



# Meeting the needs of rural general surgeons: The ACS Subcommittee on Rural Surgery

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**G**eneral surgeons today are beset by many problems, among them professional liability, constriction of their scope of practice, and a trend toward referring all but the most common procedures to subspecialist surgeons and academic medical centers. At the heart of all these issues is education: in an era of rapidly changing technology, how does a practicing general surgeon remain current and, in particular, gain the skills necessary to safely provide modern surgical care to patients? The problem is particularly challenging for rural general surgeons, who may have dif-

ficulty taking leave of their practice for educational offerings. An attempt to define the problem and to seek possible solutions to this dilemma has been the principal task of the Subcommittee on Rural Surgery.

### ***The Subcommittee on Rural Surgery***

The first Rural Surgery Forum, organized by Paul Collicott, MD, FACS, was held at the October 2003 Clinical Congress in Chicago, IL. This open-microphone meeting was attended by approximately 75 surgeons from around the U.S. and

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led to identification of numerous issues of concern to rural surgeons. Following the meeting, at the direction of Mark Malangoni, MD, FACS, Chair of the Advisory Council for General Surgery, the subcommittee was established (see roster on page 17). Our initial step was to adopt the following mission statement: “The subcommittee seeks to improve patient access to quality surgical care in the rural setting by identifying and addressing the needs of surgeons in this unique environment.”

The Rural Subcommittee of the Advisory Council for General Surgery is attempting to address the challenge of meeting the educational needs of rural surgeons. In doing so, two categories of education must be considered: residency training for the rural environment and postgraduate training of practicing surgeons.

The subcommittee has attempted to define “rural,” acknowledging that it is an elusive concept. The most useful suggestion for criteria for defining this term came from one of our consultants, D.C. Lynge, MD, FACS. On the basis of his extensive studies of surgical practices, he finds considerable differences in scope of practice, resource availability, and surgeon case volume among the following categories:<sup>1</sup>

- Urban                      Population > 50,000
- Large rural                Population 10,000-50,000
- Small rural                Population < 10,000

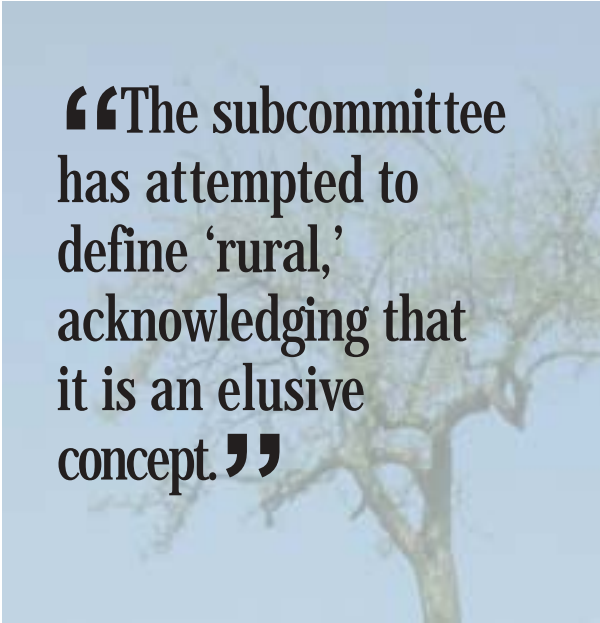
Of the approximately 17,000 general surgeons in the U.S., 80 percent live in or near a major metropolitan area, whereas 11 percent practice in large rural towns. The remaining 9 percent may be found in small rural communities. Most rural surgeons enjoy the small-town practice, despite the drawbacks of limited resources and a degree of professional isolation. Their scope of practice is dominated by hernia repairs; cholecystectomies; appendectomies; colon, anorectal, and breast surgeries; and endoscopies. Depending on locale and available subspecialists, they may perform cesarean sections; gynecologic operations; and, in some circumstances, otolaryngologic, thoracic, vascular, and orthopaedic procedures. Traditional surgical residencies prepare them for the much more complex procedures typically associated with general surgery, and most rural surgeons have a steady diet of emergency operations more demanding

than their more common cases. Typically, however, they perform a relatively small number of any particular, specific, complex procedures in a given year (for example, operations for ruptured aneurysm, blunt or penetrating abdominal trauma, perforated viscus, intestinal hemorrhagic conditions, and so on).

Keeping up with current practice for this broad range of challenging cases is difficult. Liability concerns increase annually, particularly when experts and plaintiff attorneys cite articles from academic medical centers that argue for minimum numbers of cases necessary to maintain competence. When new equipment or an entirely new approach to an old problem (for example, sentinel node biopsy or laparoscopic cholecystectomy) is introduced and accepted as the standard of care, small-town surgeons face a difficult choice: learn the new technique, or cease doing that type of surgery and refer the case to someone else. It is unreasonable and unrealistic to expect skilled and experienced professionals to discontinue treating conditions that comprise the core of their scope of practice because of advances in technology and surgical knowledge. Most surgeons will find some way to learn the new skills. The subcommittee strongly believes that, in the interest of patient safety, it is a responsibility of academic surgery and national surgical organizations to assist in devising methods to facilitate surgeons' acquisition of these skills under validated and supervised circumstances. Thus, it must be asked: How should residents be trained for small-town careers? How do associations and institutions help practicing surgeons to remain current? What can the leaders of surgery in the U.S. do to assist surgeons in maintaining competence?

### ***Training surgeons for rural practice***

There is a school of thought that the traditional surgical residency prepares the resident for all practice environments—the “compleat” surgeon. In a bygone era, this idealistic concept may have been tenable. However, in today's climate of liability, the fact is that no surgeon in his or her right mind is going to undertake a procedure of any complexity without adequate training and experience. Furthermore, a recent spate of directives from academic medical centers and consumer groups recommending minimum annual performance vol-



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umes for an increasing number of operations traditionally considered part of general surgery has had a chilling effect on rural practitioners. It is no longer sufficient to be busy and active over a broad range but low volume of challenging surgical procedures.

So, if specific training is indicated, what should be taught? Most surgeons agree that a rich experience with endoscopy is helpful and that there may be a need for more emphasis on gynecology. Most other areas are so variable that it is difficult to define a curriculum that will satisfy all circumstances. Under the leadership of Joseph Cofer, MD, FACS, current chair of the Association of Program Directors in Surgery, a survey of program directors is being conducted to assess attitudes regarding the need for specific rural training and to catalogue what models are being used to teach the necessary skills. We hope to discuss the findings of this survey in a panel session at the 2005 Clinical Congress in San Francisco, CA. Future efforts should be directed at identifying the appropriate skills that should be mastered by surgeons planning on rural practice.

John Hunter, MD, FACS, and Karen Deveney, MD, FACS, at the Oregon Health Sciences University in Portland, have reported on a one-year

residency rotation in Grants Pass, OR, designed to expose interested residents to rural general surgery.<sup>2</sup> We are aware of several training programs that regularly arrange one- to three-month electives in rural practices for selected residents. However, it is very difficult for program directors to find time in the curriculum for such electives, particularly in view of work-hour restrictions. In addition, the medical center may forfeit Medicare funding of residency positions when trainees are off campus. One of the goals of our committee is to establish at College headquarters a database of rural training opportunities that could be accessed through the College Web site by interested medical students and residents.

An additional topic worth considering is that most of the Rural Forum participants have expressed concern about who will replace them when they retire. The average age of rural surgeons is more than 50 years, compared with the average age (early 40s) of surgeons in more populous locations.

Workforce studies predict not only a shortage of general surgeons in the coming generation, but in particular a continued dearth of practitioners of all disciplines in sparsely populated regions of the country. According to Thompson and colleagues, “General surgeons form a crucial component of the medical workforce in rural areas of the United States. Any decline in their numbers could have profound effects on access to adequate health care in such areas.”<sup>2</sup>

The majority of medical schools and residency programs are located in urban centers. Students and residents receive most of their education at big medical centers in big cities, staffed by role models and mentors who have no experience in the rural practice of surgery. Unless students have had some exposure to small-town practice or encounter teachers who encourage them to explore the possibilities, they are very unlikely to venture out to the hinterlands to consider it for themselves. Indeed, anecdotal reports suggest that faculty or senior residents discourage students when they express an interest in practicing in a small town. The Advisory Council for General Surgery has had ongoing discussions about the possibility of matching medical students with surgical mentors in small-town community hospitals, although so far nothing substantive has been accomplished. If it

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is agreed that expert surgical care apart from the major population centers is desirable, then attitudes and methods will need to change or future surgeons will not go there.

### ***Postresidency surgical education***

Residents may decide on rural practice after the completion of a traditional training program. Occasionally, surgeons leave academic or urban private practice after several years to seek a small-town location. In both cases, these surgeons very quickly realize that they will be expected to perform procedures for which they have received insufficient or no training. Traditionally, such learning was accomplished by on-the-job training with the hope that no misadventures would occur while the surgeon gained the necessary experience. In the past, such an approach was tolerated, if not exactly condoned. But as previously mentioned, in the current climate of liability, this approach is unthinkable. Michael Gold, MD, FACS, and colleagues have reported in these pages on a rural surgery fellowship they developed at Bassett Hospital in Cooperstown, NY, intended to provide the necessary proctored experience, tailored to the individual needs of surgeons/fellows.<sup>3</sup> Our committee has followed their efforts with great interest, and one of our members participated in the fellowship. If the program is successful, it is hoped that it can be duplicated in similar centers around the country. In any event, it represents a creative and responsible attempt to solve a very real problem.

A much more common problem is related to new technology or new approaches to old problems. Educators describe two kinds of learning needs for surgeons: those items that fall into the cognitive domain and those that are psychomotor skills. Cognitive information can be taught in person (for example, in lectures, seminars, or surgical meetings) or through distance learning (with journals, tapes and compact discs, textbooks, Web-based courses, and the Surgical Education and Self-Assessment Program). These methods are well established. However, the teaching of manipulative skills is far more difficult.

The most dramatic example was the revolution in biliary tract surgery precipitated by the introduction of laparoscopic cholecystectomy in the late 1980s. Once the public and profession realized what a tremendous advance had occurred, there

was no stopping the rush of patients seeking to benefit from the new operation, and the practicing surgeons seeking to be able to provide it. The entire training paradigm was turned on its head. Academia was unprepared to provide the necessary tutelage, so surgeons turned to proprietary and entrepreneurial sources. Those physicians who discounted the importance of minimal access surgery were left in the dust; some of those who charged ahead with minimal supervision may have caused harm. Fortunately, the majority attempted to acquire the needed expertise in the most responsible way they could, and in balance this revolutionary change was accomplished with due regard for patient safety and yielded good results. Eventually, academic surgery was able to regain the initiative, and residents are now properly trained in minimal access surgery. But other advances are bound to occur. In the absence of methods for teaching new technology to practicing rural surgeons, how the present generation of surgeons will be prepared for the next revolution is anybody's guess.

Meanwhile, subsequent advances have produced similar concerns. An informal poll of Rural Surgery Forum attendees, conducted by our committee, revealed that the majority of respondents would welcome participation in a structured training experience for such skills as office ultrasound, lymphatic mapping and sentinel node biopsy, stapled hemorrhoidectomy, endovascular ablation of varicose veins, new techniques in hernia repair, and a variety of advanced laparoscopic procedures. Many surgical organizations, including the American College of Surgeons, have developed courses to meet these needs. The courses have been well conceived and well attended. However, not all surgeons can afford the time or the expense to travel to a distant site for such courses, and in any event, registration is often limited because so much hands-on, one-on-one participation is involved.

Many new skills are now being taught to surgeons in quasi-academic settings involving a paid consultant (often with an academic title) who has developed or learned the device and/or procedure being touted. All the necessary disclaimers are duly posted. Equipment manufacturers and entrepreneurs often pick up the tab for travel, meals, and lodging. In some circumstances, the purveyors of a particular device will

come to the surgeon, and train him or her in the office or operating room. While it is easy to disparage such methods, it begs the question: Why are such methods necessary? Why can't we construct a safe and effective infrastructure to provide for properly qualified surgeon-educators to teach new technology to practicing surgeons,

## ACS committees working toward meeting the needs of rural surgeons

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particularly rural surgeons lacking ready access to an academic medical center?

The Subcommittee on Rural Surgery wishes to pursue these and other questions pertaining to postgraduate surgical education, in conjunction with other College committees with similar concerns. The American Academy of Orthopaedic Surgeons has established a learning center with cadaver labs in Chicago, IL, where members can gain hands-on, supervised experience with new instruments and procedures. The College should be able to do something similar. Surgeons fortunate enough to have ties with colleagues in high-volume medical centers can sometimes arrange observation sessions of live surgery, thereby gaining some insight into new technology and approaches. Occasionally, it is possible to import a preceptor to a community hospital to supervise maiden voyages in new procedures. It should be possible, then, to devise a more structured program, available nationally, to which Fellows could apply to meet their specific needs. The College's Education Committee is currently exploring the development of learning centers, and our subcommittee enthusiastically supports the effort. We hope committee members will give consideration to the special circumstances of rural, solo practitioners as the learning centers are established. A radical thought, but one that deserves consideration, is to explore joint ventures between the College and the medical device industry to bring new technology to practicing surgeons in a responsible manner, with appropriate peer review and reassessment. There is probably much that these groups could learn from each other.

### Additional issues

Rural Surgery Forum participants identified many other issues of concern. Not surprisingly, these include professional liability and declining reimbursements. We have chosen to leave these issues to College committees and the Washington, DC, office, which are already dealing with them. Fellows who have concerns specific to rural surgery should contact the appropriate committees or officers for assistance. One issue repeatedly identified by our rural colleagues is that of peer review. Meaningful peer review is extremely difficult to achieve in a small hospital served by only one or a few surgeons. In the informal survey

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mentioned previously, a majority identified self-assessment and personal outcomes tracking as a high priority. All would willingly travel, at their own expense, to a distant site to gain information about how to incorporate these principles into their practices. Most surgeons want to learn and to improve. The American College of Surgeons should try to help them in their quest. At the 2005 Spring Meeting in Hollywood, FL, surgeons had the opportunity to learn how to use personal digital assistants to track their cases and outcomes. This is an excellent example of how the College is attempting to address such issues, and such efforts should be expanded.

### Conclusion


Practicing surgeons without immediate access to an academic or large-volume medical center have difficulty keeping pace with the explosion of technology. We need help from our colleagues in surgical education if we are to be able to continue to serve the needs of our patients. Several principles worth considering include the following:

- The education/training of surgeons is time-consuming, expensive, and demanding. It is not sensible to make this investment if the product could be outdated within a few years of commencing practice.

- The public wishes to have sophisticated surgical care available in all communities, large and small. Regionalization of care may be the goal of health-planning agencies, but it is far from being a reality. Unless or until regionalization and the necessary infrastructure exist, a finite number of surgeons must be trained to provide care to our rural population.

- Numerous models exist for the successful teaching of cognitive skills, but teaching of psychomotor skills is labor-intensive and expensive. Interaction between student and teacher and hands-on experience are essential. Development of effective and efficient methods for rapidly upgrading skills of practicing surgeons in all geographic areas is the principal educational challenge for the near future.

- Reputable surgeons and/or surgical organizations have developed a variety of models for teaching psychomotor skills. Nevertheless, many private practitioners obtain information and hands-on experience from entrepreneurial orga-

nizations—medical device manufacturers in particular. The surgical leadership might have something to learn from their successes. Partnerships could be considered. Bringing teacher to student, instead of vice versa for rural practitioners, may be a novel means of accomplishing this goal. 

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### References

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