

# The U.S. Health Care System Is in Crisis: Implications for Academic Medical Centers and Their Missions

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## Abstract

The medical care system in the United States is in crisis. Health care costs are escalating and threatening coverage for millions of people. Concerns about the quality of care and patient safety are heightening; patients and payers now publicly share these concerns and want to make providers more accountable. Traditionally, the response to rising health care costs has been to modify reimbursement models and incentives. Currently there is a movement to shift the responsibility of cost containment to the patients. The authors express doubts about the overall effectiveness of this

strategy and propose reengineering the health care system to improve quality and efficiency.

Leaders of academic medical centers must understand the forces and dynamics of change, and the potential institutional response to improve the quality and efficiency of their delivery systems and to preserve their missions: clinical care, education, research, and community service. As they suggest the operational changes needed to respond to this evolving health care environment, the authors discuss the implications for the various missions. The graduates of

training programs must be prepared to function within multidisciplinary teams and constantly seek ways to improve quality and efficiency to ensure that care is accessible, affordable, and safe. Academic medical centers need to expand their research agenda to develop more expertise in quality and process improvement research. Additionally, they must provide the leadership to foster the transition from an era of "managed care" to an era of "organized systems of care."

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**T**he medical care system in the United States is in crisis. As of 2004, 45.8 million Americans lacked insurance and many additional millions were underinsured (Figure 1). Health care costs are spiraling out of control, threatening coverage for additional millions.<sup>1</sup> Access to both primary care physicians and subspecialists is problematic in many parts of the country, especially in rural America.<sup>2</sup> Concerns about the quality and safety of health care have been well summarized by the Institute of Medicine (IOM).<sup>3</sup> Patients and payers now publicly share these concerns and want to make providers more accountable.<sup>4</sup> Difficult ethical and moral conundrums are

debated openly in the media and in the living rooms of Americans. Individuals, regardless of their politics, want their values understood and respected.

The health care system must change. The essential question is whether it can sufficiently respond on an incremental basis to avoid health care becoming the preeminent public policy issue, which might result in a more cataclysmic overhaul.

Leaders of academic medical centers must understand the forces and dynamics of change and the potential response that their institutions must muster in order to protect their ability to serve the traditional missions of clinical care, education, research, and service. In response to these external demands, academic medical centers will need to significantly alter and redesign their clinical programs and systems of care to emphasize and improve their quality, safety, accessibility, and efficiency—to produce better outcomes at lower costs. As they guide their organizations through operational changes, they will also have to adjust the educational processes and goals to ensure that the physicians and other health care practitioners they train have the understanding and skills to

function effectively and comfortably in an evolving health care environment. In this paper we will discuss:

- the economics of health care and the consequent impact on coverage,
- the quality and safety demands facing health care,
- the challenges to improve efficiency, making care more affordable, and
- the implications of these three considerations for the missions of the academic medical center.

Our goal is to raise the level of discourse around these challenges and to focus on the need for adaptive approaches by academic medical centers while maintaining the other missions of medical education, research, and community service. Health care must and will change, and academic medical centers must be prepared to respond and lead.

## Costs, Coverage, and Access

Health care costs, coverage, and access are inextricably linked. In fact, the conflict between them may fuel the drive for, and the ultimate pace of, change. At a time when 45 million Americans find themselves without insurance and

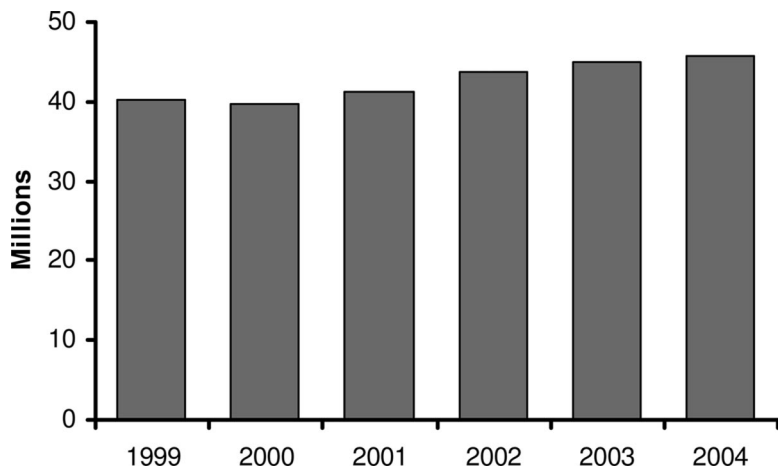
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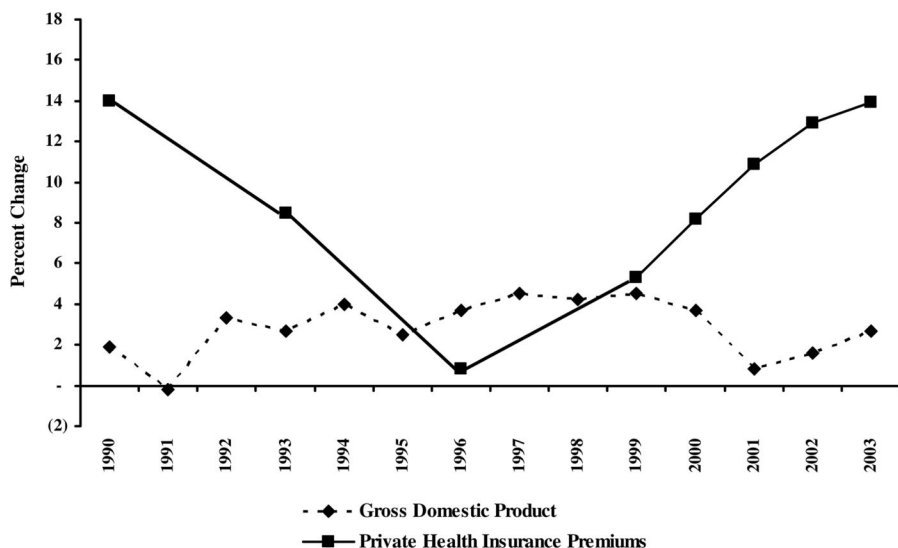
**Figure 1** Number of uninsured individuals in the United States, 1999–2004. There has been more than a 10% increase in the number of Americans without insurance over the past six years. Source: U.S. Census Bureau.<sup>5</sup>

additional millions are underinsured, economic conditions threaten the coverage of many more.<sup>5</sup> After a brief respite, once again, the cost of health care (measured by the increase in private health care premiums) is increasing faster than the economic growth of the country (measured by the gross domestic product) (Figure 2).<sup>6</sup> The escalating cost of health care has become a burden for all, and most experts agree that this dynamic is unsustainable.<sup>7</sup>

The responses by individuals, employers, and governmental agencies to this

predicament have been predictable, swift, and worrisome. Some of the responses have been focused on immediate fixes, while others have been attempts at long-term innovative systematic approaches to cost containment. Because of increased costs, some individuals have just dropped their insurance coverage outright. Even more troubling, some employers are opting out of health care coverage as a benefit in order to avoid this uncontrolled expense (Figure 3).<sup>8</sup>

Since World War II, most working Americans have received their health care



**Figure 2** Increases in health insurance premiums compared to gross domestic product increases. In the early 1990s, the increase in private health insurance premiums grew faster than the gross domestic product (GDP). With the rise of managed care in the mid-1990s, this pattern reversed and the growth in premiums was less than the rate of growth of the economy (GDP). However, over the ensuing five years there was a resurgence of rapidly rising health care premiums relative to the GDP.

Source: Bureau of Economic Analysis, Department of Commerce, Kaiser Employer Health Benefits 2004 Annual Survey.<sup>6</sup>

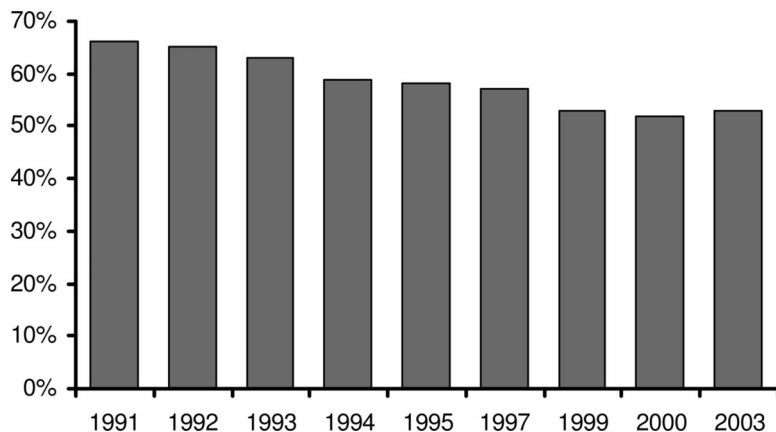
coverage from their employers. Employer-sponsored health insurance has traditionally been structured as an accepted social good where the costs are shared equally between the younger, healthier employees and the older employees with more expensive and chronic diseases. The accelerated dropout rate by employers in terms of health care coverage represents a change in social policy that has been insufficiently appreciated and inadequately debated. If this retreat by employers continues and threatens the health care coverage of many additional working Americans, the country may reach a tipping point favoring a much more aggressive approach to change.

Even large, multinational corporations are not exempt from facing these challenges. The battles between General Motors and its unions concerning health care benefits have been well chronicled.<sup>9</sup> General Motors will probably not drop coverage for employees, but it may dramatically increase cost sharing or decrease the extent of coverage.<sup>10</sup> Many corporations are also questioning their responsibility for covering the dependents of their employees, as well as their ability to maintain health care benefits for retirees.

Neither state nor federal governments are immune to these financial pressures. Facing daunting budgetary shortfalls, which are substantially attributed to the increase in Medicaid costs, many states are pruning their health care eligibility roles while at the same time decreasing the scope of the benefits covered.<sup>11</sup> We are concerned about this approach as public policy; moreover, we are truly worried about this approach as public health policy. Congress, in spite of intense lobbying from state governments, has opted to try to cut its Medicaid budget.<sup>12</sup> After passing an expensive Medicare Drug Bill, the federal government will most likely have to revise and modify Medicare to keep it fiscally solvent and sustainable.

**The Traditional Response: Tinkering with the Reimbursement Models**

Health care leaders and policy makers have typically attempted to encourage cost containment by providing incentives and manipulating reimbursement



**Figure 3** Percentage of private sector workers with employer benefits driven by decline in employer coverage. During a period of rapid rising cost of private health insurance, the number of Americans that received employer sponsored health insurance substantially decreased—a relative decrease of nearly 20% over this nine-year period.

Source: U.S. Department of Labor Bureau of Labor Statistics.<sup>8</sup>

models. This approach has limitations in driving significant and fundamental change in the health care delivery model and is often associated with undesirable and unintended consequences. Initially, insurance companies tried to control health care expenditures through administrative approaches that incorporated exclusionary clauses and eligibility provisions, an approach that placed few limits on providers and did not necessarily reward more efficient care.

When this approach failed and health care costs outpaced economic growth in the early to mid 1990s (Figure 2),<sup>6</sup> insurance companies and health plans moved responsibility for cost containment to providers through the rapid proliferation of managed care organizations, which placed the providers at risk for the financial performance of the health care system. Common wisdom says that managed care failed. However, Figure 2 demonstrates that the rate of increase in health care costs had decreased in 1990 through 1994 and was either flat or negative from 1994 through 1997. However, in the late 1990s, as individuals felt more economically secure, an increasing number of Americans objected to the restrictive nature of managed care. Patients demanded greater choice and providers chafed under restrictions. Large, loosely organized independent provider networks (IPAs) emerged and the ability to manage the care and contain costs rapidly eroded. The result was predictable, and health care costs

accelerated at a time when the national economy began to slow down and businesses were threatened by greater global competition. Many businesses attempted to reduce their costs by dropping health care coverage. Between 1999 and 2003, five million Americans became uninsured (Figure 1).<sup>5</sup>

With the perceived failure of managed care, many insurers and employers have decided to shift the responsibility for cost containment from providers to consumers, the patients themselves.<sup>13</sup> The premise is that financially engaged patients, armed with data, will make informed decisions about appropriate resource allocation—their purchases of health care. Under the model of consumerism, patients are financially engaged because they must balance substantial co-pays and deductibles with dollars available in medical savings accounts to cover these costs. If an individual or family spends more than is available in the medical savings account, they must supplement with dollars out of pocket. If they spend less, they can carry over the dollars to help cover costs for care in future years. Theoretically, patients faced with the economic consequences of their decisions will become more prudent buyers.

We have several reservations about the appropriateness and effectiveness of consumerism to encourage meaningful changes in the delivery system and reduce costs in the long term. First, the cornerstone of consumerism is to arm patients (consumers) with accurate and

complete information so that they can make informed decisions. Unfortunately, the public reporting of health information comparing prices, quality, and outcomes between providers is in its infancy. There is no single source and no generally accepted source of reliable information for patients that is easily understood. The information related to a particular condition can be very complex, conflicting, and difficult to interpret even for the most seasoned physician, let alone the general consumer. The Internet, a source to which many consumers turn, is packed with both useful and very questionable information that further confuses patients.

Second, intertwining large financial considerations with important clinical decision making may be inappropriate and unethical and may result in unwanted and unintended consequences. Rand has shown that increasing out of pocket costs does, in fact, decrease utilization.<sup>14</sup> However, the decrease in utilization is indiscriminate where patients tend to forgo not only elective and optional care, but also care that is critical, especially secondary and tertiary preventive measures that can reduce complications and the progression of disease.

Third, we are concerned that this approach has the potential for patients to shop around ineffectively and thereby fragment their care. In pursuit of the best price, they may choose to receive different parts of their care from a host of different providers. Though each element of their care may be cheaper, this approach may actually increase redundancy, decrease efficiency, and paradoxically increase overall cost. The rise in consumerism may focus too much attention on the price of various isolated elements of care and may not encourage more extensive and needed changes in the health care delivery system to improve the overall efficiency by eliminating unnecessary variation and redundancy.

We are not saying that consumerism will fail to lower health care costs. We think that this approach might even eliminate some unnecessary services. We are, however, concerned that this approach might decrease important utilization in terms of screening, maintenance, and important elective care. These concerns

should be studied carefully. In the end, the only meaningful method to reduce costs and improve efficiency is to redesign the delivery system. Academic medical centers should attend to their systems of care rather than simply reacting to the ever changing prevailing reimbursement model.

**The Imperative: More Efficient and Higher Quality Systems of Care**

Getting health care costs under control must be a critical goal for the country. All health care providers should and must understand the need for efficiency and cost containment. Unbridled increases in health care costs will eventually create sufficient pressure for drastic changes that may be inimical to providers.

The Balanced Budget Act of 1997 substantially decreased reimbursement to hospitals for Medicare patients. In response, many hospitals and most academic medical centers cut costs by decreasing patients' length of stay, reducing workforce, reengineering, outsourcing noncritical functions, and starting to standardize formularies and supplies. There may be additional savings available through predominantly administrative processes and approaches. We believe that the largest opportunity for cost savings lies in medical management approaches, i.e., standardizing approaches to medical care. Doing the right thing for the right patient in the most efficient manner will produce the best outcomes at the lowest

overall costs. Decreasing or eliminating inappropriate or unnecessary variances must be a goal for all health care providers.

Accomplishing efficiency through standardization requires gathering and interpreting complex, sophisticated data and developing a consensus on process improvement approaches. Finally, after process improvements are implemented, additional data must be gathered, and, if necessary, adjustments in approach must be made.

This type of cost containment will require a partnership between the medical staff, other health care professionals, and health care administrators of academic medical centers. Cost containment is, in our opinion, a "team sport" that requires data and systems to make the game work. Organizations that have taken such an approach have done well. The more established integrated organizations such as Kaiser Permanente that have attended to efficient care have prospered of late. Kaiser has excellent consumer satisfaction ratings and the lowest enrollee drop out rate of any plan in California. Physicians employed by Kaiser also give the organization high marks, and Kaiser has fared well in publicized statewide quality measures.<sup>15</sup>

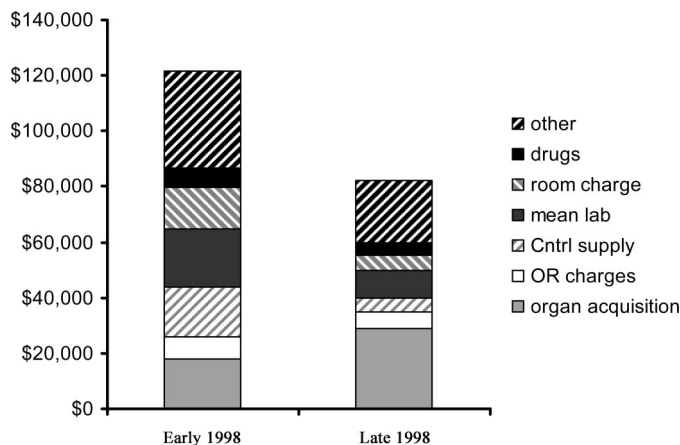
The IOM galvanized the nation's concern about quality and safety in the health care system when it pointed out in its now landmark report, "To Err Is Human," that preventable adverse events are a leading cause of death in the United

States.<sup>3</sup> As this issue was brought to the fore, regulatory and prominent not-for-profit public interest organizations became strong champions for quality and safety. The Joint Council on Accreditation of Healthcare Organizations and the National Committee for Quality Assurance have both made an emphasis on safety and quality a centerpiece of their accreditation standards. The National Quality Forum and the Institute for Health Care Initiatives, both not-for-profit entities, have been outspoken proponents for implementing aggressive process improvement strategies pioneered in other industries to improve health care quality.<sup>16</sup>

Most experts agree that achieving acceptable quality and safety performance levels will require a systematic, organized, and integrated approach. Data on outcomes and process measures will have to be gathered and interpreted, and action plans developed and acted upon. Process improvement approaches, not dissimilar to those used in other industries, will have to be employed. Similar to cost containment approaches, attempts at assuring quality in the health care system—once again, a "team sport"—will require intense cooperation between physicians, staff, and administrators. Physician opinion leaders must be invested in these efforts at all times for them to be successful.

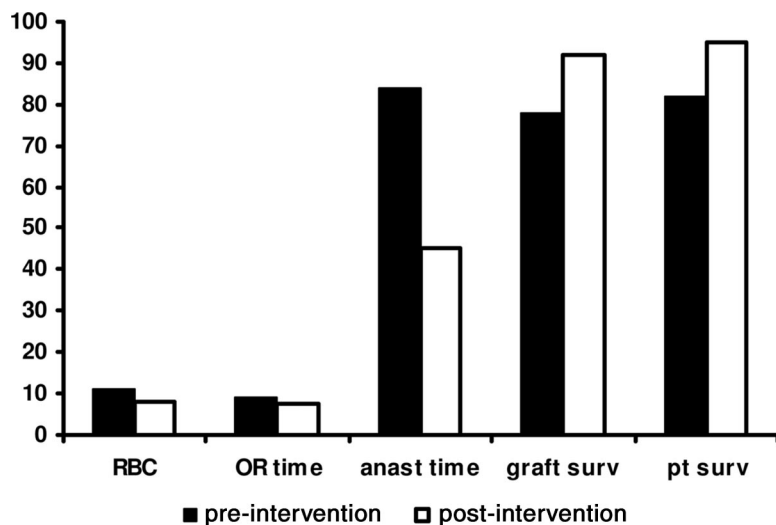
Some would have us believe that an emphasis on cost containment is antithetical to a commitment to quality and safety. We disagree. In our experiences at multiple institutions, thoughtful process improvement, based on quantitative data and thoughtful implementation approaches, has led to substantial economic benefits while assuring better outcomes.

In an effort to assure the deployment of well-established best practices, a group at the University of California, Los Angeles, established a series of algorithms for the care of patients with evolving myocardial infarction presenting to the emergency room. Their efforts decreased the length of stay in the cardiac care unit from 3.4 days to 2.8 days and the total length of stay in the hospital from 9.2 to 4.8 days, thereby saving considerable dollars. More important, incidents of recurrent ischemia decreased from 12% to 2.4%,



**Figure 4** University of Kentucky liver transplant cost per case. Through a series of process improvement interventions designed to enhance efficiency and outcomes, the liver transplant team at the University of Kentucky was able to reduce the overall average cost per transplant by nearly a third.

Source: Reddy K, Johnson T, Ranjan D.<sup>18</sup>



**Figure 5** University of Kentucky liver transplant outcome improvement. The interventions to improve efficiency were associated with better clinical outcomes including graft and overall survival.

Source: Reddy K, Johnson T, Ranjan D.<sup>18</sup>

and hospital mortality went from 16% to 3.6%.<sup>17</sup> Accepting best practices and organizing the execution of these guidelines led to substantial decreases in cost structure for the hospital, but more importantly achieved the most fundamental of quality outcomes—patients’ improved health and survival.

At the University of Kentucky, the leaders of the liver transplantation program realized that the success of their program was dependent upon staying cost competitive. After reviewing, analyzing, and implementing best practices from leading transplant centers, the group was able to trim approximately one third of

the cost of liver transplantation (reducing costs from \$120,000 per patient to \$80,000) (Figure 4). Although these savings were attractive to payers, the concomitant outcomes of improved graft and patient survival (Figure 5) were even more important.<sup>18</sup>

Many other examples are available in the literature.<sup>19</sup> We are, therefore, convinced that thoughtful approaches based on gathering and analyzing data and thoughtful implementation of process improvement techniques will not only save money but, in most circumstances, will also improve quality and therefore patients’ health.

### Implications for Academic Medical Centers and Their Various Missions

The mounting problems with the current health care financing and delivery system represent real threats and opportunities for academic medical centers and their traditional missions of clinical care, education, research, and community service. Leaders of our academic medical centers must recognize and respond to these forces that require improving the quality, efficiency, and overall performance of clinical services if academic medical centers are to best serve their communities and fulfill their other missions. Changes in the health care delivery system will mandate changes in educational programs. The graduates of such training programs must be prepared to function within multidisciplinary teams and constantly seek ways to improve quality and efficiency to ensure that care is accessible, affordable, and safe. Academic medical centers will need to expand their research agendas to develop more expertise in quality and process improvement research. Such centers will continue to be an essential community resource.

Reengineering the delivery system is needed. The critical question is what role the academic medical centers will assume in this change process. Academic medical centers have been leaders in the development and acquisition of new knowledge and technology but have often lagged behind the community in creating effective patient-centered systems to deliver services. As part of our covenant with the community, we believe it is our obligation to address this issue by developing new and innovative models of care that can be replicated and emulated throughout the delivery system.

#### Clinical care

After sounding the alarm about quality and safety issues, the IOM recognized the imperative for an overhaul of the health care system to address these concerns in addition to the issues of cost containment and the respect of patient rights. *Crossing The Quality Chasm: A New Health System For The 21<sup>st</sup> Century* is a treatise that describes the principles and the goals of a revised health care system advocated by the IOM.<sup>20</sup>

The tenets of this proposed system are outlined in Table 1 and are compared

**Table 1**  
**Simple Rules for the 21st Century Health Care System\***

Current approach	New rule
Care is based primarily on visits	Care is based on continuous healing relationships
Professional autonomy drives variability	Care is customized according to patient needs and values
Professionals control care	The patient is the source of control
Decision making is based on training and experience	Decision making is evidence-based
Do no harm is an individual responsibility	Safety is a system property
Secrecy is necessary	Transparency is necessary
The system reacts to needs	Needs are anticipated
Cost reduction is sought	Waste is continuously decreased
Preference is given to professional roles over the system	Cooperation among clinicians is a priority

\* Source: Corrigan JM, Donaldson MS, Kohn LT.<sup>20</sup>

with the values and tenets of the present system. The system that the IOM envisions respects the values and wishes of patients, emphasizes longitudinal care for prevention through chronic care management to the end of life, is information systems-dependent, focuses on quality and safety, and is evidence based. Furthermore, roles in this idealized system are function-based, not title-based. Reorganizing the delivery model potentially allows for the opportunity to rethink and redeploy providers (physicians, nurses, pharmacists, and so forth) in such a manner as to maximize efficiency and ensure utilization of a full array of skills and capabilities, consequently affording an opportunity to also address some of the issues of workforce shortages. The IOM approach is truly multidisciplinary, extended over time, and has a vision of health care as an organized entity—a “team sport.”

The traditions and organization of academic medical centers provide many unique advantages in creating a highly efficient and effective clinical enterprise. Unlike many community providers, the various constituents of an academic medical center (physicians, nursing, other clinicians, and ancillary services) have common values, goals, mission, and often a common governance structure. In principle, clinical integration to improve quality and efficiency should be easier to accomplish in this environment than in, for instance, private practice. An integrated clinical enterprise should be the ideal milieu to improve the delivery system. Unfortunately, most academic medical centers have not capitalized on this advantage to reengineer the delivery of services, especially critical advanced

specialty services, to meet the needs of their communities. We recognize that the health care delivery system will and must change.

### Education

The imperative of academic medical centers to redesign their systems of care to improve access, control costs, and provide efficient care has several implications for training programs. The traditional perception is that the educational mission precludes academic medical centers from creating patient-centered, cost-efficient systems of care with a high degree of customer service. We believe that there is no tension between cost efficient care and fulfilling the educational mission, and, in fact, if properly organized, the presence of trainees can add value to the system. We further believe that the most cost-efficient, patient-centered care that employs the best practices and systems of care is also the best environment in which to train future practitioners. Conversely, there is no evidence that the cumbersome, poorly organized clinical services that are characteristic of many resident-based clinical programs are the only environment in which one can learn to be a physician. Indeed, it is probably the wrong environment.

The values outlined by the IOM must also be imbued in medical trainees from the very beginning. Trainees must acquire appropriate analytical and quantitative skills and develop approaches and inclinations that will have them appreciate a host of factors: the need for understanding and respecting the values of patients, the need for patient-focused care, the emphasis on safety and quality, the ever-present need

for an efficient system, and the need for engendering and championing the team approach to health care delivery. Longitudinal evidence-based approaches to care need to be stressed. Quantitative analytical skills must be taught and stressed from the very beginning of medical education. The phrase “in my experience” must be replaced by the phrase “the data and literature suggest.” In morning report, the question must be repeatedly asked—“are we following best practices in the care of this patient?”

Physicians may have to modify and adapt their self-images and assume new and varied nontraditional roles. In the past, many individuals were attracted to medicine because it represented a career that was individualistic and provided substantial autonomy. The doctor was the person who was the main advocate for his or her patients and the sole decision maker. In the new world of health care, doctors will have to be part of, and frequently lead, multidisciplinary teams and will have to subjugate their prerogatives at times to the organizations prerogative. The physicians will have to understand that not only does he or she have a responsibility to the individual patient, but he or she also must be the good steward of an important public resource—health care. This division of roles and responsibilities will be a challenge and is still evolving.<sup>21</sup> Trainees who cannot understand this transition in values and who do not develop the appropriate skill sets for functioning and participating in an evolving health care system will find themselves frustrated about their choice in career rather than elated as health care changes and becomes more appropriate for the country.

The Accreditation Council for Graduate Medical Education recently recognized that graduates from all disciplines will need to obtain new nontraditional skills to be able to practice effectively in the future health care system. They endorsed a new set of general competencies, including a core competency in system-based practices. The specific objectives of this competency are presented in List 1.<sup>22</sup> Over the past several years, many academic medical centers have begun to develop new creative methods to meet these training objectives. Weingart and colleagues at Beth Israel in Boston implemented an innovative quality

## List 1

### Systems-based practices: Specific competencies for residents\*

- Understand how their patient care and other professional practices affect other health care professionals, the health care organization, and the larger society and how these elements of the systems affect their own practice.
- Know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources.
- Practice cost-effective health care and resource allocation that does not compromise quality of care.
- Advocate for quality patient care and assist patients in dealing with system complexities.
- Know how to partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance.

\* Source: Accreditation Council for Graduate Medical Education.<sup>22</sup>

improvement elective for their medical residents. During this elective, residents gain firsthand experience with multidisciplinary teams by participating in hospital quality improvement committees, performing a root cause analysis of an adverse event, and completing a quality improvement project.<sup>23</sup>

In addition, many medical schools are introducing systems-based care into the curriculum. A major objective of the Undergraduate Medical Education for the 21st Century (UME-21) project was to stimulate new educational opportunities in the areas of population-based medicine, health economics, and health systems. The UME-21 schools introduced third- and fourth-year students to the practices and principles of system-based care. These schools employed a number of educational techniques, including Web-based computer simulations and population health exercises, observing managed care and other health executives, and participating in continuous improvement projects. Though successful in many ways, the leaders of these courses encountered difficulties with finding time within the curriculum, perceived importance and priority of these educational objectives, and sufficient faculty role models.<sup>24</sup>

Physicians and other health care providers will need to develop the skills to continually improve the processes and systems of care. Recognizing that no one individual, department, or discipline can unilaterally improve the quality and efficiency of care, trainees must develop the comfort and ability to function within multidisciplinary process improvement initiatives. We recommend that the various health science colleges (medicine, nursing, dentistry, pharmacy, and allied health) develop a common and shared curriculum to teach their respective students the principles and practice of process and performance improvement. Students from the various disciplines would work and learn together in the same educational setting. This type of multidisciplinary education and skill development in process improvement should be amplified and extended into postgraduate training programs. Not only should these principles be formally incorporated into the curriculum, but senior faculty must

reinforce these lessons by modeling the concomitant behaviors. Trainees from the various clinical disciplines should be given the opportunity to work with professional administrators and staff in multidisciplinary teams to address system and process of care issues evident in their personal work and practice environment.

### Research

Traditionally, medical research has focused on advancing knowledge about basic pathophysiology, clinical diagnosis, and treatment. Less attention has been given to the study of how to best implement this new knowledge—the delivery of care.<sup>25</sup> In order to improve quality and efficiency, we must be able to design and reengineer our systems of care. This requires careful analysis and active experimentation with a goal to eliminate unnecessary variation. However, quality improvement research consumes less than one half of one percent of the federal biomedical research funding.<sup>26</sup> Quality and process improvement studies frequently involve a multicomponent intervention applied to complex clinical organizations. Research in this area is very difficult because the interventions are often very dynamic and change over time.<sup>27</sup> Despite these difficulties, academic medical centers must expand their abilities and methods to rigorously evaluate quality and process improvement interventions to understand what is most effective and to generate general principles that can be disseminated and applied to other institutions. They must embrace applied health services research. It is essential that academic medical centers provide the intellectual basis to advance this critical but neglected area of research.

At the University of Kentucky, like many academic medical centers, our quality initiatives often functioned in isolation along a single discipline or unit that limited its overall effectiveness. We recently reorganized the quality and process improvement infrastructure into a unified center, the Center for Enterprise Quality and Safety (CEQS), to leverage our resources and to promote multidisciplinary teams and enterprise or system-wide improvements. The CEQS serves as a source of expertise, data, and decision support and a catalyst to advance our quality and process improvement programs. Typically, it requires an extraordinary amount of

effort to implement any quality improvement project. This leaves little time and energy to consider the complexities of study design, data collection, analyses, and reporting the findings to assess the effectiveness of the intervention.<sup>28</sup> We created a research program, the Program for Quality, Safety and Patient Rights, to complement and further enhance the performance and outcomes of the CEQS. This endowed research center is charged to advance the field of patient quality and health care delivery by applying disciplines of clinical epidemiology, decision sciences, industrial engineering, informatics, and biomedical science. By leveraging our existing resources, promoting the use of multidisciplinary teams, and adopting more rigorous methods and measurements, we hope to be able to develop new strategies to improve our quality and outcomes that could be disseminated, replicated, and refined elsewhere.

### Community service

Academic medical centers are important community resources that provide a disproportionate amount of care for the uninsured, discover new medical knowledge, serve as catalysts to spawn new businesses and ventures, and educate future practitioners and medical leaders. Academic medical centers increasingly are the source of reliable health information to better educate and inform the public. As the health care delivery system undergoes these necessary changes to improve quality and efficiency, academic medical centers must preserve their community missions. Unless health care becomes more accessible and affordable, academic medical centers may become overwhelmed by the needs of the uninsured and underinsured, which may exhaust the available resources and undermine these other community missions. This should provide further motivation for academic medical centers to assume a more proactive and leadership role in addressing the crisis with the current health care delivery system.

### Conclusion

Academic leaders are aggressively working on making their institutions competitive and viable in the unsure

waters of change in health care. As they impose operational change they must now also start to understand the need for change in education and of the role of physicians. We must expand the quality improvement research agenda. We want to raise the issue that change must and will occur, and we want to make sure that we start developing appropriate approaches that will ensure the skills of physicians in the future and the value sets that will make them happy in their career choices. We need to transition from an era of “managed care” to an era of “organized systems of care.”

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