

UNDERWRITING

- A. Have any recent investigations of mortality by build indicated change in the relative mortality experienced according to degree of overweight or underweight, age, height, or sex?
- B. Is the basic improvement in mortality resulting in a change in the relationship between standard and substandard classes—particularly blood pressure and overweight?
- C. Should any new investigations of mortality by build and blood pressure follow the same pattern as previous intercompany studies? If not, what points should be considered?
- D. In the light of events since armistice negotiations began in Korea, what are the reasons for any change, or absence of change, in the underwriting viewpoint on questions of war risks?

MR. E. A. LEW called attention to two recent papers developed from a mortality study of overweights made in 1951 by the Metropolitan.

“Obesity and Its Relation to Health and Disease,” by Messrs. Armstrong, Dublin, Wheatley and Marks, published in the November 10, 1951 issue of the *Journal* of the American Medical Association, covers such topics as frequency of overweight, association of overweight with various impairments, overweight and mortality, and the problem of weight reduction.

A more detailed analysis of the same experience was presented by Messrs. Dublin and Marks in a paper entitled “Mortality Among Insured Overweights in Recent Years” at the October 1951 meeting of the Association of Life Insurance Medical Directors.

One set of data, covering the experience of issues of 1925 through 1934 traced to anniversaries in 1950, among males and females who were limited to substandard insurance solely on account of overweight, suggests that moderate overweight has become a more serious impairment than indicated by previous investigations, particularly at the younger ages, a conclusion also reached by Messrs. Blair and Haynes from the experience of Provident Mutual and by Mr. McCormick in a similar study at London Life.

A second set of data gives the experience among those overweight who subsequent to issue brought down their weight sufficiently to have their insurance classification improved. Mr. Lew felt that it appears reasonably clear that weight reduction pays real dividends in increased longevity.

On section B, Mr. Lew felt, on the basis of the studies referred to, that there has been a change in the relationship between the level of mortality among young overweights and the corresponding mortality among stand-

ard risks. He attributed this change to the greater basic improvement in the mortality of standard risks, stating that a smaller improvement in the mortality of overweights should have been expected since the *Supplement to the Medical Impairment Study* showed that the excess mortality among overweights was largely due to cardiovascular-renal diseases and diabetes, for which causes the mortality has shown little improvement over the years. He estimated that the relative mortality among moderate overweights today would be at the younger ages from 10% to 15% higher than in the *Supplement to the Medical Impairment Study* and at the older ages practically the same as in the *Supplement*.

MR. NORMAN BRODIE presented the following experience of the Equitable Life Assurance Society:

RELATIVE MORTALITY BY BUILD—MALES
ISSUES OF 1940 AND LATER OBSERVED TO 1949 ANNIVERSARIES
EXPECTED DEATHS CALCULATED BY CRUDE MORTALITY RATES DURING
CONTEMPORANEOUS PERIOD ON MALE POLICYHOLDERS WITHIN 20%
OF AVERAGE WEIGHT FOR RESPECTIVE AGES AND HEIGHTS

DEPARTURE FROM AVERAGE WEIGHT FOR RESPECTIVE AGES AND HEIGHTS	ACTUAL DEATHS— NUMBER OF POLICIES				MORTALITY RATIOS			
	ISSUE AGES							
	10-29	30-49	50 and over	All	10-29	30-49	50 and over	All
-10.0% to -29.9%	127	391	237	755	103% ± 6	86% ± 3	90% ± 4	90% ± 2
- 0.1 to - 9.9...	255	748	363	1,366	107 ± 4	97 ± 2	95 ± 3	98 ± 2
0.0 to + 9.9...	160	885	473	1,518	82 ± 5	106 ± 2	98 ± 3	101 ± 2
+10.0 to +29.9...	132	535	296	963	114 ± 7	107 ± 3	117 ± 5	111 ± 2
+30.0 to +59.9...	10	60	8	78	*	242 ± 21	*	166 ± 13

* Ratio omitted due to paucity of data.

It appeared that for issue ages below 30, the most favorable mortality during the nine policy years studied was in the range from average weight to 10% overweight. Young underweights seemed to exhibit a more favorable mortality pattern relative to the group of average weight than they did formerly, while the opposite seemed true of young overweights, as also pointed out by Mr. Lew.

For males above age 30, the lowest mortality rates appeared in the group from 10% to 30% underweight.

A new build table based on issues of 1940 indicated that for the more important ages and heights the average weights for males were about five

pounds greater than in the M.A.M.I. while for females they were about five pounds lighter. Both males and females among 1940 issues appeared taller than those in the M.A.M.I.

On section C, Mr. Brodie made three suggestions for any new study of mortality by build: (1) that a new build table be established, possibly using modal weights rather than average weights; (2) that separate basic standard mortality tables be prepared for males and females; (3) that if companies contributing to any such build study are asked to send to the central committee cards for individual policies rather than summary cards, a percentage sampling procedure might be applied to the exposure, at least at the ages where exposures are greatest.

MR. J. T. PHILLIPS pointed up Mr. Brodie's suggestion that we should consider sex in developing basic standard mortality tables by presenting New York Life experience on nonmedical issues of 1942 to 1948, studied between the 1948 and 1949 anniversaries.

With males and females combined, the nonmedical mortality experience was 97% of the basic medical experience. Mr. Phillips did not believe this and upon analyzing the business separately by sex found that the male nonmedical was 102% of the male medical while the female nonmedical was 113% of the female medical.

MR. B. S. PAULEY, on section B, used as a measure of secular changes in the relationship between standard and substandard classes the ratio of the mortality in the substandard classes to that in the standard class. A number of impairments studied in the Prudential for a recent period were compared with those for the 1920's. The more recent ratios were uniformly lower, with the greatest improvement shown for the higher ratings. This would tend to indicate that substandard mortality is improving more rapidly than standard, but in most cases the results were obscured by changes in underwriting and changes in definition and content of impairment classes.

In order to reduce variables to a minimum, individual impairments should be studied by age and duration groups. Such a study for cases with mitral regurgitation heart murmur indicated no change for all ages combined, but indicated high current ratios at the younger ages, no change at the middle ages, and lower current ratios at the higher ages. This suggests that the biggest factor in these changes was the basic improvement in standard mortality.

On section C, Mr. Pauley thought, from the viewpoint of an underwriter, that an important factor in making any new blood pressure study would be the methods of averaging successive readings to obtain a representative blood pressure for rating and statistical purposes. Such a study

might disclose whether the average of the higher readings or the average of all readings would give the better criterion of resulting mortality.

MR. R. T. JACKSON found that blood pressure rating tables in actual use showed tremendous variation and were generally lower than ratings based directly on the 1939 study. He concluded that we need a new blood pressure study in view of drastic changes in the general mortality level.

MR. D. N. McCORMICK illustrated section B with experience under London Life policies issued with percentage rating, since this type of rating is usual for blood pressure and overweight impairments. Up to 1945, cases with a percentage rating showed approximately the same improvement, expressed in dollars per \$1,000, as standard cases. Since 1945, the absolute improvement in mortality on policies with a percentage rating was substantially greater than the improvement on standard policies. If this reversal of trend should be genuine it would have an important bearing on the extra premiums to be charged.

Referring to section C, Mr. McCormick found in connection with build studies that mortality ratios change more rapidly by duration than for any other variable, suggesting that any new study should show results by duration. He also suggested that for all new studies the assignment of classes, codes and summaries should be such that full mechanical sorting and tabulating could be carried out, giving as an example the use of decennial age groups of the type 20-29, 30-39, etc., which can be handled readily on sorters and tabulators.

MR. J. R. GRAY and COMMANDER OSWALD JACOBY, U.S.N. (the latter having been as a staff member actually present at the armistice negotiations in Korea), gave on section D personal opinions in most respects parallel. The armistice negotiations in Korea won't get anywhere and there probably will be no armistice. Our unwelcome choice is probably between continued armed holding action in Korea (and possibly also in Indo-China or other parts of Asia) and complete withdrawal of our interests to the North American continent. The first course opens in front of our young men the almost complete certainty of serving a period of two or three years in the armed forces with, not improbably, a period of actual fighting abroad. Neither choice frees us of the danger of all-out war, which would subject our life insurance companies not only to losses on those in the armed forces but also to losses on civilians, not to mention destruction of assets.

Mr. Gray felt that if we continue the present general policy of issuing limited amounts to those who are or may become subject to the military service hazard, then steps should be taken to see that the limitation is not avoided by applying for moderate amounts of insurance in several com-

panies. Considering, however, the larger dangers inherent in a general war with possible bombing or invasion of this continent, he felt that we should begin working toward a general war clause, ruling out all war deaths wherever they might occur and whatever the status of the assured might be. He realized that before such a step could be taken the laws in practically all the states would have to be changed and that there would have to be a rather considerable change in the thinking of the insurance companies and the insuring public. He warned that the failure of the proposed pooling arrangement has not eliminated the problem. The alternative to taking aggressive steps to protect ourselves is to sit quietly by and hope for protective governmental action to avoid receivership.

Commander Jacoby said that the armistice negotiations in Korea are no more than a propaganda tool of the Russians. The war may break out in other places, but Russia will not start a general war unless two conditions apply: (1) she thinks she can win it—she doesn't now; (2) the Kremlin or Politburo feels that a war is necessary to keep their own power, for example, when a point is reached where they have to fight somebody or their own people will fight them.

In response to a question, Commander Jacoby saw only one long-run solution which he illustrated by drawing a parallel to the game of poker. In poker when your opponent bets you have three choices, to drop, to call, or to raise. The enemy made a bet by attacking across the 38th parallel in June 1950. We called by sending our troops to stop them. We were just about strong enough to call. We could not afford to raise. Even today we can't raise. The only solution is to put ourselves in position so that when they make their next bet we can raise them and raise them everything. We have got to get strong, and "we" means every one of the countries that oppose Communism.