

## MEDICAL EDUCATION: PART II

# EVERYBODY HAS A BODY: AN INTERNIST EXPERIENCE AS AN ANATOMY TEACHER

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The path to clinical mastery involves many aspects ranging from communication and interpersonal skills, professionalism, passion for clinical medicine, knowledge, and diagnostic acumen. The more knowledge and skills we develop, the more tools we can use at the bedside. Likewise, the more basic science knowledge, the more likely we can reason and troubleshoot a challenging case. For the clinician, anatomical literacy is necessary not only for procedures (surgical and bedside) but also for a skillful physical examination, interpretation of radiologic testing, and increasingly these days, for rationally incorporating use of point-of-care ultrasonography (POCUS) to our bedside tools.

Throughout my years as a bedside faculty, I experienced working with medical students who struggled to apply anatomical content—taught to them only a couple of years prior—to a bedside conundrum. Some questions were as simple as what organs or layers are they expecting to find during a bedside procedure or examination. Others required to apply physical findings, such as a motor deficit, to decide additional testing based on predicted area of injury. I even encountered the unengaged student who answered “I did Anatomy two years ago, I don’t remember this.” Of course, these experiences only fueled my desire to become more involved in early stages of medical education. Applying for the Human Body Block (HBB) clinical director position at my institution in 2016 surprised no-one. After all, I had been an Anatomy teaching assistant for six years, and an anatomy instructor for 3 more years at the University of Buenos Aires, Argentina.

At our institution, Human Body Block, which encompasses Anatomy and Embryology, was historically taught by non-clinicians. The course is the first block for our incoming medical students and their first exposure to medicine. It has two block directors, one PhD and one MD; however, for many years, the MD director was a non-clinician (MD researcher); four to six instructors and many teaching assistants. It runs for nine weeks and is divided into three units: musculoskeletal; thorax, abdo-

men and pelvis; and head and neck. When the position became available, I applied; and, in 2017, I joined the block as the clinical director. I was dazed not only by the high quality of the teachers but also by the magnitude of the content being taught with limited clinical context. Because of the amount of knowledge the students were expected to learn in those nine weeks, it was understandable that they would memorize it, rather than incorporate or learn it.

After witnessing the course first hand in 2017, we (both block directors) embarked in the journey to improve our curriculum. Our goal was to make our learning objectives leaner and clinically relevant; improve our student assessment tools; modernize our didactic methodology; and build ways in which students would have optimized opportunities for content review and application.

Our endeavor resulted in the following changes to the 2018 iteration of the block:

- 1- **reducing scheduled contact time by 40 hours, providing students with more time for individual study, tutoring sessions, or review in cadaver lab;**
- 2- **adopting, with minor modifications, the learning objectives outlined by the Anatomical Society’s core syllabus<sup>1</sup> for regional anatomy, which are all clinically oriented;**
- 3- **restructuring dissection and didactic sessions to better align with the school’s longitudinal physical exam and radiology curriculums;**
- 4- **implementing flipped classrooms in most content areas;**
- 5- **building weekly cumulative review sessions; and**
- 6- **designing entirely new unit exams that consisted in 80 MCQs each, as well as the newly implemented final cumulative exam. At least three fourths of the questions in each exam were in a clinical vignette format (half were 1-step questions and half were 2-step questions) with a small number of simple recollection questions.**

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*“I am incredibly thankful and I feel very lucky that the anatomy block I just completed was new and improved. This curriculum completely exceeded any of my expectations. First, the lectures were for the most part helpful and very relevant. Second, the emphasis placed on clinical correlates really helped me make connections about how and why this information is going to be important in my future as a physician. Third, at no time did I feel like I was learning a bunch of information that would someday be irrelevant or unnecessary for medicine—the thought that the block directors put into creating this curriculum was immensely evident”*

—Anonymous Medical Student Class of 2022 CUSOM, extracted from course evaluations

The block’s curricular change was perceived as a success. Above is a quote from one of our students extracted from the course’s evaluation. In 2018, grades were the

highest since 2010, with a mean of 88/100 and no students failing the course. The 2018’s course evaluation by students was also extremely positive, with over 95% (89% for 2017) of students thinking that the exam and quizzes questions were clearly written, and 93% (80% for 2017) thought they were well related to learning objectives and material taught. Also, 90% (79% for 2017) of students expressed that clinical examples were sufficient to illustrate the clinical relevance of the basic science material; and 95% (86% for 2017) of students felt that overall block was well organized.

Anatomical knowledge supports the masterful examination of patients, formation of exam or imaging-assisted diagnosis, communication of these findings to the patient and other medical professionals, and is the foundation for safely performing and troubleshooting surgical and bedside procedures; making it relevant to our day-to-day clinical practice regardless of our specialty. Most

importantly, I will argue that clinicians make great anatomy and basic science teachers, as they possess the tools necessary to provide the clinical context, application and relevance of the material being taught; making learning, rather than memorizing, plausible. Correspondingly, as medical schools explore transition from cadaver lab and dissection in lieu of more integrated and applied teaching modalities, and the incorporation of POCUS to our daily clinical practice, I can easily imagine the future of anatomical teaching to occur at the bedside by the hand of trained clinicians.

**References**

1. Smith CF, Finn GM, Stewart J, et al. The Anatomical Society core regional anatomy syllabus for undergraduate medicine. *J Anat.* 2016 Jan;228(1):15-23. doi: 10.1111/joa.12405. Epub 2015 Nov 27.

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