

# RECORD OF SOCIETY OF ACTUARIES 1981 VOL. 7 NO. 1

## UNDERWRITING

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1. Problems with traditional underwriting classifications: privacy, disclosure, antidiscrimination, etc.
2. New and acceptable classifications: smoking, lifestyle, build, blood pressure, finances, etc.
3. Possible transition problems: existing policies, persistency, coordination of previous data with newer classes, etc.

MR. NORM P. TAYLOR: Risk classification is presently being assailed by both regulators and legislators at state and federal levels. New and proposed laws or practices force the underwriter to be ever alert to the need to comply while fulfilling the obligation to maintain satisfactory mortality and morbidity levels. A significant factor in that function is an attempt to control costs of compliance, while providing service to the producing agency force.

Most of you are aware of a number of laws currently in effect that impact the risk selector. I refer to state laws that prohibit discrimination in the accepting, rating or rejecting of risks with specific diseases, traits or handicaps. These include Sickle Cell Trait, Hemoglobin C, and mental or physical handicaps. In Massachusetts, there are two currently proposed laws on risk classification that I offer as examples.

Risk Classification: S. 801 would prohibit an insurer from refusing to issue a life or health insurance policy or limiting the coverage because of the place of residence of the applicant or because of the racial or ethnic composition of his neighbourhood. It would further prohibit an insurer from discriminating on a basis that is arbitrary or unsupported by a reasonable analysis of the risk of loss associated with such policy.

Life Insurance on Physically Handicapped Persons: H. 378 would prohibit discrimination by life insurers against physically handicapped persons. With respect to a person's handicap which will affect his mortality, the measure would also prohibit an insurer from refusing to issue a policy of life insurance if the amount applied for is \$1,500.

Note in the first example the phrase "reasonable analysis of the risk of loss". Who will make that determination, our industry or the public servants employed in the Insurance Department? Such a law would effectively cede some risk classification authority to the state in lieu of allowing private industry to invest capital, take risks and achieve a profit.

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The second proposed law appears to be a mandate to issue a specified amount of insurance without regard to the insurer's opinion as to risk or desire to offer coverage.

Many laws have been proposed with the greatest of intent to protect the buying public. The privacy of medical records concept as an outgrowth of the Privacy Act of 1974 is a good example. The impact on underwriting is not yet clear. The insurance underwriter has a need for full disclosure of detailed medical information to properly classify the risk. In return, the insurance candidate needs the assurance that his or her medical record will be treated as confidential. The legislation at the federal level sent various state legislators and special interest groups into action on a multitude of divergent, but still related subjects.

We have the NAIC model bill concerning the format and language of an authorization for a patient to release medical records. Several states, however, have passed or introduced bills that differ from the model. Thus, the underwriter must respond with separate form for jurisdictions with specific laws.

Legislation which influences underwriting includes such areas as disclosure of reasons for adverse underwriting decisions, and in some states, we are required to name the source of information on which the underwriting decision was based. Such laws tend to inhibit our ability to secure detailed information and no doubt result in some improperly classified risks. The special authorization for release of information has fragmented into some suggested laws pertaining to alcohol or drug treatment and others where mental health histories exist. Each such specific need for unique forms to secure underwriting evidence add to our cost and cause delay in the prompt issue of policies.

There are laws that hold the insurer liable if an applicant's deposit is retained beyond a "reasonable" period. In California, the courts have created significant case law with regard to the conditional receipt. I believe our industry as a whole has changed its practice as a result of California court decisions on the conditional receipt.

We have found ways to live with and, to some extent, prosper even in an environment of increasing regulative and legislative encroachment. The most notable example of living with a legislative act is the industry's handling of Public Law 91-508 - The Fair Credit Reporting Act of 1971. Ten years ago when the act was passed, most underwriters were very concerned and, indeed, rightly so. The past ten years have proved that our consumer investigative reports are not quite as protective as they once were. Outside sources are reluctant to disclose adverse information. The industry has compensated by using more direct applicant interview and questioning techniques. While there has been no major discernible deterioration in mortality experience, it might just be disguised by more favorable medical experience.

At our company, we have a computer program that prints our underwriting worksheet. The state of residence of each applicant is included as part of the input. A second part of that program provides a highlight message that alerts the underwriter to any special or unique discriminatory practice law that may exist in that state. Thus, if a policy is to be rated, modified or rejected, we can give extra attention so as to comply with those particular laws.

MR. PETER PATTERSON: The incredible boom in the number of large cases, primarily business related, makes the subject not only important but perhaps urgent. The reasons for the boom are clear; our agents have uncovered the mother lode in the business market and very low term rates make the product an easy one to sell. The cost at some ages is almost incidental, being less for nonsmokers than was charged for accidental death riders just two or three years ago.

The question, then, is whether these facts should precipitate changes in our underwriting procedures. Can we continue to underwrite exactly as we have in the past - or will we be in for a rude awakening?

The data on which to base our judgment is scarce and fairly out-of-date, but the dangers it hints at may emphasize the reasons for real concern now. We are all aware that the Large Amount Study, covering the period from 1968 to 1973, showed a very comforting bottom line. The mortality on this block of policies was only 90% of the experience of all policies of all sizes. This has been used to justify not only lower term rates but also to rationalize a casual attitude toward justification of large amounts of insurance.

However, if we examine a subdivision of this experience, categorized by cause of death, we find some disturbing ratios.

Cause of Death 1968 - 1973

|                            |      |
|----------------------------|------|
| Medical (excluding cancer) | 81%  |
| Cancer                     | 95%  |
| Accidental                 | 121% |
| Suicide                    | 138% |

Our underwriters have been very professional in evaluating the medical risks. Probably as well, clients who purchase these policies have more access to good, but expensive medical care than would the population in general. I have shown cancer separately to emphasize these facts since it seems to be the exception that proves the case. Even careful underwriting often will fail to uncover incipient cancer risks and even wealthy people are unable to purchase cures for this disease.

The accident and suicide figures speak for themselves. Antiselection is clearly present as large life insurance policies provide the ultimate solution for a high roller who is overextended. Suicide may solve many problems, particularly if it is your partner who commits it. A delicate balance seems to exist between medical underwriting success and financial underwriting failure and we can be thankful for the weighting of medical deaths for producing that favorable bottom line.

Let me question, however, the validity of this comfortable bottom line. First consider the makeup of the term/permanent composition in the Large Amount Study. The 1970 U.S. Fact Book suggests that 50% of business written at that time was term insurance. In 1980, that figure had increased to 60%. The Large Amount Study included only 20% term insurance. Are large cases primarily being written as permanent insurance? I think

not. The explanation probably lies in the fact that companies contributing to the Study were largely the big eastern mutuals who were not aggressively writing business term insurance at that time. However, if we isolate the large term (over \$1,000,000) cases reported by these companies, we find a disturbingly high ratio of 109%. If these numbers are troubling, how anxious might companies in today's term market be?

Actual claims in this category amount to about \$11 million over 5 years. Jim Pilgrim of Connecticut General pointed out several years ago that he was aware of 5 claims totalling more than \$40 million of which only one would have been included in the study. He suggested that no matter how one calculates the exposure, inclusion of these cases in the data would yield disturbing actual/expected ratios. At my company, I have seen claims in the past 12 months of 2, 2.2, 5, 7 and 10 million dollars. Fortunately, these have not all involved ourselves and I do not think that any involve companies that provide data for the Large Amount Study.

The new Large Amount Study, covering the period from 1973 to 1978, is unlikely to indicate that this scenario has improved. I understand that overall mortality has deteriorated to a 94% bottom line for all policies combined with the term portion being virtually at 100%. The deaths from accidental causes and suicide on term policies are 155% and 112% respectively. Obviously, medical underwriting is still preventing very bad news, but the balance may be gradually tipping against us.

Those of you who attended the mortality symposium in Chicago a little more than a year ago may remember the concept of curve-squaring. Considerable progress is being made in moving the survival curve upward to the right where the virtual limit before age 60 or 70 is the line denoting accidental deaths. We were told that in the 1980's we would find ourselves underwriting the insured's lifestyle rather than his health. Consider the implication to the balance mentioned earlier if the weighting of medical causes of death is greatly reduced.

The key underwriting dilemma today is that the justification for large business policies being requested (whether for partnership buy/sell agreements, corporate stock redemption, keyman coverage, etc.) involves a valuation of the insured's holdings and/or business. The underwriter generally has few facts and is usually not expert at interpreting what he does have.

The concept of financial underwriting is quite simple - do not issue so much insurance that the insured is worth more to the beneficiary dead than alive. This is obviously the old insurable interest principle. Unfortunately, if you do not have facts or methods, then the principle cannot easily be translated into practice. Even if you get financial documents, lack of expertise in reading them may yet block proper underwriting.

Let me describe a recent case which illustrates this problem.

As background information, two individuals formed a corporation called Blivet Inc. Each owns 50% of the stock in the corporation. Mr. X has put in the capital. Mr. Y is providing the brains. Sophisticated technology is apparently involved in the conception and utilization of blivets. Application for \$2½ million was made on the life of Mr. Y (the brains), with the company to be the owner of the policy. The agent provided copies

of correspondence from Mr. X as to the need for insurance which read as follows: "Within the next month we will be commencing active promotion of blivets. Dupont and General Motors have already indicated their interest in our product. We expect to sell 2 million blivets within 5 months. This will net the corporation an amount in excess of \$1.5 million. The investment in Mr. Y is substantial. Obviously, the returns will be tremendous and the need for a large amount of life insurance is imperative. The earnings from Mr. Y's invention are unlimited." Mr. Y was shown by the inspection report to have nominal worth and income.

The following balance sheet was provided.

BLIVET INC.  
BALANCE SHEET  
DECEMBER 31, 1979  
ASSETS

CURRENT ASSETS

|                          |              |
|--------------------------|--------------|
| Cash                     | \$ 162       |
| Accounts Receivable      | 3,631        |
| Employee advances        | 17,242       |
| Inventory                | <u>4,356</u> |
| <br>Total current assets | <br>25,391   |

PRODUCTION COSTS

|  |                 |
|--|-----------------|
| At cost, less accumulated amortization | 16,979          |
|  | <u>\$42,370</u> |

LIABILITIES AND STOCKHOLDERS' EQUITY

|                      |                 |
|----------------------|-----------------|
| STOCKHOLDERS' LOANS  | \$48,673        |
| STOCKHOLDERS' EQUITY |                 |
| Common Stock         | 1,000           |
| Retained deficit     | <u>(7,303)</u>  |
|                      | <u>\$42,370</u> |

Let us review the balance sheet. Since Mr. Y is the only employee, should not the employee advances item appear on the income statement as an expense? Another item - production costs which are clearly expenses - appears to be on the wrong statement. Under liabilities, the usual format has been abandoned. No liabilities appear to exist but \$48,673 apparently represents Mr. X's investment in the company.

Although not shown here, the income statement was equally bizarre. The accompanying accountant's statement was a total disclaimer of responsibility for the financial report.

Therefore, Mr. X and/or Mr. Y provided the input and nothing was verified by an accountant. Remember we are dealing with an application for \$2½ million. Not only is the source of information in question, but the numbers in the financial statements are tiny by comparison to the amount applied for.

Why go through this exercise? Merely to illustrate that if an underwriter is unable to analyze financial statements, it is likely that none of those significant factors would be noticed. The result is that the business potential of Blivet Inc. becomes the only focal point for assessment. The fact that a totally unacceptable set of financial reports has been submitted to justify \$2½ million of insurance coverage passes unnoticed. That is just what happened - \$2½ million was issued and placed on the life of Mr. Y.

You may have noticed that blivets have not appeared on the market. It is likely that Dupont and General Motors were never interested and probably never heard of blivets. Also, Mr. Y died not long after policy issue from gunshot wounds. Remember, this was an actual case!

I will conclude by making 3 points:

1. Underwriters can, and are, developing the expertise needed in financial underwriting. The proof is in the form of a paper by Bob Spittel, FLMI entitled Financial Underwriting - Financial Justification of Business Related Insurance and Valuation of Business Equity. The paper covers terminology, danger signs and formulae for valuing businesses.
2. The formulae given will be no better than the data we obtain to put in them. We ask for, and get, medical data over the insured's signature. Banks, trust companies, etc. get our signature over our assets and liabilities whenever we apply for a loan. Why should we not get the numbers we need over the applicant's signature? Equifax have successfully test marketed, in Toronto and Montreal, a special business insurance questionnaire that the insured signs. My preference would be that the application would have a section added for use in the business insurance context.
3. Traditionally, on the one hand, we have the underwriter trying to develop methods and facts. On the other, we have the agent resisting new forms to fill out and new information to gather. It seems that actuaries, through inference by the bottom line of the Large Amount Study, have sided with the agents. It is time to take a hard look at the real facts and line up with the underwriters.

MR. NEVILLE S. HENDERSON: Like all other businesses in today's environment, the insurance industry is subject to continual change. In fact, changes become the norm for most of us and things that may have seemed remote or even impossible a few years ago are now facts of life. So it is with underwriting. Impairments that were once thought to be uninsurable are now insurable at standard rates. Underwriting tools that were once deemed to be indispensable are now seldom utilized. On the other hand, risk characteristics that had been totally ignored or were deemed impractical to consider a few years ago are now extensively reflected throughout the industry and medical and diagnostic techniques that were little

more than science fiction a decade ago are all but taken for granted as risk discrimination tools now.

The genesis of many of these changes has been instigated by multifarious and complex phenomena. However, some of the more ostensible causes have been: improvements in medical knowledge, including diagnostic techniques in treatment; sociological and environmental changes; economic changes; social pressure, whether it be from individual groups or the legislators; and competition.

Though change in one form or another has had considerable impact on virtually all facets of underwriting, the underlying principle of underwriting - to ensure, within practical limits, that each applicant is assessed a premium reflecting the risk that individual presents to the group - really has not changed. To some extent, it has been compromised by legislative change and competition as in the case of mandated coverage or a particular company's voluntary decision to eliminate charging extra premiums up to a certain level even though such might be justified by available statistics.

There are a plethora of reasons for these compromises and I'm not attempting to denigrate the people responsible for those changes, but simply to point out that they are happening. Also, the basic method of classifying risks - the numerical rating method - has not changed considerably and is still substantially appropriate for the job at hand. The fashion in which this method is used has changed somewhat in that underwriters now tend to underwrite the total risk. That is, they will grant credits for certain characteristics of an impaired risk so as to differentiate between the better and worse risks with that impairment.

Perhaps one of the more insidious factors causing change in the underwriting function has been inflation. Over the last decade, the average cost of many of our basic requirements has doubled to quintupled. Furthermore, underwriter, medical and clerical time costs have also increased. The end result is a continual rise in the level at which requirements are requested and an effort to mechanize as much as possible in order to defray costs and improve time service. Some extremely high non-medical limits are being offered today and some very sophisticated programs and computer systems are being developed to handle routine underwriting functions. Ultimately, it is the consumer who pays for the effects of inflation, since any increase in requirement levels is made with the expectation that there will be an increase in mortality.

The basic technique of using current statistics, whether they be based on industry, clinical or other studies to estimate future experience, is still widely applied. Now, seemingly more than ever before, companies are cognizant that such data is only one fleeting moment in the race of time. Consequently, the trend to extrapolate the experience based on anticipated changes in medical science or socio-economic changes is widespread. The end result is more art in underwriting. Far greater knowledge of the potential changes that can affect mortality, by both actuaries and medical directors, and the willingness to apply them is more crucial than ever before in this highly competitive market, both with respect to standard and substandard lives.

Perhaps the above can best be seen in light of certain recent developments with respect to the classical underwriting classifications and in the development of some of the newer ones. For many years now, the most frequently observed impairments which result in extra premiums or declination of the risk are overweight and cardiovascular impairments and, in particular, elevated blood pressure. There are many others and we do learn about them, but generally speaking, these are the most common ones to be discovered on examination. Consequently, the 1959 Build and Blood Pressure Study was a monumental development in assisting underwriters to appraise risks associated with those impairments. However, even as that study was being completed, new developments in medical science were occurring which were to have a significant impact on the mortality of hypertensives, namely, the better understanding and treatment of elevated blood pressure.

Subsequent to the 1959 Study, there were a number of clinical studies published showing better mortality among hypertensives and overweights. However, many of them were based on small samples or were not statistically compatible with insurance data. Nonetheless, the trend was clear. Companies began liberalizing ratings on overweights and hypertensives and, in particular, hypertensives brought under control through treatment.

Finally, we have the 1979 Build and Blood Pressure Studies. It is worth noting that these are actually separate studies based on common data. The 1979 Build Study is already available. The 1979 Blood Pressure Study is expected later this year. My comments with respect to the latter are based on some preliminary reports.

There are some factors relative to both studies which give deeper insight into the mortality differences occurring between the two and their etiology. The 1959 Study considered medically examined ordinary policies issued in the years 1935 through 1953 traced to anniversaries in 1954. The 1979 Study covered medical issues of 1950 through 1971 traced from anniversaries in 1954 to anniversaries in 1972. During the observation period of the 1959 Study, there was a constant rise in death rates from heart disease which clearly would have had an impact on the mortality of overweights and hypertensives. On the other hand, about one third of the way through the observation period of the 1979 Study, there was a steady decline in mortality from heart disease and, in particular, coronary artery disease which would clearly demonstrate itself in lower mortality in overweights and hypertensives.

Though it is difficult to pinpoint exact reasons for this trend, a number of occurrences subsequent to the 1959 Study may be at least partially responsible.

1. Better treatment of elevated blood pressure as well as an increased awareness of the dangers of the impairment by the public.
2. Improved diagnostic and treatment techniques for heart patients.
3. Greater awareness of coronary risk factors such as elevated low density lipo-proteins, elevated blood pressure, family history, overweight, etc.



4. Improved living standards and greater access to improved medical care.
5. Public awareness of the insidious effects of smoking and some trends towards the decrease in cigarette smoking by the public and a reduction in tar and nicotine content by the producers of cigarettes.
6. Greater awareness of the benefits of physical exercise, diet, etc.

At the same time, however, there are differences in the characteristics of the data observed in the two studies which must be considered.

Among these are:

1. The 1979 Study is more weighted with large policies than the 1959 Study, especially at ages under 40 and among females. These larger cases are more carefully selected and consequently, more of the poorer risks are removed by the underwriting process.
2. A change in composition of the experience occurred between the two studies. In the 1959 Study, about one-half of the exposure group came from five companies dealing in mass marketing. In the 1979 Study, about 50% was provided by five companies dealing generally with higher average amounts.

The five mass marketing companies had an expected mortality ratio of 112%, whereas the five selected companies which predominated in the 1979 Study had an expected mortality ratio of 91%. It would appear some socio-economic changes are reflected in the 1979 Study.

3. The 1979 Study includes a higher proportion of exposures at the earlier durations.

Some interesting changes can be observed between the 1959 and the 1979 Studies.

1. The average weight of males has increased slightly for all categories in the last 20 years while the average weight for females has decreased slightly for each category.
2. Optimal weights - those associated with the lowest death rate for a given height - have increased for both males and females over the 1959 Study and, in fact, are closer to the average weights in the 1979 Study than was the case with the 1959 Study.
3. The mortality experience of overweight men and women classified by range of absolute weight was not significantly different in the 1979 Study from the 1959 Study. Generally, mortality ratios were slightly lower for the 1979 Study, except in the extreme underweight category where ratios increased. The mortality of overweight women according to percentage departure from average weight was only slightly lower than demonstrated in the 1959 Study.

4. The 1979 Blood Pressure Study did not report treatment for elevated blood pressure at the time of application and showed the mortality of men with elevated systolic or diastolic pressures at the time of application was appreciably lower in the 1979 Study than in the 1959 Study.
5. The mortality ratios among women with slightly or moderately elevated systolic or diastolic pressures at the time of application did not differ radically in the 1979 Study from the 1959 Study. For the higher levels of elevated blood pressure, the 1979 Study showed distinctly lower mortality.
6. The 1979 Study also demonstrates that treatment for hypertension has a significant effect on mortality results. It is important to note this experience is based on a limited volume of data involving policies issued to carefully selected risks such that this experience is not indicative of treated hypertensives in general. Treatment is not effective in all cases, but there is increasing evidence that anti-hypertensive treatment does bring mortality levels to nearly normal levels in many situations.

Another classical underwriting classification category for which statistical data has been developed to assist in appraising the risk is hazardous sports. Until 1976, the data available was largely collected from the various organizations associated with such sports and either contained biases or was of little statistical significance. However, in 1976, the Society began publishing statistical information on many of the more hazardous sports and although statistical significance is lacking in some instances, the Society clearly points out the limitations of the data. The study is now done biennially, alternating with the study on aviation in the Transactions. Both studies take on a particular significance in a society with far more leisure time than ever before and the finances to be able to indulge in various types of hazardous sports from scuba diving to hang gliding.

Over the last decade or so, several new underwriting classifications were being experimented with and over the last few years have begun to be far more widely recognized within the industry. Classifying risks according to smoking habits is the most significant of these. In actuality, the evidence supporting higher premiums for smokers than non-smokers is far from new, but did not really become a serious underwriting consideration until the 1964 Surgeon General's report. Even then, there were many practical arguments against making such a differentiation, not the least of which was the inapplicability of the statistics to insured lives. However, a few forward-thinking companies did begin treating non-smokers more favorably on an experimental basis. In 1979, the second Surgeon General's report appeared confirming the earlier results and adding greater impetus to consider smoking and non-smoking as risk classification factors. The trend was finally set at Bal Harbour in 1979 when Cowell and Hirst presented the results of State Mutual's analysis of its own non-smoker business - the first study of insured lives which substantially supported the large mortality difference between the two groups. Though the State Mutual study lacked statistical significance in a number of areas, supplementary data submitted by a number of other companies who had also been experimenting with the classification lent

credibility and pushed the industry into accepting the dichotomy between smokers and non-smokers as a reasonable risk determinant.

My intention is not to give a detailed analysis of the various studies, but simply to point out some underwriting considerations that must be borne in mind in reviewing the statistics and using them as classification factors. It would seem that smoking, like excessive alcohol use or even overweight for that matter, takes some time to work its detrimental effects. Yet, for the smokers group, the mortality at the very young ages, even in the 20's and early 30's is much higher than expected.

Secondly, some of the more significant causes of death are homicide, suicide and motor vehicle accidents which certainly cannot be the result of cigarette smoking alone. The implication here is that some factor, other than simply smoking, is at work and that factor has generally been considered to be lifestyle. Furthermore, there is evidence that the non-smoking group is generally in a better socio-economic group than the smokers. Though we are not in a position to estimate the degree at this stage, it could well be that some of the non-smoking benefits are already being reflected in the mortality of larger cases. Finally, non-smoking has already been identified as a factor responsible for general improvements in mortality over the last few decades. In that case, rates based on projections of current experience, then modified to reflect non-smoking, may well be double counting for the mortality difference.

The utilization of these new classifications is growing at a tremendous rate with many companies offering non-smoker discounts and/or lifestyle discounts. Though it is accepted that the factors have a marked effect on mortality, some insurers are taking a more conservative view in attempting to insure more favorable mortality by requiring additional underwriting criteria to non-smoking alone. Some companies require that any one or more of the following be true for a particular applicant: the medical exam be perfectly clear and the applicant be in the optimal range with respect to weight and blood pressure; there be a favorable family history such as both parents long-lived (exception made in the case of death due to accident) and no sibling deaths from cardiovascular causes; and there be no previous medical impairments. So far, there are no studies indicating what percentage of the favorable mortality among non-smokers is due to not smoking alone and how much might be a result of a different lifestyle.

Another classification factor that is really a subset of the general classification of lifestyle is exercise and a number of companies are offering additional, although usually marginal, discounts to the basic premium for this factor. There are no sound statistics demonstrating that exercise improves mortality. In fact, this point is currently being hotly contested within both the medical profession and the public sector. Virtually everyone agrees that exercise improves the quality of life but no one has demonstrated that it improves mortality per se. There are some statistics showing that physically fit people have a better chance of surviving a coronary than non-fit individuals. At this point, regular exercise would seem to be in the purely experimental stages as a risk classification factor.

The advent of these new classification phenomena will no doubt have some effect on past underwriting approaches, especially to substandard risks. Many companies have minimum amounts below which they will not charge an extra premium even though there is some excess mortality. Some companies will ignore substandard extra premiums of up to \$4 per thousand regardless of the plan. If we were to implement such a rule in my company, it would result in foregoing some rather substantial levels of extra mortality. For example, our basic Yearly Renewable Term premium for a 35 year old male is \$1.90 per thousand. We do not use a multiple-of-standard method to calculate extras, but rather, use a separate mortality assumption. At any rate, using the \$4 limit in our premium structure would be tantamount to ignoring a rating of 200% extra mortality at issue. By age 40, the substandard extra waived for that level of extra mortality would become \$6.00 per thousand, over 300% of the basic premium, and by age 45, it would have been \$9.52 per thousand, over 500% of the standard premium.

Continued expansion of those limits has led to the basic concern that we are broadening the standard class to the extent that there may be a turnaround in general mortality. Generally speaking, however, the number of those cases has been a very small percentage of the total business and thus the impact, when spread over the considerably larger standard block, is minimal. Clearly, this is not the case with smokers or we would end up right back where we started - at aggregate rates. By the same token, the debits associated with smokers often end up in the +25% to +50% extra mortality range which is where companies would ignore the extra mortality associated with other impairments. It does not seem to be a consistent treatment of risks to ignore a certain percentage of extra mortality for some classifications but charge it in the case of smokers.

Though there has been tremendous development in many areas of classification of risks, others have been virtually untouched for almost a decade and a half. Consider occupation, for example. The last significant study was the 1967 Occupational Study. However, there have been tremendous improvements in safety and in the work environment itself for many occupations since that time. Nonetheless, it seems we hear weekly of law suits against employers for exposing employees to carcinogens or harmful dust and chemicals. Furthermore, as society and its needs change, new occupations are born and so are new hazards. Our current knowledge of occupational hazards is grossly outdated. We have come a long way in some instances and have gone nowhere in others.

MR. JAMES J. MURPHY: My remarks will address possible transition problems with regard to existing policies and changing underwriting rules, procedures and classifications. First, I will touch briefly on transition as it relates to the legal problems we are experiencing with traditional underwriting classifications. Then I will discuss the transition problems associated with the new underwriting classifications that are being or might be introduced. Finally, I will give a little more attention to the specific problem relative to retroactivity of non-smoker pricing differentials to existing policyowners.

We are seeing more and more proposals, if not actual laws or regulations, related to privacy, disclosure and anti discrimination. Some of these proposals, including a recent federal proposal on unisex pricing, include required provisions of retroactivity to existing blocks of business. While

the constitutionality of this retroactivity proposal can certainly be questioned, this form of possible forced transition obviously would present significant problems, if enacted. The logistics alone provide cause for concern. In addition, while one particular group of insureds or annuitants will no doubt benefit, there must also be a comparable group who will actually have an increase in cost or a reduction in benefits and this group will obviously be displeased. Alternatively, the group receiving the benefit will have to be subsidized by reduced profits or surplus.

The development of appropriate data on which to base any such retroactivity will also be a problem. For example, we have traditionally kept mortality statistics separate for males and females. We would have to go back and provide for development of new experience data based on appropriate mixes of males and females, perhaps varying by attained age. We cannot just average the two sets of data to come up with unisex experience.

Many of the proposals, regulations and laws in this area are at the state level. No doubt there will be some, if not many, state variations and some will cover anti discrimination while others may require discrimination. This will complicate life, not only for new issues, but also for any retroactive adjustments to existing policyowners, particularly if some of the regulations require some form of retroactivity, while others do not. Some states might even forbid retroactivity.

Another concern is that the privacy and disclosure actions by the various states and the federal government could dry up our traditional sources of underwriting information such as inspection reports and attending physician's statements. This will require a different kind of transition as we seek new sources of data. The reliability of such sources as compared to the reliability of existing sources may result in a questioning of experience studies based on new versus traditional sources. Finally, there is a basic conflict developing between government activity which is pushing antidiscrimination, rights of the handicapped, unisex tables, etc. versus the competition in the marketplace which is forcing greater refinements in underwriting classifications such as the non-smoker or other special preferred discounts. This can only result in a further complication in developing solutions to the transition problems inherent in both of these areas.

There are two types of underwriting changes: those that are more conservative than current practice and those that are more liberal than current practice. When changes are made which are more conservative, we generally do not worry about existing business and make no effort with respect to retroactivity or other forms of transition. Anyway, when did any company last tighten up their underwriting rules?

The real problems of transition come when underwriting rules are liberalized. The problems are most profound when dramatic changes are made in underwriting rules or underwriting classifications. In fact, there are probably very few, if any, transition problems associated with modest changes in underwriting rules and guidelines such as a liberalization on a blood pressure rating chart. The major questions of transition come when major changes in underwriting classifications are made or very visible changes are introduced such as recognition of smoking habits. Let us consider four separate areas of transition relative to such

changes: retroactivity, reconsiderations, term conversions and guaranteed insurability options, and coordination of data.

1. **Retroactivity:** Why should retroactivity be considered in the first place? The primary reason is a basic concern about replacement and persistency. If new policies offered by your company or by the competition provide for more liberal underwriting classifications, such as recognizing non-smokers, there is a real possibility of replacement of existing business. This can be either replacement with your own policies or with the policies of the competition. In either event, there is a definite possibility for antiselection. There is also the obvious impact on company persistency and anticipated expense amortization. For a non-par company, both aspects could lead to a block of business becoming unprofitable. The participating company can cover this cost through the dividend process, but this will lead to dissatisfaction among the remaining policyowners.

A review of the replacement issue suggests that perhaps it can be minimized if policyowners can be adequately informed about the issues. Even with some of the significant underwriting changes being made, the impact of renewed acquisition costs incurred upon replacement may still more than offset the benefit to be gained from the new underwriting classification. In some rough studies that we have done on hypothetical pricing changes for non-smokers versus smokers, we have found that only very recently issued policies could gain any advantage from replacement to a non-smoker discounted policy. However, even though the figures may show replacement not to be in the policyowner's best interest, the psychology of the new underwriting classification and its touted advantages may still lead to significant replacement activity.

The question must then be addressed as to whether or not retroactivity will necessitate a complete reunderwriting of a large number of existing policies. When full underwriting is involved, this procedure is obviously very impractical. Some underwriting changes, however, might permit relatively easy reunderwriting. For example, you might just ask the policyowners to answer a smoking questionnaire. However, the accuracy and equity of such an approach is questionable. Since you may have people who are currently non-smokers but their reason for being a non-smoker now is that they have developed lung cancer following a long history of smoking, should such people be given a retroactive change to reflect the non-smoker status they claim?

When considering the retroactivity question, there is a possibility of being accused of changing the rules in the middle of the game. For a participating company that bases dividends on mortality experience for various blocks of business, there is a possibility of removing from existing blocks the good risks and leaving behind those who do not qualify for the more liberal underwriting classification. For participating business, this will lead to increased mortality charges and poorer cost positions for the remaining lives. This may cause some policyowners to question such a proposal - perhaps through the courts.

In summary then, the retroactivity consideration rests on the relative answers to questions such as can the company afford the loss of premium due to replacements versus the additional administrative costs and potential court challenges of a retroactive action.

2. Reconsiderations: As the public becomes more and more aware of underwriting price differentials by class and more aware of health maintenance activities, we will see an increased volume of requests for reconsideration. The transition questions might then be addressed in a similar fashion to those of retroactivity. In addition, questions related to reconsideration also apply to minor underwriting liberalizations where retroactivity would probably not be addressed. Even if the change in underwriting rules is only a few debits for, say, a given blood pressure level, the company must decide whether to use the new table for reconsidering existing policies or the original table used at time of issue. If you choose to use original issue underwriting rules for reconsideration, you may have to administer two or more different classification systems. Most companies make at least one or two significant underwriting changes every year, so that such a procedure would require numerous classification systems to be used at any one time depending upon the year of issue. On balance, the newest underwriting rules will be used for reconsideration when only minor changes are involved. However, when major changes in underwriting classifications are introduced, the reconsideration question probably escalates into the retroactivity question discussed earlier.
3. Term conversions and guaranteed insurability benefit elections: After a change in pricing classifications or underwriting rules, the nature of a term conversion or a guaranteed insurability benefit is no longer clearly defined. What really was guaranteed in the original contract? If, for example, new policies provide a non-smokers discount, is it appropriate to ask whether or not the term converter or guaranteed insurability elector smokes? Can we ask other underwriting questions? Can we afford to reunderwrite these situations? Can we legally impose reunderwriting in these situations? Would we put such situations in our best underwriting class without asking any questions? What will happen to overall mortality experience on these blocks of business? These and perhaps other questions should be addressed when new classifications are being introduced.
4. Coordination of data: For data that is categorized by underwriting class, any major change in underwriting category produces a certain discontinuity in the results. It may be necessary to provide a clean break in your general mortality investigations. Data on the old and new bases simply cannot be combined in many such cases. Also, any management information systems which provide mortality results will show a similar discontinuity. This must be recognized and communicated to top management.

Thinking back to the retroactivity question on major underwriting classification changes, it is likely that the on-going experience in any remaining group will worsen whether the result of replacement or the result of planned retroactivity. This will be of significance to the actuaries who are determining dividends for or profits from various

blocks of business. There are also implications for the study of mortality on perhaps entirely unrelated impairments. For example, if all of the non-smoking diabetics replace their insurance and most of the smokers remain, the apparent mortality on diabetics will worsen for reasons completely unrelated to the diabetic impairment.

With growing consumer awareness of underwriting considerations and classifications and increased price differentials in these areas, we will see a growing demand for "Why?". This will come not only from new policyowners who question the classification they receive, but also from existing policyowners asking questions relative to retroactivity or reconsideration. We will have a growing need for "credible" statistics. This may be difficult in some areas where certain new changes are being based primarily on judgment with minimal statistics. These can produce real trouble in the future. Other areas, of course, have a sound basis for new action. The smoker/non-smoker differentials are based on fairly sound statistics that have been developed over a number of years by certain insurance companies and by the Surgeon General. As we move to greater refinements in the underwriting process, we need to be aware of our continuing need to be able to justify these refinements to management, agents, policyowners and insurance regulators.

More and more companies are introducing smoker/non-smoker differentials in their pricing structure. Of course, some companies have had these for a number of years. While I have used the smoker/non-smoker distinction as an example several times already, a few additional comments specifically related to this area and transition are appropriate. In particular, retroactivity has become a hot topic. Many of you may have seen a relatively recent article in Probe which stated that the first company to find a way to solve the retroactivity problem for non-smoker discounts would certainly have a marketing edge. While I agree with that basic statement, I am not so sure that I expect to see any company go the retroactive route in this area.

Of course, the reasons for considering such action are obvious. The concern is replacement of existing business by either your own or another company's non-smoker policy. While this is likely to happen to some extent, I suspect that it will not result in wholesale terminations. Of course, we must overcome the psychological impact of the new pricing differential on existing policyowners. We must develop educational materials to convince agents and policyowners that they already have a good deal.

The reasons for not going retroactive in this area are also clear and have already been discussed. There are probably two prime considerations. First, there is the fact that the existing business was issued without regard to the smoker/non-smoker issue. Pricing categories were determined which included both smokers and non-smokers. To provide a benefit to those in these groups who claim to be non-smokers will result in an increase in the mortality charge for those who remain behind as smokers. This is, obviously, more of a significant problem to the participating companies whose dividends already reflect the combined mortality of both smokers and non-smokers. There is the risk of being accused of changing the rules in the middle of the game. Perhaps the non-par companies could afford to do something for the non-smokers at the expense of the smokers if this expense could be absorbed in their profit margins. Even in this case, one



part of a block of business would end up in a lower profit position than another and also lower than originally desired. The second primary reason for not going retroactive with non-smoker discounts is the sheer administrative burden involved with such an effort. In fact, the cost of reunderwriting an existing block of business may more than offset any additional benefit that can be provided to the non-smokers within that group. This is particularly true for the participating policies where the dividends already reflect experience which includes a high proportion of non-smokers.

All of these comments have only scratched the surface of the transition problem for new underwriting classifications. The issues are many, varied and often complex. We must be fully aware of these as we continually increase the variety of and refinements in our underwriting classifications in the future.

MR. MURRAY PROJECTOR: May we have some discussion about the current position in underwriting applications from those who have had coronary bypass surgery?

MR. TAYLOR: When we first started seeing coronary bypass surgery patients some ten to twelve years ago, they were considered by and large uninsurable if multivessel bypass surgery was performed. It was felt that while the surgery improved the quality of the patient's life, there was no significant improvement in the patient's life expectancy. Following some studies done by surgical teams, it became rapidly apparent that the life expectancy given a coronary bypass victim was directly related to the skill of the surgical team. As a result, the industry rather timidly began taking coronary bypass victims with single or double vessel surgery at a rate which was about a +200% plus an extra \$40 to \$50 a thousand for five to ten years, anticipating perhaps 1,500 to 2,000% mortality. At the present time, two and three vessel bypass patients are being offered insurance at a rating of +100% plus an extra \$10 per thousand for five years and upwards, depending on the following: their return to work; the current status of the electrocardiogram; current status of their exercise program; many variables; and judgment.

MR. MICHAEL T. KAVANAGH: What is the impact of reinsurance shopping on underwriting?

MR. TAYLOR: Years ago, I felt that reinsurance would undermine the morale of the direct underwriting department and destroy their credibility with the producing field force. I now accept the fact that the reinsurance activity is a further way to be of service to the field force. We will submit cases to no more than four reinsurers in an effort to give our producing agent or broker the best rate that the marketplace offers. If our rate is best, we will retain the business. If the reinsurer's rate is one table better than ours, we will retain 75% of the risk. We then have a decreasing amount of retention. If there are more than four tables difference between their evaluation of the risk and ours, we allow them the privilege of having the entire risk. We are retaining a portion of many of the reinsured risks in an attempt to learn if, indeed, the reinsurer's underwriters, medical directors and actuaries are smarter than we are.

MR. PATTERSON: At least one benefit would be that because the cases are being sent to a number of companies, more people are exposed to substandard cases of an exotic nature and, as a result, the industry's ability to grow is enhanced.

MR. MURPHY: Reinsurance shopping seems to produce a lot more of the tougher underwriting cases for our underwriters to deal with because the agents are not shopping it on their own as much as they used to. Our underwriters are gaining experience by having that kind of underwriting exposure. A concern I think is valid is not wanting to undermine the confidence and morale of the underwriters. However, we follow the experience very closely and keep the underwriters appraised of the experience of the blocks of business that are reinsured through this program. We have found in the early years of the program that the mortality result appears to be closer to the rating that our underwriters gave it than to that of the various reinsurers who have taken the business. From that point of view, our underwriters can be reassured that they are probably doing a good job. The risks are getting spread over a number of reinsurers. It is working very well in terms of marketing and field relations. In general, it is positive for any company that pursues it.

MR. HENDERSON: We try to statistically justify any impairment we rate and we have had much difficulty with a number of impairments because statistical patterns of survival did not exist. The text that came out several years ago was certainly helpful, but it became antiquated and we did not see enough of the substandard risks to know how to appraise them. It was through shopping that we began to get a better idea as to how to appraise some of these risks and, certainly, some of the larger reinsurers do produce statistics. The Connecticut General has produced a number of statistical treatises on various impairments that they have come across and some of them have been extremely helpful. The shopping aspect does have a lot of advantages to commend it, not the least of which is education. It also has associated with it a very high cost. The benefits tend to be unquantifiable or are very difficult to quantify in terms of dollar amounts, but the costs of shopping are quite heavy. I would suggest that anyone doing extensive shopping should cost that program and decide whether they want to continue with it.

MR. KAVANAGH: Would you comment on classification by morals and habits or lifestyle as it is called now?

MR. TAYLOR: The subject of morals, perhaps should have been touched upon in the legislative, regulative aspect of the opening presentation. We have a law in the state of California that "thou shalt not discriminate by reason of sex, sexual preference or marital status". That law also exists in the state of Illinois and will probably proliferate. So, things that I used to treat, when I started underwriting many years ago, as a no-no for morality and the addition of debits for extra mortality have been legislated away from me. I cannot subject my company to the possibility of huge law suits, punitive damages being what they are today, particularly in the state of California, by reason of wanting to rate someone whom I believe is subject to extra mortality based on years of observing death claims, but my hands are tied. I must take that risk standard or be prepared to explain why I cannot in an atmosphere that would not accept my explanation.

The underwriting of lifestyle with regard to habits, morals, drugs, associates and whatever is rapidly becoming a thing of the past. The Fair Credit Reporting Act has pretty well shut down vast quantities of information or sources of information that would give you insight into that kind of lifestyle. When encountered now, it is probably diluted to a vast extent and therefore should be given a great deal more attention in the underwriting of a case because you will have struck only the tip of the iceberg. Alcohol or drug abuse information will be obtained primarily from medical reports or from convictions. Lifestyle underwriting is much more difficult today and will get even more difficult in the future.

MR. KAVANAGH: There is an associated question related to morals and lifestyle underwriting. What do you do when you get somebody who has put a lie on an application and you pick it up through one of your sources?

MR. HENDERSON: If an individual lied on the application and we became aware of it, our first reaction would be to find out whether or not the impairment was significant to mortality. If we found out it was, we would go back to the insured and attempt to get him to admit to his background. Whether or not he did, we would still proceed to get as much underwriting information as possible. If it was not material to the risk, we would probably issue the policy only after we had satisfied ourselves that there were no factors that had not been disclosed. We would not decline the case on the basis of a lie alone. I had one other thing I wanted to say with respect to underwriting habits, lifestyle, etc. I find it disturbing that companies are so willing to ignore very severe criticisms of habits or morals and waive very large amounts of what should be substandard extra mortality simply because they are willing to accommodate a particular agent or broker. A number of good studies in the last few years demonstrated very high levels of extra mortality associated with alcohol abuse. Yet no matter how severe the case, standard insurance is issued.

