Training, Practice, and Referral Patterns in Hepatobiliary and Pancreatic Surgery: Survey of General Surgeons

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Subspecialization has changed the way that general surgery is practiced. Hepatobiliary and pancreatic surgery (HPB) is maturing as a subspecialty. The objective of this study was to identify the current levels of practice, self-assessments of adequacy of training, referral patterns, and perceptions regarding regionalization of HPB care to high-volume centers. A total of 240 nonstratified general surgeons from across Canada were randomly selected to receive a survey developed by an expert work group. A reference group of 10 HPB specialists were also polled for a total of 250 respondents. The overall response rate was 73% (182 responders). Subspecialty training had been completed by 65% of respondents. This included surgical oncology (15%), HPB (15%), HPB and transplant (8%), laparoscopy (7%), liver transplantation (5%), and other (50%). This training was obtained in Canada (51%), the United States (35%), Europe (11%), and Australia (3%). Ninety-five percent of responders believed that some HPB services should be regionalized. Similarly, most responders thought that they were not adequately trained to perform these procedures. The following were especially considered subspecialty procedures: major hepatectomy (93%), pancreaticoduodenectomy (90%), and biliary reconstruction (79%). The majority of non-HPB surgeons do not consider themselves adequately trained to perform complex HPB procedures. Furthermore, most surgeons think that major hepatectomy, pancreaticoduodenectomy, and biliary reconstruction should be referred to HPB specialists at high-volume centers. (J GASTROINTEST SURG 2005;9:109–114)

KEY WORDS: Hepatobiliary, pancreas, survey, general surgeons, volume-outcome

The discipline of general surgery has been experiencing an evolution in practice patterns, and in some ways a crisis of identity. Subspecialization has changed the way general surgery is practiced, especially at large academic and multidisciplinary referral centers. Many large academic institutions now deal with many of the diseases historically dealt with by general surgeons in "organ-based" specialty units (e.g., colorectal, hepatobiliary, breast, upper gastrointestinal) or discipline-specific units (e.g., surgical oncology, vascular, trauma, and endocrine). The role of the "generalist" general surgeon in these settings is not well defined. This pattern of practice does not hold to the same degree in nonacademic and geographically remote areas. However, the move toward specialization is evident to a lesser degree in these settings as well. The impact that this paradigm shift has had in the field of general surgery with regard to residency and fellowship training is not well delineated and, in fact, likely varies depending on the institution.

Of all the disciplines under the purview of general surgery, hepatobiliary and pancreatic surgery (HPB) deals with some of the most complicated diseases and technically demanding operations. Indeed it has been well documented in this area that many HPB procedures have improved outcomes when performed at

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high case-volume centers.[1–8] For this reason, our objective was to identify the current levels of practice, self-assessments of training adequacy and referral patterns, and whether or not time and location of training had an impact on these other outcomes with regard to HPB surgery.

MATERIAL AND METHODS

An expert work group comprised of the authors generated a novel survey to evaluate hepatobiliary and pancreatic surgery in Canada. The domains of this construct include training, referral patterns, procedural volume, and self-assessments of adequacy of training to perform various procedures. The survey was piloted in a focus group of surgeons and trainee surgeons (5 total). This resulted in the removal of a number of items, and the modification of some items, to streamline the survey. Pilot assessments of the survey revealed it could be completed in 5 to 10 minutes.

Using the Royal College of Physicians and Surgeons of Canada website (Directory of Fellows), a list of 1871 general surgeons and their respective addresses was compiled. Of these 1871 surgeons, 977 had addresses listed. This list was compiled in November of 2002. From this list, 240 nonstratified surgeons were randomly selected to receive the survey. Ten other surgeons known to have primarily HPB practices were similarly selected to have the survey mailed to them. Therefore a total of 250 surveys were mailed out in November 2002. Surveys were mailed out with an introductory letter and a return self-addressed envelope with postage attached via first class mail. By December 31, 2002, a total of 160 surveys had been returned for an initial response rate of 64%. Two months elapsed before a second mailing was sent out in January 2003 to the 90 nonresponders of the first mailing. Twenty-two more surveys were returned, to bring the total to 182, for an overall response rate of 73%.

The survey consisted of 23 questions. Eleven were ordinal formatted dealing with various HPB surgical procedures and procedural volumes. As a corollary to each of these 11 questions, respondents were asked whether or not they felt adequately trained to perform the procedure in question (binary response–yes or no). The exact wording of the questions is included in the Results section, and in Tables 1 to 5. Data are presented as proportions unless otherwise stated.

RESULTS

Overall response rates for individual questions among responders averaged greater than 90%.

Table 1. Characteristics of survey population

Question	Responses (%)
Age (yr)	
20–30	1
31–40	32
41–50	36
51–60	21
>60	11
How many years have you been in practice since completion of most recent training?	
<1	4
1–5	23
5–10	19
10–20	29
>20	25
How would you describe your academic setting?	
Academic/university	49
Nonacademic	33
Academic affiliate	18
What is your practice setting?	
Large city (population > 250,000)	65
Suburban	8
Community (population < 100,000)	19
Rural/remote	7
Please indicate which of the colleges you hold fellowship in.	
FRCSC	57
FACS	1
Both	42

Table 1 describes the characteristics of the study population. The majority of respondents were 31 to 50 years of age, with 31% being greater than 50 years of age. Most responders (54%) had been in practice for more than 10 years, with 42% practicing between 1 and 10 years, and the rest less than 1 year. Residency training was obtained across the country of Canada, with all schools being represented. The "other" category for training most often translated into training in the United Kingdom. Forty-nine percent of responders described their practice as Academic/University in nature, with a full third of responders describing their practices as nonacademic. All respondents held fellowships in either the Royal College of Surgeons of Canada (RCPSC), the American College of Surgeons, or both.

Table 2 shows that 65% obtained further subspecialty training after general surgery residency training. Among this group, 67% obtained training in surgical oncology, HPB disease, liver transplantation, colorectal surgery, and trauma/critical care. Training was obtained to a lesser degree in vascular (4%), endocrine (2%), breast (2%), and laparoscopic (2%) surgery. The "other" group (16%) was mainly composed of persons who trained in upper gastrointestinal