

Transforming osteopathic medical education

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The evolution of the healthcare marketplace to a managed care-based system requires dramatic changes in the fragmented medical education infrastructure and curricula to more adequately train the physician workforce needed to staff and support the new system. Graduating physicians, in large numbers, feel poorly prepared to function effectively in the very areas adjudged to be essential to a successful transition, such as cost-effective care and caring for patients in outpatient settings. Managers of the new systems, such as health maintenance organizations, have expressed dissatisfaction with the skill levels of many of the practitioners whom they are hiring. Many physicians who have made the transition to a new practice paradigm by restructuring their practices are dissatisfied with several aspects of the new practice environment and equally concerned about the quality of care they can deliver. The conflict between rhetoric and incentives, and the difficulty of reforming a fragmented academic system pose barriers to effective change as the nation's academic health centers prepare to respond. Osteopathic medicine is better positioned to change because of its community-based education, its track record in primary care, and its national move to create a vertically integrated continuum of education from undergraduate through graduate study. Medical education and workforce issues are essential components of the cost, quality, and access triad. Without reform in medical education, the ability of the new paradigm to adequately address these other issues is critically compromised.

(Key words: Medical education reform, physician workforce, managed care, osteopathic medical education, Council on Graduate Medical Education [COGME], Pew Health Professions Commission, Institutes of Medicine)

The healthcare professions are undergoing radical change as the healthcare industry continues the shift to a managed care-based practice environment. This shift to managed care and a delivery system focused on increased physician accountability, outpatient care settings, cost-effective care, and integrated teams of healthcare professionals approximates

a 180-degree "about-face" from the practice environment of a decade ago. The practice environment leading up to the 1980s was the result of increased research-based specialization, high-utilization of medical technologic advances, and unchallenged physician autonomy. Practicing physicians and physicians emerging from today's medical education pipeline increasingly find themselves ill-prepared to function in the evolving delivery system.^{1,2}

Many of today's physicians acknowledge a lack of competency in the areas of practice management, cost-effective appropriate care, and practice skills and atti-

tudes required for successful participation in managed care organizations.^{1,2} Citing many of the same problems, leaders of health maintenance organizations (HMOs) have reported a lack of preparedness among physicians and have urged reform of the medical education process.³ Indeed, by its very nature, managed care mandates several educational imperatives to meet the obligations of the evolving marketplace.^{4,5}

Dissatisfaction with medical education

As the managed care scenario continues to evolve, physicians increasingly find themselves coping with a healthcare system markedly different from what they had expected from their medical education and practical clinical experiences.^{1,2} In most instances, physicians continue to be educated in a traditional "2 plus 2" curriculum format (2 years of basic sciences followed by 2 years of hospital clinical experience) that tends to neglect critical characteristics of the evolving practice environment and many of the new challenges facing physicians. Similarly, after graduating from medical school, most graduates still expect to complete their training as interns and residents in hospital and inpatient settings, even though the locus of care has shifted to outpatient settings. Accordingly, the traditional education model does not correspond to the skills, values, and attitudes that healthcare practitioners and the health professions must possess to be successful in the emerging managed care world.

Physicians-in-training

Surveys of recent medical school graduates indicate that many future physicians believe their training to have been inadequate in several key educational areas associated with the evolving delivery system. Significant numbers of graduates from 1992 to 1994 thought that they are inadequately trained in the following areas: nearly 75% in practice management skills; more than 60% in cost-effective medical practice; nearly a half in the delivery of preventive care; and, more than a third in the care of ambulatory patients.⁶ Trends during the 3-year period, however, seem to indicate slight improvement in the areas of

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delivering preventive and cost-effective medical care. Although far-reaching medical education reform has yet to be realized, favorable shifts in some competency indicators may signal a shift in some medical school curricula.

Similarly, a recently published survey of medical school graduates, conducted in 1991, revealed inadequate training in several competencies deemed necessary for the future healthcare practitioner. A large number of respondents in this survey felt ill-prepared—rating their training as *fair* to *poor*—in the following areas:

- ☐ working in the managed care setting, 70%;
- ☐ understanding the role of community health agencies in integrated patient care, 65%;
- ☐ accommodating increased scrutiny, 80%;
- ☐ considering the cost of care, 67%;
- ☐ using technology appropriately, 52%; and
- ☐ including patients and families as partners in care, 51%.

These surveys support the contention that physicians and physicians-in-training believe that the medical training process has not adequately prepared them to practice in the emerging delivery system.¹

Managed care organizations

Health maintenance organizations, in similar fashion, have indicated that generalists recruited to practice in managed care settings are poorly prepared. A report prepared by the Group Health Association of America for the Health Resources and Services Administration in May 1993,⁶ graded 51% of family practitioner/general practitioners, 75% of internists, and 62% of pediatricians as being poorly prepared to practice in managed care settings. The call for medical education reform—in response to the restructuring taking place in healthcare delivery—voiced 10 and 15 years ago by the then-emerging HMO leaders, has gone largely unheeded. For physicians to successfully meet the health needs of the public in the next century, the medical education process must be dedicated to adequately preparing providers in the

competencies necessary to function in the managed care environment.

Growth of managed care

Managed care has grown rapidly over the past decade and is now poised to dominate the healthcare market through the end of the 1990s and into the next century. During the past 10 years, combined enrollment in HMOs has more than tripled—reaching 50 million members as of January 1995—and HMO enrollment in 1996 is expected to near 65 million by the year's end.^{7,8} Ultimately, it is anticipated that within another decade 80% to 90% of the insured population of the United States will receive its care through some type of managed care system.⁹ Also, the Employee Benefits Research Institute¹⁰ reported that the number of uninsured Americans appeared to drop slightly for 1994—39.4 million uninsured, down from 40.9 million in 1993—with managed care being credited for much of the reported downturn. Moreover, more than three fourths of all physicians have at least one managed care contract, and nearly half are involved with at least one HMO.⁷ Clearly, managed care has achieved a strong foothold in the healthcare market and promises to be the prevailing organizational structure for health professions in the 21st century.

Why managed care requires changes in physician training

The growth of managed care, while touted by many as the cure-all for the ills of the healthcare industry, aggravates several troubling conditions in professional and educational communities. The move to a system of managed healthcare provides real opportunities to improve the effectiveness of the nation's healthcare system through the delivery of more cost-conscious care, more rational utilization of healthcare resources, greater access to health services for the public, and care focused on the health of entire communities rather than the disease of a single individual. In contradistinction, the unprecedented expansion of managed care threatens to magnify the reported oversupply of physicians and specialists, decrease funding for medical education at the undergraduate and graduate level, and

exacerbate the deficiencies of the current educational system. Managed care promises to radically alter the nation's healthcare system and, as the new paradigm continues to replace the fee-for-service method of healthcare financing and delivery, the healthcare industry must respond with strategies to produce appropriately trained physicians to function in the evolving marketplace.

The great proliferation of managed care organizations has produced an increased emphasis on primary care, community-based cost-conscious care, a population perspective with a preventive orientation to care, and a necessity for cooperation among health professionals in a team-oriented practice environment. As the healthcare professions have begun to make this dramatic shift toward the evolving delivery structure, it has become increasingly apparent that the current education model does not prepare new physicians adequately. The current medical education model and the existing practice environment are the result of a 50-year cycle in which the healthcare professions have grown increasingly specialized with the expansion of highly reductionist knowledge. Although this trend has served to improve the quality of care overall, it has also caused a concomitant escalation of healthcare costs, an alienation of patients from their own health, and a profound lack of coordinated care. The current medical education process reflects a system geared to promote research above education, specialization over generalism, and a delivery system founded on large, tertiary care centers. The current medical school curriculum and clinical training opportunities therefore do not correspond to the necessary skills base, attitudes, competencies, or practice sites of the emerging healthcare system.

Managed care and the anticipation of its future domination of the practice environment have already forced many physicians to make practice changes to accommodate the new paradigm. Physicians in increasing numbers are finding it necessary to merge with another practice or group; sell their practice to a hospital or healthcare firm; join a group practice without walls (GPWW), a physician-hospital organization (PHO), a management ser-

vices organization (MSO), a physician organization (PO), etcetera; or retire.¹¹ With the exception of retiring, physicians making significant practice changes must often cope with a foreign and unknown practice environment and adapt to new practice requirements.

A recent survey¹¹ of physicians who had made significant practice changes over the past 2 years identified the concerns that dominated the physicians' thinking before entering new practice circumstances. Not surprising, the top concern among these physicians was an anticipated change in their level of income.

A loss of autonomy in practice was the next concern on the list. Quality-of-care issues were the third most frequently voiced concerns associated with practice change. The fourth item on the list was a purely personal concern over the ability to have time off from work. Although not all the concerns listed dealt with negative aspects of change, nearly all the changes in this survey dealt with some loss of independence owing to new practice circumstances.¹¹

Although 87% of those physicians surveyed would make those same practice changes again if they had the choice, the physicians have experienced both satisfaction and dissatisfaction with respect to several of their new practice circumstances. Respondents did not fall into easily defined "pro" and "con" categories concerning satisfaction or dissatisfaction over practice changes. For example, on the issue of income, 40% of respondents reported that their income level remained the same, whereas 28% were more satisfied and 30% were less satisfied with income levels; many of the concerns had similarly split results. However, for all the mixed results, respondents overall appeared to be more satisfied than dissatisfied with the changes that they had made. Gaining managed care contracts was the chief reason for satisfaction among the physicians in the survey, followed by call coverage, time off, and access to a patient base.¹¹

A loss of autonomy ranked number 1 among the reasons for dissatisfaction with practice changes. Second, respondents did not experience the anticipated freedom from insurance hassles. Dissatisfaction with

income, workload, and fringe benefits followed.¹¹

In terms of daily practice in managed care organizations, POs, or group practices, physicians often find themselves facing uncomfortable situations and pressures. As employees or co-owners within a given practice environment, physicians feel increasing pressure to maintain a desired level of productivity in the number of patients seen and to conform to prescribed levels of resource utilization. Unlike previous practice or training experiences, physicians must now weigh treatment options according to established cost/benefit guidelines. Physicians must also conform to regulations dictating covered treatments, allowable charges, and specialty referrals. If physicians do not adapt to and follow the myriad rules, regulations, and guidelines of their new practice environment, they then face the possibility of "de-selection" by the firm.

To understand how the system must change, it is necessary to understand how the current education model and practice environment evolved.

Medical education's history of change

The first medical schools in the United States were founded by private practitioners, owned by their faculty, and operated for profit. By 1870, 80 medical schools were in operation—65 teaching orthodox medicine, 11 teaching homeopathy, and 4 teaching eclectic medicine.¹² Throughout its long history, medical education has continually evolved to respond to a changing environment.

In 1892, Dr Andrew Taylor Still founded the first osteopathic medical school in Kirksville, Mo. Dr Still, dissatisfied with orthodox medicine, established a philosophy of care based on the relationship between structure and function in the human body, and emphasizing wellness and health maintenance.

In 1893, The Johns Hopkins School of Medicine created the first full model of what today is known as the teaching hospital. By merging academic departments with clinical training sites, the teaching hospital linked education, research, and clinical service allowing patient care, clin-

ical research, and physician training to be conducted in a shared culture.¹³

In 1911, Abraham Flexner¹⁴ published his watershed report on the status of medical education in the United States and Canada. Based on his visits to the 147 schools in the United States and 8 schools in Canada, Flexner reported widespread problems of low entrance standards, poor science laboratory instruction, lack of clinical facilities for bedside training, and inadequate instructional staffing at many schools.

In 1929, the reforms called for by Flexner had taken their toll. Only 76 of the surveyed schools remained, with many being reorganized into functional medical schools, often as programs within a university. As full-time faculty grew, medical schools experienced phenomenal growth in medical research.¹³ With the growth in medical research came a corresponding growth in specialization.

The Social Security Act of 1935 ushered in an era of internal expansion for the nation. The government placed itself in the role of benefactor of the American people and set out to establish the best system of care for the public. In 1965, Titles XVIII and XIX of the Social Security Act created the Medicare and Medicaid programs, respectively, which provided generous federal funds to support graduate medical education (GME) in the hospitals for the first time.

The mobilization for war in the 1940s spurred the government to increase its role in science and medicine by promoting technologic invention and development. The Office of Scientific Research and Development, established by President Franklin D. Roosevelt in 1941, had a Committee on Medical Research devoted to addressing medical problems associated with the war. This event further strengthened the research component in medical education.¹⁵

In 1945, following World War II, the US government committed the nation to a large-scale program of biomedical research and allocated extensive funding to external research conducted in major academic health centers. The new research grants fundamentally altered the missions and goals of the leading medical schools by shifting their empha-

sis from the education of undergraduate medical students to the pursuit of biomedical research, greatly influencing the future course of the medical education process for the next 50 years.¹⁶

The nature, size, and distribution of the physician workforce has been a continuing issue for the country since Flexner's report. But the actual makeup of the workforce has been determined in a tug-of-war between access policies and the incentives in the healthcare system. Past access policies—The Hospital Survey and Construction Act of 1946 (Hill-Burton Act) and capitation of medical school classes in the 1970s—have encouraged the expansion of the nation's hospitals and medical schools. Although the marketplace is now calling for fewer hospitals and a realignment of the physician workforce, established incentives in physician reimbursement, GME funding, and physician training favor the status quo of specialization, research-oriented academic health centers, and inpatient hospital care.

Increased specialization through the 1980s and the early 1990s, added to the continuing developments in research and technology, has supported and strengthened the complex research-centered, specialty-based academic health centers of today.

The need for a new paradigm in medical education

Between the time of the Flexner study and the Graduate Medical Education National Advisory Committee's (GMENAC) report to Congress in 1980, reform in the healthcare system had not focused on reforming the fragmented medical education system. Instead, policymakers focused on increasing the numbers of physicians and subsidizing the cost of medical care. With growing frequency since the GMENAC report, concerned organizations have issued major reports addressing workforce issues. Embedded in each of the reports are recommendations for medical education reform. The solutions to workforce issues offered in many of the reports, however, lead to incompatible workforce outcomes because of the conflicting incentives—

physician reimbursement, GME funding, and physician training—favoring, once again, the status quo of specialization, research-oriented academic health centers, and inpatient hospital care. And yet, as access and cost issues continue to move closer to workforce issues, it is clearly time to make changes in the fragmented system under which we educate physicians.

The construct/infrastructure that supports medical education has not truly reformed itself since Flexner's study. As early as 1910, Flexner had reported that "the physician's function is fast becoming social and preventive rather than individual and curative."⁵ Medical education must now consider the appropriateness of physician education within the context of the evolving delivery systems and changing practice environment.

Assessments of the preparedness of physicians and the physician training process to meet the needs of the emerging healthcare system reveal several hurdles and barriers for the healthcare community. Major reports from concerned organizations throughout the years have influenced the discussion of managed care, physician workforce issues, and medical education. Some of the most influential in recent debates are:

Council on Graduate Medical Education (COGME)

■ COGME's third report (1992) identified a dramatic generalist-to-specialist imbalance and an anticipated physician surplus, and declared that the nation's physician workforce was not well matched with the public's healthcare needs.¹⁷

■ COGME's fourth report (1994) reinforced the conclusions of the third report and recommended:

- ☐ setting first-year residency positions at 110% of US medical school graduates;
- ☐ placing at least 50% of residency graduates in generalist disciplines;
- ☐ doubling the number of underrepresented minority students; and
- ☐ eliminating primary care shortage areas.¹⁸

■ COGME's sixth report (1995) recommended greater cooperation and col-

laboration between managed care organizations and medical schools and residency programs to produce physicians possessing the knowledge, skills, and attitudes necessary to function in managed care settings.⁷

Pew Health Professions Commission

■ *Healthy America: Practitioners for 2005*, the 1991 report from the Pew Commission declared that the education and training of health professionals was not adequate to meet America's health needs.¹⁹

■ *Health Professions Education for the Future: Schools in Service to the Nation*, the second Pew report, published in 1993, reinforced the first report by stating that the healthcare professions were even more out of sync with the needs of the emerging healthcare system.²⁰

■ *Critical Challenges: Revitalizing the Health Professions for the Twenty-First Century*, the 1995 third report from the Pew Commission, acknowledges the managed care paradigm as the emerging model of healthcare delivery and financing, and anticipates that 80% to 90% of all insured persons will be covered under such arrangements within the next decade. The report also recommends that the number of graduate medical training positions be set at 110% of US medical school graduates, and that schools reduce the size of the entering classes by 20% to 25% by the year 2005. The Pew Commission recommends closing medical schools to reduce the entering class size.⁹

Institute of Medicine (IOM)

■ *The Nation's Physician Workforce: Options for Balancing Supply and Requirements*, an IOM report issued in January 1996, recommends addressing the growing physician surplus through downsizing GME.²¹

■ *Nursing Staff in Hospitals and Nursing Homes: Is It Adequate?* another IOM report issued in March 1996, calls for more funds to train advanced-practice nurses to supervise and manage care. The report recommends that advanced-practice nursing personnel be used in both inpatient and outpatient settings

and for them to be able to take leadership positions and to act independently.²²

■ *Primary Care: America's Health in a New Era*, the prepublication draft of the final report due in August 1996, goes farther in its recommendations than the other two reports. This report proposes a new definition of primary care: "The provision of integrated, accessible healthcare services by clinicians who are accountable for addressing a large majority of personal healthcare needs, developing a sustained partnership with patients and practicing in the context of family and community." This definition supports the trend toward a team of integrated healthcare—self-care all the way through to management of chronic illness.²³

As the system of healthcare delivery and financing evolves to this new paradigm, the onus for substantive change within the industry falls heavily on the medical schools, residency programs, and teaching institutions. The fragmented medical education system has been charged with correcting the problems of physician maldistribution, minority representation, generalist-to-specialist imbalance, and the perceived glut of physicians. As healthcare professions lurch forward to embrace a new structure, deficiencies and inadequacies within the existing professional and educational systems reveal themselves. The new practice paradigm dictates a drastic shift from traditional memorization to strategic problem solving and sophisticated information-retrieval skills. The professional competencies for both current and future physicians call for dramatically different abilities in both practice and management, and physicians must now be trained to function as a member of a team and a system. In order to address these charges, medical education and academic health centers must reconfigure the ways in which they produce physicians and explore linkages with the dominant player in the field—managed care organizations.

In this period of rapid change, all the medical professions must prepare for transformations in medical education methodology and practice. Osteopathic medicine, however, faces fewer barriers to implementing swift change than do coun-

terparts in the allopathic medical profession. Colleges of osteopathic medicine do not carry the weighty burden of large tertiary care centers that plague allopathic medicine in the evolving market. As the locus of care shifts to ambulatory care centers, the osteopathic medical profession—with its tradition of small, community-based hospitals—is better situated to establish collaborative relationships with the emerging care systems. In addition, osteopathic medicine's educational expertise and enviable record of producing primary care physicians makes the colleges of osteopathic medicine logical partners in joint ventures with managed care organizations. Many of the competencies and skills expected of the contemporary physician can be easily integrated into the osteopathic medical education model.

The osteopathic medical profession is developing consortia of training centers in order to create vertically integrated education systems that combine undergraduate and graduate programs in a continuum of medical education, thus overcoming the major barrier to change—fragmentation.^{24,25} By linking all parts of the education infrastructure, educators can be accountable for workforce outcomes. Although osteopathic physicians make up only 5% of the physician workforce, they account for 20% of all family practitioners. These new initiatives added to the traditional osteopathic medical educational model position the osteopathic medical community favorably in the changing environment.

Comment

Medical education reform has become pivotal to the success of all ventures in the new practice paradigm. To proactively support the market evolution to a managed care-based environment, a focus on education must be included in the major crisis triad—access, cost, and quality—that has dominated healthcare reform efforts.

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Case reports

Inferior glenohumeral dislocation (luxatio erecta humeri)

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A 67-year-old woman was seen in the emergency department because of severe pain and inability to move her left shoulder after falling on an abducted left arm. The fall was the result of a near-syncope episode. On examination, the left arm was hyperabducted and elevated approximately 80 degrees from the horizontal plane. Furthermore, the patient was unable to move her left arm. Radiographs of the shoulder revealed an inferior dislocation of the glenohumeral joint. Closed reduction in the emergency department was successful. This rare but classic case of inferior glenohumeral dislocation (luxatio erecta humeri) serves to emphasize that a heightened awareness for this injury is necessary if it is to be recognized and treated appropriately. It is important to obtain orthopedic consultation or follow-up (or both) for this injury, because of the high incidence of accompanying tears of the rotator cuff. Neurovascular compromise is also commonly associated with this dislocation. The neurologic injuries are more common than the vascular injuries but tend to resolve after reduction.

(Key words: Inferior glenohumeral dislocation, luxatio erecta humeri, shoulder dislocation, erect glenohumeral dislocation)

Emergency physicians, family physicians, and sports medicine physicians frequently encounter patients with dislocations of the shoulder. In fact, the shoulder is the most commonly dislocated major joint in the body.¹ However, it should be recognized that the shoulder joint is actually composed of three smaller joints and one articulation:

- ☐ the glenohumeral joint,
- ☐ the acromioclavicular joint,
- ☐ the sternoclavicular joint, and
- ☐ the scapulothoracic articulation, respectively.

The glenohumeral joint is the major component as well as the most frequent-

ly injured of these joints and articulation.¹ Accordingly, what many clinicians refer to as a "shoulder dislocation" is really a glenohumeral joint dislocation.

Inferior glenohumeral dislocations, or luxatio erecta humeri, are a relatively uncommon form of shoulder dislocation. Sporadically, case reports have been published in the orthopedics and emergency medicine literature.²⁻¹⁵ This type of dislocation can occur in any age group and has a classic clinical presentation of extreme hyperabduction and elevation of the affected arm. Physicians should develop heightened awareness for rapid recognition and treatment of this type of dislocation. We report such a dislocation in an elderly woman whose injury occurred as the result of a near-syncope episode.

Report of case

A 67-year-old woman was transported by ambulance to the emergency department with the complaint of severe pain of the left shoulder and the inability to move

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