

DIGEST OF INFORMAL DISCUSSION

UNDERWRITING

- A. In terms of results obtained what evidence is there to support rules requiring the following:
1. Two medical examinations
 - a) made at the same time?
 - b) on different days?
 2. Special heart reports as supplements to regular examinations?
 3. Home office urinalyses?
 4. Electrocardiograms and chest X-rays?
 5. Attending physicians' statements?
 6. Inspection reports?

MR. E. M. MACRAE reported that a study of 200 cases in 1953 showed that the second examination rarely developed new and different information, although the material for the study was far from homogeneous. The value of a second examination may certainly be questioned if the efficiency of the examiners is low.

In four metropolitan areas the New York Life has been accepting single examinations for large amounts when the examination is made by a salaried examiner and is accompanied by an electrocardiogram and chest X-ray. The extension of this procedure to other areas is under consideration.

MR. B. S. PAULEY outlined a study by the Prudential of 143 cases with two examinations on different days. Material differences between the examinations were considered to exist if the two results led to different rating classes or if the more unfavorable examination indicated that further investigation was required. A considerable element of judgment enters into this determination. There were 20 cases with material differences, or 14% of the total. In the 50 and over age group there were 5 out of 16, or 31%. The percentage did not vary significantly by amount. The 20 cases were subdivided as follows:

Significant differences in findings in Home Office specimens . .	10
One examination omitted significant medical history	5
Significant difference in blood pressure readings	3
Abnormal heart or lung findings on only one examination . .	2

It is probable that at least half of these material differences would not have appeared if the examinations had been made on the same day.

MR. E. A. LEW, MR. F. G. WHITBREAD, and MR. I. R. TAYLOR all agreed that two examinations on different days were desirable for large amounts, such as \$50,000 or more, as an added protection for the insuring company. The procedure also protects the examiners.

MR. LEW stated that the experience of the Metropolitan over 30 years has shown that heart charts are useful supplements to regular examinations, particularly for murmurs and arrhythmias. In view of the importance of heart disease, and of the small expense involved, the use of heart charts is justified for applications of \$25,000 or more.

MR. WHITBREAD stated that the Lincoln National requires a heart report when doubt exists concerning the nature or degree of a heart impairment.

MR. H. F. GUNDY discussed three advantages of performing the microscopic analysis of urine in the Home Office laboratory:

- (i) The proportion of significant findings is higher than when the analysis is performed elsewhere.
- (ii) Results are uniform.
- (iii) His company has adopted a new system of paper chromatography for specimens containing a reducing substance. Glucose, which marks the diabetic, may be distinguished from the other reducing substances. If glucose is not detected, no further urine or blood tests are required, and by this means 25% of these tests have been eliminated.

A recent study indicated that approximately 20% of the urinalyses taken at age 55 and over yielded significant findings compared to 12% at younger ages. Urinalysis therefore appears justified for all applicants beyond a certain age.

A study of specimens submitted solely because of the amount of insurance indicated no difference in the percentage of significant findings compared with the percentage for all specimens.

MR. LEW felt that the main value of Home Office analyses was in greater accuracy in tests for albumin and sugar. Although the tests are now more expensive and less important than in the past, they are justified on cases exceeding \$25,000 and cases with a history of genito-urinary disorder.

MR. WHITBREAD stated that his company also requires the tests when the nature of the risk suggests that special studies may be valuable.

MR. TAYLOR stated that the London Life had required Home Office urinalyses with male nonmedical applications prior to 1947, but since that date the requirement had been eliminated. A recent study of the causes of death for blocks of business under the two rules showed no significant

differences and it is believed that there has been little if any adverse effect on mortality as a result of the elimination.

MR. LEW stated that the 1951 Impairment Study revealed lower mortality ratios for cases with electrocardiograms and X-rays than for similar cases without these tests. It is probable that the tests disclosed impairments which could not otherwise have been detected, such as findings of early heart disease by electrocardiogram, or enlarged heart or pulmonary shadows by X-rays of the chest.

MR. W. A. KELTIE stated that the Great West Life had studied 144 applications for large amounts submitted with electrocardiograms and chest X-rays between 1944 and 1947. The sample showed that 12% of the applications were rated or declined solely as a result of tests submitted because of the amount applied for. In consequence, since 1948 they have required the two tests as a supplement to regular examinations where the amount applied for in all companies is over \$100,000 at ages 30 to 44, \$50,000 at ages 45 to 60, and \$25,000 at ages over 60.

A study has recently been published in Vol. 70 of the *Canadian Medical Journal*. Some 363 executives and supervisors of a large Canadian industrial organization were subjected to screening by electrocardiogram between 1949 and 1952. The age distribution was similar to that for large risk applications. Of the electrocardiograms 73% were normal, 21% questionable and 6% abnormal. When related to recorded blood pressure, the results were:

Blood Pressure Class	Percentage of class which would have been rated or declined for insurance
Normal.....	14%
140/90 to 160/100.....	26%
Over 160/100.....	38%

On this evidence their rules have been modified so that with moderately elevated blood pressure the two tests are required for amounts over \$25,000 and with markedly elevated blood pressure for amounts over \$10,000.

MR. A. A. WINDECKER summarized the results of a recent study of cases for which the Equitable obtained attending physicians' statements in early 1954. At that time they were requesting physicians' statements in 5% of all cases. As expected, this percentage increases with amount group and with age group. The statements were subdivided according to whether the request concerned a specific impairment or a routine check-up. Slightly less than one-fifth of the total requests concerned routine check-ups, although the proportion is much less than this for small policies and young ages and correspondingly larger for large

policies and old ages. The effect of the statements on final underwriting action may be tabulated:

Effect on Underwriting	Specific Impairment	Routine Check-up	Combined*
Males			
Adverse.....	12%	15%	13%
None.....	31	74	41
Favorable.....	57	11	46
All.....	100%	100%	100%
No. of cases.....	418	123	555
Females			
Adverse.....	5%	†	6%
None.....	36	†	37
Favorable.....	59	†	57
All.....	100%	†	100%
No. of cases.....	168	7	177

*Includes 14 male and 2 female cases unclassified as to type of statement.

† Insufficient data.

Cases were classified as “adverse” or “favorable” if the physician’s statement was credited with inducing an increase or decrease in premium, and an element of judgment thus enters into the classification.

It appears from the study that physicians’ statements have been developing a satisfactory amount of valuable information.

MR. TAYLOR quoted the results of a study made in 1954:

Effect on Underwriting	Number of Statements	Percentage of Total
Adverse.....	19	14%
None.....	107	79
Favorable.....	10	7
	136	100%

He pointed out that statements often disclose information unknown to the applicant, and that requests for them often cause delay.

MR. MACRAE and MR. WHITBREAD both emphasized the importance of obtaining a physician's statement when a check-up examination is reported.

MR. J. F. RYAN described an investigation of inspections conducted by the New York Life three years ago which compared inspection costs with estimated mortality savings attributable to them. Inspections induced more severe underwriting in approximately 1% of the cases, three-fourths of these being declinations and one-fourth substandard ratings. Unfavorable information was disclosed as frequently on medical as on nonmedical applications but the proportion of adverse cases increased more rapidly with age for nonmedical. The adverse information was 25% medical, 15% occupational and 60% of other types.

It was assumed that the extra mortality for declined cases would be approximately five times standard at the young ages, reducing to twice standard at the older ages; for cases rated substandard the assumed extra mortality reflected the underwriting rating. It was then possible to determine an average mortality saving for cases where unfavorable inspections affected the underwriting, which was \$75.00 per \$1,000 of insurance for all ages combined. The calculation allowed for a twenty year duration without adjustment for lapses.

Following the investigation automatic inspections were eliminated on all policies of \$2,000 or less, except for a small sample of such cases which are inspected for control and study purposes. Further tests have validated this program and have suggested that it may be possible in the future to extend it further, particularly for the younger ages at issue, much as in nonmedical insurance.

MR. WINDECKER described a recent study of applications for \$5,000 or less submitted to the Equitable in 1953. Out of 845 cases declined with automatic inspections, 186 would have been issued without inspections and 172 of these at standard rates. Out of 638 cases issued substandard with automatic inspections, 24 cases would have been issued standard without inspections.

A comparison of mortality savings with inspection costs led to several general conclusions. Inspections pay for themselves at the higher ages and for the larger amounts; but if the amount is under \$2,500 or the age under 30 it is doubtful if the cost of inspections is justified.

MR. D. J. VAN KEUREN stated that a sample of 2,500 nonmedical cases of less than \$5,000 in the Metropolitan Life had been underwritten first without and then with consideration of inspection reports. Inspections were found to induce adverse underwriting action in from 2% to 3% of the cases.

MR. GUNDY stated that the Sun Life of Canada had found that inspections were the sole source of adverse information leading to unfavorable action in 1.1% of cases. Of the substandard cases 3.3% would have been issued standard and of the postponed or declined 14.3% would have been approved. These percentages did not appear to vary with amount.

In a cost investigation he had assumed that substandard business would produce extra mortality of 50% of a recent table and declinations 150% of this table. This had led to a conservatively based conclusion that mortality savings more than offset the cost of inspections for amounts of \$2,000 and higher.

MR. PAULEY stated that a calculation from a sample of policies had indicated that the average mortality saving from inspection reports was \$1.70 per \$1,000 of insurance.

MR. TAYLOR had calculated the average mortality saving to be between \$2.00 and \$3.00 per \$1,000. Against this had to be set not only the cost of the inspections but the costs of the multiple handlings which resulted from them.

MR. D. N. WARTERS believed that it might not be sufficient to appraise an underwriting tool solely by comparing its efficiency in statistical terms with its cost. Several of the tools have value in the form of a subtle police effect which cannot be measured specifically.