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Commentary: From “barber-surgeons” to virtual examinations—evolution of certification in cardiothoracic surgery

Elizabeth H. Stephens, MD, PhD, and Joseph A. Dearani, MD

Medical education has dramatically evolved and continues to do so. In Europe from 1100-1800, “academic” doctors largely had purely theoretical training, such as attending a program of lectures often without completing or any type of certificate, whereas barber-surgeons were practically trained and commonly governed by guilds, with a wide range of training and processes for certification.¹ In many societies, hanging out one’s shingle was sufficient in the public’s eye to “certify” someone as a medical practitioner. In the United States, medical education did not originate in universities, nor was it regulated by professional guilds, and training varied widely.¹ It was not until the early 1900s, with the concerted efforts resulting from the Flexner report and a number of governing associations, that requirements for medical education were developed and education evolved to resemble something more consistent with what we see today.² As education has continued to evolve, so has the certification process for cardiothoracic surgery. Certification by the American Board of Thoracic Surgery (ABTS) currently requires passing the written board examination (“qualifying exam”), designed to test *fund of knowledge* (Part I), and the oral board examination (“certifying exam”), designed to test *critical thinking and judgment*

From the Department of Cardiovascular Surgery, Mayo Clinic, Rochester, Minn.

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Address for reprints: Elizabeth H. Stephens, MD, PhD, Department of Cardiovascular Surgery, Mayo Clinic, 200 First St, SW, Rochester, MN, 55905 (E-mail: stephens.elizabeth@mayo.edu).

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Joseph A. Dearani, MD, and Elizabeth H. Stephens, MD, PhD

CENTRAL MESSAGE

As medical education and the certification process continue to evolve, virtual technology and multi-institutional collaborations, such as in simulated oral examinations, are the wave of the future.

(Part II). Successful completion of these 2 examinations in combination with documentation of operative experience and endorsement of proficiency by their institution’s Program Director yields successful certification by the ABTS.

The oral board examination for many trainees is the most challenging and intimidating part of the certification process. While the pass rate for the written examination has ranged from 81% to 95% in the last 5 years, the pass rate for the oral board examination (for those who have already passed the written examination) has been as low as ~65%, with one-quarter of graduating trainees not feeling prepared for the boards.³ The oral, rapid-interrogation format of this high-stakes examination, conducted in a highly organized and supervised setting in prearranged hotel rooms with prominent surgeons, can make the examination a stressful and psychologically daunting experience. Various efforts to adequately prepare trainees for the examination have been undertaken. While the bulk of trainee preparation is independent study, most training programs hold “mock oral exams,” in which they simulate the “real” examination experience, replete with the environment, format, and style of questioning. Various companies have also developed board preparation/review courses to also aid trainees.

Fiedler and colleagues⁴ describe a simulated, multi-institutional oral board examination for cardiothoracic trainees with the use of “virtual” technology. These mock oral boards were taken by 14 trainees across 6 institutions

and involved 14 cardiothoracic faculty. This was not endorsed by the ABTS, and no faculty who have acted as ABTS examiners are allowed to participate in any activities such as the afore-described mock orals. This manuscript is descriptive in nature and does not delve into how trainees were graded, how pass rates were determined, or how many of the trainees were actually “passed.” While such details, had they been included, would have aided others who may also wish to simulate oral board examinations, the mere practice of taking a simulated oral board examination is an important learning tool for the trainee in identifying strengths and weaknesses that may require further study. This is born out in the responses of the participants, with 100% finding the activity useful. In addition, the vast majority of participants found the virtual format did not limit the realistic nature of the examination, which highlights the broadening role of this type of technology in the practice of our field going further, including in the education realm.

So where do we go from here? While years from now virtual mock orals may not seem as preposterous as a surgeon-barber hanging out a wooden shingle in lieu of a formal

certification process, there is no doubt that virtual technology and other advanced technologies are just the beginning for the continued evolution of the education and certification process for our specialty, as well as many other specialties in medicine. Particularly with the ongoing coronavirus disease 2019 (COVID-19) pandemic, developing secure ways to test trainees in a fair and reproducible manner in a virtual format are under investigation. Similarly, such technology that also aids multi-institutional collaboration is the way of the future.

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