The Current State of Esophagogastroduodenoscopy Training in Family Practice Residency Programs

Thad Wilkins, MD; Hal Hardy, MD

Background and Objectives: Esophagogastroduodenoscopy (EGD) is a useful diagnostic procedure to evaluate patients with upper gastrointestinal complaints. Although family physicians have demonstrated that they can competently perform EGD, only a minority of family physicians perform EGD. This study determined the current state of EGD training in US family practice residency programs and how often graduating residents seek EGD privileges. Methods: We conducted a cross-sectional descriptive study surveying program directors from all Accreditation Council for Graduate Medical Education-approved family practice residency programs regarding EGD training in their program. Results: Of the 471 surveys mailed, 441 (94%) were returned. A total of 143 (32%) program directors reported that their program offered EGD training, but only 58 (13%) actually trained at least one resident. Residents performed a mean of 20 ± 2.4 EGDs per resident, and residents trained by family physicians performed more EGDs than residents trained by other specialties. In July 2000, .04% of graduating family practice residents sought credentials for EGD, and their training occurred in 32 (7%) residency programs. Conclusions: Only a minority of family practice residents seek credentialing after residency to perform EGD.

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The American Academy of Family Physicians (AAFP) has determined that upper gastrointestinal endoscopy, also known as esophagogastroduodenoscopy (EGD) is within the scope of practice for family physicians, but only 4.2% of US family physicians perform EGD. The first report of a US family physician performing EGD was published in 1979. Since then, there have been several large case series published involving family physicians performing EGDs, all of which documented good diagnostic accuracy and a low rate of complications. While the number of EGDs needed to obtain technical competence is controversial, the American College of Physicians and the American Society for Gastrointestinal Endoscopy have suggested that 50–100 procedures are needed to apply for hospital privileges in EGD. A goal of EGD training in family practice residencies is to train more family physicians to perform EGD after graduation. In 1997, Thomas reported that 24% of family practice residencies provided EGD training. A limitation of that study, however, was that it did not report the number of residents that went on to perform upper endoscopy following residency training. The main objective of our study was to determine the number of residents who sought credentials in EGD following graduation. As a surrogate for the number of residents performing EGDs after graduation, we asked program directors about the number of residents who sought credentials in EGD following graduation. To describe the current state of EGD training in family practice, we were also interested in determining the number of programs offering EGD training, the number of residents receiving this training, the number of EGDs performed during residency, the specialty of the preceptor teaching EGD, and the setting where the EGDs were performed in residency programs.

Methods

Following steps outlined by Dillman, we designed a survey to assess the extent of EGD training taking place among family practice residencies. Our survey instrument collected information on program type (e.g., community based, university based, etc), the state in which the program was located, and whether EGD
training was offered. For programs that offered EGD training, we asked questions regarding where this training was performed (eg, hospital-based endoscopy suite, family practice clinic, etc), and who supervises this training (eg, family physician, gastroenterologist, etc). We asked open-ended questions regarding the average number of EGDs performed by each resident during residency training (eg, over a 3-year residency in family medicine). Program directors were asked with an open-ended question how many residents from their prior graduating class sought credentials in EGD after graduation. Other questions were closed-ended categorical questions with a pick list or simple yes or no answer. We pretested our survey instrument on teaching faculty and made appropriate modifications prior to mailing.

The survey was mailed in January 2001 to all program directors of Accreditation Council for Graduate Medical Education-approved family practice residencies (n=471) in the United States. A second survey was sent to nonrespondents in February 2001. No other means of contact to nonrespondents was made, and responses were anonymous. The study was reviewed and approved by our local institutional review board.

Data Analysis
For statistical comparison of the numbers of EGDs performed in residency and the numbers seeking credentialing by program type and region, we used Pearson’s chi-square statistics. We used Student’s t test and the Scheffe multiple comparisons test to examine all possible combinations of the mean number of EGDs performed and the number of residents who sought credentials for EGD by program type and region of the country. We used Pearson’s correlations to determine the association of location of training and specialty of trainer with the number of EGDs performed and the number of residents who graduated in 2000 and sought EGD credentials. SPSS version 10® was used for all analyses.

Results
Of the 471 surveys mailed, 441 (94%) were returned. A total of 143 (32%) program directors reported that their program offered EGD training. Only 58 (13%) of them, however, had actually trained a resident in EGD, and only 32 (7%) reported that one or more of their graduating residents from July 2000 sought credentials to perform EGD. Among the 13% of programs that did train residents in EGD, the number of EGDs performed by residents ranged from 1 to 101, with a mean of 20 ± 2.4 EGDs per resident. Of 58 programs that trained residents, 45 (76%) reported that their residents performed between 11 to 50 EGDs during 3 years of training.

Significant differences existed among residencies offering EGD training in different regions of the United States. Forty-six percent of the plains-mountain states offered EGD training, but only 22% of programs on the East Coast and 14% of programs on the West Coast offered training in upper endoscopy (P<.0001). Residents in the south and on the West Coast were more likely to perform more EGDs than residents in the east and Midwest; however, these differences were not significant (Table 1). Among programs offering EGD training, there was no significant difference (P=.087) by program type (Table 2).

The most common training site was a hospital-based gastrointestinal (GI) suite (67%). Fewer residents were trained in family practice clinics. Residents trained in family practice clinics, however, performed more EGDs than residents trained in hospital-based GI suites (Table 3). While 50% of programs reported that gastroenterologists trained their family practice residents, about one in four programs reported that family physicians or general surgeons trained their residents. Residents trained by family physicians performed on average more EGDs, and more of them applied for credentials following residency training, compared to residents

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**Table 1**

<table>
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<tr>
<th>Region of the United States (n=441)</th>
<th># of Programs Offering EGD Training</th>
<th>Mean # of Residents Applying for EGD Credentials</th>
<th>Mean # of EGDs Per Resident</th>
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<tbody>
<tr>
<td>East</td>
<td>91 (22)</td>
<td>1.2 ± 0.3</td>
<td>27.3 ± 5.5</td>
</tr>
<tr>
<td>South</td>
<td>108 (35)</td>
<td>1.8 ± 1.0</td>
<td>20.5 ± 5.2</td>
</tr>
<tr>
<td>Midwest</td>
<td>99 (40)</td>
<td>1.9 ± 0.7</td>
<td>14.9 ± 3.6</td>
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<tr>
<td>Plains-Mountains</td>
<td>78 (46)</td>
<td>1.1 ± 1.0</td>
<td>25 ± 5.9</td>
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<tr>
<td>West</td>
<td>65 (14)</td>
<td>1.8 ± 1.0</td>
<td>14.9 ± 3.6</td>
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</table>

* P<.0001
** In programs that provide EGD training

SE—Standard error
EGD—Esophagogastroduodenoscopy

East region: Pa, Md, NJ, NY, Conn, Mass, Ve, NH, Me, Del, RI, DC
South region: Ark, La, Miss, Ala, Tenn, Ky, NC, SC, Ga, Fla, Va, WV
Midwest region: Minn, Wis, Ia, Ill, Ind, Mo, Ohio, Mich
Plains-Mountain region: Idaho, Utah, NM, Colo, Tex, Okla, Kan, Neb, Wyo, SD, ND, Mont
West region: Wash, Ore, Calif, Nev, Ariz, Hawaii
trained by physicians in other specialties (Table 3). Indeed, teaching by a family physician was highly correlated ($r=.54$, $P=.01$), and training in family practice clinics was moderately correlated ($r=.24$, $P=.05$) with numbers of EGDs performed. Teaching by family physicians was also highly correlated with having more residents applying for credentials following residency training ($r=.41$, $P=.01$) and with residents performing 25 or more EGDs ($r=.40$, $P=.01$).

**Discussion**

While our study reveals that more residencies are offering EGD training than in the past, only 7% of residency programs reported that one or more of their residents sought credentials in EGD following residency training. Further, although 60% of programs that report they provide EGD training, few actually train a resident to perform EGDs.

Out of approximately 3,500 graduating family practice residents in July 2000,11 program directors reported only 157 (.04%) sought credentials following residency training to perform EGD. It is unknown why so few residents seek credentials in EGDs. Perhaps the reason is that there are difficulties in obtaining credentials following residency, or there is a lack of interest by graduating residents in performing EGDs.

Thomas’ study surveyed family practice program directors on the extent of EGD training in late 1994 and had an 88% response rate.9 That study found that 24% of programs offered EGD training, and our current study found that 32% of programs offer EGD training. Thomas reported that the majority of programs (61%) performed 10 or fewer EGDs, while in our study only 12% of programs performed 10 or fewer procedures. Because our methodology paralleled the methods of Thomas, we think these differences represent true changes in EGD training. Has the growth in the percentage of programs offering EGD training and the concurrent rise in the number of EGDs performed per resident resulted in more graduates engaging in this procedure? In 1993, 2.0% of family physicians reported that they performed EGD,12 compared to 4.2% in May 2000.12

The number of EGDs that need to be performed for privileging is controversial. The American Society for Gastrointestinal Endoscopy recommends 100 EGDs,3 and the American College of Physicians recommends 50 EGDs4 be performed before consideration of hospital privileging. However, these recommendations are based on expert consensus. The AAFP recommends that skill level rather than the absolute number of procedures be used to determine privileging decisions. We found that family practice residents trained in EGD performed about 20–30 EGDs, but we did not assess whether this number resulted in competence to perform EGD. Future studies should assess the competence of graduating family practice residents in EGD.

**Limitations**

A major limitation of this study was that our results do not reflect actual numbers of procedures performed but relied on recall of program directors, which may not have been accurate. Second, even though the survey was anonymous, program directors may have overestimated the numbers of EGDs performed and the numbers of residents seeking credentials. Another limitation was that as a surrogate for the numbers of

<table>
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<th>Table 2</th>
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<tr>
<td><strong>EGD Training in Family Practice Residencies by Program Type (n=439)</strong></td>
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<tr>
<td>----------------------------------</td>
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<tr>
<td># of Programs</td>
</tr>
<tr>
<td>Community based</td>
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<tr>
<td>Community based and medical school affiliated</td>
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<td>Community based and medical school administered</td>
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<tr>
<td>Medical school based</td>
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<tr>
<td>Military</td>
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<tr>
<td>Total</td>
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* Three program directors did not specify program type; of these, one offered EGD training
** $P=.09$
*** In programs that provide EGD training

EGD—Esophagogastroduodenoscopy
SE—Standard error
NA—not applicable
graduates performing EGD following residency, we used those residents who sought credentials in EGD following residency training. Program directors would not have included residents who were performing office-based EGDs but did not apply for credentials in EGD after graduation. Finally, of those who sought credentials in EGD, we did not assess those who actually received credentials to perform EGD.

Conclusions

Our results indicate that more family practice residencies offer EGD training, and residents perform more EGDs during residency than they did in the past. We also found that residents trained by family physicians in family practice clinics perform more EGDs. Despite this, most family practice residents depend on physicians in other specialties to train family practice residents in EGD.

Further, it may be a waste of time to have many family practice residency programs focus time, energy, and money to provide their residents with EGD training since so few residents seek credentials in EGD after graduation. It is perhaps more feasible to have a few centers throughout the country available to train those residents who are interested, perhaps during out-of-town rotations.

Future studies might survey program directors to learn why they don’t offer EGD training and to determine their attitude and perspectives on the relevance of EGD as a procedure for graduates, eg, how does EGD “stack up” with other procedures such as sigmoidoscopy, colonoscopy, treadmill testing, etc?

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**Table 3**

<table>
<thead>
<tr>
<th>Location* of EGD training (n=170)</th>
<th># of Programs Offering EGD Training # (%)</th>
<th>Mean # of Residents Applying for EGD Credentials ± SE**</th>
<th>Mean # of EGDs Per Resident ± SE**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital-based GI suite</td>
<td>115 (67)</td>
<td>1.2 ± .3</td>
<td>18.9 ± 2.5</td>
</tr>
<tr>
<td>Family practice clinic</td>
<td>29 (17)</td>
<td>1.8 ± .4</td>
<td>30.7 ± 5.4</td>
</tr>
<tr>
<td>Surgery clinic</td>
<td>1 (6)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>GI clinic</td>
<td>5 (3)</td>
<td>.4 ± .4</td>
<td>3.6 ± 3.6</td>
</tr>
<tr>
<td>Other</td>
<td>20 (12)</td>
<td>1.8 ± 1.0</td>
<td>25 ± 5.9</td>
</tr>
</tbody>
</table>

* Directors could have chosen more than one location or specialty of preceptor

** In programs that provide EGD training

SE—Standard error

GI—Gastrointestinal

EGD—Esophagogastroduodenoscopy

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**References**