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Health Maintenance Organizations

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Health Maintenance Organization;

INTRODUCTION AND BACKGROUND

Health maintenance organizations (HMOS) have been described by their advocates as a “cost-effective” way to provide health care (489). It appears that HMOS do provide care to their enrollees at varied but substantial cost savings: Empirical evidence shows that HMO enrollees pay in the range of 10 to 40 percent less in total costs (premium plus out-of-pocket costs) than conventionally insured comparison groups (373).

Explanations of HMO performance, whether measured by costs, access, quality, or physician or enrollee satisfaction, however, are a hybrid of rhetoric, theory, and evidence. There is very little information available on the details of how HMOS actually function, especially on the analytical tools they use to make internal decisions on how to allocate their resources (295). This chapter presents some preliminary evidence regarding the current and potential use and usefulness of cost-effective analysis/cost-benefit analysis (CEA/CBA) in resource allocation decision-making in HMOs. It does not, however, examine directly the question of the cost effectiveness of HMOs themselves.

HMOs, representing the prepaid segment of the health care market, are both insurers and providers of health care (300). Their revenue comes from cavitation payments, and they are responsible for delivering care to an enrolled population (371). Theoretically, the HMO has a direct economic incentive to provide “cost-effective” care. Because of this, some people have assumed that the HMO might be more receptive than conventional health care delivery settings to the use of CEA/CBA (615).

It is important to note, however, that HMOs exist in a predominantly fee-for-service environ-

ment. Since potential enrollees have a choice of providers, and physicians a choice of practice settings, the HMO must compete for both. Because its financial viability depends on its ability to attract and retain enrollees (as well as physicians), the HMO will be induced to offer benefits and services comparable to those offered by its fee-for-service competitors.

While the distinctive characteristics of the HMO guarantee control of total costs (by virtue of cavitation payments) and promote efficiency (by virtue of the HMO’s responsibility to deliver appropriate services to an enrolled population within a constrained budget), there is nothing to require the HMO to be any more or less concerned with the effectiveness and benefits of a service than are providers in other health care delivery settings: Rather, the benefits side of the CEA/CBA problem is largely accepted as being defined by the norms of “good medical practice” that prevail in the marketplace. The expectations of HMO enrollees and physicians tend to diminish the importance of resource allocation questions pertaining to whether or not a benefit or service should be offered.

In general, the HMO plan bears primary responsibility for the financial viability of the HMO (in a management or administrative sense). The plan faces explicit resource allocation decisions upon which economic incentives and financial constraints directly bear. Whether or not physicians are sensitive or responsive to these incentives and constraints in making their implicit resource allocation decisions, however, is the subject of considerable debate (152,371, 589,590). Some claim that physicians are unaware of incentives and constraints, and even point to complete coverage as giving them a free hand (372). Yet others assert that physicians in the HMO setting are sensitive to costs (at least on a subliminal level) and that even a decision, for example, to treat bronchitis, or to perform a coronary bypass, specifically involves the aspect of costs (619).

¹This range reflects the differences observed between types of HMOs. Prepaid group practices consistently show the lowest total (premium plus out-of-pocket costs), though there is much variation among them; individual practice associations show among the highest costs (372).

In fact, the available evidence shows that almost all of the observed cost savings in HMOs are attributable to lower rates (by 30 percent) of hospitalization for HMO enrollees (373). Decisions concerning the need for hospitalization of HMO enrollees are primarily made at the discretion of attending physicians. It is true that the resource allocation decisions made at the administrative level will define the parameters of decisions faced by HMO physicians. Apart from direct and indirect controls imposed by the plan of the HMO, however, there is little consensus on any one explanation of why HMO physicians should exhibit this apparent "cost consciousness." HMO physicians, trained no differently than physicians practicing in the fee-for-service environment, bring with them habits and values acquired in medical school or in some other prior practice setting (300). Theoretically, there is no reason to expect that HMO physicians would be any more likely than their fee-for-service counterparts to explicitly consider the aspect of cost, or beyond that, to consider cost concomitantly with the effectiveness of a service.

If anything, the HMO physician can be expected to allocate the available resources to a given medical problem foremostly on the basis of effectiveness and/or efficacy, differing in this respect from the plan, which will be motivated to allocate resources in significant part on the basis of costs, i.e., efficiency. No further attempt will be made in this chapter to investigate

the use and/or usefulness of CEA/CBA in the decisionmaking of HMO physicians,

The preliminary evidence and conclusions that are presented in the discussion that follows pertain largely to the resource allocation decisions made at the organizational, i.e., administrative, level of the HMO plan. The evidence discussed in this chapter should be regarded as tentative because of the great diversity in types of HMOs and the small number of HMOs from which the evidence was gleaned. The influences assumed to determine the resource allocation questions relevant to the HMO theoretically derive from "generic" characteristics of HMOs that distinguish them from other health care providers. It is important to note, however, that there is probably no such thing as a "typical" HMO. There is a tendency (in the rhetoric and limited literature available on HMOs) to juxtapose HMOs against "other providers," but this has masked important differences among HMOs (295).

The findings presented here do seem to substantiate the preliminary conclusion that formal CEA/CBA, except in its "net cost analysis" forms, is not used to any significant degree in decisionmaking in HMOs. In large part, the evidence is based on: 1) actual resource allocation decisions recently made in a handful of HMOs around the country, 2) the analytic techniques those HMOs used, and 3) the role that analysis played in those particular decisions.

LEGISLATIVE HISTORY AND FEDERAL SUPPORT

HMOs have occupied a prominent position in Federal health policies during the last decade. They have been promoted as one strategy for controlling health care costs and encouraging a more rational allocation of resources to health care needs (295).² Much of HMOs' original and

sustaining appeal derives from the fact that these organizations have been viewed as a more desirable alternative than Federal regulation for achieving those objectives (95).

The term "health maintenance organization" was the brainchild of the Federal HMO initia-

²In 1979, the Office of Health Maintenance Organizations (OHMO) contracted for a CBA to examine the economic costs and benefits of continued Federal assistance to new HMO development. That study determined the estimated rate of return (in cost-savings to the community) derived from the Federal HMO development investments. It found that Federal assistance costs are re-

covered in the form of community health care cost savings after 8 years of HMO operation, and projected even more substantial future savings (302). Based on these findings, OHMO has devised a 10-year strategy for focusing Federal funds and support of HMO development in those areas that offer the greatest potential return (489).

tive in the early 1970's,⁹ but the concept of prepaid group practice was born under private sponsorship and developed without Federal assistance before 1970 (372, 489). In 1973, when the original Health Maintenance Organizations Act was legislated (Public Law 93-222), there were 39 prepaid group practices in existence, some of which had been providing care since the late 1920's (489). A few large programs, such as Kaiser Foundation Medical Care Plan (then, as now, the Nation's largest HMO), accounted for the bulk of enrollment,

Based on the performance of these "prototype" HMOs already in operation, advocacy of the HMO approach to health care became a major Federal initiative in 1971 (589). Federal efforts culminated in the enabling legislation for what was to be a 5-year demonstration program. This legislation (Public Law 93-222) provided a congressional mandate and Federal resources to demonstrate the "... extent to which the HMO concept can be transplanted to new environments with new participants putting it into operation." The authority has been extended twice, once in 1976 (Public Law 94-460) and again in 1978 (Public Law 95-559) (489).

Federal legislation provides explicit directives on how an HMO should be organized and operated. According to Federal law, HMOs are required to provide both ambulatory and hospital services. The law recognizes three variations in organization that distinguish three major types of HMOs (discussed below). A stringent and precise definition of the federally qualified HMO mandates a very comprehensive benefits package (including such benefits as mental health, dental, alcohol treatment, and family planning services), sets limits on charges related to utilization (in addition to premiums), and specifies enrollment mechanisms and the extent

of risk sharing (369,640). Of the 212 HMOs in operation as of April 1979, only 99 (47 percent) qualified under this strict Federal definition (489).

Critics of the legislation have viewed it as unfairly restrictive, citing a lack of comparable restrictions in the health insurance industry (372). Still, increasing levels of funding have been authorized during the past decade for the continued Federal support of new and developing HMOs. Approximately 97 (45 percent) of the 212 HMOs operational in April 1979 had received some sort of Federal financial assistance. Of the 99 federally qualified HMOs, 74 (75 percent) have received Federal assistance. The Federal HMO program is responsible for a great deal of growth in prepaid plans over the past decade (489). In June 1979, there were 215 HMOs in the United States with a total enrollment of 8,226,000 persons. The consistent promotion of the HMO program by Congress reflects the opinion that Federal support of HMOs can yield substantial national benefits.

In September 1979, Congress passed amendments (Public Law 96-620) to the Health Planning Act (Public Law 93-641) that effectively exempt HMOs from the certificate-of-need (CON) regulations administered by local health systems agencies (HSAS). The exemption, based on evidence that CON regulations were being used to delay or prevent HMO development (372), reflects congressional support of the broader rationale that HMOs may generate competition among health care providers. As boldly stated by the Office of Health Maintenance Organizations (OHMO) in the Department of Health and Human Services (DHHS) (489):

... HMOs have proven to be a quality, cost-effective, competitive alternative to traditional fee-for-service forms of medical practice ... Both Federal support and substantial private initiative have coalesced over the past several years to generate a new momentum for future HMO growth ... It appears that HMOs are moving into the mainstream of the health delivery system of this country,

⁹Paul Ellwood is credited with coining the term "health maintenance organizations" in 1973 to encompass the prepaid group practices, foundations for medical care (otherwise known as individual practice associations), and other types of prepaid systems of health care delivery (174).

DEFINITIONS

As indicated in the introduction, there is probably no “typical” HMO. That notwithstanding, **however, all** HMOs do share some characteristics that distinguish them from other health care delivery systems.

A “generic” definition identifies a minimum set of common denominators that are distinctive characteristics of HMOs (372).^a One such definition identifies the following as HMOs’ common characteristic(s): “the provision of comprehensive services by a defined set of physicians to a voluntarily enrolled population paying a prospective per capita fee” (95). Luft has recently developed and elaborated on a five-point definition of the “generic” HMO (372). The five criteria he identifies are:

1. The HMO receives a fixed annual (or monthly) premium from enrollees that is independent of their actual use of services.
2. The HMO assumes at least part of the financial risk (or gain).
3. The HMO serves a defined population.
4. The HMO assumes a contractual responsibility to provide services to its enrollees.
5. HMO enrollees are voluntarily enrolled.

Since each of these criteria is subject to being met to a greater or lesser degree, Luft’s definition allows for substantial variation among HMOs that meet these requirements of the “generic” HMO. The extent to which these criteria are met can be used to distinguish between HMOs.

Since the “generic” definition encompasses the two or three major types of HMOs generally

recognized⁵—the prepaid group practice (PGP), including the group and staff models, and the individual practice association (IPA) model—additional criteria are required to distinguish between these types.^b

Two additional criteria that allow the distinction between PGP and IPA types to be made are: 1) how the physicians are paid by the HMO; and 2) whether they provide services to enrollees in the context of an organized group (closed panel), or from a number of independent offices (open panel). In the PGP model, physicians are paid on either a salary or cavitation basis. In contrast, IPA physicians are paid by the HMO on a fee-for-service basis (according to a fee schedule) for service received by HMO enrollees. Enrollees in the IPA model HMO have their choice of physicians from those belonging to the IPA. In practice, the PGP type of HMO clearly predominates: In June 1979, about 63 percent of all HMOs were PGPs, but PGPs served about 84 percent (or 6,942,000) of the over 8 million total HMO enrollees (300). The distinction between group and staff model PGPs is based on differences in the nature of the relationship between the physicians group and the plan. In the group model PGP, the physicians are a distinct legal entity that contracts with the plan of the HMO, whereas in the staff model PGP, the physicians are hired “on the staff” of the HMO.

⁵ A fourth kind of HMO, the network model, is also recognized by some, but is not legally recognized (in the HMO statute) as are the prepaid group and staff models, and the IPA models (640). The Health Insurance Plan of Greater New York is the oldest, largest, and best known of the network models. Though network models are currently fewest in number, the model is gaining popularity, primarily because of its attractiveness to physicians and consumers alike, while maintaining a competitive posture in the community (413).

^b These characteristics are: 1) the method of paying the key decisionmakers, 2) whether physicians are full or part time, 3) the extent of risk sharing, 4) whether the HMO is non- or for-profit, 5) whether the HMO controls its hospital, 6) whether there are economies of scale, and 7) the competitive market environment faced by the HMO (372).

^a This discussion draws heavily from a draft of the forthcoming book by Harold Luft entitled *Dimensions of HMO Performance* (372). OTA wishes to especially acknowledge Dr. Luft for this helpful conceptual definition of HMOs, of which there are (in reality) virtually limitless varieties.

INCENTIVES, CONSTRAINTS, AND IMPERATIVES

There is considerable speculation on the relative influence on resource allocation questions relevant to the HMO of the internal incentives and budget constraints and of the external market environment. These two influences derive from the five distinctive characteristics of the “generic” and major types of HMO. The internal economic incentives and constraints arise from the combined features of *prepayment*, *financial risk*, and *defined population*. The external competitive imperative stems from the feature of *voluntary enrollment*. The *contractual responsibility* of the HMO to provide services has a dual effect, acting in concert with both sets of characteristics to reinforce their respective influences on resource allocation questions relevant to the HMO.

Economic Incentives and Financial Constraints

The key feature of prepayment implies two things for the HMO: 1) that it has a fixed or constrained budget (total revenue being determined by the number of enrollees and the fixed premium rate), and 2) that the premium paid by HMO enrollees is independent of their actual use of services. Thus, the usual financial incentives that exist in fee-for-service practice, in which the net income of the provider is directly related to the services rendered, are reversed. Within the constraint of a fixed payment per member per month, an HMO's net income, to some extent, is related to the number of services provided. Consequently, there is a direct financial incentive to provide services more efficiently, or to provide fewer services (presumably reducing unnecessary or inappropriate services), since this will translate into lower premiums to enrollees or higher profits to the HMO, or both (615).

The economic incentives and financial constraints deriving from prepayment are enforced by the second criterion which says that the HMO assumes at least part of the financial risk

(or gain) in the provision of services. As far as the “generic” HMO is concerned, this feature only implies that some portion of the burden of risk must be borne by the plan and not shifted to a third party through reinsurance.

Within the HMO, however, there are risk-sharing arrangements between the plan and physicians.⁷ The extent of “risk sharing” between these two decisionmaking entities has been tendered as the theoretical explanation of observed differences between the performance of HMOs and that of other forms of health care delivery. But the extent of risk borne by physicians varies considerably among HMOs, and generally but not always, by type of HMO. In the IPA, for example, the plan may act essentially as a third-party insurer: Reimbursed by the plan on a fee-for-service basis (according to a fee schedule) for services rendered to enrollees, the IPA physician (and patient) is often somewhat more insulated than the PGP physician from the financial burden associated with decisions regarding the services actually received.

With respect to hospitalization rates, both IPA and PGP enrollees had considerably lower rates (25 and 35 percent respectively) than conventionally insured comparison groups (373). These observed differences are due to very different kinds of decisions being made in these HMOs. In the case of the IPA, where physicians are often at lower risk for the implicit resource allocation decisions that they make, the plan translates its own economic incentives and financial constraints to physicians by imposing implicit controls on their decisionmaking. Decisions made at an administrative level to implement such mechanisms as preadmission certification and length-of-stay review translate this

⁷There are three functional parts to an HMO, which may even be legally distinct entities: 1) the plan, 2) physicians (already discussed), and 3) the hospital that provides inpatient services (372). Usually, the hospital does not enter into risk-sharing agreements with the HMO.

influence and assure that it will be reflected in decisions made at the provider level.⁸

Several alternative explanations for the lower hospitalization rates of PGP enrollees, and for PGP physician behavior in general, have been tendered and debated (152,590). One longstanding, simple explanation has been the availability of hospital beds, as determined by explicit resource allocation decisions made by the PGP plan (152,590). Such constraints, if rigidly adhered to, could be effective controls. Evidence of impact on physician decisionmaking, however, is minimal (619). Another hypothesis, currently supported by the Group Health Association of America (GHAA) and others, is that the combination of peer pressures, organizational factors, and cavitation motivates physicians to act in accord with professional incentives as well as the constraints of the HMO (590). A third hypothesis is that there may be something “different,” i.e., in attitudes, values, etc., about physicians who choose to practice in an HMO rather than in a more traditional fee-for-service practice setting. Although this explanation is intuitively appealing, virtually nothing is known about the possible effects of “preelection” on physician behavior in the HMO setting (372).⁹

The influence of economic incentives and financial constraints on resource allocation decisions faced by the plan and physicians in the HMO may depend on the risk-sharing arrangements between them. This characteristic varies (generally) by type of HMO, but essentially it is the plan that is responsible for making administrative decisions affecting the financial viability of the organization, while physicians are still primarily responsible for decisions affecting the well-being of HMO enrollees. The influence of physicians, especially heads of services (e.g., a chief of surgery), however, is often substantial.

⁸The fee schedule used to set reimbursement rates for ambulatory services in the IPA is another example of such direct controls imposed on physicians by the plan. Some IPAs have imposed very rigid controls on physicians (187).

⁹There is also a self-selection process suspected for enrollees which is believed to affect choice and disenrollment. Clearly, they see the plan as having some advantage, as witnessed by their tendency to display “voice” (rather than exit) in the face of dissatisfaction with services (372).

In general, theory would have it that the greater the share of risk borne by each of these entities, the greater is the influence of these incentives and constraints on their decisions. With respect to explaining the apparent “cost-conscious” behavior of HMO physicians, this is a tenable, but vigorously contested, hypothesis. With respect to the plan, however, the criterion of risk assures that it is held accountable for meeting the conditions fostered by prepayment: Its impact on administrative resource allocation questions made by the plan is explicit and immediate.

The third criterion of a defined population exerts an influence only insofar as it determines the total revenue available to the HMO, and the nature of the population for whom it must provide services. The defined population of an HMO currently ranges from about 3,000 to 2.5 million enrollees (the latter in five different State regions) (372). Predominant age and sex characteristics of the enrolled population may differ markedly between HMOs. The size and character of the HMO population will directly influence the types of decisions to be made, as well as the administrative structure required to manage the organization. But in any case, at any given point in time, the HMO can project its annual revenue, and enrollees, and therefore estimate the demand for various services. Such foresight facilitates the achievement of technical efficiencies, i.e., the cost per unit of service, and also enables the HMO to make tradeoffs in providing benefits and services that will be appropriate to its particular population.

To summarize, the internal economic incentives and financial constraints faced by the HMO derive from the fact that the HMO plan has finite resources to allocate, is legally responsible for meeting the medical needs of its member population, and is also primarily responsible for maintaining its own fiscal viability. This set of conditions, arising from the distinctive characteristics of prepayment and risk, guarantees that the HMO will be “cost conscious.” But the internal economic incentives and financial constraints do not necessarily require that the HMO be any more (or less) concerned with efficacy, or effectiveness, of a ben-

enefit or service in allocating its resources than any other health care delivery setting is,

The Competitive Imperative

This influence derives chiefly from the characteristic of voluntary enrollment, which implies that prospective enrollees have a choice between alternative health care providers (and insurers), and that they have the option to disenroll, as well as to enroll, in the HMO (372). The HMO, existing in a predominantly fee-for-service environment, must compete for its enrollees: Its financial viability depends on its ability to generate revenue through enrollment, and consequently, on its ability to attract enrollees.

The HMO may compete on the basis of cost, as well as the range and quality of benefits and services it can offer. In this regard, HMOs have a competitive “edge” in the health care market, by virtue of their generally much lower out-of-pocket costs. Competition can reintroduce the concern (by consumers) for cost (300). In the situation where HMOs compete against one another, the limited data available suggest that relatively small differences in premiums can attract enrollees (372). But when premium rates are comparable, the question becomes one of offering the most (and/or best) services for the least money (95).

The ultimate question for the HMO is what impact any change in the services and benefits offered will have on the plan premium. Theoretically, the use of “cost-effective” techniques in the development of a comparably attractive, yet low-cost, product would seem to be essential to attract and retain customers in a competitive market. At the least, the competitive imperative does not negate the potential for viewing resource allocation decisions in the HMO as CEA/CBA problems.

Ultimately, however, the competitive imperative means that the HMO must meet the expectations of enrollees regarding benefits and services, expectations that are dictated largely by the norms of practice established by the predominating fee-for-service mode of health care delivery. The leverage of enrollees to demand these services stems from their option to disen-

roll.¹¹ The competitive imperative implies that simply because competing providers are offering a service, and doing so in a certain manner, the HMO will be induced to provide it also, and in a similar fashion. The fact that HMOs must also compete in the marketplace for physicians reinforces this tendency: HMOs will seek to provide opportunities for medical practice comparable to those offered in the fee-for-service setting in order to attract and retain physicians. This situation will change as the number of HMOs increases and they are forced to compete among each other as well as with fee-for-service care.

The fact that HMOs must compete for both enrollees and physicians means that the HMO will try to provide benefits and services similar to those available from other insurers and providers—but within its financial limits. The HMO’s overall strategy in making resource allocation decisions will be to maintain or improve its competitive position. This implies that any possible efficiencies achieved in providing services, reductions made in the number and/or range of services, and/or tradeoffs made in alternative ways of offering services that might be induced by the internal economic incentives and financial constraints will be subject to the condition that the HMO remain an attractive, competitive alternative.

Thus, given both a competitive imperative and inherent economic incentives and financial constraints, the two questions most commonly of immediate concern to the HMO are: 1) how to allocate its limited resources to provide the given benefits and services in the most efficient manner possible, and/or 2) how to reduce inappropriate services and benefits (in volume and frequency) without a perceptible loss in quality (373),

Evidence appears to indicate that the cost savings of HMOs are due to changes in the mix and number of services provided. Overall, ambulatory services received by HMO enrollees are no

¹¹There is a considerable literature regarding what is essentially a cost-benefit decision made by consumers to join or opt out of an HMO: “. . . they face the question of whether the benefits they are receiving are worth the premiums they are paying” (159).

different from those received by persons covered under conventional insurance. ¹¹ (Among other things, this reflects the imperative of the HMO to meet the consumer's demand for ambulatory services.) Rather, as previously indicated, almost all of the cost savings can be directly attributed to the lower (by 30 percent overall) hospital admission rates for HMO enrollees (373).

Similarly, empirical data suggest that persons conventionally insured with full coverage for preventive ambulatory visits receive at least as many, if not more, preventive services than HMO enrollees (374). In contrast to the ideology implied in the name "health maintenance organization," the apparent greater use of preventive services in HMOs appears to be attributable to better financial coverage, i.e., the result of lower costs of ambulatory visits faced by enrollees (374).

Because of its financial incentives and constraints, the HMO (by and large) tends to deliver a "conservative" brand of medical care. This implies that where the cost of a preventive service exceeds that of treatment, and efficacy is unclear, the HMO tends not to provide that service, or to provide less of it (374). With respect to preventive services that are of questionable efficacy, it will tightly ration the resources required to provide them. For example, the Northern California Kaiser Foundation Health Plan shifted its stance on health examinations in 1976 by advocating a triannual rather than an annual physical checkup for individuals under a certain age.

Thus, in allocating resources in the HMO, the rationing of preventive services appears to be one of the principal questions where the potential benefits (i. e., efficacy) of a service are considered in relation to costs, and to which formal CEA/CBA has most often been applied. That HMOs should show concern for the efficacy and

effectiveness of preventive (rather than surgical, for instance) services in relation to costs maybe interpreted as another reflection of their adherence to the status quo. More specifically however, it is the low "market medical benefit" of preventive services that allows and encourages questions regarding their efficacy.

In summary, the limited empirical evidence available regarding HMOs suggests that the pertinent resource allocation questions and decisions are foremostly influenced by the competitive imperative, but are also ultimately subject to the inherent economic incentives and financial constraints in the HMO.

With the exception of preventive (usually secondary) services, the rationing of resources in the HMO at an administrative level generally does not include the explicit consideration of efficacy relative to costs, or of whether or not a benefit or service should be offered on that basis. Instead, the competitive imperative introduces the consideration of a "market medical benefit," or the qualitative attribute(s) of a benefit or service that will attract and retain physicians and enrollees in the marketplace. While these are not societal benefits, they are assumed to have some health benefit (619). For HMOs, these benefits are largely prescribed by competitors in the marketplace: Within HMOs, they are rationed in terms of how and/or how much to provide (rather than whether to provide them).

By and large, the resource allocation questions pertinent to this task are concerned with achieving technical efficiencies and/or volume and frequency processes. These are questions generally addressed by CEA/CBAs, though not by those that take health effects into explicit account. The concurrent appreciation and consideration of benefits and costs in HMOs may be regarded as implicit "net cost" CEA/CBA, and possibly help lead to the "cost-effective" behavior of the organization. The remaining discussion in this chapter supports these conclusions with evidence regarding the use and potential usefulness of CEA/CBA in HMO resource allocation decisionmaking.

¹¹There is considerable variation, however, in ambulatory visit rates by type of HMO. IPA model HMOs have a rate almost 20 percent higher than that of conventionally insured persons; PGP model HMOs have slightly varying rates that even out to be only negligibly different from the rate for conventional groups.

SURVEY OF HMOs

Given the limited scope of this investigation, and the tremendous diversity possible in organizations characterized as HMOs, the HMOs included in this small survey do not begin to approximate a representative sample. The HMOs surveyed here were identified with the assistance of several individuals who, on the basis of their personal knowledge and experience with them, suggested various organizations that they thought might be most likely to be able to respond.

The final selection of 11 HMOs was based on whether each HMO had recently made some important resource allocation decision, since this decision was to provide the initial basis of discussion during the interview. Table 5 indicates the HMOs interviewed, specifying for each the following traits: 1) type of HMO, i.e., staff or group model PGP, or IPA; 2) age, i.e., the length of time in operation; and 3) size, i.e., the number of enrollees. These variables were recognized as potentially important influences on findings. In the small survey sample, however, it was not thought worthwhile to try to select HMOs according to these traits.

Only one or two individuals were interviewed at each HMO, except at Kaiser, where several individuals in research offices were interviewed.¹² Consequently, some of the individuals interviewed were analysts, some were administrators, and some were physicians. But some individuals acted in two or even all three roles.¹³

There is reason to be skeptical about the generalizability of findings regarding the usefulness of CEA/CBA in these few HMOs. Because the HMOs and individuals interviewed were selected on the basis of informed (and candid, if not objective) opinions as to their ability to re-

¹²Special assistance in selecting HMOs and the individuals in them was given by Mildred Arrill of OHMO. The suggestions of Frank Seubold, Harold Luft, Martha Kendrick, Jane Willems, and Morris Collen were also helpful in singling out the several organizations and persons surveyed here.

¹³In addition to the individuals interviewed in HMOs, almost as many persons from OHMO, trade organizations, and scholars of HMOs were interviewed. Many of the comments were useful in both anticipating the findings and drawing conclusions based on them. The comments of these individuals are referenced throughout the discussion. Referenced individuals are listed in the bibliography.

Table 5.—HMOs Surveyed: By Type, Age, and Size

Name of HMO and location	Type	Age	Size (# enrollees)
1. Capital Area (Albany) Community Health Plan Latham, N.Y.	Staff PGP	3 years	27,000
2. Arizona Health Plan Phoenix, Ariz.	Group PGP	8 years	66,000
3. Group Health Cooperative of Puget Sound Seattle, Wash.	Staff PGP	33 years	270,000
4. Harvard Community Health Plan Boston, Mass.	Staff PGP	11 years	85,000
5. HMO of Pennsylvania Willow Grove, Pa.	IPA	5 years	42,000
6-8. Kaiser Foundation Medical Care Plan ^a	Group PGP	47 years	
Northern California Region, San Jose, Calif.			1,637,050
Southern California Region, San Diego, Calif.			1,554,500
Oregon Region, Portland, Oreg.			231,743
9. Northern Community Health Plan Glenview, Ill.	Group PGP	5 years	23,000
10. Rhode Island Group Health Association Providence, R.I.	Group PGP	8 years	30,000
11. Rutgers Community Health Plan New Brunswick, N.J.	Staff PGP	4 years	38,000

^aIn addition to individuals at these three HMOs, individuals at the Kaiser Permanente Medical Care Program research facility and the Kaiser Foundation Health Services Research Center were also interviewed.

SOURCE: Office of Technology Assessment.

spend to the inquiry, however, these findings may represent an estimate of the maximum potential for the use and usefulness of CEA/CBA

in HMOs. Thus, although these findings should be regarded as very preliminary, they are not without significance.

GENERAL FINDINGS

As previously mentioned, the discussions with individuals in the HMOs centered on some specific recent resource allocation decision, and whether or not CEA/CBA was used, or would have been a useful analytical technique in the decisionmaking process. The resource allocation questions, analytical techniques used, and their role in the decisionmaking process were ascertained. To ascertain the type of analysis used, a brief technical description was obtained. Inquiry regarding the usefulness of analysis was concerned with determining the decisiveness of its impact on the final decision; its effect of a political, ethical, economic, or other nature; and its contribution to the decision made as viewed by the various parties affected. Each of these three topics—resource allocation questions, analysis used, and the usefulness of the analysis—are discussed below with respect to both the current and potential appropriateness of CEA/CBA in HMO decisionmaking. In addition, the extent to which HMOs have institutionalized the resource allocation process is discussed. Finally, the current and potential applicability of CEA/CBA to decisionmaking in OHMO, and to the HMO statutes that it administers, is discussed.

Current Applicability of CEA/CBA in HMOs

Resource Allocation Questions

A wide range of resource allocation questions were reported in the surveyed HMOs. Most frequently, HMOs were engaged in a simple “make or buy,” “lease or purchase” type of decision. The question was not so much whether to do something at all, but whether something was less costly to do “in” or “out” of the HMO. The most commonly cited example of such a decision was made with respect to the addition of physician staff, usually a specialist (i. e.,

whether to contract with a physician in the community, or to hire another physician on staff of the HMO). Other examples of “lease or buy” types of decisions were made with respect to obtaining: 1) improved transcription (of medical records) services; 2) diagnostic ultrasound equipment; and 3) new physical facilities. The “make or buy” decisions arise because of the capital expenditure issue associated with them, but more importantly, they arise from the imperative exemplified in these statements:

Every time a new technology comes into medical practice, we groan because we have to find some way of getting it . . . (527);

If the “Docs” come to us and say they want to do open heart surgery, the question we face is not whether, but how we can do it (369); and

We are conservative, practicing “spartan” medicine, (and) perceived of as “tightwads,” but we are also constrained to go along with what is practiced in the medical community . . . If someone introduces something new, then we have no choice but to get it or do it somehow (619).

A common resource allocation question in the HMO, therefore, is “How can we provide what is demanded?”

Other resource allocation decisions reported in the HMOs, however, tended to be more concerned with whether or not a particular service should or could be provided. Some of these decisions were whether to: 1) implement the COSTAR (medical information) system rather than some alternative systems, 2) install a centralized v. a decentralized automated reception system, 3) cease doing intestinal bypass surgery on obese patients, 4) implement a health education program (2 cases), and 5) offer biofeedback as a palliative care measure.

Even in the case of the two-option “make or buy” type of decision, where the benefits or ef-

fects are generally accepted as being similar, the concern is not solely for efficiency. "Relative to just saving money, there is (at least) the assumption that what's being done is of benefit . . .," either to the organization (in the case of administrative decisions), or to enrollees (in the case of medical services); the benefit is assumed (619). Often, questions about benefits were identified on the basis of patient or physician dissatisfaction with current practices and the desire for improved quality rather than a less expensive way of providing the service.

In the case of questions involving the aspect of whether to provide a service, however, the relative benefits and effects of various alternatives were explicitly compared, as in the case of COSTAR and the automated reception system decisions. In the case of one of the health education programs, the decision involved evaluating the efficacy associated with these services. In particular, planners were specifically asked to measure the health benefits, i.e., how is this service going to improve health? In order to answer the question of "should we spend those dollars?" the health benefits (and to whom they pertained) had to be proven. In the case of bio-feedback, a clinical trial of that technique was being undertaken to ascertain whether it should be made available.

In all questions, the associated parameters were limited by the rigorous constraints of time and money. Consequently, much of the resource allocation process in HMOs could be characterized as "problem-solving," in which problems were often identified by those closest to them. For example, at an administrative level, there is a great deal of monitoring—of hospital admissions and length of stay, referral patterns among physicians, and so on. In the case of intestinal bypass surgery, the problem was flagged by the observation that "too many" complications were developing in postsurgical obese patients. In the case of the health education program, it was noted that the HMO was losing its "healthier" enrollees, because "sicker" enrollees impeded their access to HMO services. In that case, it was thought that a health education program might increase enrollees' satisfaction and thus help retain the "healthier" ones.

Another "problem solving" example is found in the implementation of a health appraisal system. In that case, the problem was recognized, analyzed, and resolved by the physician in charge within the medical department. The physician in charge faced a huge backlog of initial physical examinations due to recent rapid expansion of the HMO and limited physician manpower. On the basis of previous research and principles of multiphasic health testing (106), he devised a "linear system" for "batching" intake examinations and freed physician time by substituting other health personnel insofar as possible.

Thus, much of the resource allocation occurring in HMOs may be characterized as incremental decisionmaking where the parameters are subject to the constraints of cost and timeliness of a solution given the existing situation and possibilities: The number of available options is usually very small. Even at an administrative level, there are few "strategic" resource allocation questions. There appears to be very little "zero-based" decisionmaking in HMOs. The HMO rarely faces the question of whether to decentralize or centralize (e. g., to have two or six physical facilities). Instead, it is faced with the question of where to build the next facility.

At an administrative level, HMOs are simply trying to be more efficient, an objective which is not so different from that of other organizational entities delivering health care (369). "Cost effectiveness," however, is viewed as being an integral consideration in the decisionmaking process at all times. An interviewee's perception of whether the resource allocation questions addressed by HMOs were questions of cost effectiveness depended greatly on whether the individual was familiar with the formal technique of CEA/CBA or instead had a more "lay" sense of the meaning of "cost effectiveness" (such as that exemplified in the statement "we must be cost effective"). In the former case, the resource allocation questions were generally not viewed as being amenable to sophisticated, health-effects-oriented CEA/CBA, but in the latter case, they were viewed as problems of cost effectiveness.

Analyses Used

Generally speaking, formal CEA/CBA beyond “net cost” analysis was not found to be used by HMOs. This does not imply, however, that benefits were not integrated into their analyses. It was recognized that it is possible to be efficient without being effective. A common perception was that in considering every major decision, there would be an evaluation as to whether the service would be “worthwhile.” The criteria of both cost and quality were included in making this determination: The first question was often, “how will this affect the quality of service?” and the second, “what is the impact on the cost per member per month?” Analyses, therefore, involved the evaluation of both costs and benefits: Analyses were characterized by the objective of ascertaining the financial impact of a given (or multiple) option(s), but the idea of quality loomed over all considerations.

Two examples illustrate this generalization regarding analyses used in HMO decisionmaking. The example of whether to lease or purchase ultrasound equipment illustrates that benefits were also taken into consideration in the costing out of options, and that the question of medical efficacy of diagnostic ultrasound also arose in considering those benefits. Questions surrounding this “cost” analysis included not only what the costs of the lease option would be, but also whether the equipment could be put to other uses (besides obstetrics) in the HMO. This question involved ascertaining whether ultrasound diagnostics could replace other diagnostic tests, for example, CT scans in some cases, and the costing out of such “replacement” effects. Radiologists and internists in the HMO were questioned on the potential benefits of these other uses of ultrasound. These physicians concluded that the use of ultrasound in these capacities would still have to be backed up by other diagnostic tests. Consequently, the decision was made that it was not “worthwhile enough” to purchase the equipment at that time, and the lease option was chosen.

The second example of the level of detail attained in evaluating the costs and benefits associated with a particular decision is the case of

the COSTAR medical information system. Although, it was clear from the outset that the COSTAR system would probably be a more expensive option, it was also recognized that it could provide a completely different level of service in the HMO. An extremely detailed analysis of per dollar-impact over the course of several years was conducted. Part of this analysis involved estimating how far into the future the various options would work and included such factors as the rate of growth (of the HMO) and the future addition of a (third and fourth) medical center. Qualitative aspects of “after hours” accessibility and the continuity of care were also crucial factors. Even potential problems of future energy shortages and how they could affect an automated recordkeeping system were considered. Though in the long run, a projected yearly cost difference of \$20,000 to \$40,000 more for COSTAR v. other systems was estimated, COSTAR was chosen on the basis of its clear-cut superiority, i.e., its “different” level of service.

A wide range of analytical expertise and resources was found to be applied to the resource allocation questions in different HMOs. Practicing physicians, economists, operations researchers, and accountants in various administrative and/or research capacities were found to be “analysts.” Even in small HMOs, where the organization is run very “lean” and there are few spare resources to devote to analyses used in decisionmaking, analyses were being conducted and were generally more sensitive to the costs and benefits of various decisions than might have been expected. Where resources allowed, as in the case of a health education program, methodological expertise was sought to deal with the question of determining the associated health benefits. Only the very largest HMO was found to have conducted a formal CEA/CBA “in-house” (and this with some Federal support). By and large, the “in-house” efforts and resources applied in pursuit of these questions were a function of the size, age, and financial situation of the particular HMO. Though HMOs were generally thought of as being “too small” to do CEA/CBAs, it is clear that none of the HMOs in this limited survey were too small to conduct analyses that were respon-

sive to the perceived information needs of the problem at hand.

The analyses themselves ranged from “back-of-the-envelope” to rigorous fiscal analyses. The consensus opinion was that most resource allocation questions relevant to the HMO did not require formal, sophisticated CEA/CBA to ascertain a satisfactory answer because the parameters of the decisions were relatively narrow. In the case of developing and implementing a health appraisal system, the physician in charge did a “back-of-the-envelope cost analysis,” in the belief that if cost savings (in terms of substitution of physician for other medical manpower) were not evident at that crude level, they would probably not show themselves in a more detailed version of analysis.

It was commonly appreciated that there was never enough time (or money) to do all the analysis one might wish, and that decisions had to be, and ultimately are, made on the basis of the information at hand at the time the decision is made. Concomitantly, however, there was an overall confidence in HMO staff’s comprehension of the scope of most resource allocation questions and in the extent and depth of information required to get an answer that was satisfactory, if not absolutely optimal.

The OTA survey examined whether the HMOs borrowed CEA/CBA information from external sources if the HMO’s own resources were not sufficient to produce such information internally. The HMOs reportedly consulted the medical CEA/CBA literature, but relatively infrequently used it as a basis for decisions. The decisions in which it was used as a basis (all made by a single HMO) included the elimination of routine chest X-rays, modification of adult physical examinations and pediatric prevention schedules, and indications for CT scans. In other cases, including electronic fetal monitoring (EFM) and coronary bypass surgery for angina, the literature was also considered, but was regarded as too equivocal to be used as the basis of deciding to withhold these services,

Thus, while being “cost effective” was viewed as essential, the rigorous forms of CEA/CBA were seen as being largely irrelevant in these

HMOs. Rigorous CEA/CBA studies, among the HMOs surveyed, were found to be very rarely required by resource allocation questions, even more rarely conducted, and only infrequently borrowed and applied.

Role in Decisionmaking

A general consensus on the role of analysis in the resource allocation decisions found in this survey is summarized by the following statement: “The analyses are critical, . . . (we) couldn’t make the decisions without them, but the analyses do not make the decisions . . .” (330). Thus, analyses were widely appreciated as an integral part of the decisionmaking process in HMOs, even though that process is still perceived as an essentially political one. Important functions of these analyses were the following: 1) to define the parameters of the decision at hand, 2) to clarify the impacts of various options, and 3) to serve as a basis for the discussion of issues associated with a particular decision.

These generalizations are exemplified in the case of COSTAR. The main impact of that analysis was said to be that it was “. . . the basis for bringing all the issues forward in a political power struggle . . .” (568).

The aforementioned observations suggest several conclusions regarding the usefulness of analyses in the decisionmaking process. First, they indicate that when introduced into the “political” decisionmaking environment, any “objective” analysis will come under harsh scrutiny by those representing the opposing viewpoint. They also suggest the constraints of time and resources within which analysts and HMO managers and other decisionmakers must operate, i.e., how few options present themselves, and how many fewer still may be analyzed and considered. They also suggest that among these alternatives, the option about which analysts and decisionmakers may have the most information, or with which they are most familiar, may have a greater likelihood of being chosen: The decision made will often be the one where the most detailed information is available. While this may not be the “best” or optimal choice, it is a rational one.

Many of the cost analyses might technically be termed “net cost” analyses, in one sense an extreme of CEA/CBA. Yet when these analyses were incorporated into the decisionmaking process, decisionmakers became extremely sensitive to the aspects of quality and benefits: Though it was not considered to be the most “cost-effective” option, i.e., in the sense of least cost, the COSTAR option was chosen anyway on the basis of its clearly superior capabilities (as well as power politics).

The COSTAR example illustrates that perhaps the first reason to chose a particular option is so-called “program effectiveness.” At a subliminal level, it is physician and enrollee satisfaction which is the benefit of foremost concern. There is great hesitance to do anything that does not have readily discernible benefit, and anything without an immediately perceived value (however defined) will probably not be done at all.

We have a long history of taking care of the medical needs of people. It is very difficult to justify withholding something on the basis of analyses in general, and on the criterion of costs in particular . . . What people want is what is important . . . (527)

Institutionalization of Decisionmaking Processes

The degree to which resource allocation decisionmaking and the analyses were formalized, or institutionalized, is (to some extent) a function of the size and financial situation of the HMO, and consequently, of the administrative structure required to manage it. The majority of examples of resource allocation decisions discussed so far may be characterized as “problem solving,” where those individuals closest to the problem have identified and possibly even analyzed and resolved the problem. In general, these persons were not “handed” solutions (i.e., resource allocation decisions) by managers from higher echelons of the administrative hierarchy. Such “problem solving” was critical to the efficient allocation of resources within particular HMOs, and is a standard, ongoing feature, even if it is not a formalized procedure.

Institutionalized, formal analysis for resource allocation decisionmaking was the rare exception which proved this rule. The decisionmaking process meeting these criteria that was most often cited was the “budgetary process.” It was often perceived that CEA/CBA takes its most explicit form in the HMO in the annual budget-setting process. In HMOs, both large and small, the budgetary process involved projecting the annual revenue (based on forecasts of membership), and estimating the budget (based on estimates of demand for services by that population).

In two of the largest and oldest HMOs, Kaiser Foundation Medical Care Program (KFMCP) and Group Health Cooperative of Puget Sound (GHC), examples of very rigorous, institutionalized procedures for allocating resources were found. Without delving into the complex organizational and administrative structure of Kaiser, it is sufficient to say that: 1) there is an overall vertical hierarchy within both the overall organization and in each of the five regions, and 2) that the program has established considerable (relative to any other HMO) research capabilities and “in-house” analytical expertise. In both the KFMCP Central Office and in the Southern California Regional Office, there are what are called “benefit-cost offices.” These offices essentially perform financial impact analyses, i.e., they examine the impact of a proposed change in resource allocation on the cost per member per month. According to the director of one of them: “. . . We do not do cost-benefit analysis here—at least like they are done in academic or government institutions . . . where the bottom line is life-years saved, or some other society-based measure . . .” (527). Analysis of both costs and benefits is based on the internal economics of KFMCP. Thus, Kaiser does appear to conduct some “program-perspective” CEA/CBAs.

At least in the Northern California Office, requests for analyses are approached in a standardized fashion, with preprinted worksheets being used to evaluate various proposed changes. Discounting (usually at the rate of 10 percent) and sensitivity analysis are a standard part of the evaluation. The analyses typically examine

outcome measures such as total net benefit and internal rate of return on investment, as well as a cost-benefit ratio. They are key planning tools in daily use at Kaiser, and results are regarded as proprietary information. Both the performance and use of these analytical tools have been incorporated in the organizational structure and administrative processes of KFMCP.

Two other examples of the institutionalization of research capabilities and analytical expertise in Kaiser are found in: 1) the Division of Technology Assessment in Oakland, Calif.;¹⁴ and 2) the Health Services Research Center of the Bess Kaiser Foundation in Portland, Oreg. At the former, the assessment of the efficacy of biofeedback as a palliative care measure for various conditions is an example of the research conducted in the relatively new analytical entity. This research will be one input, along with . . . organizational impact, long-term cost considerations, and patient satisfaction, as well as other alternative measures . . . in making the decision of whether or not to include biofeedback as a benefit (300).

The Health Services Research Center has published several studies on the “cost effectiveness” of the substitution of nurse practitioners and/or physicians assistants for physician manpower in the HMO setting (496,497). Research on “do-not-admit” surgery was also conducted at this center (263).^{*5}

The results of both have been used throughout KFMCP (as well as other HMOs) resulting in efficiencies and thus, cost savings. Interestingly, although

there was never a conscious decision made ~by” management) to pursue a “do-not-admit” strategy, there were soon 20 percent of all surgeries being done on a “do-not-admit” basis. As the idea “caught on,” and administrative support developed, 40 percent of surgery was soon being done in this way The cost implications of this change (in physician behavior) were enormous . . . (263)

¹⁴This new Division was created in the summer of 1979, and is currently headed by Dr. Morris F. Cohen.

^{*5}“Do-not-admit” surgery refers to cases in which relatively simple surgical procedures are performed in the operating room, but the patient is not admitted unless there are complications (263).

This and the nurse practitioner/physician assistant example illustrate the use of formal methodologies to evaluate various configurations of resources, but the analyses were only loosely, and sometimes not at all, related to “across the board” policy decisions made by management.

At GHC in Seattle, the Pharmaceutical and Therapeutics Committee is a specific example of the institutionalization of cost-effectiveness and cost-benefit considerations in organizational decisionmaking. Prescription drugs, included in the benefits package of GHC enrollees, are subject to review and approval by this committee: The objective is to regulate the availability of prescription drugs (within the plan). No GHC physician may introduce a pharmaceutical into the “stockpile” of those already available unless it has been passed by this committee. The process is similar to those of formularies in hospitals. For example, with the appearance of a “new” antibiotic on the market, an “across-the-board” decision will be made to use either the new or the old drug, but not both, in that HMO.

In considering the addition of another drug, some of the questions asked by the committee were (given in this order): 1) Is it effective? 2) Is it costly? 3) Are there other, and perhaps too many other, options already in stock? and 4) What is its effectiveness and cost relative to these options? Data for these decisions were taken from the current available literature, clinical experience, and so on. It was claimed that this control resulted in very substantial (50 percent) reductions in the cost per (comparable) prescription for GHC enrollees. The committee is an example of a formal review mechanism in one HMO that has institutionalized the consideration of “cost effectiveness” as a decision criteria—and specifically the medical (or health) benefit—if not the actual conduct of formal analyses.

Potential Applicability of CEA/CBA in HMOs

Resource Allocation Questions

The question of whether something is cost effective or cost beneficial—in the most formal

analytic sense of the term—is by and large an academic one in HMOs. As perceived by the Director of the Kaiser Health Services Research Center (262):

... posing the question inherent in these analyses is like asking "... if the money supply is tightened in our economy, then" These analyses are too broad and inclusive, while the problems of management are much more constrained: CEA/CBA do not fit the parameters of management decisions.

Another criticism of CEA/CBA voiced by both analysts and decisionmakers was that, besides insufficient time and money, there was inadequate freedom to ask such questions (619):

We must serve the same psychological and social, as well as medical, needs that traditional providers do ... we must be able to react to the same emotional and social pressures ... (even though) we think in per capita terms ...

There are two reasons why "... it would be very difficult to justify withholding a service on the basis of a CEA/CBA" (527). First, as in the fee-for-service practice setting "... an ethical/medical question intervenes in trying to use **CEA/CBA as a basis for making resource allocation decisions ...**" (588). **Secondly, the HMO faces competitive pressure to offer as similar (in appearance) services as possible to those of fee-for-service providers in order to meet the expectations of both physicians and enrollees regarding comprehensiveness and quality of service.**

Decisions involving ethical and moral questions, as well as those that are otherwise value laden, are perceived as "risky" areas for the rigorous application of analysis such as CEA/CBA. For example (619):

... although the availability of hospital beds may be held at a very finely tuned ratio of 1.5 or 1.6 beds per 1,000 enrollees, when there is a "crunch," then (we) physicians simply seek other available hospital beds in the area ... we don't not admit patients who in our judgment require hospitalization ...

Similarly, the implementation of a midwife program initiated by enrollees would not be a deci-

sion likely to be subjected to, or influenced by, a formal analysis.

Decisionmakers will not be inclined to rely on analysis in addressing resource allocation questions where analysis could too easily (because of uncertainties) lead to the "wrong" answers.

Generally speaking, the question of whether something is cost effective or cost beneficial in the absolute sense is seen appropriately as having little overall practical utility in the HMO. This view was expressed by two high-ranking officials of GHAA:

... There is a misplaced emphasis on the "absolute" cost-effectiveness of capital intensive investment like lab analyzers, or CAT scanners, or open heart surgery facilities when the more important question is how (at what level or intensity) these are utilized ... (588);

and

... Much of the cost-effectiveness literature is around decisions on individual technologies, but it is the decisions regarding volume and frequency processes (such as laboratory and other diagnostic testing) where there is the greatest potential for cost savings ... (299).

HMOs seem to be more straightforwardly concerned with returns to scale, returns on investments, etc. Thus, in HMOs, "cost effectiveness" is correctly interpreted as a relative, rather than an absolute, attribute: There may be many "levels" of "cost effectiveness" associated with a particular option rather than an answer to the binary question of whether or not an option is "cost effective."

Analyses and Role in Decisionmaking

HMOs' "in-house" research and analytic capabilities were usually found to be too limited (in terms of both money and expertise) to allow the conduct of rigorous and broad-based CEA/CBAS or clinical trials of efficacy. Other potential ways of obtaining CEA/CBA information are through technical assistance and the existing CEA/CBA literature.

Technical assistance by which CEA/CBA might be obtained could potentially come from three sources: 1) private consulting firms;

2) GHAA, the trade association for prepaid group practice type HMOs; and 3) OHMO in DHHS. The financial resources required to obtain this from private consulting firms would make this source an infeasible one for many (probably most) HMOs, even if they were interested in pursuing a CEA/CBA problem. OHMO concedes that there is no reason why CEA/CBA could not be done under the existing statutory provision for general technical assistance to HMOs (159,313). Although it is conceivable that a CEA/CBA problem could be undertaken within this technical assistance provision, the possibility seems remote in light of competing, and more pressing, problems. Finally, GHAA also brokers and provides technical assistance to its member HMOs. GHAA's Associate Director confidently stated, however (588):

... I would expect that the chances of an HMO's approaching us to do a CEA/CBA are next to nothing ... because these questions just aren't there ...

Although several instances were found where the available CEA/CBA literature was consulted regarding the specific technologies, this resource was more often regarded as equivocal—both because of the technical difficulties and uncertainties of analyses, and the lack of available efficacy information (619):

... (we) have looked to the literature for a consensus on EFM, ... if there were decisive evidence, then we could use that to make decisions regarding its use ... but there's not ... (we) wish there were, but there isn't ...

The issues of transferability of existing CEA/CBAS to individual HMOs in particular, and to HMOs in general, adds yet an additional source of uncertainty (295):

... We just don't have the health delivery knowledge (in HMOs) yet to be able to predict "what happens if 'X' happens?" ... even in one HMO, let alone to generalize ...

All things considered, a representative consensus would seem to be that "... various uncertainties make formal analyses available in the literature an inadequate basis for decisionmaking ..." (615).

Thus it seems that even if CEA/CBA were directly relevant to the resource allocation processes in HMOs, most HMOs would be hard-pressed either to produce or even to find and borrow CEA/CBA information that would be useful to their individual needs.

The receptivity of decisionmakers to analyses is summarized in the following comments:

... when a CEA/CBA will tell you to throw out a certain option, and *you* intuitively feel that it's the right one ... usually you disregard the analysis ... but in any case ... you scrutinize and challenge the analysis ... (568);

... Decisionmakers know or will find the limits of analytic tools, even when analysts don't, because if the analysis is to be used as a basis for decisionmaking ... and if the analysis turns out to be wrong, it is the manager who must endure the consequences ... (295).

Given the motivation—political, ethical, economic, or other—to do so, someone can cite enough technical problems to make any analysis equivocal. Recommendations for changes in resource allocation based on analysis, therefore, have been and are likely to continue to be tentative, with pilot and demonstration projects and considerable nonanalytic input preferred as the basis for decisionmaking (295).

There also seem to be misgivings about the "overall *post facto*" nature of research generally, and about analysis that tends to follow rather than precede decisions. As noted by one observer (588):

... CEA/CBA are in "vogue" again ... When I worked for CDC (Center for Disease Control) years ago, we used CBA to evaluate tuberculosis vaccination programs, and I can tell you that even then, the answer came before the analysis was ever done, and it always justified the decision ...

Institutionalization of Decisionmaking Processes

Although it was found that the conduct of analyses and its incorporation in HMO decisionmaking was typical of the HMOs surveyed, it was also found that there was considerable

variation among HMOs with respect to whether and how these processes were formalized. An additional finding was that even though sophisticated forms of CEA/CBA were not perceived as relevant, the issues perceived to underlie CEA/CBA were considered an essential part of the decisionmaking process at all times.

More specifically, however, if the most potentially pertinent question in the HMO is "at what level of provision is 'X' cost-effective?" then the institutionalization of particular organizational procedures such as peer review of patterns of use of various resources, what constitutes inappropriate use, and who is qualified to designate their use in the HMO, as well as the monitoring of referral patterns, hospital admissions, and the like, are potentially very useful institutionalized mechanisms for assuring cost effectiveness in HMOs. Many HMOs already have instituted some of these formalities, and as a result have achieved dramatic cost savings (344).

Because of the great diversity of HMOs and variation in the competitive positions they hold in their respective communities, however, it is important that these procedures remain "individualized" (rather than standardized), i.e., each according to the HMO's need for analyses and/or review (295). Recently, GHAA has recommended to the council of the National Center for Health Care Technology that a study be undertaken with the purpose of developing criteria for the acquisition of technological resources in HMOs. The proposed study would indicate the probable impact of various acquisitions on the costs and utilization of these technologies and their relationship to per capita and aggregate costs, as well as the applicability of findings to other clinical organizational settings (300). The challenge of this proposal is formidable indeed. Still, the results might be useful if posed as a *relative* guide or as one model to follow.

Statutory Requirements for CEA/CBA in HMOs

Until January 1, 1980, the regulations promulgated under the Health Planning and Resources Development Act of 1974 (Public Law 93-641) required that HMOs demonstrate the

cost effectiveness of their requests to State health planning agencies for CON approvals of capital expenditures. During 1979, an extended process of developing a detailed set of criteria to be used to ascertain the "cost effectiveness" of a given proposal raged on. The 1979 amendments (Public Law 96-79) to the health planning law, however, exempted HMOs from CON review by local HSAS and approval by State planning agencies. Neither Federal nor non-Federal HMOs are now covered under CON regulations. Because of the new health planning law, the controversial endeavor regarding cost-effectiveness criteria for HMO proposals was suspended. In January 1980, the relationship and responsibilities of HMOs to local HSAS and State health planning agencies were described as being in a state of limbo (159).

OHMO has a formalized system to assist potential or young HMOs in making cost-effective resource allocation decisions. HMOs are perceived as businesses by OHMO, and the main talent and skills required are cited as those of management. Therefore, under the authority of the technical assistance provisions of the Health Maintenance Organizations Act, OHMO has developed and published six manuals or review guides addressing the topics of: finance, quality assurance and health services delivery, management information systems, marketing, structural and contractual relationships, and management arrangement assessment (308).

To aid applicant HMOs in making cost-effective decisions, the review criteria provide cost ranges and reasonable upper cost limits at various levels of enrollment with which quoted bids may be compared. Similarly, in the quality assurance and health services delivery review guide, a table indicates the number of physicians required, as well as staffing pattern suggestions, at various levels of enrollment. (These standardized criteria for cost-effective performance are intended to serve as benchmarks only, and are not meant to indicate mandatory standards.) In summary, it seems that the analyses, decisionmaking practices, and criteria and standards formally institutionalized in the administrative procedures developed by OHMO are very similar in spirit to those less formalized in, but typical of, individual HMOs.