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MEDICAL CARE INSURANCE RATING AND MEDICAL ECONOMICS

Medical Care Insurance Rating

In the rating of group medical care insurance plans.

A. What recognition is given to the effect on morbidity of
   1. age,
   2. geographic location,
   3. industry,
   4. employees' incomes,
   5. basic benefits in connection with supplemental major medical expense plans, and
   6. rising medical care costs?

   What consideration is given to rising medical care costs in making rate guarantees for more than one year?

B. How is the variation by size of group in the requirements for expenses and experience fluctuations taken into account?

C. In underwriting transfer cases, what reliance is placed upon the claims experience of the prior carrier and how is such experience evaluated?

New York Regional Meeting

MR. JOHN C. ANTLIFF: Comprehensive Medical rates by age may be based on the statistics in the recent *TSA Reports* which shows ratios of actual to tabular claims according to composite tabular age factor bracket. My company, the Prudential, recently adopted age factors for basic health coverages, including Weekly Indemnity. For nonmaternity benefits the factor for the oldest age group is four times as high as the factor for the youngest age group.

We feel that a census date adjustment is necessary to avoid a discontinuity in rates of $2\frac{1}{2}$ per cent to $3\frac{1}{2}$ per cent when employee data are compiled on January 1, compared with December 31, since age is calculated as the year of census minus the year of birth.

Our rates for dependent children (as a unit) are a constant per employee with children and do not vary by age of employee. However, we do vary our rates for wives by age. Some companies charge rates for both children and wives, which are a constant per employee with dependents at any age. The higher claim rates for wives at the older ages tend to be offset by a decrease in the average number of children per employee with dependents.

Rates for maternity benefits should also vary by age, for example: from 210 per cent of the average at ages under 30 to 0 per cent at ages 45 and over.

The rate filings of the large companies indicate that all of them vary their rates for comprehensive and supplemental major medical according to geographic area. However, for basic medical care coverages the use of area factors varies considerably.

Claims rates for nonoccupational medical care insurance do not vary greatly by industry. However, there are a few industries which are subject to a health hazard, primarily from dust.

MR. FRANK J. ALPERT: In order to determine the effects of age on Basic Medical Care claim costs at New York Life, we have recently analyzed the experience on our Employee Protection Plan groups by age and sex. Under EPP, we offer a set of standard packages with substantial hospital benefits, surgical benefits, and in-hospital medical benefits, to groups of 4–49 lives.

Our study covered almost 42,000 employees and 29,000 adult dependents. We were able to develop relative experience by age for frequency of nonmaternity confinements, average duration of nonmaternity confinements, total costs of nonmaternity hospital room and board, total costs of nonmaternity hospital miscellaneous charges (including outpatient), frequency of nonobstetrical surgical claims, nonobstetrical surgical claim costs, total claim costs for the minor Basic Medical Care coverages combined, and frequency of maternity confinements.

On the nonmaternity coverages male employee experience shows a steady increase with age on each of the items studied, although the slope on hospital coverages was steeper than on other coverages. Experience on female employees progresses with age up to age 40 or 50, with a leveling off or actual decrease above those ages. Experience on dependent wives tends to increase uniformly with age following more closely the pattern of male employees rather than female employees. The experience on dependent husbands in many instances starts with a very low level at the young ages but rapidly rises to a considerably higher level even at ages as low as 40. In general, the experience on dependent husbands was considerably poorer than that on dependent wives at ages above 50.

As part of our analysis of the effects of age on Basic Medical Care claim costs we looked into the question of the number of children in a dependent unit in relation to the age of the employee. Based on U.S. Census Bureau tabulations, we were able to estimate the effect on the number of children coverage. Not surprisingly, there is a sharp reduction in the number of children eligible for insurance as the age of the employee increases.

In actual use for calculating premium rates on Basic Medical Care, it was desirable to smooth and spread the crude data which we had developed. Furthermore, we felt that we should use one scale of age factors for all coverages for ease of calculation. After several tests, however, we found that the increase in nonmaternity costs for dependent spouses was almost entirely offset by the simultaneous reduction in coverage of children. Thus, at least for ages below 65, it was practical to use a flat scale for nonmaternity dependent coverage.

MR. A. HENRY KUNKEMUELLER: In rating group medical care insurance plans located entirely or partially overseas, the interrelated factors of industry, geographic location, and actual and potential trends in medical care costs, all receive underwriting consideration. These factors are interrelated because frequently the prospective policyholder is the dominant employer in the specific area where coverage is to be provided. Where this is true, the medical care cost level in the area will be directly related to the type of industry the employer is engaged in. Furthermore, the trend in medical care costs will be directly related to the employer's attitude toward coverage of medical care; and a new plan, perhaps representing a change in attitude, may alter existing trends.

American International Life's underwriting of locations overseas reflects several additional factors:

1. While minor surgery and minor illnesses require only local care, major surgery and major illnesses for expatriate personnel usually require treatment in a major United States health center, such as New York, Boston, or New Orleans. Often the major share of medical care cost goes to the treatment of only a few serious illnesses, while the bulk of the illnesses generate only a small portion of the total cost.
2. Room and board and miscellaneous services charges to expatriate personnel may be low compared to United States levels, while surgical fees at the same time may be comparable to New York levels.
3. Ambulance service may mean transportation of an ill employee for hundreds of miles, not to mention possible transportation back to the United States.
4. Frequently, company dispensaries provide medical services for minor illnesses free of charge or at nominal charge. Here the insurer underwrites only the cost of major illnesses, frequently only those illnesses which require treatment at a leading hospital. Hence the effect of available free facilities and the frequency of nonlocal medical care must be considered.
5. Inflationary trends in general price levels and possible currency devaluation.
6. Plan design is an integral part of rate making for groups located overseas. Unrealistically generous plans underwritten for an employer who is the dominant user of medical care facilities in any given area simply serve to

raise the general cost of medical care in the area and to provide windfall profits to existing medical care facilities, at the ultimate expense of the policyholder.

The insurance company must play an important role in offsetting possible inflation in medical care cost levels in areas where the policyholder is the dominant industry. Experience in setting appropriate benefit levels can be one of the most valuable services which an insurer has to sell in the overseas market.

MR. RICHARD H. HOFFMAN: The variation in cost by size of case in Group Health Insurance premium rate scales is normally provided for by the application of a scale of discount factors which start at zero for the smaller cases and rise by 1 per cent steps as premium volume increases to a maximum of as much as 25 per cent. In establishing the scale of discounts, the variation in the requirements for experience fluctuations and in expenses by size of case are the two major elements which should be taken into account.

For the experience fluctuations requirement one might use a margin of, say, 5 per cent for the largest cases increasing to about, say, 10 per cent for middle-sized cases. For the smaller cases, assuming that the company's dividend or rate refund formula provides for substantial pooling of experience, the margin can be cut back to about the 5 per cent level used for larger cases.

The expense element should normally be designed to be consistent with the company's dividend or rate refund formula. In determining expenses for premium rate purposes, a period (varying by size of case) must be assumed for the amortization of the initial expenses, including first-year commissions. The average annual amount of this amortization, together with the appropriate administrative expenses, taxes, renewal commissions, and risk charges, produces the total expenses by size of case required to develop the scale of discount factors.

The high cost of writing and administering the smaller cases, which becomes apparent from this type of analysis, has led to the development of standardized small group programs. These programs are characterized by the pooling of all experience, the use of standard policy forms and limited choices of benefit plans. These qualities produce lower expenses and enable a company to issue small group cases at more reasonable prices.

MR. FRANK J. BUSH: To the extent that is available, the following kind of information necessary for a proper analysis and evaluation of experience is requested of the prospect. Common sources of these data are

the policy-year experience summary prepared by the present or prior carrier and the D-2 disclosure form. Much of this information is not available on a case transferring from a Blue Cross–Blue Shield community rated plan.

1. Name of prospect, location, type of industry.
2. Name of present or previous carriers.
3. Reasons for changing carrier.
4. Eligible and insured classes and participation per cent.
5. Current census (sex, age, geographical distribution, and income if pertinent).
6. Per cent employer contribution.
7. Experience for each of the last 3 years, separately by coverage, showing:
   a) Plan description and level of benefits (including extended benefit provisions).
   b) Premiums and rates.
   c) Claims (whether paid or incurred).
   d) Number insured (employees; dependent units).
8. Proposed impending renewal rating action by present carrier.

As typically applied, the evaluation procedures involve the steps outlined below. In general, evaluation and projection techniques are done in our Experience Rating Division, using forms and rating rules analogous to those employed in the advance rating of individually rated existing cases.

1. Determine current manual rates by coverage and plan for each experience period.
2. Derive expected claims for these same periods.
3. Weight expected and actual claims using credibility scale currently in use for existing individually rated business.
4. Project weighted claims of the latest period for inflation and trend.
5. Load for risk and expenses. Loading is tailored to the plan and to the size and character of the risk. Level commissions are assumed.
6. Convert to an advance rate. Subject to possible modification if life insurance included in the package.

This type of analysis is made only if the prospect consists of at least 50 insured employees. No analysis is made for cases under 50 lives, since zero credibility is assumed.

Denver Regional Meeting

MR. ROBERT A. McCORKLE: Our portfolio covers almost 1,200,000 members all located within the state of California. If the subscriber's adjusted family income (as shown on his income tax return) is less than $7,500, a participating physician will accept our payment as his fee in

full; for those who earn more, our benefit is the same, but the physician is at liberty to charge his usual fee. We apply an age factor on all new business written, and also on renewal of groups of fewer than 25 subscribers. For professional benefits this varies from .87 at ages under 40 to 1.57 at ages over 70; for hospital benefits, it goes from .68 at ages under 40 to 3.97 for those ages over age 70.

Group administrative expenses are charged by assessing a decreasing percentage, by brackets, on the excess of annualized income over $2,000. The weighting is graded by size to achieve broad equity in accordance with the "credibility" concept.

MR. RICHARD H. HOFFMAN repeated the discussion which he had presented at the New York regional meeting.

MR. EDWARD A. GREEN: In general, the newer manual rate structures use greater refinement in recognizing the effect of age, sex, and geographic location on morbidity under hospital, surgical, and medical expense coverages. Quinquennial age factors are used in determining rates in place of the prior practice of recognizing only markedly skew age distributions. Also, the exact proportion of females in the covered group is used in place of percentage brackets. Age factors, decreasing by age, are used for maternity benefits.

Some companies use age factors in determining rates for both employee and dependent coverages, while others use them only for employee coverage. Some apply the more precise age and sex adjustments to the entire basic hospital-surgical-medical package, while others apply them only to the hospital or the hospital-surgical portion of the package. Some use variation by geographic location for the entire package, while others use it for only part of the package. The rate calculation sheet for medical care coverage has become a somewhat formidable document even for the initiated. This could readily result in greater centralization and utilization of machines in preparing rate quotations.

MR. HENRY K. KNOWLTON: At Occidental of California we began using age factors in our basic medical rates for nonmaternity benefits in April, 1964. These range from a factor of 75 per cent under age 40 up to 225 per cent over age 65. The maternity factors are the reciprocal of the nonmaternity benefits.

We are just getting results of some studies of the new rates by age on 1963 and 1964 experience. For nonmaternity coverages, the employee experience, by age, has shown a very level loss ratio of experience to

manual. The dependents' experience is a little different matter. The youngest groups are showing substandard dependent experience, and a testing of the results indicates that if we use a minimum employee age factor of 100 per cent for all groups, the increased employee premium will just about balance the substandard dependent experience.

The maternity study, done separately, shows what we suspected, that our maternity rate curve was not steep enough.

On the question of geographic location, we decided on hospital experience coverage to combine the factors for low-utilization and high-utilization area that we needed on room and board and the loading or discounts on expense that we needed on the miscellaneous hospital expense and are using a flat percentage factor applied to both.

MR. JOSEPH W. MORAN: One point I would like to comment on is the fact that the cost of dependent child coverage varies rather severely by age of the employee. There is a very high peak in dependent child exposure for groups with a lot of employees in the 30–40 age bracket.

Another point I would like to make is that the claims for dependent husbands are substantially higher than for male employees in the same age group. Presumably this is due to the obvious adverse selection that is present in the usual situation where a female employee does not sign up her husband on the dependent coverage unless he is likely to have claims.

We at New York Life have done a good bit of dabbling on the question of trying to avoid spurious precision and trying to look at the entire picture on the total premium rates on the medical plan, but as long as we have a situation in which some parts are computed precisely and some parts are computed inexactly the degree of precision would seem to relate to the degree of unavoidable error that you are bound to get in the end result.

Claim Cost Control

A. What claim cost control techniques have been developed to promote sounder insurance plans and claims administration?
B. What has experience been in connection with the acceptance and administration of, and savings resulting from, nonduplication provisions?
C. Has consideration been given to the possible effects on future claim costs of hospital planning, the establishment of utilization and review committees, and similar developments?

New York Regional Meeting

MR. SAMUEL E. SHAW II: Claim loss control activities with respect to group medical care insurance are intended to encourage the efficient use of available facilities and to enforce the principle of reimbursement of only those charges which would be considered necessary in the absence of insurance. The practical effect of successful claim loss control activities is to hold down the rise in health care costs.

The broad range of claim loss control activities involves the insurance industry, the policyholders and their employees, and the providers of medical care. While the insurance industry is primarily responsible for plan design and claims administration, certain controls are the joint responsibility of the insurance industry in cooperation with others. Those controls include employee education, assistance to physicians on Review Committees, and the support of education committees comprised of employee (or union), employer, and insurance representatives. There should also be listed some of the responsibilities which belong largely to others and not to insurance carriers. Those responsibilities include setting of fees independent of the existence of insurance; recognition by employers of the need for sufficient insurance company retention to permit the full use of at least the claim loss techniques which are currently available; pre-employment selection by physical examination, salutary working conditions, establishment of regional planning councils to plan for the availability of adequate but not unnecessary hospital facilities; development of efficient management and accounting procedures; and establishment of utilization committees and audits of medical and confinement practices by hospitals.

Plan design should permit new and more efficient patterns of care; for instance, the substitution of intensive and progressive care facilities and less expensive convalescent care facilities for conventional hospital accommodations, and procedures in place of cutting with respect to surgery. Since the employee has a great influence on the level and duration of care he receives, plans ought to be designed to keep him partially responsible for the out-of-pocket costs of his illness.

Deductibles and coinsurance accomplish cost sharing, and first-dollar deductibles have the additional virtue of channelling the insurance dollar toward the more costly medical problems. Inside limits can accomplish a lesser coinsurance function. Careful definition of covered charges, hospitals, exclusion of pre- and postsurgical physician's fees illustrate cost sharing determined by types of charges. Lower benefits for out-patient nervous and mental care are the result of bad experience with respect to a particular diagnosis and type of charge. Nonduplication provisions identify an important category of charges which should be excluded.

Loss control during the processing of claims starts out by identifying questionable claims, ideally at the time the benefit is being approved rather than during a postpayment audit. With respect to hospital benefits, John Hancock claim approvers are equipped with a register of hospitals to give a clue as to whether a particular institution falls within the policy language; a hospital in-patient duration guide listing normal periods of in-patient care for the most common diseases, injuries and surgery; and a hospital service indicator which outlines some of the usual hospital services, complications, and discharge factors. Where there is policyholder and hospital acceptance of this procedure, John Hancock uses the previously mentioned hospital duration guide to certify a specific number of coverage days to the hospital at the outset of confinement. If necessary, the certification is extended after our benefit payment office contacts the attending physician.

In regard to benefits connected with surgery, the claim approver has at hand a list of surgical procedures described in both professional and lay language with indication of the amount of usual postoperative care. Besides surgical relative value schedules by geographic areas and income, other screening guides include schedules of relative values for anesthesia, laboratory, radiology, oral surgery, and medicine. Historical claim statistics are particularly important for controlling nonscheduled surgical benefits.

MR. DANIEL W. PETTENGILL: My company, Aetna Life Insurance Company, has always required a Coordination with Other Benefits (COB) provision in comprehensive and major medical benefits. When the insurance business developed the model Group Coordination with Other Benefits or COB provision, we made it mandatory for all types of medical expense benefits except basic benefits issued to cases with 50 or more employees. For cases of this latter type, COB was made optional subject to a 4 per cent premium differential. Thus the only measure of acceptance that we have is with respect to this latter class of policyholders. A sample of 292 cases issued in 1964 to such policyholders revealed that 195, or 67

per cent, elected to include the model COB provision. This would seem to be a very encouraging percentage, in view of the fact that some unions are openly opposing the inclusion of COB in any benefits they negotiate.

In this latter connection it should be noted that bills have been introduced in the states of Minnesota and Washington that would outlaw the use of COB.

In supporting and promoting the use of the model Group COB provision, care should be taken to emphasize that its primary purpose is to discourage the carrying of multiple coverage and hence to eliminate the possibility of overinsurance. No dollar value can ever be placed on this principal value of COB.

A certain amount of double coverage is involuntary in that it automatically results when both husband and wife are covered under two different collectively bargained plans, each of which requires the automatic enrollment of all union members. Thus COB will provide some actual dollar savings, and my company's experience indicates that these savings more than offset the extra claim settlement costs involved in administering it. In any given case, savings will depend on the percentage of female employees, definition of "other plan," and so forth; based on our experience a range of expected savings between 1.5 per cent to 7.5 per cent is not unreasonable.

The insurance industry has made considerable progress during the last year or two in getting across to the public the principles behind the nonduplication clause and how it can help combat the community problem of overutilization of medical care facilities. Continued progress will depend to a large extent upon the degree of cooperation between all of us in administering the provision.

MR. PHILIP BRIGGS: During recent years we have seen some encouraging signs that the providers of medical care—doctors and hospital administrators—are joining with insurers in developing means to control the rising cost of medical care. The most successful of these efforts has been the establishment of Medical Society Review Committees. Over thirty of these committees are now in operation, and while their activities must still be considered experimental, there appears to be every indication that these committees are effective in controlling claim costs.

The review committees have also been very important in developing a mutual understanding between the medical profession and the insurance industry which will certainly be beneficial to all concerned.

In the area of hospital utilization committees, many hospitals have established such committees and are currently experimenting with various

techniques of determining appropriate utilization standards. There is still a lot of work to be done in this area before satisfactory standards can be established, but progress is being made. A recent example of this progress is the New Jersey Blue Cross plan, which will be in effect May 1, 1965. Under this plan Blue Cross payments will be limited to specified durations according to diagnosis and as outlined in a benefit-day table which has been distributed to the 8,000 doctors in New Jersey and to the 130 Blue Cross contracting hospitals.

Area hospital planning is still in its infancy, but in certain areas the work of dedicated doctors, hospital administrators, and insurance representatives has already resulted in substantial savings to the community through the elimination of unnecessary and wasteful new hospital construction. Area hospital planning has also resulted in more effective use of existing facilities and in a more efficient use of special equipment. The increasing use of intensive care units for the acutely ill and of affiliated nursing homes for the convalescent indicates the progress being made in this area. The Hospital Review and Planning Council of Southern New York is a good example of the type of organization which is working on these problems.

All these efforts have the desirable goal of furnishing the public with the best medical care for the lowest possible cost. The Health Insurance Council has been active in all these projects, and many insurance industry executives have given generously of their time to assist their communities in these activities.

There seems little doubt that the wage level of hospital employees will continue to increase until they are consistent with the prevailing wage scales in other industries. Since such a high percentage of hospital costs are directly related to salary levels, the only hope we have to control hospital costs lies in the more efficient use of the facilities available.

While dramatic improvements in medical care experience cannot be expected as a result of these activities, it seems clear that the insurance industry should be encouraged by these efforts and should be willing and prepared to assist wherever and whenever possible on these projects.

MR. PEARCE SHEPHERD: The Health Insurance Council held its annual meeting last week in Chicago. Dr. Appel, who is president-elect of the American Medical Association, made a very strong talk in favor of medical review committees. He recognizes, and I think through the A.M.A. there is a growing recognition in doctor circles, that review committees do serve a very useful purpose—a useful purpose in the common

goal that we all have of controlling cost of medical care so far as it can be controlled without impairing quality and availability.

MR. ROBERT J. MYERS: The previous mention of hospital utilization review committees brings to my mind that the proposed hospital insurance legislation that recently passed the House would require all hospitals that participate in the plan to establish such committees. I think this legislation will be a very strong factor in establishing these committees in virtually all hospitals in the country. Of course, under the program that would be established, these committees would only have to be applicable to the aged eligible beneficiaries, although there is no doubt that this would be very likely to apply to all patients in the particular hospitals.

The people who have developed the so-called Medicare program believe very strongly that this is one of the best controls of hospital utilization. Under the bill, if it is found that the hospital utilization review committee is not operating satisfactorily, the hospital benefits would not be paid beyond the twentieth day of hospitalization in each individual case.

Denver Regional Meeting

MR. NEAL A. FARMER: The medical foundations are one method of claim cost control in the state of California. Under the medical foundation approach, each claim that is submitted is reviewed by a doctor and adjusted if necessary before it is paid.

A very important part of the foundation approach is the Claims Review Committee. This committee reviews and eliminates charges for unnecessary treatment, as well as eliminating unreasonable charges. The Claims Review Committee is composed of doctors from various specialty fields, as well as general practitioners. Each claim is reviewed by a doctor from that specialty field. The payment recommended by the review committee limits the liability of the insurance carrier to that amount.

An important sidelight for the public is that if a doctor agrees to membership in the foundation, he also agrees to charge no more than the schedule of fees adopted by the medical foundation. He further agrees to accept the rulings of the Claims Review Committee.

MR. DANIEL W. PETTENGILL repeated the discussion which he had presented at the New York meeting.

MR. JERRY L. BROCKETT: One method of periodically reporting the experience under this business for its administration is by loss ratios. A

truer picture is obtained by presenting the results by duration and issue age, rather than an aggregate basis.

To illustrate this point I prepared a model office. The model office was used to illustrate the extent to which aggregate loss ratios fail to reveal possible serious underlying trends. This model office showed that incurred loss ratios on an aggregate basis were 6.7 per cent for 1960 grading up to 41.2 per cent for 1964. Incurred loss ratios for issues of 1960 and issue age 45, for example, were 8.1 per cent for 1960 grading up to 107.1 per cent for 1964. This latter ratio of 107.1 per cent is buried in the 41.2 per cent mentioned previously. A conclusion from this study was that if loss ratios are calculated regularly and with sufficient refinement, they could be of significant value in keeping individual health plans on a sound basis.

MR. BYRON W. STRAIGHT: The Medical Care Insurance Commission administering the Saskatchewan Government Medical Care Plan classifies, in considerable detail, each doctor as to his type of practice. Each doctor's pattern of service or billing is examined quarterly with respect to total number of patients seen, average number of complete examinations per patient, average number of urinalyses tests, blood counts, electrocardiograms, and so on. His service and billing frequencies for these items of care are related to his panel of patients by age and sex, then compared to norms for other doctors with the same type of practice. If the service or billing is statistically out of control, his profile is presented to the College of Physicians and Surgeons for action. At this time neither the Commission nor the College has developed a *mathematical* system that reduces the payments for the services or accounts in the areas where the statistics are considered to be out of control.