

Ten 10-Year Trends for the Future of Healthcare: Implications for Academic Health Centers

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The threat to the United States' Academic Health Centers (AHCs) has been reported for the past decade, signified most importantly by the decrease in the perceived value of patient care delivered and a significant reduction in direct payments to physicians in AHCs. These reductions have required AHCs to become more efficient and increased pressures to become more productive in both patient care and research. The U.S. healthcare system continues to evolve in response to these challenges and the additional pressures of increasing costs and the increasing numbers of uninsured. Ten trends for the next decade are evident: 1) more patients, 2) more technology, 3) more information, 4) the patient as the ultimate consumer, 5) development of a different delivery model, 6) innovation driven by competition, 7) increasing costs, 8) increasing numbers of uninsured, 9) less pay for providers, and 10) the continued need for a new healthcare system. In response to these trends, AHCs will have to continue to improve efficiency by increasing cooperation between researchers, clinicians, and educators while demonstrating how they are "different" and "better" than the competition.

The AHC has the tools and the personnel not only to improve patient care processes but also to understand how to decrease costs while maintaining quality. AHCs also have the size and expertise to establish control over geographic market share with services not available elsewhere. Such programs must be able to evolve and respond to market pressures, and the AHC must be an engine of innovation, continuously regenerating new knowledge and programs with "Centers of Excellence" and appropriate industry partnerships. Such progress is driven by better communication and greater sharing of information and collaboration at all levels, including building better physician referral networks. These accomplishments, driven by technology, will allow AHCs to improve quality of care and increase efficiency even under the increasing burden of patients and uninsured. This will position AHCs as the most important advocates and lead players in the development of an improved national healthcare system.

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Over the past 10 years, doom has been predicted almost continuously for our nations Academic Health Centers (AHCs). Perhaps the most important threat to AHCs has been the decrease in the perceived value of the patient care delivered by their doctors and hospitals: the payment differential to AHCs in comparison to community physicians and hospitals has virtually disappeared. The most immediate impact over the past 5 years has been a 30% reduction in direct payments for physicians in many AHCs (1).

One positive consequence of these reductions has been the requirement that AHCs have had to look inwardly to demonstrate their own quality in patient care as well as the other missions; they have also been required to become more efficient. Since AHCs have done this, pressures to improve productivity in both patient care and research have squeezed educators, in some schools placing the education mission at risk, but in others turning adversity to advantage and causing teaching to be treated as a true profession. The other major positive of the last decade has

been the almost incredible increase in research funding by the National Institutes of Health over the last 3 years, with a projected doubling between 1997 and 2002.

As we look ahead to the next decade, the United States healthcare system will continue to evolve and may even undergo significant change in structure (2). Healthcare system changes will have important implications for AHCs not only in the patient care mission, but also throughout all the missions.

The significant approaching changes in research and education will be topics of future papers. In the short term, the increasing cost and increased numbers of uninsured will continue to place great stress on the healthcare system. Nonetheless, AHCs will continue to build in programmatic areas relating to translational research from “cell to bedside to community” and in information technology while at the same time becoming even more efficient. In the medium to longer term, AHCs should thrive as the healthcare system changes, the number of uninsured eventually decrease, and AHCs are better able to demonstrate their value. This value can be described by a sphere with true interaction among all areas of mission to improve health in innovative ways, as the researcher brings basic research directly to patient care and the student continues to question making the researcher and the clinician better at what they do, in turn again improving healthcare.

Ten 10–Year Trends for the Future of Healthcare

1. More Patients

As we “Baby Boomers” age, the number of individuals arriving at age 65 will increase dramatically. Ten years from now, more patients will be living longer. The ability to treat patients with chronic disease such as heart disease is clearly lengthening their lives; in the next 30 years, the number of people with heart disease in the United States is expected to double.

2. More Technology

As genetic diagnosis and treatment translate from cell to bedside, the information and armamentarium available to the clinician will increase perhaps inconceivably over the next 10 years.

Markedly improved less invasive imaging (e.g., computer assisted diagnosis of coronary artery disease combining echo, magnetic resonance, and positron emission tomography) along with less invasive treatment using catheter techniques will provide better functional outcomes with earlier resumption of activity. DNA chip technology or genetic fingerprinting will vastly improve risk assessment. Knowledge of the risks will increase the ability of other technology to extend life. Yet techniques such as these will require that we face and attempt to resolve a series of new ethical questions.

Electronic technology will also improve efficiency. The electronic medical record will be tied directly to billing. It will soon be possible for a physician to dictate directly into the record and have software that analyzes the type of visit or procedure and creates a CPT code automatically. Since billing would be directly related to the content of the medical record, the need for complex compliance programs would be markedly reduced. Eventually, software should allow the ability to bill plans automatically regardless of the type of “billing form.”

3. More Information

As the technology improves, the information deriving from patient care will also improve. With the Internet and its successors (which among other features will provide the important safeguards for confidentiality), the electronic medical record will not only be able to store patient information but also to provide information on “best practice” instantaneously, whether it is derived statistically from the practice of the physicians in that AHC, or based on health plan data or nationally generated practice guidelines. The opportunities for “online clinical research” are clear. The ability to question large numbers of patients and large segments of the general population may provide overall improved definitions of “quality” from the patient perspective.

Additionally, we will develop better information on severity of disease. Then, the “risk” of the cost of illness for a particular future year will also be better understood. This understanding (and the differential payment that should result) will benefit AHCs since they traditionally take care of patients who are more ill.

4. *The Patient Will Be the Ultimate Consumer*

As patients surf the web and as employers perhaps no longer choose the health plan for their employees (rather giving them a “defined contribution” to buy their own healthcare), patients will become the ultimate consumers. Measures of patient satisfaction and other patient-oriented report cards will assume increasing importance. An increasing consumer focus could reduce the need for wide geographic coverage of health plans that sell to employers: with the individual choosing the insurance product, patients will choose their own physicians and hospitals close to their own homes.

5. *Different Delivery Model*

With improved availability of data to the public, process and outcomes will improve. Those not capable of achieving the best outcomes will likely either improve or stop doing the procedure. In the next 10 years, process and outcomes will be optimized for a significant proportion of patients with relatively common diseases. With these patients, care will become more regularized, making it possible to develop a better understanding of the best care delivery model. For example, it will be possible to measure the outcomes of nurse practitioners, generalist physicians, and specialty physicians in the management of certain diseases and determine the best utilization of each, creating better “hand-offs.”

In the long-run, the increase in the number of patients will lead to a great demand for practitioners; the issue will be more one of optimization of the care model rather than negotiating over who will take care of which patient. As the population ages, specialists will be needed in the areas of disease that currently afflict the aging and also in areas of emerging diseases that are now relatively rare but will become more prevalent as other more common diseases become preventable, possibly even leading to the development of new specialties. In 10–20 years, as there may be a shortage of physicians (3) (perhaps even sooner if the trend continues for the 50 – 55 year old physicians to retire), both the generalist and specialist will need more nonphysician practitioners, who will be especially effective in areas where the care to be delivered is most regular. The need for hospital beds will continue to decrease but ultimately will probably increase again, due to the aging population.

There will be greater self-diagnosis and self-care as patients obtain more information from the Internet. With this information, as well as direct Internet video communication with a practitioner’s office, the need to visit the practitioner will decrease. Hospitals will be places for extremely ill patients, with the remainder of patients at home communicating on the Internet. However, as we are learning from adult education, whether technology is available or not, humans want to interact with humans, and while visits may decrease, they will not decrease as much as technology might allow.

6. *Opportunity for Innovation*

As care for many patients becomes more regularized and process and outcomes data become more similar, competition among practitioners will be based less on who has the best outcomes for common diseases and more on ability to innovate: developing the best care delivery models for patients with common diseases or developing new strategies for patients with uncommon diseases or presentations. Again, this will favor AHCs.

7. *Costs Will Increase*

While it is clear that in addition to more efficient billing, less wasteful tests and procedures will be done as better information on appropriate care becomes available, and more efficient care models will emerge with technology for care of patients at home, these improvements will be dwarfed by increasing costs. Consider the cost of doubling the number of patients with chronic cardiovascular disease, currently 13% of medical care costs. A recent analysis on the “magic bullet” that could prevent atherosclerosis reveals that the drug would not save money, since individuals will need to take what will likely be an expensive drug for their entire lifetime (3).

8. *Uninsured Will Increase*

As costs rise, the major payers in the private system, the employers, will attempt to reduce their costs by reducing coverage and increasing the burden to the employee. As premiums continue to increase, workers will be less able to afford even basic health insurance, and the ranks of the uninsured are

likely to increase. As these numbers increase, the cost of caring for the uninsured will increasingly be shifted to AHCs, as well as the government and private insurers, thus increasing the cost of healthcare coverage and increasing the uninsured in a vicious circle.

9. Providers Will Be Paid Less

All providers are being paid approximately the same amount by the majority of payers, whether the government or private insurers. As costs increase, health plans will pay the increases to those they must and reduce payments to the others. The priorities for payment will continue to include their own administrative costs, pressures on the bottom line for private plans to make profits, and payments for new drugs and devices; providers will be given what is left unless strategies are developed to demonstrate value and increase market share.

10. Need for a Healthcare Reform

Between 5 and 10 years from now, the situation will become critical for Americans. The costs for employers will continue to rise, causing many to desire exiting the healthcare business; the number of uninsured people will also continue to increase with a widening gap between what can be afforded and what is available. The ranks of the uninsured will extend into the present middle class. These disenfranchised individuals, and their employers, may vote for a change in the healthcare system. We have recently described how that system might achieve healthcare coverage for all by 2010 (2).

Implications for Academic Health Centers

Over the next several years, strategies must be developed to ride out the decreased patient care revenue, increased uninsured, and increased competition on the basis of price and increased expense on technology.

The first strategy is to “push back” against the squeeze in prices by demonstrating to the patient that the AHC is “different” and “better.” The AHC can and should be the engine that drives improved health in the United States. The interdependent parts of the AHC mission allow the development of knowledge in the laboratory, the application of knowledge to patients, and the

teaching of that new knowledge to established physicians as well as physicians in training. Thus, it is the AHC that will improve quality of care. The AHC has the tools and the personnel not only to improve patient care processes, but also to understand how to decrease costs in providing care while maintaining quality. AHCs should take these functions back from managed care companies and thus demonstrate their value as an important resource worthy of legislative, financial, and philanthropic support. The second strategy is to control geographic market share.

“Push Back”

Different

AHCs provide a certain number of services that only they can provide by virtue of their “quaternary” nature. These programs are almost always related to research and generally occupy a niche that people cannot obtain locally; consequently, patients are willing to travel from surrounding states. These programs have a relatively short shelf life since other hospitals may be able to apply similar protocols to similar patients. The AHC must, therefore, be an engine of innovation and continuously regenerate the next new knowledge in current quaternary programs and birth new quaternary programs as well. It will be important for AHCs to demonstrate innovation to patients and physicians by developing new ways to describe new techniques and treatment. Continued innovation can also be fostered by appropriate partnerships with industry. If an AHC is the first to have a new drug or device available to treat patients, this benefits the patients and the AHC. With even a few of these relationships and breakthroughs, the halo effect that “this is the place to be” for advances in care for sick patients will be an important differentiator for the AHC and ultimately a good negotiating tool in determination of pricing with health plans. While quaternary programs can demonstrate that the AHC is “different,” these hospitals and doctors cannot survive by quaternary programs alone.

Better

The AHC (including its affiliated community hospitals) also needs to demonstrate that it is “better” at tertiary care. AHCs should therefore create visible Centers of Excellence that are large and multidisciplinary. The size, breadth, and depth of a tertiary

program in, for example, heart disease can dwarf most local hospitals. Combined with quaternary programs, two or three truly outstanding Centers of Excellence may be all that is required for the halo effect to steer patients in the direction of the AHC.

AHCs can also be “better” by improving both the effectiveness and efficiency of patient care. AHCs should develop centers for health services research that integrate with quality improvement programs and clinical research to create not only protocols for efficient patient care and demonstrating outcomes, but also integration of new drugs and devices into these protocols. The AHC’s electronic medical record can facilitate the identification, enrollment, and analysis of large numbers of patients into cutting edge research protocols.

The support from health services research programs can form a core of individuals to support these other areas. The health services research group can help to develop outcome measures to test the hypothesis that these process and outcomes data are better than those of the local competition. In many cases, local benchmarking data may not be available, but an AHC that demonstrates leadership in a particular area of outcomes establishes a gold standard that others will have to meet. Many local hospitals may not be able to collect or produce these data, thus, in themselves, providing an advantage for the AHC. Collection of data regarding physician effectiveness and efficiency across patient care, education, and research also has proven helpful in providing feedback to the physicians and their leaders (1). If it is found that the AHC is not competitive in either process or outcomes data or most certainly in service standards (such as the time to the next appointment and patient satisfaction), the AHC must take active steps to improve in all of these areas. One slogan that we have advanced for this effort is *go get lots better and prove it*.

A third way in which AHCs can demonstrate they are “better” is by providing information to physicians and patients. Patients are vitally concerned with access, and the AHC can develop web tools to improve scheduling in all departments and centers. Eventually, patients should be able to schedule appointments on the web. They should be able to access laboratory data; and for those without computers, technology is available that allows laboratory data to be telephoned into a system that leaves test results in a secure voice mail system, which patients can access.

AHCs can also provide health information to patients as a service, and become a trusted source for information, helping patients through the interpretation of Internet data. AHCs should take the lead in devising web technology to care for patients at home, especially elderly or indigent patients who may not be able to travel but who will likely have inexpensive and simple Internet access. AHCs can take the lead in creating automated billing systems that will be attractive to health plans and also potentially to patients. For physicians, the development of an electronic medical record allows earlier demonstration of outstanding outcomes and can also provide instantaneous feedback on their practice and the means to improve it. As the electronic medical record becomes tied to more physician data and information, it will become a valuable tool to attract physicians to a health system without the practice necessarily being purchased. While these investments in information technology will be expensive, AHCs are more likely able to afford them than some local hospitals, and therefore the use of this technology may establish the view that the AHC is better than the local competition.

Control Geographic Market Share

As the individual patient begins to choose his or her health provider directly rather than through an employer, the need for employers to contract with widely distributed networks will decrease. Therefore, a new strategy will emerge: AHCs will need to control market share in one or more geographical areas. If the AHC is the only provider for a population within a certain distance, it is likely that patients will choose the AHC. To control geographic market share, quaternary and tertiary hospitals in an area (the size of the area determined by geography and population) should consider “collaboration.” This collaboration does not necessarily imply merger. If even process and outcomes data are shared across hospitals and physicians using internal benchmarking, improvements will occur. If medical services further concentrate, to the extent that certain outcomes are dependent upon the number of procedures performed, outcomes may again improve.

The size and location of the physician referral network of the AHCs is also important to control the geographic market share. Since most physicians practice in hospitals relatively close to their offices, it will be important to attract physicians whose offices are

close to the hospitals in the geographic area. Traditionally, referring physicians have been thought of as primary care practitioners. However, as the care models improve, it is likely that not only will primary care physicians (or nonphysician practitioners) refer to specialists, but once again specialists will refer to specialists. An emerging player in the referrals is the patient. The number of self-referrals will likely increase, and systems will be needed to deal with these self-referrals appropriately. As the required geographic distribution of the AHC for tertiary care is better understood, it may be necessary to site specialists in offices at a distance from the main quaternary hospital.

In addition to the network of physicians physically close to the AHC, a "virtual" network for referrals beyond the geographically close network should be developed. The techniques for attracting both geographic and virtual referring physicians will be similar, including shared electronic medical records (with appropriate confidentiality), methods for obtaining rapid referral and rapid appointments; shared best practice data, practice guidelines, and quality infrastructure; personalized Continuing Medical Education; shared marketing and perhaps other office functions such as billing (especially if the AHC has automated billing processes); and, finally, shared access to research protocols and learners.

Conclusions: Light at the End of the Tunnel

The benefits to riding out the storm will be an increased ability to demonstrate quality at a time when quality will be better understood, improved patient care and service at a time when patients will potentially be the direct consumers of healthcare, and clearly improved administrative systems that will be capable of handling larger numbers of patients with electronic medical records and billing systems. Such administrative capability, provided by investment in information systems, will form a major part of the strategy for AHCs over the next 10 years.

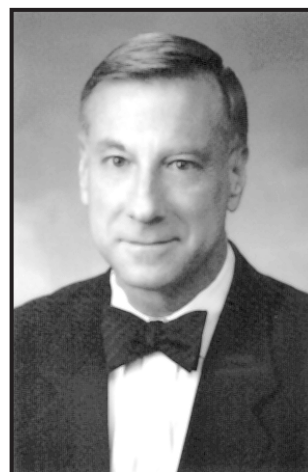
With decreasing margins in patient care and increasing numbers of uninsured, the physicians and administrators of the AHCs can become more effective and efficient in their practices – but this may not be enough: they can become important advocates on behalf of their patients for an improved healthcare system. Coverage for all is clearly beneficial to patients and physicians, allowing access and administrative simplification. Employers also benefit: in Texas in 1994, the parents of uninsured children missed 600,000 more days of work than the parents of insured children (4).

The light at the end of the tunnel is the engine of the AHCs which will improve the health of our patients through innovation,

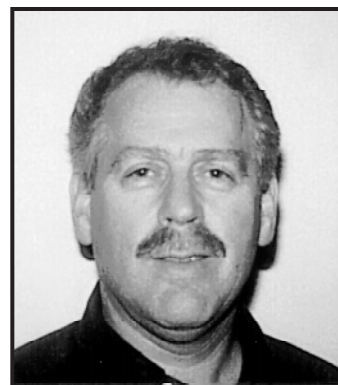
not only in the maintenance of health and treatment of disease but also in proposing, piloting, and advocating new systems that deliver appropriate care to all Americans.

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