Are General Surgery Residents Ready to Practice? A Survey of the American College of Surgeons Board of Governors and Young Fellows Association

Lena M Napolitano, MD, FACS, FCCP, FCCM, Mark Savarise, MD, FACS, Juan C Paramo, MD, FACS, Laurel C Soot, MD, FACS, S Rob Todd, MD, FACS, Jay Gregory, MD, FACS, Gary L Timmerman, MD, FACS, William G Cioffi, MD, FACS, Elisabeth Davis, PhD, Ajit K Sachdeva, MD, FRCSC, FACS

BACKGROUND: General surgery residency training has changed with adoption of the 80-hour work week, patient expectations, and the malpractice environment, resulting in decreased resident autonomy during the chief resident year. There is considerable concern that graduating residents are not prepared for independent surgical practice.

STUDY DESIGN: Two online surveys were developed, one for "young surgeons" (American College of Surgeons [ACS] Fellows 45 years of age and younger) and one for "older surgeons" (ACS Fellows older than 45 years of age). The surveys were distributed by email to 2,939 young and 9,800 older surgeons. The last question was open-ended with a request to provide comments. A qualitative and quantitative analysis of all comments was performed.

RESULTS: The response rate was 9.6% (282 of 2,939) of young and 10% (978 of 9,800) of older surgeons. The majority of young surgeons (94% [58.7% strongly agree, 34.9% agree]) stated they had adequate surgical training and were prepared for transition to the surgery attending role (91% [49.6% strongly agree, 41.1% agree]). In contrast, considerably fewer older surgeons believed that there was adequate surgical training (59% [18.7% strongly agree, 40.2% agree]) or adequate preparation for transition to the surgery attending role (53% [16.93% strongly agree, 36.13% agree]). The 2 groups' responses were significantly different, chi-square test of association (3) = 15.73, p = 0.0012. Older surgeons focused considerably more on residency issues (60% vs 42%, respectively), and young surgeons focused considerably more on business and practice issues (30% vs 14%, respectively).

CONCLUSIONS: Young and older surgeons' perceptions of general surgery residents' readiness to practice independently after completion of general surgery residency differ significantly. Future work should focus on determination of specific efforts to improve the transition to independent surgery practice for the general surgery resident. (J Am Coll Surg 2014;218:1063−1072. © 2014 by the American College of Surgeons)

Of 51.4 million inpatient surgical procedures performed annually in the United States,[1] approximately 10,000,000 are performed by surgeons trained in general surgery. The overall number of general surgeons per 100,000 population has declined by 25.91% during the past 25 years, which has considerable implications for general surgery residency training.[2] In addition, general surgery practices are now more heterogeneous, with the performance of more specialty operations.[3]

It is imperative that we ensure that general surgery residents are adequately trained and competent to perform essential surgical procedures for the US public. There is sufficient evidence to suggest that the operative experience of general surgery residents in the United States needs to be

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From the Department of Surgery, University of Michigan Health System, Ann Arbor, MI (Napolitano), University of Utah, South Jordan, UT (Savarise), Mount Sinai Medical Center, Miami Beach, FL (Paramo), The Oregon Clinic, Portland, OR (Soot), New York University, New York, NY (Todd), Muskogee Regional Medical Center, Muskogee, OK (Gregory), Sanford School of Medicine, University of South Dakota, Sioux Falls, SD (Timmerman), Brown University School of Medicine, Providence, RI (Cioffi), American College of Surgeons, Chicago, IL (Davis, Sachdeva).

Correspondence address: Lena M Napolitano, MD, FACS, FCCP, FCCM, Department of Surgery, University of Michigan Health System, Room 1C340-UH, University Hospital, 1500 East Medical Dr, SPC 5033, Ann Arbor, MI 48109-5033. email: lenan@umich.edu

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addressed, with reports of an 8% decrease in chief resident operative experience during the past 5 years, and decreased opportunity for residents to serve in a teaching role in the operating room.[4-6] National efforts to reform general residency education are now underway.[7] Although the goal of general surgery residency is to enable graduates to enter surgical practice directly, now nearly 80% choose instead to pursue additional training in surgical subspecialties.[8]

The ACGME General Surgery Program Requirements (Table 1) recommend increased graded responsibility for senior and chief residents, which is difficult to implement in our current surgical practice environment due to concerns about operating room efficiency (resident performance lengthens operating room time), billing and compliance regulations, legal pressures, and societal demands for more direct faculty surgeon involvement. These major changes have affected general surgery resident education substantially.

The American College of Surgeons (ACS) Board of Governors brought forward this important concern about the transition of general surgery residents to independent surgical practice to the leadership. In 2011, the ACS Board of Governors held a Clinical Congress Panel Discussion entitled "Are Graduating Residents Ready to Practice?" which was widely attended and generated much discussion about this important issue. To assess this issue, we used an online survey designed to gain an understanding of both "young" and "older" surgeons' perceptions of general surgery residents' readiness to practice independently at the completion of residency.

METHODS

Two surveys (Appendix 1, online only; available at: http://www.journalacs.org) were developed, one for young surgeons (defined as ACS Fellows 45 years of age and younger) and one for older surgeons (defined as ACS Fellows older than 45 years of age). Once the 2 surveys were developed, the content of the entire survey was assessed by leadership representatives of the ACS Board of Governors and the Young Fellows Association, who reviewed it for clarity of instructions, clarity of questions, and thoroughness of item responses. All responses were rated from 1 (strongly disagree) to 5 (strongly agree).

The surveys were distributed by email to all recipients. The last question was open-ended with a request to provide comments. A qualitative and quantitative analysis of all comments was performed. Chi-square test was used to test the difference between the 2 groups.

Table 1. Accreditation Council for Graduate Medical Education Program Requirements for Graduate Medical Education in General Surgery (Effective July 1, 2012) that Pertain to Progressive Independent and Transition to Independent Surgical Practice

VI.D.4.	The privilege of progressive authority and responsibility, conditional independence, and a supervisory role in patient care delegated to each resident must be assigned by the program director and faculty members.
VI.D.4.c)	Senior residents or fellows should serve in a supervisory role of junior residents in recognition of their progress toward independence, based on the needs of each patient and the skills of the individual resident or fellow.
VI.G.5.c)	Residents in the final years of education must be prepared to enter the unsupervised practice of medicine and care for patients over irregular or extended periods.

RESULTS

Young surgeon survey

A 15-item online survey was distributed to 2,939 active domestic ACS Fellows by email (August 28, 2011 through October 3, 2011). The response rate was 9.6% (282 of 2,939). The majority of young surgeons (64.5%) completed their general surgery residency in 5 years, and 58.0% completed a fellowship after general surgery residency training. Reasons for seeking fellowship training included "to specialize in an area of interest" (70.1%), "felt it was necessary to be competitive" (8.5%), and "because I didn't feel ready to practice" (0.0%). Also, 21.3% of respondents stated that all 3 reasons were applicable. The majority of respondents chose minimally invasive surgery (29.3%) and surgical critical care (28.7%) fellowship positions after general surgery residency. Most young fellows were in full-time academic practice (31.8%) or were full-time hospital employees (23.0%) and performed >400 surgical cases annually (33.7%) (Table 2). The most common general surgery cases performed included abdomen (nonhernia, 39.64%), hernia (16.03%), breast (13.89%), endoscopy (7.36%), trauma (6.78%), surgical critical care procedures (5.10%), endocrine (4.57%), with few cases in vascular (1.91%), pediatric (2.11%), or head and neck (1.61%).

The majority of young surgeons (58.7% strongly agree, 34.9% agree) stated that they had adequate surgical training to transition to the surgery attending role. Similarly, the majority (49.6% strongly agree, 41.1% agree) believed that they were prepared for the transition to the surgery attending role. We received many comments (Appendix 1, online only; available at: http://www.journalacs.org) from the young fellows about what could have assisted them with transition from residency to the surgery attending role, with common themes of more education on coding/billing and the business of surgical