The Innovative Anesthesiology Curriculum

A Challenge and Hope for the Future

Editor's Note: This is the second in a series of four Editorial Views describing the challenges and new approaches in education in our specialty.

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What exactly is a curriculum? The traditional definition of an educational curriculum is a particular course of study. The word curriculum originates from the Latin word currere, to run, as in a course or racetrack. Thought of this way, an anesthesiology residency curriculum could be envisioned as a series of actions, experiences, and programs through which newly graduated medical students become qualified anesthesiologists. This vision of curriculum acknowledges that residency graduates are not fully formed and incorporates the concept of life-long learning. Innovation means doing things in a new way to bring about changes in a product or organization. Therefore, an innovative curriculum should be forward-facing, nimble, and adept to change, particularly in a medical environment that is undergoing rapid transformation. It should prepare, direct, and push the individual trainee toward a minimal goal of excellent clinical practice as well as preparation for academic practice for those residents who plan such a career. The course can be set by the program, but the trainee might accomplish his or her goal in a variety of ways.

Our specialty has struggled with curriculum changes. We are governed by the directives of both the American Board of Anesthesiology and the Accreditation Council for Graduate Medical Education. Anesthesiology residency graduates desire eligibility for certification by the American Board of Anesthesiology, and this is contingent on the residency program maintaining its accreditation by the Accreditation Council for Graduate Medical Education. Although the premise of established requirements for programs and individuals has merit, these can limit a program director’s options and flexibility, and in many cases, these requirements achieve only minimum expectations.

In 2004, partly in response to concerns about the quality of physicianship in graduates of United States anesthesiology programs, the Anesthesiology Residency Review Committee of the Accreditation Council for Graduate Medical Education proposed significant changes to the program requirements for the specialty. These included incorporation of the Clinical Base Year into the core program and increased duration of rotations beyond the operating room, the specialty’s traditional boundary, particularly in critical care medicine and pain medicine. This proposal was debated heatedly in a variety of venues and eventually the program requirements issued by the Anesthesiology Residency Review Committee were modified considerably. A large fraction of this decision resulted from the financial and practical difficulties in implementing the requirements, such as the addition of the Clinical Base Year as an unfunded mandate, and concerns about clinical coverage.

In 2005, a report from the American Society of Anesthesiologists’ Task Force on Future Paradigms of Anesthesia Practice was publicized. Among the issues about workforce needs and practice structure was concern about the relative paucity of anesthesiologist–intensivists and the need for a more nimble and responsive training program organization. Soon after, a “wake-up call” was issued over the status of academic anesthesiology, particularly the number of physician–scientists and the hurdles required to achieve success.

Other realities in the early 21st century include an increasing geriatric population, an expansion of surgical services to a sicker patient population, an increased utilization of outpatient settings, and a demand for patient-focused, cost-effective care with minimal risk. Our hospital wards are more similar to historical intensive care units, with only catalysmically ill patients cared for in the intensive care setting. In addition, it is likely that there will be markedly increased subspecialization in all areas of medicine.

How Should We Change Our Residency Programs to Meet These Challenges?

The first issue relates to adapting core residency training to the clinical needs of the future. To enhance the development of a true perioperative physician, each resident would choose either a critical care medicine or pain medicine track for the final year of core residency training. A commitment to at least 6 months in either critical care or pain medicine would provide a stronger perioperative medicine experience than what is available in our...
current curriculum. Second, our specialty should emulate the evolution of surgery and medicine subspecialty training\* with “fast-tracking” a finite portion of general training for all anesthesiology residents, followed by subspecialty training.

If half of the Post Graduate Year (PGY)-4 year is focused on perioperative medicine, the remaining rotations in the PGY-4 year could be spent in one or more clinical subspecialty rotations to complete the basic core residency program. Traditional subspecialty fellowships could follow as PGY-5 year training, as is now the usual situation. Alternatively, residents who have achieved their clinical training milestones might be able to “fast-track” into subspecialty clinical fellowships in the latter part of the PGY-4, effectively starting fellowship training at that point. The duration of the fellowship could vary according to the specific career goals of the trainee and the capabilities of the training program. Incorporating these suggestions would mean that each resident would graduate with a perioperative focus in either critical care medicine or pain medicine and could complete a residency and clinical subspecialty fellowship in an abbreviated timeline. This would require an achievement or outcome-based evaluation of the resident to ensure that all competencies have been met. If the resident chose to pursue a career in critical care medicine or pain medicine, as many as 24 months of a 5-yr-training period could be focused on the subspecialty. The duration of other clinical subspecialty fellowships could range from 12 to 18 months. This added time could be used to develop a serious research interest or for more intensive clinical training. The resulting output of such a program would provide a potential pipeline for anesthesiologist–intensivists, as well as other clinical subspecialists. It would acknowledge and foster the increasing number of anesthesiologists who practice pain medicine exclusively, and could allow longer fellowship training for that specialty. It would provide trainees and program directors with flexibility to customize training that meets the needs of future generalist and specialist anesthesiologists. In addition, a commitment to emphasizing the nonoperating room experience would broaden the impact of anesthesiologists and better legitimize our specialty with hospital and government administrators who may see us only as expensive technicians.

The second important issue an innovative curriculum should address is the concern about the future of academic anesthesiology. Several academic departments in the country have started to work on this issue. Many graduates of medical schools come into anesthesiology residency with backgrounds in research and a professed interest in continuing research during and beyond residency training. Yet, only a fraction of anesthesiology residents pursue academic careers. The reasons for this are multifactorial,\* including high levels of debt, the paucity of mentors, and the difficult pathway of achieving success in research and other academic endeavors compared with fiscal success in the private practice setting. Several departments have developed programs designed to motivate and preserve the academic interests of their residents. Columbia University (New York, New York), Oregon Health Sciences University (Portland, Oregon), The University of Colorado (Denver, Colorado), Washington University (St. Louis, Missouri), Duke University (Durham, North Carolina), and Vanderbilt University (Nashville, Tennessee), among others, have created programs that provide a commitment from both the program and the resident toward subspecialty training, a commitment to research, or a combination.

Although these programs vary in content and structure, they share some important attributes. First, they involve a commitment from the resident, either immediately after the match or within the first year of training, to a program that will integrate their academic interests with their core clinical residency training. This captures the enthusiasm of the young trainee early and requires a serious commitment on the part of the department to sustain it. Importantly, time is set aside for genuine research productivity. In general, the programs include formalized mentorship by successful academic anesthesiologists and education about the process of doing research and developing an academic career. Most programs acknowledge the importance of developing a sense of community and pride in their scholars’ pursuit of the academic mission, with a named group, focused conferences, the opportunity for social activities, and oversight into their academic and clinical development. In addition, all these programs include an additional stipend during the training years to soften the delayed financial gratification and disparity between academic career and private practice, particularly at a time when residents are typically cash-strapped.

Whether these programs will yield their desired outcomes (increased recruitment of academic anesthesiologists) remain to be seen, although results from the earliest graduates of these programs are encouraging.\$ It is easy to envision the adaptation of this type of program to other types of career development, such as education, and health care organization leadership.

In summary, the challenge our specialty faces demands reconsideration of what the ideal training curriculum should be. A single, standardized curriculum for all trainees may not meet these needs. We should aspire for excellence and innovation in our plans for anesthesiology training programs to help secure the future of our specialty, both within and outside the halls of academia.

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