Abstract

Public policy and technology are having and will continue to have an extraordinary impact on virtually every aspect of academic medicine. The effects of this combination of policy and technology transformations can hardly be overstated. It is critical to recognize these transformative forces and work to accept and even embrace them enthusiastically. The author examines five major transformative forces affecting academic medicine today: big data, greater transparency, new payment models, emphasis on wellness, and scope of practice. He discusses each of these transformative forces within the context of the current U.S. health care environment and offers suggestions for academic medicine to leverage them. It will take resiliency, innovation, collaboration, engagement in public policy debates, and strong leadership for this country to make the U.S. health care system the success it should be.

The extraordinary impact that the combination of policy and technology is having and will continue to have on virtually every aspect of academic medicine can hardly be overstated. It is critical to recognize these transformative forces and work to accept and even embrace them enthusiastically. One could easily create a long list of the transformational forces in play, and people have already begun to debate their consequences. But I will limit myself to the five that will have particular impact on academic medicine in the coming years.

**Big Data**

The first transformational force, and arguably the most consequential, is “big data.” The transformational power of data has revolutionized medicine in myriad ways in recent years. And it has only gotten started. The vast new supply of information has generated literally thousands of new products and services. Electronic health records will soon be a mainstay in the management of health care delivery. More routine practice of evidence-based medicine will lead to decisions that rely on the best available information, which will in turn lead to far greater utilization of established best practices in patient care.

Integrated technology will allow hospitals, doctors, and health plans to create new, personalized approaches to medicine based on both genomics and vastly improved data availability. In addition, big data will unleash limitless new and innovative approaches for improved chronic illness and disease management with extraordinary opportunity for patient engagement.

Physicians and other caregivers are already beginning to have real-time access to health care records through concepts like Blue Button, a service now used in both the public and private sectors to allow patients and physicians to access and download electronic health data. This new level of engagement will give health care professionals a far more complete picture of a patient’s health than they have ever had before.

Finally, mobile applications and wearable devices are already nearly ubiquitous. Thousands of new products and services are becoming available every year. An innovation explosion is taking place in the health care sector, with the number of health start-ups among the fastest growing in the U.S. economy.

Academic medicine ought to be the epicenter of this revolution with three goals in mind. First, academic medicine must understand how big data can be utilized and coordinated effectively in all aspects of health care delivery. Second, it should lead the data education and acquisition efforts for both current and future health care providers. Third, it must help create a catalytic environment for research so that these transformative advances can continue.

**Greater Transparency**

The second transformational vehicle is the movement throughout the entire health sector toward greater transparency. Historically, health care has been the most opaque sector in our economy. It is arguably the only sector where, at the time of purchase, the consumer knows...
neither the costs of the services nor who will pay which parts of these costs. Further, most health consumers have no basis for cost comparison. Research has shown shocking inconsistencies in the information concerning what a person can expect to pay for almost any medical test or procedure.¹

Perhaps even more important, U.S. health care consumers have little objective information on either the institutions or the health care providers to whom they come for care. How remarkable it is that in the United States today, we have far more information on athletes and their teams than we do on doctors, clinics, and hospitals.

The availability of data and our increased capacity to manage it will bring a far more conducive environment for greater transparency in both the cost and quality of health care. Almost all health plans are beginning to provide cost calculator tools on their Web sites. Some also include quality data. Unfortunately, most consumers are still not using them.

The health sector will never function efficiently without sufficient transparency. Consumers must be able to distinguish differences in both price and quality to make informed decisions about their health care. This is especially important now as employers migrate from defined-benefit health plans (in which the employer provides a specific set of health benefits to employees) to defined-contribution health plans (in which the employer provides a health insurance allowance which employees spend on their own health care as needed).

To accelerate transparency, a concerted effort is needed to abolish "gag clauses" in contracts between providers and payers. These provisions prohibit a health plan from releasing price information and completely undermine a consumer's ability to ascertain meaningful information on the cost of care. Many states have begun to enact legislation to require public reporting of pricing information, but much work remains.

Quality transparency is an even bigger challenge, in part because of the myriad quality measurements that are currently utilized. A study commissioned by the National Quality Forum in 2013 reported that there are 1,367 performance measures in use today.⁴

The study referred to current circumstances as "measure chaos" for providers. It is remarkable that more than three years after the creation of a "national quality strategy,"¹⁰ there remain over a thousand performance measures, all largely unaligned.

Academic medicine could join in a concerted effort to identify common measures used for value purchasing involving both price and quality. It could help identify barriers to alignment with strong support for electronic data capture for measurement through the use of common standards.

New Payment Models

The third transformational component is the gradual movement away from fee for service and toward new payment models. This movement is, arguably, the biggest single factor in reducing unnecessary care, creating greater efficiency and value, and altering the volume-driven environment in which virtually all health care is provided today. The fee-for-service model is complex, expensive, and increasingly difficult to justify.

There are over 7,000 Current Procedural Terminology codes and over 700 diagnosis-related groups in the existing fee-for-service system. This à la carte method of paying doctors invites overtesting and general overuse, especially given the lack of transparency in health care costs and quality measures.

Fee for service requires far greater administrative costs than other payment models. It is still general practice for a patient or an insurer to receive separate bills from each health care provider involved in a single procedure (e.g., surgery), causing enormous paperwork and far greater difficulty in coordinating care.

We are already witnessing rapid growth of both new payment models and new models of care. Accountable care organizations and medical homes can now be found in every state in the country. The emphasis on moving toward episode-of-care, bundled, and global payment models, which reimburse providers a single predetermined amount for an episode of care, is increasingly evident. Last year, the National Commission on Physician Payment Reform (NCPPR), co-chaired by my colleague and friend, Bill Frist, called for an end to the fee-for-service model by the end of the decade.⁶ Even Congress, where consensus on anything health related is almost nonexistent, has been near unanimous in support of bipartisan efforts to terminate the Sustainable Growth Rate and move federal health programs into new payment models.

Organized medicine had long fought to preserve the fee-for-service system, but in recent years, this has changed. However, while a new consensus is emerging about the critical importance of migrating to new, value-based payment models, the actual effort is still lagging.

More energy and a concerted effort, perhaps led in part by academic medicine, could be extraordinarily instrumental in bringing about meaningful change in time to meet the NCPPR's projected time frame for payment reform.

Emphasis on Wellness

Fourth, another transformational force now in play is the country's attempt to prioritize wellness over illness. Research has clearly shown that emphasis on prevention and primary care leads to better overall health and higher life expectancy. It is widely recognized that emphasis on improved primary care brings far better health outcomes involving mortality, earlier detection of many diseases, and reduced cost.

Driven both by new policy initiatives and by new technological applications, providers, employers, insurers, and policy makers have all been involved in encouraging greater emphasis on improved wellness. Examples of this trend abound.

While results thus far are mixed, medical homes that emphasize team-based, coordinated, patient-centered care are now being tested in virtually every state in the country. The models vary, but the potential for reaching the goals of better access, higher quality, and lower costs remains promising. Employers are also creating innovative new wellness programs. Major retailers are offering
new “minute clinic” services in grocery and department stores as well as in pharmacies throughout the country. “Wearable apps” that monitor a user’s sleep, caloric intake, and physical activity enjoy cross-generational popularity. Insurers are designing health benefits today with far greater emphasis on access to primary care.

Perhaps even more important, as care delivery shifts from inpatient to outpatient settings with emphasis on a continuum of services, primary care will become imperative as health care transitions to more value-based models. But the key to national success will be a concerted effort to do three things. First, the country must commit to further research of best practices and organizational approaches. It must share information throughout the health sector as it becomes available. Second, we must do all we can to alter the financial incentives for primary care providers. We cannot expect dramatic shifts in primary care without a corresponding shift in the financial viability of the profession. Finally, we must put far greater emphasis on the need for primary care in our nation’s medical schools. Too much emphasis is placed on specialties and subspecialities today. Fifty years ago, over half of all physicians practiced primary care. Today, that number has been reduced to about a third.8

It is also important to acknowledge our increased reliance on international medical graduates (IMGs), especially in primary care specialties. While IMGs play a vital role in our health care workforce and in our long-term demographic health, we should not exacerbate the health challenges in developing countries by relying on IMGs when we have the human resources here to meet U.S. health care needs.

Academic medicine can play a vital role in creating the most conducive environment for an accelerated national effort to change the health paradigm from illness to wellness by training the right number of most needed health care providers and training them to provide preventive care.

Scope of Practice

The final transformational force of consequence with major importance to both our health sector generally and academic medicine specifically is the growing recognition of the importance of scope of practice. Defining the proper scope of practice for health care professions is generally regarded as a function of education and training, governmental jurisdictions, and institutional practice and regulation.

Some have predicted that with the addition of over 30 million newly insured Americans within 10 years, over 50,000 additional primary care physicians will be needed. Even with the recommendations noted above, it is unlikely that our health care workforce can be adequately and consequentially adjusted in that little time.9 Thus, the continuous evolution of scopes of practice for existing health care providers becomes more important in improving both access to and the quality of care.

As team-based, patient-centered health organizations grow in number and importance, it will be critical to our success that all health care providers are utilized to the maximum degree possible. Nurse practitioners, physician assistants, registered nurses, certified nurse midwives, licensed pharmacists, and licensed practical nurses will all be needed to provide the primary care services the U.S. population needs. In addition, telehealth services will be increasingly important as new technologies create opportunities for innovative new care models.

No one is better positioned or more authoritative in accelerating these trends than those in academic medicine today.

Embracing Transformation in Academic Medicine

Mark Andreessen was right. Health care and education are experiencing the transformation that he predicted. It will take resiliency, innovation, collaboration, engagement in the public policy debates, and strong leadership for this country to make it the success it should be.

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References