

# The Resident-Run Minor Surgery Clinic: A Pilot Study to Safely Increase Operative Autonomy



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**OBJECTIVE:** General surgery training has evolved to align with changes in work hour restrictions, supervision regulations, and reimbursement practices. This has culminated in a lack of operative autonomy, leaving residents feeling inadequately prepared to perform surgery independently when beginning fellowship or practice. A resident-run minor surgery clinic increases junior resident autonomy, but its effects on patient outcomes have not been formally established. This pilot study evaluated the safety of implementing a resident-run minor surgery clinic within a university-based general surgery training program.

**DESIGN:** Single institution case-control pilot study of a resident-run minor surgery clinic from 9/2014 to 6/2015. Rotating third-year residents staffed the clinic once weekly. Residents performed operations independently in their own procedure room. A supervising attending surgeon staffed each case prior to residents performing the procedure and viewed the surgical site before wound closure. Postprocedure patient complications and admissions to the hospital because of a complication were analyzed and compared with an attending control cohort.

**SETTING:** Massachusetts General Hospital General in Boston, MA; an academic tertiary care general surgery residency program.

**PARTICIPANTS:** Ten third-year general surgery residents.

**RESULTS:** Overall, 341 patients underwent a total of 399 procedures (110 in the resident clinic vs. 289 in the attending clinic). Minor surgeries included soft tissue mass excision ( $n = 275$ ), abscess incision and drainage ( $n = 66$ ), skin lesion excision ( $n = 37$ ), skin tag removal ( $n = 15$ ), and lymph node excision ( $n = 6$ ). There was no significant

difference in the overall rate of patients developing a postprocedure complication within 30 days (3.6% resident vs. 2.8% attending;  $p = 0.65$ ); which persisted on multivariate analysis. Similar findings were observed for the rate of hospital admission resulting from a complication. Resident evaluations overwhelmingly supported the rotation, citing increased operative autonomy as the greatest strength.

**CONCLUSIONS:** Implementation of a resident-run minor surgery clinic is a safe and effective method to increase trainee operative autonomy. The rotation is well suited for mid-level residents, as it provides an opportunity for realistic self-evaluation and focused learning that may enhance their operative experience during senior level rotations. (J Surg Ed 73:e142-e149. © 2016 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

**KEY WORDS:** graduate medical education, autonomy, patient outcomes, resident clinic, deliberate practice model, minor surgery

**COMPETENCIES:** Patient Care, Medical Knowledge, Practice-Based Learning and Improvement, Systems-Based Practice

## INTRODUCTION

General surgery residency training has evolved to align with changes in work-hour restrictions, supervision regulations, reimbursement practices, and the increase in surgical subspecialization. These changes have culminated in the nationwide phenomenon of graduating residents feeling inadequately prepared to operate when beginning fellowship or independent practice.<sup>1,2</sup> In a recent survey of fellowship directors in the United States, 66% felt that incoming fellows could not perform 30 minutes of a major operation unsupervised.<sup>3</sup> This lack of confidence has led to the creation of a “Transition to Practice Program in General Surgery” by the American College of Surgeons and almost

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certainly contributes to why 75% to 80% of graduating residents feel they would require additional training.<sup>2,4</sup> Although this paradox in surgical education is multifactorial, a major contributing factor is the decrease in resident autonomy over the past 30 years.<sup>1,5-8</sup>

In an effort to better prepare residents as they transition to more complex operations, there has been a national initiative to increase the operative experience and introduction of appropriate autonomy during the junior resident years.<sup>9</sup> Examples of such initiatives include the American Board of Surgery (ABS) mandating that residents log 250 cases by the end of their second postgraduate year (PGY),<sup>10</sup> the General Surgery Milestone Project,<sup>11</sup> use of simulation technology, and the adoption of deliberate practice models.<sup>9,12,13</sup>

A resident-run minor surgery clinic, historically referred to as a “lumps and bumps clinic,” offers junior residents a unique setting for early operative autonomy.<sup>14</sup> The procedures encountered in a “lumps and bumps clinic” are relatively low-risk, require skills that residents develop with supervision during their intern year, and are considered to be core general surgery procedures and educational objectives by the ABS and Surgical Council on Resident Education.<sup>10,15,16</sup> However, a survey of the Accreditation Council for Graduate Medical Education National Resident Report Case Logs revealed that during the 2014 to 2015 academic year, the average number of subcutaneous small tumor excisions logged by residents as surgeon chief and surgeon junior was only 0.2 and 3.3, respectively.<sup>17</sup>

Our university-based general surgery training program felt implementation of such a resident-run minor surgery clinic was feasible and conducted a 10-month pilot program. This study was designed to evaluate patient outcomes by comparing resident clinic patients with an attending control group during the pilot. Our hypothesis was that there would be no significant difference in the rate of postprocedure complications between these groups.

## MATERIALS AND METHODS

### Clinic structure

The clinic was piloted from 9/2014 to 6/2015 and run by rotating PGY-3 residents during a general surgery rotation. An established single attending minor surgery clinic was restructured to allow half of the patients during 1 clinic day each week to be seen in the resident clinic. The attending clinic otherwise saw patients 2 full days per week. New referrals to the attending clinic were given the opportunity of being seen in the resident clinic when making appointments. Soft tissue mass excisions were preferentially scheduled in the resident clinic, as this procedure was felt to allow honing of more complex procedural skills. The resident was required to observe the attending perform the procedure

once before they were able to operate on patients seen in the resident-run minor surgery clinic.

For daily workflow, a medical assistant seated patients took vital signs and prepared the procedure room. The resident conducted a history and physical examination, reviewed previously obtained laboratory studies/imaging, and performed a bedside ultrasound if indicated. Their treatment plan was discussed with the attending surgeon who met the patient before any procedure was performed. In most cases, further diagnostic work-up was not required. If a procedure was indicated, it was performed during the same visit, unless the patient deferred. The patient was offered the option of declining resident involvement in performing their procedure.

The resident operated alone in their own procedure room and was responsible for all aspects of obtaining consent, field block anesthesia, performing the surgery, discussing postprocedure wound care, and reviewing concerning symptoms that should prompt a follow-up office visit. The attending surgeon was immediately available during the procedure and entered the room after being notified that the resident had reached the critical portion of the case. The critical portion of the procedures encountered in the clinic was determined by the attending surgeon to be inspection of the surgical site just before closure to ensure hemostasis and adequate excision or drainage. Residents received feedback after each procedure and a more comprehensive debriefing session at the end of each clinic day. Residents completed a standard rotation evaluation as part of the greater general surgery service.

Patients were not routinely seen in follow-up unless a complication arose. On completion of their procedure, concerning symptoms that should prompt an office or emergency department visit were discussed with the patient and provided in a standardized written form. This form contained the contact information of the attending surgeon including office number and cell phone number. To further ensure that complications were detected, the resident and attending each contacted their respective patients by telephone 7 to 10 days after the procedure to discuss pathology results and query their recovery. If any symptoms concerning for a postprocedure complication were detected, a follow-up visit was immediately scheduled. All resident patients were also evaluated by the attending surgeon during this visit.

The Centers for Medicare and Medicaid Services Manual System states that for a teaching physician to bill for a surgical procedure they must be responsible for the preoperative, operative, and postprocedure care of the beneficiary, present for the critical portion of the procedure, and immediately available throughout the remainder of the procedure.<sup>18</sup> In our clinic, this criteria was met as previously discussed and all procedures were billed under the attending surgeon's name.

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