## The Midwest Surgical Association

# Necessity for improvement in endoscopy training during surgical residency

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#### **KEYWORDS:**

Surgical residency; Surgical education; Endoscopy training; Endoscopy simulator; Endoscopy rotation; Competency

#### Abstract

**BACKGROUND:** The Residency Review Committee for Surgery has recently increased the required number of cases needed to achieve competency in endoscopy training.

**METHODS:** A 10-question survey was sent to program directors for general surgery residencies. Endoscopic training patterns, facilities, perspectives, and residents' performance were examined.

**RESULTS:** Seventy-one surgery programs (30%) responded to the survey. Of these, 42% (n = 30) had a program size of 3 to 4 residents. Ten percent (n = 7) of all programs could not fulfill the minimum Accreditation Council for Graduate Medical Education (ACGME) requirements. Only 55% (n = 39) of programs had a dedicated rotation in endoscopy and an endoscopic skills training laboratory in their program. Few programs had their residents performing more than 100 cases of gastroscopy (18%) and colonoscopy (21%).

**CONCLUSIONS:** Future endoscopy training for surgical residents needs to be improved to comply with the new requirements. This would include provision of an endoscopic skills laboratory, dedicated endoscopic rotations, and increasing the number of staff surgeons who perform endoscopic procedures. © 2010 Elsevier Inc. All rights reserved.

Endoscopy is an important part of a general surgeon's practice. There has been an increase in general surgeons' interest in endoscopy as many current general surgical procedures are shifting into the endoscopy paradigm. With increasing interest in natural orifice transluminal endoscopy surgery (NOTES), advanced endoscopic skills will be beneficial. Surgeons should be at the forefront of this new surgical frontier to provide the optimal diagnostic and therapeutic options for their patients. With this increasing role of endoscopy in general surgery, it is vital that training programs keep pace and provide adequate endoscopic training for general surgical residents.<sup>1</sup>

Recently, the Residency Review Committee for Surgery (RRC-S) established new guidelines for training in endoscopy. Trainees finishing after June 30, 2009 must have 85 endoscopic procedures with a minimum 35 upper endoscopic and 50 colonoscopic procedures. Accordingly, program directors (PDs) made changes to integrate flexible gastrointestinal endoscopy training into their residency programs. There has been a further challenge to the PDs with the Accreditation Council for Graduate Medical Education (ACGME) 80-hour per week duty-hour restrictions, as trainees have less time to perform more procedures.

The new RRC-S guidelines have affected many programs, in particular the smaller programs. Most of the surgical training models suggest dedicated endoscopy time and staff surgical endoscopists as the two important factors to increase endoscopic experience. A desire for a better understanding of how PDs in the United States are providing cognitive and technical endoscopic training for general

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	No. of graduating residents in program (no. of programs)				
	1-2 (n = 12)	3-4 (n = 30)	5-6 (n = 21)	≥7 (n = 8)	
Not fulfill ACGME requirement	0	2 (7%)	4 (19%)	1 (13%)	
Dedicated endoscopy rotations	6 (50%)	14 (47%)	15 (71.4%)	4 (50%)	
Medical gastroenterology service	5 (42%)	17 (̀57%)́	20 (95.2%)	7 (88%)	
Endoscopy skills laboratory	3 (25%)	17 (57%)	14 (66.7%)	4 (50%)	
Exposure not sufficient	6 (50%)	3 (10%)	3 (14%)	1 (13%)	

surgery residents led to the creation of this survey. The survey examined the current patterns of training in flexible endoscopy, training facilities in the program, and assessed opinions of PDs regarding endoscopy training.

#### **Materials and Methods**

A 10-item electronic survey was created using commercially available software (http://SurveyMonkey.com) and sent to the PDs at 235 ACGME-accredited general surgery training programs in the United States. The survey was aimed at looking into the training patterns, facilities, and performance of residents in endoscopic procedures. PDs were asked to express their views with regards to the current and future training in endoscopic procedures. Questions also requested information about staff surgeons performing endoscopic procedures and medical gastroenterology service within their institution. Two items inquired as to the current average number of endoscopic cases performed by graduating residents and whether all of the residents were able to fulfill the minimum ACGME requirements. One item asked the opinions of PDs regarding the number of cases needed to achieve competency in endoscopic procedures.

Applicable demographics of the respondents including program type were compared. Descriptive statistics and frequencies were determined. The results obtained from the survey were compared with the national averages compiled by ACGME for the last 3 years for endoscopic procedures. The results were then analyzed by dividing them into groups based on the number of graduating residents per year in each program.

#### Results

In all, 71 (30%) PDs responded to the survey. Survey responses are summarized in Table 1. Most of the respondents had a program size of 3 to 4 (n=30,42%) or 5 to 6 residents (n=21,30%). PDs were asked information regarding current endoscopy rotations for their residents. Only 55% (n=39) of programs had a dedicated rotation in endoscopy, which ranged from .5 months to 3 months. Overall, 69% (n=49) of programs had a medical gastro-

enterology service, and 55% (n = 39) had an endoscopic skills training laboratory in their program. Only 25% (n = 3) of programs with 1 to 2 graduating residents per year had an endoscopic skills laboratory. The average numbers of staff surgeons in programs performing endoscopies were 5 for colonoscopy, 6 for gastroscopy, .2 for endoscopic retrograde cholangiopancreatogram (ERCP), and 5 for bronchoscopy. Programs graduating 1 to 2 residents per year had on average only 3 staff surgeons who could perform endoscopies when compared with 5, 6, and 8 staff surgeons in programs graduating 3-4, 5-6, and  $\geq 7$  residents per year, respectively.

When all programs were evaluated, 10% (n = 7) of programs could not fulfill the minimum ACGME requirements for endoscopic procedures. Of these, most (n = 4) had a program size of 5 to 6 graduating residents per year. This may be due to the disparity in the number of residents and available case volume. Four programs did not have a skills laboratory, 2 programs did not have medical gastroenterology support, and 1 program did not have a formal endoscopy rotation.

As shown in Table 2, the average numbers of cases performed by the graduating residents were 72 colonoscopies, 47 gastroscopies, no ERCPs, and 32 bronchoscopies. According to PDs, the average number of cases needed to achieve competency were 60 colonoscopies, 41 gastroscopies, 10 ERCPs, and 27 bronchoscopies. Of the 13 PDs (18%) who thought that their residents' exposure to endos-

**Table 2** Comparison of the number of endoscopic procedures performed by residents according to program directors and ACGME data against expectations of the RRC-S and PDs

Procedures	RRC-S	Data-ACGME	Data-PD	Comp-PD
Gastroscopy	35	25	47	41
Colonoscopy	50	33	72	60
Bronchoscopy	REC	9	32	27
ERCP	REC	.3	0	10

REC = recommends experience; RRC-S = minimum number required for graduation by RRC-S; Data-ACGME = national average number of cases by last 3 years graduating residents; Data-PD = average number of cases done by graduating residents according to PDs survey; Comp-PD = average number of cases needed to achieve competency according to PDs survey.

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