

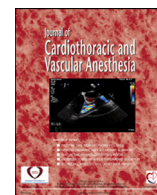


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## Editorial

## The Fellowship Experience in Adult Cardiothoracic Anesthesiology—Strategies for Applicants and Fellows to Navigate the Coronavirus Crisis

THE PANDEMIC FROM CORONAVIRUS DISEASE 2019 (COVID-19) is now a global crisis in healthcare and graduate medical education, including the fellowship landscape in adult cardiothoracic anesthesiology for applicants, fellows, faculty, and program leadership.<sup>1-4</sup> The classification of the pandemic intensity at a given institution by the Accreditation Council for Graduate Medical Education (ACGME) is a helpful guide for all of these stakeholders to plan and navigate the crisis successfully in the academic year ahead.<sup>3,4</sup>

The purpose of this freestanding editorial is to highlight the challenges facing adult cardiothoracic anesthesiology applicants and fellows within the altered educational landscape that has been created by COVID-19, and suggest methods and strategies to cope successfully with these challenges.<sup>3,4</sup> The references provide further detail for program stakeholders to manage the educational demands of the pandemic in the year (s) ahead.

### Understanding the Phased Response to the COVID-19 Pandemic

The ACGME has divided the response to the COVID-19 pandemic at a given fellowship program into 3 stages.<sup>5</sup> Stage 1 occurs when the health system's pandemic response does not overwhelm the day-to-day activities of the fellowship program. The program leadership is able to continue usual protocols with only minor disruptions in fellowship operations, including clinical care, educational and committee activities, and the match process to interview and select future fellows.<sup>6-12</sup>

The second stage of the pandemic response, as defined by the ACGME, results in mild- to- moderate disruption of fellowship activities. The program leadership has to make significant adjustments in fellowship operations as part of the contingency planning to accommodate the demands of the pandemic at this moderate intensity level.<sup>3,4</sup> During stage 2, the fellowship leadership team may suspend parts of the educational program and adjust its strategy for the fellowship

application process ([www.acgme.org/covid-19](http://www.acgme.org/covid-19)).<sup>3-5</sup> During stage 3, the pandemic response overwhelms the contingency planning and reserves of the fellowship program, with moderate- to- severe disruption of normal fellowship activities.<sup>13,14</sup> In this stage, the program leadership have suspended the typical ACGME-recommended activities to focus on patient care while maintaining a focus on the physical and psychological safety of the fellows.<sup>13-15</sup>

### Listening in Real Time to the COVID-19 Communications From Regulatory Boards

During the phases of the pandemic, the regulatory environment of the fellowship may be very dynamic as the ACGME and other regulatory agencies adjust the level of oversight and requirements as the clinical situation demands. It is particularly important for the fellows and the program leadership to follow, understand, and discuss these changes in broad oversight so that they can adapt accordingly in a collective fashion.<sup>3,4</sup>

The ACGME recently has released a joint statement with the American Board of Medical Specialties (ABMS) about their shared vision for physician training during the COVID-19 epidemic.<sup>16</sup> The first principle in the joint ACGME/ABMS statement is that both groups are committed to developing a healthy and resilient national physician workforce. The second principle underlines their joint commitment to the public to enhance the quality of this workforce through appropriate standards for physician certification and appropriate accreditation of training programs, including adult cardiothoracic anesthesiology.<sup>16</sup> The third principle in this joint statement is that during the stressful period of the pandemic crisis, assessment by the program clinical competency committee and the program director guides the decision-making as to whether a trainee is ready for independent practice and assessment of board eligibility. This is especially important when time- and volume-based standards for cases and procedures are adjusted due to the extended nature of the coronavirus crisis.<sup>6-10</sup> The

fourth guiding principle is that these assessments should be thorough and multimodal, including direct observation, simulation, quality improvement, case logs, procedural logs, and multisource feedback.<sup>16</sup> The fifth and final principle is that the assessments by the program director and clinical competency committee are a core responsibility for the sake of patients, fellow trainees, and the public.<sup>16</sup> This set of principles from the ACGME and the ABMS provides guidance for both the fellows and program leadership about the process for determining trainee readiness for graduation.

The mission of the National Board of Echocardiography (NBE) is to improve the quality of cardiovascular care through the development and delivery of high-quality examinations for recognition of advanced expertise in echocardiography.<sup>17</sup> The NBE administers the examination of special competence in advanced perioperative transesophageal echocardiography that has become a benchmark for recognized excellence in echocardiography for fellows in adult cardiothoracic anesthesiology.<sup>7,8</sup> The typical requirements to be eligible for this board-style examination are fully explained in the handbook but do include a total of 300 echocardiographic examinations, of which at least 150 must be personally performed by the applicant under the supervision of a board-certified perioperative echocardiographer.<sup>16</sup> In response to the COVID-19 pandemic, the NBE has announced a postponement of the administration date for this examination until September 2020 ([www.echoboards.org](http://www.echoboards.org), last accessed April 17<sup>th</sup> 2020). It is likely that the NBE also will modify the volume-based procedural requirements for this examination, given the protracted nature of the pandemic and the consequent attrition in perioperative echocardiography due to cancellation of elective cardiac surgical cases as part of the surge planning for COVID-19.<sup>13-16,18,19</sup>

### COVID -19 and Adapting the Fellowship Application Process

The application process for fellowship training in adult cardiothoracic anesthesiology is a competitive process that requires preparation and a thoughtful strategy.<sup>12,13,20</sup> The application is submitted online through the San Francisco Match, and has a relatively condensed timeline ([www.sfmatch.org](http://www.sfmatch.org)). The current deadlines have not been extended due to COVID-19, although individual fellowship programs may adjust their timeline for review of applications and interview scheduling, depending on the pandemic intensity.

Due to the restrictions on social gathering and travel during the coronavirus crisis, many fellowship programs have adapted in an agile fashion by migrating their interview process online with readily available video conferencing technology platforms, such as BlueJeans, Zoom, Cisco Webex, and Skype.<sup>21,22</sup> It is worthwhile for applicants to follow these developments carefully and to be familiar with the video technology used for their given fellowship interviews.<sup>21,22</sup> The fellowship candidates may have concerns with the virtual interview process, such as decreased time for personal interactions with the program team, lack of a physical tour of the

institution, and difficulties with displaying interpersonal qualities over streaming video.<sup>22,23</sup>

The move to online interviews also presents the fellowship program itself with challenges such as unfamiliar technology, limited field testing, and risks of miscommunication.<sup>21,22</sup> The success of this implementation could reflect the adaptability and resiliency within the fellowship and so can aid the applicants in their assessment of a given program. The program faculty also may have concerns such as limited familiarity with the selected technology platform, variability in comfort level with the techniques of virtual interviewing, and the lack of an in-person experience.<sup>22,23</sup>

Fellowship applicants should consider strategies to prepare thoroughly for the virtual interview experience.<sup>22,23</sup> It is recommended to test the technological platform selected for the virtual interview to avoid any failures that can interfere with a favorable candidate impression. The interviewee should troubleshoot the selected computer, audiovisual equipment, and Internet connection to optimize the integration of the hardware and software so that the video-based interview proceeds smoothly.<sup>22,23</sup> This preparation process for the virtual interview also should include thoughtful optimization of the physical environment to minimize distractions during the interview experience and to present a relatively neutral visual background for the applicant.<sup>24,25</sup>

Once these adjustments to the technology and environment have been addressed, a mock virtual interview with a mentor can be very helpful. This dry run with mentor input can allow the fellowship applicant to address possibly problematic verbal and nonverbal behaviors, including attire, body language, and speech.<sup>22-25</sup> This simulation experience, along with an optimized environment and a smoothed-out technology interface, will help the fellowship applicant to navigate the videoconferencing experience and match into an adult cardiothoracic fellowship successfully.

### COVID-19 and Managing Graduation Goals

Because the fellowship in adult cardiothoracic anesthesiology is typically a 1-year program, the disruptive effects of the COVID-19 pandemic are particularly important in how they affect graduation for most of the current fellows (June 30, 2020).<sup>10-12,26,27</sup> The fellowship educational environment may be disrupted to a significant degree, depending on the intensity of the pandemic for a given program.<sup>3-4,6</sup> A resilient program may be able to switch to virtual learning and flip the classroom.<sup>26-28</sup> A virtual learning platform such as Microsoft Teams (Microsoft, Seattle, WA) may facilitate this agile adaptation by facilitating seamless integration, collaboration, education, and communication throughout the fellowship milieu to keep the fellows on track for graduation.<sup>27,28</sup> This integrative platform may allow easy sharing and collaborative editing for documents in multiple formats. It also can facilitate conference streaming and audience polling in real time to guide content development and delivery.<sup>26-28</sup> Furthermore, it can be configured to send program announcements and allow virtual meetings.<sup>27,28</sup> This educational adaptation will have to be

balanced carefully so that the transition to this kind of virtual platform is smooth and synchronized to the workload of the fellows in the dynamic clinical learning environment of the COVID-19 pandemic.<sup>3,4</sup>

According to the latest guidance from the ACGME and ABMS, the graduation decisions for a fellowship class during COVID-19 will be made by the program leadership in consultation with the recommendations from the clinical competency committee.<sup>10,16</sup> Although educational adaptation is important, the program leadership should monitor and assess fellows in the potentially challenging clinical learning environment in real time so that the fellows are prepared for graduation according to their clinical trajectories.<sup>10</sup> If a given fellow requires support or remediation, this should be recognized early and delivered in a structured and transparent fashion, with input from the institutional graduate medical office as needed.<sup>3,4,6,10</sup>

The echocardiography goals for fellowship graduation also should be assessed meticulously through the processes of the clinical competency committee and adapted to the latest concessions from the NBE, as outlined earlier.<sup>9,10,18</sup> The program leadership should consider strategies, in conjunction with the fellows, to optimize the conduct and review of echocardiography examinations through the COVID-19 pandemic so that each fellow is prepared and qualified for the NBE examination. The plan for each fellow should be individualized based on the fellow's case log, ability, and clinical trajectory with input from the core faculty and mentorship network.<sup>3,4,6,10</sup>

### COVID-19 and Maintenance of Psychological and Physical Well-Being

A multimodal approach to the fellows can maximize their psychological and physical well-being during the current crisis.<sup>3,4</sup> A successful strategy might include transparent communication, empathetic listening, a problem-solving philosophy, and teamwork throughout the duration of the coronavirus crisis.<sup>29-31</sup> Navigation through the crisis should be dynamic and follow carefully the psychological and physical stress experienced by the fellows throughout the phases of the crisis, as defined by the ACGME.<sup>3,4</sup>

The fellows can participate as stakeholders during the crisis to assist in defining and solving the challenges in consultation with the core faculty and program leadership. This ongoing conversation will harmonize the fellowship activities with the overall response at the departmental and institutional levels through the conventional, contingency, and crisis phases of the COVID-19 pandemic.<sup>3,4,6</sup> In the setting of changing hospital-wide needs and redeployment of hospital personnel, there is certainly a need to consider the potential service of fellows outside of their typical ACGME role. Each hospital will have developed their own general policy with a staged approach to redeployment of services. The program leadership should engage in the decision-making process and communicate clearly with the fellows regarding their potential new roles and the expected duration of redeployment in the setting of

adequate supervision, training, and respect of duty hours. Regarding deployment duties, consideration should be given to each fellow's individual background, for example, whether they completed an internship or residency at their current institution or have additional advanced training in arenas such as critical care. Their redeployment should serve, as much as possible, in accordance with their ACGME-described fellowship roles but be viewed, overall, as an opportunity to emerge as leaders among the residents in modeling flexibility and professionalism in clinical care.

The psychological effects of the COVID-19 pandemic may include anxiety, sleep disorders, mood disturbances, substance abuse, burnout, and posttraumatic stress disorder.<sup>31-36</sup> These psychological presentations may affect not only the fellow at work but also the family environment.<sup>37-39</sup> The stressors that may aggravate these psychological features can occur before, during, and after the pandemic and so can be understood in 3 phases: before the crisis, during the crisis, and after the crisis.<sup>3,4</sup> It is very helpful for the faculty and fellows to self-monitor these stressors and to discuss their experiences collectively as part of the fellowship process and experience.<sup>3,4</sup>

The fellows may benefit from wellness efforts available through their institution, including discussion groups; news sharing; and programs to cultivate mindfulness, relaxation, and cognitive skill-building.<sup>40,41</sup> The ACGME also has developed a wellness portfolio on its website, including workshops, a mobile application, and podcasts. These tools facilitate open discussions about wellness and encourage an understanding of problematic mindsets, metacognition, mindful awareness, cognitive distortions, and cognitive restructuring.<sup>42</sup> The behavioral strategies can foster a culture of cognitive wellness and resilience.<sup>32</sup> The goals are to conquer negative mindsets and develop solutions to encourage psychological health.<sup>42</sup>

Apart from these resources, there are further web-based and mobile applications to manage the negative psychological effects of the current crisis.<sup>41</sup> These applications recently have been grouped as follows: meditation (Headspace, guided meditation audios), breathing routines (Breath2Relax), web-based cognitive behavioral therapy (MoodGym, Stress Gym), and suicide prevention applications (Stay Alive, Virtual Hope Box).<sup>41</sup> These techniques can encourage psychological well-being through and beyond the coronavirus crisis when vulnerability is still a significant issue.<sup>41,42</sup>

### Conclusion

The COVID-19 pandemic has disrupted the typical experience in adult cardiothoracic anesthesiology for current and aspiring fellows. Strategies that focus on the phases of the fellowship in relation to the pandemic intensity, psychological and physical safety, and the national response can steer learners successfully through this crisis.

### Conflict of Interest

None.



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