



AN INSTITUTIONAL SURVEY REGARDING MEDICAL STUDENT PERCEPTIONS OF A CAREER IN CARDIOTHORACIC SURGERY: MEDICAL STUDENTS'



Authors: Krishan Lodhia, Karanjeet Sagoo and Jan Sindhar

RESPONSE

To the Editor:

As clinical year students in the United Kingdom currently considering future specialities, we found Cohan and colleagues'¹ article particularly thought-provoking. We agree that a lack of exposure is significant in reducing students' desire to pursue a career in cardiothoracic surgery.

One survey found only 13% of students would pursue surgery² and further research from a UK deanery reported cardiothoracic surgery as the least popular choice (3.6%).³ Subsequently, consensus was gathered from students and clinicians nationwide, based on the Royal College of Surgeons undergraduate surgical curriculum. It established essential surgical knowledge for medical students and foundation doctors—the UK equivalent of US resident physicians—current clinical needs, and areas for improvement within curricula.⁴

We believe there is a lack of basic surgical exposure and skills training overall, not just cardiothoracic exposure specifically. Universities have undertaken significant curriculum changes to increase exposure to general practice (GP) in keeping with the government's mandate for 50% of medical school graduates to enter GP training.⁵ This recruitment change was necessitated by the United Kingdom's ageing population, alongside the workforce crisis caused by a disproportionate increase in the number of GP specialist training posts versus training places, causing a 4% decrease in the number of trainees.^{6,7}

Furthermore, the lack of anatomy teaching during clinical years is apparent. Confidence in anatomy knowledge is core to driving interest in surgical careers. Many foundation doctors report that upon reaching their clinical placements, they find they have forgotten essential knowledge that affected their confidence to pursue a career in surgery.⁸ Balance is required to address the increasing demand for GPs whilst maintaining sufficient surgical skills training, such that a

shortage is not seen in key specialities and ensuring future foundation doctors are not ill-equipped to handle surgical presentations. Incorporation of dissection and anatomy workshops and peer-assisted teaching of surgical skills, including suturing in conjunction with formal observation and assessment, may improve the delivery of surgical content. This addresses concerns regarding decreases in manual dexterity and creativity amongst newer generations of students.⁹ Ultimately, clinical years should encompass a thorough surgery department rotation to ensure competency in basic surgical knowhow, skills, and anatomy.

Cardiothoracic surgery is often considered a competitive speciality. Thus a lack of exposure to surgery skills and anatomy knowledge may lead students to believe that they are not capable of pursuing a career in this speciality.¹⁰ Currently, medical school curricula in the United Kingdom are set by the General Medical Council, with some input from the Medical Schools Council and the Royal College of Surgeons. Perhaps allowing students to tailor their medical training by choosing modules early on could help them develop key surgical skillsets before the foundation years. Mandatory classes in surgical specialities could be introduced throughout all years of medical school such that interest does not falter.

Krishan Lodhia, BSc (Hons)
Karanjeet Singh Sagoo, BSc (Hons)
Jan Sindhar, BSc (Hons)
Faculty of Life Sciences & Medicine
King's College London
London, United Kingdom

References

1. Cohan GN, Kilic A, Gleason TG, Schuchert MJ, Luketich JD, Okusanya O, et al. Medical student perceptions of a career in cardiothoracic surgery: results of an institutional survey. *J Thorac Cardiovasc Surg.* 2020;159:1906-12.
2. Glynn RW, Kerin MJ. Factors influencing medical students and junior doctors in choosing a career in surgery. *Surgeon.* 2009;8:187-91.
3. Burnside N. The impact of junior surgical jobs in cardiothoracic surgery on career choice in the United Kingdom. *Gen Thorac Cardiovasc Surg.* 2018;66:411-4.
4. ASiT Medical Student and Foundation Doctor Consensus Group, Authorship consensus group, Steering group, Writing group, Consensus exercise participants, External advisory group. Core content of the medical school surgical curriculum: consensus report from the Association of Surgeons in Training (ASiT). *Int J Surg.* January 9, 2020 [Epub ahead of print].
5. Delivering high quality, effective, compassionate care: developing the right people with the right skills and the right values. A mandate from the Government to Health Education England: April 2015 to March 2016; . Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/411200/HEE_Mandate.pdf. Accessed May 20, 2020.
6. Half of medical students to become GPs by 2015; . Available at: <http://www.pulsetoday.co.uk/news/gp-topics/education/half-of-medical-students-to-become-gps-by-2015/20003100.article>. Accessed May 23, 2020.
7. Half of medical students should become GPs, minister vows; . Available at: <https://www.gponline.com/half-medical-students-become-gps-minister-vows/article/1183933>. Accessed May 23, 2020.
8. Fitzgerald JEF, White MJ, Tang SW, Maxwell Armstrong CA, James DK. Are we teaching sufficient anatomy at medical school? The opinions of newly qualified doctors. *Clin Anat.* 2008;21:718-24.
9. Surgery students 'losing dexterity to stitch patients'; . Available at: <https://www.bbc.co.uk/news/education-46019429>. Accessed July 5, 2020.

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Dr Mokadam is a consultant and investigator for Abbott, Medtronic, and SynCardia and a consultant for Carmat. Dr Ganapathi reported no conflicts of interest.

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10. Specialty recruitment competition ratios 2019; . Available at: https://specialtytraining.hee.nhs.uk/Portals/1/Competition%20Ratios%202019_1.pdf. Accessed May 20, 2020.

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REPLY: EXTINCT? FAR FROM IT

Reply to the Editor:

As yet another match day has passed us by, the debate over the lack of interest in pursuing a career in cardiothoracic surgery continues. Lodhia and colleagues¹ recently provided an additional perspective of

medical students in the United Kingdom regarding their experiences, or lack thereof, and how it impacted their pursuit of a cardiothoracic surgery. With regards to exposure, many have stated the impact of early and continued exposure to cardiothoracic surgeons.^{2,3} As we have previously written, the benefits of a cardiothoracic surgery rotation extend beyond those who pursue cardiothoracic surgery,⁴ and the presence of cardiothoracic surgeons on medical school curriculum committees and involvement with general surgery departments is essential to provide exposure for many individuals.

Perhaps the more important discussion is the perception versus reality of interest and pursuit of cardiothoracic surgery. In the most recent National Resident Matching Program match data, there were a total of 459,049 students who applied for the match with only 38 positions available in (integrated) thoracic surgery. For those 38 spots there were 120 applicants (78 of which were fourth-year medical students) with a 100% fill rate.⁵ In addition, in the match for thoracic surgery independent programs following general surgery, there were 96 positions with 88 filled, for a fill rate of 91.7%.⁶ These numbers indicate that cardiothoracic surgery remains very competitive.

Cardiothoracic surgeons have remarkably transformed a specialty in low demand with numerous unfilled positions to one with many more applicants than spots. While we should continue our current efforts to provide initial and continued exposure in medical school, we should also focus on attracting the best medical students and general surgery

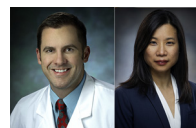
residents, and ensuring individuals who are bright and motivated get an appropriate exposure to the field. The demand for cardiothoracic surgeons nationwide will continue for the foreseeable future. We are not going extinct.

Asvin M. Ganapathi, MD
Nahush A. Mokadam, MD
Division of Cardiac Surgery
Department of Surgery
The Ohio State University Wexner Medical Center
Columbus, Ohio

References

- Lodhia K, Sagoo K, Sindhar J. An institutional survey regarding medical student perceptions of a career in cardiothoracic surgery: medical students' response. *J Thorac Cardiovasc Surg.* 2021;161:e315-6.
- Coyan GN, Kilic A, Gleason TG, Schuchert MJ, Luketich JD, Okusanya O, et al. Medical student perceptions of a career in cardiothoracic surgery: results of an institutional survey. *J Thorac Cardiovasc Surg.* 2020;159:1906-12.
- Taylor B. Cardiothoracic surgery exposure in medical school—a United Kingdom student perspective. *J Thorac Cardiovasc Surg.* 2020;159:e131.
- Ganapathi AM, Mokadam NA. Reply: don't let them be the one that got away. *J Thorac Cardiovasc Surg.* October 10, 2019 [Epub ahead of print].
- National Resident Matching Program. Results and Data: 2020 Main Residency Match. 2020. Washington, DC: National Resident Matching Program; 2020. Available at: https://mk0nrmp3oyqui6wqfm.kinstacdn.com/wp-content/uploads/2020/06/MM_Results_and-Data_2020-1.pdf. Accessed June 16, 2020.
- Match Results Statistics. Thoracic Surgery and Vascular Surgery-2019. 2019. Available at: <https://www.sts.org/sites/default/files/documents/Thoracic-Surgery-and-Vascular-Surgery-Match-Results-Statistic.pdf>. Accessed June 16, 2020.

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REPLY: PRESERVING OUR OSLERIAN HERITAGE

Reply to the Editor:

We can only instill principles, put the student in the right path, give him method, teach him how to study, and early to discern between essentials and non-essentials.

—Sir William Osler¹