
From Physician Shortage to Patient Shortage

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Employment of Physicians at Harvard Community Health Plan

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In contrast to the other chapters which consider broad sectors of the American medical community, this chapter is devoted to a close case-study examination of the physician employment practices in a single health maintenance organization (HMO). Harvard Community Health Plan (HCHP) which began operations in 1969 with eighty-eight members, by January 1986 had become a 210,000-member HMO with nine health centers located around the Boston area (Figures 5.1 and 5.2). It is not a typical HMO since it started with a special relationship to Harvard University and some of its teaching hospitals. Nevertheless, as HCHP has grown over the past seventeen years, it has confronted and continues to confront issues of changing medical practice and changing physician personnel which may be instructive for others in a variety of health care settings.

Background

HCHP is a staff model HMO. As such, its physician staff are salaried employees and there is a single line relationship which can be drawn from the president (CEO) to the medical director (COO) down to the level of each physician's practice. This structure differs from the group model HMO in which the group of clinicians who care for HMO members is organized separately from the entity which enrolls the members, and generally the group practice receives a capitation (a certain number of dollars per member per month) for providing services to HMO members. The structure of HCHP also differs from that of an independent practice association (IPA), which is currently the most rapidly growing HMO model. In an IPA, the entity which enrolls the

members contracts with independent practitioners to provide care to its members. The mode of reimbursement to the independent practitioners could be a capitation. More commonly it is a percentage of usual charges for the services rendered, with the remainder held in escrow for distribution if the total expenditures of the HMO are less than its revenues.

The basic operating unit at HCHP is the health center. The oldest and largest center has 54,000 members. Other mature centers are smaller and have 20,000 to 40,000 members. New health centers usually begin with a few thousand members, many of whom have transferred from an older center when the new one is closer to the home or workplace. Each health center, regardless of size, contains at least four departments with center-based chiefs: internal medicine, pediatrics, obstetrics/gynecology, and mental health. In addition, medical and surgical specialty services are provided physically within each center, but they are organized on a plan-wide basis. Thus, there are central departments of surgery, orthopedics, visual services, neurology, oncology, cardiology, etc., and each such department has a central chief.

Nurse practitioners and other nonphysician health professionals have long played an important role in the delivery of health services at HCHP. In its early years HCHP employed nurses. Then, as the desire grew to incorporate nurse practitioners into the delivery of primary care, HCHP undertook a major training program to develop its own group of nurse practitioners. These practitioners have been used universally in the internal medicine departments where one practitioner has worked with one or two physicians. HCHP is currently adopting a model of internal medicine practice in which there will be a fixed ratio of one nurse practitioner to each two full-time physician equivalents. Thus, it is important to keep in mind as we discuss physicians' practices that these physicians are working not alone but rather in a team arrangement with nurse practitioners.

Development of Physician Staffing at HCHP

At its inception there was one health center, the Kenmore Center, and HCHP physicians were recruited from the staffs of Harvard teaching hospitals, primarily the Beth Israel Hospital and the Peter Brigham Hospital. The latter is now a division of Brigham and Women's Hospital (BWH). As HCHP became solvent, physicians were no longer paid through their initial hospital affiliation, and they became direct salaried employees of HCHP. Nevertheless, the relationship to the teaching hospitals remained strong, and HCHP's adult patients were admitted to them. Though many physicians were full-time at HCHP, particularly in the departments of internal medicine, pediatrics, and obstetrics/

gynecology, some part-time physicians were hired from the outset. The part-time physicians in primary care departments tended to divide their work between HCHP and a function in an affiliated teaching hospital or possibly with home responsibilities. They did not have private practices outside the plan. In mental health, part-time physicians and psychologists have been the rule; and most of these part-time staff have split their professional activities between HCHP and private practice. The nature of mental health practice inside and outside HCHP differs. Within the HMO, psychiatrists have placed a strong emphasis on care of psychotic patients and others with serious mental health problems, while their private practices have been weighted towards patients with problems of living or adjustment. Some have argued that to concentrate on one or the other type of practice would be professionally confining or possibly too much of an emotional strain. Thus, the model of part-time staffing in this field has persisted.

For a different reason, staffing in the surgical departments also began with part-time employees. This pattern was needed in order to have enough individuals in the department to provide on-call coverage twenty-four hours a day, seven days a week and to cover subspecialties within the department. Thus, for example, with approximately one full-time surgeon for every 22,000 members, it would take a moderately large staff model HMO to support a full-time surgical staff of four members. In contrast, a rather small HMO could support three or four quarter-time surgeons.

HCHP's relationship to the Harvard teaching hospitals was atypical, indeed unique, for an HMO. Only recently have other HMO arrangements begun to develop from academic departments. The relationship was useful for HCHP recruitment in several ways: in internal medicine HCHP has had an active residency and fellowship training program which has provided potential recruits with an opportunity to have a genuine practice experience at HCHP and, in turn, has provided HCHP chiefs an opportunity to evaluate potential recruits firsthand. In departments such as surgery, it has been possible for the plan to take advantage of the high quality of recruits in the teaching-hospital-based departments and provide a general practice outlet for the staffs of those departments. In parallel, there have been advantages for the academic departments and their chairmen: HCHP has been a convenient location for placing trainees with an interest in practice. In addition, the availability of HCHP as a practice location and the accompanying solid funding for clinical physicians has permitted academic department chairmen to expand their departments with researchers or to develop subspecialists without the need to provide full salaries. It is likely that this has allowed

some academic departments to grow at a faster rate than otherwise would have occurred.

HCHP's second center opened in Cambridge, Massachusetts in 1973. The founding members of this center were two academic physicians on the staff of Cambridge Hospital, a city hospital which is also a Harvard teaching hospital. The staff in primary care fields was largely, though not exclusively, recruited from Harvard training programs. The center's staff in the specialties was recruited from the staff of Cambridge Hospital. Most of these physicians were not full-time members of the academic department at Cambridge Hospital but were practitioners associated with the hospital. Not all of the recruits were salaried employees. Some of the specialty physicians developed a contractual relationship with HCHP (a subject which will be expanded below). In other respects, however, the physician staffing pattern resembled that of the Kenmore Center, the principal difference being the teaching hospital with which the staff was affiliated.

Planning for a third center began in the mid-1970s. It was originally envisioned that this center, to be located in Wellesley, Massachusetts, would have a relationship with an outstanding community hospital in that area, the Newton-Wellesley Hospital, and that the relationship would be similar to that of the Cambridge Center and Cambridge Hospital or the Kenmore Center and the in-town teaching hospitals. The physician staff of the Newton-Wellesley Hospital, however, most of whom were in private fee-for-service practice, strongly opposed an affiliation of the hospital and HCHP. Indeed, one byplay of this was that several of the local practitioners who were Harvard Medical School alumni and who were incensed by HCHP's move into their area began a campaign through the Harvard alumni association against HCHP's use of "The Harvard Name."¹ At this time, HCHP recognized that it could not depend on local hospitals for affiliation of its centers, and since it wanted a more appropriate institution than the tertiary teaching hospitals for hospitalization of patients with secondary care needs, it purchased a small hospital in Boston which is now called HCHP hospital.

The fact that the Wellesley Center, located approximately ten miles from downtown Boston, could not affiliate with the nearest hospital, led to several changes within HCHP. Though it would have been possible to staff the primary care departments with full-time and part-time center-based personnel, it would have been essential to staff the specialty departments from Boston, and, as it turned out, largely from the Kenmore Center. This led to the clear recognition that HCHP did not consist of a confederation of separate centers, like McDonald's franchises, but instead was a multi-center system of care. It was at this time that the central departments of surgery and orthopedics were established, and

chiefs were appointed with plan-wide responsibility. It is important to keep in mind the fact that staffing or recruiting was really the central problem addressed by the central departments. In an organization predominantly managed within an operating unit, i.e., health center, it took an important problem, specialty staffing, to precipitate the development of a separate management structure which cut across operating units—the central clinical services.

Recently another staffing problem has arisen requiring a different solution. In July 1984, HCHP opened its sixth health center, located in Peabody, Massachusetts, eighteen miles from downtown Boston. Until that time, HCHP centers had been located close enough to Boston so that while some of the residents in the area around the center used local hospitals, many used hospitals in Boston. Thus, HCHP's pattern of using hospitals in Boston was not alien to many, perhaps most, of its suburban members. The population of the North Shore area in which the Peabody Center was located, however, rarely used Boston hospitals. Therefore, it would not have been possible to build the center without an affiliation with a local hospital. Furthermore, since none of the local hospitals was a teaching hospital, it was necessary to work out contractual arrangements for specialty coverage with existing community groups of physicians who used the hospital with which the affiliation arrangement was established. These requirements led to complicated multilateral negotiations which eventuated in a series of contracts with the Beverly Hospital and with several groups of practitioners on its staff.

Effects of Growth on Recruitment

HCHP has been growing steadily at 15–20 percent per year throughout its history. While growth has provided opportunities to expand staff and particularly to expand the skills provided inside the organization, it has also posed interesting problems in physician recruitment.

In early 1981, after over a decade of its existence, HCHP enrolled its 100,000th member, and in mid-1985, it enrolled its 200,000th member. Though the growth rate had not changed, a difference in recruiting practices was needed to provide sufficient staff for the enlarged membership. To understand this, it is necessary to examine staffing ratios, such as the ones in effect at HCHP (Table 5.1). For example, if the staffing pattern in an HMO is one full-time equivalent orthopedist for every 20,000 members, then for 20,000 total members four quarter-time orthopedists would be required to provide appropriate on-call coverage. As the HMO grew to 40,000 members, probably a several year process, new orthopedists would be added or the four existing orthopedists would increase their practice to half-time, which would

eliminate the need for new recruits. At HCHP, until there were 100,000 members, specialty departments grew largely by a combination of adding new part-time physicians and by increased time commitments from existing staff. At about that size, with a 20 percent annual growth rate, a new type of problem presented itself. It became apparent that within a one-year period there would be a sufficient number of new members to require the addition of a full-time equivalent orthopedist, and that in subsequent years, assuming continued growth, progressively more full-time equivalents would be needed. There were several difficulties in filling this need with additional part-time physicians, and we shall examine this problem below.

Even in the primary care departments, continued growth at HCHP has placed a great strain on the traditional recruiting mechanisms. Beyond 100,000 members, growth required hiring more internists and pediatricians each year, numbers large enough to outstrip the capability of Harvard teaching programs to serve as the predominant recruitment pool. Thus the chance to become familiar with potential recruits by working with them during their training has been diminished, as has the importance of the "old boy network" which permitted plan chiefs to request references on potential recruits from friends and colleagues on the Harvard faculty. It also has become necessary to formalize the recruiting mechanisms in most departments. In 1984, the first director of physician recruitment was appointed. A physician-manager, his functions have included development of recruitment marketing techniques so that HCHP can attract appropriate numbers and types of candidates who are qualified to be on the staff of the plan and its affiliated hospitals. He has also played an important role in the increasingly difficult problem of placing new physicians in mutually optimal locations: Different centers do not just have a need for new internists or gynecologists. They may have a particular demand for female physicians or for older physicians, for physicians who are experienced at handling the problems of inner-city children, or for physicians who are willing to have a primary care practice but also have an interest in a subspecialty such as endocrinology, etc.

A specific example of some of the changes that have occurred in HCHP's physician staffing arrangements with growth and of the opportunities and problems indicated above, is HCHP's Department of Orthopedics: As the hypothetical example above suggests, in the early days of HCHP, when there were few members, all of the orthopedists were part-time. Almost all were members of BWH's Department of Orthopedics, a highly specialized department with an international reputation. The general pattern was that newly hired orthopedists at BWH would work part-time at HCHP. This allowed the chairman of

the BWH department to add talented budding academic orthopedists to his staff without having to support them entirely from research funds or BWH's practice base. The two departments grew together well for over ten years. Along the way one full-time orthopedic surgeon was hired by HCHP, and he was affiliated with the smaller academic Department of Orthopedics at the Beth Israel Hospital. In general, the staffing ratio was one full-time equivalent orthopedist per 20,000 members. At about the time HCHP had 100,000 members, several problems occurred. First, the BWH department had reached a large size and was neither willing nor able to continue growing to meet HCHP's manpower needs. Second, most of the part-time HCHP orthopedists who were on the staff of BWH were unwilling to increase their time commitment to HCHP. Indeed, about this time several of them had established strong reputations in specialty areas of orthopedics and realized that they could support themselves at least as well, and at the same time further their academic specialty careers, if they did not undertake orthopedic work at HCHP. Third, HCHP's chief of orthopedics was one of the part-time BWH-affiliated physicians and was caught between his two bosses and their needs: HCHP's need to continue to staff its growth and the BWH department's need to limit its growth and limit competition for precious operating room time. Consequently, over the next two years several of the part-time orthopedists left HCHP to concentrate their activities at BWH, while HCHP appointed its only full-time orthopedist as its department chief, mounted a major recruiting effort which led to the hiring of several new full-time orthopedists plus some new part-time orthopedists, entered into a contractual relationship with a non-academically affiliated practicing group of orthopedists to provide services to members in one of the centers most distant from the teaching hospitals, and equipped HCHP Hospital to handle all but the most complicated orthopedic cases.

Employment Arrangements with Physicians

HMOs can be thought of as having many "make-versus-buy" decisions which determine the services which will be supplied in-house and which services it will obtain elsewhere. For example, all HMOs must provide cardiac surgery and neurosurgery to their members when their medical conditions warrant these services; but only the very largest HMOs have cardiac surgeons or neurosurgeons on their staffs. The most common alternatives to direct employment of physicians include contractual relationships with individual physicians or groups of physicians for specified amounts of patient care (e.g., three office sessions a week plus a share of the on-call rotation) or for specified types of care (e.g., all

professional services related to performance of a heart transplant), or simply the purchase of care on a fee-for-service basis as needed.

At HCHP most physician services are provided by salaried employees. For many years explicit or implicit work expectations in return for salary were defined by department chiefs. Recently, plan-wide explicit work expectations have been defined for the major clinical departments. Work expectations in HMOs are usually defined either by the amount of time the physician is expected to work (e.g., a full-time internist will spend "x" hours seeing ambulatory patients in office sessions, perform the hospital care associated with those patients, and have a full share of the on-call schedule) or by establishing the size of the panel of patients for whose care the physician is responsible (e.g., a full-time internist working with a half-time nurse practitioner will provide all ambulatory medical care for a panel of "xx" members, perform the hospital care associated with the panel, and have a full share of the on-call schedule). HCHP, in going to plan-wide work expectations, has adopted panel-size based expectations for the primary care departments. The definition of panel-size is complicated and will depend at a minimum on the age distribution of the membership of the HMO, since an internist cannot care for as many older adults as young ones and a pediatrician cannot care for as many young infants as older children.

Similarly, there are many ways to set up compensation systems. At HCHP, as at a number of older HMOs, for many years all salaries were indexed to one specialty, and within a specialty the distinctions in salary between physicians related solely to years of prior experience in medicine and years of service at HCHP. Performance distinctions between physicians were not expressed in salary distinctions. Thus, at HCHP the salary scale for internists had a ranking of 1.0, and other specialties had scales which were a fixed multiple of the internal medicine salaries; i.e., psychiatry was 1.14, surgery was 1.22, orthopedics 1.55, etc. There was a 70 percent difference between the highest and lowest salaries within a scale; and it took eight years of experience within the plan (now six) to traverse the scale within a specialty if one's prior medical experience was limited enough to necessitate starting at the lowest rung of the salary ladder. Currently at HCHP, as at many other HMOs, incentives are being built into the physician compensation system. Furthermore, specialties are no longer indexed to each other. Rather, the scale for each specialty is now determined in part from a "marketplace" assessment of earnings in that specialty.

To develop an incentive compensation, it has been necessary to develop a more formal physician review process. At HCHP, new physicians have always had two reviews, one at nine months and another at two years, before they obtained permanent employee status. Now,

physicians who have worked five years or more at HCHP are being reviewed every year by their chiefs of service. Areas which are covered in the review include the quality of care provided, with attention to technical knowledge and skills, interpersonal and service skills, and the physician's role as leader of the care team (the nurse practitioner and clinical assistant). The review also covers practice management skills, cost-effectiveness of practice style, participation in nonclinical activities in the plan, continuing education, and participation in teaching or research. The review is written by the chief and is submitted to the medical director.

Contractual arrangements with physicians are common in many HMOs. There are a number of reasons why the HMO or the physician might want a contractual relationship rather than a salaried employee status. For instance, a physician who is being recruited to work for the HMO part-time and is already in fee-for-service practice may find the usual salaried arrangement undesirable because he or she already has a professional corporation, does not need the HMO's fringe benefit arrangements, and would be more attracted to the HMO position if the benefits could be converted to cash (a problem which may be solved only by a contract). This can be generalized to any situation in which a potential recruit who is highly desirable from the HMO's standpoint finds the standard employment arrangement disadvantageous. An example of a situation in which the HMO prefers a contractual relationship is the situation in which an HMO usually salaries physicians to provide a fixed fraction of a full-time equivalent position but now wants to hire a group of physicians to care for its growing membership in a capitation arrangement. This would necessitate a contract, but would provide the HMO with exactly as much care as its membership needs. Thus the HMO would not hire a full-time surgeon-equivalent in anticipation of rapid growth when a half-time surgeon-equivalent would be sufficient. A contract would enable the HMO to demand the coverage equivalent of a full-time surgeon when the membership warrants it, but would pay for only a part-time surgeon at lower membership.

Of course, both advantages and disadvantages accrue to each party in a contract as well as in a straight employment arrangement. Contracts generally contain provisions for cancellation without cause, whereas in many HMOs physician employees have the equivalent of tenure and can be terminated only for cause. Contractors are unlikely to feel the same loyalty to the organization as do employees. Also, an HMO inclined to frequent contracting to get around its own employment conditions is unlikely to be able to maintain the morale of its employees. In short, it is essential to weigh the advantages and disadvantages of contracting, and it is desirable to have policies indicating sanctioned uses of contracts.

In the world of fee-for-service medical practice, there has been a simple elegance to the monetary incentive system. By and large, physicians who perform services technically well, in volume, or in a way that is satisfying to patients, have been rewarded monetarily. There are some inequities: some technically skilled physicians who are not nice to their patients make a fortune, while some highly personally satisfying physicians who spend inordinate amounts of time with their patients earn relatively little. On the whole, however, physicians tend to be rewarded for what they do, and if patients do not like the treatment they receive from one physician, they can change to another.

Devising a suitable reward system has proved to be a difficult task for HMOs since there are many different types of behavior an HMO may wish to reward. An HMO wants members to receive appropriate medical care, but it also wants to ensure that physicians do not overutilize resources such as laboratory tests, consultations, hospitalization, and procedures. Only recently has this become a concern in the fee-for-service world. In addition, the HMO must demand that physicians are accessible to members and provide personally satisfying care during encounters since members often do not have many, if any, alternatives to the clinicians they are seeing, and members are contracted to stay with the HMO for up to one year before a switch to another care system is possible. Unfortunately, while there are several good reasons for HMOs to encourage these patterns of behavior, there has been no simple or generally accepted incentive. In a newly opened center, HCHP has attempted to address this problem by establishing a new compensation system. While physicians will receive a "draw salary," which will be 85 percent of the standard HCHP scale, an annual performance fund has also been established. This fund is generated from achievement of targeted objectives for average panel size, patient satisfaction levels, out-of-office and hospital utilization costs, and quality of care indicators. The distribution of the performance fund to individuals is determined on the basis of a merit review conducted jointly by the chief and department members and can amount to as much as 25 percent of the draw salary during the performance period.

Alternatives to Physicians

To provide care to its members, HCHP employs a variety of professionals in addition to physicians. These include nurse practitioners, physicians' assistants, nurses, psychologists, social workers, physical therapists, nutritionists, optometrists, and podiatrists. In mid-1985, HCHP employed 271 full-time physicians about one-half of whom were primary care internists or pediatricians. At the same time, HCHP had

185 mid-level clinicians, predominantly nurse practitioners and physicians' assistants.

It is axiomatic that as an HMO grows in size and in the complexity of the services which it makes rather than buys, it will include additional types of health professionals. It is only slightly less obvious that once an HMO has employed a nonphysician health professional, almost invariably at lesser cost, it becomes possible to consider substitution of physician services for those of the nonphysician. Nurse practitioners have been effective in providing care in ambulatory practice settings,² and it has already been mentioned that they are embedded in the provision of care in the primary care departments at HCHP. Many work in other departments as well, such as urgent care or triage. Until recently, physicians' assistants have been employed primarily in surgical specialty areas and urgent care, but now they are being hired in primary care departments as well. Member satisfaction with the services provided by these nurse practitioners and physicians' assistants is high, indeed similar to satisfaction with physicians. Clearly, it has been possible for physicians to extend the care that they give to members by working closely with a nurse practitioner or physicians' assistant.

Another example of the use of nonphysicians is HCHP's use of a podiatrist. Routine podiatry is not a benefit provided to HCHP members, except for those members with diabetes mellitus or peripheral vascular disease. Until a few years ago, HCHP contracted with a podiatrist to provide only those covered services. In the reorganization of the orthopedic department described above, it was apparent that it would be difficult to recruit sufficient numbers of orthopedists and that it would be desirable to use substitutes for orthopedists when possible. Many consultations with orthopedists were for foot problems which fit nicely within the range of skills of podiatrists. Accordingly, HCHP obtained additional services from a podiatrist so that the department of orthopedics could allocate some orthopedic referrals to the podiatrist. This substitution has functioned effectively for HCHP and its members, although routine podiatric care is still not a covered benefit.

There are some health professionals who provide substantively different types of care from those rendered by physicians, sometimes for problems similar to those treated by physicians. Chiropractic and acupuncture are examples of these. Neither is a covered benefit for HCHP members. HMOs do differ in their approaches to these types of care. For example, at least one HMO in the Boston area does offer chiropractic services to its members. The general issue involved here is the definition of the benefit package to which members subscribe. There is no real controversy about the value of routine podiatry or routine dental care, but many HMOs, probably most, do not offer them routinely. Were the HMOs

to offer these services, it would require an increase in premium and a potential loss of competitiveness against less comprehensive, less expensive packages, or alternatively, curtailment of other types of services in order to keep the premium down.

Effects of Growth on Organization of Services

HCHP's growth from 100,000 to 200,000 members has been accompanied by a number of changes within the organization. As mentioned earlier, this growth involved a structural change from two centers which provided care independently to their memberships to a multi-center system of health care. Specialty services such as oncology and cardiology, which began with part-time physicians or with physicians who split their time between primary care and specialty care, have developed into freestanding units. Services which once were bought are now provided in part or wholly within the HMO. These include audiology, physical and occupational therapy, fundus photography, diagnostic ultrasound, mammography, exercise testing, electroencephalography, GI endoscopy, and vascular surgery. In order to bring most of these services in-house, it has been necessary to develop central management structures and to hire specialized allied health personnel and specialized physicians.

Interestingly, as HCHP has grown, it has decentralized its laboratory services. Laboratories in each health center now perform over 70 percent of the tests ordered by clinicians in those centers. When the plan was smaller, there was a single central laboratory to perform routine testing; only phlebotomy was done within the health center. The central laboratory has been dissolved and tests which cannot be done within the ordering health center are handled either by another center or by an outside vendor. In contrast, cytology and anatomic pathology, which once were performed by outside vendors, are now in-house services.

There is no hard-and-fast rule about which services should be brought in-house and which should remain outside. It is a fluid process which requires periodic reassessment of the cost-effectiveness of the current arrangement, coupled with an assessment of whether there is managerial capability for handling an alternative. It is usually easier to bring a service in-house than to disband an in-house service in favor of an outside vendor, since the latter generally requires reassigning or laying off employees and decisions about capital equipment which has been in use.

Many types of services still are purchased at HCHP. To name a few: CT scanning and nuclear medicine (for which we have contracts favorable enough to forestall bringing the services in-house), angiography, neurosurgery, cardiac surgery, and plastic surgery. Hospital services, which

have been both performed and bought by HCHP, are likely to be bought to a greater degree in the future. Recent changes in the hospital industry are leading to a greater availability of beds at a time when the needs of growing HMOs, such as HCHP, are increasing. Since even a large HMO has a bed requirement which would fill only a small hospital (approximately one bed per thousand members per day), it is likely that many HMOs will make alliances with existing hospitals rather than create new ones. HCHP has developed a long-term contractual relationship with BWH, in which BWH will become the principal hospital site for most of HCHP's centers near Boston. An emergency service for HCHP members is being built at BWH. Over the next several years, a highly interdependent relationship is expected to develop. One consequence of the new arrangement has been the closing of HCHP Hospital, another demonstration of the fluidity of the make-versus-buy decision.

Changing Location of Care Delivery

It has been apparent for many years that HMO members have lower rates of hospitalization than patients in fee-for-service practices, and a Rand study³ has demonstrated that this is the result of fundamental differences in practice, not as a result of skimming the healthiest members of the population or skipping on necessary care. The fundamental differences are multiple. They are likely to include more judicious selection of patients for hospitalization and the specific substitution of ambulatory services for inpatient services. In many HMOs, such as HCHP, where most ambulatory care is delivered within a health center, it is possible to perform tests, procedures, and give treatments that formerly were given in the hospital; and the tendency is to design units that increasingly permit this substitution. For example, HCHP recently built a central oncology unit which includes a day treatment center. In this unit, it is possible to administer forms of chemotherapy which heretofore were given only to hospitalized patients.

While the Rand study did not demonstrate clearly that length of stay (LOS) was lower for patients who were hospitalized by physicians in an HMO than for patients in fee-for-service practices, it is likely that some HMOs have adopted practices which would decrease LOS and that others have led their communities in devising programs to decrease LOS. The improving technologies associated with home care are likely to prove as appealing to HMOs as to those under the pressure of DRGs. At HCHP, the use of home care services has been stimulated by development of the Outside Health Resources Utilization Program in which skilled nurse practitioners make daily rounds to HCHP's hospitalized patients and evaluate early in a hospitalization what kinds of

arrangements would facilitate discharge from the hospital or transfer to a more appropriate institutional setting. HCHP has contracted with a single large home health agency not only to achieve a volume discount but also to manage smoothly the interface between the patient at home and the physician in the office. Many of the efforts of the Outside Health Resources Utilization Program have been directed toward educating clinicians about home health care, since most physicians did not learn much about home care in their training; and for those who did, that knowledge is becoming rapidly outmoded.

HCHP is interested in fostering alternatives to traditional hospitalization. This is not necessarily cost-saving. The interest in alternatives derives from a desire to decrease dependence on traditional hospitals since, as pointed out above, hospital arrangements can be very complicated for an HMO such as HCHP. More important, however, is the belief that a day at home is better than a day in the hospital. Hospitals, after all, remain institutions despite efforts to personalize care within them. The challenges are to provide similar or better care outside the hospital and to market this care to the general population, who will be inclined to be skeptical about even shorter stays in the hospital.

An example of HCHP's interest in this area was its pilot programs to discharge newly delivered mothers within twenty-four hours of delivery which began in two centers in early 1985. In one, mothers were subsequently visited at home by a nurse practitioner who examined the baby and assessed the medical needs of mother and child. In the other, trained helpers came to the home for four days after discharge and performed several functions: they made sure that meals were available, did light housekeeping, and helped (as well as instructed when necessary) the mother with routine care of the newborn. This latter program has attracted more candidates than the former, although both have been satisfactorily received by those who have tried them. HCHP is now developing a plan-wide program which will combine the features of the two pilots.

It also is likely that HMOs and other institutions with an interest in decreasing their use of traditional hospitals will stimulate the acceptance, and perhaps even foster the development, of new technologies. The work of Dr. Gerald Moss,⁴ who has discharged over 200 patients from the hospital within twenty-four hours of a cholecystectomy is being copied. Dr. Moss has developed some changes in technique which permit him to eliminate use of narcotic analgesics and to feed patients orally by the second day without development of ileus. Although it may take time to market the concept to physicians and patients, it is hard to believe that a patient who is home on the second day and visits Dr. Moss in his office on the third, is not doing better than the traditional

cholecystectomy patient who is lucky to be discharged on the fifth or sixth day.

Physician Turnover

In HCHP's early years, physician turnover rates were low. For example, between 1978 and 1980, turnover in the plan's departments of internal medicine was 2-3 percent per year. In 1985, turnover in internal medicine was 5 percent. It is likely that the rates will be higher in the foreseeable future than they were in the past for several reasons: In the early years of HMO growth, including the 1970s, many physicians who accepted full-time positions in these organizations were intellectually committed to the concept of HMOs and prepaid care. They were unlikely to think of their positions as merely jobs. We have already mentioned that at HCHP the opportunity to examine candidates closely was greater when the plan was smaller. Similar opportunities are likely to occur in other small HMOs, even when they are not affiliated with teaching programs. As the quality of employment screening declines, it is likely that there will be a greater percentage of recruits who discover that they do not like to practice in the HMO setting and a greater percentage who do not live up to the HMO's standards and are asked to leave. Also, in the past physicians were less likely to be married to other professionals than they are now. When there is extensive hiring of young physicians, it is likely that there will be some turnover due to relocation of spouses as they complete training in their own professions, including medical training, or get caught up in the job mobility of early nonmedical careers.

The combination of higher physician turnover rates and leaves of absence, such as maternity leaves which are increasing as more women physicians join HMOs, makes it progressively more difficult to provide continuity of care to HMO members. Unfortunately, it appears likely that members of HMOs, such as HCHP, which have had a strong commitment to linking members with a primary care team, are going to have to accept some discontinuities in primary care clinicians; and HMOs are going to have to devise methods for making sure that the quality of care of these members remains high despite the discontinuities.

New Career Paths for Physicians in HMOs

As medicine becomes more "industrial" and as physicians increasingly become more likely to work in managed settings, the demand for physician-managers is likely to rise. HCHP has had a long commitment to an important managerial role for physicians. Each health center has

a physician as health center director; and chiefs (who now number thirty-eight) are the general managers of their departments. The processes which need to be managed within departments are considerably less standardized than similar processes which occur in the traditional model of management in medicine—the teaching hospital department. Recruiting physicians who ideally will spend an entire career in one practice, evaluating what happens behind the closed office door, and developing new strengths in old staffs are challenging and complex tasks. At the same time, the chief must be an accomplished clinician and teacher. He or she must be able to motivate different types of clinicians to work well together and to work effectively with their support staffs; and the chief must be able to design and implement new programs to improve resource utilization, patient flow, etc. Perhaps because of the complexity and lack of standardization of the job which needs to be performed, the autocratic model so common in teaching hospitals is not particularly effective at HCHP. It has required considerable effort to train physicians to manage effectively, and several formal management programs have emerged.

Teaching is also likely to become an important function for physicians in ambulatory care settings such as HMOs.⁵ As HMOs grow, it has become evident that the hospital plays only a small part in the total medical care of the patient and it also appears likely that the patient population for traditional teaching hospital-based education will be eroded. There does seem to be a growing interest in educating medical students and young postgraduate physicians in the elements of overall care of the patient; but there is not yet a clear scheme for merging the traditional interests of medical schools and teaching hospitals with the needs of HMOs and other practice settings to have well-trained practitioners. HCHP does have teaching as one of its goals. Teaching is conducted primarily through the auspices of the HCHP Teaching Program which is funded by the HCHP Foundation. The foundation is funded from a percentage of HCHP's revenues and uses these funds to support teaching, research, and community service. The director of the teaching program is a former medical director of HCHP. There is a teaching unit which is physically located within the Kenmore Center. It includes conference rooms, audiovisual facilities, rooms equipped with one-way mirrors or video-cameras for interviewing and examining real and simulated patients, a micro-computing facility, and a library. Several programs for medical students, house officers in affiliated teaching hospitals, fellows, and nurse practitioners are now run by the Teaching Program. There has also been a formal effort to improve and focus the teaching skills of HCHP clinicians. While it is likely that the HCHP Teaching Program will continue to grow and develop, it is not so likely

that other HMOs, particularly the for-profit HMOs, will fund teaching activities from member premiums. If teaching within the HMO setting is to develop on a national scale, a number of problems need to be addressed to clarify the relationship of teaching to other activities at an HMO and the relationship of teaching within the HMO setting to the overall education of medical students and young physicians. These include: Who will be the teachers? What will be the incentives to teach? How will teachers be compensated? How will the HMO fund teaching activities? Will the funds come from external sources or from an appropriate quid pro quo to make it worthwhile to the HMO to sponsor teaching activities? What criteria will apply to the students to indicate that they have been educated appropriately (i.e., what will be the analog to current residency requirements)?

Overall, as long as the financing does not place it at a competitive disadvantage, teaching should have a beneficial effect on an HMO: clinician-teachers will have a stimulus to maintain high quality in their personal practices. The questioning attitude in a teaching setting should invigorate even those who do not participate directly in teaching. Not least, the students ultimately will be a more suitably trained source of new staff than currently exists. For these reasons, despite the unanswered questions above, it is probable that interest in improving educational opportunities within HMOs will continue to develop.

Standardization of Physician Practices

Another byproduct of the industrialization of medical practice is that demands are being placed on the new medical organizations that were rarely, if ever, placed on individual practitioners. One of these is that the parties who are paying for care, such as government agencies and employers, are increasingly interested in the quality of care provided. Although measurement of the quality of care remains a soft art, inroads are being made in assessing some of the components. Similarly, it is likely that in the future physicians will be expected to perform certain tasks according to standard. For example, there could easily be standards for immunization levels, for follow-up of abnormal screening test results such as Pap smears, and standards which define the components of a "checkup."

HCHP clearly seems headed in the direction of more standardization and measurement. There are relatively recently appointed physician-managers who are deputy medical director for health practices, with responsibility for development of practice standards, and vice-president for quality of care measurement (who reports directly to the president of HCHP). HCHP has long had an automated medical records system.⁶

This now includes a clinical reminder system. Components of this system do a variety of tasks aimed at standardization. For example, there is a reminder which is generated and sent to the clinician who obtained an abnormal Pap smear when there is no record of a follow-up examination within sixty days. Another type of reminder generates a listing of insulin-dependent diabetics every six months which indicates when they last had examinations such as ophthalmologic evaluations. A third type generates postcard reminders for patients whose age or diagnostic codes indicate that they are candidates for influenza vaccine. In addition, every time one of these persons has an appointment during the influenza vaccination season, a reminder is printed on the front of the printout of the record which is sent to the clinician. The same system makes it possible to evaluate each primary care practice at the end of the influenza season to determine the rates of influenza vaccination among suitable candidates.

Extrapolations from the Case Study

This chapter has provided a description of many of the features of physician staffing at HCHP. It is important to remember that HCHP is a staff model HMO, i.e., it is an example of the most tightly organized model of managed care settings. Relatively few staff model HMOs are being established at this time. They are capital intensive compared to IPAs; they are not suitable to the very high growth rates that have been sought and achieved in IPAs and PPOs; and they can be established only in populous areas. It remains to be seen what will become of staff model HMOs. They could occupy a valuable niche in the future world of health care; their anatomy could be unfavorable for the future world and become extinct; or they could develop different features from the ones they have today. In the meantime HMOs provide an interesting example of what can and cannot be achieved in managed care settings.

I believe that tightly organized care settings such as staff model HMOs generally and HCHP specifically have an opportunity to achieve a better standard of quality of care than less tightly organized care systems. In particular, if one compares a staff model HMO with fee-for-service practice, variation in care is less likely. While HMOs may not achieve the high peaks in quality of care found in some exceptional fee-for-service practices, it is also not likely to tolerate the deep valleys of quality that co-exist in the fee-for-service world. In the HMO it should be easier to identify and manage quality problems. Nevertheless, practice variations do exist, even within staff model HMOs and even when there are no economic incentives for such variations. For example, influenza vaccination rates at HCHP, measured by the reminder system described previously, have varied about threefold between practitioners

with the poorest and best performance. This occurs despite the fact that the overall level of influenza immunization among high-risk members is higher than that reported in the general population.

Similarly, tightly organized HMOs are likely to be able to better manage the problems of impaired clinicians. Whereas, in the fee-for-service system it is often not clear who can or will blow the whistle or within whose jurisdiction the problem lies, be it alcoholism, drug-dependence, inappropriate sexual behavior, in an organized setting the problems are brought to the attention of the management. They cannot be swept under the rug; they must be managed.

A common public perception seems to be that physicians are just entrepreneurs. In contrast, physicians, as they are becoming involved in managed care settings, seem to perceive themselves increasingly as laborers. I believe that the public wants to perceive physicians neither as entrepreneurs nor laborers. Rather, the public is looking for physicians to be caring medical scientists. Just as the fee-for-service system is now failing, tightly organized settings will not succeed in the long run unless they provide what the public wants. The challenge for HMO managers is to foster the role of the caring physician and not to force or even allow physicians to feel like mere laborers. If we have well-motivated caring physicians, our members will be satisfied and the model will be perpetuated; if we do not, there will be call for further change.

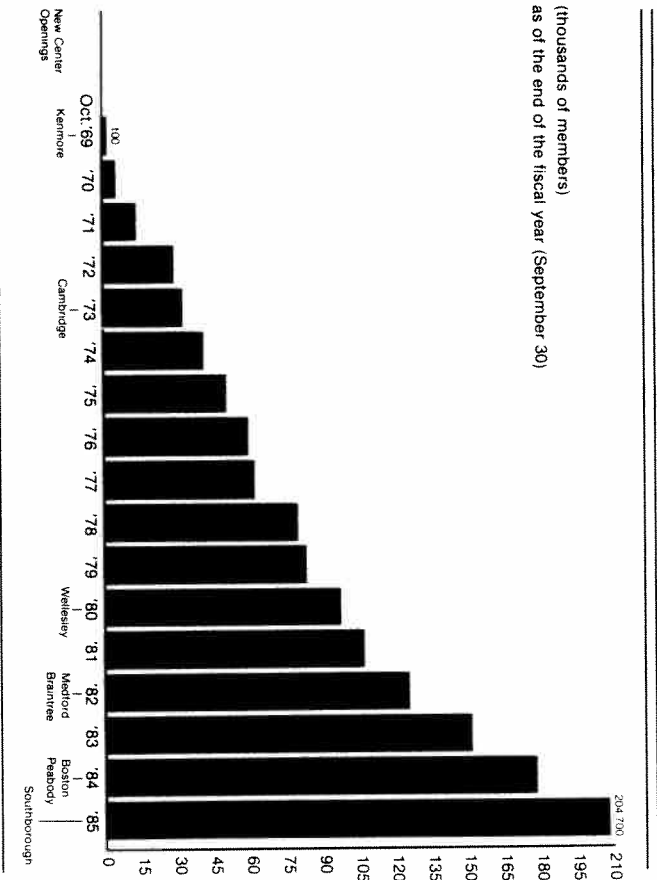
HCHP has had to confront a number of important issues over the past sixteen years; and it is likely that most other managed care systems, even if they are not staff model HMOs will confront similar issues. These issues include staffing a rapidly growing organization with high quality clinicians; devising a mutually advantageous employment arrangement with appropriate incentives to achieve the desired kind of organization; utilizing nonphysician professionals in a way which is cost-effective and possibly expands the scope of services; training physicians to function in an environment which probably requires more use of new technology but less use of traditional hospital beds; providing continuity of care despite increasing physician turnover; developing physician-managers to run the industrialized medical world; and standardizing and monitoring medical care processes so that the public and their payers will be assured that they are the recipients of high quality care. Challenging though these tasks may be, none seems impossible; and the general population can only benefit as these tasks are addressed.

Notes

1. "What's in a Name?" *Harvard Medical Alumni Bulletin* 54 (1980): 14-28.
2. L. LeRoy, "The Cost and Effectiveness of Nurse Practitioners" (Washington, D.C.: Office of Technology Assessment, Case Study No. 16, 1981).

- 3. Willard G. Manning et al., "A Controlled Trial of the Effect of a Prepaid Group Practice on Use of Services," *The New England Journal of Medicine* 310 (1984): 1505-1510.
- 4. Gerald Moss, Mary Ellen Regal, and Leo Lichtig, "Reducing Postoperative Pain, Narcotics, and Length of Hospitalization," *Surgery* 99 (1986): 206-209.
- 5. Gerald T. Perkoff, "Teaching Clinical Medicine in the Ambulatory Setting: An Idea Whose Time May Have Finally Come," *The New England Journal of Medicine* 314 (1986): 27-31.
- 6. Judith Golden, Margaret McCarthy, and Charles Sugar, "User Comments: An Automated Medical Records System, Ten Years Later," *Proceedings of the Seventh Annual Symposium on Computer Applications in Medical Care* (New York: Institute of Electrical and Electronics Engineers, Computer Society Press, November 1983), pp. 77-79.

FIGURE 5.1
Harvard Community Health Plan Membership, 1969-1985



(Courtesy of Harvard Community Health Plan)

FIGURE 5.2
Harvard Community Health Plan Enrollment Area

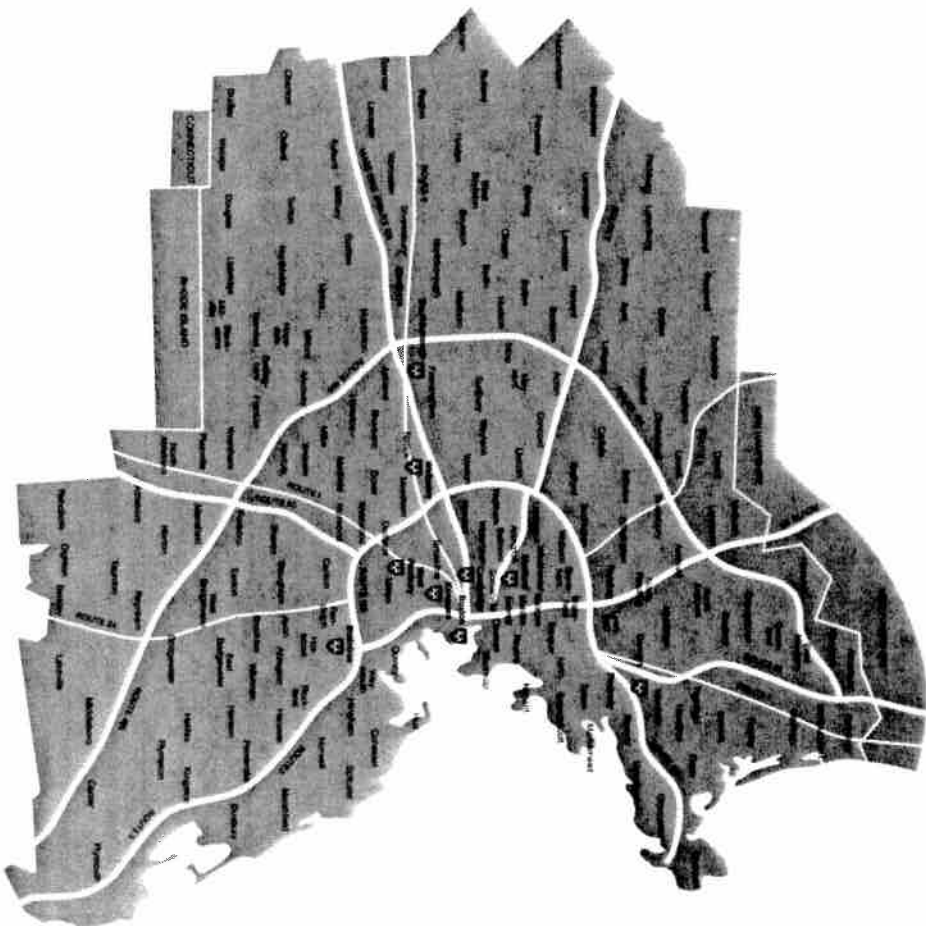


TABLE 5.1
Average Budgeted Physician Staffing Ratios*

	Ratio
Medical specialty	
Allergy	1:73,354
Dermatology	1:29,390
Adult neurology	1:60,245
Pediatric neurology	1:237,936
Gastroenterology	1:145,926
Endocrinology	1:184,071
Rheumatology	1:255,700
Pulmonary	1:452,078
Nephrology	1:516,071
Genetics	1:123,519
Surgical specialty	
Cardiology	1:113,020
Pediatric cardiology	1:452,078
Ophthalmology	1:25,892
Orthopedics	1:18,199
General surgery	1:21,928
ENT	1:32,690
Urology	1:59,275
Internal medicine	1:1,720**
Pediatrics	1:1,350***

Notes:

*One full-time equivalent physician per "X" members.

****Adult members (16 years of age or older).**

***Child members.