HEALTH INSURANCE HAZARDS REFLECTED IN OCCUPATIONAL HEALTH LOSS RATIOS

BY

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Health insurance has been universally unprofitable to the commercial accident and health companies and we should take advantage of every opportunity to study and analyze the factors which enter into the high loss ratios. The Committee of Five on Statistics of the Bureau of Personal Accident and Health Underwriters has published an exhaustive report on the combined health experience of 24 of the largest companies for the years of 1921, 1922 and 1923. The report is based upon sufficient data to give an excellent indication of actual conditions, and as the underwriting theory and practice and policy provisions of all companies are essentially the same we may safely use this report as a basis for an inquiry into the make-up of severe health losses.

The report verifies the long recognized principle that health hazards increase with advanced age although there are some downward swings of the health curve around middle age. The larger weekly indemnity policies have been shown to be more disastrous which has been realized and countered by the companies restricting and scrutinizing the larger risks. The most interesting schedule is the one which gives the loss ratios by occupations and we are surprised at the great variance which clearly indicates that there are some fundamental underlying causes for the vast differences; further the variations are difficult to explain at first thought, from our preconceived ideas about health underwriting. However, before making an analysis or drawing any conclusions we must be certain that our data are homogeneous. Seven policy forms are included in the report as follows:

1. 52 weeks' limit, total disability only; full weekly indemnity irrespective of house confinement.
2. 52 weeks' limit, total disability with full weekly indemnity, irrespective of house confinement, and partial disability.
3. 52 weeks' limit, total disability only, full weekly indemnity while confined to house and reduced payment while not confined.
4. Life indemnity, total disability only, full weekly indemnity irrespective of house confinement.
5. Life indemnity, total disability with full weekly indemnity irrespective of house confinement, and partial disability.

6. Policies on which the first seven days of total disability are eliminated.

7. Policies on which the first fourteen days are eliminated.

We are not using forms 6 and 7 as the waiting period policies will reflect a selection favorable to the companies in that only the better risks will accept a waiting period unless there is undue company and resulting agency pressure. The elimination period is at the present time a panacea for the unsatisfactory health insurance condition and companies are insisting or demanding one or two weeks' "coinsurance," but in the years 1921, 1922 and 1923 the waiting period policy was merely an additional form of coverage offered by the companies and taken mostly by those risks who were physically and financially preparing protection against only the unforeseen and improbable lengthy disability. Forms 4 and 5 are not used as a few cases of prolonged disabilities would distort the experience. If sufficient exposure were obtained it would be preferable to take only one policy form but when our premiums are subdivided into occupations the exposure for many groups would be too small for dependability. We have therefore combined forms 1, 2, and 3 which, even though form 3 calls for house confinement, follow the same general trend.

The following table shows the combined loss ratios by occupations in descending order together with the exposure in thousands of earned premium for each occupation.

OCCUPATIONAL LOSS RATIOS

Occupation	*Earned Premium—Thousands of Dollars*	*Loss Ratio*
Manufacturers, Miscellaneous	43	.790
Restaurant Proprietors	99	.768
Barbers	75	.744
Tailors	111	.731
Merchant Clerks, Confectionery	54	.722
Auto Dealers and Salesmen	277	.715
Clothing Manufacturers	115	.712
Clergymen	116	.690
Commission Merchants	97	.639
Merchant Clerks, Tobacco	68	.633
Merchant Clerks, Groceries	297	.625
Buyers	74	.624
Merchant Clerks, Light Goods	674	.622
Corporation Officers N. O. C.	937	.621
Auto Garage Proprietors	66	.620
Physicians and Surgeons	1,042	.612
Real Estate Salesmen	395	.606
Merchant Clerks, Dry Goods	242	.601
Stationary Engineers	22	.591

OCCUPATIONAL LOSS RATIOS—Continued

Occupation	*Earned Premium—Thousands of Dollars*	*Loss Ratio*
Postal Employees	39	.589
Traveling Salesmen	847	.587
Dentists	442	.583
Merchants, Wholesale	155	.580
Bakers, Manufacturers	57	.578
Merchant Clerks, Drugs	239	.577
Oil Wells, P. S. & F.	56	.572
Sales Managers	143	.572
Drivers and Teamsters	98	.572
Brokers	287	.564
Merchant Clerks, Heavy Goods	135	.555
Farmers	140	.543
City and State Officials	30	.534
Actors, Movie	15	.533
Butchers and Fish Dealers	109	.531
Hotel Proprietors and Managers	68	.530
Auto Accessories, Manufacturers and Merchants	87	.529
Textile Manufacturers, Light	70	.528
Auto Garage Employees	38	.526
Plumbing, P. S. & F.	79	.520
Office Clerks	1,852	.515
Musicians	78	.515
Mechanical Engineers	37	.514
Merchant Clerks, Furniture	97	.505
Newspaper Publishers	97	.504
Insurance Agents and Brokers	626	.504
Jewelers	125	.504
Miscellaneous Office	59	.491
Theater Proprietors and Managers	43	.487
Claim Agents	42	.475
Shipping Clerks	55	.474
Machine Shop, P. S. & F.	65	.461
Printing	118	.457
Undertakers and Embalmers	57	.456
City Salesmen	33	.453
Lumber Yard Dealers	98	.450
Carpenter, Contractor	169	.449
Merchant Clerks, Hardware	83	.445
Merchant Clerks, Country Store	41	.439
Teachers	153	.431
Bankers	415	.429
Civil Engineers	120	.425
Iron and Steel Manufacturers	40	.425
Lawyers	669	.423
Actors, Not Movie	29	.414
Insurance Officers and Clerks	97	.413
Artists and Designers	49	.408
Opticians	36	.390
Electrical Employees, Inside	54	.370
Mining	38	.368
Architects	73	.343
Total Classified	*13,483	.554
Remaining Unclassified	2,470	.565
Grand Total	15,953	.566

P. S. & F. refers to Proprietors, Superintendents and Foremen.

*The total of our occupational exposure adds to 13,486 but the correct figure from the original data is 13,483, the difference being due to our taking the nearest $1,000.00 instead of the nearest $1.00. This has no effect on the ratios.

We are immediately impressed by the inconsistency of the loss ratios and we are convinced that there is some underwriting or physical foundation for these differences. If we can prove by experimentation that these variations follow a logical sequence as explained by our theories of underwriting, or if we can find that there is a sensible explanation for them, we shall feel less discouraged over the ultimate future of health insurance.

The factors which enter into morbidity rates by occupations could be considered from two angles, (1) the objective or physical health hazard presented by the duties of the occupation, and (2) the subjective or the characteristics of the individuals of the occupation combined with the influences which might have a bearing on the moral hazard of the individual. We might sub-divide according to the following outlines:

Objective

Occupations which cause illness by exposure to disease.
Occupations which prolong disease by exposure after returning to work.
Occupations which prolong disability by inability to return to work.

Subjective

Physical or racial characteristics of individuals making up the occupational group, which constitute a moral or physical hazard.
Uncertain income or employment which consciously or unconsciously develops the moral hazard in times of low income or slack employment.

If we attempt to classify all occupations into these subdivisions, we must resolve the choice into little more than guesswork as most occupations are not capable of such refinement except in a negative way. However, there are some occupations which are materially affected by these factors and others which undoubtedly and emphatically are not influenced by these criteria. If we do not attempt to choose the occupations according to the degree of hazard, but merely divide them into negative, possible, or positive; that is

1. Those that are not affected by the hazard factors,
2. Those that may be affected by the hazard factors,
3. Those that are affected by the hazard factors,

we should empirically prove or disprove the correctness of our hazard theory. The following table shows division into these three groups under both the objective and subjective captions:

DIVISION OF OCCUPATIONS BY OBJECTIVE HAZARD

Occupation	Earned Premiums (thousands of dollars)	Loss Ratios
Group 1—		
Office Clerks	1,852	.515
Miscellaneous Office		.491
Architects		.343
Artists and Designers		.408
Bankers	415	
Insurance Agents	626	
Insurance Officers	97	
Lawyers	669	.42[illegible]
Corporation Officers	937	.621
Teachers	153	.431
Real Estate Salesmen	395	.606
Totals	5,325	.511
Group 2—		
All Occupations not included n Groups 1 or 3	6,674	.576
Group 3—		
Dentists	442	.583
Physicians and Surgeons	1,042	.612
Totals	1,484	.603

DIVISION OF OCCUPATIONS BY SUBJECTIVE HAZARD

Occupation	Earned Premiums (thousands of dollars)	Loss Ratios
Group 1—		
Corporation Officers	937	.621
Office Clerks	1,852	.515
Mechanical Engineers	37	.514
Miscellaneous Office	59	.491
Teachers	153	.431
Bankers	415	.429
[illegible]il Engineers	120	.425
[illegible]ts	669	.423
[illegible]ce Officers	97	.413
[illegible]ects	73	.343
Totals	4,412	.504
Group 2—		
All Occupations not included in Groups 1 or 3	7,551	.560
Group 3—		
a Restaurant Proprietors	99	.768
a Barbers	75	.744
a Clothing Manufacturers	115	.712
a Merchant Clerks, Groceries	297	.625
a Merchant Clerks, Confectionery	54	.722
a Commission Merchants	97	.639
a Tailors	111	.731
b Real Estate Salesmen	395	.606
b Auto Dealers and Salesmen	277	.715
Totals	1,520	.671

a Racial or Physical. *b* Income or Employment.

The loss ratios by occupation have been oriented from a chaotic divergence to three groups whose ratios rise in order according to predetermined hazards as follows:

	Objective		*Subjective*	
	Earned Premium Exposure (thousands of dollars)	Loss Ratio	Earned Premium Exposure (thousands of dollars)	Loss Ratio
Group 1	5,325	.511	4,412	.504
Group 2	6,674	.576	7,551	.560
Group 3	1,484	.603	1,520	.671

We have arranged the data according to the two methods of testing the health risk of an employment and the results of each follow in approximately the same proportion. If we should combine the two methods, and if we had a greater spread and could accurately group the occupations, we could approach a smooth curve. We do not recommend [illegible] ipate a rating of health risks by occupation but we believe the data has a trend toward showing that certain broad aspects of [illegible] icular occupation are a function of the health hazard of the [illegible] employment. The attainment of uniformity in occupational [illegible] atios can better be brought about by the selection of the indi[illegible]al risks with the hazard factors strongly in mind rather than [illegible] attempt to re-rate an entire occupation; although some occupa[illegible]ns should bear future analysis of complete statistics with the poss[illegible]lity of higher rating as a group.

The grouping in the table is of necessity arbitrarily made and solely the result of applying individual judgment to the factors involving the choice. There is no definite line of demarcation between any of the groups, especially between 1 and 2, and we have been further handicapped by the lack of finely divided and completely described occupations. If we had a truer picture of the duties and personnel of each we could more accurately allocate our occupations into groups. Also, there is the disdavantage of picking the subdivisions from an underwriter's point of view, for although we have tried conscientiously to choose with regard to the attributes of the occupations and individuals with the abstract ideas in mind, we have possibly exercised an unconscious selection toward

the desired result. However, we believe that the grouping has been essentially in accordance with the outline and that the results are at least an indication that the experience by occupations has followed a well defined course which does agree with the basic ideas of profitable selection of risks. Conversely we realize that if we very carefully apply the factors that enter into the high ratios of group three we may be successful in greatly reducing the total health losses. We are especially encouraged by the satisfactorily low rates of many occupations, nearly all of which are lacking entirely in the qualities which make up the higher losses of the more unprofitable occupations.