

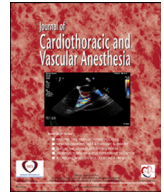


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Editorial

## Mid-Atlantic Cardiac Anesthesiology—Leveraging Virtual Technology to Advance Continuing Medical Education



THE COVID-19 PANDEMIC has disrupted the landscape of graduate medical education radically and permanently.<sup>1</sup> All aspects of residency and fellowship training have been affected—clinical volume, patient acuity, research, physician wellness, and medical education.<sup>2–6</sup> Curricula have been forcibly altered, in order to adapt to the clinical surges of the disease, while maintaining the integrity of trainee education. This stressful and challenging situation has forced educators to innovate and rethink traditional educational paradigms. This article discusses how, in the midst of this devastating pandemic, graduate medical education has evolved and flourished, specifically using technology to overcome traditional logistical barriers allowing for inter-institutional collaboration.<sup>7</sup> The authors present several programs that were created, developed, and adapted in response to the pandemic with a focus on inter-institutional programs. Lastly, the authors discuss how the pandemic inspired and facilitated the creation of a new, multi-institutional conference, the Mid-Atlantic Cardiac Anesthesiology Conference.

In response to the sudden disruption to clinical volume, the pain fellowship at the University of Washington established the Inter-institutional Pain Learning Exchange (PLEX) in Spring 2020.<sup>8</sup> This multi-institutional program consisted of daily didactic sessions in the form of faculty lectures or fellow-led difficult case or journal club presentations via the online video platform Zoom. The goals of the PLEX program were to continue fellow didactic learning despite reduced in-person sessions, while simultaneously providing a space for networking and sharing of curricular content and practice styles. The program was established quickly to minimize the loss of educational opportunities for the fellows since there was an abrupt and significant decline in office visits and procedures. The program's success was measured by frequent participant satisfaction surveys. Over 90% of participants found the various sessions helpful, agreed that the program was valuable to their growth as a pain specialist, and indicated that continuation of the program would be beneficial beyond pandemic times.<sup>8</sup> Despite an uncertain clinical environment, this

program was created quickly in a time of stress and change and has become a permanent component of the fellows' education owing to the adaptability and flexibility of its structure and ability to harness the full capabilities of virtual conferencing software.

Similarly, oral maxillofacial surgery educators from around the United States developed the “Collaborative OMS Virtual Interinstitutional Didactic” (COVID) Program, a combined didactic program intended to enrich current resident education and potentially fill any educational voids that an individual institution may have within its traditional curriculum.<sup>9</sup> Content was delivered online over the course of twenty weeks and consisted of 3 weekly lessons followed by an expert discussion and subsequent question and answer session with attendees. This collaboration highlights the benefits of the inter-institutional format, which includes shared responsibility of curriculum creation, widespread opportunities for networking, presentation experience, and the ability to engage in human and professional connection during the pandemic. Continuous program improvement was maintained through weekly meetings among founding representatives and intermittent feedback collected from both faculty and resident participants.

The University of California, San Francisco, created the Urology Collaborative Online Video Didactics series that featured daily lectures from renown faculty around the world.<sup>10</sup> Trainees could view and listen to the lectures on their own time. The initiative became an important resource for urology education with >50 institutions from around the world as part of the collaborative, providing a library of lectures for asynchronous learning. The National Surgery Resident Lecture Series was created in March 2020, and featured lectures from expert faculty from around the country. Over 50 general surgery programs participated, and the program lasted for 8 weeks until surgical case volume had resumed in May 2020.<sup>11</sup> In April 2020, the Virtual Global Spine Conference was created by a multi-institutional, multidisciplinary team of neurosurgeons and neuroradiologists to provide a virtual case-based conference series to deliver spine education to attendings and

trainees. Over 1,000 surgeons, trainees, and other specialists were recruited from around the world and an early survey showed that 92% viewed the content to be highly valuable to their practice and 94% would continue to participate post-COVID-19.<sup>12</sup> Lastly, within the authors' own specialty, the instructors behind the Anesthesia Tool Box formed a task force which developed a synchronous online video conference of daily anesthesiology lessons. The Anesthesia Tool Box is an online resource available to anesthesia residents across the country. Instead of creating wholly new content and a new conference, they were able to catalogue and organize existing content and pair it with a moderator and content expert in live educational sessions. This initiative demonstrated the clear value in pooling educational resources and recruiting content experts across multiple institutions. Participation was widespread and over half of the conference participants returned at some point for further instruction, illustrating its value.<sup>13</sup> The aforementioned programs are just a few examples of how the combination of challenging circumstances and social distancing requirements forced educators to become creative and leverage technology to break down departmental, institutional, and even national walls to generate multi-institutional educational programs that were uncommon prior to the pandemic outside of society meetings.

In 2021, a new, inter-institutional educational initiative called the Mid-Atlantic Cardiac Anesthesiology Conference was founded by cardiothoracic anesthesiologists from two institutions in Philadelphia. In addition to the founding institutions, the conference consisted of four other institutions from the Mid-Atlantic geographic region. As of 2022, owing to interest from other institutions, the conference has grown to seven members, with the addition of another Mid-Atlantic Institution.

Prospective institutions were approached over e-mail and every department that was invited, accepted the invitation to participate. After the member institutions were finalized, one to two core representatives from each institution were identified as liaisons to the conference directors. The idea for an in-person conference had been discussed amongst some of the institutions in the past; however, it was the embrace of video-conferencing in graduate medical education that allowed the idea to bear fruit and flourish.

The development and creation of the conference was done systematically and stepwise starting with the development of clear goals and objectives. The objectives of the conference were multifaceted, geared toward not only education for Adult Cardiothoracic Anesthesiology (ACTA) fellows, but also cardiothoracic anesthesia faculty (Table 1). After the objectives were agreed upon, the logistics of the conference were established. Initially, the founders wanted to create a quarterly conference; however, to allow time for new ACTA fellows to orient into their new roles, successfully prepare for their ABA Advanced exam or critical care board exam, the conference is held thrice per year—fall, winter, and spring. The directors polled representatives from each institution and after discussion, it was determined that Saturday mornings from 9 AM to

Table 1  
MACA Objectives and Goals

A professional and an academic opportunity for Cardiothoracic Anesthesiology faculty and fellows
Venue for discussion and presentation of new and/or important topics in perioperative cardiovascular medicine and transesophageal echocardiography
Venue to discuss trends and variability of institutional practice seeking to improve clinical practice, patient outcomes and efficiency
Opportunity to develop professional relationships, collaboration and enhance academic careers

Abbreviation: MACA, Mid-Atlantic Cardiac Anesthesiology Conference.

11 AM likely would garner the most attendance. The conference is 2 hours in duration, and consists of 3 presentations, from either an ACTA fellow or faculty member. After a ~20-minute presentation, at least 25 minutes of discussion are allowed. Fellows were asked to have a faculty mentor for their presentations who would act as a moderator during the discussion. To prevent interruption, participants were asked to submit questions into the chat. Examples of topics have included—Cardiopulmonary Bypass and Andexanet Alpha; A Case of a Gerbode Defect; BioVentric; Fascial Plane Blocks in Minimally Invasive Cardiac Surgery; Alternative Dual Perfusion Strategy in Deep Hypothermic Circulatory Arrest; A Case of Delayed-Presentation of LV Ischemia Complicated by Pseudoaneurysm with Rupture; and others.

As of January 2022, four meetings have taken place with 45 to 60 attendees per meeting. The authors continue to receive positive feedback from participants, generate fantastic discussion, and have even helped change practice in one institution, which started to incorporate regional anesthesia into minimally invasive procedures. This conference is not specifically a didactic lecture series geared toward Accreditation Council for Graduate Medical Education topics. It provides a unique, society meeting—like venue for trainees and faculty to develop high-level presentations on advanced topics. By leveraging virtual conferencing technology, fellows not only learn as presenters, but also by engaging with faculty and content experts as participants. This conference provides a unique venue for discussion, collaboration, and debate by pooling faculty and content experts from multiple institutions. In the future, the conference likely will continue to grow and include more member institutions. The authors hope participants utilize the conference as a platform for collaboration for research and other scholarly activities, invited lectures or grand rounds, inter-institutional mentorship, and junior faculty career development.

The COVID-19 pandemic has challenged the feasibility of traditional graduate medical education and has necessitated the creation and implementation of novel modalities of delivering didactic content to physician learners. The natural solution has been the utilization of virtual platforms, which have not only allowed for safe and rapid dissemination of information, but have even more impressively cultivated means of interinstitutional

educational collaborations that may not have otherwise come to fruition. A major shift has been from in-person didactic sessions to virtual learning.<sup>14</sup> Virtual meeting software has allowed for conferences and seminars at all levels, from intradepartmental to national society meetings and international conferences. Software, such as Microsoft Teams and Zoom, are now in the vernacular of most medical trainees. Online learning platforms have enabled faculty at other clinical sites to contribute to graduate medical education, whether that be within the same institution or from another one.<sup>15,16</sup> Furthermore, traditional barriers to in-person attendance, such as off-site rotations, operating room clinical duties, post-call or duty hour restrictions that may prevent in-person attendance are overcome with virtual meetings that can be recorded and catalogued for asynchronous learning. Although this new paradigm is used readily at the departmental level, the authors presented several unique programs that maximized the benefits of virtual conferencing platforms and created multi-institutional educational initiatives. Combining educational resources and faculty experts from multiple institutions maximizes the educational experience of our trainees and offers academic opportunities for junior faculty. The authors, who founded the new Mid-Atlantic Cardiac Anesthesia Conference, strongly believe it can be replicated readily in other geographic regions to further ACTA fellow education, promote faculty development and enrichment, allow for cross-institutional networking and collaboration, and most importantly, to improve clinical practice by sharing ideas and institutional practices.

### Declaration of Competing Interest

None.

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