Preparing the doctor of the future

Medical school and residency program evolution

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Contents

Executive summary

AS the health care market changes, so are the capabilities physicians need to best practice medicine and serve their patients. Medical education is in an era of transformation, and medical schools are beginning to innovate to prepare new physicians for the emerging new model of care.

Findings from the Deloitte Center for Health Solutions' surveys of physicians, health care consumers, and health system CEOs show that physicians' expectations are changing. Our analysis found that:

- Hospital CEOs report needing more innovative leaders and clinicians, as well as employees with technology and data analytics skills.

- Increasingly, consumers expect to partner with doctors instead of relying passively on them to make treatment decisions.

- Physicians report anticipating that approximately 50 percent of their total compensation will be paid through value-based payment models in the next 10 years and that they expect to need new business, health information technology (HIT), and communication skills to practice effective value-based care (VBC).

Together, these findings suggest that an evolving market environment is demanding new competencies: business acumen, data analytic skills, and broadened interpersonal relationship skills, including enhanced communication and leadership skills.

Medical schools are anticipating these new demands and beginning to change the content of medical education curricula and how they teach medical students. Hofstra Northwell School of Medicine provides New York state emergency medical technician training to first-year medical students; Oregon Health and Sciences University (OHSU) has added a fourth year to its primary care residency pro-

> Medical education is in an era of transformation, and medical schools are beginning to innovate to prepare new physicians for the emerging new model of care.

gram; and the American Medical Association has launched an initiative to help medical schools transform education and share their experiences with other schools. Many of these initiatives are in their early days, but they hold promise for meeting the needs of the new value-based system.

By teaching medical students more about the health care system, further integrating technology into the practice of medicine, and helping physicians learn the leadership and communication skills required to effectively connect with patients and team members, medical schools can improve quality of care while also improving the experience of receiving care.

Has the future of medicine arrived?

THE physician of the future won't show up to work with a satchel and a stethoscope, but rather with a tablet or smartphone that fits neatly into the pocket of her white coat. Most likely, she'll be employed by a hospital or other entity (rather than owning a small practice), and she will work alongside other physicians, nurses, physician assistants, pharmacists, technicians, and other clinicians. Her patients will likely receive team-based care through a holistic lens rather than care through sequential encounters that may not be consistently tied together. Prescriptions could be requested and appointments made online, and digital technology will likely allow for online check-ups and quick questions. Decision support technology will likely help her use the most up-to-date evidence-based information when evaluating the need for care and making clinical decisions.

The Patient Protection and Affordable Care Act (ACA) paved the way for providers and payers to experiment with how care is delivered and paid for. In response to growing health care costs, employers and government purchasers are increasingly demanding
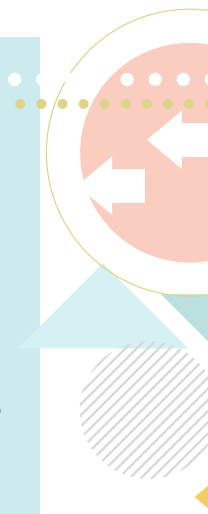
> New technology has the potential to change how care is delivered, documented, and analyzed.

A CENTURY OF MEDICINE

Around 1910, it became possible to say in the United States that a patient with any disease consulting a doctor chosen at random stood better than a 50-50 chance of benefiting from the encounter. Before then, a person was just as likely to be harmed by medical treatment as helped.[1] That year, Abraham Flexner published a scathing exposé on medical education in the United States, criticizing the minimal oversight and regulation of the field. He found that "medical schools" were often run by a doctor or two for a profit, and required little study of medicine before a degree was awarded.[2] Flexner's report led to the development of a standardized medical school curriculum—the two years of science and anatomy and two years of clinical practice that are still the standard today.

A hundred years later, the world of medicine is again caught in a moment of transition. In 2000, the Institute of Medicine (IOM) published a report, *To err is human*, estimating that as many as 98,000 people die each year from medical errors in hospitals.[3] This, in conjunction with the high level of US spending on medical care—roughly 17.5 percent of the GDP, the highest of all Organisation for Economic Cooperation and Development (OECD) countries—has led to a new era of transformation in health care.[4] Policymakers and employers are implementing policies intended to reduce the cost and improve the quality of health care, as well as to increase access to health care.

more evidence of "value," asking providers to improve quality while minding costs. New technology has the potential to change how care is delivered, documented, and analyzed. Consumers want price transparency and to partner with their providers when making care decisions.

A range of private and government-sponsored initiatives are pushing health systems and physicians to begin to take on financial risk for patient care in initiatives sponsored by government and private purchasers. These programs come in a variety of forms:

- Participation in accountable care organizations (ACOs) or bundling pilots

- Development of a provider-sponsored health plan

- Pay-for-performance contracting that include financial penalties and bonuses

Hospitals will likely shift their focus to ambulatory care, as inpatient services are no longer the economic engine they have been in the past. In general, nurse practitioners and physician assistants will likely take on a more central role in caregiving, and care will be available outside the traditional doctor's office or hospital setting, in home-based, retail, and virtual settings. New models of care management and coordination will likely be developed to target high-cost patients and provide them with services and support that help them stay healthy and out of the hospital.

Yet, in the face of all this change, medical education has had the same basic structure for almost 100 years: two years of studying anatomy and pathophysiology followed by two years of clinical, mostly hospital-based training.

Does using this educational structure prepare physicians for the new world of medicine? This article investigates how medical schools and residency programs are evolving to help train physicians for the new world of medicine and how medical education is changing to equip physicians to thrive in the new landscape.
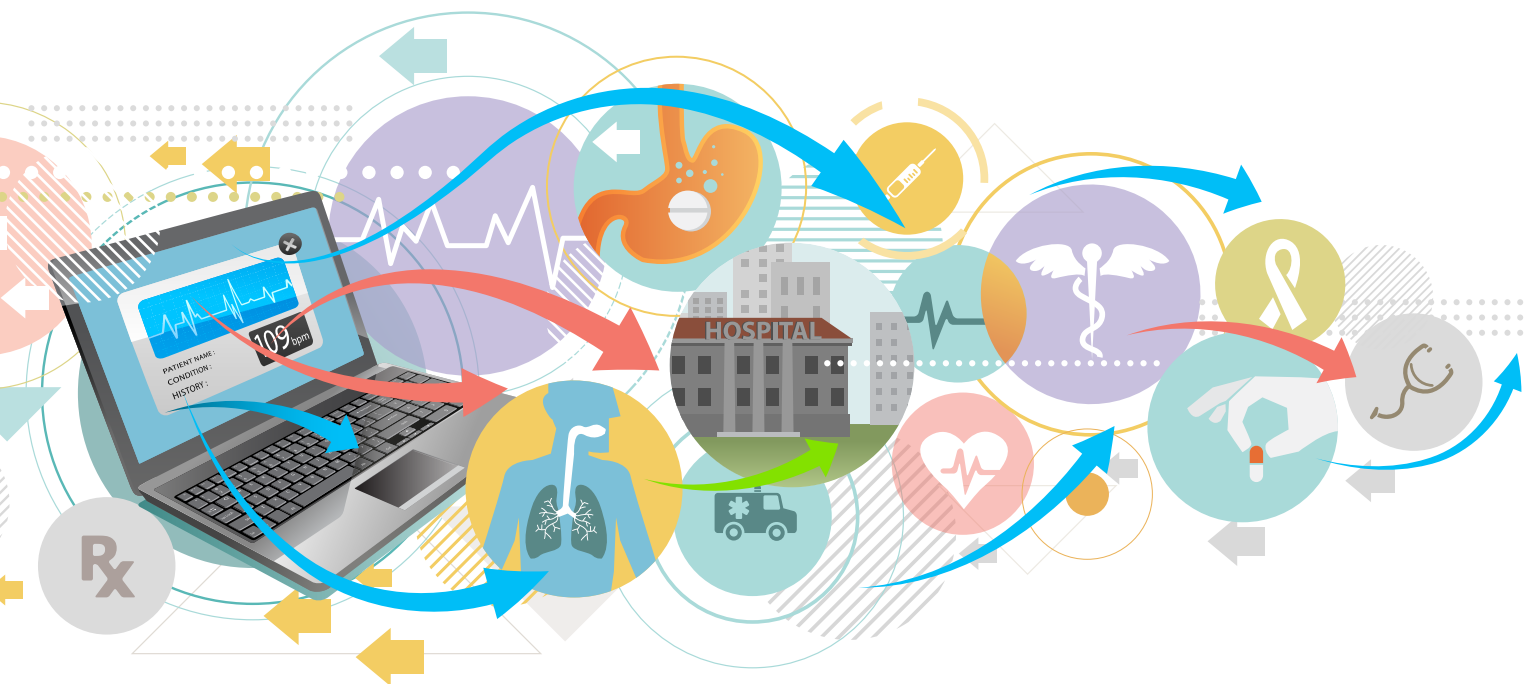
The shift to VBC and consumerism will require new skills

Physicians want new skills to practice in a VBC world

RESULTS from the Deloitte Center for Health Solutions' 2014 survey of US physicians demonstrate that physicians are aware that the industry is changing and that they will need new capabilities to do well in a VBC world.[5] Surveyed physicians anticipate that approximately 50 percent of their total compensation will be paid through value-based payment models over the next 10 years. In order to participate in VBC models, physicians report needing new business, HIT, and communication skills.

Physicians ranked business skills as the third most important of the skills we asked about. Between 60 and 70 percent of the respondents said that they anticipate needing these skills to negotiate reimbursement contracts and that they would benefit from financial and actuarial expertise.[6] Also, 80 percent of respondents viewed the expanded use of HIT for communication and the use of electronic health records (EHRs) as very important to practicing medicine in the future.

As shown in figure 1, when asked about the most important capabilities future physicians will need, 91 percent of the respondents rated interpersonal and communication skills as important or very important, beating out health IT capabilities and managerial expertise. This held true across the board, whether the respondent was a primary care physician (PCP) or a specialist.
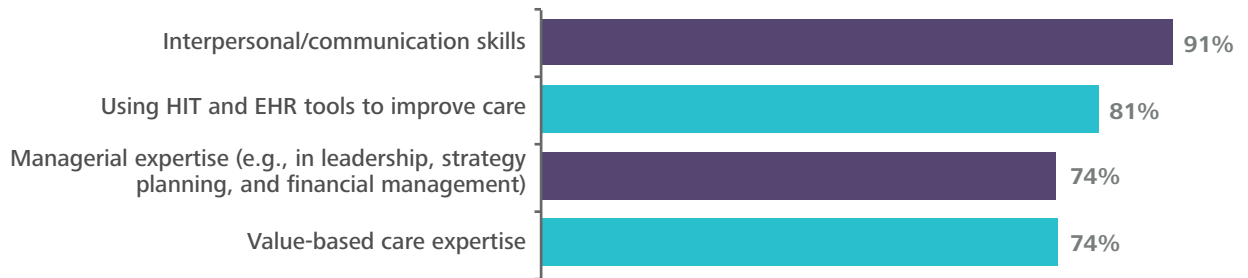
ALPHABET SOUP: HITECH, HIT, ACA, AND VBC

The Health Information and Technology for Economic and Clinical Health (HITECH) Act of 2009 provided incentives for health care organizations to adopt certain technologies, including electronic health records. Utilizing hardware and software that stores, retrieves, shares, and uses health care information is referred to as "health IT" or "HIT." The Patient Protection and Affordable Care Act (ACA) introduced accountable care organizations (ACOs); this, along with the consolidation of the health care market, is changing the traditional dynamics between payers and providers. This changing market is seeking to define the value of health care services and pushing for more value-based care (VBC), patient-centeredness, and technology utilization.

Health system CEOs are preparing for VBC

Responding to the evolving market, health system CEOs have new expectations of the physicians they employ. According to Deloitte Center for Health Solutions 2015 survey of US health system CEOs, most agreed that VBC will reshape care delivery by 2025. They anticipate that VBC will upend traditional business models, and they recognize that talent is critical.[7]

Figure 1. Physicians report "interpersonal/communication skills" as the most important capability for successfully practicing medicine in the future

Which of the following are important for physicians to possess in order to successfully practice medicine in the future?

Interpersonal/communication skills	91%
Using HIT and EHR tools to improve care	81%
Managerial expertise (e.g., in leadership, strategy planning, and financial management)	74%
Value-based care expertise	74%

Note: 561 physicians completed the survey. Figures represent the percentage of respondents rating each skill as important or very important.

Source: Deloitte Center for Health Solutions, *Deloitte survey of US physicians: Physician insights on health reform, health IT, and the future of medicine*, 2014, http://www2.deloitte.com/us/en/pages/life-sciences-and-health-care/articles/center-for-health-solutions-us-physicians-survey-health-information-technology.html.

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All of the health system CEOs interviewed for the study agreed that clinical leadership is a top priority for positioning health systems for the future. Overall, respondents said that they need physicians and other clinical leaders who can connect as peers with other physicians in the organization and help drive culture change. Some CEOs even envision these leaders making clinical decisions for the organization, a shift from the more disaggregated approach common today.

Consumerism is changing doctor-patient relationships

Interviewed health system CEOs expressed that they also expect an increase in consumerism in health care. They recognize the need to be more customer-friendly, accessible, and transparent, and to provide services and interactions when and where the consumer desires.

This expectation is borne out by the Deloitte Center for Health Solutions' 2015 survey of US health care consumers, which found that consumers are beginning to seek better access, more involvement in care decisions, and improved customer service. More and more consumers prefer to partner with doctors instead of relying passively on them to make treatment decisions. Thirty-four percent of survey respondents strongly believe that doctors should encourage patients to research and ask questions about their treatment, and 58 percent feel that doctors should explain treatment costs to them before decisions are made.[8] When practicing medicine in a value-based world, physicians will be expected to engage with patients in new ways and better encourage patients to take care of themselves.

What skills will physicians need?

IT is clear that medical schools will not be able to use the old training structure for new physicians. So what can medical schools do to better prepare today's doctors for an evolving world of medicine? What skills should medical schools teach in order to better meet the demands of VBC?

A successful physician will need an understanding of the health care business, as well as business acumen to assess growth opportunities.

Business acumen

Medical schools should consider integrating business operations improvement and finance into physicians' education. Both physicians in private practice and those who are otherwise employed will likely benefit from financial skills to help understand the potential risk and benefits of VBC payment models. To adequately protect their financial interests, physicians need the skills to evaluate how financially exposed they are, how performance-based incentives will be split, and how performance goals will affect how they practice medicine on a day-to-day basis. These skills are important whether an agreement comes from a payer or a practice manager. A successful physician will need an understanding of the health care business, as well as business acumen to assess

growth opportunities (for example, M&A and payer propositions).[9]

In an interview, Dr. Atul Grover, chief public policy officer at the American Academy of Medical Colleges (AAMC), noted the need to train for the management component of new payment models. He went on to say that larger teaching hospitals in urban centers may be well positioned to educate physicians about new payment models, as many of these hospitals are participating in Medicare's ACO initiatives. According to Dr. Grover, while residents or students may not be actively involved these pilots, they certainly will be more familiar with them than residents and students in hospitals that are not participating in ACOs. Moreover, physicians in hospitals where experimentation is happening are likely to be much more prepared to handle novel arrangements than physicians already out in the field.[10]

As health care continues to move toward VBC, some medical schools like the Mayo Clinic are incorporating contemporary "health systems" education where faculty teach about policy, the basics of health insurance, VBC, the ACA, and Medicaid.[11]

Effective data analytics and HIT tools

Traditionally, the cadaver has been a key part of medical school anatomy courses. But as Dr. Lawrence Smith, dean of Hofstra Northwell School of Medicine, questioned, "Is that really

a helpful way to learn? Not really. Students [can] spend weeks pinning and learning all of the bones or nerves in a very small part of the body."[12] Instead, Hofstra Northwell decided to integrate the technology tools routinely used today for testing and imaging into the traditional anatomy class to better teach how technology can enhance clinical practice. The cadaver still helps students evolve into professionals, but looking at organs from the inside helps students learn about anatomy in practice, rather than in theory.

Technology has uses in other arenas as well. In the past, the concept of doing a search meant that one had to go to the library and sort through card catalogs. While this information is readily at our fingertips today, the question remains of how to make the most of this readily accessible information. One way, for instance, is to use it to reduce the need for rote memorization: Having data and information available electronically means that physicians do not have to know as much information by heart. Realizing this, Hofstra Northwell deans decided to deemphasize memorization and instead teach principles that enable students to apply knowledge in solving health care problems.
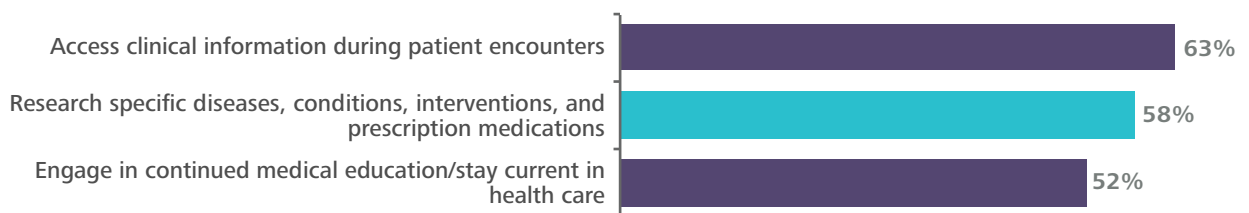
This approach aligns with the potential growth in the use of mHealth to help manage clinical care. Nine in ten of the respondents to the 2014 Deloitte physician survey reported

that they are interested in mHealth and acknowledge its clinical value. Additionally, three in five reported that the greatest benefits of mHealth were the ability to access clinical information and research medical information (figure 2)—capabilities that could reduce the need for memorization.

With more information available electronically, medical schools have also been working on ways to harness and utilize "big data" in medical education. The widespread use of EHRs means that data from patient encounters are digitally captured; however, as one report says, the "ability and capacity to train both new and experienced clinicians to manage this tremendous amount of data lag far behind the pace of the data revolution."[13] Anecdotal observations suggest that, when medical students leave school or residency, they prefer to work in an environment with the same EHR systems they had in training. However, some physicians are exposed to "dummy" EHRs while learning (passive access), with the full "power" of the EHR not available until later. Using EHRs earlier in training could both improve patient outcomes and the data that are generated.

A few schools are beginning to experiment with using these data. For example, one New York University Medical School initiative, "Health Care by the Numbers," emphasizes the use of big data and technology for patient and population management. The program

Figure 2. Three in five surveyed physicians reported that mHealth's greatest benefits were accessing clinical information and researching medical information

Access clinical information during patient encounters	63%
Research specific diseases, conditions, interventions, and prescription medications	58%
Engage in continued medical education/stay current in health care	52%

Note: 561 physicians completed the survey. Figures represent the percentage of respondents selecting each capability as a benefit.

Source: Deloitte Center for Health Solutions, *Deloitte survey of US physicians: Physician insights on health reform, health IT, and the future of medicine*, 2014, http://www2.deloitte.com/us/en/pages/life-sciences-and-health-care/articles/center-for-health-solutions-us-physicians-survey-health-information-technology.html.

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allows students to track their own performance in quality improvement, safety, and value-added care.

Many medical schools have also begun to integrate HIT systems into physician education. In health systems and medical schools with shared databases and technologically integrated care, physicians in training will increasingly have the ability to use HIT for real-time decision support. One application in the future is to use HIT to support care management and case management, as well as to improve transitions—applying lessons learned from inpatient care to other settings.

One example of the integration of technology into medical education is the collaboration between University of Illinois at Urbana-Champaign with nearby Carle Health System to open a new medical school, Carle Illinois College of Medicine. University of Illinois is combining its expertise in biological, engineering, behavioral, physical, and computational sciences at the engineering school with Carle Health System's expertise in patient care and clinical research. By using the systems thinking of the engineering school and better educating students in new technology, the school will work to prepare students to utilize new technology capabilities to practice medicine.[14]

Enhanced communication and leadership skills

Leadership and collaboration skills are important, and the current medical education model may not adequately prepare physicians in either. In today's health care environments, physicians need the skills to work with and lead a team of care providers. As a whole, the number of employees supervised by each first-line manager is increasing, reaching as high as 13 in the health care industry.[15] At the same time, the concept of leadership is being radically redefined, and the previous notion of "positional leadership," or the idea that people become leaders by virtue of their position, is being challenged. Instead, leaders are instead

expected to inspire team loyalty through their expertise, vision, and judgment.[16] To do this effectively, physician leaders need to possess strong communication skills, the ability to manage through influence, and the aptitude to galvanize a group through vision. Unfortunately, the culture of academic medical research may work against sharing ideas and collaborating: Many doctors now keep findings, work, knowledge, and understanding to themselves due to the highly competitive environment of the medical field. Medical students are often told something once and then tested to see if they get it right or wrong.

It is likely that teamwork—leveraging other clinicians' skills integrating patients' and caregivers' perspectives—will be key to success in the future. This means that physicians will need to work effectively on teams, moving beyond the traditional individualistic mentality.

In the past, success as a practicing physician was predicated on an individual's flawless capabilities—and this remains a deep-seated cultural belief in medicine. Traditionally, medical school culture has taught doctors that, if they question themselves or open their decisions to disagreement, they lose the confidence of their team. This culture works against team-based care. Literature, however, suggests that in high-reliability organizations, the team is more important than the individual.[17] This recalls the analogous crew mentality in the airline industry, where two pilots are in the cockpit at all times. Training doctors to work in this way will likely require making the medical school curriculum more collaborative across all disciplines: physical therapy, nursing, and pharmacy, among others. Physicians need to be able to trust that the team structure can respond to situations and deliver care services where a physician may not be needed.

Some schools are adjusting their curricula to incorporate more team-based learning experiences. For instance, at the new Hofstra Northwell School of Medicine in Hempstead, NY, students spend their first eight weeks of medical school training to become New York

state-certified emergency medical technicians (EMTs), spending time working alongside EMTs in the community. This novel approach came about through Hofstra's commitment to integrate clinical experiences into students' earliest days of medical education. By enabling students to become certified as EMTs early, the school integrated ambulance runs into their very first course. In doing this, school administrators realized that this type of training professionalized the students, giving them opportunities to learn how to work in teams, communicate with patients, better understand social determinants of health, and gain a greater appreciation for the different roles and responsibilities comprising the health care system.[18]

Dr. Grover, the AAMC's chief public policy officer, notes that medical schools are experimenting with team-based and interdisciplinary care in a variety of ways. In fact, 80 percent of AAMC medical students have had professional experience working with physician assistants, social workers, or psychologists.[19] In December 2015, Kaiser Permanente announced that it would open its own medical school, which would accept its first class in 2019. Based on where the nonprofit, managed health care system sees the industry moving, the school plans to train students to practice medicine on integrated teams. Some other medical schools are partnering with other schools

inside their universities—business schools, nursing schools, social science programs—in order to expose students to a greater range of care perspectives. The University of Maryland, Baltimore School of Medicine even includes law students' perspectives at an interdisciplinary clinic. These changes are expected to make new medical students better at working in teams, questioning authority, and working collaboratively.

Team-based care means not only working well with other clinicians but also considering patients and their caregivers to be part of the team. Traditionally, many doctors were not taught how to communicate effectively with patients, families, and coworkers. Despite the fact that many physicians may be very good communicators, they do not necessarily have the time or encouragement to make communication with stakeholders a top priority. Accordingly, some schools, such as Hofstra Northwell, has incorporated patient-centered communication skills throughout its four-year curriculum. Educators across disciplines— nurses, social workers, and doctors—work with students on an ongoing basis.[20] Anecdotally, after five years of training students in communication skills, Hofstra Northwell has observed that its students communicate quite well and become comfortable interacting with patients in all clinical settings.

Stakeholder groups are working to accelerate change

MANY other initiatives are accelerating the pace of change in medical education. These include initiatives to develop faculty and to provide funding for transformation.

A key strategy for moving medical education forward is training faculty to teach new skills and capabilities. The AAMC has established a leadership development unit that trains executives, faculty, and administrators at AAMC medical schools in the skills needed to transform academic medical centers for the future. This program aims to help the 15–20 new medical school deans appointed each year learn communication, public policy, and other leadership skills.

Acknowledging the up-front cost and difficulty associated with organizational change, the American Medical Association (AMA) has provided funding to jump-start transformation. Susan Skochelak, MD, MPH, serves as the AMA's group vice president for medical education. In this role, she leads the AMA's strategic initiative to accelerate change in medical education. This program provides funding for innovative models in medical education intended to align physician training with the health care system's future demands. The goal is to stimulate innovation and transform how physicians are taught. Dr. Skochelak says that

> A key strategy for moving medical education forward is training faculty to teach new skills and capabilities.

the AMA began its transformation initiative by looking for ways to improve health outcomes. In doing so, the AMA became convinced that it had a role to play "in improving health outcomes, helping physicians become more satisfied, and helping to propel medical education forward."[21]

The AMA's initiative has funded major innovations at medical schools and brought the schools together to share leading practices and lessons learned. Rather than operating the initiative like a grant program, the AMA has established a learning group consortium to share ideas in order to drive changes across the schools selected, as well as to conduct a national evaluation plan. Dr. Skochelak says: "The goal of the AMA's initiative to accelerate change in medical education was to close the gap in physician training by investing resources so that schools would have the margin of opportunity to make these changes." Two years into the project, the initiative has had more success than anticipated.[22]

Though 85 percent of US medical schools applied to be a part of the program, the AMA selected 11 schools to start with. Focused first on medical school education structure, rather than curriculum, the AMA consortium is looking to encourage medical education to

embrace competency-based pathways, health systems education, and new delivery models; integrate technology; and shape tomorrow's medical leaders. Noting that roughly 40 percent of new medical students come to school from nontraditional pathways, the AMA wants to encourage an education system that is more competency-based.

In addition to being a member of the AMA consortium, Oregon Health and Sciences University (OHSU) is participating in a four-year family medicine residency pilot with the Accreditation Council for Graduate Medical Education. The four-year family medicine track emphasizes population health management education, interpersonal team-based care, and managing transitions of care, among other areas.[23] The purpose of the pilot is to determine if extending primary care residencies will better prepare physicians to practice primary care in today's evolving health care system.[24] The pilot began in July 2013 and will conclude by June 2019.[25]
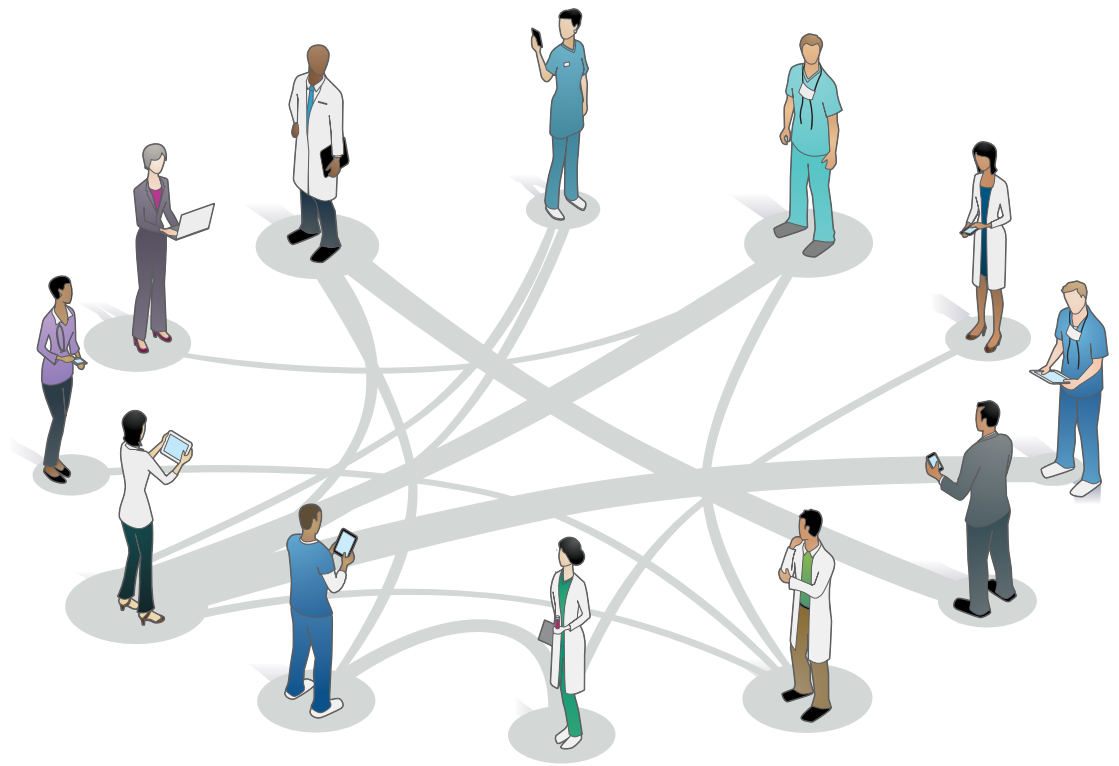
Interest in medical school transformation is evident, but challenges remain

THE question of what skills are imperative to deliver medicine in the 21st century—as well as what part of the curriculum should be dropped to make the time and space for new material—will continue to challenge academic medical institutions. It is difficult to make major changes to curricula even when medical school leaders know that reform is inevitable. Even though students stay in medical school for four years, they still undergo a very full and demanding medical curriculum.

Change is hard. The AAMC's Dr. Grover notes that, in order to successfully educate new physicians about costs, public policy, public health, and leadership, medical schools need to have faculty with expertise in these areas. Today, only a limited number of medical school professors are experts in policy or "health systems science" education.

Funding transformation is still a hurdle for many institutions. Noting that 85 percent of US medical schools applied to be a part of the initial AMA consortium, the AMA's Dr. Skochelak emphasizes that medical education as an industry is motivated to change and meet the demands of 21st-century practice. However, the financial challenges of transformation are more difficult. System transformation requires an up-front investment, and not all schools have the resources to experiment with curriculum and system redesign without outside funding. That said, there are positive

Change is hard.

signs on the horizon: This past winter, the AMA announced that 20 more medical schools were joining the consortium in an effort to learn from broader experimentation and disseminate the results quicker and further.[26]

Some areas where skills may be needed are still being defined. One of these is population health. Though there is much talk of "population health" in the health care industry, the system is still inadequately prepared to move in this direction. Doctors receive minimal training in nutrition, for example. The varying roles of different caregivers for those with chronic disease, chronic care management systems that are outside the realm of the health care system, and upstream solutions to maintaining health make aligning incentives very challenging. Medical education has traditionally emphasized two goals: preparing physicians as researchers and training them to provide care. In general, physicians are overly trained and prepared to address patients in the hospital rather than in ambulatory or community care settings. Moving forward, medical education could transition from acute care needs to outcomes-based care, focusing on the complex components of managing disease and relationships.

Ideally, education should teach providers to deliver the best possible care, no matter how long it takes (or doesn't take) for students to master the skills. Competency-based learning,

LIMITS ON MEDICARE FUNDING FOR RESIDENTS

Medicare provides funding to help offset the costs associated with educating residents, caring for patients who require more intense and complex care, and executing other elements of teaching hospitals' missions. However, in 1997, Congress limited the number of resident "spots" it would fund through the Medicare indirect medical education (IME) and direct graduate medical education (DGME) reimbursement programs to the number of hospital residents in each program at the end of 1996. Today, almost 20 years later, if the number of residents being trained at a teaching hospital exceeds the 1996 limit, that hospital receives no additional IME or DGME payments. If teaching hospitals want more flexibility in the current residency training funding structure, then policy changes are needed. Some schools want to train more residents, for instance, or allow for residents to have unique "tracks" where some take a longer or shorter time than others to finish their training. However, absent more federal funding, little change has occurred.

or the idea that medical or residency training should be evaluated based on outcomes rather than time in training, is often mentioned as a way to transform medical education and reduce the time needed (for some) to become a new physician. When discussing the possibility of competency-based learning, Dr. Grover of the AAMC noted that more schools are evaluating how residents communicate with other members of their teams and that, if doctors in training score poorly, there is remediation to educate them on needed communication skills.

Competency-based learning might keep a student or resident from advancing if the attending physician thinks that he or she is not proficient. However, because the residency system matches students to hospitals only once a year, competency-based learning would put students on different timelines—which would quickly become very difficult to manage and could lead to problems with Medicare payment policies (see sidebar, "Limits on Medicare funding for residents"). Dr. Grover says that competency-based learning may be more feasible to implement in other places: Canada, for instance, has 17 medical schools compared to the United States' 145, reducing the level of complexity involved. Additionally, Dr. Skochelak acknowledges that competency-based learning faces many hurdles: "How do you individualize medical education for 170 people?"[27]

A slow evolution toward change

MEDICAL schools know that medicine is changing, and they are trying to adapt. Some changes may happen naturally and without system-wide reform. For example, as Millennials comfortable with apps, digital platforms, and online communication graduate and begin to practice medicine, they could be more prepared to integrate digital tools into their day-to-day work than older generations. Other changes, such as team-based care, moving away from memorization, and embracing a cultural shift toward continuous learning likely will come from more deliberate curriculum redesign.

Hofstra Northwell School of Medicine dean Dr. Lawrence Smith, along with Dr. Judith Brenner, associate dean for curricular integration and assessment at Hofstra Northwell School of Medicine, have noted that, when developing a new way to train physicians, continual quality improvement and a commitment to ongoing curriculum evolution are key. Some strategies will work and others will not—and schools and health systems need the flexibility to learn from success and failure.[28]

As medical school administrators look to accelerate change in the way future physicians practice medicine, they might consider:

- **Looking for funding in unconventional places**: This could include partnering with hospital systems, different schools within a

university system (that is, business schools, engineering schools, or hospitality schools), or other outside private entities seeking to add value to the health care system. Additionally, the philanthropic sector, while their contributions are typically significantly smaller than those available from public or for-profit funders, has moved to invest in medical research and medical education.

Even if medical school curricula changed overnight, it would only be one step toward addressing the skills needed by all the practicing doctors.

- **Integrating technology into medical education**: Acknowledging that technology is changing how care is delivered, medical schools and residency programs could consider incorporating new tools into the curriculum. This could be as simple as allowing the use of tablet technology in the classroom setting or using advanced imaging tools during anatomy courses.

- **Providing experiences beyond hospital or clinic walls**: Challenging students or residents to work with stakeholders outside of hospital or clinic-based health services could enhance understanding of the patient

and consumer experience. This could include, for instance, helping low-income patients apply for Medicaid or hosting integrated educational experiences with the justice system.

- **Educating students on the financial and regulatory aspects of medical practice**: Medical schools and residency programs could consider programs where faculty teach medical students about policy, the basics of health insurance, VBC, the ACA, and Medicare/Medicaid.

- **Implement "train the trainer" programs**: Medical school faculty and administrators need to be up to date on the latest trends, tools, and policies affecting their industry in order to effectively train new physicians. Medical schools and residency programs could consider investing in leadership forums, policy seminars, and technology training for their faculty and administrators.

Even if medical school curricula changed overnight, it would only be one step toward addressing the skills needed by all the practicing doctors. Continuing medical education—the ongoing medical education requirements that help physicians maintain their skills and learn about developing areas of their field—could be integral to transforming how existing physicians practice medicine. Health systems and group practices, and their own physician leaders, also will likely need to work to provide ongoing education for practicing physicians.

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