

**A roadmap
to safe
surgical
care:**

A view from Pennsylvania



by John R. Clarke, MD, FACS

Safe operations and patient care should be a precondition for all clinical surgical activities. To achieve safe surgery, surgeons should take a number of steps.

Commit to safety as a precondition

The most important component of patient safety during surgical care is the will of the surgeon to make a commitment to safe operations and patient care. This commitment will take many forms. Most importantly, it will require surgeons to accept the responsibility of doing whatever they can to make surgery safe. Safe surgery should be a precondition for surgical care and not a goal in competition with efficiency, productivity, or profitability. The long-term effects of safe surgery should be fewer complications, less care per patient, lower costs, and less liability.

View safety as a system responsibility

Surgeons have been taught individual responsibility: mistakes are the result of personal cognitive or technical failures and if shame does not immunize against error, remediation is needed. Safety experts see health care as a complex system of services. Safety is a product of the way the system is organized as well as the way providers in the system behave. Individual providers must act safely, but the system must not be dependent on the safe practices of individual providers to make the entire system safe. Systems also need such properties as forcing functions, resiliency, redundancy, and standards to be safe. Although providers are not individually responsible for the inherent safety of a system, they must be jointly responsible for making a system as safe as it can be. In particular, they must not only help each other recover from errors before patient harm occurs, they must pursue improvements in the system so that ad hoc workarounds are not needed to make the system work as intended.

Provide leadership

Surgeons cannot make the health care delivery system safe by themselves. They can provide leadership that will help, rather than hinder, the organization's efforts. They can show commit-

ment, be good role models, and give direction. Many opportunities for leadership can be cited. Surgeons are particularly well-positioned to identify those options leading to safe operations.

Practice according to an evidence-based system of medical care

A bazaar provides a variety of ideas and opinions about what is desirable, and the craft cooperative feeding a bazaar is a group of individualists, all trying to meet their own needs in a collective setting for increased individual efficiency. In contrast, a hospital provides the best scientifically based medical care to a variety of patients with specific problems and comorbidities. In a hospital, it is the patient, not the science, that varies. The best management for a problem varies commonly with the patient's comorbidities but only occasionally with the technical competencies of the provider.

In general, the best clinical care is the care best supported by the scientific or clinical evidence; the number of optimal ways to manage the patient does not equal the number of provider preferences. Best practice guidelines and standards of care are available for many clinical situations, including patient safety situations. They should be followed where appropriate. Sources include the American College of Surgeons' Evidence-Based Reviews in Surgery (EBRS), the National Guideline Clearinghouse (<http://www.guideline.gov>), and the report published by the Agency for Healthcare Research and Quality, *Making Health Care Safer: A Critical Analysis of Patient Safety Practices* (available at <http://www.ahrq.gov/CLINIC/PTSAFETY/>). For other common clinical situations, an institution-specific protocol can be developed by those most expert, then critiqued, defended, modified by consensus, and used as a uniform approach to the problem. When an organization has one way of doing something, variation is obvious and can be efficiently double-checked for appropriateness.

Practice only at the highest level of intellectual and technical competency

If you know you could do better, why not learn? If you know someone else could do a better job, how can you justify doing it yourself? Not every-

one is good at everything, but everyone can be good at everything they choose to do. Professionals committed to excellence should not hesitate to help each other, even if they are competitors. Courses for further training and methods for measuring competence are available at the American College of Surgeons' annual Clinical Congress and through EBRIS, the Advanced Trauma Life Support® (ATLS®) course, the Surgical Education and Self-Assessment Program, the National Surgical Quality Improvement Program (NSQIP), and many other sources.

Focus on safe operations

Many patient-safety initiatives focus on medications, falls, and other aspects of care that could affect anyone receiving health care. Surgery invariably involves a specific procedure in a specific place by a specially trained team. Procedures are a major source of iatrogenic morbidity. The operating room is the focal point of surgical care. A safe operation is a logical primary objective for any surgical patient-safety initiative. It is of great interest to all concerned. Achieving safe operations will involve a finite number of providers in a limited setting. Progress is measurable, and results may be generalizable.

Encourage teamwork characterized by mutual respect

The surgeon has the responsibility to perform a safe operation, but every member of the operating team shares that responsibility. Teamwork is an essential part of modern clinical care. Good teamwork requires additional skills and training. Teamwork involves not only meeting your own responsibilities but helping the patient care team achieve the most successful outcome possible. Teamwork in the operating room involves surgeons, anesthesia personnel, and nurses. Each has expertise that should be valued for its contribution to the coordinated care of the patient. The “captain of the ship” has been replaced by a flattened hierarchy of the “first among equals.” Good teamwork is an essential asset for good patient care and safe surgery.

Be open to sharing

No one likes mistakes pointed out after the fact (although most professionals would like someone to point them out before they are acted on). On the other hand, everyone would like to learn from the mistakes of others, rather than their own. Sharing mistakes is justified both ethically and practically.

Surgeons are known for their confidence. Confidence means not only belief in yourself but trust in others. Confidentiality should not mean secrecy—it should refer to discretion and confiding in a supportive, learning environment. The National Patient Safety and Quality Improvement Act of 2005 recognized the need for confidential sharing of information for learning purposes by establishing a system for confidential reporting to patient safety organizations.

Sharing also means communicating and accepting responsibility to patients. Sharing has been shown to engender, rather than endanger, trust. Patients do not expect perfection. They expect providers to do their best, accept responsibility for and express regret about mistakes, and demonstrate responsibility for correcting these mistakes for the patient injured and for future patients. Disclosure of errors to patients facilitates objective analysis of the causes and increases the probability of effective solutions. It has also been shown to decrease malpractice claims.

Make safety a legitimate area of academic inquiry

If safety is a systems science, research is needed to solve intractable problems. Clinical complications like retained foreign bodies and wrong site surgery have not disappeared with scrutiny alone. Clinicians lack expertise in safety and safety experts lack domain knowledge. Partnerships, available in large universities, are needed to provide centers for useful and effective insights. Observational and epidemiological data are needed. Champions, mentors, salary support, project funding, reviewers, forums for presentations and publications, prizes, and other research infrastructure are needed. Reducing mortality and morbidity through new treatments has value. Reducing mortality and morbidity through reli-

able application of the treatments we currently know to be effective should have similar value.

Collect data

Problems cannot be identified without information. Progress cannot be determined without measures of process and outcome. Factors affecting successful outcomes include patient factors such as comorbidities and provider factors such as competencies. Factors involving safe outcomes also include institutional and team factors. All need to be measured to understand the relationship between process and outcome. As with any other clinical problems, some patient safety problems will be identified by monitoring key measures. Others will require in-depth analyses. Currently, most patient safety reporting systems are not linked to broad-based outcomes databases. NSQIP is an outcomes database that could help provide information to improve patient safety.

Identify high-risk situations

Errors in the delivery of medical care may be influenced by predetermined patient factors (such as a higher risk of retained foreign bodies in obese patients), provider factors (such as hours worked), institutional factors (such as computerized provider order systems), and team factors (such as new team members). Data on the relationship between process, outcomes, and the characteristics of the patient, provider, institution, and team can reveal attributes that are associated with high- and low-risk situations. Identification of high-risk situations could trigger extra safety precautions, such as double-checking the programming of infusion pumps delivering high-alert drugs.

Identify safest practices

Errors in the delivery of medical care are also influenced by the choices and actions of providers, both individually and within a team. Some decisions, techniques, and behaviors will produce fewer errors (and better outcomes) than others. Again, data on the relationship between process, outcomes, and those plans and actions can reveal

strategies that are associated with better and worse outcomes. Identification of safest practices can be evaluated for best-practice designation.

Summary

An effort to make operations safe is realistic if surgeons are committed. Such an effort involves educating surgeons about safe practices based on current knowledge of best practices, including team training and talking to patients. It involves identifying leaders and developing appropriate infrastructure for academic activities. It also involves the collection of information needed to identify safe and unsafe situations. The potential advantages of a drive for safe surgery should be fewer complications, less care per patient, lower costs, and less liability. Ω

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