

ENVISIONING THE FUTURE OF MEDICAL EDUCATION

Imagine it's the year 2033. You are a prospective student about to embark on your medical education. Clearly, the landscape of health care will have changed 20 years in the future. But how has academic medicine evolved to train those seeking a career in health professions?

No doubt, new tools will radically change medical education and clinical practice in the future. But as technological advances are made, "high tech" will need to be balanced with "high touch." The world's future health-care providers will be trained in a time when advanced simulation, self-paced curricula and team-based learning will prepare them with an extensive knowledge base and a high degree of technical proficiency in clinical skills.

"Ideally, medical education should be structured to produce graduates who have the competencies required to practice in the environment in which they are going to be practicing," says C. Donald Combs, PhD, Vice President and Dean of the School of Health Professions. "That's kind of a fundamental assumption, but often, we have not cared about the world of practice. Going forward, I think, we are going to have to be much more attuned to the context in which someone is going to be practicing."

Dr. Combs envisions that context will be technology and information heavy. "We're going to have very strict expectations about productivity, about competency and about the effectiveness of care," he says.



Team-based learning

Future medical students will train collaboratively with students in the health professions, mirroring the cross-disciplinary approach that will be integral to the clinical environment of the future.

“There is a big push for moving toward inter-professional education in medical education today,” says Ronald Flenner, MD, Associate Dean for Medical Education and the James E. Etheridge Jr. Distinguished Professor. Unlike today, medical students of the future will be learning alongside physician assistants, surgical assistants and even nurses and pharmacy students, he says.

Dr. Combs sees the importance of learning in a team-based approach because of the productivity pressures mounting on physicians today. “We are going to have physicians practicing in a much more managerial role,” Dr. Combs says. “They’ll not only have to manage the therapeutic regimens of their patients but also have to manage a whole host of other providers like physician assistants and nurse practitioners.”

Dr. Combs sees that shift occurring now. “Rather than the traditional model where physicians do it all by themselves, I believe that will be a smaller and smaller part of some practices, and their role will be more about managing a team,” he says.

Self-paced curricula

With the cost and time it takes to train today’s medical students, future students may find themselves being called “doctor” much sooner.

“There is going to be a departure from the traditional four years of medical school where everyone does the same thing,” Dr. Flenner says. “Not everybody needs four years to finish.

Dr. Flenner sees a trend toward competency-based learning where reaching certain milestones would dictate when a student moves on. He also thinks that students will assume tracks based on their desired (or intended) specialties, which would put them on a faster track instead of taking time learning things that wouldn’t apply to them, he explains.



Advanced simulation

The old saying goes, “Practice makes perfect.” But, in actuality, perfect practice makes perfect. Currently, medical modeling and simulation technology allow students to enhance and/or remediate skills as needed. Through the Sentara Center for Simulation and Immersive Learning at EVMS, students’ skills can be assessed with a level of precision impossible to attain through human observation alone. In the future, Dr. Combs, who oversees medical modeling and simulation at EVMS, sees advanced simulation taking on an even greater role.

Dr. Combs says putting people in immersive learning environments, whether interacting with standardized patients — which is how it’s done today — or working in a virtual-simulation lab — which is under development — or having an immersive experience in some other way not yet envisioned, allows students to practice skills correctly and get feedback in a much more intensive way.

He also foresees the widespread use of tactile holograms, which have interactive anatomy and programmable physiology. “From a training point of view,” he says, “the metrics are far more precise. If you want to look at someone who is 10 percent overweight or 10 percent underweight, you can do that. It’s all data that you pull in and configure it to be what you need.”

Dr. Combs uses the example of Charles Dickens’ A Christmas Carol where the character Ebenezer Scrooge is shown what his past, present and future look like.

“You start with the present, but if you want to educate, you can show what that patient was like as a young boy, or you can fast forward and say ‘here’s what happens to you if you don’t change,’” Dr. Combs explains. “The mindset of today is you do an interview, you take the history, you try to diagnose and provide a treatment plan, but how useful would it be to have a hologram that can communicate so much more?”

Patient safety

Many hospitals struggle with transition of care, which is the movement of a patient from one setting of care to another or a hand-off of a patient from one health-care professional to another. During these transitions, poor communication and coordination among health-care professionals, patients and caregivers can lead to serious and even life-threatening situations.

Electronic-health records and networked communications have helped, but organizations, such as the Association of American Medical Colleges, say much can be done in the future to improve patient safety and outcomes.

“Because of residents’ work-hour restrictions,” Dr. Flenner says, “we tend to see more transition of care than ever existed. For example, before, you would just stay 36 hours to take care of the patients. Now, you’re not allowed to, so someone else has to take over.”

Dr. Flenner says teaching hand-offs at medical schools should become an integral

component of the medical education curriculum.

Cloud-based technology — where medical records are stored securely and can be accessed by health-care professionals in real time — can smooth transitions by serving as a hub for patient data, preventing miscommunication among providers, Dr. Combs says.

Dr. Flenner agrees. “You can use technology to take out one more step where patient error can occur instead of using the old-fashioned way of going over a list to make sure you’ve done the right steps or ordered the right tests.”

Future students will be able to capitalize on this new technology and advances in their medical education to be able to spend more time building strong relationships with their patients. After all, human interaction has no substitute. Learning a patients’ stories, understanding their needs, and developing courses of treatment with them optimizes their health. □

EVMS’ futuristic look at medical education wins big

The Association of American Medical Colleges (AAMC) recently challenged its member schools to envision the future of academic medicine by creating a two-minute video depicting medical education in 2033.

The AAMC announced at its annual meeting in November that EVMS’ submission to the “Light-years Beyond Flexner: Academic Medicine in 2033” national video contest won first place.

Watch the video