-operation is, of course, to sell your clients on the importance of this work to them. There are, I am painfully aware, some formidable barriers to the pursuit of this project, time and money being probably the most important of these. I hope that the barriers may be overcome by persuading first yourselves and then your clients that the results of these studies can be a vital contribution toward the preservation of our private pension structure from an oppressing and damaging regimentation.

MR. MILTON F. CHAUNER: In our consulting work on health insurance, we work less on self-administered plans and more on coverage design and related underwriting questions for insurance companies. We make considerable use of the Society studies as a comparative standard of morbidity costs when developing premiums for a new line of health insurance. The intercompany statistics, after suitable alterations to reflect specific conditions, can be used as the expected experience.

Group Life Committee report statistics, most recently reported in 1960, are of particular and direct use in rate-making. The basic mortality rates by age brackets are increased by a margin for conversion costs and for some degree of antiselection because of the ever expanding underwriting limits. This adjusted "net" is then loaded for commissions, taxes, estimated expense, refunds, and contingencies.

For projecting mortality into the future and the extension of benefits to retired employees, we also make use of the committee reports' findings. It is not clear, however, whether the mortality shown for higher ages is for active employees, retired employees, or both. More specific information on this point would be helpful.

We frequently refer to the group life studies for occupational loadings by industry. In such cases it is necessary to use a considerable degree of judgment, but the existence of a comparative standard is more helpful. As group life rates become more competitive, these loadings become of greater significance.

One shortcoming of the group morbidity information is the lack of statistics by age. We frequently must develop factors to reflect higher morbidity as age increases. It would be most helpful if, over a period of time, information by age could be reported regularly in the Committee Reports. The Society's 1963 publications on individual health insurance have been particularly helpful in that many data by age are shown.

As an example of a difficulty arising from lack of age data, we find that our morbidity costs for several weekly indemnity as well as hospital plans are around 85 per cent of committee tabular costs, assuming that

such costs represent the age bracket 45–49, say, age 47. However, if they in fact represent as much as age 51 or 52, the actual to tabular would be several points higher, perhaps 95 per cent to 100 per cent.

MR. FRANK J. BUSH: I have been associated with activities of the Health Insurance Association of America for many years, through my relationships as a member of its various committees and subcommittees, including its Subcommittee on Group Insurance, of which I am presently chairman. The Association's statistical interests have, unlike the Society's, been less concerned with claim costs and more concerned with the nature and composition of business either being written or now on the books. It is in the process of making a detailed survey of the industry's total health insurance in force—a geographical profile by coverage, plan, level of benefits, and so forth. The Association also has a supplementary interest in the adequacy of insurance expense benefits in force, as a measure of the effectiveness of coverages and plans that have been written. Through its Steering Committee, it co-ordinates areas of mutual interest with the Society's morbidity committees. Industry studies and surveys of the magnitude and scope required to satisfy the Association's interests are time-consuming and expensive. Nonetheless, it feels that the value is well worth the effort and expenditure. It is deeply appreciative of the general, over-all support and co-operation which it has received in the past from its constituent membership.

MODERATOR GREEN: We, of course, in our committee, do not want to duplicate other efforts. We sometimes wonder whether there are efforts made in either industry or labor for the collection of data which may duplicate or supplement what we have.

I understand that the UAW may be collecting such statistics. Maybe Howard Young could tell us a little bit about that.

MR. HOWARD YOUNG: I really do not have very much to tell you, because we are just getting started, but during the past year I have been talking with the major companies with whom we deal about getting extensive data on our retirees. All our plans are administered by the companies, subject to the direction of a joint committee which has access to the data, but it is only recently that we have worked on this information.

It is our hope to do mortality studies, and, if the companies will agree to release the data, we will be glad to put this in the Society's studies.



We also would like to study questions like retirement age and utilization of the options; one subject we are very interested in, which I would like to see studied by the Society also, is the question of the effect of compulsory retirement upon mortality.

MR. ARTHUR PEDOE: I want to speak not as a specialist but as one of the average actuaries who refers frequently to these Society reports and tries to find time to read them as they appear. They have, with justification, become specialist publications. The annual cost of half a million dollars, referred to, might be more readily justified if, in some way, we could publish a summary of these reports as they appear each year. This would not only be of value to the nonspecialist members of the Society but also to many outside the actuarial profession interested in the results. In this way, the splendid work done by the specialists in mortality and morbidity investigations would serve a wider field and receive the appreciation it deserves.

MR. HAROLD V. LYONS: I have found the use of these mortality studies that the committee has promulgated very valuable for a company which does not have sufficient claim experience of its own. They are especially useful for convincing people of the need to raise rates. I have always used the argument that the statistics were prepared by many companies from their own experience on a completely objective basis.

MR. MILLER: I am puzzled as to why the use of health statistics for claim-cost control has not received more discussion here today. In my company we are under considerable pressure from our sales department and our group clients to give them standards against which they can measure their health insurance claims experience as it evolves, for example, the average duration of hospital stay, the more frequent causes of disability, the duration of accident and sickness disabilities from frequent causes, and related material of that nature.

I have the distinct impression that each of us is limping along, developing our own material from our own claims, and that, with an intercompany approach to some of these things, we might be able to make our work more effective and perhaps less expensive.

MODERATOR GREEN: We spend quite a bit of money trying to develop those standards on our own, and I think we would be quite interested in an intercompany effort along that line.

Has anybody else any thoughts on this matter?

MR. BUSH: The new type of group hospital and surgical morbidity study being conducted by the Society's respective group committee could well be the source of data required for industry purposes other than morbidity. I have in mind the formulation and development of guides for claim-loss-control purposes, as well as for the purposes of evaluating the over-all effectiveness of plans and benefits in reimbursing for health and medical expenses. The individual closed claims entering the Society's study would be ideally suited for such uses. These by-products would help to justify the costs of such studies. The Society's Group Morbidity Committee might well review the objectives of its new type study with these additional industry needs in mind.

MR. GINGERY: The committee is planning to adopt Mr. Richard Hoffman's proposal for a special annual study of a few large groups with liberal benefit plans which would give a great deal more variety of information than possible to collect under the regular annual studies.

On another subject, namely, credit life and accident and health experience, there has been a notable lack of experience statistics available on credit life mortality and credit morbidity, particularly the latter.

I am not recommending that the Society take part in what might be called rate regulation or any other supervisory activity of that sort but rather that it collect and make available mortality and morbidity costs on a suitable unit basis.

The present mortality and morbidity committees have discussed this from time to time, and I believe that it is the consensus of the committee that by its nature this is not a completely suitable subject for study by any one of the present mortality and morbidity committees. It involves an overlapping between mortality and morbidity and an overlapping between individual and group types of policies, so that it seemed to all of us that a new committee would be more appropriate. If anyone has any comments on how desirable they think this type of study would be and on any more details in subjects as to the extent and frequency with which it might be conducted, I am sure that we would be interested.

MODERATOR GREEN: In closing, I would like to thank very much the members of the panel, not only for serving on the panel but for the work they are doing in the committee efforts of the Society.