Commentary: Education in progress

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Central Message

To educate our future cardiothoracic surgeons better is not only foundational to our legacy, but much needed.

See Article page 1948.

Reports in the *Journal* of cardiothoracic surgery training in countries outside the United States have proved enlightening with regard to history, organizational and evaluative processes, and challenges with the respective educational paradigms.^{1,2} In this issue of the *Journal*, Zakkar and colleagues³ continue what has been an informative approach with a comprehensive view of the training of cardiothoracic surgeons in the United Kingdom.

What one first notices about surgical education in the United Kingdom is its similarity to that in the United States. Organizationally, the aim of the Society for Cardiothoracic Surgery in Great Britain and Ireland is to improve the quality of surgical care and to direct education. The Royal Colleges of Surgeons collaborate to maintain surgical standards, along with administering membership examinations. Setting these standards rests with the General Medical Council; the Royal Colleges effect initiatives through the Joint Committee of Surgical Training and its Specialty Advisory Committees and Core Surgical Training Committees. The training pathways are also somewhat similar to that in the United States, although truncated with respect to the core surgical training of 2 years, after which there is a longer postgraduate training of 6 years in cardiothoracic surgery. In parallel, there is “run-through” training, analogous to an integrated program in the United States, albeit with 8 years of clinical training.

Perhaps more rigorous in the United Kingdom is the use of assessment tools, although the Milestones Project in the United States has generated an important layer of documentation. During the training period, assessments and high-stakes examinations are required before advancing to the next level. Work Based Assessments, including Clinical Evaluation Exercise, Case Based Discussion, Procedure Based Assessment, and Direct Observation of Procedural Skills, along with structured reports, contribute to the Annual Review of Competence Progression. The final stage allows the trainee to develop a particular area of expertise before appointment to a consultant position.

Nonetheless, there are challenges, as clearly articulated by Zakkar and colleagues.³ The limited number of available

consultant positions is addressed by predicting retirement numbers, combined with analyzing the impact of technology and public health issues. With regard to practice profile, cardiothoracic surgery is progressing toward separation of cardiac surgery from thoracic surgery, and, as in the United States, the trainees continue to be trained in both areas.³ Public reporting in the United Kingdom has led to potential avoidance of high-risk cases, and reporting of surgeon-specific outcomes underestimates the importance of multidisciplinary care in the hospital. Finally, European Working Time Directive mandates a 48-hour work week; similar to arguments posed in the US, the decrease in work hours appears to have resulted in decreased elective and emergency operative experience and fragmented training.³

At the risk of being more ethnocentric, the reader may wonder whether there are challenges unique to the educational system in the United States. A brief historical context may be relevant. In *Time to Heal*, published in 1999, Ludmerer⁴ dissected the impact of the 1910 Flexner report (funded by the Carnegie Foundation) and the transformation of American medical education.⁵ The 3 pillars of the medical system were education, research, and patient care. From World War I to World War II, education was paramount. After World War II, research replaced teaching as the dominant activity, primarily as the result of scientific discoveries and expansion of the National Institutes of Health. With the passage of Medicare and Medicaid in 1965, clinical practice soared as charity patients became paying patients. Within the next 2 decades, and with changes in health care delivery, the size of the clinical

enterprise overshadowed those of research and education as academic centers emphasized clinical volume and profitability. Ludmerer⁴ observed the compromise of academic quality, stating “At many schools, clinical teachers and investigators were forced to spend more and more time seeing patients, sometimes to the near abandonment of their educational responsibilities.”

One hundred years after the Flexner report, the Carnegie Foundation issued an updated report on medical education.^{6,7} The authors, Cooke and colleagues,^{6,7} found that medical training in the United States is inflexible and not learner centered. Presaged by Ludmerer,⁴ they noted that clinical education “excessively emphasizes mastery of facts, inpatient clinical experience, teaching by residents, supervision by clinical faculty who have less and less time to teach, and hospitals with marginal capacity or willingness to support the teaching mission.”⁷ Importantly, the “pace and commercial nature of health care often impede the inculcation of fundamental values of the profession.”⁷ As successful as the American medical enterprise has been, the casualty has been the erosion of the third pillar, that of education.

On further review, the most important implication of the report by Zakkar and colleagues³ may be something of which we are all aware. Surgical education is a highly costly endeavor, with multiple stakeholders, but such an endeavor is the only way to ensure the welfare of future generations, or, stated another way, our personal health. To advance education, Cooke and colleagues^{6,7} propose that key stakeholders, specifically chief executive officers of teaching hospitals, medical school leadership, directors of

residency programs, and national organizations (American Association of Medical Colleges, American Medical Association, Accreditation Council for Graduate Medical Education, and specialty boards), focus on aligning patient care and clinical education to improve educational programs consistent with practice requirements; support the teaching mission of faculty by providing financial support, faculty development, and academic advancement; and advocate for sustained funding to support infrastructure and educational innovation. Recall our residency experiences, but acknowledge that it is unlikely that we can go back to the training paradigms of generations past. In view of all the progress, remember that to educate our future cardiothoracic surgeons better is not only foundational to our legacy, but much needed.

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