The Impact of Managed Care on Medical Education and Physician Workforce
The dramatic spread of managed health care is changing the way that health care services are financed and delivered. It is also affecting the demand for physician services, compounding the impact of recent trends that have led to an overabundance of physician specialists and undersupplies of generalists. Education and training of the physician workforce for the future must be responsive to changing health care needs and the changing medical marketplace. Yet, the increasingly competitive environment of managed care and budgetary pressures to reduce government spending are eroding the financial foundations of the institutions that provide undergraduate and graduate medical education. The ability to spread the costs of academic and research missions among payers is reduced as managed care entities account for larger proportions of insured patients and channel their enrollees to predominantly non-teaching settings.

This position paper traces the growth of managed care and its impact on medical education and the physician workforce. It discusses the financing of medical education and the historical basis of funding. The paper then explains the disincentives for managed care to incur educational and research costs. It highlights the financial challenges confronting institutions that provide medical education, training and research in light of the concurrent growth of managed care and decreasing financial support from all levels of government. The paper also examines the implications of managed care on the content and process of medical education.

The paper articulates the following positions of the American College of Physicians:

1. A health care system dominated by managed care will have different physician workforce needs from the traditional fee-for-service system. It will require fewer overall numbers of physicians to serve covered populations, fewer numbers of some specialists and subspecialists, and a greater percentage of generalists. This will necessitate changes in national policies concerning the education and training of health professionals so that the overall numbers and specialty mix better match the needs of the evolving system.
2. The content of medical education must change to be more responsive to the needs of physicians who will work with integrated health care systems.
3. Education and training in internal medicine must prepare internists to be the best physicians for adult patients in an evolving health care system:
4. Internal Medicine must take a leadership role in providing educational experiences in ambulatory training sites.
5. Adequate funding for medical education and research must be secured.
6. Medicare payments to capitated medical plans should accurately reflect expenses for medical education, training and research. ACP favors correcting the formula for determining capitated payments by Medicare to managed risk plans so that the portions of payments for medical education, training and research are made directly to those who actually incur these costs.
7. ACP favors establishment of an all-payer system for graduate medical education in which all purchasers of health care share equitably in the costs of medical education and research.
THE IMPACT OF MANAGED CARE ON MEDICAL EDUCATION AND PHYSICIAN WORKFORCE

Position Paper of the
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GROWTH OF MANAGED CARE

There are many different definitions of managed care. John Iglehart defines it as, "a system that, in varying degrees, integrates the financing and delivery of medical care through contracts with selected physicians and hospitals that provide comprehensive health care services to enrolled members for a predetermined monthly premium." Managed care is increasingly associated with corporate integrated health care systems in which utilization of services is closely monitored and a network of providers share the financial risks for providing services economically and efficiently. Managed care organizations (MCOs) include various forms of health maintenance organizations (HMOs), as well as point-of-service (POS) plans and preferred provider organizations (PPOs).

Growth of managed care during the 1980s and '90s has been phenomenal. By 1993, 51% of all workers with employer-sponsored health insurance were enrolled in managed care plans, up from 29% just five years earlier. Of these, 22% were enrolled in an HMO, 20% were covered by a PPO plan, and 9% were in a POS plan.

In 1993, 75% of physicians reported having at least one contract with a managed care organization, and 35% of physician practice revenues were through managed care contracts. Overall membership in HMOs grew from 10.2 million in 1982 to over 52 million (20.3% of the U.S. population) in 1994. Over 50 million Americans now are enrolled in PPOs. During the first six months of 1994 alone, total HMO enrollment increased by 6.7%. By the year 2000, as many as 65% of all Americans are expected to be receiving their health care through integrated managed care plans.

Public Sector

Growth of managed care in the public sector has also been dramatic. The federal government and more than 36 states have turned to various forms of managed care to control the rapidly rising costs of Medicaid. Many states are experimenting with innovative forms of managed care through research and demonstration projects that have been granted waivers from traditional Medicaid requirements.

Enrollment in Medicaid managed care programs more than doubled between 1987 and 1992, rising to 3.6 million (12% of the Medicaid population) by mid-1992. By the end of 1994, Medicaid managed care enrollments more than doubled again, covering 8.1 million Medicaid recipients (nearly 24% of the eligible population). Medicaid managed care programs generally involve the use of a primary care physician to control and coordinate the delivery of health
services. Programs differ widely among the states, ranging from capitated models that pay organizations a monthly amount per enrollee to provide or arrange for all covered services to models that pay physicians on a fee-for-service basis with an additional per capita management fee for case management.

Enrollment in Medicare managed care programs has been voluntary, and growth has been slower but still substantial, growing at an average of 11 percent annually since 1990. About 9 percent of the Medicare population, approximately 3.2 million beneficiaries were enrolled in a managed care option in 1995, compared to 7 percent in 1993. Risk contracts are offered through HMOs and competitive medical plans. Coverage is at least equivalent to Medicare Parts A and B, often with additional benefits such as coverage for prescription drugs and no cost-sharing requirements. Recent federal budget initiatives seek to encourage Medicare beneficiaries to enroll in MedicareSelect, a preferred provider option (PPO) that offers coverage through managed care networks of providers.

Mature vs. rapid growth markets

The growth of managed care has been accompanied by increased competition among plans. The degree of competition varies geographically as a function of managed care penetration (% of those covered) and the degree to which the market has become consolidated (the coalescence of multiple MCOs into a few). Managed care penetration varies regionally and among health care markets. Market penetration is highest on the West coast followed by the Southeast, Northeast, and Upper-Midwest. Over 70% of insured persons in each of these regions now are covered under a managed care plan. However, there are also large sections of the country (e.g., Montana and northern New England) where the population density is unlikely to support the development of competing health plans in the foreseeable future. Approximately 29% of the U.S. population reside in such sparsely populated areas.

IMPACT OF MANAGED CARE ON THE PHYSICIAN WORKFORCE

1. ACP Position 1: A health care system dominated by managed care will have different physician workforce needs from the traditional fee-for-service system. It will require fewer overall numbers of physicians to serve covered populations, fewer numbers of some specialists and subspecialists, and a greater percentage of generalists. This will necessitate changes in national policies concerning the education and training of health professionals so that the overall numbers and specialty mix better match the needs of the evolving system.

Past projections of physician workforce supply and requirements assumed an environment in which fee-for-service practice arrangements would continue to predominate. Estimates of physician requirements typically assumed that the existing physician-to-population ratios were adequate and estimated anticipated changes from the current ratio as a basis for projecting future shortages or surpluses. Demand for physician services was generally considered to be virtually unlimited, with each physician empowered to order services and thus create demand for his or her services.
In 1980, when the overall physician-to-population ratio was 171 per 100,000, the Graduate Medical Education National Advisory Committee (GMENAC) developed a methodology for projecting “requirements” for physicians by specialty based on estimates of “adjusted need” of the population for specific health care services. GMENAC observed that the trend of increasing specialization among physicians was producing shortages of primary care physicians and an oversupply of specialists, particularly in surgical fields. It estimated that by 1990, there would be an excess supply of 70,000 physicians and that the overall surplus would grow to 140,000 by the year 2000.

A decade later, the federal Council on Graduate Medical Education (CoGME) confirmed that there were too few generalist physicians and too many specialists and subspecialists. CoGME identified continuing problems of geographic and specialty maldistribution, and warned that if current trends of medical education and physician specialization continue, the nation will continue to have an overall surplus of 100,000 physicians at least until the year 2020. By 1995 the physician/population ratio had risen to 242 physicians per 100,000 people. Projections by the federal Bureau of Health Professions also indicate growing surpluses in surgical and other nonprimary care specialties and a slight surplus in primary care by 1990. It estimates that the physician-to-population ratio will rise to 288 per 100,000 in 2020.

The dramatic growth of managed care and integrated health care systems is now directly affecting the demand for services of both physicians and non-physicians, and necessitates reevaluation of assumptions about the entire health care workforce. Although this paper focuses only on the impact of managed care on the physician workforce; a subsequent paper will address the larger issue of how to better meet the nations future requirements for various health care professionals.

Managed care organizations, with their huge market power and their ability to employ physicians or contract for physician services on a capitated basis, are now largely determining the market for physician services. Managed care is expected to affect the demand for physicians in the following ways:

- Managed care organizations emphasize preventive and primary care services and seek to provide these services as cost-effectively as possible
- Managed care systems exert their market power in purchasing health care services, including physician services, to minimize costs
- Demand for generalist physicians increases as these physicians are seen as cost-effective primary care providers who can handle most health care problems and make appropriate referrals for specialist care
- Managed care restricts referrals to specialists
- Oversupplies of specialists and subspecialists cause underemployment, early retirements, reduced incomes, and potential unemployment for these kinds of physicians
- Pressures for physicians to increase productivity continue as the marketplace becomes even more competitive and managed care plans can obtain physician services from an abundant supply of physicians
• Competition increases between physicians and non-physicians in providing certain health care services; the competitive advantage goes to those who can provide care at the lowest cost.

The CoGME estimates that physician staffing requirements in a managed care dominated environment would be in the range of 85 to 105 specialists per 100,000 covered population and 60 to 80 generalists per 100,000. 14 CoGME projects that if 70 percent or more of medical school graduates continue to select specialty careers and the marketplace for physician services is increasingly dominated by managed care, there will be a national surplus of 125,000 specialists and a modest shortage of 20,000 generalists in the year 2000. By 2010, the oversupply of specialists will amount to 170,000, and the supply of generalists will approximate requirements. While the growth in generalist physicians is expected to level-off, “the projected ratio of specialist physicians to population will significantly exceed projected staffing needs through 2020.” 15 CoGME further warns that there is “the potential for physician underemployment or unemployment as we enter the 21st century,” regardless of whether managed care or fee-for-service arrangements predominate.” 16

Calculation of physician workforce needs based on HMO staffing patterns suggest an even greater future surplus of physicians. Depending on the extent to which graduate medical residency training shifts from specialty to primary care, the supply of primary care physicians could be 7% to 18% above desired requirements in 2000, and the supply of specialists could be more than 60% in excess of requirements. 17

Another study assumed that two-thirds of the U.S. population would be enrolled in a managed care plan with strong utilization guidelines by the year 2000 and that this percentage would rise to 80% by 2020. 18 It concluded that if current trends in physician workforce supply continue, the oversupply of specialists would amount to 111,000 in 2000 and would continue to rise to 196,000 by 2020. Offsetting these surpluses would be shortages of 38,000 generalists in 2000 and 85,000 in 2020. Even if projections were based on a conservative ratio of 172.5 physicians per 100,000 enrollees for HMOs (actual ratios currently range from 120-138) and the supply of first-year residents were limited to 110% of the US medical school graduating class and 50% of all graduates were to enter primary care, there would still be an overall excess supply of 55,000 specialists in the year 2020, but the supply of generalists would be in approximate balance with requirements.

Looking at these various studies, the Pew Health Professions Commission concluded, “the current best estimate of the emerging oversupply of physicians lies in the range of 100,000 to 150,000 out of a total practicing physician community of over 600,000.” 19 The Pew Commission further predicted that integration and consolidation in the health care field would lead to a surplus of 200,000 to 300,000 nurses, as hospitals close, and a surplus of 40,000 pharmacists, as the dispensing function for drugs is automated and centralized. In addition, over 200 allied health professions will be consolidated into multi-skilled professions as hospitals re-engineer their service delivery programs. The Pew Commission concludes that a rapid transformation is needed of the system that produces health professionals. It identifies four challenges to the ways that health professionals practice and are educated and trained. These include 1) re-designing the ways in which health professionals work; 2) re-regulating the ways in which health professionals are permitted to practice; 3) “right-sizing” the workforce (reducing the size of professional
programs); and 4) restructuring education to make efficient use of the resources that are allocated to it.  

ACP and a variety of national committees have recommended changes in medical education to anticipate future market demands for physician services. Among the changes recommended by ACP for achieving a mix of physicians that will better meet the nation's future health care needs are establishing a national workforce commission to set long-term goals regarding the number of residency and fellowship training positions.

In viewing the end product of medical education as trained physicians, it is clear that the shift in demand for generalists over specialists resulting from the growth of managed care will create an acute imbalance in this "market." The medical education enterprise and academic health centers (AHCs) in particular must assume major responsibility for changing their programs to produce the types of practitioners to meet new market demands. The most influential factors in directing students towards generalist careers (the criteria used for admitting students, the design of the curriculum, and emphasis on faculty role models) are all under AHC control.

There is already evidence of a dramatic change in the market for physician services. Specialists and subspecialists in many areas are having difficulty obtaining referrals and employment. Many HMOs are offering higher salaries to recruit primary care physicians, and increases have been substantial in the most competitive markets. In addition to shifting production from specialist to generalist physicians, managed care also creates a demand for a new medical education product, clinician managers. Clinician managers are needed to participate in the design of the rules and incentives and must assume leadership positions within MCOs. However, today's marketplace for a physician workforce cannot be relied upon as the sole process for determining how many and what kinds of physicians will be needed for the future. The marketplace will not assure that the nation has a sufficient supply of highly trained biomedical investigators. There will continue to be a need for national assessments of the supply and requirements of health professionals and a mechanism for developing national policy to educate and train appropriate numbers of health care professionals.

**IMPACT OF MANAGED CARE ON MEDICAL EDUCATION**

**CONTENT OF MEDICAL EDUCATION**

**ACP Position 2:** *The content of medical education must change to be more responsive to the needs of physicians who will work with integrated health care systems.*

A 1986 survey revealed that HMO managers wanted medical school and residency curricula to give greater emphasis to cost-effectiveness, utilization review and quality assurance, gatekeeping, and the financing of health services -- all subjects which were virtually ignored in extant medical school curricula. These have now been recognized to form a core of competencies that the AAMC (Association of American Medical Colleges) and the Accreditation Council for Graduate Medical Education (ACGME) have identified as educational mandates arising from the growth of managed care. The mandates include learning to manage resources through health services research, participation in clinical guideline development, understanding
clinical epidemiology, learning to make evidence-based decisions, functioning as a member of a team, and practicing as a professional.\textsuperscript{31, 32}

Currently, many entering first-year medical students arrive with negative attitudes towards managed care. Only 10\% indicate that they would elect to receive care in a HMO.\textsuperscript{33} Additionally, ignorance of what actually goes on in MCOs has proven to be a barrier to recruitment according to a survey of HMO managers.\textsuperscript{34} Medical educators must not only introduce managed care content, but must also change attitudes during the educational process.

There is some evidence that medical schools are beginning to adapt to the new realities. In a 1991 survey of medical schools, very few had integrated teaching of quality assurance into their curricula.\textsuperscript{35} In a similar survey incorporated into the 1994/1995 LCME (Liaison Committee on Medical Education) survey of medical schools, 76 of 125 schools had some training in quality assurance, and 119 schools taught prevention and health maintenance.\textsuperscript{36} The AMA's Health of the Public Mission Statement Working Group identified a set of objectives, including more cost-effective care, which are likely to find broad support among MCOs. This is an indication that the missions of AHCs and MCOs are starting to find significant areas of overlap.\textsuperscript{37} Such trends are encouraging and need to be accelerated and supported.

Delivery of medical care in the 21st century will require a fundamentally different set of skills than has been traditionally taught in undergraduate and graduate medical education. Attention will need to be given to the requirements for successful practice in a managed care environment. Education and training will need to encompass experience in teamwork, management, quality assessment/improvement, economic evaluation, epidemiology, ethical decision-making, and community orientation.

**Internal Medicine Education and Training**

**ACP Position 3:** *Education and training in internal medicine must prepare internists to be the best physicians for adult patients in an evolving health care system:*

General and subspecialty internists are experts in managing patients with advanced, complex illness and diseases of multiple organ systems and are equally effective in office and hospital settings. Internists evaluate and manage all aspects of illness in the whole patient and are experts in disease prevention, early detection of disease and health promotion. General internists are physicians who provide first contact, comprehensive and continuing care for adults from adolescence to old age.\textsuperscript{38} Internists are also resource and clinical information managers who are trained as clinical decision-makers to provide evaluation and management services. General internists serve as the patient's guide and advocate in today's complex health care environment and are best prepared to be the primary physicians for adults in managed care.

However, if internists are to continue to act as managers of health care for the future, then appropriate skills, knowledge, and attitudes must be incorporated into training in internal medicine.\textsuperscript{39} Programs at the residency level have the potential for developing many of the skills required for practice in integrated health care systems (such as: expanded clinical breadth, population-based practice, and evidence-based decision-making). Future internists will also need to be prepared for the heightened ethical challenges of population-based care in a cost-constrained
environment of managed care. Targeting the content of the residency experience to future practice is one option for re-engineering the graduate medical education experience. At the same time, care must be exercised to preserve the richness of the medical subspecialty experience critical to the training of excellent general internists. Recognizing that the health care system continues to evolve and that physicians should be prepared for a lifelong career of 35 years or more, education and training in internal medicine should prepare internists to be the best physicians for adults for all types of health care delivery systems.
PROCESS OF MEDICAL EDUCATION

ACP Position 4: Internal Medicine must take a leadership role in providing educational experiences in ambulatory training sites.

Consequences of managed care for the process of training in internal medicine include shifts from inpatient to outpatient care, service utilization to service conservation, individual to population-based approaches, and hospital-based to program-specific budgeting. Among the challenges that will be faced in making these shifts are maintaining an adequate and appropriate patient base, maintaining inpatient care expertise, developing effective ambulatory teaching models, and resolving conflicts between service and education.\textsuperscript{42} Traditional hospital-based reimbursement, including the Medicare payment formula based on the ratio of interns and residents to beds, has created a focus on inpatient care and fostered a dynamic interdependence between medical education and the teaching hospital. Refocusing care in the outpatient realm in general and the growth of managed care specifically demand the reshaping of old links and forging of new ones. The fate of AHCs will depend largely on their capacity to adapt, form new partnerships and take advantage of the opportunities of a rapidly changing system.\textsuperscript{43}

Alliances between AHCs and MCOs to create Academic Health Systems seem well suited to meet the demands for the provision of adequate ambulatory training sites for both undergraduate and graduate medical education. Three potential relationships exist between MCOs and academic health centers: ownership, affiliation, and joint ventures centered around the marketing of particular services (e.g., transplants). Direct ownership of an MCO would require substantial capital, and the plan would need to cover a large population to offset the problem of adverse risk selection.

Shifting education to appropriate settings through joint ventures with MCOs would require overcoming formidable barriers. Academic medical centers generally have failed to value training in community-based ambulatory sites. Lack of sufficient funding also has been a major barrier to moving education into ambulatory sites.\textsuperscript{44} A supply of primary care physicians and secure funding for the costs of graduate medical education are critical for such ventures.\textsuperscript{45} The Studies of the costs of ambulatory medical education have found that loss of productivity of clinical faculty was the prime cost of ambulatory teaching, amounting to approximately $17,000-$26,000 per full-time equivalent faculty/FTE student in 1986.\textsuperscript{46,47} Such inefficiencies are intolerable to MCOs competing in an aggressive health care market. As a result new instructional paradigms must be developed to improve the efficiency and support of teaching, especially in ambulatory practices.\textsuperscript{48}

The identification of mutually shared values is another key to the success of academic health center / MCO partnerships.\textsuperscript{49} Conflicts between faculty and community physicians over academic versus service missions can undermine alliances between MCOs and academic institutions.\textsuperscript{50} AHCs must also bring academic inducements to the table to provide additional added value to MCOs.\textsuperscript{51}

A variety of models for academic health systems are now emerging. Recently some academic health centers have been attempting to adapt to the needs of MCOs.\textsuperscript{52} There are also indications that MCOs are interested in participating in medical education despite financial
disincentives. Harvard Medical School and the Harvard Community Health Plan recently formed the first medical school department to be based in a freestanding HMO. The Harvard experience with the "teaching HMO" shows that alliances between medical schools and large HMOs can create appropriate settings for teaching medical students, house staff, and allied health professionals and also provide support for research in academic areas. The 1994-1995 LCME medical school questionnaire found that 14% of schools required all of their students to spend time in an MCO; however, an additional 60% indicated that some of their students obtained some experience at an MCO.

FINANCING OF MEDICAL EDUCATION

ACP Position 5: Adequate funding for medical education and research must be secured.

Historical Basis for Funding Medical Education, Research and Academic Health Centers

The education and training of the future physician workforce involves both direct and indirect expenses. At both the undergraduate and graduate levels costs include salaries and fringe benefits of faculty, overhead such as classrooms, administration, and research. At the graduate level direct costs also include resident stipends and benefits. Indirect costs of GME include the higher costs generated by more complex cases in teaching hospitals, additional laboratory tests ordered by undergraduate and graduate medical students, and other costs associated with teaching programs. The bulk of higher costs in urban hospitals are linked to graduate medical education.

AHCs also have costs related to their research missions. Un-sponsored clinical research is subsidized out of patient care reimbursements. Other components of research costs, most notably the infrastructure costs incurred by the academic medical center for space, utilities and administrative support, are not fully paid by granting agencies. Mandatory cost sharing and recent legislation to cap indirect costs have led academic medical centers to increase subsidization of the research performed by their faculties over the last decade.

Although the sources of these increased costs have not substantively changed, the ways they have been financed have evolved over time. Federal research grants, third-party payers, and government sources (principally Medicare) have funded medical education and AHCs to varying degrees over the last five decades.

Public Support

Historically, medical education, particularly at the graduate level where it is inextricably intertwined with patient care, has been treated as a public trust, given public funding and allowed considerable autonomy. Public support has been based on recognition of the public need to assure that medical care is provided only by licensed physicians who have obtained the necessary education and training from institutions that meet high standards of educational quality and who have the requisite clinical knowledge, skills and competence to provide high quality care that is safe and effective. Public support has also been based on the desirability of assuring that opportunities for medical careers would be open to the best qualified candidates regardless of
their economic, social or demographic background. Public financing also has been provided in recognition of the value to all of society in having institutions and highly qualified personnel for health care research, teaching and faculty development, centers for technological innovation and the advancement of medical science, and for the provision of health care services to the poor and underserved.

Federal Research Grants

The majority of older AHCs were created through local community support and philanthropy. In the post-World War II era these institutions expanded rapidly and new ones were established in response to generous federal research grant funding. NIH grants were for research activities involving patient care, but a significant portion of NIH research funds supported the educational missions of AHCs. Although not strictly research related, these missions were considered essential to the development of clinician researchers. However, federal AHC support declined during the 1970’s, in conjunction with a new austerity in NIH funding. Meanwhile federal capitation grants to encourage expansion of medical schools also ended as the nation no longer faced a "doctor shortage." Although research activities continued to be funded, the imposition of stricter accounting standards for these allocations precluded the traditional large scale transfer of funds to other AHC missions.

Third-Party Payers

As federal research and private philanthropic funds diminished, AHC's developed greater reliance on patient care revenues. The costs of training, research and other overhead were included in the prices of hospital services. Higher charges to private insurance carriers and self-paying patients in effect subsidized teaching hospitals' additional costs of education, training, and research and helped offset uncompensated expenses for care to indigent patients and bad debts. Over time the increased costs due to academic missions were shifted among payers with private insurers covering a disproportionate share of academic expenses.

Third-party payers, including Medicare and Medicaid, now comprise the largest single source of medical education support. However, disparities in third-party payments favoring procedural over non-procedural services and greater potential for patient care revenues from surgical and subspecialty services have created financial incentives for expanding hospital specialty services. Consequently there has been further growth in the number of clinical faculty, especially among subspecialists. Correspondingly, the patient mix at AHCs has tended to consist primarily of patients requiring complex specialty care and residency training has emphasized procedural-oriented specialty training. These incentives have resulted in relatively little funding for residency training in ambulatory care sites and training opportunities for treating the kinds of problems likely to be encountered by primary care physicians, particularly in managed care settings. Although AHCs have enjoyed a somewhat privileged position in the past, public pressures on these institutions are mounting. Third-party payers have recognized that the continued cross-subsidization of educational costs is an impediment to cost control.
Medicare and Medicaid

Prior to the advent of Medicare and Medicaid in the mid-1960s, the majority of patients on teaching services were uninsured. Payments by Medicare and Medicaid to academic physicians and teaching hospitals provided a new resource for AHC support, prompting growth and dependence upon this revenue stream. Under the open-ended, cost-based, hospital care reimbursement system, teaching hospitals were able to obtain higher payments for their services than non-teaching hospitals.

Continued escalation of Medicare and Medicaid costs during the 1970s and '80s prompted Congress to replace the cost-based reimbursement methodology used by these programs with a fixed-rate, prospective payment mechanism based on diagnosis related groups (DRGs). However, policymakers recognized that AHCs would require additional compensation for their non-patient care missions. Consequently, when Congress enacted legislation to implement the prospective payment system for hospital services in 1983, it provided special adjustments to protect teaching hospitals. The direct costs of graduate medical education (DME) continued to be paid on a cost basis as a "pass-through." In addition, an Indirect Medical Education Adjustment (IME) was created as a flat percentage add-on to the DRG rate based on each hospital's resident-to-bed ratio. Additional federal funding through the Medicaid program was allocated to institutions which demonstrated that they cared for a disproportionate share of the medically indigent (DSH payments). Some state Medicaid programs also provided medical education payments using similar allocation formulae.

Disincentives for Managed Care to Incur Added Costs of Medical Education and Research

A series of case studies of academic health centers located in rapidly evolving health care markets throughout the country indicates that charges for inpatient admissions (adjusted for case mix) at AHCs are approximately 15 to 35 percent above comparable charges in community hospitals with which they are increasingly competing for patients. Price-conscious customers, especially managed care plans, are generally unwilling to pay this additional premium, even recognizing the additional roles played by AHCs.

In market theory, MCOs will allow referrals of patients to teaching institutions only in those instances where the value added is "worth" the cost differentials involved in subsidizing the institution's academic and research missions. Revenues from the relatively few services that would justify admission to a teaching facility would be unlikely to sustain the enterprise nor provide an appropriate patient mix for clinical teaching. In theory, MCOs have disincentives to contract with academic centers, because coverage of technologically intensive services could attract enrollees requiring such services, thus causing potential adverse risk selection and higher health plan costs. Nevertheless, almost all MCOs have contracts with AHCs, because they recognize the added value of the reputations of these institutions and seek to include physicians in their provider networks who are affiliated with them. MCOs also realize that their covered populations will require some care that can best be obtained at teaching facilities.

Still, in those markets now dominated by price competition (e.g., California, Minnesota, and Massachusetts) integrated health care delivery systems are increasingly reluctant to subsidize the extra costs of teaching, research, and care for vulnerable populations and those with
complicated illnesses. MCOs in these markets can be expected to preferentially refer patients to lower cost providers whose cost structure is free from these special missions. In those instances when MCOs choose to contract with AHCs, the negotiated discounts usually do not provide funds to cross-subsidize academic missions. Furthermore voluntary clinical faculty may be compelled to practice in non-teaching settings as competition and the need to increase clinical productivity accelerates. In Southern California and Minnesota these strategies have already resulted in the financial distress for academic health centers. Medical schools will also be affected. Market erosion via price competition for academic health centers translates into higher tuition for undergraduate medical education as clinical revenue subsidies through practice plans and Deans' taxes decline.

Some academic health centers might actually fare better under quality based competition. But lack of hard data to convincingly demonstrate a quality edge often force these centers to rely on reputation alone in negotiating premiums from MCO purchasers. Yet, in the most advanced managed care markets (e.g., San Francisco), it is estimated that reputation will translate into only a 3-5% premium. Consequently, there is growing concern that AHCs will not be able to generate such premiums over community-based competitors in the future.

In addition to the threat AHCs face from the private health care market, AHCs now face decreasing support from the public sector as well. In order to curtail spending on Medicare and Medicaid, federal and state governments have been reducing explicit subsidies for graduate medical education and for the care of underserved populations. Recent proposals to balance the federal budget would reduce aggregate payments to academic medical centers for GME. The indirect medical education (IME) adjustment -- an add-on to DRG payments made to academic medical centers -- would be reduced from its existing level of 7.7 percent for each 0.1 increase in the ratio of interns and residents-to-beds to 4.5-6.0 percent. Payments for the direct costs of GME would be restricted and not available for residency training of certain foreign international medical school graduates.

At the state level, Medicaid programs that have made payments to academic medical centers in recognition of their educational roles and their disproportionate involvement in the care of underserved areas are contemplating reducing or eliminating such subsidies. For example, in Tennessee, as part of a recent overhaul of its Medicaid program, the state abruptly eliminated graduate medical education payments to hospitals under the tenure program for a year, but then reinstated funding in 1996 under a restructured arrangement channeling funds through the state’s four medical schools.

Challenges for AHCs from Managed Care

The growth of managed care provides a significant challenge to the status quo of medical education and academic health centers (AHCs). The growth of managed care through public and private sector health care reform has created five critical challenges for AHCs: decreased payment for services based on historical norms, decreased volumes of clinical services, decreased market share, adverse selection, and loss of explicit GME, DSH, and capital funding. Lower per service payments result as capitated payments and discounted fee-for-service reimbursements are negotiated. Reductions in the volume of clinical services are a natural, and from a market perspective, desirable consequence of the introduction of managed care. Hospital lengths of stay
and emergency ward utilization have been shown to be very responsive to the introduction of case management, achieving reductions of 15-20% in each. Although these reductions are not unique to AHCs, they could affect an institution’s ability to offer an adequate inpatient case mix for training purposes.

AHCs have a tradition of providing services to vulnerable populations. Medicaid populations and the medically indigent have relied on these institutions as primary sites for both inpatient and outpatient care, largely because these patients lacked access to other providers. Recently, many states have implemented initiatives to enroll Medicaid recipients in managed care plans, often in conjunction with expansion of Medicaid eligibility. Capitated payments and the ability to risk select from this new pool offer opportunities for considerable profit, making these formerly non-paying patients more desirable to MCOs. As a result, AHCs must now fight to retain their market share. The very population which AHCs had previously taken for granted are suddenly among those for which they must compete most fiercely.

The fourth challenge posed by managed care, adverse selection, is a direct consequence of the competition for the AHC’s traditional patient population. The patients who are most likely to stay with the AHC when given a choice of providers are those who are the most dependent upon its services (i.e., the seriously ill). As AHCs retain the sickest patients, other providers are wooing the remaining patient population.

The final, but perhaps most significant challenge to AHCs brought by managed care is the uncertainty of payment differentials and loss of subsidies. Global budgets and other pressures to reduce health care spending mean that funds allocated to the special missions of AHCs will decrease funds available for other purposes. Thus, an adversarial relationship between AHCs and other providers is assured.

In theory, AHCs could mitigate some of the negative impact of managed care by offering their own insurance products, thus gaining access to the entire capitated health dollar. Profit margins built into management loads could then be applied to funding academic missions. This strategy has not been widely adopted, because there are substantial barriers to AHCs entering the commercial market. These barriers include the inability of state institutions to entertain such a private enterprise, the substantial capital assets required to manage the risk associated with capitation, and the lack of sufficient management expertise to undertake the administration of an insurance plan. The latter is made all the more difficult by the fact that AHC insurance products would have to cover a huge number of lives to distribute their risk of adverse selection.

In summary, the natural evolution of AHCs under the financial incentives of managed care is to evolve into increasingly inappropriate sites for training and research. Purchasers of health care who can minimize costs by obtaining services at facilities that do not reflect educational or clinical research expenses gain a competitive advantage. Consequently, market forces will lower covert subsidies to the educational and research mission straining the ability of AHCs to cross-subsidize, while services being referred to AHCs for care will be of an increasingly complex nature.
Medicare Capitated Payments for Enrollees in Managed Risk Plans

ACP Position 6: Medicare payments to capitated medical plans should accurately reflect expenses for medical education, training and research. ACP favors correcting the formula for determining capitated payments by Medicare to managed risk plans so that the portions of payments for medical education, training and research are made directly to those who actually incur these costs.

Since 1982, the Health Care Financing Administration has contracted with health maintenance organizations and integrated health care delivery systems to provide services to Medicare beneficiaries enrolled in risk-adjusted health plans. Medicare payments are made on a per capita basis and are calculated by determining the national average Medicare per capita cost under the fee-for-service system and adjusting this figure by geographic factors to compute per capita costs by county. For each Medicare enrollee, HMOs with risk contracts receive 95% of the estimated average adjusted per capita cost (AAPCC) that Medicare would pay for fee-for-service care in their county. Since the capitated payment is based on the national average Medicare payment, it includes compensation for both the direct and indirect costs of medical education provided at teaching hospitals whether or not the HMO incurs educational expenses or utilizes facilities with educational programs. In those cases where a HMO uses a teaching facility there is no requirement or incentive to pass on the "capitation premium" for education to the teaching facility. Both the Physician Payment Review Commission (PPRC) 68 and the Council on Graduate Medical Education (CoGME) 69 have recommended that the formula be changed to remove the educational component and to provide educational payments either directly to teaching hospitals or only to those HMOs that actually incur educational expenses.

All-Payer Funding for GME

ACP Position 7: ACP favors establishment of an all-payer system for graduate medical education in which all purchasers of health care share equitably in the costs of medical education and research.

One solution, favored by ACP and others including the AMA, Association of American Medical Colleges (AAMC), the Physician Payment Review Commission (PPRC), and the Council on Graduate Medical Education (CoGME) is to establish an all-payer system for graduate medical education. Since all elements of the health care system benefit from the training of physicians and other health care providers, all should share, directly or indirectly, to support this training.70 All purchasers of health care could contribute to a fund for the support of medical education, training and clinical research. AHCs, teaching hospitals, medical schools, ambulatory training sites, and other qualified entities could then receive reimbursement for these crucial functions which ultimately benefit all current and future patients. Such support would be limited to covering the academic missions of these institutions only. As a result this financing stream would promote the competitive position of academic medicine without insulating it from the forces of the evolving health care market.

However, AHCs might be compelled to make some sacrifices, relinquishing some autonomy to the general needs of society as defined by governmental and private funding sources. For example, AHCs could be expected to become more responsive to the training needs of
managed competition or to meet specific targets in terms of specialty distribution. The insular relationship these institutions have enjoyed would also change as demands increase for accountability and pressures rise by those who pay for health care to have a greater say in the educational product. This new accountability is summarized in three of the recommendations of the AAMC Committee on Financing Graduate Medical Education:71

1. The medical education community should continue to monitor the quality of its residency training and provide assurances that graduates of its residency programs are adequately prepared for practice.
2. The institutions receiving funding should recognize their obligations to train the types of physicians needed by society.
3. These institutions also must recognize their obligation to operate the training programs in a cost-effective manner.

ACP has also favored providing transitional support to public hospitals in major urban centers to reduce their dependence on housestaff for meeting patient service needs, initiatives to graduate more minority and generalist physicians, and expansion of the capacity for primary-care teaching.72

Other Funding Options Considered But Rejected by ACP

The College reviewed many other options, but rejected them as either practically or politically untenable at this time. No single option was seen as a desirable sole source of funding, although some could be integrated into a multi-tiered approach to funding GME. Among the other options considered were: 1.) continue the present system of cost differentials by third-party payers; 2.) have AHCs compete in the marketplace with no specific subsidies for their educational mission; 3) have Medicare increase its share of AHC funding to offset the loss of private third-party payer support; 4.) create a separate government program to finance medical education (as opposed to establishing a trust fund to which all-payers would contribute); 5.) have state and local governments assume greater roles in funding AHCs; 6.) have private foundations and/or university affiliates and/or the AHCs themselves support the educational mission; and 7.) have physicians bear significantly more costs of their training.

Other Sources of Revenues for Medical Education

Although clinical revenues have generated the bulk of subsidies for teaching in academic health centers, the research "products" of AHCs can provide another important source of revenues. The technology transfer function of academic health centers, where research findings are moved from the bench to the bedside, is a natural consequence of academic missions and is unique to academic health centers. Data collected by the Association of University Technology managers show that U.S. universities overall received about $250 million from the sale of intellectual property in all fields in 1994, of which proceeds from biomedical inventions constituted the largest and fastest-growing source.73 The growth of managed care creates additional opportunities for the sale of research based on efforts to reduce the costs or increase the quality of clinical processes through outcomes research and identification of critical pathways.
CONCLUSION

Adequate funding for medical education and research must be secured. All third-party payers, including managed care organizations, should pay their fair share. Undergraduate and graduate medical education and training must be responsive to changing health care needs and the changing medical marketplace. Yet, the increasingly competitive environment of managed care and budgetary pressures to reduce state and federal spending are eroding the financial foundation of many academic institutions. The ability to spread the costs of academic and research missions among payers is reduced as managed care entities account for larger proportions of insured patients and channel their enrollees to predominantly non-teaching settings. If the financing of medical education is destabilized by the evolving health care market a system which has led the world in medical education, creativity, and research could be lost in the process. Means must be found to assure that all purchasers of health care share equitably in these costs.

Medical educators and AHC leadership must resist the temptation of blaming the messenger (managed care) for the message (that medical education and AHCs must change). The majority of the problems with the current state of medical education discussed here including the need to revise the content of medical education to reflect changing practice, shift education to outpatient settings, and support the production of generalists have been well recognized for over a decade. The growth of managed care has heighten our awareness of these needs but has not created them.

The growth of managed care and the transitional turmoil it is creating are forcing changes which government and private commissions have long recommended. In that context, we should recognize opportunities for change and for restructuring the content, process and financing of medical education at both the undergraduate and graduate levels. Greater involvement of managed care in supporting medical education and research and increased responsiveness of education and training to the needs of patients and physicians in an evolving environment will help to assure a physician workforce of the future that is appropriate and well trained to meet the nation’s health care needs.
GLOSSARY OF ACRONYMS

AAMC: Association of American Medical Colleges - "A non-profit association comprising the 125 accredited U.S. medical schools; the 16 accredited Canadian medical schools: more than 400 major teaching hospitals...; over 90 academic and professional societies representing 75,000 faculty members; and the nation's medical students and residents." The purpose of the AAMC is "the improvement of the nation's health through the advancement of academic medicine." AAMC accredits medical schools in the U.S., Canada and Puerto Rico.

AAPCC: Average Adjusted Per Capita Cost - An estimate by the Health Care Financing Administration of the average cost Medicare would incur for beneficiaries under the fee-for-service system, adjusted by county for geographic cost differences and differences in age, sex, disability status, Medicaid eligibility, and institutional status. The AAPCC is used as the basis for determining Medicare monthly capitated payments to health maintenance organizations under risk contracts. For each Medicare beneficiary enrolled in a Medicare HMO, Medicare pays the HMO 95% of the AAPCC for that beneficiary's demographic rate class.

ACGME: Accreditation Council for Graduate Medical Education - An independent private sector body that accredits programs and develops standards for graduate medical education training. The ACGME is a consortium consisting of the Association of American Medical Colleges, the American Board of Medical Specialties, the American Hospital Association, the American Medical Association, and the Council of Medical Specialty Societies. To receive accreditation, residency training programs must comply with general requirements developed by the ACGME and must satisfy special requirements that are developed and monitored for each specialty by 24 separate residency review committees of the ACGME.

ACP: American College of Physicians - The nation's largest medical specialty society with a membership of 89,000 physicians practicing internal medicine and its subspecialties. Founded in 1915, ACP is an academic and professional organization whose primary mission is the promotion of medical excellence and public health through continuing education and the development and advocacy of responsible public policy. Headquartered in Philadelphia with a public policy office in Washington, DC, ACP publishes the *Annals of Internal Medicine*, the most widely cited medical society journal in the world.

AHC: Academic Health Center - An institution providing inpatient medical care integrated with medical education, training and research. Generally, involving a combination of at least one allopathic or osteopathic medical school, one or more teaching hospitals and at least one other health professional training program.

CoGME: Council on Graduate Medical Education - A federal advisory council authorized by Congress in 1986 to provide advice and make recommendations to the Secretary of the Department of Health and Human Services and to Congress on the supply and distribution of physicians and associated issues, including the financing of undergraduate and graduate medical education.

DME: Direct Medical Education expenses - The costs of graduate medical education that are directly related to medical education, including faculty salaries, resident stipends, fringe benefits of
faculty and residents, classroom space, and other overhead and related to teaching. Medicare reimburses teaching hospitals based on hospital-specific per resident amounts of 1984 adjusted for inflation and multiplied by 1.0 for each full-time equivalent resident in an initial residency period (period required for first board eligibility, but not more than 5 years) and 0.5 for each FTE in an approved program beyond the initial period.

**DRGs:** Diagnosis Related Groups - A system of classifying patients on the basis of diagnoses for purposes of payment to hospitals. Used by Medicare and other third-party payers in paying for inpatient hospital care.

**DSH:** Disproportionate Share adjustment - Extra payments by Medicare to certain hospitals that serve a disproportionate share of the medically indigent to compensate for higher costs associated with more severely ill patients and longer hospital stays. Factors considered for qualification for DSH payments included number of beds, patient days, and hospital location. DSH payments were based on a formula that considered certain hospital and patient factors.

**FTE:** Full-time Equivalent - A proxy used in calculating numbers of workers (e.g., faculty, residents, students, etc.) by which part-time workers are counted on a pro-rated basis proportional to their hours worked. For example, if a full-time faculty member is defined as working a minimum of 2000 hours per year, two part-time faculty each working 1000 hours per year would be counted as .5 FTE each and together they would count as one FTE.

**GME:** Graduate Medical Education - The period of medical training following graduation from medical school, including internship, residency, and fellowship training.

**GMENC:** Graduate Medical Education National Advisory Committee - A federal advisory group chartered by Congress and established in 1976 to advise the Secretary of the Department of Health and Human Services on the number of physicians required nationally in each specialty to bring supply and requirements into balance. The committee was also charged to recommend methods to improve the geographic distribution of physicians and mechanisms to finance graduate medical education. In its final report of September 30, 1980, GMENAC projected that there would be an overall surplus of 70,000 physicians by 1990 with oversupplies in most specialties, but shortages in primary care. The national surplus was predicted to rise to 145,000 by 2000 unless corrective action was taken.

**IME:** Indirect Medical Education expenses - Under the Prospective Payment System, teaching hospitals receive adjustments in payments from Medicare in recognition of the indirect costs associated with their additional missions. Higher costs of teaching hospitals are attributed in part to extra demands placed on hospital staff due to teaching activity, care for more severely ill patients requiring specialized services, and additional tests and procedures ordered by residents in training. For FY 1995, Medicare applied an IME adjustment to payments for inpatient services provided to Medicare beneficiaries at qualifying teaching hospitals based on a formula that increased DRG payments by 7.7 % for each 10% increase in the ratio of interns and residents to beds.

**LCME:** Liaison Committee on Medical Education - Not-for-profit private sector body that accredits allopathic medical schools in the United States, Canada and Puerto Rico. Membership
consists primarily of representatives of the AMA Council on Medical Education and the Association of American Medical Colleges, but also includes representatives of the public, students, and the Committee for the Accreditation of Canadian Medical Schools.

**MCO:** Managed care organization - An organization that attempts to control or coordinate the use of health services by its enrolled members in order to contain health care expenditures. MCOs typically administer health plans that involve defined delivery systems in which participating providers have contractual arrangements with the plans. MCOs include health maintenance organizations, preferred provider organizations, and independent practice associations.

**NIH:** National Institutes of Health - The NIH is a federally funded biomedical and behavioral research institution consisting of 24 distinct institutes, centers, and divisions. Its mission is to discover new medical knowledge to help prevent, detect, and treat disease and disability. NIH is part of the Public Health Service, but 81% of its budget is spent on extramural research conducted at universities, research institutions and hospitals throughout the United States.

**POS:** Point-of-Service - An option under some managed care plans that permits enrollees to use non-network providers. POS plans allow enrollees to decide at the time of service whether to use an HMO or out-of-network provider. However, by going out of network, the enrollee generally is subject to higher copayments and the plan may have proscribed limits on how much it will pay.

**PPO:** Preferred Provider Organization - An organized network of physicians, hospitals and/or other health care providers that negotiates with employers, government and other third-party payers and agrees to provide specific services at discounted prices. Participating providers retain autonomy and are indemnified on a fee-for-service basis. Enrollees in PPO plans generally can obtain services from the preferred providers with no or only nominal fees, but must pay higher copayments for services obtained from nonpreferred providers.

**PPRC:** Physician Payment Review Commission - A federal advisory commission established by Congress in 1985 to advise Congress and make recommendations on methods to reform payments to physicians under the Medicare program. The PPRC has also responded to Congressional requests for advice concerning implementation and revisions of the Medicare Fee Schedule, volume performance standards, the supply and specialty distribution of physicians, access to health care, utilization review and quality assurance, malpractice reforms, and managed care.

**TennCare** - A Medicaid demonstration project in the State of Tennessee begun in 1994 in which Medicaid recipients and the uninsured are enrolled in managed care plans. Under a waiver to Medicaid rules, managed care organizations are paid a capitated annual amount for each enrollee and payment schedules are established for physician services. Enrollees may obtain services only from participating physicians who agree to accept the TennCare fee schedule.
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