An Alumni Survey as a Needs Assessment for Curriculum Improvement in Obstetrics and Gynecology

Diana Curran, MD
Xiao Xu, PhD
Samantha Dewald, BS
Timothy R. B. Johnson, MD
R. Kevin Reynolds, MD

Abstract

Background The Accreditation Council for Graduate Medical Education requirements recommend using outside measures to perform annual residency program evaluations to identify areas for program improvement.

Objective The aim of the study was to identify areas for residency program improvement via an alumni survey.

Methods An anonymous online survey was sent to the last 10 years of graduates from our obstetrics and gynecology residency program.

Results Response rate was 63% (34 of 54). All respondents reported being comfortable serving as gynecologic consultants. More than 75% (26 of 54) reported being comfortable performing abdominal hysterectomies, vaginal hysterectomies, basic and complex laparoscopies, and vaginal surgery. Regarding management of urologic injuries, the participants' responses varied, with 58% (20 of 34) reporting they felt prepared, 21% (7 of 34) with neutral responses, and 21% (7 of 34) reporting they felt unprepared. For total laparoscopic hysterectomy, 65% (22 of 34) reported feeling prepared, 29% (10 of 34) reported they felt unprepared, and 9% (3 of 34) reported they felt neutral. All respondents indicated that he or she would still choose the obstetrics and gynecology residency program at the University of Michigan.

Conclusion An alumni survey can provide useful outside measures for training programs to assess their effectiveness in preparing their graduates for independent practice. Results of alumni surveys can provide a blueprint for program improvement.

Editor's note: The online version of this article contains the survey tool and surgical evaluation tool used in this study.

Introduction

The Accreditation Council for Graduate Medical Education requirements recommend using outside measures at the time of the annual residency program review to help identify areas for program improvement.[1, 2] The current tools include annual faculty and resident evaluations of the residency program, and exit interviews with graduating residents. One objective outside measure of program success is the Board pass rates of graduates. Another way to assess the effectiveness of a training program is to study the success of its recent graduates.

Use of alumni surveys as a needs assessment tool has been reported to be useful for program improvement in plastic surgery[3] and anesthesiology residency training.[4] Kasten et al[3] surveyed national plastic surgery graduates from 2000–2005 using a competency-based questionnaire. Although results showed excellent overall training in the 6 core competencies, the need for improvement in systems-based practice education was identified. Rose and Long[4] created a report card model to assess an anesthesiology residency, using multiple measures to construct the report card, including board certification rates, in-service examination results, and an alumni survey. They reported using the annual report card as a guide for continuing program improvement.

To date there are no studies of obstetrics and gynecology (Ob-Gyn) graduate preparedness. The goals of this study were to conduct a competency-based survey to assess the preparedness of our graduates to enter practice in Ob-Gyn, and to use these data for program improvement.

All authors are at the Department of Obstetrics and Gynecology at the University of Michigan Health System. **Diana Curran, MD,** is the Residency Program Director; **Xiao Xu, PhD,** is a Research Assistant Professor; **Samantha Dewald, BS,** is a Research Assistant; **Timothy R. B. Johnson, MD,** is the Bates Professor and Chair; and **R. Kevin Reynolds, MD,** is the George W. Morley Professor and Chief of the Division of Gynecologic Oncology.

Funding: The authors report no external funding source for this study.

Corresponding author: Diana Curran, MD, Department of Obstetrics and Gynecology, University of Michigan Health System, L4000 Women's Hospital, 1500 East Medical Center Drive, Ann Arbor, MI 48109, 734.936.3110, dianacur@med.umich.edu

Received June 1, 2011; revision received November 14, 2011; accepted January 16, 2012.

DOI: http://dx.doi.org/10.4300/JGME-D-11-00122.1

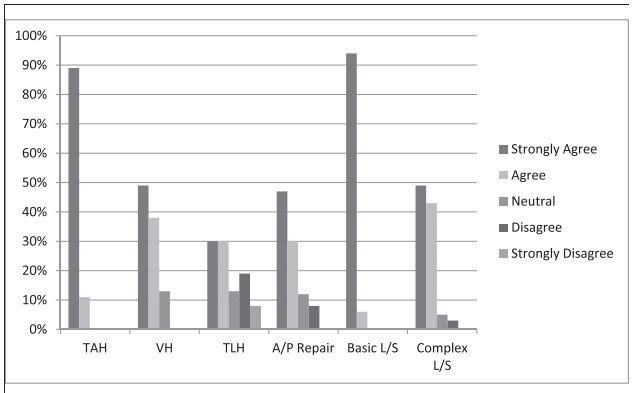

FIGURE 1 **Respondents' Preparedness to Perform Gynecologic Procedures**

Abbreviations: TAH = Total Abdominal Hysterectomy, TLH = Total Laparoscopic Hysterectomy, Ant/Post Colp = Anterior and Posterior colporrhaphy or repair, Basic L/S = Basic Laparoscopy, Complex L/S = Complex Laparoscopy, TVT = Tension Free Vaginal Tape/ anti-incontinence surgery

What was known

Graduate surveys are an important tool for assessing the relevance of the residency curriculum and a source of ideas for curricular improvement.

What is new

An anonymous survey of a single obstetric-gynecology program's graduates identified training in several procedural areas and in management of urologic injuries as opportunities for curricular improvement.

Limitations

Single-program study may limit generalizability; use of 10 years of graduates may erroneously highlight areas currently well taught; choice of responses may result in the omission of topics graduates felt in need of improvement.

Bottom line

A survey of a program's obstetrics-gynecology graduates provided valuable feedback for curricular improvements, and is feasible for a single program to administer.

Methods

The names and e-mail addresses of the previous 10 years of Ob-Gyn residency graduates from the University of Michigan were obtained from departmental records. The University of Michigan Medical School Institutional Review Board approved this study.

Survey

We developed a competency-based, self-administered survey to assess the effectiveness of the Ob-Gyn training program and to guide future curriculum development. Because no preexisting survey specific to Ob-Gyn was found, items were adapted from surveys on plastic surgery and anesthesiology.[3,4] The survey was pilot tested and subsequently revised using recent residency graduates from another local institution as well as select faculty. The survey used a 5-point Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree). Text boxes were included to capture feedback not specified in the survey. Responses were collected anonymously. The survey instrument is provided as supplemental online information.

To gauge whether we are teaching our residents useful office procedures, we asked what office procedures they had added to the practices they joined, such as genetic amniocenteses, sonohysterograms, embryo transfers, and intrauterine insemination, as well as what procedures they had added to their own practices after graduation, such as office endometrial ablation, which was not taught in our residency program.

Data Collection and Analysis

In February 2010, we e-mailed the survey request with the survey link to program graduates (N = 54). Reminder e-mails were sent twice to maximize survey responses 2 and 4 weeks following the initial mailing. Because respondents were anonymous, all graduates were sent reminder e-mails. Data were stored in a secure location in the corresponding author's office and secure survey account. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were calculated to determine the characteristics of respondents and their responses to each survey question.

Results

Respondents

A total of 34 graduates completed the survey for a response rate of 63% (34 of 54). A range of 2 to 6 graduates from each class responded to the survey. Survey respondents were mostly women (80%; 27 of 34), 77% (26 of 34) were ages 30 to 39 years, and 88% (30 of 34) were non-Hispanic white. Most graduates who responded are practicing general Ob-Gyn (57%; 19 of 34), with 4 subspecialties also represented (maternal-fetal medicine, reproductive endocrinology and infertility, urogynecology, and minimally invasive surgery). Respondents also reported being involved in teaching medical students, residents, or other medical professionals (12%; 4 of 34), as well as administration (7%; 7 of 34).

Patient Care and Surgical Skills

Most respondents reported feeling very comfortable evaluating new patients and performing common gynecologic procedures (FIGURE 1) and 29% (10 of 34) reported using robot-assisted surgery, with 17% (6 of 34) planning to become trained.

Office Practice

Respondents reported feeling well prepared for office practice procedures as well as counseling patients on common obstetrical and gynecologic problems. The two

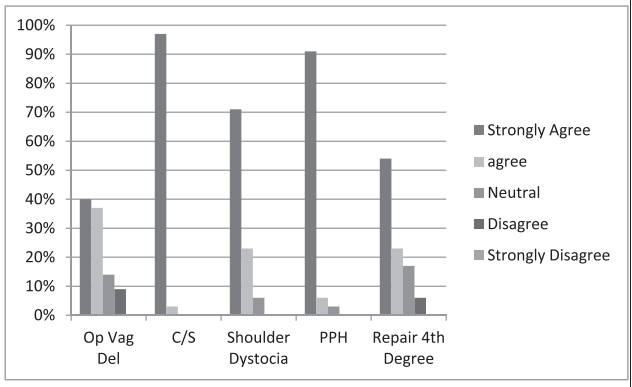

FIGURE 2 **Respondents' Preparedness to Perform Obstetric Procedures**

Abbreviations: Op Vag Del = Operative Vaginal Deliveries (forceps and vacuum), PPH = Postpartum Hemorrhage, C/S = Cesarean Section, Repair 4th Degree Laceration

most common procedures respondents added to their practice after residency were hysteroscopy (54%; 18 of 34) and endometrial ablation (50%; 17 of 34).

Hospital Obstetrics

All of the survey respondents reported feeling very well prepared to manage inpatient obstetric patients and to perform cesarean deliveries. Ninety-four percent (32 of 34) indicated that they felt well prepared to serve as obstetric consultants and to manage both antenatal as well as obstetric complications (FIGURE 2).

Inpatient Gynecology

All respondents reported feeling very well prepared to counsel patients on surgical indications, risks, and benefits. They were also unanimous about feeling prepared to serve as gynecologic consultants. Comfort with most gynecologic procedures is shown in FIGURE 1. The most notable reported deficit in preparation for practice is for performance of total laparoscopic hysterectomy (FIGURE 1). In contrast, all respondents reported feeling well prepared to manage intraoperative and postoperative complications, with the exception of one individual who reported feeling neutral regarding preparation to manage intraoperative complications. With respect to management of urologic injuries, the level of reported confidence was more variable, with 58% (19 of 34) feeling prepared, 21% (7 of 34) feeling neutral, and 21% (7 of 34) feeling unprepared.

Medical Knowledge

All respondents agreed that they felt prepared to pass the oral and written American Board of Obstetrics and Gynecology examinations. All program graduates who have taken the examinations have passed; the last 2 years of graduates have yet to take the oral examinations. The high pass rate on specialty examinations serves as an external measure to validate the appropriateness and accuracy of the high level of confidence exhibited by respondents.

Practice-Based Learning and Improvement

All respondents reported feeling well prepared to critically analyze the literature and to locate and apply scientific evidence to the care of patients, whereas 83% (28 of 34) reported preparedness to analyze their own practice performance and carry out needed quality assurance improvements, and 17% (6 of 34) reported feeling neutral.

Interpersonal and Communication Skills

All respondents reported feeling very well prepared to counsel patients and establish a rapport with them. Ninety-seven percent (33 of 34) reported feeling prepared to work and communicate as a clinical team leader, with only one individual (3%; 1 of 34) reporting feeling neutral.

Professionalism

Every respondent agreed that he or she felt well prepared to become a member of the medical staff, with all of the attendant responsibilities.

System-Based Practices

Most respondents (91%; 31 of 34) agreed that they felt well prepared to work with hospital management and interdisciplinary teams to improve care or advocate for patient care, whereas 6% (2 of 34) felt neutral, and 3% (1 of 34) disagreed.

General Questions

The consensus of respondents regarding their overall experience during residency at the University of Michigan was positive, with 77% (26 of 34) ranking the quality of the faculty as excellent and 23% (8 of 34) ranking the quality of the faculty as very good. Every respondent indicated that he or she would choose the Ob-Gyn residency program at the University of Michigan again if he or she were to make the decision today.

Evaluation Methods

When ranking the evaluation types used to provide feedback during residency, the survey respondents reported that all of the evaluations were at least somewhat useful. Over the last 10 years, the Global Faculty Assessment, Program Director Evaluation, Surgical Skills Evaluation, In-Service Examination, and 360-Degree Evaluation tools were used with most respondents during their training. The Surgical Skills Evaluation tool was singled out as one of the most useful by respondents (provided as online supplemental material). Some of the respondents underwent training and evaluation using simulated patients, simula-

tions and/or models, and objective structured clinical examinations, and most respondents who were exposed to these teaching and assessment methods reported that these were the most beneficial for attaining useful skills.

The total time to develop, administer, and collect the survey was approximately 170 hours. Developing the survey was the most time-intensive task; it required searching for other surveys, pilot testing, and revision, all of which were conducted by the two primary authors (D.C. and X.X.) during the course of 3 months (4 hours each per week). The finalized survey was administered by a research assistant requiring 4 hours weekly for a month. The final analysis required each of the investigators to spend 2 to 4 hours weekly for a month.

Discussion

Our survey of 10 years of graduates from the University of Michigan Ob-Gyn residency program revealed overall high satisfaction with their training and confidence in their abilities to perform common office and hospital procedures, and the data from this alumni survey were presented to our department. Most of the respondents indicated satisfaction with training, including surgical and medical skills in addition to mastery of the core competencies. The survey identified 3 key areas in need of improvement, including management of urologic complications, preparedness to perform total laparoscopic hysterectomy, and preparedness to perform robot-assisted laparoscopic surgery.

Because the survey questions did not ask respondents to specify which urologic complications they did not feel comfortable managing, we were not able to develop a specific educational plan to address the perceived weaknesses. Future survey questions will specify urologic complications to allow for more targeted learning and training.

The perceived lack of preparedness to perform total laparoscopic hysterectomy was surprising given the large number of these procedures performed at this institution. However, some of the respondents graduated in an era when many of these cases were performed by attending physicians and fellows rather than residents. The role of the residents in these cases was addressed in our Residency Advisory Committee, and an active decision was made to increase resident involvement over the last 5 years. The residency has established a benchmark by ensuring that residents perform a minimum of 15 laparoscopic hysterectomies as the primary surgeon during training, including either conventional laparoscopic or robot-assisted laparoscopic hysterectomy.

The perceived lack of preparedness to perform robot-assisted procedures was not surprising, because many of the respondents trained in an era prior to the inclusion of residents in these procedures. In addition, 11 of the respondents are maternal-fetal medicine specialists who would not perform robotic surgery. Although subspecialists in gynecologic oncology and minimally invasive surgery were using the robotic system in this department beginning in 2001, it was not commonly used by Ob-Gyn generalists or other subspecialty services. Appropriate residency curricular changes have been made to reflect these findings.

Strengths of this study include the high response rate (63%) and the competency-based survey questions. Responses about type of practice were consistent with what we know about our graduates' current practice types, and many respondents provided valuable free-text feedback. It is heartening to know that all of the graduates would train in this institution again. However, we plan to respond to perceived areas of weakness by using the survey to continually improve our curriculum and teaching methods based on the real-life experiences and needs of our program graduates.[6,7]

In retrospect, including graduates from the previous 10 years may have been too long an interval given the rapid changes in contemporary practice and the intrinsic lag time necessary before these changes can be incorporated into training. A more realistic interval may be 5 years, although this would mean a smaller number of respondents. Finally, although the survey tool has construct validity, to ensure each respondent interpreted the questions similarly, anchors would have been helpful to improve the validity of the responses. Studies have shown that physician self-assessment of skills may be better than objective skills assessment.[7] Despite this limitation, self-assessment of graduates can reveal areas for greater attention during and after training. Finally, our study did not anticipate areas of weakness, which might have allowed us to collect more specific data regarding those areas to inform our interventions to enhance the curriculum.

Conclusion

Developing, administering, and reviewing an alumni survey required moderate effort and can easily be achieved by any residency program. Our online survey of Ob-Gyn program graduates provided valuable feedback for curricular improvement.

References

1 ACGME. ACGME Common Program Requirements. http://www.acgme.org/acWebsite/dutyHours/dh_dutyhoursCommonPR07012007.pdf. Accessed July 12, 2012.

2 ACGME. ACGME Program Specific Requirements. http://acgme.org/acWebsite/RRC_220/220_prIndex.asp. Accessed February 7, 2010.

3 Kasten SJ, Levi B, Eng D, Schenarts KA. Toward outcomes-based plastic surgery training: a needs assessment of recent graduates. *Plast Reconstr Surg*. 2009;124(5):1703–1710.

4 Rose SH, Long TR. Accreditation Council for Graduate Medical Education (ACGME) annual anesthesiology residency and fellowship program review: a "report card" model for continuous improvement. *BMC Med Educ*. 2010;10:13. http://www.biomedcentral.com/1472-6920/10/13. Accessed February 10, 2010.

5 Kern DE, Thomas PA, Howard DM, Bass EB. *Curriculum Development for Medical Education: A Six-Step Approach*. Baltimore, MD: Johns Hopkins University Press; 1998:1–2, 59–70.

6 Blumenthal D, Gokhale M, Campbell EG, Weissman JS. Preparedness for clinical practice: reports of graduating residents at academic health centers. *JAMA*. 2001;286:1027–1034.

7 Lipsett PA, Harris I, Downing S. Resident self-other assessor agreement: influence of assessor, competency and performance level. *Arch Surg*. 2011;146(8):901–906.