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Few would dispute that the American health care system is undergoing fundamental change. The major trends, well-documented elsewhere, include: the rapid growth of Health maintenance organizations (HMOs) and other managed care systems; the introduction of prospective payment systems for hospital services; increasing medical technology and its attendant cost; an abundance of physicians and their maldistribution by medical specialty and geography; the aging of the population; the emergence of large for-profit corporations providing medical services; and more intense competition for health care-related research funding, the total pool of which is growing less rapidly than before.

This transformation of the health care environment poses an array of difficult challenges for the medical profession, not the least of which is how best to organize, deliver, and fund medical education. In its drive to cut the federal budget, the Reagan administration is seeking to reduce Medicare expenditures by removing cross-subsidies that financed a considerable amount of medical education. In addition, Medicare’s prospective payment method is reducing funding for direct and indirect costs of graduate medical education in teaching hospitals. At the same time, HMOs and other cost-competitive delivery systems are shifting care out of hospitals whenever possible. When hospitalization is required, teaching hospitals are avoided because of their higher costs.

Since teaching hospitals are now the dominant source of patients and teachers for undergraduate and graduate medical education and have increasingly subsidized the academic process, these private and public policy changes will seemingly require the development of new methods of providing medical education. In a sentence, medical education must find new sources of financial support and new ways to shift the locus of education from inpatient, teaching hospitals to the ambulatory settings where an increasing number of sicker patients will be receiving the majority of their services.

This paper will explore one potential vehicle for meeting these new challenges.
requirements for adaptation: developing more binding ties between medical education and HMOs. HMOs, which have experienced rapid enrollment growth in recent years, represent a model of future medical practice and financing, with an emphasis on ambulatory care, prospective payment, and price competition. To date, HMOs have engaged the challenges of medical education in only a few instances. Indeed, a recent survey showed that only 21 percent of medical schools reported a formal arrangement with one or more of thirty-two HMOs.

While larger, traditional, nonprofit HMOs have increasingly developed relationships with local medical schools, neither the rate of increase in teaching responsibility nor the types of teaching undertaken yield optimism that many HMOs will shoulder a significant burden of teaching in the future, unless such organizations perceive it to be in their interests to do so.

### Barriers To Collaboration

There are substantial obstacles to developing ties between academic medical centers and HMOs. These obstacles must be recognized and addressed because the status quo is not an option for academic medical centers. Conflicts in values, beliefs, attitudes, and expectations separate the academic medical environment from the emerging world of HMOs. In addition, hospital specialists who now are the major teaching faculty generally view ambulatory care as less intellectually challenging than hospital services and as a less appropriate locus for learning medicine. Moreover, they view the HMO setting as a cost-cutting environment that yields inferior care.

HMOs, in turn, have a traditional suspicion of academic medical centers and teaching hospitals. In the view of HMOs, teaching hospitals are expensive and do not share the HMOs’ concern for efficiency and consumer service. HMOs place great emphasis on keeping their members out of hospitals; additionally, teaching hospitals reflect the technological imperative that many physicians and patients advocate but HMOs eschew. In addition, a long-held bias among HMO leaders is that medical student teaching will reduce productivity and member satisfaction. Suffice it to say then, that under the traditional medical care system, precious few incentives existed attracting medical educators to HMOs and vice versa.

### Why Should HMOs Get Involved With Medical Education?

As the obstacles above suggest, HMOs are unlikely to devote some of their energies to training the next generation of physicians without strong incentives that encourage them to do so. But I believe there are three
major considerations that HMOs may find attractive when they address this issue: their social responsibility, their practical self-interest, and their derived satisfaction.

As new institutions that succeed move into the mainstream, our society has come to expect that they will share some of their fruits in a socially useful manner. One need only watch the credits for sponsors of public television to realize the number of institutions which provide support for public causes. The tradition of corporate philanthropy in the United States runs strong and at some point HMOs will be expected to embrace it. As the HMO sphere consolidates and strong organizations emerge as dominant, we can expect that they will want to explore ways in which they can participate in medical education.

If participation in medical teaching yields benefits which satisfy an HMO’s practical self-interest—which I believe it does—more HMOs would develop teaching affiliations. The HMO environment is very competitive, emphasizing low cost, high service, and value for premiums paid. The organizations which perform best on these parameters will increase their market share and flourish. The effectiveness of their physician staff is a critical ingredient in their success. Indeed, without high quality physicians, the likelihood of an HMO succeeding is greatly reduced.

An HMO that teaches has a greater potential for differentiating its product from that of its competitors through an enhanced capacity to recruit the best new physicians. In addition, an HMO that teaches adds a dimension to its program that will bolster its physician retention rate because of the prestige that accompanies the process of medical education. Thirdly, most HMO leaders believe that the presence of students enhances quality and can improve organizational effectiveness. Medical students and residents encourage medical staffs to examine what they do and open up the process of self-reflection and continued learning. Because teaching is, by its very nature, a questioning process, it also can become a powerful instrument for change.

The Academic Medical Center Perspective

Many medical schools and teaching hospitals, increasingly aware that the current educational settings are inadequate to prepare students for practice in the future, are likely to welcome HMOs as collaborative teaching institutions. HMOs far better reflect the general practice environment of the future. By using these existing ambulatory prepaid settings for teaching, the teaching hospital may be able to concentrate on its role as a highly efficient producer of tertiary hospital services.

The Harvard Community Health Plan (HCHP) serves as an example of collaboration between one HMO and an academic medical center. Its
experience reflects a variety of efforts to adapt traditional teaching approaches to the HMO’s practice environment and to develop a working relationship with the medical school and teaching hospitals.

HCHP offers a number of on-site medical education programs, including psychiatric, medical, and pediatric postgraduate training at the resident and fellow level. In addition, medical students can take their introduction to clinical medicine at HCHP in a format unique to the HMO rather than the hospital setting. Other programs include: a first-year tutorial introducing students to the role of the physician; a paid, summer practicum in which the students participate as HMO office staff and explore nonphysician roles; a course on principles of epidemiology and medical decision making; a seminar in which the students explore the impact of new forms of health care financing and delivery of clinical practice; and advanced clerkships in primary care. In addition, many of HCHP’s staff teach in the HMO’s affiliated hospitals. Approximately fifty students a year participate in an HCHP teaching activity (Harvard’s class size is 165 students).

In developing acceptable HMO-based programs which function effectively within their clinical setting, HCHP has developed a variety of new and not-so-new approaches: (1) HCHP contributes 1 percent of its gross revenues to a foundation which has been created to fund teaching, research, and community service; (2) a teaching department has been created and funded by the foundation; (3) the foundation supported the construction of a teaching facility built to duplicate an ambulatory care practice unit; this facility allows medical students to be taught in a realistic setting, but out of the mainstream of clinical activities. In this setting, we are developing and using more efficient teaching methods, including: videotapes, computer-assisted learning, simulated patients, volunteer patient-instructors, demonstration mini-clinics, case-method teaching, role-play and gaming techniques, and student teachers; (4) HCHP has sought and received Harvard faculty appointments for the majority of its medical staff; (5) we have received direct compensation from the medical school for some of the extra costs incurred in teaching; (6) we have established a continuing education program for physicians who participate in teaching activities and have established a mechanism for awarding continuing medical education credits; (7) HCHP supports HMO faculty who are directly responsible for the teaching and supervision of the medical residents who care for the HMO’s patients in the affiliated teaching hospitals; and (8) we are in the process of designing an “HMO teaching department,” to teach medical students and residents while providing effective and efficient clinical services to the HMO’s members. To meet this goal, the department will be designed to accommodate students in service-producing roles and to incorporate computers, new patient and information flow systems, and nontraditional uses of space and personnel.
Prospects For The Future

Although there are a number of incentives that encourage collaboration between HMOs and academic medical centers, little progress is likely if medical centers expect HMOs to undertake teaching in its traditional form. The problems of member dissatisfaction with medical students, high teaching costs, effects on productivity, and the added complexity of a teaching service are significant obstacles to change and must be countered in future designs. Thus, the models of collaboration must explore new educational designs and new affiliation agreements. HMOs must undertake, and their affiliated academic institutions must support, critical reappraisal of the HMO as a teaching environment. The following section speculates on the dimensions of some of these changes.

Major innovation is needed to design more effective and efficient teaching facilities and educational designs. Early learners cannot easily acquire their skills in a rapidly moving, realtime ambulatory practice environment. New teaching concepts will be needed, such as the development of special learning centers, out of the mainstream of clinical activities, which use new technologies to facilitate learning. The amortized cost of building specialized teaching facilities is relatively small compared to the cost of reduction in clinician productivity.

Cost pressures on medical schools, students, teaching hospitals, and HMOs alike will force HMOs to examine productive roles which medical students and residents may undertake as they learn. For example, medical students can partly replace some technical personnel, and the more advanced students, and certainly the residents, may play effective clinical roles which lead to reduced staffing ratios for nurses and physicians. Students could also perform health risk appraisals and provide health education and disease prevention activities for the HMO’s membership. HMOs must emulate the early experience of the teaching hospitals by utilizing medical students and residents in a fashion which enhances the production of its services and which reduces its expenses.

HMOs and medical schools will explore and test new affiliation agreements, covering such issues as reimbursement for added costs of teaching, agreements for the exchange of services and personnel, academic recognition for HMO faculty, and research. Just as the hospital grew to become an important academic partner in medical schools, the HMO will grow in influence and force changes in the expectations and agreements among the partners in the educational process.

HMOs are far more likely to assume a role in medical education if government or business policy creates financial incentives to do so. If, as it appears, government will decrease but not eliminate educational subsidies in its payment formulas, it is possible that this funding might shift to stimulate ambulatory teaching in HMOs. This initiative fits with the
government’s interest in stimulating HMO enrollment of Medicaid and Medicare recipients. It is an appropriate role of government to reshape the education of the physicians of the future if it serves the public’s interest and would not otherwise occur. Public policy should be directed to encourage HMOs to teach by shifting financial incentives toward this setting either through modification of the Medicare reimbursement formulas or through direct grants and subsidies.

Since medical education traditionally has focused its services on providing care for the uninsured population, government subsidies of HMO teaching might include incentives which encourage the enrollment of the uninsured at lower rates. For example, agreeing to pay the difference (as a subsidy to the teaching programs or as a contribution to the premium) between the patient’s contribution and the HMO’s standard premium would open a new pool of members to the HMO. The costs of teaching would be partially underwritten, and the lower costs incurred by using the students and residents would allow the HMO to construct a financially sound program. This would teach students and residents to practice effectively in a cost-constrained environment.

HMOs must seek ways in which the presence of students enhances their ability to recruit and retain staff. For example, the collaboration between the HMO and academic teaching center might lead to a sabbatical program in which the resident-in-training replaces a staff physician who returns to the academic medical center for a prolonged period of retraining. Such a process supports the needs of both the medical school and the HMO.

Careful examination of the practice environment within an HMO will be necessary to design settings in which teaching can take place and patient satisfaction remains high. It will not be sufficient merely to engraft medical students and residents into HMO departments of family practice, internal medicine, or pediatrics. Teaching does have a profound impact on issues of continuity, productivity, access of patients, and costs. Careful design of HMO teaching departments will be necessary to identify those elements of its operation which will allow the multiple goals of teaching and productive service to be integrated successfully. An innovative and well-designed teaching department should actually enhance the service to the HMO’s members by providing their care in a teaching environment which has been designed specifically for this purpose. This environment will include careful attention to manpower mix, the development of powerful support systems, the redefinition of the systems and procedures governing the flow of patients into the practice environment and their management over time, and the proper incorporation of appropriate educational materials. Even the design of the physical space will be a critical determinant in the success of such a teaching department.

Finally, the content of the educational process and the very goals which
students achieve will undergo change. The changed nature of the world in which they will work requires that tomorrow’s medical graduates learn different things than today’s. HMOs will have much to say about the content of the educational experiences which they sponsor. We can expect that such areas as the doctor/patient relationship, resource allocation, decision analysis, and health promotion and disease prevention skills will be emphasized.

Since no established models of HMO and academic medical center affiliation appear predominant today, and since both institutions are making rapid adjustments to a changing health care environment, we can expect pluralism among the affiliation models which emerge in the near future. New forms of relationships and a great variety in teaching approaches and in the role of the HMO can be expected to develop. This diversity is both necessary and healthy. Only after both sets of institutions have successfully adapted to the forces affecting them today can we expect that exportable and replicable models will emerge.

Conclusion

The academic medical center of the future will include affiliated HMOs, just as it, today, includes the teaching hospital. The proper environment for teaching includes ambulatory as well as hospital sites and settings successfully embedded in the competitive marketplace in which we now find ourselves. The most successful HMOs, for-profit or not-for-profit, will find teaching to be a satisfying and rewarding undertaking, and in leading the development of teaching environments for the future, they will be the most likely to reap the benefits of this activity. Teaching settings, the content of the education, the type of teaching carried out, and the relationship between and among the different parts of the academic medical center will change dramatically over the next decade.

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