HMOs and some European Alternatives

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1. Introduction

The objective of this contribution is threefold. First, it tries to develop a scheme for comparing different types of health insurance in a general way. Second, it focuses on two new alternatives that have recently become popular in German private health insurance, fixed rebates for no claims and experience-rated bonus systems. Third, some estimates concerning the effectiveness of these new options in controlling moral hazard in ambulatory medical care will be presented.

2. Conventional contracts in health insurance

By necessity, health insurance changes behavior of the insured, albeit only minimally so in many cases. In particular, there is evidence suggesting that amply covered individuals tend to initiate a medical episode with a somewhat higher probability (Duan et al., 1982). The empirical foundation of moral hazard is considerably weaker when it comes to the intensity of ambulatory care, let alone hospitalization (Duan et al., 1982; Newhouse et al., 1981; Zweifel, 1986a). This lack of empirical evidence at the level of an individual does not prove, however, that there is no moral hazard in the health services sector. It could well be that the physician himself reacts to ample insurance coverage of his patients by choosing a more costly style of practice.

In their attempts at limiting moral hazard, health insurers traditionally have offered policies featuring cost sharing, either in the guise of deductible or of coinsurance. In terms of Fig. 1 below, they thus have focused on the insured patient as a source of moral hazard. In keeping with this classical view, the way out of the "cost explosion" in health care is to curtail demand for medical services by stepping up cost sharing. This would decrease the quantity of medical services consumed, reduce medical fees and total outlay to be covered by the insurer.

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Figure 1 : Types of health insurance and their influence on the market for medical care

3. New solutions : HMOs and PPOs

HMOs and PPOs emphasize the supply side, above all the role of the primary care physician. These organizations make physicians participate in the profits but also the losses of the system. In countries where people typically live in the same region or even community for most of their lives, HMOs that comprise only a small subset of a community's physicians are not likely to succeed. For this reason, two Swiss social health insurers are jointly preparing to launch a regional PPO (Schmid, 1986). Physicians of a given region are ordered according to increasing cost per case treated, resulting in a statistical distribution. If a physician lies below a cutoff point that is currently put at the 75th percentile of that distribution, he is retained as a preferred provider. Members of the two sick funds who are willing to limit their choice to the set of physicians making up the 75% least costly ones pay a reduced premium. On the other hand, physicians will try to be on the list because this provides them with a regular flow of patients. Many a physician situated slightly above the cutoff point may even consider developing a less costly style of practice in order to get on the list, which would result in a fall of the cutoff point itself.

As indicated in Fig. 1, traditional cost sharing methods are believed to be countervailed by supplier-induced demand. HMOs and PPOs are exempt from that problem because participating physicians would themselves have to bear the financial consequences of demand inducement. But as shown in the next section, new solutions in the conventional domain also have the potential to alleviate the problem of supplier-induced demand.

4. Bonus systems as an alternative

Bonus systems offer non-users of medical care a positive incentive instead of meting out a negative sanction to users. For the time being, fixed rebates are not distinguished from experience-rated bonuses. Although entered on the side of conventional contracts in Fig. 1, both variants afford a flexibility for the consumer that is lacking from conventional policies with deductibles and coinsurances. To see the difference from the insured's point of view, one should distinguish two risks that are relevant in a sickness episode. The first, uninsured, is the health risk proper (losses in terms of quality of life, possibly also income derived from overtime work), while the second risk stems from the net cost of treatment (due to cost sharing, see Zweifel, 1986 b).

Now under a conventional cost sharing policy, these two risks strike within the same relevant time period (usually a quarter). Thus, there is cumulation of risks, a situation one seeks to avoid in most walks of life. This is one possible reason why conventional cost sharing policies are not very popular, not even among buyers of private health insurance. By way of contrast, a bonus system allows the insured to separate the two risks in time. He can always revert to full coverage for the time being by sacrificing his rebate. Thus, the incidence of the second risk can be deferred to a later period, resulting in a desirable reduction of the positive correlation between the two risks.

Figure 2 : Out-of-pocket costs to the insured

This increased flexibility also has the potential of limiting supplier-induced demand, as indicated in Fig. 2. When a physician has to choose between a more modest and a more costly way of treatment, it is easy for him to gauge the financial consequences of his choice for a patient covered by a conventional health insurance policy. For example, putting 50 Dollars more on the bill will increase the cost to be borne by the patient by a predictable 10 Dollars if the rate of coinsurance is 20%. In the case of a deductible, each additional Dollar

on the bill will increase the cost to the patient by one Dollar at the beginning, but beyond the deductible, net additional cost to the patient will be zero (cf. Point F of Fig. 2). Again, it is relatively easy for the physician to predict what the financial consequences of demand-inducement will be for his patient.

Things are not as clear cut when the patient is covered by a policy featuring a bonus option. On the one hand, the insured may figure that he will lose his bonus during the remainder of the year (fixed rebate) or in the following year (experience-rated bonus) at any rate. In that event, he will submit even a petty claim to the insurer. Under other circumstances, the insured may count on saving his bonus through the remainder of the year and possibly attain a better rating the following year, creating an incentive for paying rather substantial amounts out-of-pocket. This implies that additional costs generated by the physician may continue to be reflected in increased net costs to the patient up to a rather high amount, as indicated by point B in Fig. 2.

It is not easy for the physician to predict whether or not a patient will try to save his bonus. Therefore, there is a certain range of billings where he runs the risk of fully charging his patient with every additional Dollar he puts on the bill. This range is indicated by end points C1 and C2 in Fig. 2. But given this uncertainty, most physicians will be much less likely to indulge in demand inducement compared to the case where the sharing in marginal costs falls to zero beyond a fully known limit value.

5. Recent experience with rebates and bonuses in Germany

Three private German health insurers participated in a study designed to analyze and compare the impacts of their policies on the demand for medical care. Their individual, anonymized data refer to the years 1980 to 1982. Insurer A continues to write conventional policies, the most popular version providing for a yearly deductible of 250 DM (about 125 Dollars at 1986 exchange rates), applicable for ambulatory care outlays only. Whenever the annual bill exceeds that limit, the insured is expected to submit it to the insurer because he will receive a net payment. Beyond the deductible, the distribution of billings should therefore be influenced by the utilization of care rather than the decision to submit. From a social point of view, only savings due to a modification of behavior are of interest, while the decision to pay a visit out-of-pocket rather than charge it to the insurer amounts to a mere cost shifting between the insurer and the insured.

Insurer B also writes policies with a deductible (most often amounting to 300 DM or 150 Dollars), while offering a fixed rebate of three monthly premiums for no claims during a year.

Since a rebate may be sacrificed at any time during the year, it appears to be a rather weak substitute for conventional unconditional cost sharing. The first hypothesis to test therefore is that the rebate offer of B reinforces the conventional deductible, a feature shared with A. For such a comparison, it is important to realize that members of B should submit their bills only if they exceed a threshold of some 1000 DM (500 Dollars). Beyond that threshold, the billings distribution should be complete, i.e. not artificially thinned out by decisions not to submit a bill.

When moving up the distribution of annual ambulatory care bills, the conventional deductible of insurer A seems to lose its impact rather quickly (see Waser and Zweifel, 1986 for details). As indicated in Fig. 3, members of insurer A with and without the 125 Dollars deductible are both estimated to exceed the 500 Dollars threshold with a probability of about 40%. Among members of insurer B, however, the combined impact of the deductible and the rebate for no claims results in a highly significant difference. As shown in Fig. 3, the probability of exceeding the same high threshold is only 34% for those having a policy with deductible whereas it amounts to 41% for those without a deductible.

Figure 3 : Reinforcement effect of the fixed rebate, insurer B

Generalizing this analysis somewhat, one can define a whole sequence of thresholds in the billings distribution, up to the point where the incentive structure of the policy does not seem to make a difference anymore. This procedure yields a lower limit value of the total cost effects of the different options. Thus, the next higher deductible offered by insurer A, amounting to 225 Dollars, is estimated to lower annual treatment costs for ambulatory care by 9%, compared to fully insured members. For the low deductible option of 125 Dollars, this reduction amounts to an estimated 2.2% only, comparable to the 3.7% achieved by a 20% coinsurance rate. These are lower limit estimates because they do not take into account possible savings hidden in the lower end of the billings distribution.

Table 1 : Reductions in ambulatory care outlays (1982)

A : Coinsurance 450 DM (225 Dollars)	9.0%
250 DM (125 Dollars)	2.2%
Coinsurance 20%	3.7%
B : Deductible 300 DM (150 Dollars) (reinforced by the fixed rebate)	8.2%

Reference group : Insureds without any cost sharing

In the case of insurer B, the combination of the 150 Dollars deductible with the rebate for no claims seems to reduce medical care costs by 8.2% compared to those without a deductible. This is about the same effect as the one generated by insurer A's deductible of 225 Dollars (Waser and Zweifel, 1986). As a first conclusion, one may therefore state that the rebate for no claims, while being a cost sharing measure that can be revoked at any time by the insured, nevertheless limits moral hazard rather effectively.

The second hypothesis to be tested is that a variable, experience-rated bonus is even more effective in limiting moral hazard than a comparable fixed rebate for no claims. Such a test can be carried out on the basis of insurer C's data whose members are entitled to a bonus of two monthly premiums in their first year without a claim, three after two consecutive years, and a maximum of four after three consecutive years without a claim. Whenever a claim is submitted, the insured loses his bonus entirely. Thus, on average the bonus should be equivalent to the fixed rebate of three monthly premiums offered by insurer B.

Figure 4 : Fixed rebate (B) and dynamic bonus (C) compared, 1982

Fig. 4 contains a comparison between the distributions of annual ambulatory care billings pertaining to insurers B and C, respectively. In order to neutralize cost shifting effects, the threshold had to be put at a higher value this time, in the neighborhood of 525 Dollars. It is exceeded in 37% of all cases by the members of insurer B but only in 26% by those of insurer C (see Zweifel, 1987). When evaluating these effects, it should be borne in mind that other factors that influence medical care outlays of an individual, such as sex, age, and risk classification have been statistically controlled for. Thus, these estimates relate to partial effects that should indeed reflect differences in the policies' incentive structure.

6. Conclusion

If John Doe dislikes traditional solutions to the problem of moral hazard in health insurance, he has some good reasons for it. These traditional solutions in the guise of deductibles and coinsurance are characterized by a positive correlation in time between the two risk "loss of health proper" and "net treatment costs". The new alternatives HMO and PPO

solve this problem entirely because they usually do not require any cost sharing by the patient. Another, more conventional solution to the problem of risk cumulation is provided by a bonus option that allows the insured to waive cost sharing during a spell of illness. In turn, he has to put up with the loss of his current rebate, and possibly part of his future rebates in an experience-rated system. A comparison based on individual files of three German private health insurers suggests that a dynamic bonus system, by offering increasing rebates to the non-user of ambulatory care services, limits moral hazard in a particularly effective way while being quite popular with the insured.

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