

Enhancement in virtual learning cannot substitute for hands-on training in Cardiothoracic Surgery

Invited Commentary

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Conflict of interest statement: THE AUTHORS DECLARE NO CONFLICT OF INTEREST

Funding: NONE

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Abstract

This program director survey attempts to determine how coronavirus 2019 (COVID-19) pandemic is impacting current training in cardiothoracic surgery. A transition to virtual didactic sessions may prove beneficial with increasing attendance. On the other hand, decreasing live simulation and case volumes may jeopardize achieving competency in surgical skills.

Commentary

A rapidly increasing body of literature illustrates how COVID-19 pandemic is significantly impacting surgical training. This study by Cohan et al. (1) analyzes how thoracic surgery program directors (PDs) are responding to this unprecedented time. The authors conducted a voluntary electronic survey which targeted PDs of 74 accredited traditional thoracic surgery programs (2-3 years), 27 integrated thoracic surgery programs (1-6 years) and 13 combined general/thoracic surgery programs (4+3 years) in the United States. The response rate was only 29.2% over a 2-week study period. They report that 91% of participating programs have elected to implement on-line video conferencing for didactic curriculum and educational activities. Some programs have faced the need to re-deploy thoracic surgery residents to non-surgical services to assist with the primary care of COVID-19 patients. The majority of PDs agree that their residents (both junior and graduating) will suffer a negative effect on surgical case volumes because of the pandemic. Some PDs are concerned about graduating resident preparedness. However, it is not affecting the ability of this year's residents to graduate on time.

A recent study from the United Kingdom (2) also utilized an electronic survey to determine the impact of COVID-19 on cardiothoracic surgical training. This survey targeted all nationally appointed trainees, 64% of them responded. Sixty three percent were concerned about their health and 54% were concerned about provision of appropriate personal protective equipment. Fifty five percent had been redeployed to cover other specialties, 78% reported reduction of time in the operating room, 88% were concerned about the impact in their training and 71% felt that the deviation may require an extension in their planned training time.

In addition to lower case volumes, the participation of trainees as primary operators has also decreased in some programs (3). It is anticipated that previous cancellation of elective surgeries may result in more patients requiring urgent interventions with higher operative risk that would likely be performed by faculty instead of trainees and further diminish training opportunities.

In contrast to the negative effect of the COVID-19 pandemic in surgical skills training, an explosion of didactic content has been developed. The implementation of virtual platforms for didactic activities has facilitated access to educational opportunities not readily available before the COVID-19 pandemic. The elimination of constraints related to geographic distance and conflicting schedules have resulted in increasing participation of faculty and trainees in virtual academic meetings. Programs not only have the opportunity to review their didactic

curriculum but also have the opportunity to participate in national and international meetings sharing educational resources with other programs. International webinars are now frequently being organized and accessed effortlessly; the content of cardiothoracic surgery annual meetings is now available to view on-demand.

Despite a potential improvement in delivering didactic material to trainees, program directors and trainees are concerned about decreased hands-on training in cardiothoracic surgery. A significant reduction of elective surgeries is a global phenomenon affecting cardiothoracic surgery training programs. In recognition of the detrimental effects of COVID-19 pandemic on surgical training, programs should develop potential complements to enhance surgical training during this time (4). Given the scarcity of cases, the educational value of each clinical encounter should be maximized and effective assessment tools should be designed to determine areas in which trainees require improvement to achieve competency. Simulation should be enhanced, videotaping of operative cases with subsequent review and constructive feedback is a valuable strategy to facilitate progress. Programs should motivate faculty to become better educators.

It may take a while before case volumes in cardiothoracic surgery training programs return to the numbers that preceded the COVID-19 pandemic; until then strategies should be implemented to maximize the educational experience of current trainees and provide them with tools to feel confident about their competency to start independent practice at the end of their training.

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