**TRANSACTIONS OF SOCIETY OF ACTUARIES**
**1954 VOL. 6 NO. 16**

# DIGEST OF INFORMAL DISCUSSION

## UNDERWRITING

A. In view of the low rates of mortality currently experienced on standard lives, particularly at the younger ages, is the standard classification too narrow?
B. Do substandard extra premiums at the lower ratings make fair provision for the additional expenses incurred on substandard policies?
C. What problems are encountered in issuing life insurance on persons residing outside the continental United States and Canada?
D. What changes have been made recently in nonmedical selection and why?
E. How could greater use be made of mortality or morbidity studies carried on by hospitals, clinics, government agencies, universities and others outside of the life insurance business?

MR. B. S. PAULEY used asset shares to determine that the Prudential's dividends on Ordinary Life if the first substandard group had been issued at standard rates would be reduced 6 cents per $1,000 at age 20, 8½ cents at 35, and 15 cents at 50. The reduction would be two or three times as great if only one company extended their practice, because of the increased proportion of borderline cases.

The introduction of Preferred Whole Life plans and low rates for females indicates a tendency to further narrow the standard group.

Prudential experience seems to indicate that the mortality ratio for substandard groups increases at durations beyond 20 years.

Some ratings (occupational and medical) have been reduced and borderline cases are being treated more liberally by most companies, standard insurance being offered except to definitely substandard risks. These trends will probably continue. Greater use could be made of temporary extras at younger ages, perhaps for rheumatic fever, neuroses, and asthma.

MR. A. C. WEBSTER emphasized the danger of broadening the standard base by ignoring numerical ratings and engaging in "competitive underwriting." Any company indulging in the latter will generally wind up losing money on such business because of the excessive number of the poorer risks they will be insuring.

MR. J. B. MABON recommended, for comparison purposes, preparation by an individual company of a table representing its own standard experience, or use of the 1946–49 Basic Table possibly adjusted to reflect a shorter select period and subsequent reduction in mortality rates at

younger ages. Substandard extras for specific impairments would be too difficult to determine, because only limited data are available, but can be calculated for multiple table ratings or flat extras, the latter possibly modified with increase in age. For decreasing extra mortality cases, temporary extras should be adjusted by age to reflect the incidence of extra mortality.

In his opinion the maximum extra which can be overlooked might range from $1.00 to $1.50 per $1,000, considering the percentage it bears to the net standard premium. Based on Sun Life of Canada data, 20 Year Endowments could be issued standard up to 150% mortality to age 25 and up to 135% to age 33.

At the younger ages, the standard mortality rate is so low that the line of demarcation between standard and substandard is hazy, and both standard and substandard groups could be broadened. However, a uniform system of classifications at all ages is most practical.

On section B, Mr. Mabon said that additional costs on substandard risks and on borderline risks classified standard are a necessary part of our service to the public and no special loading should be imposed.

MR. C. F. B. RICHARDSON noted that the following points should be considered in testing the adequacy of substandard extra premiums:

1. The underwriting expenses for substandard are higher than on standard and increase with the size of the rating. Mutual Life of New York charges part of these expenses on a per policy basis and part on a per thousand basis. The total expenses on substandard expressed on a per thousand basis work out at more than twice the expenses on standard business.
2. The not-taken rate for substandard is much higher than for standard and increases rapidly with the size of the rating. The expenses on not-taken business could be charged over the entire business by using the not-taken rate of standard and substandard combined. Alternatively, the standard business could be charged with expenses reflecting the standard not-taken rate, and all substandard charged on the basis of its not-taken rate. A third alternative would take account of the different not-taken rates of each substandard class.
3. The effect of reducing ratings after issue must be allowed for.
4. The lapse rate on substandard appears to be about double that of standard.
5. The type of extra mortality will affect the funds arising from the substandard extra. In their tests they used a flat percentage extra mortality.

They have computed funds to test the adequacy of substandard extras and find that the margins are adequate over a ten year period, but there are small losses on terminated policies at the short durations, especially for the lower ratings.

MR. S. P. ADAMS said the Lincoln National found that extra underwriting costs and medical and inspection fees in the lower rating classes

exceeded those for standard policies by about $3 per policy for each 25% of extra mortality. The not-taken rate was about double in the 50% extra mortality class. Consequently, the first year overhead expense rate (excluding commissions and taxes) per policy paid for in the lower rating classes exceeded that for standard policies by about 11% for each 25% of extra mortality.

Generally, appropriate extras were CSO net extras with a small loading, but a more substantial loading was required for all ratings at points where the net extra is relatively small, such as short-term endowments at the younger ages.

MR. B. T. HOLMES, in discussing section C, classified the problems as currency, effect of local laws, and underwriting. The nature and importance of the problems depends on whether or not you do business in the country concerned and whether the applicant is a national of the country or is an American or Canadian working abroad.

Currency is no problem if you do not operate in the country since U.S. or Canadian dollars will be stipulated. If you are licensed in the country, local currency should be used unless local investment possibilities are too small.

Local laws will have little effect if you do not operate in the country as you will specify what law governs. Another jurisdiction may try a disputed case, causing trouble but not serious loss. If you are licensed in the country, local laws must be studied in detail and you must expect to conform with them whether they require you to operate as a small local company or merely to pay different taxes.

Underwriting presents no problems if you are active in the country since reliable medical examiners are available and you will know how reliable the inspection reporting system is. If you do not operate in the country, the applicant should be accepted only if he presents himself for examination in a country where you normally do business. Unless this is done, you will find the examination unsatisfactorily performed by unknown doctors. The whole arrangement will generally be expensive and unsatisfactory because of frequent requests for changes as well as the problems of obtaining proper and satisfactory proof of death.

Confederation Life experience shows improvement in semitropical and tropical mortality paralleling the improvement in the United States and Canada, and this is taken into account in determining the appropriate extra for foreign business.

Because of the almost unassessable "political hazard" risk currently present, there are many countries from which business will not be accepted.

MR. G. W. WILSON discussed the problems of insuring (1) Americans and Canadians temporarily living abroad now, (2) Americans and Canadians going abroad for a period of years, and (3) permanent residents of other countries applying while temporarily in the United States or Canada. In the first category, the problems listed were the same as covered by the previous speaker and the Sun Life of Canada does not accept applications by correspondence.

In the second category, the main problem is determination of the proper extra premium. Based on their own mortality experience on white lives in various foreign countries, extras varying by age group and to some extent by plan are calculated, then possibly modified to reflect current conditions in particular territories. The extra includes a charge to cover anticipated higher administrative costs. It was noted that according to actual experience in subtropical and tropical countries the mortality rates on white lives have shown improvements paralleling that in the United States and Canada, but extra hazards are still present. Out of 21 deaths under policies issued at subtropical or tropical rates, 2 were of passengers on foreign airlines, 2 were by assassination, and 3 were from diseases common only in subtropical and tropical climates.

Applications from natives of foreign countries (such as an East Indian medical student) temporarily here are accepted only if the Company operates in the country concerned, and appropriate premiums are charged. However, nonforfeiture values under policies issued in the United States must be on the Northern basis to conform to State insurance laws.

Disability and accidental death benefits are not granted in cases involving foreign residence unless the applicant will be residing in a territory in which the Company operates.

MR. H. F. ROOD mentioned the growing feeling of nationalization which confronts a company operating in a foreign country. Government-operated companies may be established or the interests of local companies furthered to the extent that inadequate margins are available after competitive rates are determined.

Taxes must be considered. Often heavy export taxes may be charged on funds transferred to the home office, or the local currency may be blocked. Investment of local currency may be difficult and possibly confined to bonds of large corporations. Bank balances may be large if investment opportunities are not available.

Local authorities may make burdensome requests for frequent reports or special surveys relative to the operations of a company.

MR. A. P. MORTON opened the discussion on section D by noting that the nonmedical limit generally was $10,000 to age 30 or 35, then

$5,000 to age 35 or 40. Most Canadian companies continue some amount to age 45.

Using the data given in the 1953 Report of the Committee on Mortality under Ordinary Insurances, the approximate discounted extra mortality cost per $1,000 of nonmedical business is as follows:

| Ages at issue: | Under 30 | 30–34 | 35–39 | 40–44 | 45–49 |
|---|---|---|---|---|---|
| Discounted Cost: | Under $1.00 | $1.50 | $3.00 | $7.00 | $15.00 |

Over age 35 only a nominal limit of $2,500 would seem permissible. Higher limits may be justified if special conditions hold, such as careful supervision of field operations or favorable geographical distribution.

Certain limitations of the data should be noted: (1) It does not compare the over-all mortality result with the corresponding result if nonmedical had never been issued; (2) the percentage of nonmedical has increased sharply in recent years; (3) there are wide differences in nonmedical practices; and (4) there is a higher percentage of females under nonmedical business.

MR. E. M. MACRAE indicated that changes made by the New York Life since 1950 were acceptance of nonmedical on an agent's family but not on the agent himself and acceptance from all brokers except those who submit business through single case agreements. Based on a study of their experience between 1948 and 1949 anniversaries for issues from 1942 through 1948, the nonmedical limit was set in 1950 at $10,000 to age 35 and $5,000 at ages 36–40. Any civilian aviation risk will be considered nonmedically.

MR. W. J. NOVEMBER pointed out that the expense saving under the nonmedical procedure on a $10,000 policy does not take care of the extra mortality, and that the use of nonmedical on policies of that size has its justification in their being averaged out with smaller policies. This presents a special problem in connection with a policy with a minimum size of $10,000, such as the one that was recently adopted by his company. The Equitable of New York does not permit the use of nonmedical on their $10,000 minimum policy and this has caused a shift of a significant amount of their nonmedical business to a medical basis.

MR. E. A. LEW opened the discussion on section E by commenting on the cost of the 1951 Impairment Study. He pointed out that during the 15-year period covered by this study many new methods of therapy had been adopted and other striking advances made in medical and surgical treatment, so that the findings in the study for a few impairments, such as syphilis and osteomyelitis, turned out to be largely of academic interest. With continuing progress in medicine and declining mortality, it is likely

that an even larger part of the results in future medico-actuarial investigations covering reasonably long periods of time will be somewhat out-of-date when published. Under these circumstances recent clinical developments frequently will give a better indication of probable future mortality. Can mortality statistics for some impairments be obtained more cheaply and more up-to-date from sources other than life insurance company records?

A number of hospitals, clinics, universities, government agencies, and others outside the life insurance business compile statistics, some of which are technically sound and relevant, at least in a general way, for the underwriting of many impairments. The speaker then mentioned several studies that were currently in progress or recently completed by the Mayo Clinic, the Massachusetts General Hospital, the Veterans Administration, the Public Health Service, and other institutions, organizations, departments, and individuals. These studies covered such impairments as cancer, peptic ulcer, coronary artery disease, hypertension, rheumatoid arthritis, rheumatic fever, tuberculosis, heart murmurs, diabetes, smoking habits, psychoneurosis, hepatitis.

The Committee on Veterans Medical Problems of the National Research Council specializes in follow-up studies of the veteran population, which is the most important source of follow-up studies except for insured lives.

Future medico-actuarial investigations could be directed at impairments on which outside studies shed little or no light. To make the outside mortality studies of maximum use for life insurance underwriting, the Society should work with these groups, carefully evaluating the nature and characteristics of the population being studied and the original records used. Actuaries should work with their Medical Directors to find out more about follow-up mortality studies being carried on in their localities.

So far as morbidity statistics are concerned, we need every bit of basic information that bears on the many problems in the growing lines of accident and health insurance. Among the more promising developments in this field is a national morbidity survey now under consideration by the United States Public Health Service. Its purpose is to gather up-to-date information on the incidence and prevalence of disease, injuries, and impairments, the nature and duration of disabilities, and the amount and type of medical care received. These data would be obtained from a probability sample of households, through a canvass of 45,000 households over a period of two years, resulting in a total of 90,000 enumerations. Canada has just completed the field work on a similar survey covering 10,000

households visited at intervals of a month for one year. In California a morbidity survey of approximately 12,000 households is now being made by the California State Department of Public Health with the assistance of the Bureau of the Census.

MR. T. H. KIRKPATRICK mentioned that the Committee on Experience under Individual Accident and Sickness Insurance was looking into the material available from outside sources. If practical it will be indexed and made available in a suitable form.

The Committee hopes to cooperate with the Research Council for Economic Security on their study of prolonged illnesses with the intention of developing reliable information of practical value to actuaries.

MISS JOSEPHINE W. BEERS pointed out that a group actuary has to set a premium for benefits whether or not statistics are available, *e.g.*, to cover an occupation hazard in a certain industry. She has made use of Department of Labor statistics showing the frequency of work accidents by specific industries. An index indicating the availability of such data would be of great value.

The University of California studied the medical costs of 455 families from 1947 to 1948, and these basic data were used in evaluating a deductible determined from their own statistics.

MR. D. R. ANDERSON pointed out that actuaries should get in when the questionnaires are being developed. Slightly different wording or an additional question or two may produce information of much greater practical value. If necessary, institutions could be paid a fee for statistics developed by them but put to use by actuaries.