Enhancing the Student Surgical Learning Experience

To the Editor,

In this issue, Okonkwo *et al.*, have discussed areas of improvement for the undergraduate medical curriculum that are needed to promote the next generation of surgeons.[1] With an ever-present trend of decreasing interest in surgery, this is now more important than ever.[2] However, Okonkwo et al. are short in their discussion in what medical students can do themselves to enhance their surgical training experience. The steps that medical students can undertake begin in the anatomy lab and progress into the clinical surgical rotation. In addition to these, joining student surgical societies and finding effective mentors will assist surgically-minded medical students on their surgical career path.

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Anatomy Teaching

Anatomy has forever been one of the corner stones of medical education, often marking the entry of students into the world of medicine. However, in the past decade anatomical teaching has seen a decline, with a reduction in both time and resources directed towards developing the anatomical curriculum.[3] While there is still much debate in how the future of anatomical teaching will look, it would indeed be difficult to argue against the importance of a solid foundation in the anatomical sciences.[4]

Regardless of whether a student will be using cadavers, specimens, or electronic images, preparation is key for a successful anatomy lab. Due to the limited amount of time available in the anatomy labs, students should begin with a preliminary understanding of the topics to be covered. Too frequently students arrive without sufficient background knowledge to efficiently use their time in the lab. In addition, surgically-minded students should always keep in mind the clinical relevance of their dissection experience.[5] For example while studying the anatomy of the knee, students should explore the different clinical presentations of ligament tears. This helps to promote learning through understanding, rather than superficial memorization. Studies have shown that in order to promote long-term anatomical learning, students should take multiple approaches in their learning of anatomy.[6] These steps should ensure a solid foundation of anatomical knowledge and will serve students well as they enter their surgical rotations.

Surgical Rotations

As the surgically minded students advance from the preclinical stage into their clinical rotations, they will soon face their daunting first surgical rotation. Indeed, many students enter their surgical rotation with concerns of fatigue, mental abuse, and proficiency.[7] The surgical rotation has historically been described as having a unique learning environment with an emphasis on teamwork, but with less personal connections with staff members.[8] Students need to quickly adapt to make the most of their experience. Students may be initially disappointed with the passive nature of learning in the operating room (OR). However, those hours standing in the OR do not need to be wasted. To fully take advantage of their OR experience, students need to be familiar with clinical history and presentations of the patients that they will be seeing. Meeting the patient pre-operatively also has the added advantage of increasing the likelihood of being permitted to attend and actively participate in the patient's operation. What students frequently forget is that clinical learning does not have a strict syllabus that is seen in the preclinical curriculum. This means that students are partially responsible for their learning. This means taking the responsibility to ask questions, demonstrate enthusiasm, ask for feedback, and discover their own learning opportunities. These are the traits that will help medical students succeed in a surgical rotation, and ultimately, secure a surgical training position.

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Finding the right mentor

Okonkwo et al., have discussed the importance for medical schools to provide access to surgical mentors.[1] However, this service is not always provided by medical schools; indeed, the majority of medical students do not have effective surgical mentors.[9] Ultimately, it falls upon the student to find and create that personal connection. Students frequently misconceive that mentors must be consultant/attending-level surgeons. While senior mentors have the benefit of being well known among the academic community, provide convincing reference letters, and have a wealth of experience, the benefits of junior mentors are often overlooked. One study demonstrated that students who were exposed to surgical residents that enjoyed teaching and acted as role models, were more likely to pursue a career in surgery.[10] As a result, students should strive to have several mentors from varying stages of proficiency, benefiting from the time that junior doctors have to offer and the experience of senior experienced surgeons. Students should also strive to find a mentor with a similar learning style and outlook on medicine. A mismatched pair of mentor-mentee can be an ineffective tool and may potentially act as a deterrent to enter the field of surgery.

Student surgical community

While surgical training is habitually based in the hospital, surgical training is not limited to the OR. In such a dynamic field, surgical excellence is reliant on continuous learning, which is made possible through strong and active surgical communities found both locally and globally. Medical students have founded surgical societies which create a platform for students to engage with members of their own surgical departments. These societies also highlight local windows of opportunity for students interested in further developing their surgical knowledge. In addition, membership in these societies demonstrates to training directors a trainee's commitment and interest.[11] National and regional surgical societies bring together members of the larger surgical community. Membership in such societies provides students with a wide array of exposure to this ever-changing field and is routine for students with a surgical interest.[12] These groups also frequently host extracurricular lectures, workshops, and conferences where pre-clinical and clinical medical students alike have the opportunity to engage with all facets of surgical training. Taking active steps to get involved with such groups is an invaluable way of ensuring a well-rounded and cutting-edge surgical education.

In conclusion, Okwonko *et al.*, have discussed how the undergraduate medical curriculum needs to help support medical

students on a surgical training path;[1] however, it is important to note that there are several steps that medical students can take themselves to enhance their surgical training experience in the undergraduate setting. These steps take the form of self-directed learning in the anatomy lab, in the OR, finding motivational mentors, and collaborating with the activities of a student surgical society. Together, the curriculum improvements highlighted by Okwonko et al. and the student factors mentioned here will ensure the development of the next generation of surgical trainees.

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