

FROM THE EDITORS' DESK

Medical Education Then and Now

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It is said that half of what you learn in medical school is not true 10 years later, but you are not sure at the time which half. This aphorism conveys both the uncertainty and the rapidly evolving nature of medical knowledge. It also conveys some of the inherent futility of the traditional approach to medical education that consisted largely of memorizing a massive quantity of information and demonstrating mastery by making the correct selection on a multiple-choice examination. That is how most of the current generation of physicians were trained. Luckily, this ineffective and illogical approach to teaching and assessment is gradually becoming a vestige of the past.

I (MDF) have been reflecting quite a bit lately on my own medical school education as I approach nearly 30 years since my graduation from the UCSF School of Medicine in 1991. Coincidentally, this year, my son Jonathan (JAK-F) began medical school at the same institution. The contrast between his curriculum and that of the UCSF class of 1991 is illustrative of the progress being made in medical education in the US. This progress can be summarized by my reaction when I first saw Jonathan's first year curriculum: "What happened to Anatomy?"

In 1988, as a first-year medical student, my schedule consisted of five classes per quarter, each with its own learning objectives and content, with little or no connection to the other classes we were taking or, for that matter, to the larger health care system. In addition to Anatomy, Biochemistry, Physiology and Microbiology, our first-year coursework did include a course (Psychiatry 100 A and B) that covered the "psychological core of medicine," but with long overdue apologies to my colleagues in the Department of Psychiatry, it was not a course that anyone took very seriously.

Fast forward to the new, remarkable curriculum that UCSF launched in the Summer of 2016 called "Bridges." This innovative curriculum is everything that the 1988 UCSF curriculum was not: it is multidisciplinary and integrated where the old curriculum presented each content area in its own disciplinary silo. It attempts to place each topic within a broader social, cultural and political context, while in contrast, the

1988 UCSF curriculum for the most part approached medical education as if it was taking place in isolation from the outside world. In the new curriculum, most of the teaching and learning take place in small groups rather than the large lectures that characterized the dominant pedagogy of the past.

JAK-F: During our first-year orientation, my new classmates and I were led through a 2-day training entitled "Differences Matter," where we were taught communication and listening skills with a focus on the diversity of our patients and our peers. We were challenged to explore and question our unconscious biases; this led to many new insights and more than a few tears. It also may lead to our providing better care to sexual and other minorities as the paper by Phelan et al. suggests in this issue of *JGIM*.¹ They report on a study that examines to what extent the medical school curriculum, role modeling and the overall diversity climate predict graduating medical students' bias against gay and lesbian people. They conclude that a climate that supports diversity and a curriculum focused on providing care to sexual minorities can have a positive impact on medical student biases toward sexual minorities.

In the new Bridges curriculum for my UCSF class of 2021, we are immersed in clinical medicine much earlier than was true for the class of 1991. From day one, each student is assigned to a Clinical Microsystems Clerkship (CMC), a group of 5–6 first year students and a faculty member or "Coach" who will serve as a clinical instructor and mentor for us for the next 4 years. My classmates and I could barely contain our excitement at the start of this immersive clinical exposure (in my case, the lung transplant clinic) and the prospect of using our newly learned communication skills with patients. The CMC also challenges us to learn about how our clinical placement fits into the local, regional and national health care systems. Through the CMC and in other ways we will quickly become part of functioning medical teams, meet researchers from different disciplines and have already discovered that the most powerful partnership of all is between the doctor and patient. In another small group called the Core Inquiry Curriculum (CIC), we learned about the knowledge network that is constructed from overlapping scientific disciplines. Using the opioid epidemic as an example, we practiced generating research questions (a prelude to the real research we are expected to conduct as part of CIC) that spanned the Social and Behavioral, Epidemiological, Biomedical, Educational, Clinical and Systems domains of science (See Fig. 1).²

In response to my dad's question "What happened to Anatomy?" I spent some time searching for this core class

on the UCSF Bridges website, with no luck. What used to be called the basic science classes are now part of the Interdepartmental Studies curriculum. It wasn't until our first Anatomy lecture in the first week that I understood the logic behind these broad descriptors. Our professors (who like to share the stage during lectures to give us a wider range of expertise) introduced a clinical case (a young athlete falls off his bike) and led us through this patient's journey through the medical system, from the Emergency Room diagnosis (a femoral head fracture) to his treatment and likely surgery for probable avascular necrosis. Afterwards we headed into the anatomy lab to identify the affected bones, muscles and neuro-vasculature. If I could give the new UCSF Bridges curriculum a one-word descriptor that distinguishes it from curricula of the past it would be: context. Illness does not happen in a vacuum, and neither does our new curriculum. It integrates sciences and learning modalities to give us a comprehensive picture. The secondary benefit is the excitement that comes along with the "aha!" moment I get several times per day when my learning from one discipline or bodily system fits perfectly in context with another.

MDF/JAK-F: UCSF is not the only medical school experimenting with new approaches to medical education, and while vastly improved from the traditional curriculum of 1988, it is far from perfect. In this issue of *JGIM*, Elnicki et al.³ propose a new curricular framework based on five core Entrustable Professional Activities (EPAs) that they argue are most relevant for senior medical students to prepare them to enter internal medicine residencies. Some of these EPAs are specific and pragmatic (e.g., how to enter orders and prescriptions) while others focus on broader skills (e.g., how to collaborate as a member of an inter-professional team). Importantly, they were not dreamed up by a panel of experts. Instead, internal medicine residents were surveyed and asked to iden-

tify what they felt were the most important skills to be learned prior to internship.

If they were surveyed, students enrolled in the new curriculum probably would point out that while new content was added, not enough was eliminated, which has meant that students are expected to learn more compressed into a tighter timeline. As Jonathan puts it: "I came to medical school fully expecting informational overload akin to 'drinking from a firehose,' but it feels as though, while the diameter of the hose has gotten wider, the water pressure has not been reduced." It seems that students are expected to learn and retain more information than was true in the past, in a shortened time frame. But, while the work is challenging and the pressure inherent in medical education just as intense as ever, there are now support systems for students that did not exist before, from free mental health counseling to dedicated weeks designed for self-reflection and well-being. With over one-quarter of medical students reporting depression or depressive symptoms,⁴ we take heart in the fact that UCSF prioritizes students' mental and physical wellbeing.

Overall, there is no doubt that the new UCSF curriculum, and others like it, will produce a new generation of doctors far better prepared for a career in medicine, characterized by lifelong learning, informed by a commitment to social justice and dedicated to the care of all patients with empathy and compassion.

And yes, Anatomy is still there, you just have to search a little harder to find it.

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Domains of Science

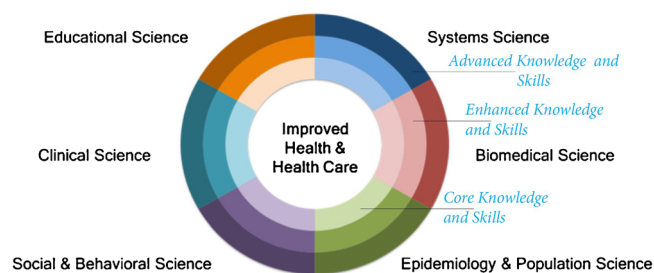


Fig. 1 Domains of Science