

Entrustment, autonomy, and performance in the operating room

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A FEW YEARS AGO, WHILE I WAS COMPLETING MY TRAINING AS A GENERAL SURGICAL REGISTRAR (ie, resident) in the English National Health Service, I would often perform operative procedures without my supervising consultant (ie, attending) surgeon in the operating theatre (ie, operating room [OR]), and sometimes not in the hospital itself. This obviously depended upon my level of comfort and skill with the planned procedure, and previous discussion of the case with my consultant. These experiences enabled me to not only perform operative procedures from a technical perspective but also to learn how to direct (and train) my junior operative assistant(s). Furthermore, I was forced to manage other aspects of the operating room, such as equipment requirements, postoperative care plans, and when to call for the next case. Clearly, there were times when I needed to call my consultant, either for phone advice or to physically come to theater to help me out of a challenging situation. This too was a learning experience, of knowing “when to call for help,” and then how to “fix the problem.”

When I think of my current practice as an attending gastrointestinal surgeon in a large North American academic health center, I occasionally reflect back on my ability as a trainee to manage complicated anatomy, hemorrhage, and other untoward occurrences independently. It is thus a little alien to me that in North America the attending surgeon always is physically present in the OR during surgical cases, even if a competent resident is performing a straightforward case. My concern is that my mere presence in the room has an effect

on the resident’s operative independence and autonomy, either for him or her to ask for help, or for me to offer assistance. Indeed, this has been borne out by the opinion study published by Mattar et al¹ in 2013 considering resident autonomy and subsequent ability for independent practice. From this report, it seems that resident training is the place for supervised practice, with fellowship providing the mainstay of experiences for taking the reins to practice independently.

The reasoning may be that outcomes when residents operate are poorer than when attending surgeons perform the case? Perhaps this is then a just course of action, to maintain and protect patient safety. Studies derived from large databases such as Veteran’s Affairs, and the National Surgical Quality Improvement Program, however, have not reported significant differences between attending and resident performed surgery.^{2,3} It is important to consider, as the data are from North American centers, that attending surgeons were most likely in the operating room, if not also scrubbed into, the resident-performed surgeries.

A prospective observational study from the National Surgical Research Collaborative in the United Kingdom is helpful here.⁴ Studying 3,326 appendectomies performed across 95 centers, the authors found that 2,943 (88.5%) were performed by a trainee surgeon, with the consultant present in the operating theater for only 792 (or 23.9%) of cases. Consultant presence in theater, in addition to daytime surgery and greater center volume, was indicative of increased use of laparoscopy, which in turn was associated with reduced 30-day morbidity. This was further exacerbated on Sundays, when there was 43% less likelihood of laparoscopy, accompanied by the least level of consultant presence (17.6%), compared with other days of the week.

So where does this leave us with regard to trainee autonomy in the operating room? It is crucial to consider the primary stakeholders here, ie, the *resident* who wants to get trained for independent practice, the *attending surgeon* who wants to get the case done safely and in good time, in addition to

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provision of an educational experience for their trainee, and the *patient*, who requests the greatest quality of care possible. It is based upon the views of the first 2 stakeholders, that Torbeck et al⁵ have undertaken a phenomenographical approach to understand faculty-based promotion of resident autonomy in the OR. From a single academic center, postgraduate year 4 and 5 residents were asked to rate faculty members according to provision of autonomy in the OR. Through focus groups for the responding residents, and semistructured interviews for those faculty identified as either very high or very low autonomy surgeons by the same residents, a series of 5 questions were posed, focused on the behaviors, techniques, triggers, and motivational factors for faculty to support independent performance, as well as possible reasons for variations in these factors.

The behaviors and techniques elicited from this study were much as expected, such that “high autonomy” attending surgeons were setting initial expectations, allowing residents time to struggle, giving pointers, and forcing them to “think-aloud” each step of the procedure. The authors correctly state that the “low-autonomy” faculty surgeons should be provided with an educational curriculum for how to teach in the OR; indeed, this should be a prerequisite for all surgeons who train residents and could be provided toward the end of residency training, and regularly reviewed for all faculty surgeons. We also need to move away from the principle that all attending surgeons are deemed automatically to be surgeon educators; some may choose to focus solely on their own clinical practice, whereas others (such as have been defined by Torbeck et al) may be more suited to train the bulk of our residents.

The themes of trust and familiarity between faculty and resident also were prevalent, mostly when these dyads persisted for long durations. There is some evidence that resident-attending dyads in fact lead to better clinical outcomes, espousing the age-old Halstedian apprenticeship model.⁶ This is troubling to me, as we no longer live in an age of subjective familiarity and trust. In accordance with the Next Accreditation System from the Accreditation Council of Graduate Medical Education, residents are expected to fulfill milestones throughout their training.⁷ This can be achieved through competency-based progression, underpinned by the concept of entrustable professional activities, or EPAs.⁸ Faculty surgeons need to be explicitly aware of this concept, and utilize it to promote autonomy in the OR. For example, the resident may have achieved competence to remove

the gallbladder from the liver bed during laparoscopic cholecystectomy, or another resident possess the necessary knowledge, skills and attitudes to perform a circular stapled colorectal anastomosis. It is in my mind not necessary for a long rotation to evolve for the attending surgeon to allow the resident to perform these tasks; if they are “signed-off” in a formal manner to perform this step, then so be it.

The study focused on faculty-based factors to develop operative autonomy. Unfortunately, I feel that by doing so, the authors have painted a paternalistic picture of learning in the OR. Residents, as adult learners, have just as much to do with respect to gaining autonomy in the OR. Perhaps the authors could have asked faculty members to also rate the top and bottom three residents to whom they are likely to provide autonomy, and explore potential reasons for the differences? Knowing and meeting the patient beforehand, reviewing the case notes, knowing and mentally rehearsing the operative steps of the procedure in detail, reviewing videos of the procedure (and those performed by the specific surgeon if possible), actively participating not only when they are the primary surgeon, but also when they are the first assistant, and following up by seeing the patient post-operatively, are all key aspects to develop surgical autonomy. A preoperative and structured briefing between the attending and resident surgeon, and a postprocedure structured debrief with feedback and advice for the resident for the next case, will serve to further enhance resident performance and subsequent autonomy. Furthermore, this should also be an opportunity for structured feedback from the resident to the attending in terms of the educational experience.

Another point to make is that this study has focused upon resident autonomy solely in the OR. Although this is undoubtedly a *sine qua non* of surgical practice, I would advise readers to strongly associate such work with the development of autonomy in the outpatient clinic, emergency room, patient ward, and all other clinical care arenas. It was not unusual as a trainee in England to undertake regular scheduled registrar clinics, without consultant presence. This again enables patient care decisions to be made in an independent manner. Although not as acute as making operative decisions, independent surgical practice demands autonomy in all aspects of clinical care.

It is critical to also write that the learning process never stops, and too much autonomy can also be a bad thing. As an attending surgeon, I still

discuss and review complex cases with my colleagues, and occasionally request intraoperative consultations too. Surgeons need to know when to “slow down,” and when to request help from their colleagues.⁹ This is also something that can and should be taught to our trainees, in accordance with working as members of a team, in the operating room and the rest of the clinical environment.

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