VIEWPOINT

Preserving and Enhancing Resident Autonomy—Strategies for Surgical Educators

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General surgery resident autonomy is declining. Data from the Veterans Affairs Quality Improvement Project demonstrate this in stark detail: Anjaria and colleagues[1] analyzed 15 years' worth of operative records and found that the proportion of surgical procedures performed by general surgery residents, without an attending surgeon scrubbed in during the case, decreased from 12.5% in 2004 to 3.7% in 2019. Yet, there is no evidence that providing resident autonomy worsens outcomes. Autonomy should be one of the cornerstone goals of surgical educators because this is the most effective way to facilitate the development of trainees into competent, independent surgeons. Residents who are not allowed progressive autonomous decision-making and intraoperative responsibility cannot be expected to seamlessly transition into independent practice after graduation.

Some of this battle may already have been lost: lack of confidence in the operative skills of graduated residents by fellowship program directors[2] and the expressed reservations of residents about their own capabilities raise doubts about our current effectiveness as clinician educators. The creation of the Mastery in General Surgery fellowship by the American College of Surgeons speaks to the fact that residency may not succeed in producing competent general surgeons by the time of graduation. The relationship between operative supervision, resident independence, and resident competency is complex. Likewise, absence of an attending surgeon is not synonymous with resident autonomy, nor does autonomy equate with capability. However, it is paramount that we undertake concerted efforts to create and sustain opportunities for resident autonomy so that trainees can graduate with confidence in their skills and judgment.

Though many are quick to blame work-hour restrictions enacted in the early 2000s, in truth it is a combination of multiple factors that have all contributed to undermining trainee independence. Some of these factors include changing expectations of clinical productivity, perceptions of resident autonomy by the public and media, ideas surrounding liability and risk by administration, and rules about billing enacted by the Centers for Medicare & Medicaid Services. To combat this trend, we propose the following:

1. For junior residents, an office-based procedure clinic can provide an outlet for gaining clinical independence.
   Wojcik and colleagues[3] describe a resident-run minor surgery clinic with indirect attending surgeon oversight. Via a deliberate practice model, junior residents received frequent feedback and had multiple opportunities to practice deliberate clinical and technical skills while allowing faculty to step back from immediate oversight as competence was gained. These authors reported no significant difference in patient outcomes when compared with patients who were seen only by attending staff.
2. For senior residents, a resident-run service may offer a near real-world scenario for eventual practice.
   Seegmiller and co-authors[4] describe a senior-level rotation wherein residents are given office hours, operative block time, and call opportunities and assume responsibility for the preoperative, intraoperative, and postoperative management of patients. These authors posited that this experience helps their residents step into the attending surgeon role while still preserving clinical backup and support. This work also supports the body of literature that reports safe outcomes for patients when resident trainees are the primary facilitators of surgical care. Using data from the Quality in Training Initiative and National Surgical Quality Improvement Project, Seegmiller and coauthors[4] observed no difference in outcomes when residents were on traditional faculty-led services compared with those on a resident-run service.
3. For surgical educators, a critical appraisal of one's own practices surrounding resident autonomy may reveal inconsistencies and even biases.
   We urge all surgeons involved in training residents to critically evaluate their own practices regarding autonomy. They should recognize that effective resident autonomy does not mean attending surgeon absence. Autonomy can be provided while the attending surgeon is in the operating room, even scrubbed. They should also be aware that the decision to grant autonomy may be subject to implicit bias. Meyerson and colleagues[5] reviewed the feedback and autonomy data from 8900 operative cases involving 412 residents and found that, compared with men, women received less operative autonomy, even after controlling for level of training, procedural difficulty, patient-related case complexity, faculty sex, and type of program. Critical self-reflection can help mitigate the effect of implicit bias and foster open conversations about resident autonomy practices at the individual and institutional level.
4. For all supervising faculty, embrace the new American Board of Surgery (ABS) plan for Entrustable Professional Activities (EPAs).
   The EPAs reflect concerted, ongoing work by the ABS to move toward competency-based educa-

tion to improve residents' clinical training. By standardizing feedback in specific clinical domains, EPAs provide a framework so that clinician educators have robust, data-informed tools to make decisions surrounding readiness for practice. As we move away from subjective assessments of resident readiness, the use of EPA data may help faculty increase resident autonomy based on granular analysis of past performance. By incorporating the Zwisch scale[6] into each assessment, the ABS has designed a program that centers the goal of training independent surgeons at its core.

5. For both residents and faculty, participate in ongoing professional development regarding entrustment.

   As we transition toward a competency-based educational model, continued professional development will help improve opportunities for autonomy. OpTrust, an educational package aimed at improving resident entrustment, is one such model that has been previously described.[7] Analyzing their experience with this intervention, Williams and colleagues[7] reported no difference in outcomes between historical controls and a cohort of more than 8000 patients who underwent surgery after implementation of OpTrust. These authors concluded that increasing resident entrustment does not worsen patient outcomes, and that a formal educational intervention may encourage increased resident autonomy.

6. For patients, provide continued education and transparency regarding trainee involvement in care.

   There are many misperceptions about surgical trainees among the nonmedical public. Kempenich and colleagues[8] describe an educational intervention to improve patient understanding about trainee involvement in care, in which they found that the proportion of survey respondents in favor of resident participation was high. These authors also reported that, after reading the materials, nearly two-thirds of survey respondents were in favor of fifth-year trainees independently operating without immediate faculty supervision, but these authors also encouraged faculty to obtain patient consent for the involvement of trainees in their care.

7. Last, for residents and faculty alike, we advocate for continued conversation about this important issue.

   The apprenticeship-based halstedian model of surgical training must evolve. No longer can we rely on time-based metrics, such as case numbers or duration of training, to serve as surrogates for competency. Continued investigation and innovation are necessary for our training methods to keep pace with the evolution of surgical science. Likewise, we must continue open lines of communication with trainees regarding expectations about autonomy and progressive entrustment. We have confidence that EPAs will assist in these conversations, but we must not wholly rely on this program to supplant ongoing lines of dialogue regarding decisions about autonomy.

We, as surgical educators, must protect existing opportunities for resident autonomy and seek out new experiences for trainee independence so that we can continue to train capable and resilient surgeons. To uphold our professional standards and replenish our workforce, it is of the utmost importance that we advocate for residents and provide a safe learning environment in which they may grow and develop independence so that they can become confident, mature, and capable young surgeons.

ARTICLE INFORMATION

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