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Commentary: Help wanted! Replicating on-the-job surgical education during the pandemic

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My former chairman would quip “well they didn’t teach that in the doctor books,” when referring to a particularly unique or complex situation. It is a reminder that many parts of a surgeon’s development happen “on the job” and there is simply no viable substitute for that experience. Due to the pandemic, Chan and colleagues¹ found themselves with limited “on-the-job” training potential for fellows in pulmonary transplantation and a need to still cultivate skills that could not be learned from medical textbooks, either. They therefore created a low-fidelity, but adaptable, model for vascular anastomosis within the thoracic cavity.

Even before the pandemic, cardiothoracic and transplant surgery fellowship have struggled to meet adequate case volumes and in turn, overall surgical experiences. A recent survey of graduating cardiothoracic surgery residents revealed that 28% “felt training inadequate” and thus pursued additional training.² According to data from 2018, between 23% and 46% of heart and lung transplant training programs reported less than the number of cases required by United Network for Organ Sharing to qualify as a primary transplant surgeon upon graduation.³ Possibly related to this, only 38% of senior fellows actually secured a job performing transplants after graduation.

Further amplifying this issue is the heterogeneity of technical abilities that the fellow may bring to the table

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CENTRAL MESSAGE

The pandemic brought a variety of challenges to residency programs, including decreased case volumes. Simulation models may augment, but not replace, operative experiences in cardiothoracic surgery.

themselves. Data suggest these skills—at least laparoscopically—may be impacted by a surgeon’s outside hobbies, like video gaming,⁴ and yet few opportunities exist for digital acquisition of technical skills in our field. And, although simulation and “Boot Camp” scenarios have been well-studied,⁵ these opportunities were also paused due to the pandemic.

The pandemic has affected the most vulnerable first: elderly patients with comorbidities, families with economic strain, and for training programs, learners who may have already been struggling to obtain adequate case volumes or technical skills. Combined with a paucity of cases, personal protective equipment limiting participation in the operating room, and a renewed focus on efficiency and outcomes, it would be fair to assume that most learners found themselves at a disadvantage for the hands-on training so necessary to build excellent surgeons.

Obviously, simulation models are not meant to replace on-the-job training, only to augment the in-person operating experience. While simulation models may help bridge the gap as operating rooms lay quiet, we can’t help but wonder if they are an appropriate or accurate means to assess the fellows’ abilities and technical improvements? Likewise, do all training program have the financial and staff resources needed to implement simulation models? There are certainly data to support that simulation-based training is a reliable tool for assessing learners and for teaching skills⁴; however, the implementation of simulation training

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and content and fidelity of the curricula have not been uniformly employed across training programs yet.

In closing, we recognize the constraints and challenges of the anastomotic model creation and implementation, and we applauded Chan and colleagues in their efforts to maintain technical abilities through the pandemic.

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