Surgical Evolution

Collaboration Is the Key

Aurora D. Pryor, MD

Surgery is an evolving profession. Only a decade ago, surgeons had well-defined and relatively isolated clinical practices. Most surgical procedures were performed through large incisions that required prolonged hospitalizations. In the 21st century, however, minimally invasive techniques and advanced technology, which require collaborative work with internal medicine specialists, are more prevalent. Fortunately for our patients, these developments are resulting in improved outcomes and reduced hospitalization times. This change in approach to the patient from unilateral to collaborative, however, is leading to a breakdown of the surgeon’s traditional role. To best serve our patients, surgeons need to reevaluate their isolated position within the medical profession.

If surgeons continue to work within an isolated medical arena, they may risk the opportunity to assist in the expansion of disease treatment. Advances in the treatment of cardiovascular disease as well as gastroesophageal reflux disease have not been, in recent years, inclusive of the surgeons who specialize in cardiothoracic and upper gastrointestinal tract diseases. Cardiologists are stenting peripheral and central vascular lesions. Minimally invasive techniques to treat cardiovascular disease are decreasing the demand for traditional operative approaches. Gastroenterologists are performing endoscopic fundoplication for gastroesophageal reflux disease. These procedures are often done without consultation with a surgeon. The change to outpatient endoluminal procedures has opened the door for physicians in nonsurgical disciplines to treat patients who have traditionally surgical diseases. This minimizes surgical referrals and the stability of surgical practice. It also makes it difficult to compare efficacy and outcomes across treatment modalities in different specialties. Patients may not be fully aware of alternate procedures, based on the expertise of their practitioner. We, as surgeons, should become fluent and facile with these new technologies as they are developed and work in partnership with the other specialties to implement them. With the introduction of the laparoscopic cholecystectomy, patient preference influenced the widespread application of this minimally invasive procedure. To ensure that patients are not at increased risk for complications owing to the practitioners’ desire to meet the societal demand, novel technology requires collaborative development and a staged introduction into the medical communities.

Important issues surrounding the implementation of novel techniques, which affect the surgeon and the medical physician, include (1) equivalent or improved patient outcomes, (2) cost containment, and (3) accreditation of professionals providing these services. Surgeons need to assure controlled introduction of new technology by appropriately trained physicians. As a profession, surgeons can assist in defining the best practices and standards of care for a particular disease process. We need to design and to implement appropriate clinical trials, which include quality-of-life and cost outcomes, to evaluate new technology. Determining the learning curves for the novel procedures

Author Affiliations: Department of Surgery, Duke University Medical Center, Durham, NC.
and the credentials required to perform the procedures should also involve collaboration between all the subspecialists involved with patient care.

As more disciplines become adept at minimally invasive procedures, surgeons will need to work with their medical colleagues to optimize patient care. It is unreasonable to expect that physicians outside of surgery cannot perform procedures. It is more practical to branch into integrated practices with the other medical professionals. Such disease-based practices will facilitate a focus on outcomes and patient needs.

There are many benefits to establishing disease-based integrated multidisciplinary practices. Advantages can be seen in all areas of patient care from triage to billing and collections. If a primary care physician diagnoses a patient as having an esophageal disease or as having a vascular problem, they can refer the patient to a practice that focuses in that area, without having to know what procedure the patient needs or who will best perform it. The initial appointment within a specialty practice can be a data acquisition and diagnostic appointment. Patients can then be triaged to the appropriate procedure-based physician within the practice by someone familiar with the specific medical problem. Patients with more complicated conditions can be discussed within the practice and appropriate treatment options can be considered and debated. Not only will this help with appropriate patient selection, but it also can facilitate collaboration for patients needing treatment of complex conditions.

Patient care will be more of a team effort with this multidisciplinary approach. Care of a specific patient will no longer be by a specific physician, but by the practice itself. Patient follow-up and urgent care will be shared within the practice. This approach will have the advantage of disease-specific team coverage but will rely on good communication to continue high-quality patient care. An additional benefit to multidisciplinary care might be improved surgeon job satisfaction by increasing job flexibility and decreasing on-call responsibilities. For example, the interventionalist and vascular surgeon can share the patient care responsibilities and decrease the burden typically placed on the surgeon to assume sole “coverage” for these patients with complex conditions. It is important for both the surgical trainee and the resident in interventional radiology to uncover the outcomes and complications from their combined procedures. It is also important for these practitioners to be involved in development of patient treatment plans. This multidisciplinary disease-centered approach to the patient will facilitate the development of novel techniques if the surgical and nonsurgical specialists are involved in the postoperative-procedural patient care.

Program-based medical care can also help to reduce overhead costs. Duplicate secretarial support can be minimized. Clinic spaces and outpatient procedure facilities can be shared. Capital expenditures can be reduced by combining resources. Marketing services can be streamlined and integrated within a practice. When expenses and profits are evenly shared, it minimizes competition between members of the group and maximizes collaboration. Billing and collections can also be centrally coordinated, allowing for better negotiations with insurers for reimbursement and for better rapport with patients over financial issues. Patient resources can also be combined making it easier to navigate an otherwise complicated hospital system. Smaller organizations are generally more efficient than larger hospital or department-based systems. These are all real advantages to a multidisciplinary approach.

Such an integrated multidisciplinary practice, however, questions the traditional departmental structure seen in academic medicine. To effectively collaborate we need to break down administrative, financial, and communication barriers between departments. To avoid some of the inevitable bureaucracy of a cross-departmental program, budgetary control for day-to-day issues will need to reside within the clinical programs instead of the departments. This can maximize both efficiency and financial responsibility. Multidisciplinary programs can be virtual, by title or triage base only, or physical by colo-locating providers. Efficiency is improved by locating providers together. This minimizes redundant resources and maximizes communication. It also facilitates patient access to the different components of a practice. Physicians can report in a traditional department structure but work daily with the team.

We will need to consider the effects of such a structural change on education. Medical school graduates could possibly train in disease management, such as vascular disease, rather than studying in radiology or surgery first. This type of education would give physicians a better understanding of all facets of disease-based patient care and possibly lead to more appropriate triage or procedural decisions. Although I advocate a multidisciplinary practice, I still feel it is best to have subspecialists within such a practice. To accomplish this, physicians would still train in surgery and then complete a fellowship across the disciplines in one specific area, as is the current practice. In such a model, the vascular fellows from radiology, cardiology, and surgery would rotate through all disciplines in the disease-based practice as part of their fellowship training. However, they would still focus on their specific subspecialty. Similar models could be followed in other clinical areas as well, such as hepatobiliary or foregut disease. This would facilitate a multidisciplinary practice but continue to allow surgeons to focus on surgical care.

Multispecialty practices will allow us to develop true centers of excellence for disease-based patient care (Figure). We may then be able to effectively gage the efficacy of new technology in comparison with traditional surgical procedures. With the continued assessment of surgical quality parameters, surgeons will be able to assess individual program performance compared with published outcomes. Standard of care will no longer just address what specifically is done but how well it is done. Employers and insurers potentially will limit physician choices for their clients to attempt to minimize complications and, therefore, save money. The collaborative disease-centered patient care is being practiced in subspecialty fields such as bariatric surgery and will likely expand to other disease-based practices as well.

In North Carolina, Blue Cross Blue Shield has polled bariatric practices and hospitals on patient outcomes, fol-
low-up, hospital stay, complications, services, and other factors. Practices and facilities that met specific screening criteria were then visited and inspected. Seven centers around the state were designated as Centers of Excellence. One feature prominent to each of these centers was a focus on the multidisciplinary care of the obese patient. Initially these centers will be recommended to patients covered by Blue Cross Blue Shield, but eventually coverage for bariatric procedures will be limited to the chosen centers. This has some clear positive and negative impact for surgeons. Practices included as a center of excellence have less paperwork to complete, have a potential increase in referrals, and may see improved reimbursement. Patients may also have improved outcomes owing to potentially less competent surgeons being excluded as providers. New surgeons entering practice with minimal experience and outcomes data will potentially be unable to recruit patients or enter the field. We will need to consider the effect of such practice restrictions and develop plans to introduce new providers.

The American Society for Bariatric Surgery has also set up a separate entity, the Surgical Review Corporation to designate centers of excellence in bariatric surgery around the country. Unlike the centers of excellence spearheaded by Blue Cross Blue Shield, surgeons are driving this effort. The motivation is to encourage insurers to continue to cover the procedures and potentially help address some of the malpractice crisis. The result, however, may be exclusive and prevent surgeons from accessing the field.

Although bariatric surgery centers of excellence are a start for improved patient care, they are not yet an ideal system. We need to develop centers that are truly disease based and not purely procedure driven, including for instance medical, dietary, and exercise components for nonsurgical weight loss in appropriate patients. Multidisciplinary practices will help solve this deficit in patient care, allowing patients to be informed consumers. By expanding the approach to the obese patient, a program may truly become a center of excellence in obesity management.

Centers of excellence are developing in other areas as well. To continue to refine the practice of surgery we need to consider how centers of excellence can be designed. Outcomes evaluation offers one means to assist in the development of a disease-focused “center.” There are many organizations setting up nationwide databases, such as the SAGES outcomes initiative or the National Trauma Data Bank, to monitor outcomes and define standards of care within surgery. Although these sites are used primarily to provide a benchmark for current outcomes, they may define the minimal standard of care in the future. It may be expected that practitioners will enter their outcomes and compare their morbidity and mortality with that of others across the country.

To truly define standards and develop centers of excellence across the practice of medicine, data from small community practices, as well as academic medical centers, must be included. An example is the diagnosis and management of bile duct injuries at the time of cholecystectomy. The surgical literature supports that these are to be managed at tertiary referral centers for improved outcomes. However, the literature is developed at the tertiary centers for the most part. It is conceivable that a community surgeon may diagnose and treat a ductal injury at operation and if successful, the patient is never referred to or seen at a tertiary center. It is virtually impossible to track these outcomes without a nationwide database. Any database may need to cross-reference a database based on International Classification of Diseases, Ninth Revision and operating room coding, but it will still be inherently limited and possibly flawed. Site visits may be required to ensure the integrity and validity of data. It is also unwise to trust these data if surgeons have little investment in accurately entering their data. These are the pitfalls to avoid in nationwide databases, but they are not insurmountable. The Veterans Administration medical system has been able to effectively

Figure. Shift in practice composition from a traditional department-based structure to a disease-based multidisciplinary organization. GI indicates gastrointestinal.
assess basic outcomes data in surgical care across several medical centers.\textsuperscript{12} Such data tracking systems can be applied to other surgical practices as well.\textsuperscript{13} Through efforts like these, new standards of care can be developed and implemented.

Recognizing the importance of surgical and procedural outcomes, we, as a profession, have to make sure that evidence-based restrictions or recommendations are not too narrow. The true general surgeon still needs to be able to perform elective surgery as long as he or she is able to comply with the minimal standards. Although many surgeons will limit their practices to provide outstanding care in one specific area, there will still be a role for the general surgeon in many smaller communities. As community general surgeons seek to incorporate new technology into their practices, multidisciplinary mentorship programs could be used to provide the necessary training. The general surgeon will then need to track his or her outcomes to assure compliance within a basic standard of care for the particular disease state.

The medical profession is continuing to evolve. Surgeons who are in practice will need to reevaluate their interactions with their medical colleagues. Our surgical residents will need to train in a more collaborative disease-based system. As new technology emerges for a specific disease, both the surgeon and medical subspecialist will need to determine the means for training and widespread application. Clinical trials will need to be designed collaboratively to assure that the novel method meets or exceeds the current standard of patient care. We must diversify our capabilities and work collaboratively to evaluate our changing medical technology. Conflicts and competition between departments can be resolved through multidisciplinary disease-based practices. Such practices will improve patient care, reduce operational and overhead costs, and ensure a high level of competency.

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\textbf{Correspondence:} Aurora D. Pryor, MD, Duke University Medical Center, 3116 N Duke St, Suite 209, Durham, NC 27704 (pryor002@mc.duke.edu).

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