

PERSPECTIVE

Improving the *pot-plant* experience: surgical simulation for medical students

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<https://ijohs.com/article/doi/10.54531/MJET6349>

Simulation training has been increasingly implemented in surgical training programs. Amongst junior medical officers, the opportunity to participate in simulation-based training has improved their safety and competency [1]. However, simulation-based training for surgical skills has not been well-integrated into medical school programs within Australia.

As a final-year medical student, I am a firm advocate for the integration of surgical simulation programs as part of the medical curriculum.

Earlier this year, I had the opportunity to attend a simulation session organized by the Royal Australian College of Surgeons (RACS). While there was no charge for final-year medical students, positions were limited. Participants were selected on a first-come first-serve basis. The day included four different stations, with each focusing on a different surgical specialty. We performed suturing for the plastics station; plastering as a part of orthopaedics; suprapubic catheters for urology; and (my personal favourite) laparoscopic simulations as part of a general surgery station. Prior to these workshops, my surgical experiences consisted of being a fly-on-the-wall during ward rounds and theatre, with the occasional opportunity to scrub into a procedure and watch from 1 m, instead of 2. I had never attempted the skills that registrars and consultants practice daily. I had never held the different laparoscopic equipment; let alone understand the dexterity and coordination required. Despite my interest in surgery, the main deterrent for me was the thought of standing for hours on end in the operating room. However, in one challenge during the workshop, we were tasked with stacking a tower of bolts using laparoscopic equipment. As I was trying to stack just one more bolt on top of a teetering tower, I was enthralled by the concentration required and time passed extraordinarily fast. This experience made me ever more certain of my choice in career pathway.

It is important to delineate the difference between simulation sessions for junior doctors who are trying to hone their skills to finely dissect through abdominal fascia, compared to medical students who are still undecided on their careers. I believe that the value of surgical simulation training for medical students is four-fold: (1) to allow surgically inclined students (such as myself) the opportunity to engage with their future field of interest prior to committing; (2) to train medical interns in all facets of a 'general year' within the hospital; (3) to kindle the interest of other students, who may otherwise have pre-emptively discarded the thought of surgical specialization based on incomplete experiences; and (4) to provide a juxtaposition to the inherently physicians-inclined teachings throughout medical school.

Of course, not all medical students are interested in surgery; and some may argue that surgical simulation is therefore irrelevant to their basic training and a waste of resources. However, this argument is paradoxical, as without the

opportunity to engage in surgical simulations, students cannot be expected to appreciate, let alone commit to the arduous surgical journey. Indeed, simulation-based training has been shown to increase student engagement in the surgical field [2]. Anecdotally speaking, surgical placements for students typically consist of lightning-fast ward rounds, clinics and being a *pot-plant* in theatre. This only emphasizes the need to offer greater operational exposure through surgical simulations, allowing undecided students to weigh whether they are interested in the other 90% of surgical specialization. On the flip side, for those of us who are aspiring surgeons, simulation offers valuable exposure to the bread-and-butter work of this field. We know what surgical trainees who have a better understanding of surgery's work and expectation are more likely to complete their training [3]. Hence, simulation prompts us to reflect on our career choices.

Further, regardless of one's career path in the future, it is important that we are never stray too far away from our current role in the hospital. As an intern especially, we are assigned to a 'general year' during which we are expected to be part of each team that we join – whether that be a medical ward or surgical ward or the emergency department or otherwise. Understanding the basic skills of the home team includes knowing the placement of suprapubic catheters, holding a laparoscopic camera or inserting a chest tube. It is the role of medical schools to nurture students to become competent interns; and learning the skills of being an assistant in theatre is just as vital to learning how to maintain proper medical records.

Medical school seems to be designed in such a way that exposes students more thoroughly to physician over surgical specialties. This is perhaps an unavoidable artefact of the different nature of each field, as it is much easier to involve students in non-interventional specialties. Through my experiences at medical school, I can appreciate that most of the teaching is delivered by physicians; and there are attendance requirements for joining ward rounds regularly, but no similar requirements for attending theatre. Even on surgical rotations, we are encouraged to shadow the junior doctors whose job is to stay on the wards to manage medical issues. This may be contributing to the decline in surgical interest amongst Australian and New Zealand medical graduates [4]. Consequently, surgical simulations offer a much-needed counterbalance to the *status quo*.

Sadly, the lack of surgical exposure has been emphasized due to impact of COVID-19 on placements and hospital exposure. In particular, my cohort of classmates has struggled to participate in theatre time and experience the basic skills of surgeons because of strict number limits and policies in the hospitals. Despite the

height of the pandemic being long past, we still observe a negative shift away from allowing 'too many students' into the operating room. The universities, the hospitals, RACS and all invested parties must be informed of this reduced exposure in the post-pandemic era; and more strongly advocate for the right of students to be learn through experience.

Ultimately, I propose that all students should be exposed to a 1-day simulation training program for surgical skills during their final year of study. It should be an opportunity to nurture the interest of young budding surgical enthusiasts; and to kindle the interest of those who may have previously shunned the surgical pathway.

Declarations

Acknowledgements

I would like to acknowledge my fellow medical student Zhao Feng Liu for his assistance in editing and reviewing the final version of the manuscript.

Authors' contributions

None declared.

Funding

None declared.

Availability of data and materials

None declared.

Ethics approval and consent to participate

None declared.

Competing interests

None declared.

References

1. Spiliotis AE, Spiliotis PM, Palios IM. Transferability of simulation-based training in laparoscopic surgeries: a systematic review. *Mini-invasive Surgery*. 2020 Aug 25;2020:5879485.
2. Tesche LJ, Feins RH, Dedmon MM, et al. Simulation experience enhances medical students' interest in cardiothoracic surgery. *The Annals of Thoracic Surgery*. 2010 Dec;90(6):1967–1974.
3. Abelson JS, Sosa JA, Symer MM, et al. Association of expectations of training with attrition in general surgery residents. *JAMA Surgery*. 2018 Aug 1;153(8):712–717.
4. Deedar-Ali-Khawaja R, Khan SM. Trends of surgical career selection among medical students and graduates: a global perspective. *The Journal of Surgical Education*. 2010 Jul/Aug;67(4):237–248.