Published in final edited form as:

Surgery. 2021 April ; 169(4): 994–995. doi:10.1016/j.surg.2020.07.026.

The American Board of Surgery Certifying Exam: Embrace technology, eradicate bias

Sandra R. DiBrito, MD, PhD^{*}, Caitlin W. Hicks, MD, MS

Johns Hopkins School of Medicine, Baltimore, MD

Over the course of the past several weeks, the medical community has changed dramatically. We have embraced technology to allow us to continue seeing patients while protecting them from the risk of infection. Online meetings and teleconferences have replaced almost all of the in-person interactions we have in academic medical institutions. Many of us have found these virtual interactions to be increasingly convenient, productive, and easy to arrange within the seemingly boundless online space. Without a pandemic forcing our hand, it would have taken decades to develop the infrastructure to support this degree of technologically advanced patient care, administrative management, and academic interaction. Instead, we have leapt forward, innovation and creativity prized, as we solve daily problems and plan for an ever-changing landscape in patient care and medical training.

Given the uncertainty of the coming months, even the American Board of Surgery (ABS) has embraced the necessity of innovation. This July, hundreds of surgeons will sit at home to take their qualifying exams, as opposed to the highly fortified testing center of years past. This will decrease the risk of viral transmission among test-takers and test-administrators and propel the ABS into an interesting new dimension of the future.

Although this decision is exciting, an even more necessary move toward modernity is a retooling of the decades old structure of the ABS certifying examination. After the qualifying exam, surgical hopefuls will wait patiently for a turn to pay thousands of dollars to fly to 1 of 5 cities, spend a sleepless night in a prescribed hotel, and spend a total of 84 minutes in front of 6 separate examiners who will determine their professional fate. There are several mechanisms carefully controlled by the ABS to ensure fair delivery and scoring of this exam. However, the excess costs associated with its antiquated administration far outweigh the value of an in-person experience. This past June, the in-person certifying examination was cancelled because of the pandemic, but a virtual examination was performed with a limited number of trainees. We suggest that transitioning the certifying examination to an online platform permanently would eliminate a huge cost to both trainees and the ABS itself and would result in an outcome that is no different than the current.

Would more surgical faculty be willing to participate in giving the exam if it only meant an hour-long time commitment that could be conducted from the comfort of their own office?

^{*}Reprint requests: Sandra.dibrito@gmail.com (S.R. DiBrito).

Conflict of interest/Disclosures

The authors have no disclosures.

This would be a stark departure from asking for several days off work, leaving practices and families unattended. How much money would the ABS save if it could avoid the cost of airfare, lodging, and food stipends for all the examiners? How much would each of the hundreds of trainees—most of whom carry substantial medical school debts at the time of graduation—save on the same? Not to mention the cost of the exam facility itself. Online meeting platforms are inexpensive and would still allow face-to-face (virtual) interactions. Vascular surgery mock oral boards were delivered nationally via an online platform, and reviews from faculty and trainees are glowing. Reportedly the recent ABS virtual certifying exam pilot was also a success, suggesting the online format is feasible.

As we move to embrace the convenience of virtual examinations, we can take one further step and work to eradicate the unavoidable, implicit (and arguably explicit) bias that is inherent in oral exams and interviews. In many professional realms, it has been demonstrated that sex- and race-based hiring biases exist.^{1–4} In a famous study of orchestral auditions, 30% more women were chosen for positions after auditions conducted from behind an opaque screen.⁵ “Epistemic injustice” describes the negative influence of stereotyping on the judgment of the knowledge, credibility, or expertise of another. Minorities in surgery are frequently subjected to this form of bias, and the administration of the oral boards is likely no exception.^{4,6,7}

The bias present in the ABS certifying exam has been hypothesized but never demonstrated. Data are not available to calculate pass rates comparing applicants by sex, race, ethnicity, etc. The ABS implements many checks and balances within their scoring algorithm to ensure that examiners are as fair as possible in evaluating examinees. Scores are curved based on examiner scoring patterns to ensure that “hawks” and “doves” are accounted for. The ABS also works to ensure anonymity in the examiner-examinee relationship and to remove the examinee from the positive or negative light of their training program, their collegiate alma mater, or their place of origin. This is very admirable, but this work would not be necessary if the exam could be delivered in a truly anonymous form.

We propose that the ABS step willingly and boldly into the future, using technological means to anonymize a real-time, interactive exam delivery via an online interface as a permanent change to the antiquated in-person format. The technology that we are harnessing daily to conduct confidential patient encounters, educational conferences, and academic meetings during the COVID pandemic provides a timely opportunity for the ABS to administer a much less expensive, more convenient, and equally effective certifying exam. Further, it is worth investigating technology that could mask the visible and audible demographic differences between candidates, ensuring a nonbiased interpretation of the answers provided. Simple, inexpensive, pre-existing programs could allow every examinee to appear and sound exactly alike, freeing the minds of the examiners from unconscious bias and allowing them to hear the actual answers without a veil of stereotypes. The exam would be more cost effective, easier to administer, and more just. What could be better than embracing technology and eradicating bias?

Acknowledgments

Funding/Support

No funding sources supported the production of this manuscript.

References

1. Erhunmwunsee L, Backhus LM, Godoy L, Edwards MA, Cooke DT. Report from the Workforce on Diversity and Inclusion—The Society of Thoracic Surgeons members' bias experiences. *Ann Thorac Surg*. 2019;108:1287–1291. [PubMed: 31520637]
2. Bertrand M, Mullainathan S. Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination; 2003. <https://www.nber.org/papers/w9873.pdf>. Accessed May 2020.
3. Fitzgerald C, Hurst S. Implicit bias in healthcare professionals: A systematic review. *BMC Med Ethics*. 2017;18:19. [PubMed: 28249596]
4. Cochran A, Hauschild T, Elder W, Neumayer LA, Brasel KJ, Crandall ML. Perceived gender-based barriers to careers in academic surgery. *Am J Surg*. 2013;206: 263–268. [PubMed: 23414631]
5. Goldin C, Rouse C. Orchestrating impartiality: The impact of “blind” auditions on female musicians. *Am Econ Rev*. 2000;90:715–741.
6. Hutchison K. Four types of gender bias affecting women surgeons and their cumulative impact. *J Med Ethics*. 2020;46:236–241. [PubMed: 32229595]
7. Macrae CN, Milne AB, Bodenhausen GV. Stereotypes as energy-saving devices: a peek inside the cognitive toolbox. *J Pers Soc Psychol*. 1994;66:37–47.