

Surgical Education

# The impact of an acute care surgery team on general surgery residency



Quinton Hatch, M.D.<sup>a,\*</sup>, Derek McVay, D.O.<sup>a</sup>, Eric K. Johnson, M.D.<sup>a</sup>,  
Justin A. Maykel, M.D.<sup>b</sup>, Bradley J. Champagne, M.D.<sup>c</sup>,  
Scott R. Steele, M.D.<sup>a</sup>

<sup>a</sup>Department of Surgery, Madigan Army Medical Center, Tacoma, WA, USA; <sup>b</sup>Department of Surgery, Division of Colorectal Surgery, University of Massachusetts Memorial Medical Center, Worcester, MA, USA; <sup>c</sup>Department of Surgery, Division of Colorectal Surgery, Case Western University, Cleveland, OH, USA

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**Abstract**

**BACKGROUND:** Acute care surgical teams (ACSTs) have limited data in residency. We sought to determine the impact of an ACST on the depth and breadth of general surgery resident training.

**METHODS:** One year prior to and after implementation of an ACST, Accreditation Council for Graduate Medical Education case logs spanning multiple postgraduate year levels were compared for numbers, case types, and complexity.

**RESULTS:** We identified 6,009 cases, including 2,783 after ACST implementation. ACSTs accounted for 752 cases (27%), with 39.2% performed laparoscopically. ACST cases included biliary (19.4%), skin/soft tissue (10%), hernia (9.8%), and appendix (6.5%). Second-year residents performed a lower percentage of laparoscopic cases after the creation of the ACST (20.4% vs 26.3%;  $P = .003$ ), while chief residents performed a higher percentage (42.1 vs 37.4;  $P = .04$ ). Case numbers and complexity following ACST development were unchanged within all year groups ( $P > .1$ ).

**CONCLUSION:** ACST in a residency program does not sacrifice resident case complexity, diversity, or volume.

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Surgical training is an evolving process. With the implementation of the Accreditation Council for Graduate Medical Education-mandated 80-hour work week, residency

program directors have had to devise unique methods to ensure a well-rounded surgical education. One such method has been the adoption of the acute care (or emergency) surgical team, the purpose of which is to ensure that residents receive nontrauma emergency surgical training in a supervised academic setting. Before the development of acute care teams, many of these emergent cases fell to the on-call surgeon who was often a private practice surgeon operating outside of the multidisciplinary academic team.<sup>1</sup> Within the academic training environment itself, overnight semiurgent cases are often delayed until the morning, leaving the surgical night float team as little more than an admitting service.

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\* Corresponding author. Tel.: +1-253-968-2200; fax: +1-253-968-5900.

E-mail address: [qhatch@gmail.com](mailto:qhatch@gmail.com)

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Residents therefore lose valuable opportunities to operate on and manage these patients. To fill this educational void, program directors have had to “farm out” residents to nonacademic institutions to meet minimum case number requirements.<sup>2</sup>

Recent studies have shown that the institution of emergency surgical teams at the home institution has resulted in an increase in the percentage of emergency cases performed within the academic setting.<sup>1,3</sup> Furthermore, chief residents have been shown to gain diverse, high-volume experience while rotating on emergency general surgery teams.<sup>1,3</sup> What has yet to be evaluated, however, is the impact of acute care teams on the remainder of postgraduate year levels.

An acute care surgical team (ACST) was recently implemented in our residency program. We sought to assess case load and case complexity in all PGY levels before and after the implementation of the ACST. We hypothesized that overall case load and average case complexity would remain unchanged at all year levels.

## Methods

We reviewed all general surgery resident Accreditation Council for Graduate Medical Education operative logs

from July 1, 2010 to June 30, 2012, one academic year before and after the implementation of an ACST. During this time period, the entire program consisted of 17 residents, 14 of whom consistently operated within the home academic institution (3 fifth-year residents [R5s], 2 third-year residents [R3s], 4 second-year residents [R2s], and 5 interns). The remaining 3 residents were R4s, who operated predominantly at outside community hospitals. We therefore excluded the 3 R4s from this analysis. The ACST was made up of an R5, an R3, an R2, and an intern. The remaining residents were distributed between the other 2 general surgery teams. All residents rotated between the 3 teams, and spent equivalent amounts of time on each. Regardless of the team, cases were allocated at the discretion of the chief residents (R5) with staff surgeon approval, pending the perceived difficulty of the case, resident availability, and individual skill level. The chief resident of the acute care team had the autonomy to operate as a teaching assistant under the guidance of a staff surgeon for most routine and select cases. The acute care team took all inpatient and emergency department consults during the work day regardless of acuity, and operated on all semi-urgent cases that had come in the previous night. In rare circumstances, the team also covered elective cases that

**Table 1** Case complexity scores

0	1	2	3	4	5
Rectal examination under anesthesia	Management of large (>20 cm) wounds	Appendectomy	Laparoscopic Nissen fundoplication	Total proctocolectomy	Whipple procedure
Seton placement	Fistula plug placement	Mastectomy	Bowel resection/repair, colostomy/ileostomy creation	Proctectomy	Formal liver resection
Basic wound care	Lumpectomy	Cholecystectomy	Laparoscopic transcystic common bile duct exploration	Hepatic wedge resection	Esophagectomy
	Breast biopsy	Endoscopy	Ladd's procedure	Pulmonary lobectomy	
	Sentinel lymph node biopsy	Diagnostic laparoscopy	Parotidectomy		
	Incision and drainage of perianal abscess	Adhesiolysis	Axillary lymph node dissection		
	Hemorrhoidectomy	Panniculectomy	Parathyroidectomy		
	Lateral internal sphincterotomy	Exploratory laparotomy	Adrenalectomy		
	Open inguinal hernia repair	Laparoscopic hernia repair	Roux-en-y gastric bypass		
	Open ventral/umbilical hernia repair	Thoracoscopy	Duodenal switch with biliopancreatic diversion		
	Central venous catheter placement	Transanal excision of rectal mass	Stamm gastrostomy		
	Chest tube placement	Sleeve gastrectomy	Pyloromyotomy		
			Cystgastrostomy		
			Splenectomy		
			Thyroidectomy		

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