

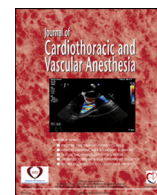


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## Editorial

## Fellowship Training in Adult Cardiothoracic Anesthesiology: Navigating the New Educational Landscape as a Result of the Coronavirus Crisis

THE severe acute respiratory syndrome coronavirus-2 has spawned a pandemic from the resultant coronavirus disease-19 (COVID-19) that is now a worldwide crisis.<sup>1–3</sup> The spectrum of COVID-19 includes acute lung injury that may progress to acute respiratory distress syndrome, circulatory shock, renal failure, and death.<sup>3–6</sup> The surge in health care demands for patients with severe COVID-19 across the United States has been overwhelming as a result of multiple factors, including viral transmission, patient volume, patient acuity, and the requirements for strict infection control.<sup>7,8</sup>

The purpose of this freestanding editorial is to highlight the significant effects of the coronavirus crisis on fellowship training in adult cardiothoracic anesthesiology across the United States. This perspective describes this landscape and suggests solutions for the program leadership to navigate this crisis successfully in a flexible and resilient fashion. The references provide additional detail for program directors and their teams to manage the demands of the pandemic in their respective fellowship programs.

### COVID-19 and the Accreditation Council for Graduate Medical Education

The severity of a health system's response to the COVID-19 crisis has been classified into 1 of 3 stages by the Accreditation Council for Graduate Medical Education (ACGME) (full details available at: [www.acgme.org/covid-19](http://www.acgme.org/covid-19)). Stage 1 has been termed “business as usual,” reflecting a period during which the health system is not significantly affected by the coronavirus crisis. In this stage there is little disruption of patient care or fellow educational activities, but the hospital and departmental leadership have begun planning for the anticipated increased clinical load. Although the fellowship is still governed by the usual common and specific program requirements, certain ACGME activities will be suspended, including surveys, the self-study, and site visits.<sup>9,10</sup>

The duration of the first stage is determined by the local trajectory of the pandemic in a given health system and region.<sup>11,12</sup> As the number of infected patients and subsequent

clinical demands increase, the health system enters stage 2, during which period some educational activities are suspended and some fellows are shifted to patient care duties outside of their fellowship area to help shoulder the clinical burden of the health system's pandemic response. Although the fellowship continues to be governed by the existing common and specific program requirements, the ACGME has added some qualifiers, including the provision of adequate resources and training, adequate supervision, the maintenance of professional standards, and the preservation of existing work hour limits ([www.acgme.org/covid-19](http://www.acgme.org/covid-19)). Board-eligible fellows may apply for and receive emergency credentialing from their respective health system so that they may function as attendings in anesthesiology to further aid in managing the increased clinical workload. However, the amount of time they spend outside the clinical area of their fellowship may not exceed 20% of the fellowship year. Although surveys, self-study, and site visits are suspended in stage 2, fellowship programs should do their best to continue with educational activities while adhering to adequate social distancing and other local rules and policies regarding the size of meetings or gatherings. Thankfully, there are a variety of technology-based solutions that allow for the continuation of educational activities under such restrictions, including remote video- and audio-conferencing technology, internet-based resources, and similar innovative tools.

As clinical demands surge along with the local COVID-19-positive population, the health system enters stage 3. ACGME has termed this phase “pandemic emergency status,” which it defines as the deployment of most fellows to patient care areas outside the normal fellowship scope and the suspension of most educational sessions ([www.acgme.org/covid-19](http://www.acgme.org/covid-19)). In this crisis mode, the fellowship is governed by the following 4 overriding requirements: respect for work hour limits, the provision of adequate resources and training, maintenance of adequate supervision, and the potential for fellows to function as attendings in their core specialty of anesthesiology. The other requirements for stages 1 and 2, and for the fellowship subspecialty, are waived during stage 3.

This road map provided by the ACGME allows the health system to plan a phased response to the COVID-19 pandemic depending on its local intensity. The fellowship leadership then can synchronize accordingly at all levels, as outlined in the following sections.

### Staying in Touch with the Institutional Graduate Medical Education Office

The designated institutional official graduate medical office will lead the navigation through the response phases to the pandemic as outlined by the ACGME and thus serve, as always, their vital central oversight function across the training landscape at a given institution.<sup>13,14</sup> This central leadership from the institutional graduate medical education team likely will consider the following recommended principles to engage and support the graduate medical community through the COVID-19 crisis: a clear strategy to cope with patient volume and acuity, protecting and supporting the fellows on the front lines of patient care, a transparent and fair strategy for allocation of health care resources, and the deployment of an adaptable and open communication policy with weekly townhall-style meetings that take advantage of innovative platforms such as remote conferencing technology.<sup>8</sup> The fellowship program director should be very familiar with all of this content to guide the fellowship faculty and trainees successfully through the ups and downs of the coronavirus crisis with focused planning, training, and teamwork in a fashion consistent with the phased ACGME response to COVID-19.<sup>8,9</sup>

### Staying in Touch with the Departmental Leadership

The director and broader leadership team of the fellowship program should strive to maintain consistent and transparent communication not only with the educational leadership at the institutional level but also at the departmental level. This includes the leader of the core anesthesiology residency program, other fellowship directors, the vice-chair for education, and the departmental chair.<sup>8,15</sup> This regular dialogue will facilitate a seamless synchronization of the adult cardiothoracic fellowship with the department's integrated response to COVID-19, especially in stages 2 and 3. This communication will help to ensure that the fellows have adequate training in the clinical area to which they are deployed, are appropriately credentialed, and receive the necessary supplies and equipment to protect themselves as they aid the department and health system in caring for COVID-19–positive patients.<sup>11,16–18</sup>

The normal fellowship timeline with its goals and activities should be managed as best as possible in stages 1 and 2, but will have to be largely sacrificed in stage 3, depending on the intensity of the local COVID-19 outbreak, as outlined by the ACGME.<sup>19,20</sup> This dynamic educational landscape offers multiple opportunities to mentor educational leaders, including aspiring program directors, to develop creative and collaborative solutions for the challenges of the coronavirus crisis for both the graduating and incoming fellows.<sup>19–21</sup> The phased

response to the crisis intensity at the departmental level will be greatly enhanced with an integrated response from the fellowship leadership.<sup>21–23</sup>

### Staying in Touch With the Program Faculty and Fellows

The program leadership should endeavor to maintain an open and approachable leadership style with the faculty and fellows. The interpretation and implementation of the information and policies from the ACGME, institutional graduate medical office, and the department leadership can be led and facilitated at the fellowship level by the program director.<sup>13,15,19</sup> A regular series of townhall-style meetings will allow the fellows to be heard and express their concerns and ideas for addressing the effect of the coronavirus crisis, including the clinical, educational, and emotional considerations.<sup>2–4,24</sup> Of note, fellows should be reassured that the clinical minimums set by the ACGME are a means to evaluate programs themselves, not individual fellows. Thus, the decision as to whether an individual fellow will graduate from a training program is up to the program director and larger clinical competency committee, irrespective of whether all minimum case numbers have been met.<sup>10,13,15</sup> The ACGME also has stated that the COVID-19 crisis and its effects on fellowship case logs will be taken into account when program reviews eventually restart ([www.acgme.org/covid-19](http://www.acgme.org/covid-19)).

Other aspects that program directors must take into consideration are the psychological and emotional consequences of quarantine.<sup>24,25</sup> The psychological effects of quarantine are significant and may affect fellows who are quarantined because of exposure to or infection with COVID-19 or who are well but live in an area of community lockdown with social distancing to minimize the risks of viral transmission.<sup>24,25</sup> These effects include confusion, anger, depression, burn-out, and posttraumatic stress disorder.<sup>24</sup> Given the significant effects of quarantine on psychological well-being, program directors should be aware of these issues and be constantly vigilant for their signs in the fellowship class.

Additional stressors that fellows or faculty may be facing include known psychiatric conditions such as anxiety and depression, which are commonly exacerbated during times of crisis. Additional factors that may aggravate stress include marital status, number of children, and perceived level of exposure, although the evidence is not consistent about these issues.<sup>24–26</sup> Clinical investigation about factors that may negatively affect psychological well-being during periods of quarantine has revealed several triggers, including the duration of quarantine, anxiety levels about infection, levels of frustration and boredom, inadequate supplies and personal protective equipment, and disordered communication.<sup>24–27</sup> After quarantine has ended, ongoing stressors that may slow psychological recovery include financial losses and the effects of social stigma.<sup>24</sup>

Because the effects of quarantine may occur through all phases of the COVID-19 response, program directors should consider processes to recognize and manage these issues in their fellows. Interventions that may minimize the effects of

quarantine and social distancing include a focused approach to the fellows with regular, open communication; frequent information sharing; adequate supplies and personal protective equipment; and an emphasis on collective responsibility and teamwork.<sup>24–27</sup> The fellowship team can manage these challenges with due cognizance of these factors in concert with departmental, institutional, and national guidance.

## Conclusions

The coronavirus crisis has challenged fellowship training in adult cardiothoracic anesthesiology. The magnitude of this challenge is proportional to the intensity of the COVID-19 crisis. The program leadership should coordinate its strategies in concert with input from the institution, department, faculty, and fellows. The successful navigation of this crisis should focus on patient care and the physical and psychological safety of the fellows.

## Conflict of Interest

None.

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