

# Health Maintenance Organizations and the Rationing of Medical Care

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HEALTH MAINTENANCE ORGANIZATIONS (HMOs), with their capitation payments and contractual obligations to provide services, present a set of economic incentives that depart significantly from those of the conventional fee-for-service medical care system. It might be expected that these incentive differences will result in different approaches to the allocation of medical resources. Furthermore, these allocation or rationing mechanisms might have ethical implications because of the differential impact on various socioeconomic groups.

This paper will address a series of questions arising from the differences between prepaid and fee-for-service systems. The first section will examine the incentives under each system. In doing so, it will focus on incentives to the enrollee or patient, to the organization, and to providers within the system. This discussion will highlight the conflicting incentives inherent in various arrangements. The second section will examine how these incentives and conflicts may be dealt with in terms of the rationing or allocation of resources. The third section will expand the analysis to consider the probable effects of different systems with respect to various socioeconomic groups. This discussion will focus on both the microquestion of the impact of

various mechanisms to allocate services among plan members, and the macroquestion of the effects of HMO enrollment and marketing decisions on who gets access to HMO options. To the extent possible, this discussion will include empirical evidence on the magnitude of such effects. The fourth section extends the discussion to speculate on the possible effects of an increasingly competitive environment for HMOs and other health care plans. Again, while this section will be based largely on conjecture, some evidence is available for analysis. The final section of the paper will consider the ethical implications of the issues already raised and will discuss some of the policy implications arising from them.

## Economic Incentives in Various Medical Settings

Economic incentives and allocation mechanisms exist in all medical care delivery systems. Defining either optimally efficient or ethically just systems within the context of medical care realities is a task well beyond the scope of this paper. Instead, the focus here is on how various prepaid systems, of which HMOs are one notable example, *differ* from the conventional, primarily fee-for-service system. Subsequent discussions may then address the desirability of alternative systems.

### *Incentives in the Conventional Fee-for-Service Setting*

The primary actors in the medical care system are: 1) consumers or, after they begin to receive medical care, patients; 2) insurance companies or other third parties; 3) physicians; and 4) hospitals. For most employed people and their families, health insurance is purchased through employer or union groups, often with a substantial employer contribution. The insurance plan or plans to be offered are selected by the employer or union and in most cases only one option is available to the employee. When ill, the patient selects a physician to diagnose the problem, provide treatment, and serve as an agent in arranging for the provision of services by hospitals and other physicians. All of these providers are typically paid on a fee-for-service or cost-reimbursement basis by the patient, the patient's insurer, or the government.

To the extent that insurance or other third-party payments such as Medicaid reduce the net price of services to the patient, more

medical care will be demanded than if the patient paid the total bill (Newhouse et al., 1981). How much greater demand will be, or in economic terms the price elasticity of demand, is a much debated empirical question, but it is generally agreed that there is some increase, and that it is proportionately greater for discretionary and ambulatory services than for emergency and hospital services. Simultaneously, fee-for-service payments to the providers create a natural incentive to do more and respond to the increased demand.

### *Incentives in an HMO Setting*

An HMO changes some of these linkages in ways that alter substantially the economic incentives. The patient no longer pays fee-for-service, except for an occasional small copayment of a dollar or two, so demand is likely to increase relative to conventional coverage. The HMO can also develop a set of financial linkages that tie together the physician, hospital, and insurer in a fashion quite unlike that of the conventional system. In contrast to the typical fee-for-service situation, the physicians and hospitals gain economically by doing less. This sets up a direct conflict with their patients whose comprehensive coverage leads them to demand even more than is usually the case.

In HMOs where the physicians practice as a group, two payment schemes are generally used: 1) salaries, with some type of bonuses if the group performs well; or 2) fee-for-service based payments modified to reflect the total pool of funds available. Salaries, of course, provide an incentive to exert oneself as little as possible unless there are other rewards for good performance. Fee-for-service payments tend to increase productivity—as measured by services per hour and hours worked per year—but increase the conflict between incentives to do more and the group incentives to do less (Held and Reinhardt, 1980).

In addition to the group model HMO, there is the individual practice association (IPA) model which typically involves an HMO acting as a health plan which then contracts through an intermediary organization with independent office-based physicians to provide services. These physicians agree to accept payment by the HMO as payment in full and to allow a withholding of these fees to be placed at risk. The withheld fee is paid back only if the HMO meets its financial goals. Thus, while the individual physician can still earn

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more by performing more services, he or she can lose money if the physicians collectively provide or order too much or too expensive care.

The implications of these different economic incentives on the supply of services by the HMO and its providers are quite complex. When the physicians are essentially salaried and share in the financial success of the plan, they will collectively and individually probably try to reduce services. When physicians are essentially paid on a fee-for-service basis within a group or IPA type HMO, this incentive to do more will be only partially offset by the collective risk-sharing. This is especially true in IPAs in which the prepaid patients typically account for under 15 percent of the physicians' caseload.

### *Organizational Influences*

While economic incentives are clearly different in HMOs, one must also consider a second dimension of difference—the organizational setting. The prepaid-group-practice type of HMO, which has been the economically most successful model, is characterized by both prepayment *and* the group-practice mode of delivery. Often, one of the attractions for physicians of large group practices is a more regularly scheduled life, with vacation time, educational leave, shorter hours, and on-call coverage. Such arrangements imply less doctor-patient continuity and typically a more bureaucratic organization (Luft, 1981; Mechanic, 1976). Prepaid groups, in particular, seem to have developed appointment and scheduling systems that reduce patient waiting time in the office but increase the time one must wait to obtain an appointment. Patients who drop in or request a visit the same day are typically seen in an urgent-care clinic, usually by a physician on rotation, rather than their usual provider.

In the discussion that follows it will not be possible to examine all possible combinations of economic and organizational factors that may influence the provision of services. Instead, three models of practice will be discussed. The first is the conventional system of independently practicing fee-for-service providers with third-party insurance available for the patient. The second is the individual practice association or IPA model HMO involving primarily independent fee-for-service practitioners linked through a risk-sharing arrangement with an HMO. The third is the prepaid-group-practice or PGP model

HMO composed of a large multispecialty-physician group practice which obtains most of its revenue from the HMO in the form of fixed capitation or salary payments plus some risk sharing based on overall plan performance.

### *Methods of Allocating Services in HMOs*

In classical market situations, goods and services are allocated through a price system. In medical care, various factors combine to cause substantial deviations from a market in which price is the only means of allocation. Information is scarce, both because of restrictions on advertising and, more importantly, because of the technical nature of the product, so consumers cannot make rational decisions (Arrow, 1963). Not only must the patient rely upon the physician to diagnose and provide services, but in many instances it is difficult to check on performance, so trust becomes an important factor. Medical services also require the presence of the patient and thus impose a time cost to obtain medical care and information about treatment alternatives.

Further complicating the analysis of the allocation of medical services is the fact that two levels of decisions are involved. The first decision is the type of insurance *cum* medical delivery system, that is, conventional insurance with independent fee-for-service providers or a prepaid system with a more limited choice of providers. (Of course, one also must consider *which* of the available providers one will choose within these two groupings.) The second level of decision concerns how much medical care will be consumed in treating a specific problem. Each type of decision reflects the preferences and behaviors of consumers/patients, on the one hand, and insurers/providers on the other. HMOs and insurers can attempt to influence the enrollment choices of consumers, and providers can influence or control the services delivered. Consumers often have strong preferences for practice setting (group vs. solo) and constrained vs. free choice of provider. Patients also have preferences, sometimes strongly held ones, as to the treatments they expect for specific illnesses. The following discussion will examine first the factors that influence treatment decisions and how these might vary among different practice settings; these might be termed "service allocation or rationing" issues. The focus will then widen to consider the allocation of consumers among

systems; these might be termed "enrollment allocation or rationing" issues.

### *Decisionmaking in Three Types of Medical Treatment*

When examining how medical care is allocated under various systems, it is useful to distinguish three major types of services: 1) patient initiated visits; 2) physician initiated or controlled visits; and 3) hospitalizations (Gertman, 1974). In a typical situation, a person recognizes certain problems or symptoms and decides that an examination by a physician is warranted. Obviously, whether a physician is actually seen will depend on the fee that must be paid, time costs, transportation and access costs, and whether the patient knows a potential provider. At the end of the examination, the physician may request a follow-up visit or may suggest a consultation with a specialist. (Of course, this is not entirely up to the physician; the patient may request such follow-up procedures for more reassurance and, likewise, the patient may refuse to follow through.) In some cases, the patient may continue to initiate follow-up visits by seeking out physicians. In general, the consumer has less control with respect to hospital services—admission can be gained only with the authorization of a physician and once in the hospital, the physician essentially controls what services will and will not be provided.

A crucial point in this discussion is the idea that not only do physicians have a great deal of discretion in treatment and referral decisions, but that wide variation in practice patterns may be consistent with good quality care rendered in a careful and professional manner. Some physicians will have broad indications for surgery while others will impose stringent criteria for even suspected appendicitis. Some will make aggressive use of laboratory tests to rule out conditions while others will rely more upon the patient's history and physical examination. In most instances, large scale trials have not been performed to identify the course of action leading to the best results. Wide variations in practice patterns often coexist in similar practice settings (e.g., among independent fee-for-service practitioners in the same state), with no noticeable differences in outcomes (Roos and Roos, 1981; Wennberg and Gittelsohn, 1973; Wennberg et al.,

1980). This suggests that physicians in various HMOs and fee-for-service settings may consistently differ in their recommendations for treatment, yet still be within acceptable norms.

### *Likely Impact on Services in Different Settings*

The likely impacts of the differences in price, accessibility, and practice styles on utilization of services in different settings are summarized in Table 1. While precise measurements of these effects are unavailable, in most instances each aspect can be identified as either increasing or decreasing utilization. One must note, however, that it is not always clear whether increased or decreased utilization is necessarily desirable. In general, increased access for patient-initiated visits is probably desirable, but one can even question that assumption. For instance, annual physical examinations for certain population groups are not cost-effective (Collen et al., 1973). Moreover, frequent testing of healthy people increases the likelihood of false-positive results and subsequent anxiety, invasive testing, and iatrogenesis.

The various factors listed in Table 1 influence utilization through different mechanisms. Some, like net price, travel time and costs, and waiting time, enter into the consumer's implicit calculation concerning whether the perceived problem is worth a visit. In general, because IPA-HMOs involve physicians primarily in fee-for-service office based practice, the only difference perceived by their HMO patients relative to their fee-for-service patients is more comprehensive coverage. The resulting lower net price will tend to increase utilization. Prepaid group-practice (PGP) patients also face a lower (or zero) net money price, but other factors change simultaneously. They may not have a close relationship to a physician in the plan and thus may find it more difficult to take the initial steps to obtain treatment. PGPs are typically centralized so that for most patients a longer trip will be involved. The PGP also generally involves a different set of time costs—appointments must be scheduled further in advance, but once made, waiting time in the office is typically less (Mechanic, 1976; Richardson et al., 1977; Luft, 1981). Thus, while fees are not used by HMOs as a rationing device to influence demand, as is the case in the conventional system, there are other changes associated with the organization of group practice that make access both easier and more difficult. More importantly, as will be seen below, some

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of these influences on access may have different effects for people in different socioeconomic groups.

As one examines physician-initiated referral and follow-up visits and hospitalizations, differential physician behavior becomes more important relative to consumer factors. In part this is because conventional insurance policies provide better coverage for hospital services, tests, and procedures than for initial office visits, and because follow-up visits are more likely to be beyond the initial deductible. The greater physician influence also reflects the fact that when evaluating whether to make an initial visit, patients have only their own perceptions (as well as those of friends and family) concerning the need for a visit. For follow-ups, referrals, and hospitalizations, the physician's presentation of the severity of the problem will play a key role. Thus, differential clinical decision rules are a potentially major factor in the HMO's control over cost and utilization. This role is highlighted when one recognizes that in general, HMO enrollees are somewhat more likely than people in conventional plans to see a physician at least once a year, yet among utilizers, HMO enrollees have somewhat fewer office visits and substantially fewer hospitalizations (Luft, 1978).

Thus far, the discussion may have suggested that the capitation or risk-sharing incentives of the HMO lead HMO physicians to alter their practice patterns for their members. In fact, it is extremely unlikely that HMO physicians reflect upon the impact on their bonuses each time they consider a follow-up visit or an extra test. Instead, certain routine patterns are probably developed that tend to be consistent with their economic incentives. Inconsistent patterns may be reexamined and slowly adjusted to reduce conflict with system incentives.

As before, the situation in IPA and PGP HMOs differs markedly. While the research has yet to be done, it seems unlikely that many physicians will use different decision rules for their fee-for-service and prepaid patients. The available evidence supports the notion that current levels of risk sharing and patient loads in IPAs (10–20 percent withheld fees and under 15 percent of the patients) have little impact on performance (Meier and Tillotson, 1978). Instead, IPAs exercise controls through hospital-based utilization review and through educational efforts to change general practice patterns by showing that certain less costly techniques are equally effective.

TABLE 1  
Probable Effects on Utilization of Services of Various Factors in Different Practice Settings

Type of Medical Care/ Rationing Factors	Conventional Fee-for Service and Insurance	IPA-HMOs: Fee-for-Service Practitioners at Risk	PGP-HMOs
<i>Patient Initiated Visits</i>			
Price to consumer	Initial and preventive visits often not covered	Comprehensive coverage of all visits	Comprehensive coverage of all visits
Knowledge of provider	Often a local physician with a longstanding relationship	Often a local physician with a longstanding relationship	Often a local physician with no prior contact with patient
Appointment lag	Typically short, urgent visits "squeezed in"	Typically short, urgent visits "squeezed in"	Typically long, urgent visits routed to separate clinic
Accessibility to provider	Decentralized, likely one close to patient	Decentralized, likely one close to patient	Centralized, generally further from patient
Waiting time in office	Variable, often long because patients "squeezed in"	Variable, often long because patients "squeezed in"	Typically short if appoint- ment made in advance
<i>Physician Initiated Visits</i>			
Physician incentives	Follow-up increases revenue	Follow-up increases revenue more than risk sharing	Follow-up reduces net income; substitute call-backs
Other factors similar to above			

*Physician Initiated Referral*  
Physician incentives

Reciprocal referrals among different specialists encouraged by professional network, discouraged by prohibitions on fee splitting	+	Referrals encouraged by professional network but discouraged by risk sharing	+/-	Referral attractive to "dump" a problem patient, but collegial and financial costs if frequent	-
Price to consumer	More likely covered than initial visit, still not complete	Comprehensive coverage of all visits	+	Comprehensive coverage of all visits	+
Accessibility of provider	Typically at a different location	Typically at a different location	-	Centralized—"one stop care"	+
Incentives to "return patient to primary care physician"	Depends on nature of referral network	Depends on referral network, sometimes encouraged by HMO	+	Typically encouraged by the system	-
<i>Hospitalization</i>					
Price to patient	Often fairly comprehensive coverage but some copayments	Comprehensive coverage pays in full	+	Comprehensive coverage pays in full	+
Incentives for physician	Hourly income higher in hospital	Hourly income higher, but risk sharing tends to counter	+	No additional income, costs are borne by plan	-

+ = tends to increase utilization  
 - = tends to decrease utilization  
 +/- = mixed effects

PGP physicians typically see only HMO patients, so the altering of practice styles may be easier because a "two-class" system is not necessary. Some HMOs develop extensive data bases on the use of tests by physicians and feed back this information. Merely seeing that he or she has an ordering pattern very different from the rest of the group is often sufficient incentive for a clinician to rethink decision rules. In other cases, active physician-education programs have been undertaken by the HMO (Thompson, 1979). Another, perhaps crucial factor is self-selection by physicians. PGPs are often perceived by outside physicians as imposing restrictions on the practices of their clinicians and this is likely to deter even initial investigation by physicians who value highly the unconstrained ability to aggressively use any treatment. (Interestingly, PGP physicians often mention as one of the advantages of prepaid practice the ability to select treatments without having to worry about the financial cost to the patient [Cook, 1971].) Similarly, physicians who value a wait-and-see approach may be attracted by the HMO setting which does not penalize them financially for not ordering batteries of tests. In this way prepaid and fee-for-service settings may attract physicians with previously developed practice styles consistent with their subsequent economic incentives.

### *Allocation of Consumers Among Systems*

Thus far, the focus has been on the provision of services within an HMO or other medical care setting. However, it is important to also take a broader view and examine the question of who is allowed into the setting. HMOs, like other insurers, receive most of their members through employee groups. Generally only a small number of people are allowed to enroll as individual (nongroup) contracts and their premiums are typically higher. (In fact, the record of HMOs on this issue is generally better than that of most commercial insurers. The HMO Act of 1973 requires federally qualified HMOs to provide an open enrollment season and allow individual subscribers to enroll at community rates. Conventional insurers are under no such obligation.)

If an HMO wishes to select a certain type of enrollee—healthy, white, female, upper income, or whatever—two strategies may be used. The first involves careful selection of the employee groups to whom the HMO option will be offered. For instance, firms with primarily white collar workers might be placed high on the marketing

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list while other firms might be ranked lower. (The mandating provisions of the HMO Act allow a federally qualified HMO to require certain employers to offer the HMO as an option. There is no parallel requirement of an HMO to offer enrollment to any employer requesting coverage.) In general, it is difficult to document instances in which firms were not approached because their employees were thought to be too risky—numerous explanations for marketing patterns can be described. However, there are some examples of behavior toward firms already in the HMO that support the notion of these techniques. In one case, an HMO in Minneapolis-St. Paul dropped its contract with a large local employer because maternity use within the group was too high (Matlock, 1980). In another case, an HMO that phased in mental health benefits offered them first to working class groups least likely to use them while delaying coverage of university groups anticipated to be higher users.

The second strategy for selection would be to attract certain types of people *within* the employee group. Various tactics can be used to influence enrollment. Premiums are often weighted so that family coverage is proportionately less expensive than individual coverage, thus attracting families with children who tend to cost less per capita than single persons or two person families. (This strategy is also used by conventional insurers.) HMOs have traditionally offered more comprehensive coverage of maternity care, again attracting young, relatively healthy families. (Note that not all selection strategies are socially undesirable.) In other instances, the same factors that influence the use of services by members also influence who becomes a member. The single most important determinant of whether someone will choose a prepaid group practice when given the option is whether that decision will break a strong existing tie to a physician; people with strong ties do not join, whereas those without such ties are much more likely to join prepaid groups (Berki and Ashcraft, 1980). One explanation for the absence of a strong physician-patient relationship is low utilization of services. By chance or design, the PGP structure both attracts people without strong physician bonds and does not foster their development—and both features may lead to lower use of services (Scitovsky et al., 1979).

Another approach is in the careful location of facilities. While enrollment may be offered to any employee within a relatively wide region, if the clinics are only convenient to certain population

subgroups, then enrollment is likely to reflect those locational factors. Similarly, access might be differentially altered for certain types of patients. For instance, appointment scheduling might be made easy and flexible for pediatrics and difficult for adult or geriatric medicine. The dual-choice option in the HMO is, in part, designed so that dissatisfied enrollees can leave the plan, removing both the source of complaint and the pressure on the organization to change (Hirschman, 1970; Phelan et al., 1970).

Because the typical IPA-model HMO utilizes the practices of a large number of independent practitioners, it has less control than the PGP over certain features of its delivery system, but it has more control over others. In particular, IPAs occasionally drop physicians from their roster because of excessive utilization. The situation may not have to get to the point of formal severance. Repeated review and questioning of a physician's treatment patterns is probably sufficient to cause withdrawal.

While some of the factors that have been discussed are rather subtle, they need only to result in relatively small differences among certain people to have a major cost impact from the perspective of the HMO. In general, a small fraction of the plan's enrollees account for the majority of its costs. Most people are fairly healthy and use ambulatory care and occasional hospital services. Clearly, it is in the plan's interests if certain features, whether by design or accident, tend to keep out those people who are frequent users of costly services. Note that not only does the plan benefit, but the relatively low-cost people who do enroll receive comprehensive coverage and usually excellent service at lower average cost, at least in part because they do not have to share the costs of their fellows. Conventional insurers have the same incentives to select healthy enrollees.

This leads to a consideration of the environment in which HMOs exist. The notion of risk spreading through community rating whereby everyone in an area pays the same premium has been almost universally replaced by experience rating whereby firms with young, healthy employees pay lower premiums while those with older and more costly employees have higher premiums. In spite of this, HMOs were traditionally community rated long before the HMO Act required them to do so. Only recently, in the Omnibus Budget Reconciliation Act of 1981, P.L. 97-35, has the law been changed to allow HMOs to take into account differences in enrollment mix. How they will use

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the increased flexibility will depend in part on future changes in the competitive environment.

### Socioeconomic Differences in the Effects of Alternative Allocation Systems

The major feature of the HMO system from the consumer's perspective is that prices in the form of coinsurance and deductibles are absent. This suggests immediately that income and ability to pay will not influence utilization, so the distribution of care may be expected to be more equitable. (In this case, equitable is taken to mean that services are allocated according to need rather than effective demand.) However, the previous section identified other variables that may influence utilization and these may have differential effects by income group, race, sex, residence, or other factors.

To economists, the most familiar device used by HMOs to constrain patient demand is time. Waiting time in an office is "dead," unproductive time. Many economists value time at the individual's wage rate so that an hour for someone earning \$10 per hour is worth four times that of someone earning \$2.50 per hour. Other economists would argue that wage rates alone are not appropriate measures of the value of time to an individual. At a minimum, wage rates must be compared to total income. Furthermore, a highly paid professional typically has more sick leave, flexibility in hours, and discretion than a dishwasher paid the minimum wage. For the dishwasher, a long appointment wait may mean peremptory firing, not just an inconvenience. In any case, it is difficult to determine the relative time costs in HMOs. Travel time is generally increased in PGPs, but waiting time in the office is reduced. Furthermore, patients with appointments probably experience less variability in waiting time in PGPs. While it is difficult to know whether the shorter office waits benefit more the higher or lower income groups, they may make less difference to the retired who are probably not pressed for time, and there are numerous anecdotes of the waiting room as a social hall.

The long appointment lag in PGPs has a different type of effect. It has little impact on people who have postponable, schedulable problems with a low anxiety component. Middle-class professionals are likely to fall into this category. The poor, parents of small children,

and those elderly persons with recurrent urgent or acute problems may not be served as well by such a system. However, most PGPs offer 24-hour emergency coverage and urgent drop-in visits at the clinic, so services are available, albeit with longer waits and usually an unfamiliar provider. The PGP does have a substantial advantage over the typical emergency room in that the patient's medical record is usually available.

Physical access to PGP HMOs may have a differential effect on various subgroups. The centralized location means that the poor and others without automobiles may find access more difficult. However, the presence of consultants, laboratory, X-ray, and pharmacy at the same site may be a special convenience to such people. Like institutions, large PGPs are also more likely to enhance access for certain subgroups, such as non-English-speaking minorities and the disabled. For instance, Kaiser offers a special teletypewriter (TTY) telephone line for hearing-impaired persons, a convenience not offered by many independent physicians.

The large, bureaucratic structure of some PGPs may create barriers for the less educated. There is often a "system" that one must learn how to "work," rather than the helpful receptionist in an independent practitioner's office. On the other hand, the conventional system often offers no assistance in getting from one provider to another. The HMO also eliminates the need for complicated claim forms which often increase substantially the cost to the poor and uneducated because they do not claim the benefits due them.

Prepaid group practices are by their nature closer to some people than others. This may lead to much higher travel costs for residents of some neighborhoods. In most instances, because HMOs concentrate on enrolling employed populations, this implies reduced accessibility for people in lower-class areas. However, some HMOs have targeted their services to Medicaid recipients and thus are inaccessible to the middle and upper class.

HMOs can selectively try to enroll certain population subgroups. Clearly, they have incentives to avoid those groups with higher-than-average costs and utilization unless their premiums are commensurately higher. (Note that, in part, this incentive is caused by the HMO's community rating while other insurers rate by experience. An experience-rating HMO might even find high-risk people especially desirable because of the larger potential savings it could offer relative to the conventional system.)

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*Enrollment Choices by HMOs and the Poor*

The most important factors in HMO selection with respect to the aged and the poor are policies set by the federal and state governments. Current Medicare provisions do not make it attractive for HMOs to enroll the elderly, nor are Medicare beneficiaries given any incentives to enroll in HMOs (Luft et al., 1980). The Medicaid program allows states to contract with HMOs to provide care for the poor. In some states this has resulted in rather large programs, but in many areas Medicaid enrollment is minimal even though HMOs are available.

The poor, almost by definition, enter HMOs under circumstances different than those of the middle class who have a dual-choice option through their employers or unions. In general, the conventional health-insurance alternative for employees provides fairly comprehensive coverage with some copayments and deductibles. Moreover, the middle-class family can generally use their conventional health insurance at a wide range of medical care providers. For those who join, the HMO is the better of several fairly good options.

Poor enrollees in HMOs have generally entered through either of two routes—a demonstration project or a Medicaid contract. In a demonstration project or experiment, a government or private agency offers to pay the premiums for those people who enroll in the HMO. In a few instances, the family is given a choice of plans, but in almost all of these instances special monitoring programs and evaluations are included. (Such efforts are likely to influence, as well as measure, performance.) These demonstration projects often include special features such as outreach coordinators and transportation programs not normally provided by the HMO (Freeborn et al., 1980; Coltin et al., 1978; Richardson et al., 1977). In some cases the experiment provided comprehensive coverage as long as the family stayed enrolled, but disenrollment would imply a loss of benefits. It is also the case that most demonstration projects for which data are available were undertaken by mature HMOs with large stable enrollments of employed populations. Many of the HMOs supported substantial research staffs and most undertook the demonstration at least in part out of perceived social responsibility. All of these factors render such situations somewhat atypical and may alter the actual or perceived performance of the plan relative to a simple competitive market model.

In several states HMO enrollment has been made available as an option to Medicaid beneficiaries. Although on the surface such ar-

rangements appear analogous to the multiple-choice options available to employees, there are also some important differences. One is that conventional Medicaid programs generally do not include copayments or a premium paid by the enrollee, nor is the HMO able to offer additional benefits to the enrollee should it realize savings. Thus, the Medicaid recipient is not attracted to the HMO by its better financial coverage, lower cost, or improved benefits, as is the case for middle- and working-class enrollees. Instead, the reason many Medicaid beneficiaries take an HMO option is that few fee-for-service physicians in their area are willing to accept Medicaid patients. Rather than being attracted by a better system, the HMO may offer the only viable system and thus be under less pressure to perform well. In addition to the enrollees' incentives, it is important to examine the motives of the HMO in negotiating a Medicaid contract. In most instances, this process is long and difficult, and the capitation rates offered by the state are often unattractive relative to premiums paid by employee groups. Thus, some plans that choose to attract Medicaid beneficiaries may do so because of their own precarious position in the market. This is certainly not always the case, however, and some well-known and highly successful HMOs have tried to enroll the poor out of a sense of community.

### *Service Allocation Differences for Different Socioeconomic Groups*

One problem in searching for differential consequences by socioeconomic group is choosing the appropriate comparison population. One can argue that the poor have more health problems than the nonpoor, so the poor in an HMO should be compared to the poor in the traditional system. Alternatively, one might reason that the fee-for-service system is not now meeting the needs of the poor. Thus the experience of the poor in an HMO should be compared to that of the middle class in the same organization. Studies of both types are available.

Most of the findings concerning utilization of comparable groups of the poor in HMOs and fee-for-service settings are discussed in Luft, 1981 (see also Vignola and Strumpf, 1980). The major studies are those of Gaus, Cooper, and Hirschman (1976) on ten HMOs; Fuller and Patera (1976) on Group Health Association in Washington, D.C.;

Richardson et al. (1977) on the Seattle Model Cities Project; Johnson and Azevedo (1979) on Kaiser-Portland; and Salkever, German, Shapiro, Horky, and Skinner (1976) on East Baltimore Health Plan. For ambulatory care, the results are mixed; in half, there are more visits by the poor in HMOs, and in half, the results are reversed. These average findings are misleading because it is much more frequently the case that the poor in HMOs have at least one visit more than the poor seeing fee-for-service physicians. This suggests that access is easier for the poor in HMOs than for those in the conventional systems, even with Medicaid coverage.

For hospitalization, the results are remarkably consistent—lower admission rates for HMO enrollees in all cases. The prevailing opinion is that this generally is not due to an inability of patients to gain admission. In fact, somewhat lower utilization is probably good because of the presumed excessive hospitalization in conventional settings. While exceedingly low utilization rates may not be good practice, more detailed studies are necessary in order for us to determine if this is the case.

The second type of comparison involves the poor and nonpoor in the same organization. The question is: Does enrollment of the poor in the same plan with the middle class, and with the same financial coverage, eliminate the general underservice of the poor found in the conventional system? In general, ambulatory utilization rates of the poor in mature HMOs approximates that of the middle class.

However, some differences appear in the *types* of utilization by different socioeconomic groups. The poor are more likely than the middle-class enrollees to walk in or use the hospital emergency room instead of a regularly scheduled appointment. The former results in fragmented care, but may better fit the life circumstances of the poor. Further adding to the fragmentation was the fact that when appointments were made, the poor had a higher no-show rate (Hurtado et al., 1973; Richardson et al., 1977; Group Health Cooperative of Puget Sound, 1970; Shragg et al., 1973). It is difficult to identify the cause of these utilization patterns, but it appears that to some degree the style of service provided by the HMOs does not match that desired by the poor enrollees. Of course, the life circumstances of the poor may lead them to favor drop-in visits, emergency room use, and cancelled appointments in all settings, not just in HMOs.

These studies examined the behavior of special subgroups of the

poor who were introduced to an ongoing HMO as part of a demonstration project. Such an arrangement requires adjustments by both the HMO staff and the new enrollees. An alternative research design examines whether different utilization patterns occur by socioeconomic group within the regularly enrolled population. While this approach is limited to employed people with an HMO option (and thus omits the very poor), it provides better measures of long-run equilibrium. Furthermore, if differences appear, they are likely to be larger if coverage is extended to the very poor.

Much of this work has been done by the Kaiser Portland Research Center. Freeborn, Pope, Davis, and Mullooly (1977) summarize their results concerning outpatient utilization with respect to socioeconomic status. Health status measures appear to be the dominant factors, and once they are held constant, education, income, and socioeconomic class have little effect on utilization. The one exception is preventive service, which is not related to health status but, for women, is positively related to education and income. These studies also exhibit differences in the patterns of ambulatory use that are related to socioeconomic status—the middle class is more likely to use the telephone for reporting symptoms and is less likely to use walk-in clinics (Pope et al., 1971; Weiss and Greenlick, 1970; Nolan et al., 1967).

Hetherington, Hopkins, and Roemer (1975) argue that in PGPs people with more education and higher incomes can more easily “work the system.” While it is true that higher-income enrollees in Kaiser and Ross-Loos have more visits per year than lower-income enrollees, their own data show that this is also the case in the conventional plans. More importantly, low income PGP enrollees were much less likely to go without a physician visit, suggesting that the lower out-of-pocket cost in the PGPs more than compensates for any bureaucratic deterrent.

Taken together, these studies in large mature PGPs suggest some important differences in utilization patterns among regularly enrolled HMO members. While overall use of ambulatory services does not differ very much, especially when factors such as age, sex, and health status are held constant, the types of services vary. The middle class is much more likely to use the telephone to report symptoms. Walk-in visits and appointments, both of which are held during normal working hours, also appear easier for the middle class. While the unemployed may have a low time cost, the working poor probably

have less flexible schedules than the middle class. Thus the poor are more likely to use the emergency room, and they are more likely to miss appointments without cancelling them.

### *The California Prepaid Health Plan Program Under Medicaid*

The previous discussion provides substantial evidence that many HMOs have adequately served the poor and that their systems to constrain costs have not had noticeably adverse impacts. Yet, the history of HMOs and the poor contains one chapter with a different tone—reports of fraud, abuse, poor quality, and inaccessible services by some prepaid health plans serving Medicaid beneficiaries in California. To gain a better understanding of how HMO-type services can lead to undesirable outcomes, it is useful to examine the California experience.

In 1970 California began a policy of encouraging the development of HMOs to serve its Medicaid population. These organizations, called prepaid health plans (PHPs), were supposed to save the state money by reducing unnecessary utilization and administrative costs of claims reimbursement. The then governor Ronald Reagan also attempted to control utilization of fee-for-service providers by limiting office visits and requiring prior authorization for hospital admissions. (See, e.g., Goldberg, 1975; California Department of Health, 1975; Chavkin and Treseder, 1977.) This strategy was also designed to make HMO enrollment more attractive to the Medicaid population, because no such external restrictions on utilization would be imposed on HMO enrollees. Implicit constraints were imposed because the HMO capitation rates were pegged to the average fee-for-service costs. Most observers agree that the initial program was poorly designed with problems arising from marketing abuses, excessive administrative costs and profits, and poor quality of care (Goldberg, 1975; D'Onofrio and Mullen, 1975; Moore and Breslow, 1972; California State Legislative Analyst, 1975; U.S. Senate Committee on Government Operations, Permanent Subcommittee on Investigations, 1975, 1978).

The principal charges concerning marketing stemmed from PHP use of door-to-door salespeople to enroll Medicaid eligibles. These people often posed as physicians or Medicaid officials and rarely explained fully the options available to consumers. Promises often far

exceeded reality. Salespeople attempted to enroll only healthy individuals and told people with ongoing problems to stay in the fee-for-service system. These marketing abuses were at least partially attributable to the intense competition for enrollees among plans, which, in turn, was fostered by the ground rules laid down by the state (U.S. General Accounting Office, 1974). A PHP would sign a contract allowing it to receive a fixed monthly capitation fee of no more than 90 percent of the average fee-for-service cost of similar enrollees. No funds were available for start up or fixed costs, so it was imperative that the PHP enroll members as quickly as possible. Furthermore, in an effort to encourage competition and promote choice for Medicaid eligibles, the state took a laissez-faire attitude and authorized many plans to operate in the same service areas. While creating a situation in which there was a rush to enroll people, the state refused to release the names of Medicaid eligibles, so the PHPs had to use door-to-door salespeople paid on commission. There was also little control over PHP attempts to enroll only the healthy and to keep dissatisfied members from disenrolling. The situation was almost perfectly designed to lead to an aggressive attempt to enroll healthy members.

There was almost no concern for even minimal quality audits in the early years of the PHP program, and only after June 1973 were medical professionals assigned by the state to audit PHPs (California State Legislative Analyst, 1975). A detailed investigation in 1974 of five PHPs in operation prior to December 1972 showed substantial variability in quality, with some significantly better than fee-for-service Medi-Cal (the California Medicaid program) and some significantly worse. Plans with a high proportion of non-Medi-Cal enrollees scored consistently better (Louis and McCord, 1974).

These differences in quality which appear related to the proportion of non-Medi-Cal enrollees are consistent with the notion that plans tend to provide comparable services for all enrollees and that the competitive environment has a major influence on the overall level of service. Large, mature HMOs have had to compete with conventional insurers and providers for the employed population. In contrast, some of the PHPs were established to serve only Medi-Cal prepaid enrollees while others were large fee-for-service Medi-Cal practices prior to converting to prepayment. In many areas, the poor have few alternatives—in 1972 less than 20 percent of Medi-Cal eligibles in Orange County saw “mainstream” providers (Auger and Goldberg, 1974).

This review suggests that in the past competition for employed populations has led to a high quality of care and service by HMOs. (These mature HMOs were also established by individuals committed primarily to the development of innovations in medical care rather than profitability, an issue to be discussed below.) But, competition per se is not necessarily good; the intense competition among PHPs for Medi-Cal enrollees encouraged their marketing abuses. Thus, future policy strategies should examine the nature and level of competition most likely to lead to socially desirable results.

### Potential Effects Under Increased Competition

It is important to remember that the preceding discussion of HMO incentives and performance relates to a specific market environment and historical context. Most mature HMOs (i.e., those developed before the 1970s, which account for the bulk of total enrollment and most of the research studies) were started in an environment actively hostile to prepayment. The founders of these plans were often visionaries with strong beliefs concerning the superiority of prepayment and group practice (MacColl, 1966; Rothenberg et al., 1949; Williams, 1971). They often enlisted community support in their struggles with organized medicine and sought to provide a better service at reasonable cost. Few of these HMOs were operated on a for-profit basis and those aspects that were technically for profit, e.g., the physician groups, rarely seemed to act as if profit were a major goal. The market environment has also been relatively noncompetitive. Often only one HMO existed in an area. Although HMOs competed with conventional insurers for enrollees, tax subsidies for health insurance benefits and employer ignorance or unconcern made the market orderly and quiet. Current proposals to increase competition in the medical care market suggest that it may be inappropriate to extrapolate from the past.

### *Changes in the Competitive Environment*

Several changes are proposed or in process to substantially increase competition. Various bills have been introduced to alter the tax laws to increase employee sensitivity to the cost of health insurance (Ig-

lehart, 1981). Current law allows all employer contributions to be tax deductible for the employer and tax free to the employee. Many employers contribute more for more expensive plans. The proposed changes would place a cap on the employer contribution, require equal contributions, or give tax-free rebates to people choosing less expensive plans. Some employers provide "cafeteria style" benefit packages whereby employees receive a lump sum in fringe benefits to allocate among various health, life insurance, pension, vacation, and other options. The proposed changes in the tax law would increase the desirability of such cafeteria plans.

Employers have also become more aware of the cost of health insurance contributions and that this fringe benefit is a largely uncontrollable cost. Some employers have begun to alter their health insurance packages to increase cost control. One very popular approach is self-insurance and administrative-services-only arrangements in which the employer bears the risk and the carrier merely handles claims processing. The employer can then develop a substantial data base on cost and utilization and can exercise substantial control over reimbursement levels and payment flexibility.

New delivery systems and insurance arrangements are also beginning to enter the market. The older generation of PGPs and IPAs has been joined by new HMOs with a frankly entrepreneurial orientation. Some are local organizations, often controlled by a few physicians, while others are owned and operated by large statewide or national insurers. In some instances it has been alleged that these new plans have a very short (2–3 year) time horizon on profitability, rather than the long-run perspective focusing on service delivery attributed to the older plans. (For example, the innovative United Healthcare plan sponsored by Safeco has been closed [Moore et al., 1980].) The currently high interest rates make imperative the rapid payback of start-up capital. New firms have entered the administrative services market with an emphasis on fast, inexpensive processing and a get-tough attitude toward providers. Such firms will sometimes offer a fixed fee, perhaps well below the physician's usual charge, and if that is not accepted, threaten interminable negotiations. Other plans are establishing "preferred provider organizations" in which selected cost-conscious providers are identified. If the enrollee goes to one of these providers, charges are covered in full, while for other providers standard copayments are required.

Simultaneously, the provider market is becoming increasingly competitive. Falling hospitalization rates are leading to increasing bed surpluses so hospitals are more willing to grant concessions (Kralewski and Countryman, 1982). For-profit hospital chains are expanding and sometimes concentrate on handling only certain types of cases. In some instances HMOs are owned by these for-profit chains. The supply of physicians is also increasing rapidly relative to the population and in some parts of the nation it is becoming difficult for physicians to start an independent practice and meet income expectations and debts incurred during training. This is leading to an increased willingness and sometimes eagerness by new, young physicians to accept a position with one of the new HMOs or other plans.

### *Possible Effects of Increased Competition*

As competition increases, consumers and employers become more cost-conscious, and providers become more squeezed, various tactics may be used to ration resources inside and out of HMOs. Plans will probably attempt to control costs much more tightly than is currently the case. This may lead to the firing or dropping from provider lists of those physicians who appear to overutilize services (Physicians Health Plan, 1980). Both approaches have been used in selected plans. The question, of course, is whether the cuts are aimed only at the true "abuser" such as the physician who gives a vitamin B-12 shot to every patient. In a cost-cutting environment a plan may fail to distinguish the abusing physicians from those who have a sicker patient load. In either case, the patients of those physicians will lose a provider and the ones who will be most affected are the frequent users with chronic high-cost problems. Similar approaches are not difficult to imagine. For instance, plans generally cover all but "experimental" services. By not updating the coverage list frequently, patients desiring such new and usually expensive procedures will be encouraged to switch insurers (Rybin, 1981). Alternatively, the indications for a service or its delivery method may be structured to shift certain users out of the plan. Many HMOs provide fairly comprehensive coverage of outpatient mental health care—often 20 or more visits per year, usually in a group therapy setting. While this may be sufficient for most acute problems, it may not be very attractive to patients who wish long-term insight-oriented individual therapy. Such people will

switch to conventional insurers with outpatient mental health benefits. Plans could attract well-trained board-certified physicians yet make sure that, while the primary-care physicians are well liked by the enrollees, most of the specialists are foreigners with limited command of conversational English. Such a strategy would, if associated with low premiums, attract the young and healthy, and repel the old and sick.

Even more subtle tactics could be used by IPAs or insurers through manipulation of reimbursements. The allowable fees for certain types of expensive specialists could be held down, either as a matter of policy or by updating usual, customary, and reasonable fee screens less frequently for low-volume specialties (Showstack et al., 1979). Such an approach would increasingly shift costs to the patient and might even lead to a change of plan. A crucial factor in such approaches is that a small number of enrollees account for a large fraction of the costs (Roos and Shapiro, 1981; Eggers, 1981; McCall and Wai, 1981). Small changes that may affect only high users can have a major cost impact with little apparent effect on enrollment. Moreover, changes in administrative procedures or providers affecting this small segment are difficult or impossible to monitor from the outside.

Competitive strategies are even more likely to occur in marketing. Some of the procompetitive bills would eliminate minimum basic benefit packages. If such minimums are dropped, HMOs and insurers could compete for low-cost enrollees by offering benefits attractive to the healthy, like eyeglasses, while limiting coverage for services required by high-cost enrollees. Plans are likely to target their enrollment toward the healthier groups, and within groups toward healthier and less expensive individuals.

Employers may also structure their benefit packages to reduce their own costs. For instance, it is reported that one Washington, D.C.-based firm has designed its health-benefits option so employees married to federal workers will choose coverage under their spouse's plan, thus reducing costs to the firm. (While such anecdotal evidence is difficult to generalize, it is indicative of the types of behavior already observed which are likely to become more common. The examples are drawn from interviews during which anonymity was assured.) In another situation, a firm with a self-insured plan and a community-rated HMO option had personnel staff counsel people with health problems to

join the HMO—and thus lower the firm's costs. Some employers with administrative-services-only contracts have their carriers identify high-utilizing employees for special counseling. It is only a small additional step to pressure such employees to quit. Preemployment physical exams can be used to screen out not only people unable to perform their jobs, but those who may have costly medical expenses.

These are just a few of the possible ways by which increased competition may lead to a situation in which the young and healthy receive good low-cost coverage and the old and sick face expensive inadequate coverage—just the opposite of the risk-pooling implicit in socially desirable insurance. Many more tactics are likely to be developed as competitive pressures increase. While the old and sick are more likely to be poor, other factors will also increase the burden of such a competitive strategy for poor and female workers. Unions are likely to resist the fragmentation envisioned in this scenario and employers of upper-income workers are also less likely to adopt penny-pinching strategies. For instance, one electronics firm was said to avoid aggressive intermediaries because it did not want to offend its engineers with a hard line on claims. Low-income and non-union workers have much smaller employer contributions and are likely to be especially sensitive to the self-selection inducements of a competitive strategy (Taylor and Lawson, 1981).

If Medicare and Medicaid are brought into the competitive strategy similar outcomes are possible. The experience with the "Medigap" policies suggests that many of the elderly are not informed consumers of health insurance; the poor are apt to be even more vulnerable. Depending upon the value of the "voucher" offered by the government, the Medicare and Medicaid beneficiaries could be very attractive markets. On average, their medical expenditures (and implicit premiums) are high, but again, a small fraction accounts for a very large fraction of the expenditures (Roos and Shapiro, 1981). Furthermore, in contrast to employed groups, high expenditures among Medicare and Medicaid beneficiaries are probably more likely to be associated with chronic conditions than sudden trauma so the importance of preexisting physician ties is even stronger. It may also be easier to attract people with certain chronic, but low-cost conditions while discouraging others. For instance, a plan may emphasize a program for the blind, who are relatively low-cost patients, while making access difficult to car-

diologists. The relative absence of informed agents, such as union negotiators, may make such strategies particularly easy if there is no government monitoring of the process.

## Ethical and Policy Implications of Rationing of Medical Care in HMOs

The previous sections have pointed out that the systems of controlling utilization or rationing in HMOs are rather different than they might appear at first glance. While fees are not used to influence consumer demand, the burden is placed only partially on time prices. The seemingly endless queues reported in England are not evident in most HMOs. Instead, there is a different tradeoff between waiting time and appointment delay in PGPs and, while physical accessibility is more difficult in some ways, it is easier in others. Rationing tends to occur in much more subtle ways. Controls over services provided take place through an environment that encourages the medical staff to be more conservative in its use of medical resources. Hard and fast rules on when a patient should be admitted have not been uncovered. Instead, although clinicians make decisions on a case-by-case basis, the overall pattern of decisions is more conservative. This may be the result of changing the practice patterns of physicians or of attracting those physicians who already have conservative practice patterns. Perhaps a more important type of rationing occurs through the process by which consumers enroll in HMOs. A complex mixture of decisions by government, insurers, HMOs, employers, unions, and the individuals themselves results in HMO options being unavailable to some, expensive to others, and attractive to a relatively small proportion of the nation.

The effects of these rationing devices on various subgroups of the population are similarly complex. By and large, the poor and other disadvantaged groups enrolled in HMOs probably have better access to services than would be the case for them in the conventional system. Similarly, the differences in utilization among socioeconomic groups in HMOs are far smaller than in conventional settings. This is not to say that all differences are erased or that utilization of services is strictly in proportion to need. However, many of the remaining differences seem attributable to difficulties faced by the poor in all

settings, rather than to specific hurdles imposed by the HMOs. Somewhat broader differential effects can be seen in those who have the option of joining HMOs. However, this rationing through the availability of enrollment options is to a substantial degree a reflection of market forces and government policies.

### *Ethical Issues in Approaches Used by HMOs to Constrain Utilization*

Two major ethical issues arise when considering the methods used by HMOs to allocate medical services: 1) whether the economic incentives present in an HMO create unethical behavior by their physicians, and 2) whether the allocation system appropriately reflects medical need. Unethical physician behavior may arise from the loss of the physician as an impartial and trusted agent for the patient. This important issue lies at the heart of traditional opposition to the corporate practice of medicine. Abstracting from the rhetoric of such discussions, one can say that the appropriate level of treatment within the current market environment is that level of treatment which the fully informed patient would choose after weighing its risks and benefits, as well as its financial costs (Pauly, 1979). (To simplify matters, we will assume the patient's insurance coverage is equivalent under both systems. Various redistributive schemes would add complexity to the discussion but not alter its major conclusion.) A physician acting as a perfect agent for this patient would reach a similar conclusion. A physician who is also a provider of care to this patient may no longer be a perfect agent and may be swayed by the economic incentives inherent in the payment scheme. If paid fee-for-service, he or she will have an incentive to offer more services, while if paid on a salary or capitation basis, there is an incentive to offer fewer services. The question is whether it is better to err on the high or low side of the correct amount. Too many services increase not only cost but risk.

Unfortunately, it is rarely the case that the patient's problem is diagnosed with such certainty and that a course of treatment is so clear that the "correct" amount is known. Instead, there is generally some uncertainty about the true nature of the disease and often there are several courses of treatment with no clear objective evidence as to which is best for the particular patient (Wennberg et al., 1980).

The patient does not have the expertise to really evaluate the potential choices, and I suspect that few physicians are able to deal explicitly with the uncertainty. In fact, even consciously recognizing the relative "softness" of the decision may be such a burden that many physicians develop a "standard approach" to dealing with particular problems. Some may choose a very aggressive testing and treatment approach while others may choose to "wait and see" with minimal intervention. Yet both approaches may yield similar outcomes, especially since our measures of outcome are rather insensitive. The similarity in results will reinforce each practitioner in his or her chosen approach. Wide variations in practice styles have been observed among independent fee-for-service practitioners, as well as within apparently similar physicians in both fee-for-service and prepaid group practices (Wennberg and Gittelsohn, 1973; Schroeder et al., 1973; Roos and Roos, 1981).

While there may be a wide distribution across physicians in how they might treat a particular problem, fee-for-service physicians are more likely to be concentrated at the high service end and prepaid physicians at the low service end. This may reflect the role of incentives in altering their clinical decision making. Alternatively, it may reflect a process of selection. Physicians who order fewer tests and procedures and hospitalize less frequently—perhaps because that is the way they were trained—will find it difficult to earn as much in a fee-for-service environment as will more aggressive physicians. Similarly, physicians with an aggressive approach will find a prepaid environment less rewarding than fee-for-service (McClure, 1982). Yet each type may be practicing within the generally accepted range of clinical behavior.

There are very few studies of different practice patterns in fee-for-service and prepaid settings that examine what is or would be done for identical patients. Overall measures of the use of services are confounded by patient copayments, differences in case mix, and other factors. One very recent study queried board-certified cardiologists on how they would treat a series of patients described in brief case histories (Hlatky et al., 1981). As might be expected, the independent fee-for-service physicians on average were much more likely than the prepaid group-practice cardiologists to recommend invasive testing and cardiac bypass surgery. However, the recommendations of the HMO physicians were similar to those of university-based cardiologists. In general, recommendations were comparable across practice settings for patients with the most severe manifestations, and major

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discrepancies occurred for patients with only one or two blocked arteries, a situation in which there is no clear consensus on appropriate treatment in the research literature (McIntosh, 1981; Kouchoukos, 1981). Furthermore, some fee-for-service cardiologists were *more* conservative than the PGP cardiologists, supporting the notion that while the average recommendation may differ significantly, the PGP physicians are within a range acceptable to fee-for-service providers. In general, current studies of the quality of care in HMOs indicate standards at least as high as those in the fee-for-service community (Cunningham and Williamson, 1980; Luft, 1981).

The second ethical issue is whether the systems used by HMOs to ration their services result in an allocation that reflects medical need. HMOs seem to perform well in allocating care *among their enrollees* largely according to need, rather than ability to pay. In this respect, their performance is superior to the conventional system in which copayments often serve as greater deterrents for those with lower incomes.

From a broader perspective, however, one may ask whether *access to health plans* should be independent of ability to pay. There are two problems raised by this question. The first relates to the inability of the poor to pay for health insurance premiums. This problem can, in theory, be solved by giving the poor and low-income workers a voucher scaled to their income and family size that can be used to purchase basic health insurance. If they wish a more expensive plan they will have to pay the extra cost out-of-pocket, just as would be the case for the middle class. Everyone would be placed on an equal footing and access to good basic coverage would be available to all. Such an approach is outlined in Alain Enthoven's "Consumer Choice Health Plan" (1980) and is incorporated in the "Project Health" system in Multnomah County, Oregon (Lewis, 1979; Multnomah County, Oregon, Project Health Division, 1977). The "Project Health" system provided not only a basic voucher, but provided subsidies so that low-income enrollees did not have to pay the full marginal cost of more expensive plans.

The second problem in assuring equal access to health plans arises from the higher cost of covering sick people and the resulting incentives for plans to avoid or push out such enrollees. As indicated earlier, increasing competition is likely to increase the attempts by plans—both HMOs and conventional insurers—to enroll only the

healthy. This suggests that people with high needs for medical care will have to purchase coverage at substantial out-of-pocket cost or else they will be forced out of the system. The proposed scenario is analogous to the change in insurance during the 1950s and 1960s which led to the virtual replacement of community rating by experience rating. An area would start out with a uniform rate for all persons. Insurers would identify firms with younger-than-average employees and offer a lower rate. As low-cost firms dropped out of the pool, the premium for those remaining would increase and the process accelerate. The result was a wide variation in rates charged to different firms with some gaining and others losing. Increased competition in the 1980s is likely to result in conventional insurers and HMOs trying to attract low-cost *individuals* within firms, leaving the older or sicker persons to high-cost plans. Furthermore, as the California PHP example and other early indications suggest, the competitive techniques that may be used are not always aboveboard.

### *Implications for Health Policy*

The crucial policy issue that derives from this discussion is how can a competitive system be designed to allow for diversity and encourage innovation and efficiency without getting caught by an analogue to Gresham's law in which cheap plans attract the healthy and exclude the sick. Unfortunately, it is far easier to raise concerns and identify problems than it is to propose solutions, but a few suggestions will be offered to promote discussion.

The basic approach in these suggestions is to reduce the benefits to those plans that select healthy enrollees and increase the penalties they would pay for pursuing such strategies. The first step would be to require a rather broad basic-benefit package for all plans so that people with specific health problems would not be deterred by benefit exclusions. Plans would be encouraged to compete primarily on the basis of price rather than coverage options. This will also make it easier for consumers to evaluate alternatives (Luft, 1982).

The major difficulty with any competitive approach is that the effective premiums for the sick must be above those for the healthy; otherwise plans will develop strategies to avoid enrolling people whose expected costs exceed the premium. If it is possible to identify with reasonable accuracy those people at risk for high expenses, they can

be categorized and charged a higher premium. This would entail a system analogous to, but much more complicated than, the point system used by carriers to adjust insurance premiums for drivers with poor accident or traffic violation records. A social decision might be made that most health problems are not the individual's responsibility, so government vouchers or employer contributions would be adjusted to reflect the individual's risk category. While a rather complex system might result, the philosophical precedent is already implicit in the current willingness to pay high premiums for Medicare coverage of the elderly, persons with kidney failure, and the permanently disabled.

The actuarial feasibility of designing risk-adjusted premiums and vouchers is quite another problem. Making the premium a smooth function of several factors such as age, sex, family medical history, and the like might avoid many of the problems associated with the yes/no decisions on disability eligibility. Such a system would make the sick and healthy equally desirable to plans because each brings a premium commensurate with expected costs. Very careful screening by plans might still produce some selection, but most of the benefit to plans of such approaches would be lost. The vouchers could be set at some constant fraction of the risk-adjusted premiums if price sensitivity were desired. Furthermore, the plan's actual premium might be above or below the voucher level depending on the plan's efficiency.

Enthoven (1980) includes a more restricted version of this notion in his discussion of actuarial risk categories. My major difference with him is in emphasis. I think we agree that without such adjustments competition will result primarily in a rush for healthy enrollees. However, I am much more skeptical than Enthoven about the technical feasibility of devising a sufficiently sensitive categorizing scheme, but this is a research question which has not to my knowledge even been explored in a preliminary fashion. The government's willingness to maintain its contribution levels for the most costly categories is a crucial political question that must also be addressed. This becomes particularly important if high-cost patients tend to enroll in certain plans (e.g., those utilizing tertiary-care hospitals) and the plan's high costs are attributed to inefficiency rather than to patients with more complicated problems.

The rewards a plan can reap by pushing out its high-cost enrollees can also be reduced. It may be possible to develop monitoring systems whereby people who change plans report on the problems they ex-

perienced and whether they felt pushed out. For instance, the California Public Employees Retirement System, which provides multiple-choice options for state employees, sends a questionnaire to all enrollees switching plans. Because such a system must be sensitive enough to identify important but infrequent complaints, it may be necessary to pool the data from many employee groups to obtain a sufficient sample. Such a system might be analogous to that used to evaluate automobile failures nationwide.

The incentives to keep nonusers while disenrolling users might be blunted by allowing enrollees to build up credits over several years for below-average use. If they switch to another plan, say after incurring an illness, some of those credits would be transferred and drawn down by the new plan. If the previous plan induced them to stay, it could use some of the credits to offset the patient's higher expenses. Although such an approach may be criticized as contrary to general insurance principles, it is designed to counter strong market incentives that may destroy the basic foundation of risk-spreading insurance.

It should be clear that these are only preliminary ideas presented to encourage discussion. They rest upon the belief that HMOs currently provide an important alternative to the conventional system, but that potential changes in the market environment may result in rather objectionable behavior by HMOs and other health plans. Whether it will be possible to design the appropriate policies to encourage desirable, and discourage undesirable, performance rests on improving our knowledge of how the medical care system works and on creating the correct incentives.

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*Acknowledgments:* This paper was prepared for the President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research. I am grateful for comments by Mary Ann Baily, Barbara Cooper, Lauren LeRoy, Susan Maerki, Lawrence Stern, Joan Trauner, and anonymous reviewers.

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# Certificate of Need and Low Capital-Cost Medical Technology

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**B**IOMEDICAL ADVANCES DURING THE LAST THIRTY years have spawned new medical technologies at a prodigious rate. Swift adoption of these innovations has not only altered the face of medical practice, but has transformed many hospitals into increasingly complex, resource-intensive institutions. In numerous instances, such radical change has hampered objective evaluation of clinical risks and benefits associated with these new technologies. Accompanying this trend there has been a growing concern that the costs of new equipment and procedures may be adding greatly to the inflationary trend seen in health care expenditures (Feldstein and Taylor, 1977; Altman and Wallack, 1979). One study (Abt Associates, 1975) estimated in 1975 that capital costs of major medical equipment alone may contribute 9 percent to the annual rise in hospital expenditures. Warner (1979) subsequently added operating expenses to this figure, calculating that equipment-embodied technologies alone may actually account for nearly 34 percent of the annual cost increase. One public policy response to this problem has been to attempt restraint of technology diffusion to hospitals. The prime policy instruments have been state Certificate of Need (CON) programs, which