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HEALTH MAINTENANCE ORGANIZATIONS AS AN INSTRUMENT FOR
COST CONTAINMENT POLICY*

I. INTRODUCTION

Growing health care expenditures, both total expenditures and federal expenditures, continue to be a matter of pressing concern. Most health care expenditures result from the provision of services under the direction and control of physicians, and there are currently few incentives for physicians to attempt to cut costs in delivering services. To introduce some incentives for economy into the system, a number of changes have been suggested for both the way physicians deliver services and the relation between the services they deliver and the income they receive. This paper considers one of the major options, Health Maintenance Organizations (HMOs).

About 20 percent of total health expenditures are for physician services, but physicians have a far greater impact on the health system than this proportion would imply. They prescribe drugs, order lab tests, admit patients to hospitals, and determine the length of stay.

The hospital segment accounts for the largest share of recent growth in health expenditures. Cost containment for hospitals, however, is often considered an administrative rather than a medical issue. That view ignores the relationship between hospitals and physicians. Hospital care is really a product produced jointly by hospitals and physicians, with the physicians (not the hospital administrators) acting as the central decisionmakers regarding the admission of patients, determination of length of stay, ordering of tests, performance of surgery and other medical services. Hospital cost containment approaches that ignore the role physicians play in the operation of the hospital are not likely to promote the kinds of

* Paper presented at the Annual Meeting of the Atlantic Economic Society, Washington, D.C., October 10-13, 1979.

efficiencies in delivering hospital care that would reduce costs with the least reductions in quality and access to care.

Total health expenditures increased by more than a factor of 10 between 1950 and 1976 (see Table 1). While the average cost of a hospital day is about 10 times the cost of a quarter century ago, hospital insurance coverage also increased so that the average out-of-pocket cost to the patient only slightly more than doubled over the same period, an increase less than the rate of inflation in the general economy.* About 92 percent of hospital revenues are paid by third-party payors, a far higher percentage than for physician office visits. More than half (54.6 percent) of the increase in health-care expenditures over the last quarter century is due to inflation in the health care sector, and just over one-third (34.9 percent) is due to increases in the use and intensity of care, that is, changes in the number and kind of services provided (the remaining 10.5 percent of the increase reflects changes in the size and age of the population).†

Physician fees rose 4.4 percent per year between 1955 and 1971, and even though average hours worked per week and average weeks worked per year fell slightly, physician incomes rose 7.2 percent per year over the same period.** This reflects increases in the resource intensity of medical care. A large part of this change is the increase in the use of hospitals (see Table 2) which now account for about 40 percent of all health care expenditures. The number of laboratory tests performed also increased, from about 2.9 billion to an estimated 5.0 billion just between 1971 and 1975. Over the last six years, the number of laboratory tests per hospital admission rose by more than eight percent annually. Intensive and coronary care units and departments of respiratory therapy have spread to more and smaller hospitals.

* S. Wallack, B. Lefkowitz, S. Coleman and W. Dunn, *Expenditures for Health Care: Federal Programs and Their Effects*, Congressional Budget Office, Background Paper, August 1977.

† Wallack et al., *op cit.*

** Michael Redisch, *Physician Reimbursement*, Office of Research and Statistics, Social Security Administration.

Table 1

TRENDS IN NATIONAL HEALTH EXPENDITURES FOR SELECTED
FISCAL YEARS: IN BILLIONS OF DOLLARS

Year	All Health Expendi- tures	Percent of GNP	<u>Expenditures for Personal Health Care a/</u>				
			Total	Private	Public	Federal Portion of Public	Medicare & Medicaid Portion of Federal
1950	12.0	4.5	10.4	8.3	2.1	1.0	NA <u>b/</u>
1960	25.9	5.2	22.7	17.8	4.9	2.1	NA
1965	38.9	5.9	33.5	26.5	7.0	2.8	NA
1970	69.2	7.2	60.1	39.6	20.5	13.4	9.4
1975	122.2	8.4	105.7	63.8	42.0	28.9	21.2
1976	139.3	8.6	120.4	72.0	48.4	33.7	25.2

SOURCES: Social Security Administration, Office of Research and Statistics, and The Budget of the United States Government, Fiscal Year 1978.

a/ Expenditures for personal health care include all expenditures for health services and supplies other than those for prepayment, administration, research, construction, and government public health activities.

b/ NA - Not applicable since program started making payments in 1966.

Table 2

TRENDS IN UTILIZATION OF HEALTH CARE FACILITIES:
SELECTED YEARS 1950-1975

Year	Hospital Admissions <u>a/</u>	Outpatient Visits <u>a/</u>	Physician Visits (per person)
1950	120.4	N/D <u>b/</u>	N/D
1960	137.1	N/D	N/D
1965	146.5	639.6	4.5
1970	153.1	874.3	4.6
1975	166.9	1,176.6	5.1

SOURCES: American Hospital Association, *Hospital Statistics, 1976 Edition*, and National Center for Health Statistics, Utilization Branch.

a/ Per thousand population.

b/ N/D - No data available before 1965.

While the motivating factor for physicians in using new procedures and equipment is increased quality of care, it is not clear that the growth in services has corresponded to improved health outcomes.

Health Maintenance Organizations

> A health maintenance organization (HMO) is any public or private organization that provides a comprehensive range of health care services, either directly or under arrangements with others, to an enrolled population for a fixed prepaid per capita fee. The basic health services that HMOs provide to their enrollees include physician services, inpatient and outpatient hospital services, medically necessary emergency health services, short-term mental health services, treatment and referral services for alcohol or drug abuse, laboratory and radiologic services, home health services, and preventive health services. The HMOs also provide supplemental health services for an additional payment if the necessary health manpower are available. These services include long-term care, vision, dental, and mental health services not included as a basic health service, and drugs prescribed in connection with the provision of either basic or supplemental health services. HMOs may charge an enrollee a nominal payment in addition to the prepaid enrollment fee for basic services. The additional payments are made at the time of receipt of the services. The oldest prepaid group practices (the prototypes of HMOs) still in existence predate World War II, including Group Health Association in Washington, D.C., founded in 1937, and the Ross-Loos Medical Clinic in Los Angeles, founded in 1929. There are now about 175 HMOs operating in the United States, with a total enrollment of about 6.5 million members.

Policymakers at all levels have argued for the expansion of HMOs and recently a new Office of Health Maintenance Organizations was established within DHEW to promote the HMO concept. It is generally believed that HMOs are a less costly method of delivering health care than the traditional fee-for-service system. Lower rates of hospitalization and surgery appear to account for the cost savings. The evidence generally supports the view that HMOs reduce costs but the effects on costs vary with the organization of the HMO and the practice setting.

II. METHODS OF PHYSICIAN REIMBURSEMENT

There are three major methods of physician reimbursement--fee-for-service, salary, and capitation. Currently about 71 percent of nonfederal physicians in patient care are paid by the fee-for-service method, about 28 percent are salaried, and the remaining 1 percent are paid by some form of capitation.

Fee-for-Service

Under the fee-for-service method, the dominant form of payment for physicians, the physician charges a fee for each unit of service provided. The fee might be paid directly by the patient, through some third-party payor (e.g., insurance company or government), or a combination of the two. Under the fee-for-service method, the physician sees a direct relation between what he does and what he earns. The fee-for-service incentives encourage and reward higher quantity and greater intensity of services. Increasing insurance coverage removes consumer resistance at the margin to additional services and charges.

Fee-for-service reimbursement poses the greatest problem for cost containment efforts relative to the other reimbursement methods. This has remained so despite the use of fee schedules or screens by all third-party payors. Fee schedules and screens set the maximum level of reimbursement for a specific service. Medicare, 20 to 30 of the state medicaid agencies, and a few private insurance companies use a fee screen called "usual, customary and reasonable" (UCR) reimbursement. The other 20 or 30 state medicaid agencies, most private insurance companies, and most other Western nations use a fee schedule. Appendix A describes the UCR fee screen payment method and fee schedule payment method.

Salary and Capitation

The income of salaried physicians is not affected by the number of units of service provided or the number of patients seen. This

payment method is usually associated with some kind of institutional setting, such as employment in a health maintenance organization, clinic, Veterans Administration hospital or other government facility, or a neighborhood health center; interns and residents and some radiologists, pathologists and anesthesiologists are salaried by hospitals. The salaries vary according to the physician's training, skills, seniority and scope of responsibility.

Putting physicians on salary removes many of the incentives for overutilization that operate under the fee-for-service method. The physician is not rewarded by ordering extra lab tests or by hospitalizing patients. There is some evidence that physicians working under salary arrangements reduce their work effort. This could lead, in some cases, to the need for larger staffs of physicians. The incentives that individual salaried physicians face are really determined largely by the incentives facing the organization that employs them. The incentives will be different, for example, depending on whether the organization provides year-end bonuses or penalties to the physicians according to the performance of the organization in terms of cost control. While it is sometimes argued that there is a great deal of resistance among physicians to being salaried, recent evidence indicates an increasing willingness on the part of physicians to work in institutional settings; they appear to be placing more emphasis on professional and personal amenities and conveniences, with pecuniary incentives decreasing in importance over time.*

If the number of physicians paid by salary increased substantially, there would be a greater possibility that physicians would form collective bargaining groups for salary negotiations and other terms of employment. That would tend to reduce the amount of control that could be exerted on total costs through the control of physician salaries.

* Judith Lave, Lester Lave and Samuel Leinhardt, *Medical Manpower Models: Need, Demand, and Supply*, The Rand Corporation, R-1481-CHD, March 1974.

Capitation, a fixed prepaid fee per enrollee, is extensively used for paying physician groups; relatively few individual physicians are paid this way. For individual physicians the advantages of salary and capitation are similar. They both give a degree of income security and a lack of constraint on the choice of treatment, though incentives for providing the least costly mix of services may be built into these payment methods more easily than with fee-for-service payments.

Physicians paid under the capitation method have the incentive to maximize their patient enrollments while giving the minimum level of services required to each enrollee. Direct capitation payments to physicians are relatively rare in this country, though common in many foreign countries. Capitation payments in the U.S. generally go to organizations which then pay their physicians on a salary basis. Direct capitation payments to physicians could encourage or discourage physicians to hospitalize patients, depending on the extent to which primary-care physicians bear the financial risk for hospital and specialty care. As in the case of the salary payment method, capitation reduces the incentive to provide additional medical services. This could lead to underdoctoring or low-quality care, although the competition among physicians for subscribers should counteract this tendency to some degree.

A difficulty with the capitation method is in determining the appropriate capitation rate and the appropriate mix of services to be covered by that rate. That is, it is important whether the capitation payment covers only that physician's services or whether the physician is also at risk for specialty services, lab tests, or hospitalization. If the payment covers physician services and not hospital services, for example, the incentives for hospitalization remain essentially the same as under the fee-for-service method. If the capitation payment does include a full range of medical services, the physician may not be adequately insured against extraordinary events that deplete his pool of capitation payments.

The definition of an extraordinary event would then become an important issue since expensive services could be provided at additional

cost. If additional payments were allowed for services not included in the capitation payment, costs could be expected to escalate for the services that were not covered by capitation. The inclusion of a wide range of services covered by the capitation payment would help avoid adverse substitution effects. To assure quality of care under a capitation system, some form of utilization review might be necessary.

III. TYPES OF HMOs

Although all HMOs are paid on a capitation basis, that is, a fixed fee per enrollee for a specified period of time such as a year, they vary in three ways: (1) their method of payment to their physicians, (2) the amount of care covered by the capitation payment, and (3) the organization and delivery of services. The predominant and traditional HMO structure is organized as a group practice plan in which physicians are salaried, and which include hospitalization. Primary care is provided in a multi-specialty clinic setting often linked to the HMO's own hospital. Under this arrangement, the salaried physicians do not gain financially by placing patients in hospitals. Also, the organization of physicians in large multi-specialty groups may further help to reduce hospital use; a wide variety of diagnostic and treatment services can be provided in these multi-specialty groups without hospitalization.

A second form of organization for HMOs is similar to the first except that the HMO is not at risk for hospitalization. This type of HMO would be expected to have hospitalization rates higher than the first, although the other factors--mostly salaried physicians and large multi-group practice setting--should still operate to hold down hospitalization rates below the fee-for-service rates.

A third type of HMO includes foundations for medical care (FMCs), in which fee-for-service physicians have organized to carry out peer review on hospitalization and sponsor and deliver comprehensive benefit packages of health care services. When qualified as HMOs, these are also known as independent practice associations (IPAs). They resemble the fee-for-service system in organization and method of paying physicians, but the organization as a whole receives a capitation payment for both hospital and physician services. The individual physician in an IPA is not under the direct management control of the HMO as in the salaried models. Some of the same incentives for hospitalization are present as in the fee-for-service system, such as the greater

convenience to the physician on weekends and evenings, more surgery, and more income. The only incentive against hospitalization in an IPA is the overall risk that the foundation will overspend its capitation payment. Some IPAs use a peer review process as a way of counteracting the weaker financial incentives. At least one IPA puts individual primary care physicians at risk for drugs, ancillary and specialty services as well as hospitalization.

There are also a number of different combinations of these three basic models of HMOs. In some HMOs, physicians may share in profits or receive bonuses for performing specific procedures. Some physicians have a combination of fee-for-service and capitation patients (this is the case for most IPAs). The HMOs may also be either nonprofit or for-profit.

IV. PROBLEMS IN INCREASING HMO ENROLLMENT

While some caution that the future growth potential of HMOs may be very limited,^{*} others suggest that physicians are becoming increasingly willing to accept staff positions in institutional facilities, placing more emphasis on professional and personal amenities and conveniences.[†]

It has been found that people will not join prepaid group practices if the premium cost is considerably in excess of the premium cost of their existing coverage, even though the usual range of prepaid benefits is broader than the competing packages offered by Blue Cross-Blue Shield and private insurance companies.^{**} The federal requirements for certification as a qualified HMO make it necessary that any prepaid practice offer the comprehensive range of medical services described earlier. It has been estimated that even for prepaid group practices with broad coverage, the additional services that must be offered to qualify as an HMO would increase premium rates by 6 to 8 percent.^{††} This increases the difficulty of starting HMOs in many communities. Physicians in solo or group practice who become members of an IPA, however, are allowed to continue their regular fee-for-service practice while the IPA develops.

The stringent elements in the HMO Act make it difficult for new HMOs to form. There are a number of reasons that these elements were incorporated in the Act.^{***} One has to do with competing special interest groups such as optometrists, dentists, the National Institute of Alcoholism and Alcohol Abuse and the mental health lobby. Many of

^{*} Robert Heysfel and Henry Seidel, "The Johns Hopkins Experience in Columbia, Maryland," *New England Journal of Medicine*, November 25, 1976.

[†] Judith Lave, Lester Lave, and Samuel Leinhardt, *op cit*.

^{**} Joseph Dorsey, "The Health Maintenance Organization Act of 1973 (P.L. 93-222) and Prepaid Group Practice Plans," *Medical Care*, January 1975.

^{††} *Ibid*.

^{***} Dorsey, *op cit*.

the HMO supporters also had in mind a broader context such as either national health insurance or major restructuring of the health care industry. They included these requirements in the HMO Act with the intention of their eventually spreading to other parts of the health care field. Also, there was a concern about the possibility of organizations making excess profits, skimming or deliberately underutilizing services for their enrollees; the strong requirements of the Act were intended to keep the marginal operators out of the field. While the existing prepaid group practice plans have generally been strong advocates of community rating and broad benefit coverage, they have in effect been selected out to meet certain standards that no one else in the marketplace is required to meet. Commercial insurance companies as well as Blue Cross-Blue Shield can offer limited benefit packages, avoid open enrollment, and have experience-rating.

To encourage the further development of HMOs, the requirements of health maintenance organizations will either have to be cut back or there will have to be more lenient phasing-in allowances. The Group Health Association of America, the Association of Prepaid Plans, has recommended a three-year phase-in requirement. Organizations would be regarded as qualified HMOs under the Act if they had approved phase-in plans for meeting federal statutory and regulatory requirements within a reasonable time period. A less feasible alternative that has been suggested for making HMOs more competitive is to increase the requirements of other health insurance plans in terms of services covered, thereby increasing the costs of other insurance plans.

As mentioned earlier, the greatest growth in HMOs is more likely to be among IPAs rather than among groups which have their own (limited) hospital facilities. IPAs are easier to form because they involve less disruption in the delivery system, and they make patient recruitment easier as well.

An important facet of the growth in HMO enrollments is the possibility of increased competition with the fee-for-service sector. Dorsey^{*} has noted that a significant HMO presence in an area may help

^{*} Joseph Dorsey, "HMOs and the Cost of Health Care," *The New England Journal of Medicine*, Vol. 298, No. 24, June 15, 1978, pp. 1360-1361.

lower costs in the fee-for-service sector because the residents of that area have alternative forms of health insurance and delivery systems from which to choose. And the fee-for-service sector, faced with such competition, provides services at lower cost and operates with fewer hospital beds than in areas without an HMO.

V. SUMMARY OF COST COMPARISONS

Health Maintenance Organizations are seen by many as a way to reduce expenditures for health care. In particular, they are seen as a way of changing the delivery system as well as the way that physicians are paid. The removal of the relation between amount of services provided and physician income, with the substitution of an incentive to maintain the health of enrollees in the least costly manner, is a major difference between the environment in an HMO and in the fee-for-service sector.

A number of comparisons between the cost of services in various types of HMOs and in fee-for-service settings, and differences in the types of services delivered, are summarized in this section. Appendix B describes these findings in more detail.

It is claimed that HMOs reduce costs by lowering the level of hospitalization, either admissions rates, length of stay or surgery rates, and emphasizing preventive measures. The evidence generally supports the former, but not the latter. While length of stay tends to be about the same for HMOs and fee-for-service hospitals, HMOs generally have lower rates of hospital admissions and lower surgery rates. These differences still hold when demographic characteristics and health levels of the respective populations are taken into account. And the surgery rates are lower in HMOs across a wide variety of surgical procedures. There is no evidence that HMOs reduce admissions in the more discretionary diagnosis categories; rather the admissions rates are lower across the board.

Average number of physician visits are in some cases about the same for HMO and fee-for-service physicians, in other cases higher in HMOs as a shift from higher cost hospital care to lower cost ambulatory care takes place. There is generally a greater use of lower cost paraprofessional medical manpower in HMOs. The average rate of drug prescriptions has been found to be lower in HMOs, and drugs are more often prescribed generically rather than by brand name, further reducing

costs. The use of preventive health measures, however, is not generally any higher in HMOs than in other settings.

Total costs for health care range from 10 to 40 percent lower in HMOs compared with other forms of health care delivery. The cost savings vary, however, with the organization of the HMO. HMOs that control their own hospital tend to show greater cost savings than prepaid groups that use an outside hospital. Both of these forms of HMOs tend to show greater cost savings than the IPA-type HMOs, in which the physicians maintain their individual practices but are paid by the IPA which receives its funds on a capitation basis. IPAs with rigorous peer review, however, do reduce costs relative to other IPAs.

The differences in performance in terms of cost savings of different types of HMOs is an important issue because many of the new HMOs that may be formed are likely to be IPAs. The creation of an IPA causes less disruption in the health care delivery system, and so is much easier to form. Recruitment of patients may be easier for an IPA as well. The type of HMO most likely to grow in number is thus the type likely to produce the least cost savings. The savings can be increased, however, if peer review within the IPA is taken seriously.

One important problem in comparing IPA-type HMO hospitalization rates with other HMOs or even with fee-for-service plans is that in most cases only a very small percentage of the patients for any particular physician are in the foundation. The physician usually does not know which of his patients are covered by the capitation payment. It could be that the incentives built into the IPA won't take their full effect until a fairly substantial proportion of the physician's patient load includes patients covered by the capitation payment to the IPA. Another factor has to do with the risk-sharing factor. In many of the IPA plans, the physicians do not share any of the financial risks while physicians in group practice HMOs generally don't receive their year-end bonuses unless the costs of the plan are within the limits of the capitation charges. Another factor important for the comparison has to do with the supply of hospital beds. Physicians in IPAs are in most cases using the same hospital beds as in the regular

fee-for-service system, while physicians under group practice-type HMOs are restricted to the number of hospital beds in their particular plan, which is usually limited to such a degree that only patients with unchallengeable indications for admission to the hospital are actually hospitalized.

One new type of IPA developing in the Pacific Northwest puts individual primary care physicians at risk for drugs, ancillary and specialty services, as well as hospitalization. These IPAs have so far shown cost reductions similar to those for group practice HMOs. These IPAs are developing in Seattle, Washington, and in a number of smaller communities in Washington, Oregon, and California. Similar plans which put primary care physicians at risk for most medical services are also being developed in Wisconsin.

From the standpoint of physicians, it has been found that fee-for-service physicians spend more time in direct patient care activities than physicians in HMOs.* The total income of a fee-for-service physician is very strongly related to the number of patients seen. Fee-for-service physicians tend to respond to high patient demand by increasing the hours they spend in direct patient care. No corresponding incentive exists for a salaried physician working in a HMO. While some salaried physicians, either because of compulsiveness or a sense of obligation, may increase their hours worked, the more frequent response is to either delay patient care using the queue as a rationing device, or allowing the patient to use emergency services. Although most discussions of the economic advantages of prepaid practice focus on reductions in hospital admissions and surgery, many prepaid practices achieve additional economies by limiting the resources available for ambulatory medical care as well. This would require physicians to spend less time with individual patients and would also tend to shift more of the patient care to emergency facilities.

An important finding relevant to the issue of whether to promote the growth of HMOs is that the presence of an HMO in an area seems to

*David Mechanic, "The Organization of Medical Practice and Practice Orientations Among Physicians in Prepaid and Nonprepaid Primary Care Settings," *Medical Care*, March 1975.

lower the costs in the fee-for-service sector in that area as well. That is, the fee-for-service sector seems to be responding to the lower cost competition from HMOs. This effect, if real, could become stronger if a larger proportion of the population were enrolled in HMOs (current enrollment is about three percent of the population). This would mean that cost savings would accrue at a faster rate than the growth in HMO enrollment.

VI. POLICY ALTERNATIVES

Policy alternatives with respect to Health Maintenance Organizations fall into several categories. First, the funding levels for federal programs that make grants and loans to support the development of new HMOs and expansion of existing HMOs can be increased or decreased to speed or slow the growth of HMOs. The funds required become larger in the initial development stage and the qualification stage than in the earlier feasibility and planning stages. Small increases or decreases in grants for feasibility projects can, therefore, strongly affect the appropriations required in later years. But larger appropriations now should increase the ultimate cost savings in other federal programs and in total expenditures for health care.

Second, the level of technical support in the various development stages could be increased to reduce the failure rate at each level of development. Currently, about three-quarters of the feasibility projects advance to the planning stage. About 90 percent of these reach the initial development stage, and about 90 percent of these become qualified HMOs.

A third instrument for affecting the rate of growth of HMOs is the availability of information about HMOs. Some efforts within DHEW to inform major industrial corporations of the possible savings for their employee insurance plans have already taken place. Efforts could be made to inform the general public. This could, alternatively, be left to the insurance or personnel offices of major employers.

Fourth, efforts to promote HMO growth could be more targeted to specific types of HMOs. Prepaid group practices that control their own hospital (closed-panel HMOs) generally show the greatest cost savings, though this type of HMO may be the most difficult and most expensive to create. IPAs are easier to create, but show much smaller cost savings unless they undertake rigorous peer review. The type of IPA in which primary care physicians are at risk for nearly all health services rivals the closed-panel HMOs in terms of cost savings. This

type of IPA could be expected, however, to meet a good deal of resistance from nonprimary care physicians, since their level of discretion within the health care system would be reduced relative to primary care physicians.

Fifth, regulations regarding HMO qualification could be reconsidered. The HMO qualification requirements could be relaxed or the phase-in allowances made more lenient. Currently only physicians who are joining an IPA are allowed to continue their regular fee-for-service practice while the IPA develops. The higher premium cost of an HMO, necessitated by the comprehensive range of services the HMO must provide, discourages many people from joining an HMO, even though the cost of the full range of services is generally lower than outside the HMO. The availability of smaller benefit packages would make HMOs more competitive with conventional insurance coverage.

Whether or not HMO promotion is targeted to specific types of HMOs, any policy undertaken should recognize the important differences from one type of HMO to another, and should consider the trade-off between ease of establishment and growth on the one hand, and potential cost savings on the other. The larger share of the growth in HMOs is likely to be among IPAs; therefore, simple extrapolation of health cost savings from expected growth in HMO enrollment would seriously overestimate the likely cost savings.

APPENDIX A
UCR REIMBURSEMENT AND FEE SCHEDULES

Under the UCR method of payment, the physician is reimbursed the lowest of three amounts: that physician's actual charge, that physician's median charge in a recent prior period, and the 75th percentile of charges in that same period by physicians in the same specialty and geographic area. (These three amounts are respectively the actual, usual and prevailing charges; they have been termed by medicare as respectively the actual, usual and customary charges; the lowest of the three is called the reasonable charge). The UCR fee screen then builds in the incentive for physicians to raise their actual charges, and to keep increasing the charge since this year's actual charge will become next year's usual charge.* Physicians who don't accept assignment (that is, don't bill medicare but rather bill their patients and let the patients collect what they can from medicare) may collect the high "actual" charge, inflating charges even more. The predictable inflationary consequences have in fact come about. Since the enactment of medicare and medicaid, the rate of inflation in the health-care sector and the growth rate of total health expenditures have accelerated. Expenditures for medicare and medicaid have increased between 15 and 18 percent per year since the programs began.

UCR represents a way of individualizing levels of payment based on the recognition of the uniqueness of each physician and his pattern of practice. It adds to this, moving boundaries based on the aggregate patterns of the local medical community. Claims above those limits are in some cases still paid in full, if it is judged to be "reasonable"

* Out of administrative convenience, many Blue Shield plans that use UCR don't check the physician's usual-fee profile; his claims are routinely paid in full if they fall within the community's customary range. See John Crucich, *The Making of the California Relative Value Studies: The Ideology and Administration of Pricing Policy in the Fee-for-Service Medical Market*, Center for Medical Sociology and Health Services Research, University of Wisconsin-Madison, July 1976.

by medical consultants or a local peer review committee, on the basis of special facts and extenuating circumstances of the particular case in question. The UCR approach generally gives rise to constantly upward shifts in the customary range and thus a rising average level of reimbursement for most procedures. Ceilings on allowable increases in fee levels generally lead to lower rates of participation in the medicare and medicaid programs on the part of physicians.

Fee schedules are generally established by applying a conversion factor to a relative value scale, which gives a value for each medical service or procedure relative to some chosen standard. One frequently used relative value scale is the California Relative Value Schedule (CRVS). The CRVS is not itself a fee schedule. The unit values composing the CRVS reflect the relationship among procedures in terms primarily of the median charges that California physicians have been billing for them. A unit value is considered to roughly correspond to the investment of time, thought, training, skill and risk demanded by each procedure relative to other procedures for that particular specialty. Though data on median charges by procedure are the major determinant of the relativities, in selected cases the state committee establishing the relative value scale will base unit values on judgments of the time, risk or skill involved in a procedure.*

The CRVS first appeared in 1956. By mid-1975, a few county medical societies and 16 state medical societies had issued relative value guides based on local charge patterns. Though not the most recent version of the California scale, the 1969 CRVS is still used by many insurers nationally for the purpose of standardizing the list of procedures for reimbursement, even when the relativities in that scale are not used.

One major concern in the use of relative value scales, whether they are used to determine a fee schedule or just used to standardize the nomenclature for UCR reimbursement, is the growth over time in the number of procedures identified. The 1969 CRVS listed about 1200 more procedures than did the 1964 CRVS. And the 1974 CRVS (the most recent one) lists about 1800 more procedures than the 1969 CRVS. While

* John Crucich, *op cit*.

about 1400 of these additions are new procedures, the other 400 are new variations or levels of formerly listed items. Some argue that listing many levels of complexity for a procedure has an inflationary effect on health care costs, because physicians may tend to inflate the reported complexity of their services without a commensurate increase in actual services or intrinsic value of services.

Two studies^{*} examining the effects on physician charges of the change from the 1964 CRVS to the 1969 CRVS support two different views of the effect of changes in nomenclature. Sobaski compared charges during the first three months of 1972, when the 1969 CRVS was used, with those of the first three months of 1970, when the 1964 CRVS was still in use. It was found that the average charge for a physician office visit increased 15.7 percent during this period. Average charges rose 10.4 percent over this period for a fixed set of services, leaving a 4.9 percent increase attributable to a change in reported services. This could have resulted from physicians using the more detailed scale of values in such a way that they minimized the number of lower valued services performed or reported, with a corresponding increase in the number of higher valued items. Part of the change could have resulted from the use of the same term for different levels of service in the two scales. For example, the term "brief" designates the lowest intensity service level in the 1964 CRVS terminology, and the same term designates the second lowest service level in the 1969 CRVS.

Scitovsky and McCall duplicated the Sobaski study using records for physician office visits of the Palo Alto Medical Clinic (PAMC) for fiscal year 1970 and fiscal year 1972. PAMC is a large, multi-specialty, predominantly fee-for-service group practice. Scitovsky and McCall suggest that the shift to higher priced services may be due to physicians charging for more expensive services for medicare

^{*}William Sobaski and Anne Scitovsky and Nelda McCall, *The 1969 California Relative Value Studies and Costs of Physician Office Visits: Two Studies*, Health Policy Program Discussion Paper, School of Medicine, University of California, San Francisco, April 1976.

than those performed because they know that medicare will not reimburse them for the full amount of their customary fee for the service rendered. Their findings support their hypothesis that the change from one coding and terminology system to another has considerably less impact on physician charges when physicians do not know the insurance status of their patients than when they know that they will be paid only a certain percentage of their regular fee. Scitovsky and McCall argue for a more simplified coding and terminology system for physician visits than what is found in either the 1974 or 1969 CRVS. This might reduce the tendency of physicians to "upgrade" the services they provide under government programs.

APPENDIX B
COST COMPARISONS

This Appendix reviews the findings of a series of comparisons summarized in Section V. It compares HMOs of various types to other forms of health care delivery with respect to hospital utilization, including admissions, length of stay and surgery rates, physician visits and drug prescription rates, and the basis of selection of an HMO or other form of health care delivery on the part of patients.

Densen et al^{*} compared hospital utilization in a prepaid group practice with fee-for-service by considering employees in the same industry and with essentially the same medical care coverage under two plans. One plan was Group Health Insurance (GHI), which is a fee-for-service solo practice plan; the other was Health Insurance Plan of Greater New York (HIP), which is a medical group that receives payments on a capitation basis.

Perrott[†] compared the hospitalization of federal employees covered under the federal employees health benefits program by five different types of insurance: group practice members, Blue Cross-Blue Shield, Indemnity, Employer Organizations, and individual practice plans. Corbin and Krute^{**} compared group practice prepayment plans with fee-for-service plans for the medicare population specifically, using seven group practice plans that are reimbursed with prepaid per capita payments directly from medicare based on their reasonable costs instead of through the usual medicare fee-for-service billing procedures. They compared costs for medicare members of these seven group practice plans with the average reimbursement per beneficiary for control groups of

^{*}Densen, Jones, Balamuth and Shapiro, "Prepaid Medical Care and Hospital Utilization in a Dual Choice Situation," *American Journal of Public Health*, Vol. 50, No. 11, November 1960, pp. 1710-1726.

[†]George Perrott, "Utilization of Hospital Services," *American Journal of Public Health*, January 1966.

^{**}Corbin and Krute, "Some Aspects of Medicare Experience with Group Practice and Prepayment Plans," *Social Security Bulletin*, March 1975.

other medicare enrollees residing in the same areas and receiving services under fee-for-service payments.

Gaus, Cooper and Hirschmann^{*} compared 10 HMOs with 10 matched populations receiving care from the fee-for-service system. The comparisons were made for the medicaid population. They also included a varied set of HMOs; that is, the HMOs in the sample varied in terms of methods of paying physicians, financial risk of the HMOs, and organizational structure.

Edgahl, Taft and Linde[†] published preliminary data comparing hospitalization rates for IPAs and regular service benefit plans. Rabin, Bush and Fuller^{**} compared drug prescription rates for medicaid beneficiaries before and after enrollment in a prepaid group practice, Group Health Association (GHA) of Washington, D.C., mentioned in Chapter I as one of the oldest prepaid plans in the U.S. They compared the GHA study group's rates of physician visits and average number of prescribed drugs before and after enrollment in GHA. Tessler and Mechanic^{††} compared the patient basis for selection of a prepaid group practice in contrast to other plans in a dual choice situation.

Densen et al, in comparing a fee-for-service solo practice plan (GHI) and a medical group receiving capitation payments (HIP), found for the period studied an annual hospital admission rate of 65.2 per 1,000 population for HIP compared with a 74.6 per 1,000 rate for GHI. The size of the difference is larger when adjustments are made for age, sex, and union local composition of the two populations. The admission rate is lower for HIP in all age groups for women. For men,

^{*} Gaus, Cooper, and Hirschman, "Contrasts in HMO and Fee-for-Service Performance," paper presented at American Economic Association Meetings, Dallas, December 1975.

[†] Edgahl, Taft, and Linde, "Method of Physician Payment and Hospital Length of Stay," *New England Journal of Medicine*, February 10, 1977.

^{**} David Rabin, Patricia Bush and Normal Fuller, "Drug Prescription Rates Before and After Enrollment of a Medicaid Population in an HMO," *Public Health Reports*, Vol. 93, No. 1, January-February 1978, pp. 16-23.

^{††} Richard Tessler and David Mechanic, "Factors Affecting the Choice Between Prepaid Group Practice and Alternative Insurance Programs," *MMFQ Health and Society*, Spring 1975.

the HIP admission rate is higher than the GHI for one age group (under 35), about the same for one (35 to 44 years), and lower for three age groups (45 and over). The admission rates by diagnosis are generally lower in HIP than in GHI as well.

The average length of stay per hospital admission is about the same for the prepaid group practice and the fee-for-service plan. The total number of paid days in a hospital per 100 population is lower for HIP, 74.4 per 100, than in GHI, 95.5 per 100. This difference is due primarily to the difference in admission rates. These differences in hospital admission rates hold even though the health coverage for the two plans is essentially the same. Also, the two groups were very similar in how they rated their own health status, in their general perceptions of health, and in their attitudes towards the use and value of medical care. Earlier experience with high cost illnesses did not seem to be a factor either.

Restrictions on available hospital beds are sometimes given as the reason for lower rates of hospital admissions in prepaid group practices. This does not appear to be the case, however, in the comparison between GHI and HIP. It would appear that the other factors usually associated with multi-specialty group practices such as availability in one place of diagnostic facilities, consultations with other physicians, and the fact that the physician's income is not directly linked to the service that he renders would explain the lower hospital admission rates in HIP as compared with GHI.

Perrott compared hospital utilization and surgery rates across five plans. Again, the difference in admission rates is responsible for the lower utilization by the group practice enrollees. Group practice members had lower hospital admissions and lower hospital days per 1,000 persons, compared to the other four plans. Surgery rates ranged between 1-1/2 and 2-1/2 times as high for specific surgical procedures for the Blue Shield plans as compared with group practice. The Blue Shield rate for female surgery, which includes mastectomy, hysterectomy, and nonmaternal dilation and curettage was about 1.5 times that of group practice. The rate for appendectomy was nearly

twice that among group practice enrollees and the tonsilectomy rate was over 2.5 times as high as that for the group practice plans. The differences in the rates for female surgery were due largely to differences in the surgery rates for mastectomy and hysterectomy; the rates for the other procedures being about the same for the two plans.

Corbin and Krute compared group practice prepayment plans with fee-for-service plans for the medicare population specifically, using seven group practice plans that are reimbursed with prepaid per capita payments directly from medicare based on their reasonable costs instead of through the usual medicare fee-for-service billing procedures. They compared costs for medicare members of these seven group practice plans with the average reimbursement per beneficiary for control groups of other medicare enrollees residing in the same areas and receiving services under fee-for-service payments. Their results varied by group practice plans. Generally, the seven prepaid plans showed lower inpatient hospital utilization and higher utilization of physician services compared with the control group. The combined payments for physician services and hospitalization do not always, however, result in less costly total health care services for medicare enrollees. The reductions in hospital inpatient reimbursement for the group practice plans do not always offset the higher reimbursement for physician services. These findings apply only to the medicare members of these seven group practice plans.

The capitation payments to these seven group practice plans cover only in-plan physician services; that is, those paid for by the plan and included in their costs. The medicare enrollee, however, may also use out-of-plan physician services, which are reimbursed separately using the usual medicare fee-for-service procedures. The reimbursement figures given in the table include both in-plan and out-of-plan payments for medicare enrollees. Clearly, the plans are able to affect medicare costs only to the extent that they control the services provided to their medicare members. In the case of hospitalization, their control is limited to those admissions and services ordered and controlled by the physicians in their plan. This use of out-of-plan

services can seriously reduce a plan's ability to control utilization and therefore cost. Out-of-plan usage is affected by a number of factors, including accessibility and comprehensiveness of in-plan services as well as consumer satisfaction or dissatisfaction. The out-of-pocket expenditures, however, do tend to be higher for the use of out-of-plan services than for in-plan services and this should discourage the use of out-of-plan services to some degree.

Hospital utilization was consistently lower for the seven group practice plans as compared with the control groups while the use of physician services was higher for their medicare members. The reductions in hospital use, however, did not always offset the increases in the use of physician services. Two factors that appear to be related to favorable cost experience among these plans were low utilization of out-of-plan physician services and plan control of hospital facilities (that is, plans that included hospitalization in the capitation payment had lower total costs than those not at risk for hospital services).

The Gaus et al study also considered utilization patterns across different types of HMOs. It compared 10 HMOs with 10 matched populations receiving care from the fee-for-service system, all 20 groups being part of the medicaid population. They also included a varied set of HMOs; that is, the HMOs in the sample varied in terms of methods of paying physicians, financial risk of the HMOs, and organizational structure. No significant differences were found between the study groups and controls in terms of health status perceived or the number of chronic conditions. There was also no difference between the study groups and the controls in terms of the degree of health consciousness, as measured by a concern with nutrition and diet or reading books on health.

This study did find that the medicaid enrollees using the fee-for-service system had hospital use 2-1/2 times higher than for those in the group practice HMOs. However, between the FMC HMOs and their controls, there was no statistically significant difference in hospital use. The pattern is the same for surgical rates. There was little

difference between the FMC HMOs and their controls while the surgical rates for the group practice HMOs were about half those of their controls.

The authors suggest that since the foundation-type HMOs shown no major differences in hospital use when compared with their controls, even though they have a financial incentive to do so, this is evidence that the financial incentives of the capitation payment to the foundation are not enough to have an important impact on hospital use. Rather, the presence of an organized group of salaried physicians may be more significant. One of the group practice HMOs which was not at risk for hospitalization still had lower hospital use than its control group, further supporting the notion that physician payment method and practice organization are the major influences on hospital use. All of this suggests that the incentives that operate directly on the physician may have more impact than those that affect the organization as a whole.

It might be expected that salaried physicians, having no incentive to see ambulatory patients any more than necessary, would have lower ambulatory care rates than physicians operating under fee-for-service, where additional visits mean additional income. It can also be argued that the lower hospitalization rates in group practice HMOs result partly from the financial incentives to substitute the less-costly ambulatory care for the more expensive hospital care. In this case, it should be expected that ambulatory rates in group practice HMOs would be higher than in fee-for-service. These results for medicaid enrollees support neither theory. The number of physician contacts in the group practice plans were the same as in the controls, about 3.5 visits per person per year. The utilization of lower-paid health professionals was also not significantly different between the group practice HMOs and their controls. Ambulatory visits to all health professionals, however, were somewhat higher for the foundations than for their controls or for the other types of HMOs.

The lower hospital use for the group practice HMO enrollees as compared with their controls did not seem to result in any decline in

their health status. While HMOs would seem to have more of an incentive to provide preventive procedures, the overall results were quite similar for HMOs and controls. For example, about 52 percent of women with live births had 10 or more prenatal visits in the group practice plans compared with 59 percent in the controls. The foundation HMOs and their controls showed similar relationships.

To summarize the findings for these medicaid comparisons, the HMOs and their controls were very similar in terms of prior health status, ambulatory care use, including preventive care, and in terms of accessibility and satisfaction. The group practice HMOs did have significantly lower hospital utilization than fee-for-service groups. However, the foundation HMOs did not. Gaus et al concluded that the organized multi-specialty group practice arrangements with largely salaried physicians is the more important aspect of HMOs rather than the capitation payment itself.

The differences in performance in terms of cost savings of different types of HMOs is an important issue because many of the new HMOs that may be formed are likely to be foundation HMOs or IPAs. The creation of an IPA causes less disruption in the health care delivery system and so is much easier to form. Recruitment of patients may be easier for an IPA as well, especially for patients who have already established a patient/physician relationship, and the majority of American physicians still seem to prefer the fee-for-service system.

Although no definitive studies have yet been published, Egdahl et al present preliminary data indicating that IPAs with very rigorous peer review can reduce hospitalization. They found reductions in hospital days per 1,000 enrollees after the introduction of IPA plans in Albuquerque, New Mexico, and northern Illinois. And in one county in Oregon, an IPA plan involving fee-for-service physicians showed a hospitalization rate of 443 days per 1,000 compared with a 530 rate in that same year (1975) for the regular service benefit plan operating in that area. In most cases, however, the IPA hospitalization rates are still higher than those associated with group practice HMOs. The reductions cited above all involve cases of very strong peer review.

Increasing costs of prescription drugs have not received as much attention as some of the other components of health care costs. One reason is that while national rates of medicine use are steadily increasing, it is not an increasing proportion of health care costs. Rabin et al compared drug prescription rates for medicaid beneficiaries before and after enrollment in GHA of Washington, D.C., mentioned earlier as one of the oldest prepaid plans in the U.S. Comparing the GHA study group rates of physician visits and average number of prescribed drugs showed a reduction in both of these services in the 12 months after enrollment compared with the 12 months before enrollment. Also, the study group's rates of use of both of these services after enrollment were less than the corresponding rates for the medicaid control group. The largest reductions in prescription drug use was for the two age groups 20-34 years. Their rates were almost cut in half. The only age group that showed an increase in the use of prescription drugs was the 55-64 age group.

The decrease in physician visit rates appears to account for most of the decrease in prescription drug use for the medicaid enrollees over the study period. However, the average number of prescriptions per physician visit also decreased after enrollment in GHA. The decrease in drug prescription rates resulted in considerable cost savings for medicaid. The total cost per person per year for the medicaid beneficiaries enrolled in GHA was \$282 in fiscal year 1972, of which 5.5 percent was for drugs. This compares with a total cost of \$373 per person per year for the medicaid control group of which 7.0 percent was for drugs. Prescription drugs were thus a smaller percentage of a smaller base for the GHA enrollees compared with the control group.

Part of the cost savings may also be attributed to the greater propensity for GHA physicians to prescribe drugs generically rather than by brand names. Generally a drug prescribed generically is cheaper than a drug prescribed by a brand name. While it is difficult to assess prescribing quality without diagnostic information, it is generally felt that lower rates of drug use are desirable because of

the costs and risks associated with high medicine use. The GHA physicians tended to prescribe a somewhat narrower spectrum of drugs and their rates of antibiotics and hormones were lower than the control group. It should be noted that with few exceptions there is little evidence that brand name drugs are more efficacious than their generic equivalents, even though the brand names tend to be more expensive.

Rabin et al concluded that strategies that reduce ambulatory physician visit rates are likely to reduce medicine use as well. And for the medicaid population, the prepaid group plans seem to decrease the rate of use of prescription drugs and costs without any apparent reduction in quality and with high enrollee satisfaction. It is not clear whether these results for prepaid group practice HMOs can be generalized to other types of HMOs.

It has been found that prepaid prescription plans alone generally increase the use of prescription medicine. Such a plan gives no incentive for substituting other kinds of therapy for drug use.

It is sometimes suggested that HMO cost savings result from a selection bias on the part of patients or physicians. But the Densen study found existing health conditions not to be a factor in determining the choice between the fee-for-service and prepaid medical plans. Only two demographic factors distinguished the choice between prepaid and fee-for-service plans in the study by Tessler and Mechanic. Those who chose a prepaid program were better educated and more likely to be unmarried. But no important differences were found in terms of perceived health status or in indicators of earlier use of medical care services. The two groups also seemed to be virtually the same in their propensities to use preventive services and in their attitude toward care. There is one difference in the two groups of enrollees which may be important. The data suggest that persons with many chronic illnesses tend to be heavy users of medical services, and there was a tendency for the spouses and children of lower-income families enrolling in prepaid group practices to have more chronic illnesses than the spouse and children of similar families who chose the fee-for-service insurance plan. It should be noted that the

Tessler and Mechanic study is really a case study; the fee-for-service insurance plan compared to the prepaid group practice is more liberal with respect to its outpatient coverage than most. It is possible then that in different social settings or in comparisons between different insurance plans, the results could be somewhat different.

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