Education: A Career of Teaching in Colon and Rectal Surgery

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ABSTRACT

The past 25 years have seen a revolution in the way surgery is learned, taught, and practiced. This revolution has increased the need for surgical educators to adapt surgical educational strategies to the modern practice environment. The purposes of this article are (1) to describe the impact of recent and upcoming changes in surgical education, (2) to explore the benefits of participating in surgical education activities both for academic surgeons and for surgeons in private practice, and (3) to review some of the avenues available to surgeons wishing to become involved or build a career in surgical education.

KEYWORDS: Surgical education, promotion and tenure, education degree

Objectives: Upon completion of this article, the reader should be able to: (1) identify some of the past and future changes that are reshaping the face of surgical education; (2) reflect on the personal benefits of and barriers to pursuing additional involvement in education; and (3) list different available avenues for additional personal involvement in surgical education.

The past 25 years have seen a revolution in the way surgery is learned, taught, and practiced. Gone are the days when residents were expected to spend 120 hours a week in hospital, learning by osmosis from their seniors or through low-intensity exposure to repetitive tasks containing a minute kernel of educational value. Gone are the days when faculty members were considered to be expert teachers because they were expert surgeons or researchers. Gone are the days when the skills you learned as a resident were going to last you a lifetime as a surgeon. We now live in the days of 80-hour work weeks for residents, ambulatory surgery and teaching, early specialization, rapidly evolving surgical techniques and instruments, and continuing medical education for recertification. These factors have all combined to force the accelerated adaptation of surgical educational strategies to the modern practice environment. The challenges of teaching under such fluid conditions can either attract or discourage many bright young (and not so young) surgeons to or from the field of surgical education.

The purposes of this article are (1) to describe briefly the impact of recent and upcoming changes in surgical education, (2) to explore the benefits of participating in surgical education activities both for academic surgeons and for surgeons in private practice, and (3) to review some of the avenues available to surgeons wishing either to become simply involved or ultimately to build a career in surgical education. This article does not represent an exhaustive list of all available opportunities for those interested in education, nor does it constitute an endorsement of any given program; rather, it endeavors to provide examples of a variety of means that may be tailored to individual needs and aspirations.

I Am in Private Practice and Do Not Teach Medical Students or Residents. I Have No Academic Aspirations. Why Should I Care about Surgical Education? What Is in This for Me?

Teaching is highly relevant to all surgeons, whether in private or academic practice. Teaching is an integral part

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Career Development; Guest Editors, Harry T. Papaconstantinou, M.D., H. David Vargas, M.D.

Clin Colon Rectal Surg 2006;19:156–160. Copyright © 2006 by Thieme Medical Publishers, Inc., 333 Seventh Avenue, New York, NY 10001, USA. Tel: +1(212) 584-4662.

DOI 10.1055/s-2006-948028. ISSN 1531-0043.

of surgical practice. Communication, presentation, and feedback skills are used daily in interacting with patients. Surgeons are also called upon to teach other health professionals, in both informal and formal settings, to build care teams and offer optimal surgical care. Reaching out to the lay and medical communities by giving presentations and teaching creates additional opportunities for increasing practice visibility and referral patterns. The teaching challenges encountered in the academic setting are universal; skills honed in a formal setting directly apply to the needs of the private practitioner.

Recruitment is another reason to keep informed about the sweeping recent and upcoming changes in surgical education. The essence of the surgical culture has shifted profoundly over the past 25 years. Most surgeons have been trained under the Halstedian model of surgical apprenticeship, with the time-honored “see one, do one, teach one” approach to teaching. Modern residents, now training under the 80-hour-per-week work rule, must demonstrate competencies by “operating” on dry-bench models or in a surgical skills laboratory before they are allowed in the operating room. Chances are that the next partner you hire will have trained under rules and regulations you never experienced; as a result, he or she will bring different expectations to the bargaining table. Even more dramatic changes are on the horizon. The training curriculum in surgery may soon be completely restructured into a shorter basic surgery core, followed by early specialization in cardiothoracic, plastic, vascular, transplant, trauma, pediatric, colorectal, oncologic, rural, or urban surgery. Two recent papers on that subject outline the possible curricular changes under evaluation.^{1,2} Today’s surgical resident is your partner of tomorrow; knowing about the changes and trends in modern surgical education will help you select and recruit the best partner for your practice.

Surgeons in private practice have an additional incentive for remaining up to date with regard to the language and the evolution of surgical education: recertification. The new evaluation paradigm of medical education, based on the six general competencies defined by the Accreditation Council for Graduate Medical Education (ACGME) (www.acgme.org/outcome/comp/compFull.asp), is starting to permeate the recertification process. Recertification requirements will soon be completely reframed so that applicants have to demonstrate and document proficiency in the areas of patient care, medical knowledge, interpersonal and communication skills, practice-based learning and improvement, professionalism, and systems-based practice. Teaching skills are pivotal to the areas of communication, patient counseling and education, team building, and partnering. Involvement in teach-

ing and education provides an avenue to keep up with the requirements and changes.

I Do Not Have Any Training in Education. How Do I Get Educated about Education?

Most medical schools have a faculty development office, dedicated to the support and ongoing education of all health professionals involved in teaching. Support and education offerings are usually tailored to various levels of need. The format may be quite flexible, from formal lectures, hands-on workshops, retreats, conferences, and grand rounds to mentorship programs, minifellowships, and formal degrees in medical education. If you are involved in day-to-day teaching of residents, medical students, and other health professionals and need help with immediate problems, look for half-day or 1-day workshops addressing the challenges you face daily. Examples include teaching in the ambulatory setting, teaching technical skills in the operating room, using audiovisual aids, improving your presentation skills, “hyperteaching” when the time is short, and providing effective feedback. If you are interested in the science and the art of education, look for topics such as principles of adult learning and teaching, differences in teaching and learning styles, and principles of education research. The variety of topics covered by faculty development offices is endless, and suggestions for additional topics relevant to the educators in the trenches are usually welcome.

Several associations are devoted to medical and surgical education. Visit the websites of the Association for Surgical Education (www.surgicaleducation.com), the Association of American Medical Colleges (www.aamc.org), and the Royal College of Physicians and Surgeons of Canada (www.rcpsc.medical.org), to name a few. These associations have an annual meeting entirely focused on education. Other national and regional societies, such as the American College of Surgeons and the Society for University Surgeons (again, not an exhaustive list), dedicate a significant portion of their scientific programs to education issues. Attending these sessions is an excellent introduction to the current issues in surgical education.

Several journals specialize in medical education. Some of the most prominent are *Academic Medicine*, *Medical Education*, *Teaching and Learning in Medicine*, *Clinical Teaching*, and the *Journal of Medical Education*. Many clinical specialty journals routinely publish cutting-edge educational papers. Examples include the *American Journal of Surgery*, the *Journal of the American College of Surgeons*, *Annals of Internal Medicine*, *JAMA*, and the *Journal of General Internal Medicine*.

All these avenues provide the interested individual with different insights into surgical education and tailored resources for entry-level involvement.

I Am Interested in Surgical Education. How Do I Get Involved?

The needs for teachers are multifaceted, and opportunities abound. Decide on how you would like to become involved, and volunteer your services. Regardless of their practice setting, academic or private practice, all surgeons willing to devote the time and energy to teach students and residents have much to contribute. The intensity and duration of each teacher's involvement may be tailored to his or her level of interest, availability, and strengths as a teacher. Whether you love teaching medical students or more senior trainees, whether you can dedicate an hour a year or an hour a week to teaching, whether you are a wonderful technical skills teacher yet a boring lecturer, there are needs and opportunities that match your qualifications.

Look at all available clinical teaching opportunities. Teaching activities may take place in the classroom but also in the ambulatory setting, at the bedside, on the wards, or in the operating room. Although the need for more traditional teaching vehicles (such as lectures) remains, clinical rounds, small group teaching, case presentations, and discussions are tailor made for teaching clinical surgery. This may take place in major teaching hospitals, where the education pyramid endures (from medical student, clinical clerk, junior and senior residents, to fellows), but also in the private practice settings, where surgeons can often provide one-on-one teaching for mandatory or elective rotations of variable duration.

Also look for alternative teaching settings. Teaching technical skills is increasingly shifting from the operating room to the surgical skills laboratory. This allows repeated practice of a common set of necessary skills with immediate feedback. The core curriculum contents are predetermined and include basic skills (e.g., instruments handling, knot tying, suturing) and more advanced skills (e.g., hand-sewn and stapled anastomosis, laparoscopic skills). There may be a need for qualified instructors in your community: volunteer your services, but expect to be screened and, if selected, to be trained to meet the specific objectives of the program. Desirable attributes in an instructor include patience with repetitive practice, the ability to provide effective feedback, dynamism, and the ability to evaluate learners.

Finally, think outside the "teaching box." Teaching does not necessarily mean transferring medical knowledge: consider mentoring a student. Mentoring medical students by providing early exposure to surgical role models helps attract the best and brightest to the field of surgery. Most surgeons cite the influence of a senior surgeon who served as a role model or mentor in helping to crystallize their career choice. Exposure to surgery early in medical school is paramount, as an ever-growing number of specialties are jockeying for applicants while the relative time devoted to surgery in the

medical school curricula is ever decreasing. A variety of mentorship formats are available, from sporadic shadowing activities, to 1-week "clerkships," to formal scheduled meetings at determined intervals.

These are only a few examples of the avenues available for the individual interested in becoming involved in medical education. Mentoring and teaching the next generation of surgeons is a golden opportunity to "give back" to our own teachers by "giving forward" to students, as stated in the Hippocratic oath:

To reckon him who taught me this Art equally dear to me as my parents, (. . .); to look upon his offspring in the same footing as my own brothers, and to teach them this art, if they shall wish to learn it, without fee or stipulation.

Is Surgical Education Really a Path to Academic Promotion and Tenure?

Absolutely yes! Until recent years, excellence in research was considered to be *the* path to academic promotion. This has changed considerably. The core mission of all academic departments of surgery rests on the tripod of medical education, research, and clinical care. The convergent pressures of decreased reimbursement, increased need for clinical productivity, massive shifts to the ambulatory setting, and the explosion of advanced surgical procedures (e.g., laparoscopic) impose additional strains on the surgeons willing to devote the time and effort necessary to train medical students and residents but have also increased the market value of clinical teachers. Most surgical departments now recognize the importance of clinical teachers and consider promotion and tenure based on demonstrated excellence in teaching.

Academic appointments may be granted at several different levels (e.g., lecturer, instructor, assistant professor, associate professor, or professor). Criteria for appointment are part of the public domain and can easily be obtained from university websites or by requesting them from the local office for promotion and tenure or its equivalent. Most universities have at least two parallel tracks: tenure (for full-time academics) and nontenure (for clinical, adjunct, or part-time staff). Academic promotion in any track is generally based on demonstrated excellence in three of four categories of performance: clinical work, teaching, research, and service.

Although the details of the application process for promotion and tenure vary at the local level, the first step is to prepare a teaching dossier or teaching portfolio. Table 1 summarizes the principal areas in which surgical educators can document and demonstrate scholarly contributions to education. Most university departments ask their faculty for an annual report of activities; in addition to your publications, presentations, participation on committees, and so forth, keep track of supporting

Table 1 Teaching Portfolio for Academic Promotion and Tenure

Teaching skills
Supervision/teaching: outpatient/inpatient, operating room/endoscopy suite
Classroom teaching: small groups/whole class/problem-based learning
Grand rounds
Invited lectures/rounds/presentations/conferences/CME lectures at the local/regional/national level
ATLS/ACLS instructor
Curriculum development and instructional design
Development and production of courses/rotations/seminars
Development of teaching cases
Training of standardized patients
Development of educational objectives
Preparation of instructional materials, handouts, resources, ...
Development of CME materials (e.g., SESAP, CARSEP)
Mentorship
List of formal advisees: former and current students/residents
List of informal advisees (junior colleagues, advisees with whom you had a prolonged interaction, but without formal reporting mechanism)
Research supervision
Number of students requesting you as an advisor (as compared with others)
Assessment of learner performance
Development/implementation of examinations (written, multiple choice examinations, objective structured clinical examinations (OSCEs), oral examinations, ...)
Board examiner/member (e.g., American Board of Surgery, American Board of Colon and Rectal Surgery, Royal College of Surgeons of Canada)
Educational administration
Chair/director/coordinator of clerkship/residency program
Member (elected/appointed/volunteer) of educational or curriculum committees: at university level, at national level (e.g., ASCRS Self-Assessment Committee, CME Committee)
Interviewer, medical school admissions committee
Service in national surgical education societies
Member, editorial board education journals
Educational honors and awards
Awards/certificates/honors (including degree in education)
Research in education
Peer-reviewed papers/thesis
Lectures/presentations in education

ACLS, advanced cardiac life support; ASCRS, American Society of Colon and Rectal Surgeons; ATLS, advanced trauma life support; CARSEP, Colon and Rectal Surgery Educational Program; CME, continuing medical education; SESAP, Surgical Education and Self-Assessment Program.

documentation for your teaching activities such as written evaluations by students, residents, colleagues, peers (course participants), and outside referees who are considered leaders in the field of education. Written sup-

portive documentation is required when submitting an application for promotion or tenure.

Advanced Training in Medical Education: What Is Available? What Do I Need? Should I Get a Degree? What Are the Benefits? What Are the Barriers?

There are countless programs for advanced training in surgical education. All share the common goal of preparing participants for a leadership role in education. The breadth and depth of knowledge necessary to become an effective leader in surgical education (Table 2) are such that a legitimate structured program should take a minimum of 1 year to complete. More extensive programs, usually culminating in a degree in education, often take several (~2 to 3) years. All master's degree programs require direct participation in a research project relevant to surgical education and publication of a thesis or papers based on the project.

A range of formats are available, the most flexible of which can be tailored to allow busy surgeons to improve their educational skills while maintaining most of their clinical, teaching, or research responsibilities. Several university surgical departments offer such educational "scholarship" or "fellowship" tracks for their faculty. A minimum number of university courses is required in most programs; independent study, participation in education workshops or seminars, and supervised research complete the basic requirements for those nondegree paths. For faculty members whose university

Table 2 Summary Curriculum for Training in Education

Theory of education and instruction
Learning and teaching styles
Principles of adult learning
Effective teaching strategies
Curriculum design and planning
Course development (e.g., lectures, skills laboratory)
Evaluation and assessment
Student assessment
Program evaluation
Leadership and management skills
Structure of organizations
Leadership
Managing change
Critical issues influencing education
Organizational
Political
Social
Historical
Educational research
Research design and completion
Grant writing and paper writing
Critical literature review

does not have such opportunities, the Association for Surgical Education (ASE) offers the Surgical Education Research Fellowship (SERF) program, a competitive 1-year home site fellowship program aimed at developing skills for planning, implementing, and reporting educational research studies. Participants are paired with an experienced ASE advisor who supervises and mentors them; course requirements and attendance at predetermined educational meetings and seminars complete the SERF curriculum. Additional information on those programs is available on the web through the local medical schools, departments of surgery, or through the Association for Surgical Education (www.surgical-education.com) websites.

Although obtaining a degree in medical education is not mandatory, there are several advantages to doing it. First and foremost, it is the best preparation you can have for meeting the challenges of a leadership role in surgical education. Second, it confers credibility; securing a degree confirms your dedication and interest in education. And third, it helps with securing promotion and tenure. An additional, more intangible yet equally important benefit is the creation of a network of surgeon educators who share a common culture and drive the progressive transformation of the traditional surgical culture in education.

The major barriers to obtaining a degree in medical education are (1) timing, (2) the time necessary for achieving a degree, (3) the requirements for physical attendance in courses, and (4) financial constraints. Several residency programs now offer a master's degree in education instead of a research year during the course of the residency. Alternatively, graduating residents can enroll in a degree program immediately after completing their residency. Pursuing a degree during those natural hiatuses in time is easiest for the course of one's surgical career. For practicing surgeons and faculty members, the options are to enroll in one of the numerous master's programs providing the flexibility to distribute the mandatory courses over the span of 2 to 3 years or to spend a sabbatical year entirely devoted to a master's degree. Requirements for participants' physical attendance in courses used to be a major barrier; thanks to advances in distance learning and teaching through information technology, several programs now offer on-line courses. This less traditional yet more flexible approach does not

eliminate the need for and benefits gained from discussing educational challenges face to face with an interdisciplinary group of health educators. Nonetheless, many programs have decreased the obligations for physical presence significantly, making a degree more accessible to all interested parties. Depending on the number of credit hours needed to obtain a degree, financial constraints may impose a significant burden on the candidate. Support may be available from your department chair, from the university, from surgical associations, or from outside sources.

Getting advanced training in medical education requires a considerable investment of time and effort. Prior to selecting a program, reflect on your personal long-term goals as an educator, establish your educational needs, and identify your limitations with regard to time availability and financial means; then obtain as much information as possible on the prerequisite qualifications for applicants, the academic requirements, and the mission statement of each of the programs you may be interested in. Congruence between your needs and goals and your intended program's strengths will provide the best guarantee for ultimate success, for an enjoyable experience, and for mutual benefit from the relationship.

CONCLUSION

Changes in the surgical practice environment have forced the review and renewal of our approaches to teaching surgery. All surgeons, whether in academic or private practice, must know and understand those changes, as those educational innovations will in turn trigger further changes in the way we practice. There is a need for surgeons willing to devote the time and energy to teaching. Educational support, training, and personal involvement can be tailored to the needs, interests, and availability of interested candidates.

REFERENCES

1. Pellegrini CA, Warshaw AL, Debas HT. Residency training in surgery in the 21st century: a new paradigm. *Surgery* 2004; 136:953-965
2. Debas HT, Bass BL, Brennan MF, et al. American Surgical Association Blue Ribbon Committee Report on Surgical Education: 2004. *Ann Surg* 2005;241:1-8