Three questions for Victoria Harnik, PhD

Looking Back on Ten Years of Intentional Curricular Reform: A View from the NYU Grossman School of Medicine

Dr. Kalet: What advice would you give us, based on your last decade of designing and implementing new medical school curricula?

Dr. Harnik: I really appreciate the advice we got ten years ago from a dean at another institution who said "... you are not going to get it right and that's okay, you will get it 70% right the first go around and then you will fix it." The experience with our new curriculum was very positive, but not initially. But we fixed it. Our students were very resilient and able to learn the material.

The content doesn't change, but the way we teach the material is always evolving as we learn how to best teach facts and concepts that are relevant to the care of patients. This was not easy at first. Ten years ago, we were given the challenge of reducing the basic science curriculum from twenty-two to fifteen months, teaching anatomy without cadavers, and significantly reducing the number of lectures to make room for smaller group case-based learning. We were given twelve months to plan and implement the new organ and systems-based curriculum. Initially the Basic Science faculty were not fans, since they were accustomed to a traditional course-based curriculum, and it was painful to weed out the science that was not needed. For a while, I became a bit of a pariah among my colleagues.

It was key to have a mix of basic science educators and clinicians in the room as we planned out the new case-based curriculum to ensure we understood why medical students needed to learn each concept. We also refocused our attention from *what* students needed to learn toward what *"habits of mind"* they needed to develop. We focused on making sure students understood the bigger context and how to identity what they didn't know and, therefore, needed to look up and learn. The balance came out to about 50% lectures and 50% smaller group work. Of note, it took until two years ago to complete the transition to teaching anatomy without cadavers which was, of course, fortuitous because it allowed up to pivot to remote teaching of anatomy seamlessly during COVID-19.

Having a new curriculum in process allows you to recruit and select for students who are educationally adventurous and willing to co-create the curriculum with you. Step 1 going pass/fail helps with this and, of course, given how academically strong our students are, you can rely on them to learn no matter what.

A couple of years after we implemented the changes, a basic science colleague of mine apologized for giving us such a hard time. It was clear to him that the students were more engaged because they understood why they were learning the material. He also recognized that this new curriculum was much more satisfying to teach.

Dr. Kalet: How did you squeeze the preclinical curriculum down to fifteen months initially, and how will you further reduce it to one year?

Dr. Harnik: To significantly shorten the time for basic sciences, the material must be integrated. At first, we had a "branding" problem. Sometimes, students were concerned that they didn't learn something. Now we are more explicit, reminding them "you are learning basic pharmacology now. Being explicit about what they are learning reassures students.

This new curriculum reform process is likely to be less painful for our faculty. They now recognize the value of having a more flexible curriculum and they are much more comfortable being creative to provide material to students without "delivering" it in a lecture format. For instance, one content director creates "spotlight on science" which are brief (about five to ten minute) modules addressing a basic concept.

The pre-clerkship stage in our new curriculum will include only the well-established science then, after the core clerkships, we will bring back the cutting-edge stuff when students have the clinical context. It also gives us time for emerging topics such as health systems science, personalized medicine, and social determinants of health. We are also likely to make it possible for students to complete the medical school curriculum in three years with an additional year to complete a Master's degree.

Dr. Kalet: What are your worries going forward?

Dr. Harnik: As we move even further away from lectures toward small group learning we must face the fact that this model is faculty intensive, and we still don't have a model where faculty are released from other responsibilities to teach. They just teach because they love it, they are expected to do it, and it is part of their identity as academic medical center faculty.

Managing student perceptions is going to be key. Pharmacology has been a sore point. When they get to the wards, they haven't yet memorized all the antibiotic names. But

they do know the general principles, contraindications, and characteristics of antibiotics that are essential to basic decision making. Given different formularies in the different hospitals, even the more experienced clinicians must look things up when selecting a drug. But students don't know this yet, so they feel insecure.

We have a great working relationship with the curriculum committee who serve as good advisors to the curriculum leaders. We think of the final approval of the new curriculum as one might a thesis defense, you don't go to them until you are sure it will be approved. That means working closely with everyone the whole way through to ensure a smooth process.

Dr. Victoria Harnik is the co-author of an excellent I-book on Active Learning in Medicine available for download at https://books.apple.com/us/book/active-learning-in-medicine/id1114041723