# Assessing the Evidence on HMO Performance

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**REPAID MEDICAL SERVICE PLANS HAVE EXISTED ON** the American scene for over a century. Because most of these early plans catered to defined populations-usually on a religious, ethnic, or employment basis-they operated in relative obscurity until the Depression. Then, in 1932, the Committee on the Costs of Medical Care recommended that health care be furnished by organized groups of health professionals, preferably in a hospital setting, on a group payment basis. Prepaid health delivery plans came into public view, with special prominence given to such innovative programs as those established by the Ross-Loos Medical Group in Los Angeles, the Farmer's Union Co-operative Hospital of Elk City, Oklahoma, and the Trinity Hospital and Clinic in Little Rock, Arkansas. In an era when most Americans were without any form of health insurance coverage and when private health care was too costly for a large segment of the population, prepaid health services were touted as a means of enabling families of average income to afford preventive, diagnostic, and therapeutic care at a predetermined cost. Prepayment applied insurance principles of spreading risks, and financing by budgeted premiums payable over time (of wellness, and not only at time of illness).

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In the fifty years that have ensued since the study by the Committee on the Costs of Medical Care, health insurance has become widely available to most Americans and third-party payers have assumed responsibility for a major portion of most health bills. The growth of the health sector has been spurred by federal programs that have funded hospital construction, expanded the number and size of professional schools, fostered the development of new technologies, and encouraged the spread of health insurance. During the same period, national health expenditures have risen precipitously, from 4.1 percent of the gross national product in 1935 to 9.0 percent in 1979 (Gibson, 1979; Health Care Financing Administration, 1980). In response to an ever-increasing health budget, the focus of national health policy began to shift in the 1970s from guaranteeing accessibility of health services to cost containment. Once again, prepaid health services became the focus of national attention.

Revived federal interest in prepaid health plans dates back to 1970 when the term "health maintenance organization" (HMO) was coined by Paul Elwood, Jr., in an attempt to encourage the Nixon administration to accept the principle of prepayment in combination with coordinated organization of services. Since that time, the HMO concept has been espoused by a variety of political activists concerned with such divergent goals as cost containment, consumerism, and limits on government involvement in the health care system. HMOs have been viewed as more cost efficient than traditional fee-for-service forms of coverage, while providing medical care of comparable or better quality; HMOs have also been seen as stimulating competition within the health industry by encouraging traditional providers to adopt costcontainment programs and to develop new premium and benefit structures. Since 1973, federal policy has encouraged the development and growth of HMOs through a program of grants and loan guarantees; the HMO Act of 1973, P.L. 93-222 (Section 1310), has also sought to improve the marketability of HMO plans by requiring certain categories of employers to expand their health benefit programs to include HMO options. Whether and how public policy should continue to encourage the growth of health maintenance organizations depends upon the extent to which the experience with HMOs confirms widespread expectations as to their performance.

This paper will report on the available evidence concerning HMO performance. To lay a foundation for the discussion, the first section

will begin with a generic definition of HMOs, followed by a discussion of the diversity of HMOs; the next section will summarize major findings concerning HMO performance vis-a-vis their own enrollees; and the third section will explore possible implications of competition in the health industry, particularly in terms of the influence of HMO activity upon fee-for-service providers. A final section will discuss unanswered policy questions.

# Definition and Scope of the HMO Concept

Reflecting its political origins, the term health maintenance organization has been used to refer to a variety of plans. Some people use the term to mean the prepaid group practices that have existed for decades, such as the Kaiser-Permanente plan. In contrast, the federal HMO Act of 1973 restricts application of the term to organizations that comply with an extensive array of requirements. Individual as well as group practices can qualify as HMOs under the act, but some HMO-type organizations have chosen not to seek federal qualification.

Each of these definitions is too narrow to permit comprehensive analysis of HMO performance. For purposes of analysis, we define HMOs in terms of a set of essential behavioral characteristics:

1. The HMO assumes a contractual responsibility to provide or ensure the delivery of a stated range of health services, including at least physician and hospital services.

2. The HMO services an enrolled, defined population.

3. The HMO has voluntary enrollment of subscribers.

4. The HMO requires a *fixed periodic payment* to the organization that is independent of use of services. (There may be small charges related to utilization, but these are relatively insignificant.)

5. The HMO assumes at least part of the *financial risk* and/or *gain* in the provision of services.

Contractual responsibility implies that the HMO member has the legal right to medical care provided by the HMO. This situation is in contrast with the conventional one in which the medical care provider has the right to decide whether to accept the patient and is under no obligation, other than an ethical one, to provide treatment. The existence of an enrolled, defined population means that the HMO knows its obligations and can estimate the probable demand for its services. Voluntary enrollment implies that consumers can choose either the HMO or a conventional insurer; mandatory enrollment could include within the definition settings such as military and student health clinics. The fixed periodic payment, independent of the quantity of services provided, implies that, for a given enrollee, the HMO does not gain any substantial revenue by providing more services. In fact, the fewer services the HMO provides, the more the HMO will increase its net revenue after expenses. (In the long run, of course, the HMO may gain more enrollees by offering more services, and it will lose members if it noticeably underserves them.) Finally, financial risk implies that the HMO will suffer or benefit financially from its decisions to provide services. The presence of risk creates the incentives for cost containment that have made HMOs so attractive to policy makers.

This definition purposely allows considerable latitude for the organizational characteristics of HMOs. Note that the definition did not specify any restrictions on the method by which individual physicians are paid or on whether services are offered in a single group setting or dispersed over a large number of practitioners' offices.

There are basically two types of HMOs: the group/staff model, sometimes referred to as prepaid group practices (PGPs), and individual practice associations (IPAs).<sup>1</sup> Although there are many important exceptions, most group or staff model plans pay their physicians on a salary or capitation basis, and most individual practice associations are composed of physicians in private offices who bill the HMO on a fee-for-service basis. (The group model HMO involves an independent medical group that contracts with the HMO; in the staff model the physicians are hired directly by the HMO.)

Health maintenance organizations also vary in the extent to which they meet the five criteria of the overall HMO definition. The comprehensiveness of guaranteed services varies widely among plans and beneficiaries. The Kaiser Foundation Health Plan of Southern

<sup>&</sup>lt;sup>1</sup> Foundations for medical care are sometimes considered synonymous with IPAs, although not all IPAs are foundations, nor all foundations IPAs. See Egdahl (1973) and Edgahl et al. (1977).

California, for example, reported at least five different basic benefit packages in 1971, with monthly premiums ranging from \$7.82 to \$16.00 per subscriber (Somers, 1971). Groups also may purchase special coverages for eyeglasses, drugs, mental health care, and other benefits. Federally qualified HMOs must offer a basic benefit package but additional services may be tailored to the enrollee group.

The defined populations served by HMOs also vary widely. For instance, HMOs vary in size from 3,000 to more than 1 million enrollees. In some cases, enrollees are a homogeneous population, such as a university faculty. In other cases, the population is heterogeneous. The geographic base of enrollment may be concentrated in a single town (such as Columbia, Maryland, or Marshfield, Wisconsin), or widely dispersed through several metropolitan areas (such as the Kaiser plans in California), or a large rural region (such as the San Joaquin Foundation in California). Furthermore, although the enrolled population at any time is known, because of the capitation method of payment, enrollee turnover may vary from under 5 to over 75 percent per year (Cutler et al., 1973; Breslow, 1975). Finally, the population enrolled on a prepaid basis may represent a wide range (2 to 90+ percent) of the patients seen by a group of physicians.

The degree of freedom of choice in enrollment also varies, not because of requirements for membership, but because of limited access to other providers or modes of insurance. An effective HMO monopoly can occur in underserved areas, such as inner cities and rural communities, particularly when public financing programs, notably Medicaid, set reimbursement levels so low that private practitioners refuse to participate in them.

The structure of HMO coverage also shows great variation. Health maintenance organizations may use cost-sharing to varying degrees, and several types of cost-sharing may be involved. In the early 1970s, California state employees were enrolled in HMOs that had coinsurance rates of zero, 20 percent, and 25 percent, and deductibles of zero and \$2 per visit, or \$25 per illness (Dozier et al., 1973). Some plans currently include copayments and maximum out-of-pocket provisions (Miller, 1980).

The exposure to risk also varies among HMOs. The Health Insurance Plan of Greater New York (HIP) and other plans that use conventional insurance for hospital care are not at risk for hospital expenses. Even when an HMO is at risk for all services, risk can be allocated in a variety of ways among three functional (and sometimes legally distinct) parts of an HMO: 1) the "plan," which contracts with enrollees; 2) the physicians, who provide medical services; and 3) the hospital, which provides inpatient services. Zelten (1979) has described eight models of HMO organization that, in turn, can be aggregated into two groups: those that own their own hospitals and those that contract with community hospitals for inpatient services. Zelten's classification of HMOs ranges from the most highly integrated HMO form, where the HMO owns or controls its hospital facilities and hires physicians on a salaried basis, to the most loosely structured form in which the HMO contracts with community hospitals and with a physician-sponsored entity, the individual practice association (IPA). In addition to the models described by Zelten, two other models are noteworthy: the "Safeco" (United Healthcare) model, in which the HMO establishes a primary care network with each primary care physician responsible for specialty referral, emergency room use, and hospital admissions (Moore, 1979); and proposed hospital capitation experiments, in which an insurance entity or Medicaid agency contracts directly with hospitals to provide care to a defined population on a capitation basis.

HMOs differ not only in terms of organizational structure, but also in terms of their sponsorship. HMOs have been sponsored by universities, large commercial insurers, unions, employers, multispecialty groups, hospitals, consumer groups, municipal agencies, and for-profit management firms. In turn, sponsorship influences the selection of the professional staff and, ultimately, plan performance. For instance, a consumer-run HMO is unlikely to attract or hire physicians whose primary motivation is income maximization. A multispecialty medical group with a tradition of emphasizing high-quality secondary and tertiary care may be ill prepared to provide primary care to HMO subscribers. A university-sponsored plan may attract physicians who give precedence to the educational aspects of diagnosing and treating patients rather than to potential cost implications.

Because of the diversity of plans classified under the label "HMO," an evaluation of HMO performance must identify major variations in plan structure and sponsorship whenever possible. It must be remembered that because every HMO has some unique features, no evaluation can fully identify to what extent the performance of a specific HMO relates to its general characteristics and to what extent to its special features.

# Claims and Evidence on HMO Performance

In evaluating the evidence on HMO experience, four important caveats must be kept in mind. The first stems from the diversity of HMOs. To understand the published findings, one must take each HMO as a unique case. Yet, to be useful for policy makers, results must be generalizable; thus the findings of many studies may have to be lumped together, all but the most obvious differences being ignored.

The second caveat relates to the availability of data. A recently completed comprehensive review of the published evidence on HMO performance indicates that available data vary in depth, breadth, and quality (Luft, 1980c). For example, more than fifty comparisons of hospitalization are available, but for some dimensions of performance only a single study has been published.

The third caveat relates to the source of published findings on HMO performance. By far the bulk of the studies relate to a handful of large, well-established plans. Most of these are hospital-based prepaid group practices and almost all relate to plans developed before the "new wave" of HMOs in the mid to late 1970s.

Finally, there have been no randomized, controlled experiments that involve the assignment of a representative group of people to a wide range of health insurance plans and health maintenance organizations. Therefore, while we can say that costs (or utilization, or satisfaction) are lower in one situation than in another, we cannot really determine whether the differences are attributable to general characteristics of the plans, to unique features of the providers and administrators, or to subtle differences among the people selecting each plan.

# HMO Costs

Health maintenance organizations are intuitively attractive as a means for cost control because they alter the usual economic incentives in medical care and give providers a stake in holding down costs. The evidence supports this theory, particularly when the response to HMO incentives is compared with the prevailing system of extensive third-party reimbursement for providers. In all instances, the total cost of medical care (premium plus out-of-pocket costs) for HMO enrollees is lower than for comparable people with conventional insurance coverage (Luft, 1978a; Wersinger and Sorensen, 1980). The lower costs are clearest for enrollees in prepaid group practices, where total costs range from 10 to 40 percent below costs for conventional insurance enrollees. Although the evidence is scanty, costs for enrollees in individual practice associations appear no lower than for enrollees in conventional plans.

Although there is substantial evidence of lower costs for HMO enrollees, there is little evidence that costs in HMOs are growing less rapidly than in the overall medical care sector (Luft, 1980a). This is not to belittle the importance of a 10-40 percent cost difference, but it suggests that HMOs may not have the solution to the dynamic of escalating medical costs within a predominantly third-party, costreimbursement medical system.

Knowing that costs are lower for HMO enrollees is only the first step. Total costs can be divided into the cost per unit of service and the number of services of each type provided by the system. Differences in total costs, then, theoretically could reflect differences in each of these elements. If lower HMO costs did reflect lower costs per unit, HMO input prices would have to be lower, or HMO production more efficient. Because HMOs generally pay the going rate for the people they hire, and their physicians have earnings comparable to those in fee-for-service practice, attention must be focused on the issue of HMO efficiency, as related to physician productivity, use of auxiliary personnel, administrative services, and duplication of facilities.

The question of whether group practice leads to economies of scale has long been a subject of debate. It is important to recognize that this debate has little to do with the performance of HMOs as a unique organizational form; whatever economies of scale exist should be equally obtainable by both fee-for-service and prepaid medical groups. Unfortunately, measurement of returns to scale is confounded by disagreement on measures of outputs or inputs and the paucity of data available for analysis. Studies of economies of scale have reflected these analytical problems and produced mixed results. Most agree that economies of scale may occur as practice size increases, but that these economies peak at a relatively low scale, between two and five practitioners. Whether productivity per physician remains constant or even declines beyond that point is hard to evaluate. Thus there is no real support for the claim that large prepaid group practices realize substantial economies of scale in ambulatory care (Held and Reinhardt, 1979).

Size has an effect on physician productivity as well as on organizational output. There is a substantial body of theoretical literature that argues that the rewards for efficient practice are inversely related to the size of the group, thereby encouraging reduction in physicians' work effort as the size of their practices rises (Newhouse, 1973; Sloan, 1974). Data problems exist here as well, but the empirical evidence suggests that physician productivity in ambulatory care is higher in small groups than in large groups, whether the financing for the large groups is prepaid or fee-for-service. Thus group size, not the unique financial characteristics of the HMO, appears to be the critical factor in physician productivity. The relation between size and productivity may reflect the attraction of different types of physicians to solo, small group, and large group practices. For instance, physicians in relatively large groups have been found to desire such benefits as longer vacations, more time for educational leave, and reduced patient loads. In one study that did compare fee-for-service groups with prepaid groups, the prepaid physicians were found to spend approximately 11 percent less time seeing patients than their fee-for-service counterparts (Held and Reinhardt, 1979).

Another potential source of increased efficiency is the use of allied health professionals (AHPs) in large group practices. It has been argued that people with special skills (e.g., physicians' assistants, nurse practitioners, orthopedic technicians, and nurse midwives) can provide care at lower costs than physicians. To the extent that there are indivisibilities associated with task delegation, large group practices will be better able to employ AHPs. On the other hand, if the teamwork and role definition implied in the use of AHPs is threatening to the physician staff, efficient use of AHPs cannot be achieved. As pointed out in a Mathematica Policy Research Study (Held and Reinhardt, 1979) the actual delegation of tasks in the prepaid and in fee-for-service groups was quite similar. Effective integration of AHPs into the practice setting may be more directly related to the age of the group than to size or financial structure, with newly developed groups being able to design the work flow from the ground up, rather than having to contend with a modification of existing practice patterns.

Another possible economy relates to enrollment size. For a long time, one of the widely accepted generalizations about HMOs was that 30,000 members were necessary before a plan could break even financially (that is, arrive at a point where revenues equaled expenditures on a current, rather than a cumulative basis). As noted by Zelten (1979), the 30,000 figure was not the result of careful research into HMO operations, but rather the casual acceptance of a frequently quoted figure as to the optimal size for planning group facilities.

Theoretically, an HMO that grows large enough to be able to control or own hospital facilities should be able to achieve greater efficiency, since the most expensive part of medical care occurs in the hospital. On this point data are available only for the largest of plans because, until recently, only the Kaiser plans and Group Health Cooperative of Puget Sound controlled their own hospitals. Data for Kaiser hospitals in California and Oregon, as well as for the Group Health Cooperative of Puget Sound hospital, can be compared with data from a matched sample of hospitals of similar size in the same regions. The data show no consistent differences in cost per patient day, although lengths of stay are shorter, and thus costs per case are lower in the HMO-controlled hospitals (Luft, 1980c). A detailed examination of hospital costs for people in Group Health Cooperative of Puget Sound and those in a comprehensive Blue Cross-Blue Shield plan in Seattle indicates that the hospital costs for the HMO members were about 25 percent lower. Almost all this difference, however, was attributable to lower utilization rates; the unit costs for drugs, X-rays, laboratory and other services were comparable (McCaffree et al., 1976).

Health maintenance organizations also may increase their relative efficiency by avoiding duplication of facilities. It has often been pointed out that community hospitals compete for physicians by purchasing special equipment that may subsequently be underutilized (Lee, 1971; Cohen, 1978; Holoweiko, 1980). HMO-controlled hospitals should not face this problem; Kaiser, for example, appears to centralize its services and to have less duplication of facilities than do conventional hospitals (Luft and Crane, 1980). To summarize the evidence on costs, existing prepaid group practices clearly have been able to provide medical care for their enrollees at costs 10 to 40 percent lower than those in conventional plans. The lower costs do not appear to stem from substantially lower costs per unit of service. Although large systems such as Kaiser do appear to reduce duplication of facilities, there are few real economies of scale. Instead, we must look to differences in the utilization of services to explain observed cost differences.

#### Utilization of Services

In contrast to the relative paucity of data on costs, there is ample evidence on both inpatient and ambulatory care utilization by enrollees in HMOs and in conventional plans. Differences are likely to be concentrated in hospital rather than in ambulatory care. Hospital use is easier to control. The consumer can directly initiate an ambulatory visit, but only a physician can authorize a patient's admission to a hospital. Furthermore, HMOs typically lower financial barriers to ambulatory usage and may attempt to substitute ambulatory for inpatient care.

A review of more than two dozen studies indicates somewhat more ambulatory visits for HMO enrollees, particularly those in individual practice associations, than for patients in the fee-for-service system. Differences are greater for hospitalization. Based on more than fifty observations over a twenty-five-year period, those studies with good data almost unanimously support the claim that enrollees in prepaid group practices have lower hospitalization rates than do people with conventional insurance. The results for individual practice association enrollees are more mixed. Average differences in utilization by enrollees in HMOs and by people who rely on fee-for-service medical care are substantial, with about 30 percent fewer hospital days for enrollees in prepaid group practices, and 20 percent fewer days for enrollees in individual practice associations. HMO enrollees have a somewhat shorter stay than do people in conventional plans, but most of the overall utilization difference stems from lower admission rates.

If we ignore the impact of specific organizational features, there are two primary explanations for these lower admission rates: 1) that HMOs identify and screen out cases that really do not require hospitalization—the discretionary or "unnecessary" cases; and 2) that HMOs achieve a lower hospitalization rate without any apparent discrimination among cases according to obvious "necessity."

The best available data from a broad range of HMOs tend to support the second explanation rather than the first. HMOs do not achieve a disproportionate share of their lower admission rates by "reducing" surgical as opposed to medical cases; instead, admissions seem to be lower across the board. Similarly, although admissions for certain "discretionary procedures," such as hernia repair and hysterectomy, are lower in HMOs than in comparison plans, the figures for discretionary procedures do not appear disproportionately lower than the figures for all surgery. One must immediately point out, however, that the measures of "discretionary" care are very rough approximations that mask the fine distinctions in patient care. It is highly likely that many so-called discretionary" admissions are actually essential, and that many "nondiscretionary" admissions are actually optional.

Recognizing the complexities of evaluating admissions, and assuming a scattering of discretionary cases in all patient categories, we find four possible, but not mutually exclusive, interpretations of the reasons for lower hospital admissions in HMOs: 1) Rather than reducing admissions for broad categories of patients identified as "discretionary," an effective HMO reduces admissions that case management reveals as "discretionary." In other words, a good physician can, if pressed, triage patients on a one-by-one basis and decide who really needs admission and who can be treated on an ambulatory basis. 2) Self-selection among HMO enrollees may result in lower admission rates; that is, better health or greater aversion to hospital admissions among HMO enrollees may contribute to the differential between HMO and fee-for-service (FFS) admission rates. 3) HMOs may provide preventive care that reduces the occurrence of health problems that require hospital admissions. 4) HMOs may undertreat, or traditional providers overtreat, nondiscretionary cases. To test this hypothesis, we must examine quality of care in HMOs.

As pointed out by Blumberg (1980), the preceding discussion tacitly assumes that the fee-for-service sector is the norm against which HMO hospitalization should be compared; if the perspective is reversed, and the higher hospitalization rate by FFS providers is examined, the following explanations appear: 1) Because physicians' fees and other components of hospital care are more completely covered by conventional third parties than are ambulatory services, FFS patients are less sensitive to hospital costs than to prices for office care. 2) Physician services in the hospital result in little practice expense to physicians and hence yield greater net revenue and greater incentive to hospitalize. 3) PGP physicians have little or no personal economic incentive to hospitalize since individual incomes do not depend on the location where care is provided. 4) Since HMO patients have negligible out-of-pocket costs, regardless of where care is provided, their concern may be more in terms of indirect costs (e.g., family convenience).

Returning to our focus on HMOs, however, we can examine in the following sections the available evidence with respect to consumer selection, preventive services, and quality of care.

# Factors Affecting Consumer Selection of an HMO

People are not randomly assigned to health maintenance organizations or to conventional medical care plans. HMO enrollees generally choose HMO membership over other delivery options. The HMO literature about self-selection has been somewhat ambivalent. The theory of consumer preference (often identified in this instance as the "risk-vulnerability hypothesis") argues that people most concerned about the expected costs of medical care will choose the HMO option. In fact, HMOs have been concerned that self-selection on this basis through open enrollment periods will leave them with those people who are sickest. Conversely, it has been argued that low HMO utilization rates prove that HMO members were healthier at the time they chose to enroll. Sociological factors (e.g., attitudes toward illness and medical care) and demographic factors (e.g., age, sex, and marital status) also influence the HMO choice. Some studies have concluded that people who join health maintenance organizations are likely to be older than people with conventional coverage, to be married, and to have young children. But other studies do not indicate any statistically significant differences between HMO members and people with conventional third-party coverage (Berki and Ashcraft, 1980). A second level of analysis compares perceived measures of health status for HMO members and nonmembers. Some studies have indicated no differences in perceptions of health status. Others that have focused on chronic and acute conditions indicate either no differences or

mixed results, with HMO members reporting more of certain types of illnesses and no differences in other measures (Berki and Ashcraft, 1980).

Roghmann and associates (1975) provide data relating more explicitly to the risk-vulnerability hypothesis by examining out-ofpocket medical expenses of people who later chose to stay with conventional coverage or to join various prepaid plans. Although differences in total expenditures were not statistically significant, families who stayed with Blue Cross-Blue Shield (BC-BS) averaged lower total expenditures (\$281) than did those who joined prepaid plans (\$332). Moreover, families who stayed with BC-BS had statistically significant lower expenses for physician, laboratory, and X-ray services. Another study (Roghmann, Sorensen, and Wells, 1980) shows that in the year before the enrollment the hospitalization rate for people who left BC-BS to join the prepaid group practices was only half the rate for people who stayed with BC-BS.

Studies of enrollment choices between HMOs and conventional insurance (dual or multiple choice) indicate that people who have good relationships with their physicians are unlikely to give them up to join a prepaid group practice (Berki et al., 1977). Patients currently under treatment also would not be expected to switch physicians. (This is not an issue if the choice lies between a conventional insurer and an individual practice association that includes those physicians.) People who have no close relationship with a physician, or who perceive substantial financial benefits from the prepaid group practice, are thus the most likely enrollees in HMOs.

What are the advantages an HMO offers individuals already covered by conventional insurance? Conventional coverage offered in dual-choice situations usually includes reasonably comprehensive hospitalization benefits that, with the exception of maternity coverage, are comparable to HMO protection. The major financial advantage of HMOs is their coverage of ambulatory visits. Enrollment in HMOs is therefore most likely among people who anticipate a large number of ambulatory visits.

Differentials in coverage for maternity care appear to affect the choice of an HMO, and, in turn, hospital utilization, although recent changes in federal law mandating maternity coverage may in the future diminish this effect. In the multiple-choice situation in Rochester, New York, Blue Cross-Blue Shield offered only \$155 toward maternity costs that averaged \$850 to \$1,000, while the prepaid plans offered complete coverage. The subsequent general fertility of Blue Cross members was 30.9 births per 1,000 women aged 15 to 44, while the rates in three prepaid plans were 75.1, 81.5, and 148.8 (Wersinger, 1975).

Lower hospital admission rates for HMOs also might reflect members' tendency to disenroll from the plan or to obtain outside care if they seek hospitalization. If the HMO encourages its physicians to avoid hospitalization, then the patient may well seek outside opinions or treatment or, in a dual-choice situation, switch coverage at the next open enrollment period. Theoretically, a relatively small number of "switchers with hospitalization in mind" can have a substantial effect on hospitalization rates. Unfortunately, this phenomenon is difficult to measure, and no evidence is available on its occurrence.

It is crucial to point out that differential selection is likely to be most important when an employed population is first offered a multiple-choice option with prepaid group practices and other plans. Eventually, the people who lacked physician ties and joined the PGP will develop ties to PGP physicians, the young will age and their health will deteriorate. Thus, the selection effect will be reduced over time. Following this logic, the selection effect is likely to be more important in the brand-new Rochester plans than in the Kaiser plans in California, the majority of whose enrollees have been members for quite some time (Blumberg, 1980). Moreover, although we can say that a selection effect occurs in certain circumstances, we do not know whether it accounts for a large or a small fraction of the observed differential in any particular study, let alone know its importance in general.

Self-selection in HMO membership has important consequences for the evaluation of HMO performance. If the lower hospital utilization and associated lower costs of health maintenance organizations are a function of their membership rather than of their structure or financial incentives, then expectations about the effect of HMO expansion may require substantial adjustment. Rather than promoting efficiency in the overall delivery system, increased HMO membership might simply alter the distribution of medical costs. The expansion of dual choice and of HMOs might draw low users of hospital care into HMOs and leave high users in conventional insurance plans. On the other hand, if HMOs attract persons who are high users of some services and lower users of other services, there may be little effect from self-selection.

#### Use of Preventive Services

Studies concerning the provision of preventive services can be divided into two groups that appear to offer contradictory findings (Luft, 1978b). The first group supports the hypothesis that HMO enrollees receive more preventive services than do people with conventional health insurance. The second group suggests that there are no differences in the use of preventive services, or that the HMO enrollees receive even fewer services than do people with conventional coverage. In fact, the two sets of studies are not really in conflict. With a few exceptions, the different results can be explained by focusing not on the distinction between HMO and other forms of coverage, but on the presence or absence of coverage for preventive visits. Such coverage is almost universal with HMOs, but it is rare with conventional insurance. Thus, those studies that involve a comparison between HMO enrollees and people with conventional insurance coverage (the first group above) are actually testing two variables: 1) an HMO health maintenance effect, and 2) the differential financial coverages for preventive care. In the few instances in which the third party covers preventive visits (the second group of studies), the second (insurance) variable is held constant and there appears to be little or no HMO health maintenance effect. Studies comparing HMO enrollees with people having conventional coverage for preventive services typically produce ambiguous results: the HMOs provide more preventive care of some types and less of others. These results may reflect recent skepticism in the medical community concerning the efficacy of many "preventive services," such as tests, screenings, and checkups (Collen et al., 1973; Sagel et al., 1974; Cochrane and Elwood, 1969; Foltz and Kelsev, 1978).

# Quality of Care

Improved health status or outcome is the ultimate objective of medical care. Unfortunately, outcomes are very difficult to measure. Health services researchers, therefore, rely on other measures of medical care quality, such as the presence of "appropriate" resources (structural measures) and the use of "appropriate" procedures for given cases (process measures). There is unfortunately little evidence that structure, process, and outcome measures correlate well with each other or with what people might recognize as "quality" (Brook, 1973a, 1973b; McAuliffe, 1979).

In terms of "structural" measures, the available data generally support the argument that health maintenance organizations have resources at least as good as those of the conventional system. HMOs tend to have higher proportions of more highly trained physicians and are more likely to use accredited hospitals, but there are a number of important exceptions. Some HMOs have not been able to get ready access to the "better" hospitals and others apparently have chosen not to emphasize specialists and accredited, nonprofit facilities.

Finally, group practice is not essential to peer review; physicians in group practice do have the advantage of physical proximity, but individual practice associations and fee-for-service practices allow the development and use of practice profiles for evaluating physicians.

Although HMOs tend to score higher than conventional practitioners when process measures (especially laboratory tests and procedures) are used, this differential appears to reflect comprehensiveness of coverage rather than organizational characteristics. Large prepaid group practices often exhibit higher quality than do average fee-forservice providers, but the quality is not noticeably higher than what large fee-for-service groups provide.

Outcome measures are most important in quality evaluation, but the available studies focus on narrowly defined mortality-morbidity measures or on broad outcomes such as disability days. The early studies of the Health Insurance Plan of Greater New York (HIP) showed lower prematurity and mortality rates for HMO enrollees (Shapiro, Weiner, and Densen, 1958; Shapiro et al., 1960, 1967). Few subsequent studies offer conclusive evidence in any direction. In general, the available data suggest that outcomes in HMOs are much the same as or somewhat better than those in conventional practice.

In sum, although the quality question remains unresolved, there is no evidence that HMOs achieve their utilization and cost savings by offering substantially lower-quality care than the fee-for-service system. In fact, there is some suggestion of higher quality in health maintenance organizations, as shown in the Cunningham and Williamson (1980) review of the literature.

#### **Consumer Satisfaction**

The most important features of HMOs for which evidence on consumer satisfaction is available are access, financial coverage, continuity of care, communication, and perceived quality. Among a broad range of access measures, prepaid group practices offer shorter waiting times, but longer waiting periods to obtain an appointment. The relative value of these two measures of access will vary among individuals. The PGP pattern is probably best for people with routine problems that can be scheduled, such as checkups and periodic visits for chronic conditions. People with "semiurgent" acute problems who can afford the time to wait in the office are more likely to prefer fee-for-service practitioners and the guarantee of eventually seeing their own physicians.

HMO members almost universally express greater satisfaction with the financial coverage provided than do people with other insurance coverage.

HMOs and fee-for-service arrangements also seem to differ with respect to physician-patient relationships (Mechanic, 1976). Prepaid group practices appear to offer less continuity of care when that care is measured by consumer identification with a single physician. But when care is measured in terms of availability of patients' records, a group may be able to provide more continuity of care. However, the role of doctor-patient ties in choice of plan suggests that continuity of provider may be less important for people choosing prepaid groups than are financial incentives.

People enrolled in prepaid group practices seem less happy about their ability to communicate with physicians than do fee-for-service patients or people enrolled in individual practice associations. The general view is that PGP physicians are less willing than individual practitioners to spend time with patients. In turn, physicians in prepaid group practices are reported to be dissatisfied with the degree of communication they have with their patients (Mechanic, 1975).

Another approach to measuring consumer satisfaction relates to the extent to which PGP subscribers continue to use services outside the plans. However, it is not generally known to what extent such services substitute for, rather than supplement, services available within the plans. Between 5 and 20 percent of prepaid group practice members are regular outside users, and a comparable proportion of different members each year use an occasional service outside the plan. Overall, outside use accounts for 7 to 14 percent of all services members receive. If outside use represents dissatisfaction, the extent of outside use is comparable to the proportion of members who when interviewed reported substantial dissatisfaction. To a certain degree, outside use may also be a reflection of duplicate coverage. According to a 1980 Kaiser study, approximately 14 percent of HMO enrollees had duplicate coverage; added to this number are Medicare beneficiaries who retain the ability to seek consultations or treatment outside the HMO system (Blumberg, 1980). Unknown is the percentage of enrollees who primarily seek treatment outside the HMO but look upon HMO benefits as a form of "catastrophic coverage."

The dual-choice arrangements available to most HMO members offer what may be the best single *objective* measure of overall satisfaction. The impressive record of long-term growth in the HMO share within given enrollee groups implies that the levels of dissatisfaction are relatively low and have an insignificant effect on membership. Among every group of new enrollees, a small proportion, perhaps 5 to 10 percent, find that they really do not like the HMO. Others become dissatisfied for one reason or another and leave. These withdrawals, however, are more than offset by new members coming in from conventional plans.

The coexistence of dissatisfaction in face of growing HMO membership reflects the decision-making process in the dual-option setting. In choosing between HMOs and traditional coverage, potential HMO enrollees must weigh various factors, such as financial coverage, premiums, perceived quality, and access. For some people, the benefits of the HMO option outweigh the disadvantages. Hence, HMO members like the short waits and comprehensive coverage, but are dissatisfied with the amount of time it takes to get an appointment, their inability to see their usual physician for urgent visits, and the limited communication and warmth in their patient-physician relationship. However, when offered the opportunity to switch out of the HMO in open enrollment periods, most choose to stay in the HMO.

Evidence on consumer satisfaction, then, like evidence on other elements of HMO experience, is not clear-cut. It seems fair to conclude that HMO costs tend to be lower than fee-for-service costs for broadly comparable populations; that lower costs primarily reflect lower hospital utilization; and that, although we cannot identify the causes of these lower rates, they appear to be neither a product of poor-quality care nor a source of significant consumer dissatisfaction.

#### **Physician Satisfaction**

By tradition and law, physicians are the pivotal element in medical care delivery. HMOs must be able to attract physicians in sufficient number and with suitable training and qualifications to compete effectively with the fee-for-service system. A national sample of pediatricians and general practitioners, in solo, group, and prepaid group practice, has shown that physicians in prepaid practice work shorter hours and earn less (Mechanic, 1975). Most prepaid groups have some form of income-sharing that results in a general leveling of income differences across specialties. Physician dissatisfaction with work overload has been reported in several studies (Freidson, 1973; McElrath, 1961) but national surveys of physicians in general show substantial dissatisfaction with a lack of free time (Owens, 1977, 1978). Some of the dissatisfaction of HMO-based physicians may be attributed to the contractual nature of prepaid systems; whereas fee-for-service physicians can refuse to treat or refer out patients they see as neurotic or overly demanding, all HMO subscribers have the right to receive medical treatment within the system. On the other hand, HMO coverage allows physicians to practice high-quality medical care without having to be concerned about a patient's ability to pay (Cook, 1971; Hetherington, Hopkins and Roemer, 1975).

Physician satisfaction with HMOs can also be measured in terms of the ability of plans to recruit new physicians and to keep turnover to a reasonable level. Whereas prepaid groups had difficulty recruiting physicians in the 1950s and early 1960s because of the opposition of the medical establishment, the situation has now changed and positions are readily filled, with the exception of certain subspecialty areas (e.g., orthopedics, neurosurgery) in which physicians in private practice can command exceptionally high incomes (Saward and Greenlick, 1972; Lum, 1975; Smillie, 1976). Turnover rate for physicians tends to be significantly higher during the first two years of "probationary" employment than it is for more senior PGP physicians who have achieved partnership status. For instance, at the Permanente Medical Group (Northern California Kaiser), the termination rate among employed physicians ranged from 7.7 to 16.2 percent between 1968 and 1975, with an average of 12.0 percent; for partners, the rate ranged from 1.3 to 4.8 percent, with a mean of 2.6 percent, of which twofifths was due to death or disability (Smillie, 1976).

To date, physician satisfaction has been measured largely in terms of the practice setting within well-established prepaid groups. The attitudes of physicians in newly formed groups or IPAs—particularly during the start-up stages—need to be examined, since the incentives, work load, and income base of the new plans may vary significantly from those of the often studied plans such as Kaiser, HIP, and Group Health Cooperative.

#### Meeting the Needs of the Poor, Aged, and Rural Populations

Most HMOs have been designed for the middle and working classes, usually within an urban or suburban environment. In 1979, 4.3 percent of HMO enrollment comprised Medicare subscribers, whereas Medicare enrollees account for roughly 10 percent of the American population (National HMO Census, 1979). This low participation rate is the result of two factors: 1) HMOs can not use the savings resulting from lower hospital use to attract Medicare beneficiaries through better coverage; and 2) complex Medicare reimbursement policies fail to provide an incentive for HMOs to seek out Medicare beneficiaries (Luft et al., 1980; Strumpf, 1979). Basically, HMOs can receive payment from the Health Care Financing Administration either according to a cost-reimbursement system or on a capitation basis. Cost reimbursement produces increased administrative costs for HMOs which, instead of providing a full range of services for a fixed predetermined amount, must keep track of deductibles, of Medicare-covered services, and of the costs associated with each individual service. Annual capitation rates for at-risk HMOs are equal to the adjusted average per capita cost (AAPCC) provided to Medicare beneficiaries who receive fee-for-service care; any savings generated by the HMOs are shared with the government, while deficits must be absorbed or carried forward to be offset against future savings. As a result of these disincentives, by 1978 only one plan had contracted with Medicare on a risk basis (Group Health Cooperative of Puget Sound).

In 1979, discontent with Medicare policy led to various proposals in Congress to restructure HMO reimbursement. Included in the proposals were the following: development of risk contracts that would pay HMOs prospectively at 95 percent of the AAPCC; use of the HMOs' community rate, adjusted for Medicare utilization, for comparison with the AAPCC; and the difference between the AAPCC and the HMOs' community rate, to be returned to Medicare enrollees in the form of reduced premiums and/or expanded service benefits. Several capitation experiments, using the 95 percent formula, are currently being funded by the Health Care Financing Administration, but the results of the experiments are not yet available.

As with the Medicare program, participation by HMOs in the Medicaid program has also been extremely restricted. As of June 1979, 246,268 persons, or approximately 3 percent of all HMO enrollment, were Title XIX (Medicaid) eligibles, whereas they comprised approximately 10 percent of the U.S. population. Originally, when the HMO concept was formulated in the early 1970s, HMOs were seen as a means of improving the health care of the poor while providing an alternative to the open-ended costs of the fee-for-service system. By 1973, some 62 prepaid health plans (PHPs) in twelve different states were providing care to slightly over 200,000 individuals (Strumpf, 1979). Then came a series of scandals associated with the Medicaid program. Medicaid "mills," operating on a fee-for-service basis in large urban centers, such as New York City, were discovered to be delivering shoddy care and to be using fraudulent billing practices. In California, the PHPs were accused of questionable marketing and enrollment procedures, of delivering poor-quality care, of restricting access to medical personnel, and of siphoning funds from nonprofit HMO entities into for-profit subsidiaries (Goldberg, 1976; California Department of Health, 1975; Chavkin and Treseder, 1977). Analyses of the California situation revealed that the problem was not in the concept of prepayment, but in the design and administration of the PHP program within the state government. The California experience, however, led to a major restructuring of Medicaid HMO contracts by Congress. PL 94-460 (1976) specified that prepaid plans thereafter had to meet the standards of federally qualified HMOs (with certain exceptions granted to public agencies and rural facilities) and that private-pay enrollees (non-Medicare and non-Medicaid) had to comprise at least 50 percent of the subscribers within a specified time period.

To date, the number of Medicaid contracts has not increased significantly above the 1973 level. Appropriate incentives do not currently exist for Medicaid enrollees to seek out prepaid plans; conversely, prepaid plans do not have any financial incentives to develop Medicaid contracts. For instance, if an individual Medicaid recipient stavs within the fee-for-service system, he/she is in a position to choose any physician desired (given availability). The HMO represents a narrowing of that choice to those physicians who work within the prepaid system. Moreover, under Medicaid, copayments for ambulatory services are prohibited, thereby eliminating a major financial incentive used by HMOs to attract the middle class. For HMOs, negative factors associated with the signing of a Medicaid contract include the increased costs associated with administration and marketing of the program. high turnover of Medicaid enrollees because of loss of Title XIX eligibility, unrealistic capitation rates, as well as the possibility of increased utilization of medical services by the needy.

Whereas most HMOs do not maintain inner city locations and therefore accessibility may be a problem for Medicaid recipients, in rural areas the problem is even more aggravated. In particular, nonmetropolitan areas with stable or declining populations have the greatest difficulty attracting and retaining physicians (Cotterill and Eisenberg, 1979). For the poor and aged, geographic access is further complicated by financial constraints and by the small number of physicians who accept Medicare and Medicaid patients. Open-panel IPAs have been viewed as one way of implementing prepaid coverage for rural populations; another method calls for networks of primary care physicians, operating in conjunction with HMOs in urban settings. The feasibility of new group practices is more open to question, as researchers have found that physicians seek out areas with a reasonably rapid population growth and relatively rapid access to metropolitan areas (Cotterill and Eisenberg, 1979).

Thus, HMOs have only just begun to deal with the needs of the poor, the aged, and rural populations. In speaking of HMOs, this paper has described prepaid systems largely in terms of the generic definitions, without specifying the organizational variables that can affect performance. For instance, sponsorship of an HMO may influence the decision of an HMO to provide care to the needy or the aged; a consumer-sponsored plan is more likely to place social goals

above financial considerations, whereas a for-profit plan operated by an investor group will have different priorities. Performance of a plan can vary in terms of external or environmental factors, such as the legal and regulatory constraints of state laws and the structure of the local health care market. The internal organization of the plan, in terms of professional staffing ratios, administrative structure, physician reimbursement, risk-sharing arrangements, and availability of stop-loss insurance, ownership of hospitals or negotiation of bed rates, may also affect plan growth and quality of care. Unfortunately, most research about HMOs has examined performance largely in terms of the group/staff versus IPA dichotomy, rather than looking at specific organizational variables. Although some evidence exists on each of these issues, there are few studies available and the material should be considered at best exploratory (Luft, 1980c). From a research perspective, there are several times as many explanatory variables as there are observations. However, the increased awareness among researchers that HMOs differ is beginning to lead to more concern with the factors that explain HMO performance.

#### The Competitive Impact of HMOs

Perhaps the most important potential role for HMOs is in promoting competition within the health care system; by stimulating conventional providers to restructure medical practice and insurance benefits, HMOs function as catalysts for cost containment. Alain Enthoven's (1978) "Consumer Choice Health Plan" is based on this premise, as are a variety of procompetition proposals introduced in Congress, beginning in 1979. Unfortunately, only a handful of studies deal with this crucial problem and the available evidence is mixed (Luft, 1980b).

A 1977 study by the Federal Trade Commission (FTC) argues that the entry of HMOs is responsible for lowering the hospital utilization of people in conventional plans. Goldberg and Greenberg (1977) rest their case on two types of analysis: 1) regressions of hospital utilization by Blue Cross members as a function of HMO market share and other variables; and 2) interviews in various HMO market areas. Unfortunately, the regressions are dominated by four states on the West Coast: California, Washington, Oregon, and Hawaii, all of which have both high HMO market shares and low utilization rates. If these four states are omitted, the negative relation is no longer significant. The interviews indicate clear competitive reactions by Blue Cross of Northern California to Kaiser's growth, beginning in the 1950s, but little supporting evidence in other areas. Also, for the California story, the FTC investigators ignored overall developments in the insurance market (e.g., the split between Blue Cross and Blue Shield and the entrance of commercial insurers); thus, the decline in hospital utilization in California, which appeared during a period of substantial HMO growth, cannot be used as prima facie evidence of an "HMO effect."

Other situations that have been used in support of the competitive model also produce equivocal results. For instance, in Rochester, New York, there has been intense competition between several HMOs and the local Blue Cross/Blue Shield plan. There the inpatient medicalsurgical utilization rate for BC/BS members under 65 years of age was relatively constant from 1974 to 1977 at about 625 days, then dropped precipitously to 547 by mid-1979, a decline much larger than for any other eastern Blue Cross Plan. Blue Cross of Rochester attributes much of this decline to a competitive effect (Finger Lakes Health Systems Agency, 1980). There are a number of alternative explanations, however. First, Rochester has had aggressive health planning since the late 1940s, and traditionally has had a very low ratio of beds per capita. It also has an actively interested group of large employers who are encouraging innovation and cost control. A rather unusual regional budgeting strategy is being implemented (Sorensen and Saward, 1978). Finally, changes in New York State policies toward nursing home reimbursement have made it more difficult to transfer Medicare and Medicaid recipients out of hospitals. Given the tight bed supply, this could force down the BC/BS utilization rate by limiting the number of beds available to those who are not elderly and not poor (Wersinger, 1979).

In Hawaii there is very low hospital utilization in both Kaiser and the Hawaii Medical Service Association (HMSA). Although HMSA is nominally a Blue Shield plan, it exercises rather stringent controls over utilization and thus acts like an IPA or a cost-conscious alternative delivery system (McClure, 1978). But the history of HMSA, beginning with its founding by local social workers, the Hawaii heritage of plantation-provided medical care, and Hawaii's unique ethnic mix suggest that the HMSA behavior may have more to do with its special history than with competition with Kaiser (Bailey, 1971). Christianson

and McClure (1979) offer a detailed description of competition among seven HMOs in Minneapolis-St. Paul. All but one of these HMOs were formed within the past five years, however, and the Christianson-McClure focus is primarily on the behavior of the HMOs, rather than on the long-term responses of conventional providers. An InterStudy report has documented a drop in the rate of increase of total per capita hospital expenditures, presumably because of decreased hospital utilization. Medicare data compiled by the professional standards review organization (PSRO) in the Twin Cities showed a larger drop in hospital admissions for the over-65 population in 1977 (-6.5 percent) than for any other PSRO in the country (Ellwein, 1979). Again, it is difficult to separate out the causes for the decline in hospital utilization. For example, utilization review programs used by the PSRO and the individual hospitals may have had some effect; similarly, pressure from large corporate employers to hold down health-benefit costs also may be important.

To date, "the HMO effect" has been discussed largely in terms of an effect upon hospitalization rates, insurance premium costs, benefit packages, and the pricing of professional and hospital services. Little attention has been devoted to the issue of overall health expenditures. If competition between HMOs and conventional providers does affect overall costs, one might expect this situation to appear in California with its massive Kaiser plans, its competing HMOs, and a documented history of Blue Cross concern. By some standards the mix of medical services bought by Californians may be more efficient than elsewhere, because hospital use is low and physician use is high, but there is no evidence that massive HMO enrollment has resulted in overall cost containment. In fact, per capita medical care expenditures by all Californians and by Medicare beneficiaries in California are among the highest in the nation (Social Security Administration, 1971; Cooper, Worthington, and Piro, 1975).

#### **Policy Questions**

The previous sections of this paper have attempted to describe what is known about the performance of HMOs. Unfortunately, there is a great deal that is not known about HMO performance. The answers to some unanswered questions may be useful to planners, the designers of HMOs, or others, but are not particularly relevant to federal and state policy makers. Examples of such questions are whether HMOs are efficient users of allied health personnel, or whether they adopt medical technology wisely. The answers to other questions, however, may have a direct bearing on policy decisions. This section will outline some of these policy-relevant areas that require further investigation.

#### The Federal HMO Qualification and Monitoring Process

To obtain federal funding for planning, development, and start-up costs, and to qualify for the employer-mandating provisions, health plans must conform to a narrowly defined set of criteria. Some wellestablished plans have either delayed or intentionally not sought federal qualification. Criticism has centered largely around the mandatory open-enrollment period, the specification of the maximum benefit package, and the community rating requirement. Which of these and other features cause the most difficulties for HMOs?

The Office of Health Maintenance Organizations has a policy of restricting the number of loans and grants in each market area so as not to encourage too much competition for plans it has already helped support. At what level does an increase in the number of HMOs begin to pose serious competitive threats to other HMOs? Are there ways to identify among the applicants the strongest potential survivors, so that support is not allocated solely on a first-come, first-served basis? Is it possible to establish a system with competitive renewals, whereby early support for a plan with little likelihood of success will not preclude support for a later, but much more promising plan? Does the entry of for-profit firms, through the purchase of subsidized, not-forprofit HMOs, subvert the intent of the HMO act or strengthen it by resulting in a stronger and more viable HMO presence? What techniques can be used to predict more accurately which markets are ripe for HMO development and which plans are likely to succeed?

What are the advantages and disadvantages of relatively independent state and federal reporting requirements and monitoring? That is, are some state requirements or techniques substantially more useful in validating data and identifying and correcting problems? If so, how might the two systems be better integrated to retain the benefits of each while reducing unnecessary duplication? What types of quality assessment can be implemented effectively and yet offer reasonable protection to the public? What is the impact of an HMO failure on its enrollees and on other HMOs? Should other HMOs in the area be required to accept the former enrollees of the failed HMO? What types of reinsurance should be provided (and by whom) to protect enrollees in the case of a plan's insolvency? What effect does the fear by employers and potential enrollees of plan insolvency have on marketing of new plans?

In some areas, prepaid systems have developed that have certain HMO features (i.e., hospital-sponsored capitation plans or primary care networks) but do not meet all the requirements for HMO qualification. In other areas, plans that fit the federal definition have chosen not to seek federal qualification. Although this precludes federal assistance and use of the employer-mandating provision, such plans can tailor their benefit packages and experience-rate employee groups. What are the implications of this type of competitive setting? Do the federally qualified HMOs "open up the market," only to lose it later to experience-rated plans? Does the wider range of alternatives improve the market for everyone? Should all plans, if state-licensed, be allowed to make use of the mandating process? Are there other incentives that can induce plans to become federally qualified?

#### HMOs and the Health Insurance Market

HMOs compete not only with each other but also, what is more important, with conventional insurers. The federal qualification process and many state regulations impose restrictions on HMOs and other prepaid systems that are not applied to conventional health insurers. What are the implications of this double standard? In particular, how important are experience-rating and the selection of benefits? What is the effect of the increasing similarity of benefits resulting from the expansion of maternity coverage through the Civil Rights Amendments of 1978, and state-mandated coverage for certain problems of mental health and drug abuse? Many conventional carriers are entering the HMO market by establishing new HMOs or purchasing existing plans. From one perspective this is desirable because of the wealth of expertise and financial support they can bring to bear. From another perspective, one might fear anticompetitive behavior designed to protect the carrier's primary business. To what extent should conventional carriers be encouraged in or discouraged from establishing HMOs?

Some current legislative proposals are designed to alter the tax code to make employees more sensitive to the cost of their health insurance and to encourage HMOs. Does the experience of employee groups with multiple-choice options support the notion of rational decisionmaking? How important a problem is enrollment by people to obtain a set of expensive services under high-option coverage one year, who switch to the low-option plan the next? What is the impact of the increasing proportion of people with duplicate health insurance coverage through other family members?

Much of the impetus for changes in the tax law is based on the belief that increased competition between HMOs and the conventional system will lead to cost-containing responses by the latter. As was pointed out, there is some evidence supporting this notion, but there are almost always alternative explanations for each set of findings. Thus, we need to know much more about the competitive effects of HMO development. Furthermore, it is likely that HMOs engender beneficial competitive responses in some settings, little response in others, and perhaps detrimental responses in others. (For instance, the California Prepaid Health Plan scandals poisoned the waters for many legitimate HMOs.) What factors characterize and influence the type of effects HMOs may have?

Much of the HMO discussion envisions separate prepaid group practices, networks of clinics, or small IPAs. What happens when several HMOs contract with the same set of providers? For instance, a fee-for-service group may see conventionally insured patients, be part of a network of groups, and have contractual relationships with several IPAs or carrier-sponsored alternative delivery systems. Are there significant cross-subsidies among patients, and are there conflicts of interest? In another situation, what are the implications of a large IPA that dominates a medical care market and controls costs, in part, by excluding certain physicians or hospitals? How does one balance the efficiency against the antitrust implications?

# Medicare and Medicaid

Most of the recent HMO policies have been focused on improving the HMO option for employed populations. Although a substantial number of Medicare beneficiaries belong to HMOs, most have "aged in"—having been members before retirement. Moreover, with the exception of some experimental programs, Medicare legislation has not allowed capitation payments that are attractive to HMOs. Thus Medicare beneficiaries are treated by HMO providers on what is essentially a fee-for-service arrangement. One current proposal would allow the Health Care Financing Administration (HCFA) to pay HMOs a capitation equal to 95 percent of the average adjusted cost for fee-for-service Medicare beneficiaries in the area. If this were to occur, would HMOs change their style of practice for their current Medicare beneficiaries? How would the beneficiaries react to limits on coverage for outside use? Would new Medicare enrollees be "good" or "bad" risks and what factors might influence such selective enrollment? How well can the capitation payment be adjusted to reflect the differential enrollment of certain types of people? What are the implications of returning savings to enrollees in increased benefits or reduced costs?

For Medicaid beneficiaries the situation is rather different. State agencies have the option of contracting with HMOs and several have done so, with a wide range of success. Several problems occur in linking HMOs and the poor: 1) The intermittent eligibility of many beneficiaries and fluctuating state policies make Medicaid contracts far less desirable than employee groups to most HMOs. 2) Medicaid coverage is usually extensive and allows no copayments, so that the financial savings available to the typical HMO enrollee can not be used as an enrollment incentive. 3) Since the poor are often concentrated geographically, it is difficult for an HMO to enroll a significant number of the poor without becoming a Medicaid-only plan. The solutions to these problems will require substantial experimentation. Perhaps the maximum of 50 percent federally funded enrollees should be waived in certain instances. Can HMO-type plans be designed to meet the health needs of the most severely ill Medicaid beneficiaries with chronic health problems, or who need long-term care? How well do voucher systems work for a poverty population? What types of quality controls and marketing surveillance are feasible and appropriate? What systems can also provide services to the near-poor not covered by employer or union sponsored plans?

# Local Health Planning and Regulation

Health care planning and regulation through health systems agencies, certificate-of-need regulations, and hospital rate-setting are designed

to correct perceived problems with the conventional medical care system. HMOs operate with a markedly different set of incentives and have been exempted from some of these restrictions, such as certificate of need. Has this exemption worked as planned, to allow HMOs to grow and purchase existing facilities? Or is it occasionally used as a loophole to build facilities that are then used or taken over by conventional providers? Does the 50,000 enrollment minimum too severely limit the exemption to selected plans or is it reasonable? What happens to resources in conventional hospitals as HMOs get their own equipment and facilities? Do HMOs use their bargaining power to encourage more efficient performance by contracting hospitals? Or do they use it to extract favorable rates that are then subsidized by other patients?

Posing questions for further research is a relatively easy but quite humbling undertaking, as it points out how little we know. In some instances, the answers can be developed through carefully designed and executed research studies of the existing system. In other areas, one cannot merely look before leaping, one must carry out some experiments to test new organizational forms and to see how people and institutions react under altered incentives. Understanding the structure and operation of the medical care system is a relatively recent phenomenon, with much of the work having taken place in the fifteen years since Medicare and Medicaid. Although policy initiatives will not await firm research findings, policies should be designed with the understanding that they may need to be changed as we learn more about their effects and about how the medical care system responds to a changing environment.

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