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Risk in Surgery

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Commentary: The Challenges and Opportunities for Reducing Risk in Surgery

by William Berry, MD

Dr. Berry is board certified in General Surgery and Surgical Intensive Care. He is the surgical consultant to CRICO/RMF and is a faculty member of the Institute for Healthcare Improvement.

Why is *Forum*—dedicated to improvements in patient safety and reduction of malpractice cases—focusing on surgery?

Because, surgery is also fraught with risk, a risk that is borne out in the malpractice experience.

Consider the very nature of surgery, grounded in science but practiced as an art. It requires dexterity, physical stamina, knowledge, and judgment. In the operating room, relatively “normal” patients are given medications that stop them from breathing and make them feel no pain while a surgeon takes a knife and opens the body, reaching within it to remove a tumor or repair a broken body part. The inherent danger is magnified by numerous other factors, including:

- the ever expanding amount of surgical knowledge that “specializes” even general surgeons,
- less invasive technologies have moved what was once confined to the operating room to the radiology suite or cardiac catheterization laboratory, and
- rapidly advancing technology and new learning curves that challenge surgeons and systems to keep up.

This, then, is the setting in which *Forum* explores many different problems surgeons (and their patients) are facing: some with ready solutions...some still unsolved.

While surgeons represent 17 percent of the physicians insured by CRICO, surgery-related cases account for 30 percent of the malpractice claims. This imbalance is attributable to several factors. Each surgical encounter carries with it a greater chance of patient harm than is present in many other areas of medicine. Surgeons depend more on physical skill in their care of patients than many other medical specialists—making technical error a vexing and persistent problem. Finally, training surgeons presents unique challenges. How do you know when a resident surgeon is ready to wield the knife and cut and sew? How do you supervise surgical residents closely enough that patients get safe care, and at the same time encourage the development of independent judgment? Our contributing experts touch on these and other important questions relating to surgical risk and strategies to reduce it.

In addition to myriad individual efforts underway to improve surgical patient safety, are some collaborative efforts coordinated through the Harvard medical malpractice insurance program and CRICO/RMF. In response to issues surfaced in the analysis of malpractice claims—and confirmed clinically in the institutions—the need for change is clear.



- A surgical safety collaborative consisting of the Chiefs of Surgery of the major Harvard teaching hospitals was launched two years ago. Improving communication between everyone involved in surgical care lies at the center of their work. This group has now developed, and is in the process of implementing, a set of triggers to enable better communication between residents and attending surgeons. Progress is being made.
- In November 2007, CRICO/RMF organized a Surgical Summit, attended by surgeons from the Harvard-affiliated institutions (and across the country). Extensive discussions took place regarding teamwork in the operating room, technical error at surgery, informed consent, and “what to do after an adverse event.”
- And, in January 2008, CRICO/RMF and the surgical chiefs endorsed a certification program in Fundamentals of Laparoscopic Surgery (FLS). Successful completion of the FLS program is linked to a patient safety incentive.

CRICO/RMF is also funding research in the areas of surgical outcomes improvement through team training and quality improvement. Surgery can and will be safer for our patients through this important work. ■

Malpractice Claims Involving Surgeons

by Kathy Dwyer

Ms. Dwyer is Program Director, Loss Prevention/Patient Safety, for CRICO/RMF.

Surgeons, who represent 14 percent of CRICO-insured¹ physicians, are named in 31 percent of the CRICO malpractice cases asserted over the past five years. From January 2002–September 2007, 407 surgery-related claims² were filed naming 470 physicians, and accounting for nearly one-third of CRICO's total incurred losses.³ Although a vast majority of the claims were resolved without payment, the emotional toll for patients and providers can be enormous. The average indemnity payment for those cases that *were* closed with payment was \$676,000, 28 cases closed with payment exceeding \$1 million (see Page 4).

Plaintiff patients commonly allege that an unexpected and preventable outcome (i.e., injury, complication, or non-resolution of their pre-operative condition) was caused by technical, cognitive, or communication errors that (often) occurred before or after the operation, as well as in the operating room (OR) during surgery. The surgical complications in the cases include:

- collateral damage to adjacent organs (e.g., dividing a ureter);
- significant postoperative hemorrhage;
- unrecognized injuries (e.g., spleen or bowel injury);
- failures of surgical anastomoses;
- retained foreign bodies;
- wrong site surgery; and
- other unplanned returns to the OR.

Technical error was a prevalent factor in 58 percent of the cases, followed by clinical judgment/decision making errors (54 percent), and communication breakdowns (43 percent).⁴ Deeper analysis of the CRICO cases identifies persistent problems with the supporting systems in and out of the OR, including wrong site surgery; inadequate communication among clinicians; failure of staff to follow procedures; less than ideal team performance; fumbled handoffs; and supervision gaps.

Communication Factors

From the research, focus groups, demonstration projects, and the patient safety initiatives that CRICO has funded in surgery over the last few years, it has become clear that a surgeon's communication style—directly and indirectly—impacts patient safety. While surgeons cannot control the entire process, they can have great influence in bringing out the best in their colleagues, especially in a crisis. Suboptimal communication is a factor in a significant number of surgery-related claims. Breakdowns in surgeon-patient interactions prior to surgery, team communication in the OR, and post-op supervision are all exposed when the outcome is unexpected and subject to investigation. In many cases, poor communication exacerbates technical or clinical judgment errors that might be recoverable given a better exchange of critical patient information (see *A Good Day in the OR*, page 9).

Consent

An adverse surgical outcome that is also unexpected is more likely to motivate litigation than if the patient has been adequately prepared for it. Upon examination, one out of every five CRICO surgical cases reveals a significant issue related to informed consent, including the decision to undergo the procedure, the risk-benefit equation, what the surgeon plans to do, expectations for post-op quality of life, and a reasonable comprehension of potential complications. Inadequate informed consent manifests itself in several ways, including:

- the patient is not told of alternative treatments;
- the medical record does not reflect the conservative treatments tried and the results,
- the surgeon fails to realistically represent the risks as well as the likely outcome of the procedure,
- a lack of preparing the patient for what is to come (i.e., the patient is completely surprised),
- in explaining the potential risks of a procedure, the surgeon fails to put him or herself “in the shoes” of the patient, and
- the informed consent is obtained on the day of surgery when there is no time to reflect on the course of treatment.

In 2006, CRICO-insured institutions performed 79,400 inpatient surgeries, 149,300 outpatient surgeries.	
General Surgery	381
Orthopedic Surgery	195
Ophthalmology	153
Gynecology	121
ENT	109
Urology	66
Neurosurgery	64
Plastic Surgery	57
Cardiac Surgery	51
Thoracic Surgery	40
Vascular Surgery	34
Oncology Surgery	33
Oral Surgery	31
Podiatry	26
Other surgical specialties	14
Total	1,375

a As of December 2006

Cases Asserted 2002–Sept. 2007	All CRICO	Surgery-related ^a
Total cases	1,319	407
Cases with high-severity injury ^b	597	154
Average indemnity incurred	\$671,000	\$628,000
Cases Closed 2002–Sept. 2007	All CRICO	Surgery-related
Cases	1,344	421
Cases closed with indemnity payment	31%	29%
Total indemnity payment	\$252M	\$81M
Average indemnity payment	\$605,000	\$676,000
Cases closed with indemnity payment >\$1M	88 (6.7%)	28 (6.9%)

a Claims and suits in which a surgical specialty was responsible for the patient at the time of the alleged event.

b Permanent significant, major, or grave injury, and death.

Physician Defendants	N=470
Staff	390
Fellow	15
Resident	65
Non-physician Defendants	N=313
Organization	267
Nurse	33
Physician Assistant	3
Other	10
Top Responsible Services	N=407
Orthopedics	95
General Surgery	32
Gynecology	46
Neurosurgery	45
Plastic Surgery	27
Cardiac Surgery	21
Otolaryngology	18
Urology Surgery	18
Top Locations	N=407
Operating room	223
Physician's office/clinic	79
Ambulatory surgery	56
Offsite	12
Top Risk Management Issues	N=1,018
Technical skill	236
Clinical judgment	219
Communication	173
Top Case Types	N=407
Inadequate informed consent	79 (19%)
Wrong site surgery	67 (16%)
Retained foreign body	39 (9%)

upon too late to prevent irreversible damage. Several of the cases depict residents getting into trouble and not communicating with the team—not even the attending—about the problem or not knowing when to ask for help. Inadequate communication in the other direction—e.g., when the attending surgeon does not share key information with the postoperative team caring for the patient is also noted in the surgical claims (see Regenbogen, page 12).

Lessons

Analysis of CRICO's surgery-related malpractice claims shows that improved safety for surgery patients necessitates attention to technical, teamwork, and communication skills employed from the initial patient visit through the post-op discharge

Provider-to-Provider Communication

Surgery-related malpractice cases that involve communication breakdowns between providers often germinate from one party either a) having the mindset “*I didn't think you needed to know that,*” or b) failing to stress his or her most important concern (e.g., potential for blood loss). Such assumptions—that the information was not needed by the other members of the patient's care team—unnecessarily elevate a moderate risk to a potential crisis. On the other hand, the use of such tools as team timeouts/briefings, checklists, and sign outs can help systematize better team communication.

Supervision

Residents and fellows account for 17 percent of the physicians named in the surgical claims. Those cases are predominately related to situations in which a post-op patient's complication(s) were recognized or acted

process. Physicians, nurses, and technicians—regardless of status or specialty—should all consider themselves essential to providing a safe environment and optimal outcome (see Mandell, page 7).

Helping the patient have realistic expectations is critical (see Riley, page 16). Patients who are adequately informed about and prepared for the very real risks of complications are less likely to seek retribution when they do, unfortunately, occur. Once the patient is in the OR, surgeons can and should help create an environment that fosters teamwork via briefings, timeouts, and any other opportunity to connect with colleagues. Surgeons who have framed a good rapport within the clinical setting greatly reduce the risk of critical information being lost due to misbegotten assumptions. Likewise, surgeons who strive for a high level of individual professionalism (see Whittemore, page 22) properly set the stage for highly reliable team performance.

Certainly, some adverse surgical events can be avoided with better technical training and proficiency (see Jones, page 18). But, no matter how qualified or experienced the surgeon, many technical “errors” are virtually unavoidable: known complications of complex procedures, complex anatomy, or complex co-morbidities. What is avoidable, is failing to promptly recognize and skillfully manage those complications. Surgery teams with a common understanding of how they will handle the unexpected are less likely to be caught unprepared in the face of an unforeseen complication.

Finally, when errors do occur and lead to an adverse and unexpected outcome, surgeons cannot abandon their patients (see Shapiro, page 20). Disclosing facts as they become known, extending compassion and being available to the patients, and seeking help for their own emotional disruption, are necessary steps surgeons must take in beginning to heal the break in trust.

Using Malpractice Data to Support the Need for Change

Research has shown that the adverse events that lead to malpractice claims are a (relatively small) subset of all adverse medical events.⁵ Nevertheless, the overall occurrence is infrequent: each year, CRICO-insured surgeons perform more than 225,000 (inpatient and outpatient) surgical procedures; each year, approximately 70 patients file malpractice claims or suits. The frequency of surgical malpractice cases may be infinitesimal, but no one considers any one of them insignificant; the consequences for the patients, their families, and the surgeons

Continued from previous page

and other clinicians are often devastating. Every avoidable adverse event is worthy of some degree of investigation, comprehension, and action to prevent recurrence. Across the Harvard-affiliated hospitals, the surgery departments have been working—initially independently, and now in collaboration (see Augello, page 14)—to reduce the risk of adverse events. This innovative and important work will drive changes in how surgeons are trained, how they communicate, and how they see themselves as partners in patient safety. ■

Thanks to Winnie Yu, Data Analyst, for preparation of CRICO claims data.

Notes

- 1 Professional liability insurance coverage for MIT and Harvard-affiliated medical institutions is provided by Controlled Risk Insurance Company of Vermont, Inc. (A Risk Retention Group) and Controlled Risk Insurance Company, Ltd (CRICO).
- 2 Based on claims and suits in which a surgical specialty was responsible for the patient at the time of the alleged event.
- 3 Incurred losses aggregate reserves on open cases, payments on closed cases, and expenses.
- 4 A single case may be assigned multiple risk management issues, thus the totals exceed 100 percent.
- 5 Committee on Quality of Health Care in America. *To Err is Human: Building a Safer Health System*. Washington, DC: National Academy Press, 1999.

Surgery-related Cases Asserted 1998–2007 that Closed with Payment ≥ \$1,000,000

Event Year	Description
1993	36-year-old male suffered multiple complications after gastric by-pass, resulting in total gastrectomy and need for enteral feedings
1994	30-year-old male suffered an intracranial hemorrhage during a brain biopsy (plaintiff alleged inadequate pre-operative evaluation)
1996	16-year-old male sustained spinal cord injury during rod placement for scoliosis, resulting in paraplegia
1996	47-year-old female died following a lumbar discectomy due to a torn iliac vein during procedure (attending surgeon was not in attendance for much of the procedure)
1996	32-year-old male, who developed respiratory complications after a bowel resection, alleged improper management (delay in intubation)
1996	Three-year-old female had extensive deep invasion and spread of retinoblastoma after undergoing eye enucleation (no other treatment offered or consultations obtained)
1996	45-year-old male alleged a delayed diagnosis of invasive nasopharyngeal squamous cell carcinoma
1996	Two-year-old female suffered loss of vision due to an alleged delay in diagnosis and treatment of bilateral subdural hematomas sustained after falling at home
1996	31-year-old female alleged that failure to diagnose a brain tumor led to her loss of vision
1997	50-year-old female's posterior ligament was punctured during spinal surgery, resulting in paraplegia
1997	Two-year-old female sustained anoxic encephalopathy due to cardiovascular collapse during surgery for an obstructed bowel (alleged failure to recognize severity of SBO symptoms resulted in surgical delay and brain damage)
1998	35-year-old deaf male developed respiratory distress post IV sedation (alleged inadequate informed consent, i.e., no interpreter)
1998	51-year-old female undergoing an elective resection of a large hepatic cyst died as a result of severe bleeding due to ligation of the IVC (inadequate informed consent was alleged)
1998	48-year-old male sustained brain damage due to an air embolism after SG catheter disconnected during patient transfer
1998	44-year-old male died after post-op communication between fellow and attending surgeon was delayed
1998	17-year-old male sustained post-operative brain damage allegedly due to poor communication among providers and a lack of coordination of care
1999	37-year-old male sustained brain damage during repair of AVM due to the adhesive used in procedure (radiologist who was aware of complications from adhesive, used a backdated letter from manufacturer allowing patient into the study)
1999	28-year-old female suffered neurologic deficits (double vision, slurred speech, and gait problems) after having electrodes implanted into her brain
1999	33-year-old male suffered quadraparesis following anterior cervical discectomy due to a dural leak
1999	48-year-old male sustained a dural tear and partial avulsion of nerve root along with large blood loss during discectomy, resulting in multiple surgeries and neurologic deficits
1999	One-month-old (premature) male was rendered blind after an alleged failure to timely diagnose and treat retinopathy (coordination of care was a contributing factor)
2000	48-year-old obese female with known sleep apnea went into respiratory arrest and died after a vitrectomy (her estate alleged an inadequate history and physical, miscommunication among providers, and errant selection/management of pain medications)
2000	40-year-old female underwent wrong-site surgery and acquired Addison's disease
2000	32-year-old female sustained lower extremity paralysis/paraplegia from spinal cord damage post excision of a pelvic mass
2000	One-year-old female (with hydrocephalus) died when surgery to repair a failing shunt was delayed because the surgeon could not be reached
2000	69-year-old female died after sustaining a pulmonary artery puncture during AAA re-repair (no communication of the complication was noted to patient or other providers)
2000	31-year-old female required multiple surgeries following revision of gastric bypass (surgeon inexperience with procedure seen as contributing factor)
2001	24-year-old male suffered multiple neurologic impairments post spinal fusion, requiring re-exploration and removal of bony fragments
2002	45-year-old male complained of new pain due to malposition of surgical screw (surgeon left the OR suite during procedure and never informed patient of incident)

Delayed Diagnosis of Post-operative Complication

A 45-year-old man died 16 hours after undergoing elective abdominal surgery.

CASE STUDY

Key Lessons

- Communication delays can be averted when expectations are clearly set.
- When dealing with new, unusual, or complex situations, physicians, whether attendings, fellows or residents, should seek consultation from others with more expertise.
- Effective documentation includes notes supporting the provider's clinical rationale for diagnosis and treatment.

Clinical Sequence

May 2000 A 45-year-old obese male, with a history of ulcerative colitis and hypertension was admitted via the Emergency Department with complaints of epigastric/abdominal pain and nausea/vomiting. Ultrasound revealed a dilated common bile duct (CBD) and mild intrahepatic ductal dilatation. An abdominal CT showed a 2.8mm cystic lesion on his pancreatic head. After undergoing an endoscopic retrograde cholangiopancreatography (ERCP), the patient's symptoms subsided and he was discharged home after a three-day hospital stay.

Ten days later, the patient was readmitted for recurrent abdominal pain, this time associated with anorexia and fever (104°F). ERCP revealed several CBD stones, which were removed. However, an 8mm stone was noted above a smooth stricture which could not be removed. A 10F stent was placed, resulting in good bile flow, and the patient was able to be discharged the following day with a plan to follow-up with a surgeon.

June 2000 The surgeon recommended that the patient undergo a Whipple procedure (removal of the head of the pancreas, duodenum, and gallbladder). A long conversation regarding the reasons for this procedure, the potential complications, and alternatives ensued. The patient signed the informed consent and the surgery was scheduled.

On the scheduled day, the operating room (OR) was running late and the patient's 10:00 a.m. surgery was delayed until 4:00 p.m., concluding near 10:00 p.m. The surgery was documented as "uneventful," with an estimated blood loss (EBL) of 3.5–4.0 liters. With the patient in "stable" condition the attending surgeon left the hospital for the evening

- 10:30 p.m. the patient was admitted to the surgical intensive care unit (SICU) with a BP 155/99, HR 120. Because he appeared to be "fighting" or breathing over the ventilator, he was given a sedative (Propofol).
- 11:00 p.m.–midnight the patient had both a central line and central venous pressure (CVP) line placed.

- 12:30 a.m. BP ranged from 96/69 to 74/54, HR was 110 and the patient's abdomen was noted to be distended with slightly more than 200cc bright red blood in the three Jackson Pratt drains. He was placed in Trendelenberg, given neosynephrine, one unit of packed red blood cells (PRBCs), and one amp of CaCl. Lab results at this time included Hct 37.2, PT 15.2, INR 1.5, and PTT 36.9.
- 12:40 a.m. BP 156/103, HR 122; the neosynephrine was turned off and the patient received one unit PRBCs.
- 1:00 a.m. BP 141/103, HR 114; Propofol increased.
- 2:00 a.m. BP 109/80, HR 114; one unit FFP given, Propofol decreased then stopped secondary to his BP continuing to drop to 89/– and neosynephrine begun again.
- 2:30 a.m. BP 137/107, bolus of Propofol given.
- 2:35 a.m. BP 41/23, HR 120, no pulse, code blue initiated, patient successfully resuscitated.
- 3:00 a.m. arterial blood gas revealed pH 7.05 (7.35–7.45), pCO₂ 37 (31–45), pO₂ 428 (75–101) and total CO₂ 11 (21–30); Hct dropped to 24. A chest tube was inserted and bright red blood was noted; CT revealed the tube had been placed subdiaphragmatic rather than in the chest cavity.

Of note: during the time the patient was admitted to the SICU up to the time he coded, the resident did not document in the patient's medical record; the only progress notes present were that of the nurse. The resident did not contact the chief resident or the attending surgeon regarding the changes in the patient's medical status.

- By 3:30 a.m. the patient was brought back to the OR for an exploratory laparotomy, ligation of bleeding vessels, and abdominal packing. EBL was approximately 4500ml, requiring a large volume resuscitation (17 units PRBCs, six units FFP, six units platelets, IVF). Findings from the surgery included a capsular tear in the dome of the liver (not bleeding), several small bleeders noted in the mesentery, as well as bleeding from the porta-hepatis, a branch of the gastroduodenal artery, side branches of the portal vein, and from the side of the hepatic artery.
- 6:30 a.m.–2:00 p.m. the patient returned to the SICU in critical condition. Over the course of the next several hours, he developed acute respiratory distress syndrome and became profoundly acidotic and hypothermic. At approximately 2:00 p.m., he coded and could not be resuscitated.

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ABOUT FORUM

FORUM provides in-depth analyses of specific medical malpractice cases and issues along with practical loss prevention advice and case abstracts.

The Massachusetts Board of Registration in Medicine has approved **FORUM** as qualifying for the equivalent of AMA Category 1 continuing medical education credit suitable for the Massachusetts requirement in risk management education.

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Post-operative Complication (cont'd)

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Allegation

The patient's family filed suit alleging that 1) the surgery performed was unnecessary, 2) the patient was wrongfully administered the drug Propofol, causing him to experience profound hypotension, and 3) the patient's post-operative abdominal bleeding was not diagnosed in time to prevent his death.

Disposition

The case was settled in the high range (>\$500,000).

Analysis

From the time the patient was admitted to the SICU and was being followed by the resident, his medical condition progressively deteriorated—resulting in an electromechanical defect and code. In retrospect, it appears that the resident never fully appreciated the complexity/severity of what was occurring.

Attending physicians should set clear expectations for residents as to 1) what signs and symptoms they should be concerned about given a patient's particular circumstances, 2) when they **need** to be notified of a change in a patient's medical condition (e.g., hemodynamic instability, new arrhythmias, wound complications, or unplanned blood transfusion) and 3) what they expect when a resident is unsure of how to proceed. (e.g., development of a concern/situation that is more complicated than he/she can manage).

The resident chose not to contact the chief resident and/or the attending surgeon.

When dealing with new, unusual, or complex situations, physicians, whether attendings, fellows or residents, should seek consultation from others with more expertise or just a different perspective. The resident in this case should have at least notified the chief resident regarding the patient's variable BP, distended abdomen and laboratory results (abnormal coagulation results). He also could have availed himself of additional expertise by consulting an anesthesiologist, an internist, a critical care physician, or a pharmacist.

Documentation by the resident was notably absent in the medical record. Without any notes, the resident's thought process is unknowable: Did he consider the patient was suffering from a surgical complication, such as an intra-abdominal bleed? Did he consider any other underlying causes for the patient's variable condition?

Clear, concise documentation regarding a patient's current medical condition, potential differential diagnoses, and plan of care are important elements of good documentation along with the rationale for proceeding as prescribed. This need not be lengthy, but should indicate alternatives considered, and the medical judgment and clinical basis for those decisions. ■

Driving Patient Safety Improvement Through Children's Hospital Boston

by James Mandell, MD and Kathy Jenkins, MD

Dr. Mandell is President and CEO of Children's Hospital Boston (CHB), and a Professor of Surgery at Harvard Medical School.

Dr. Jenkins is Director, Program for Patient Safety and Quality, Kobren Family Chair in Pediatric Safety and Quality, and a Senior Associate in Cardiology at CHB.

The Children's Hospital Boston (CHB) mission is to provide the best clinical service, education, and research in the field of pediatrics. The drive towards excellence in these areas has been led by physician and nursing leaders whose uncompromising goal has been to recruit the brightest talent, provide them with the opportunity to succeed, and hold them to (sometimes) uncomfortably high standards. The concept of physician leadership and significant autonomy is an embedded part of this culture.

In the past, the widespread internal acceptance of our high performance standards was not, however, subject to rigorous testing or benchmarking in many of our clinical areas—similar to many other institutions (especially those in pediatrics). Thus when, after a rather flagrant and public adverse patient safety event accompanied by a very negative regulatory review occurred in 2003, we at CHB began an in-depth critical review of the overall institutional performance, we were venturing into somewhat unfamiliar territory. While both of us—one serving as President and CEO and the other the Director of the Program for Patient Safety and Quality (PPSQ)—were familiar with the terminology and concepts of the patient safety and quality movement, we were certainly not experts in the subject matter—nor even strong institutional proponents.

The guiding principles of the process of embedding safety and quality within CHB include:

- safety first;
- commitment to high quality care is an expectation;
- excellent individuals working together on teams; and
- commitment to relentless, evidence-driven improvement.

Reporting and Reviewing

Perhaps our most important step forward was identifying two physicians (physician-in-chief and surgeon-in-chief) and the chief nursing officer as responsible and accountable for day-to-day monitoring of adverse events, patient safety, and clinical outcomes. A Senior Clinical Leadership Committee (SCLC) was established to review all significant adverse events, monitor quality metrics, and set policies and procedures for the institution as a whole regarding clinical performance standards. We also established an institution wide, web-based reporting system. Encouragement from leadership to report all adverse events or near misses (with complete protection for the reporter) led to a five-fold increase in the number of events reported for the subsequent 2-3 years. CHB also standardized the definitions for adverse event severity across the institution, as well as definitions for preventability. Multidisciplinary review of all significant adverse events is required, as is the classifica-

tion of events as preventable or possibly preventable whenever there is the slightest opportunity for lessons to be learned from the review. After initial increases due to enhanced reporting, the number of reported events leveled, and now appears to be decreasing.

Driving new policies throughout a complex organization requires a broad focus. As the depth and breadth of the scope of our patient safety work has expanded over time, we found the need for more focused attention on measurement, implementation of initiatives, and education. Each area is guided by strategies for safety and quality initiatives, with physician and nursing leadership accountable to the PPSQ and, ultimately, to the SCLC. These efforts have engendered considerable participation among our experienced physicians and nurses, and have proved to be a productive vehicle for dialogue and engagement in patient safety improvement.

The focus on metrics is, essentially, to measure how well we serve our patients and community. The framework we use is based on the six Institute of Medicine steps to quality (safe, effective, patient-centered, timely, efficient, and equitable care) across the four CHB mission goals (patient care, research, teaching, and community health). Through our academic faculty, we create meaningful measures that are truly reflective of performance—outcome, not process—that can be benchmarked internally and externally, and involve significant portions of the organization. This is especially important, since there are very few established quality measures for pediatric conditions. A hospital-wide plan is to create departmental-specific measures for performance at the physician-level.

A major challenge has been how to incorporate trainees (interns, residents) into safety and quality efforts. Toward that end, CHB created supervision guidelines for trainees at all levels, and makes certain that all trainees are aware of the requirements—especially that trainees should readily call the attending physician when questions arise. More specific attention has been focused on rotators, who come to CHB for brief periods of time and often have this as their first pediatric exposure. For example, one program being piloted educates surgical trainees about pediatric-specific information.

CHB has also worked to improve communication, especially for surgical procedures. Handoffs between the operating room, postoperative care units, intensive care units, and the regular floors are routinely monitored. A major new policy, known as the Associate Attending Policy, has identified more than 25,000 children under CHB's care for complex chronic conditions, and mandates attending-to-attending physician communication

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between the longitudinal care provider and the surgeon *before* operative procedures or other interventions. CHB also provides universal training to staff—especially nurses—to streamline communication and empower assertion, when necessary. Additional initiatives, beyond communication, have focused on reducing surgical site infections, and the escalation of support in response to clinical changes in the postoperative period. These multiple efforts, and constant reinforcement, have significantly increased physician and nursing engagement.

The Continuing Challenges

1. Despite years of work, CHB still struggles with measurement development and benchmarking in specific areas of pediatric sub-specialty care. While CHB has taken an active lead nationally in this area, and continues to refine acuity-adjusted outcomes, much work remains.
2. At the time of initial review in 2003, we determined that miscommunication between and among clinical services was a major factor in adverse outcomes. In response, significant strides have been made towards improving communication between faculty and trainees—as well as among attending physicians—and between physicians, nurses, and other caregivers. However, problems with communication remain a major challenge in our increasingly complex environment.
3. Public reporting remains a constant reality in our environment. CHB has expedited a more transparent process, but the diversity of regulatory and oversight agencies and their non-standardized approach to reporting continues to cause unnecessary and duplicative work. Reporting

now includes “pay for performance” contracting with both private and public payers.

4. The constant pressure from regulatory areas has also caused confusion among clinical leaders about what issues are truly important. The need to pursue multiple changes simultaneously has also led to “quality” fatigue and confusion. Both of these factors have led to leadership resistance, although this continues to fade over time. Despite occasional expressions of lack of trust, CHB’s culture of transparency and peer pressure continues to build.
5. The report and review process for reportable events has, out of necessity, become more timely. The process is still relatively new to the institution and balancing the “blame-free environment” with individual “competency” requirements remains a difficult cultural change.

CHB has tried to embrace and celebrate its significant accomplishments without becoming complacent. Our goal is to embed a culture of continuous learning, and never being satisfied with the status quo, into the fabric of the hospital, continuing a legacy of commitment to excellence. This will require continued efforts to achieve a true change in culture, where safe practice is practiced effortlessly. At present, whenever the spotlight veers away from a specific area of performance, we tend to see a backslide. Clearly, we are not universally excellent in all areas—and still need benchmarks in others. But, as long as we consider this a never-ending journey, towards a set of goals, we will never permit a relaxation of vigilance or absence from self-questioning. ■



What Makes for a Good Day in the OR, and What Keeps Me Up at Night?

by David W. Rattner, MD and Marion L. Freehan, RN, MPA/HA, CNOR

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For the Surgeon

The key is getting off to a good start. Simple as it may seem, a lot goes into getting the day in the operating room (OR) going in the right direction. Seemingly mundane tasks such as scheduling and preoperative testing have to be properly performed to ensure that the patient, surgical team, and the resources are correctly aligned on the day of surgery. Minor issues such as lost paperwork (e.g., surgical consent forms) force the nursing staff to track down the surgeon and interrupt rounds and other duties. As trivial as it sounds, a misplaced form can get the day off to a rough start. Surgeons are creatures of habit: disrupting the early morning routine is not a good thing. A number of studies have shown that starting the first case of the day on time has an inordinately large impact on subsequent cases in spite of the obvious fact that each case is a separate patient, problem, and procedure.¹

Initial Encounter

From the surgeon's perspective, the groundwork for a good OR day is laid during the initial patient encounter. During this visit, a trusting relationship must be established with the patient who is, in essence, letting a stranger operate on him or her. Both patient and surgeon must have conviction that they have decided to do the right procedure, at the right point in time, and for the right indication. Often, the pieces of that puzzle do not fit together perfectly. While the complexity of this initial encounter makes for good teaching material, it can also create doubt or anxiety in either the patient's mind or the provider's, setting the stage for tension if things do not go perfectly. On a good day, this tension provides energy and excitement as the members of the surgical team get the opportunity to apply their problem solving skills and accomplish a difficult task. But on a bad day this ambiguity is amplified, leading to stress and poor performance. If a case goes less than perfectly, you best hope all parties agree you were in the OR for the right reason.

A Team Sport

The public's perception of the surgeon as a solo virtuoso with magic hands is far from reality. Surgery is a team sport; it is impossible to overemphasize the importance of team performance. One great player is not enough, whether on the basketball court or in the OR. A prolific scorer cannot score unless a teammate gathers the rebounds and another teammate delivers the ball at the right moment, and in the most strategic position where the shot can be taken. The most skilled surgeon in the world can be brought to his or her knees if the scrub personnel do not

For the Nurse

A good day in the operating room (OR) begins when planned elective cases have been well thought out and all issues identified and addressed prior to the patient's arrival in the OR suite. This means that all the preoperative workup was completed and all necessary items for the case have been communicated.

When the registered nurse (RN) does not need to spend time tracking down information and interrupting surgeons or department office staff to locate, clarify, or validate information or missing paperwork on the day of surgery, then he or she has more time to focus on the needs of the patient and family. In addition, the RN can re-assess the patient for any changes since the preoperative visit; this can be critical to safe care. The patient and family generally feel comfortable disclosing information to the OR nurse (e.g., eating breakfast on the morning of the surgical procedure or a new medical condition) which may lead to significant changes in their plan of care. This new information may necessitate changes or rescheduling to reduce the risk of an intraoperative adverse event.

On a good day, the plans for the elective cases are comprehensive and documented with no surprises, which allows the RN to be organized and flexible to meet other needs as they arise. When the daily operating room schedule is posted, the day can begin *right* with the allocation of clinical staffing resources who are assigned based on their knowledge of the service and skill level to meet the complexity of the patient—and equipment conflicts can be avoided.

On good days, each surgical team takes the time to introduce and acknowledge every member present and the roles they will play. Prior to the surgical incision the "time out" confirms the patient's name, the planned procedure, laterality, surgical site mark, antibiotics given, prosthesis available, equipment needs, radiology, pathology, blood products, and special post-operative bed placement. And everyone understands that any member of the team may voice any concerns they may have and that the surgery does not proceed until the person asking the question is comfortable with the answer.

Emergent cases or unanticipated events in scheduled cases add complexity; however, when the staff members all know their roles, have the resources they need, and function as a highly effective team delivering the best possible care, it is a good day.

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Surgeon continued

provide the right instruments, or if the instruments provided by the OR supply team do not function properly. Therefore, when I walk into the OR the first thing I note is who is on my team that day—who is providing anesthesia, who are the nurses and technicians, who will be scrubbing and circulating in the room. Although I will interact most directly with the surgical resident who will be assisting me, the resident is less likely to affect how smoothly things go in the room than is the nursing and anesthesia team.

A skilled anesthesiologist makes an operation easier to perform in several ways. Adequate relaxation, and a smooth induction and emergence, are key components of a successful procedure. Perhaps equally important, though less obvious, are a pleasant personality with some sense of equanimity. Now you have a great teammate for the day. The importance of trust and camaraderie cannot be overstated: if it is absent when I'm in the OR, my mind is apt to wander to concerns about what is happening on the other side of the ether screen. This detracts from the concentration needed to perform the surgery.

One of the most satisfying aspects of surgery is operating with *good scrub personnel* on a consistent basis. A competent nurse not only knows what instruments are needed and hands them to me when asked, but also anticipates the next phase of the procedure—it is like dancing with a great partner. When you are both on the same page it can be beautiful, but when you are out of synch or the complexity of the case exceeds the skill level of the personnel and the surgical team cannot keep up, it gets pretty stressful. If the surgeon and nurse have worked well together, their professional relationship allows for supportive comments as well as constructive criticism. Good nurses learn the preferences and idiosyncrasies of a surgeon and plan accordingly. Since surgery can, on occasion, be tense and even hair raising, the surgeon and the nurse share highs and lows and often develop a certain unique type of emotional or intellectual intimacy—not romantic (generally), but intense.

Then there are the *environmental factors* we simply take for granted that make (or ruin) our day in the OR. If the air conditioning is broken, then both temperature and tempers seem to rise. If the wrong music is cued up, the surgeon will be irked.² Lighting is another factor that plays a role in the day's suc-

cess. For example, most of my surgery is videoscopic, so image quality has a huge impact on eyestrain and overall fatigue. The introduction of HDTV in the OR has made a noticeable impact in this regard...as long as it is working properly.

Given a good team and a comfortable environment, the ebb and flow of the day ultimately depends on the surgery itself. A relatively standard procedure, for example a cholecystectomy or colectomy, can be highly variable in difficulty. Many an experienced surgeon has been humbled by assuming that he or she was going to perform “just a simple” cholecystectomy only to then struggle to identify the anatomy correctly with the fear of inadvertent bile duct injury looming. Most surprises in surgery are unwelcome. The cases we had anticipated to be complex that turn out to be simple are rapidly forgotten, but when a colectomy assumed to be a straightforward 90-minute operation turns into a five-hour marathon multi-organ resection, then time pressure, tension, and worry about the judgments necessary to embark on and complete an unanticipated complex procedure disrupt everyone's Zen. Of course, if every day went as planned many of us would be bored: as in many other facets of life, you can't have your cake and eat it too!

The best part of a good day in the OR occurs after surgery is completed, while rounding on your patients, when you can see the results of your efforts. This is *extremely* satisfying. Most patients and families are glad to see you and grateful for your efforts. Since I like to leave the hospital smiling, I usually perform my administrative or clerical duties immediately upon completing my last operation. I leave the post op rounds for the last task at the end of the day. More often than not, I walk to my car smiling. When I finish my day on this note, it has indeed been a good day in the OR. ■

Notes

- 1 Massachusetts General Hospital Operating Room administrative dataset.
- 2 Several studies of surgeon performance have confirmed what many of us already knew—*good* music is relaxing and performance enhancing. As for what constitutes “good” music, well, anyone who thinks they can impose their preferences without discussion is unwelcome in my OR.

What Keeps Me Up at Night

When clinicians come together in the OR without knowing each other, there is a hesitancy to voice uncertainty, or to persist when concerns are not addressed. Communication among surgical team members in large teaching hospitals is further complicated by larger staffs and multiple nursing, anesthesia, and surgery students. Unfamiliarity can lead to crises in confidence or communication that may escalate during a case and be displayed in vertical or horizontal conflicts.

The desire to move patients efficiently through the system pressures nurses to manage competing demands: constantly reprioritizing their workflow. As a result, many distractions have found their way into the OR: answering cell phones and pagers, and making calls for members of the team.

The complexity and proliferation of technology in the surgical arena creates increased environmental risks in the OR, some of which make it increasingly difficult for nurses to maintain expertise in all services. For example, minimally invasive procedures require darkened rooms and increased pieces of equipment and cords (now often consolidated on one cart, which becomes heavy and awkward for staff to move).

To keep current, OR nurses in some institutions are assigned to surgical specialty teams, and many surgical teams rely on industry partners to support product utilization, rather than nurses and technicians. In such situations, the nurse needs to be concerned about the vendor's orientation to the OR environment, the compliance with standards and practices, and regulations that include documentation on their educational training and health screening.

Everyday Questions

I'm not really certain if it was a good day, or if I'm in for a sleepless night, until I run through a mental checklist.

- Was there time for me to introduce myself to my assigned patients, family members, and the team?
- Is my mind racing trying to recall what piece of information I may have missed because of interruptions?
- Was the team respectful of my role, or did they interrupt,

ask me to make calls on their behalf, or run for equipment they failed to plan for in advance?

- Did the team have time to ask questions and get answers?
- Was the physician credentialed for the procedure?
- Did all the team members have the competency necessary for the procedure and the technology being used?
- Was I rushed to turn over a room?
- Did I experience any vertical or lateral conflicts from team members, and did I handle it appropriately?
- Was I able to complete my documentation?
- Was I able to provide for an inclusive handoff of care?
- Was the count correct?
- Were medications handled appropriately?
- Did the team prevent the patient from being impacted adversely by any of the equipment/technology?
- How did I handle all the competing responsibilities?
- Did I experience any of the ergonomic injuries staff are at risk for? Did I need to move a patient quickly and was there enough help to do this?
- Was I exposed to any blood borne pathogens today?
- Will I be able to recall the new policies, procedures, and technologies introduced today?
- Do I have time to read the new literature published to keep current in my profession?

Afterward, can I finally turn away from evaluating the day, so that my heart and mind are not racing? The answer is yes, most nights I can put my head down and know that I have left the OR accomplishing all that I came in that morning to do: provide quality, safe patient care, working with an exceptional team whose members value and respect each other.

On those rare occasions when a restless night comes into play, it usually has to do with a poor patient outcome (expected or unexpected), or when I have not had time to spend with the patient or family who I know could have benefited with a few more minutes of my time, or when working relationships became strained, or when I encountered an ethical dilemma relative to what I was asked to do. Fortunately in my OR, there are more good days than bad. ■

Challenges in Surgical Education: A Resident's Perspective

by Scott E. Regenbogen, MD, MPH

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My six years as a surgical resident parallel the most rapid period of change in surgical education in decades. Though the basic approaches of supervised patient care, graduated responsibility, and didactic learning—created by William Stewart Halsted at Johns Hopkins and modernized to their current form by Edward D. Churchill at Massachusetts General Hospital (MGH)¹—remain true to their original design, the intersection of a number of recent challenges has driven rapid and still uncertain reforms to the essential structure of surgical education. Dr. David Richardson, Vice Chairman of Surgery at University of Louisville, has compared these colliding factors to a “perfect storm,” driving fundamental changes in the way residents will be trained.² Though hardly an exhaustive list, three forces in particular—residency work hour restrictions, increasing subspecialization, and changing expectations for supervision of trainees—have already significantly influenced the way my generation of surgeons is trained.

The 80-hour Work Week

In response to concern over residents' work hours, and facing the prospect of regulation by the United States Congress, the Accreditation Council for Graduate Medical Education (ACGME) preempted federal action with a set of regulations that took effect in July 2003—exactly one year into my surgical training. Those rules limit residents to no more than 80 hours of patient care per week and in-house call averaging no more than every third night. In addition to the administrative challenges they presented for residency directors, the 80-hour work week rules presage a major shift from the contemporary expectation that general surgeons-in-training follow patients as continuously as possible from evaluation through diagnosis, operative intervention, and postoperative recovery. Continuity of care has, thus, given way to diffusion of responsibility among cycling teams of residents and “physician extenders,” arousing fears of trainees with “shift-work” mentality who lack both a personal commitment to patient care, and the motivation to efficiently carry out their responsibilities.³ Further, many worried that residents' operative experience would decline, and their overall educational experience would decrease in proportion with the hours worked.

To date, the reported effects—both anecdotal and published—of duty hours restrictions have been mixed. Quantitative operative experience appears not to have been significantly affected (either at MGH or elsewhere).⁴⁻⁶ In a published study, residents in my training program (i.e., those who began their training before the new rules) reported less “burnout” and “emotional exhaustion,” better quality of life, and increased motivation to work after introduction of the work hour limits. However, interns who *began* their training in this period were seen as

less bonded with both patients and attending surgeons, and their technical skill, clinical judgment, sense of responsibility, preparedness, and efficiency all were rated lower than those who preceded the 80-hour work week.⁵

Now entering their fifth year, the ACGME's work hour reforms have stretched surgical education to its limits. Even as non-educational service tasks are transferred to physician extenders—at significant cost in institutions that house large surgical residencies—it remains a significant challenge for residents to take on an ever-expanding knowledge base despite decreased time in clinical environments. Independent study, web-based education, and novel media for technical skills training (*see* Jones, Page 18) have all become increasingly important, but none has reached a level of sophistication that it may be considered a replacement for clinical exposure. Meanwhile, surgical residents remain heavily conflicted by tensions they perceive between their personal sense of responsibility for patients and the directives of a “new professionalism,”⁷ which require compliance with duty hour restrictions and adoption of new techniques of information transfer, resource management, and dependence on other providers.

Specialization and Alternative Training Pathways

The increasing demand for subspecialty training among general surgery graduates comes in response to both market demands of employers and patients—who increasingly seek out fellowship-trained specialists—and the growing awareness of research linking surgeon volume and specialization with improved outcomes in high-complexity surgery.⁸⁻¹⁰ As many as 80 percent of graduates from five-year categorical general surgery programs now seek additional subspecialty training,¹¹ raising important questions about whether a one-size-fits-all, five-year program suits the future surgical trainee. The American Surgical Association's Blue Ribbon Committee on Surgical Education¹² has already endorsed a restructuring of surgical training that would involve a shortened core training in general surgery, followed by specialist tracks both in the traditional subspecialties, and in fields such as breast, hepatobiliary, endocrine surgery, and others that have, until recently, remained within general surgery's purview.

These revised pathways to specialization face a variety of logistic challenges, such as how the American Board of Surgery might certify competence of such trainees and what types of operations a short-track endocrine surgeon, for example, might be credentialed to perform. For contemporary general surgery trainees, the incursion of these general surgery subspecialty fellowships raises further important questions about the operative training we will receive.

Will the aspiring thoracic surgeon yield a pancreatectomy to her hepatobiliary-bound classmate?...or to the new hepatobiliary fellow?...or even to the visiting resident from a community program, who is planning a career in rural general surgery and needs experience in pancreatic surgery?

How early in our training will we have to choose our specialty?

Will any of us feel competent to manage surgical problems outside of the increasingly narrow specialties we pursue?

Increasing Scrutiny of Care by Trainees

With waning societal tolerance for unsupervised trainees, increasing threat of malpractice liability, and narrowing hospital profit margins that leave little room for the inefficiencies of learning in the operating room,¹³ the days when residents operated alone are long past. Surgical educators are well aware that their graduates must leave training prepared to operate independently, despite few existing alternatives to the use of patients as learning material. Even as the sophistication of simulation technologies has improved, only a handful of residency programs have made them central tools in skills training; the rest have found no obvious way to integrate simulation. Should skills labs replace patient care rotations? Should competency on a simulation trainer be a prerequisite for scrubbing in and operating?

Clearly, the training paradigm must adapt to these and other pressures, but little evidence exists to support any of the novel approaches to surgical training as an adequate substitute. Good surgeons do more than cut well and tie well—they exercise good judgment and decision-making. So, residents must learn not only to operate as technicians, but also to employ independent thinking as surgeons. To enable this maturation, despite external pressures for hospitals to increase operative volume and decrease length of stay (while caring for sicker and older patients), will require major rethinking of the structure and format of surgical education.

The View from Here

Fortunately, the challenges facing surgical education are well recognized among national opinion leaders in surgery, and a variety of reform efforts are underway.¹² The residency of the future will likely involve a combination of traditional and novel teaching methods, with resident learning distributed more broadly between clinical, didactic, and focused skills laboratory experiences. Achievement of standardized core competencies, and objective, structured performance evaluations will be required of all residents. Efficiency will be emphasized, with shorter tracks toward specialization, both as a response to the demands of the marketplace, and as a means to address the financial, family, and lifestyle constraints of today's trainees. And for my generation of surgeons, in the new paradigm and the new professionalism, it is essential that we instill the same standards of personal dedication and commitment to excellence that we learn from the surgeon-mentors who train us. ■

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Harvard Teaching Hospitals Talk to Improve Communication Among Surgeons

by Tom Augello

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On neutral territory, away from their everyday distractions, the chairs of the surgery programs at four academic hospitals in the Harvard medical system are experimenting with non-competition. Together, they are exploring what malpractice data can teach them about how to prevent errors from harming patients—and in turn, what they can teach each other.

In a 2007 study of closed malpractice claims from liability insurers across the United States,¹ Dr. Caprice Greenberg² and colleagues looked at the second most common category of surgical errors that lead to harm: miscommunication.³ Even before the study was published, surgical leaders in the Harvard system were combing the data.

“The underlying patterns were ones that gave us some ideas of avenues to go down for interventions,” recalls study co-author, Dr. Atul Gawande.⁴ “So, at that point we started getting the chairs⁵ of Harvard’s major surgery departments together, mainly to start talking about what the data were showing and see if they wanted to collaborate as a group in trying to address them.”

They did.

CRICO/RMF, the malpractice insurance company that covers the Harvard medical institutions, convened the group of daytime competitors to become collaborators at night. Over the course of two years and several late nights, these surgical chairs considered what they could do together that they could not do equally well, or quickly, apart.

The surgical chairs quickly focused their attention on *breakdowns in communication with* attending surgeons. According to the data, communication errors that led to patient harm most frequently involved a breakdown in a one-to-one transfer of information, and those fumbled transfers most frequently featured an attending physician.¹

Additionally, the location of the communication errors tended to be outside of the operating room (OR). When the researchers excluded sponge count errors—which occur exclusively and uniquely in the OR—surgery communication errors no longer looked like they occurred evenly in the pre-op, peri-operative, and post-operative domains. Non-sponge counts communication errors in the OR were still evident (19 percent), but considerably less so than those errors that occurred pre-operatively (34 percent) and post-operatively (37 percent).

“Many of the current surgical communication initiatives, like timeouts and crew resource management, address OR issues,” says Dr. Greenberg. “But what our results suggest is that we also need to pay a lot of attention to the system that is getting patients into the OR and the system that is taking care of them afterwards.”

Dr. Greenberg believes that the findings of her study counter perceptions that the best way to fix weaknesses in the system is to focus solely on residents. Attending surgeons—keepers and receivers of the information that needs to be transferred in order to effectively prevent adverse outcomes—should share the spotlight of interventions to reduce communication errors.

The Greenberg study goes so far as to suggest the use of “triggers,” that is, patient conditions that will require residents to contact attending surgeons. Examples might include transfer into the ICU, or unplanned intubation. The authors concluded that up to 44 percent of the communication breakdowns outside of the OR might have been prevented with the use of specific triggers.

Pulling Together

After the initial assessment, the surgical leaders at Harvard asked Dr. Gawande’s team to dig deeper into the medical malpractice case files by sorting through the high level of detail in depositions, expert medical reviews, and case analyses to find underlying patterns that would help narrow the focus even further.

“There is a pattern for a few common critical events,” says Dr. Gawande, “like the patient who ends up getting a blood transfusion in the middle of the night or a patient who starts to have respiratory failure, but the team in the hospital doesn’t get in touch with the surgeon in a timely way.”

Evidence that a significant proportion of adverse surgical events involved patients receiving routine care triggered questions about intervention. For example, how do you ensure that critical information about the post-operative patient reaches the attending within an hour 100 percent of the time, rather than 70-80 percent?

Even with fairly rare occurrences, such as an attending who fails to answer a page, the group considered how to make sure that all the backup systems actually work, for example that the tracking down of a non-responding attending—or communication with another attending—happens quickly.

Dr. Gawande says that even a high level, multi-institutional collaboration eventually comes down to nuts and bolts. But instead of addressing a range of technical issues within multiple procedures, the Harvard group has looked for common elements in the general process of preparing patients for surgery and helping them recover.

“We are starting to recognize that, across all of those surgeries, there are common elements, that orthopedics really is not all that different from gynecology,” Dr. Gawande says. “Those

common factors have to do with recurrent patterns of what happens when you have a patient develop a terrible complication and how they are managed? What kind of communications occur and how do you have people trained to handle the most difficult technical situations, whatever the specialty?”

The data suggest that additional approaches to reducing harmful communication errors, such as standardized handoffs and transfer protocols, in conjunction with the use of a trigger list might have prevented up to 73 percent of the inpatient errors seen in the malpractice cases Dr. Gawande’s team studied. No one involved in the Harvard surgery collaborative doubts that surgeons already care about and feel responsible for the well-being and safety of their patients. And, Dr. Gawande acknowledges, any efforts by third parties to force changes upon this cohort will meet resistance unless the surgeons can see that the agents of change understand their world, that the interventions are practical, and that the data support their effectiveness. Consideration must also be given to the fact that the medical training process that made them highly qualified surgeons did not prepare most of them to be highly qualified in patient safety.

“Those are different skills,” Dr. Gawande says. “When I got out of my training, the three things that I felt I was really well-trained for were: making diagnoses, being a technically good surgeon, and trying to be kind and empathic toward people. It turns out that having those things was not enough. If an operation was going to go really well for a patient, I not only had to be able to do my job well and care about the patient; I also had to figure out how to deal with a really gargantuan system.”

“Many of the current surgical communication initiatives, like timeouts and crew resource management, address OR issues,” says Dr. Greenberg. “But what our results suggest is that we also need to pay a lot of attention to the system that is getting patients into the OR and the system that is taking care of them afterwards.”

The Change Process

Increased development and use of error and outcomes data help lead to solutions that surgeons will adopt. The involvement of surgical leaders to develop interventions for their own institutions also improves the chance they will be well received. Whether or not these interventions lead to learning—and how fast that learning is shared—will also depend on continuous use of data, and a willingness to share difficult problems and solutions. Dr. Gawande says the group of Harvard surgical chairs has been learning how to coach themselves in carrying along

a change process.

“We have to be able to absorb an enormous amount of know-how and turn it into practice in lots of places,” Dr. Gawande says, “and I think that the surgical chairs getting together is part of the answer, by having an ongoing discussion and using benchmarks to ask, ‘How far have we gotten in the last few months on the major issues we want to be working on? Where are the roadblocks that we’re running into? How have you overcome it at the Beth Israel Deaconess? How have you overcome it at the Mass General?’ If you look around and you realize that one of these places is actually doing something that is a lot better than everybody else, maybe we all should be doing it.” ■

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- 3 The top category was technical error.
- 4 Dr. Gawande is a surgeon and researcher at Brigham and Women’s Hospital (Boston), Associate Professor of Surgery at Harvard Medical School and the Harvard School of Public Health and director of the World Health Organization’s program to reduce surgical deaths
- 5 Dr Michael Zinner, Brigham and Women’s Hospital; Dr. Andrew Warshaw, Massachusetts General Hospital; Dr. Josef Fischer, Beth Israel Deaconess Medical Center; Dr. Alan Retik, Children’s Hospital Boston.

Informed Consent for Surgery Patients

by Richard Riley, Esq.

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With so much medical information available to laymen at the click of a mouse—some not so accurate—it is more important than ever for physicians to give patients relevant, accurate information to guide their decisions regarding whether or not to undergo a particular medical procedure, treatment, or therapy. The legal doctrine that embodies this concept is “informed consent.”

The Law

The seminal case in Massachusetts on the doctrine of informed consent is the 1982 *Harnish v. Children's Hospital* ruling¹ in which the Supreme Judicial Court (sjc) noted that it is the exclusive prerogative of the patient—not the physician—to determine whether to undergo a particular treatment or procedure. In a nutshell, the sjc held in *Harnish* that:

Every *competent* adult has a right to forego treatment, or even cure, if it entails what for him are intolerable consequences or risks however *unwise* his sense of values may be in the eyes of the medical profession.... Knowing exercise of this right requires knowledge of the available options and the risks attendant on each. [Therefore] a physician's failure to divulge in a reasonable manner to a *competent* adult patient sufficient information to enable the patient to make an informed judgment whether to give or withhold consent to a medical or surgical procedure constitutes professional misconduct....

If proper informed consent is not obtained from the patient, then even if a surgery or other procedure is performed without any negligence whatsoever, the patient may recover damages if in fact a risk that should have been disclosed to the patient materializes and results in harm to the patient.

Before a patient can be expected to give truly informed consent, he or she “requires knowledge of the available options and risks attendant on each.”² While the law recognizes a patient's right to know, it also recognizes that the right “must be harmonized with the recognition that an undue burden should not be placed on the physician.”³ Therefore, “a physician owes to his patient that duty to disclose in a reasonable manner all significant medical information that the physician possesses or reasonably should possess that is material to an intelligent decision by the patient whether to undergo a proposed procedure.”³ This means that not every conceivable risk need be disclosed, but only those that are “material.” Materiality is defined in a common sense fashion: “...the significance a reasonable person, in what the physician knows or should know is his patient's position, would attach to the disclosed risk or risks in deciding whether to submit or not to submit to surgery or treatment.”⁴

Appropriate information may include, but is not limited to:

- the nature of the patient's condition;
- the nature and probability of risks involved;
- benefits to be reasonably expected;
- the inability of the physician to predict results, if that is the situation;
- the irreversibility of the procedure, if that may be the case;
- the likely result of no treatment; and
- available alternatives, including their risks and benefits.⁴

In order to prevail on an informed consent claim, the plaintiff must also demonstrate that, had the proper information been provided neither he, nor a reasonable person in similar circumstances, would have undergone the procedure.⁵

The Process

This legal framework leads then to the question of how a surgeon can best assure that a patient's consent to a procedure is truly “informed” and, if necessary, legally defensible. Surgeons need to consider several practical points in this regard.

A standardized or generic “consent form” should be the starting point, not the totality of the record of the information provided in obtaining a patient's informed consent. The space provided for the surgeon to “customize” the form to the patient's specific condition and the procedure/treatment under consideration should be used. Delineate as clearly and with as much specificity as is reasonable, the material risks that are associated with the treatment that a patient is about to undergo.

Frequently, plaintiffs—even when confronted with a consent form bearing their signature—deny any memory of ever having signed the form or of ever having discussed the material risks of the procedure with their physician. So how can a surgeon make the consent process “memorable”? To the extent possible, meet with the patient in advance of the day of the procedure and/or surgery, ideally in your office. Sitting down in an office, dressed, as opposed to sitting on a treatment table in a hospital gown, makes the patient more receptive to receiving information about the pending procedure and renders the occasion more memorable. In this less vulnerable setting, the patient may be more likely to ask questions and express concerns. A patient engaged in a conversation about the procedure is more likely to remember that a specific discussion of the procedure's benefits and risks occurred.

Having spouses or adult children present for this meeting can also improve recall, reducing the likelihood that a dissatisfied patient will claim later on that they were not properly informed as to the risks of the procedure in question (a plaintiff's spouse testifying that he or she was present when the patient signed a consent form, and forced to concede that the patient was given

ample opportunity to ask questions and express concerns deals a hearty blow to a “failure to give informed consent” claim).

Thorough notes documenting the occurrence of this meeting with the patient, including issues discussed, concerns raised, and individuals who were present and/or participated are invaluable. This is particularly so when a patient claims no memory regarding the discussion with the surgeon about the procedure and its risks. Diagrams and other case-specific notes made in the physician’s own handwriting on the consent form provide direct evidence of the risks that were discussed, as well as evidence that a detailed and personalized discussion regarding risks and benefits took place.

Challenges

Of course, you cannot always set the mood and the location for the signing of a consent form, but emergent procedures still require the surgeon to make reasonable efforts to inform the patient of the risks, benefits, and alternatives. In the well-intentioned effort to address a perhaps life-threatening condition, it can be easy to forget the need to obtain the patient’s (or a proxy’s) informed consent. Even in emergencies, the failure to do so exposes the physician to liability even if the procedure is done flawlessly. If a patient is mentally or physically incapable of providing consent, or if procedures are planned that could leave the patient incapable of providing informed consent, efforts should be made in advance to determine the identity of an alternative decision-maker (next-of-kin, health care proxy) and contact information identified and noted prominently in the patient’s chart for ease of future reference.

If a given procedure entails a risk that a second procedure may need to be performed, inform the patient beforehand. For example, if surgical removal of ovarian cysts may necessitate the need for a hysterectomy, communicate that potential scenario to the patient...or you run the risk of being sued for a procedure to which the patient did not give her consent.

When language/communication/literacy problems arise, it is the surgeon’s responsibility to ensure an interpreter’s assistance. The interpreter (even when a family member)⁶ should be asked to sign the consent form attesting to the fact that he or she faithfully translated the discussion.

If residents, students, or fellows are going to participate in the procedure, inform the patient of this...and of his or her right to refuse⁷ as well. If the patient seeks to place limitations on the extent to which medical students or residents may participate, such limitations must be set forth as clearly and specifically as possible, and documented.

On a related note, although Massachusetts has not yet squarely ruled on the topic, some jurisdictions have recognized a tort

known as “ghost surgery” in which a surgeon other than the surgeon the patient was told would perform the surgery actually performs the subject procedure.⁸ Where it is common practice for surgeons to “cover” for each other, or to routinely perform surgery only on particular days, the patient should be told (and asked to give specific consent) of that possibility.

Obviously even a “perfect” consent form may be vulnerable to attack if the patient was under the influence of sedative or pain medication at the time it was signed. This can be particularly an issue in the case of anesthesia consent forms, which are sometimes signed *after* the patient is administered some form of conscious sedation. Avoid conducting any part of the consent process after any form of sedation has been given to the patient.

Finally, at least one Massachusetts court has held that certain sorts of non-medical information may be material to a patient’s decision to undergo a procedure and must be a part of the informed consent process. In *Darke v. Isner*,⁹ a superior court judge held that if a physician arguably has a financial interest in a procedure (in *Darke*, the physician held stock in a company that developed a certain form of gene therapy that the physician was recommending to a patient), a jury may consider whether the failure of a physician to disclose this financial interest to a patient was material to the patient’s decision making process.

Appearing deceptively simple, the law of informed consent can be complex, and we have only touched on those areas in which surgeons needs to be particularly vigilant. In the end, honest and open communication with patients together with thorough documentation of these communications are the anchor concepts for the practitioner to remember in order to obtain valid informed consent and avoid subsequent litigation over the issue. ■

Thank you to Attorney Amy R. Riley for her instrumental role in the preparation of this article.

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- 1 *Harnish v. Children’s Hospital Medical Center*, 387 Mass. 152 (1982)
- 2 See *Harnish*, *supra* at 154.
- 3 *Id.* at 155.
- 4 *Harnish*, *supra* at 156
- 5 *Id.* at 158.
- 6 Informed consent for a surgical procedure (and the signing of the consent form) should be done if possible through an independent interpreter. If litigation arises in which the quality of the informed consent obtained from the patient is in issue, the defense is vulnerable when the proof of informed consent is dependent upon the testimony of a witness so obviously sympathetic to and aligned with the plaintiff.
- 7 M.G.L. c. 111, § 70E provides, in pertinent part that “Every patient or resident of a facility shall have the right...(h) to refuse to be examined, observed, or treated by students or any other facility staff without jeopardizing access to psychiatric, psychological, or other medical care and attention.”
- 8 See *Perna v. Priozi*, 92 N.J. 446 (1983).
- 9 17 Mass. L. Rep. 689 (Mass. Super. 2004)

A New Paradigm for Surgical Training

by Daniel B. Jones, MD; Kinga A. Powers, MD; Scott T. Rehrig, MD

Dr. Jones is Chief, Section for Minimally Invasive Surgical Services, Beth Israel Deaconess Medical Center (BIDMC) and Co-Director of the BIDMC Simulation and Skills Center. Drs. Powers and Rehrig are Fellows in Minimally Invasive Surgical Services at BIDMC.

The once immutable apprentice model (“see one, do one, teach one,”) for surgical training—developed by Dr. William Halstead in the early 20th century¹—is no longer unquestioned. After the 1999 publication of “To err is human,”² the Institution of Medicine challenged teaching institutions to devise alternative methods of surgical training. After Bridges et al.,³ also in 1999, estimated the financial impact of teaching surgical residents in the operating room (OR) to be \$53 million per year, a second incentive for change came to light, soon followed by the 2003 institution of the 80-hour work week restrictions.⁴ Coincidentally, patient safety concerns (and medical malpractice cases) related to laparoscopic procedures being performed by surgeons more comfortable with open procedures was raising another red flag in surgical training.

In response, partial task training and medical simulation have gained credibility as alternative and complementary methodologies for surgeons needing to master or polish both technical and communication skills. Outside of the OR, surgical simulation and skills training offers a safe compliment for improving quality and efficiency of teaching and learning procedures.

Simulator Based Training

Minimally invasive surgery imparts new challenges for the surgeon. Operating in a three-dimensional field with a two-dimensional visualization demands much different psychomotor skills. Haptics, tactility, and ergonomics of instruments—as well as the OR set up—may be a challenge for a novice in the field and requires a steep learning curve for proficiency. Patient safety concerns have reduced the trainees ability to acquire surgical skills by “practicing” on patients in the OR. Therefore simulator training has emerged and offers surgeons a safe alternative for learning laparoscopic skills.

Current technology offers a variety of tools to help with task training. The realism and scope of task trainers is rapidly expanding. Simulation tools can be labeled as *physical reality* systems that include box trainers and animal models, *virtual reality* (VR) systems that are software-based, and *mixed reality* trainers that are a combination of video equipment and electronic sensors that are activated upon touching physical objects with instruments. The simulation tools can be used for part-task training of basic to complex skills that occur during surgical procedures, for example suturing or dissection. Full procedural simulators enable the user to practice integrating different skills into a continuous procedure. The latest emerging field is the concept of integrating part-task training and procedural simulator training with team training in simulated operating rooms where trainees have an opportunity to rehearse skillful handling of emergency situations.

Box trainers offer a number of drills that can be practiced using real instruments and even cadaveric tissues, however the face validity of these models is poor and their application specifically towards bariatric procedures is still in development. The Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) uses the box trainer for certification in Fundamentals of Laparoscopic Skills (FLS).⁵ Although not required, FLS certification is recommended by SAGES for all senior residents in General Surgery and may represent a benchmark for surgeons performing laparoscopic procedures. As part of a patient safety initiative in 2008, CRICO/RMF is offering a premium insurance discount to surgeons after successful completion of FLS.

Animal models as well as *cadaveric models* are used for laparoscopic surgery training courses. Much of the porcine foregut anatomy is similar to the human anatomy and therefore this model provides high fidelity. In addition, animal lab operating suites offer the opportunity for trainees to work in teams more closely approximating procedures on humans. Ethical restraints, as well as costs, are limiting the use of animal models for wide scale procedure training.

Virtual reality (VR) represents a novel avenue for laparoscopic surgery training. Although sophisticated simulators are available commercially and provide higher face validity than box trainers, they are still in relatively early stages of development. VR provides an opportunity to practice tasks and entire procedures in a way that trainees not only learn technical skills but also key steps of procedures. However, one major limitation of VR simulators is their lack of haptics (touch). Force feedback mechanisms are currently being integrated into newer simulators. Some of the endoscopic procedure simulators have a more developed haptics feedback mechanism. They are based on a common platform with real endoscopes introduced into an elongated box in which the travel of the end-piece activates progressive views of anatomy or specific haptics responses. One criticism of VR simulation is that graphics remain ‘cartoonish’, however they are also expected to improve with time. One of the VR simulators currently available for laparoscopic surgery,⁶ the LAP Mentor (Simbionix) has developed a library of modules that contain part-task and procedure-specific virtual reality training cases. Each part of the procedure is broken down into several critical steps that are described and the surgeon can perform them using virtual tools.

Operating Room Team Training

Beyond part-task trainers and VR procedure simulators, team training in virtual ORs is being developed to enable the learner to practice more comprehensive laparoscopic surgery scenarios. Virtual ORs target higher level skills that enable the surgeon to not only perform a surgical task, but interact in a health

care team environment—simulating a real OR. Traditionally, quality patient care was believed to result from being well trained in a particular set of individual skills. Unfortunately, even skilled, experienced providers will make mistakes, which are often viewed as personal failure, with the predictable result that these events are minimized and not openly discussed. Human factors research suggests that surgical outcomes are not only a result of an individual's skill but also a result of complex interactions of health care personnel working as a team, all of whom are influenced by the environment in which they work in. A report from the Joint Commission revealed that in more than 70 percent of 2,455 sentinel events reported, the primary cause of medical error was communication failure.⁷ Reflecting the seriousness of these occurrences, approximately 75 percent of these patients died. As in aviation and other industries, steps to circumvent error via team training have been implemented (and are often mandatory). Crisis simulation team training in surgery using a simulated operating theater was first described in the United Kingdom by Sir Ara Darzi.⁸ That scenario assessed the trainee's technical ability to control femoral arterial bleeding as well as team/human factors skills such as: communication, situational awareness, and team and leadership skills during a crisis.

Virtual endosuites are a novel concept that is currently being developed. The first virtual endosuite used for laparoscopic skills training has been established at the Beth Israel Deaconess Medical Center. The Carl J. Shapiro Simulation and Skills Center,⁹—accredited as a Level 1 Education Institute by the American College of Surgeons—provides simulation-based skills training to health care students and professionals from all medical and surgical disciplines. SASC's mock endosuite replicates a real operating theater.¹⁰ All standard laparoscopic surgical equipment, as well as an anesthetic simulator, is present and allows manipulation of the mannequin's hemodynamic parameters through a software program. Video and audio recording equipment allows the researchers or trainers to view

Patient safety concerns have reduced the trainees ability to acquire surgical skills by "practicing" on patients in the OR. Therefore simulator training has emerged and offers surgeons a safe alternative for learning laparoscopic skills.

the simulation in real time as well as via playback on a DVD disc to evaluate or use for debriefing. A synthetic model of the abdomen is fixed to the anesthetic simulator which simulates the abdominal wall skin as well as intraabdominal organs and fat. The model is draped with surgical drapes and simulated laparoscopic procedures can be performed and simulated blood loss initiated, controlled, and monitored.

Although surgical simulation has limitation, the field is undergoing growth and transformation at an exponential rate. Simulators, even in their current form, have been demonstrated to improve laparoscopic surgical skills. In the era of increased patient demands for safety and a change in health care culture from an individual expert physician to collaborative team environments, surgical simulators have an enormous potential to develop into standardized training programs for laparoscopic and other surgical procedures. Even with its limitations, simulation should prove to be a powerful surgical training and planning tool. ■

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When We Err

by Jo Shapiro, MD

Dr. Shapiro is Chief, Division of Otolaryngology, at Boston's Brigham and Women's Hospital, and Senior Associate Director, Graduate Medical Education, for Partners Healthcare.

The Story (from years ago) That sinking feeling: I am in the OR and my resident calls from the PACU saying, "Mr. Jones, an elderly patient, has chest pain and neck crepitus. I have just performed an endoscopic CO₂ laser Zenker's diverticulotomy on Mr. Jones, so that one-sentence update from my resident tells me what I most do not want to hear: the patient has a pharyngoesophageal perforation.

I disclose to Mr. Jones what occurred, apologize, and continue to take care of him. The patient, with whom I have a good relationship and open communication, actually seems to be doing well emotionally and physically with this situation. We manage Mr. Jones carefully; he seems to heal and this is confirmed by his clinical picture and a follow up barium swallow one week later. But in three days, he returns with a neck and chest abscess from a non-healed perforation. As we are organizing a reoperation, Mr. Jones' son-in-law—who is training in a surgical program out of state—calls, yells, and informs me that he is transferring the patient to another hospital. Mr. Jones is transferred, has his abscess drained, fully recovers, and returns home. The family sues me for malpractice. The jury deliberates for only an hour and finds me not negligent. The case is closed. I win...but not really.

The above event occurred at a time in my career when I was fairly senior and had developed a highly subspecialized practice of treating patients with oropharyngeal dysphagia and performing operations to correct Zenker's diverticulae. I had (and still have) a very supportive family, and I managed to survive the repercussions of the event and the lawsuit. But as I reflected on just how difficult this experience was, I wondered how other clinicians—especially junior faculty or trainees, or those without strong family support—would handle *their* medical errors.

An Exploration

Several years ago, I participated in a conference breakout session led by Dr. John Christensen entitled: "Handling Our Mistakes." Across my many years of surgical practice, I had never heard anyone even entertain the notion that our mistakes may need to be "handled." Outside of hospital M&M conferences, where we focus on the clinical outcomes of our decisions, I had never been involved in a discussion about the effect of errors on physicians, and certainly not the effect of these errors on our psyches. What effect? What psyches?

Certainly, I had made errors, and I knew that there was a price to be paid that went beyond the patients' outcomes. I just had not previously heard anyone in "the system" speak to this dark side of our lifelong learning experience. Thus began my journey of exploration in how to support physicians in what, for every single one of us, is part of our clinical professional world.

Then I met Linda Kenney. After sustaining a severe iatrogenic

injury, Ms. Kenney went on to partner with Dr. Rick Van Pelt¹ to educate clinicians regarding the need for honesty in disclosure. Kenney, who founded the Medically Induced Trauma Support Services,² was the first person who encouraged me to tell my story and ideas in the context of the emotional impact of errors on the physician. Working with Kenney and Dr. Van Pelt led to me joining forces with her, Drs. Lucian Leape,³ Tom Gallagher,⁴ Mike Woods,⁵ Albert Wu,⁶ and many others as we all wrestle with this most difficult topic.

Making an error can be devastating for a physician. Effects (transient or longstanding) may include depression, crisis of confidence, negative effects on interpersonal relationships, and burnout. Likely variables include the severity of the injury to the patient, the reaction of the patient and family, the experience and confidence level of the physician, the level of collegial support, and the physician's own family and friend support network. Other external factors such as malpractice litigation and publicity can seriously exacerbate the emotional impact. Added to this is a culture of blame and silence that can further isolate the physician. In the abstract, and distant from any particular personal experiences, clinicians are told that most adverse events are a result of systems errors, not personal shortcomings. Although that is true in theory, in fact, the individual clinician who is responsible for a patient injury is personally vulnerable both emotionally and legally.

We also know that physicians want help dealing with this, but there are significant barriers to accessing support. One of the most important is uncertainty that confidentiality will be held and certainty that disclosing errors will in some way harm one's career. Some clinicians may feel that seeking help admits weakness, and frankly, unless you have been through this experience, it is difficult to fully comprehend.

Programmatic Approaches

Many of us who have been through this feel that peer support is an important first step in reaching out to a clinician involved in an error. Boston's Brigham and Women's Hospital (BWH), has developed, and is expanding, a peer support program that was spearheaded by Dr. Van Pelt and BWH Executive Director for Clinical Compliance and Risk Management, Janet Barnes. The program has several initiatives, one of which is training a core group of physicians (faculty and residents), to offer a confidential 1:1 connection with any physician involved in an adverse event. The premise is to normalize the reactions to these events by offering physicians direct support rather than saying "call the psychiatrist." The peer supporters are providing emotional first aid, not therapy. They can, however, help the physician connect with any other services such as the Employee Assistance Program or psychiatry, should the need arise. Peer

support is also not a root cause analysis or an M&M—both of which are important quality improvement processes—but rather a means of addressing the personal impact the event may have on the individual provider.

A separate but equally important process for which clinicians need support is *disclosure and apology*. The process starts from the moment the clinician discusses an adverse event with the patient, and it may continue until well after the patient has been discharged. The support for the clinicians during this process is focused directly on the needs of the patient and family. The underlying premise is that clinicians need to tell patients what they know about the event when they know it. There is great debate nationally over the specifics of disclosure and it is, indeed, a difficult process. But as clinicians are encouraged to disclose, they need disclosure programs that actually help them navigate this complicated and charged territory so that they can continue to care for their patients when something goes wrong. But developing a disclosure policy and then telling physicians to “just do it” is a disservice without ongoing training and support—it is too important a part of the overall health care process.

All clinicians, from vulnerable trainees to seasoned attendings, need support in the face of an adverse event or they risk the chance that their practice, their health, their family—and their patients—may suffer. We need to acknowledge that, while the culture is moving towards holding the system accountable for adverse events, there is still an emotional impact on individual providers. To fill that void, we as leaders and colleagues need to step forward—as a community and as individuals—to provide each other with the training for disclosure and access to emotionally supportive care so that physicians involved in adverse events are not left alone when things go wrong. ■

Notes

- 1 Dr. Van Pelt is an anesthesiologist and Director of the Community Service Unit at Brigham and Women's Hospital, in Boston.
- 2 www.mitss.org.
- 3 Dr. Leape is Adjunct Professor of Health Policy, Harvard School of Public Health
- 4 Dr. Gallagher is an attending physician at the University of Washington Medical Center and an Associate Professor, Departments of Medicine and Medical History and Ethics, University of Washington.
- 5 Dr. Woods, MD, practices surgery in Santa Fe, NM, and is the founder and President of Civility Mutual, an organization for providers and patients, focused on helping them communicate more effectively.
- 6 Dr. Wu is Professor of Health Policy and Management at the Johns Hopkins School of Public Health with joint appointments in the Departments of Medicine, Surgery, Epidemiology, and International Health.

CRICO/RMF Tips for Safer Surgical Practice

1. Talk to your patient.
 - a. Before, during, and after hospitalization, your patient should be part of the care team.
 - b. Share decision making and uncertainty; make sure your patient has realistic expectations of what your surgery can do for him or her.
 - c. Include concern and compassion in your bedside manner.
 - d. Communicate with the family.
2. Listen to your patient.
 - a. Be empathetic.
 - b. Treat your patient as you would want to be treated.
3. Informed consent is a process, an extended conversation, not just a piece of paper.
4. Ask for help from your colleagues
 - a. Two opinions are better than one.
 - b. Get help if you are unsure or do not know how to do something. Set your pride aside.
5. Beware of equipment you have never used before. Practice with new equipment before using it the first time on your patient.
6. When complications occur, acknowledge them; do not ignore them or walk away.
7. Think ahead, have an “escape plan” and prepare contingencies before you operate.
8. Residents are learning; they need your knowledge and supervision. Be at the bedside often.
9. Have guidelines for when residents must call you.
10. If you are going away, make sure your patients are going to be taken care of and that your “coverage” knows what they need to know.
11. Patient care is a team effort, whether in the office or the hospital; you cannot do your job alone.
12. Share, do not hoard, information.
13. Document promptly, leave evidence of your presence in the record.
14. If you think you should talk to the risk manager, you are probably right.

Professionalism in the OR

by Anthony Whittemore, MD

Dr. Whittemore, a vascular surgeon, is Chief Medical Officer and Senior Vice President for Clinical Affairs at Brigham and Women's Hospital, in Boston.

As chief medical officer of a large teaching hospital, a significant part of my charge is the management of errant physician behavior which derives from unprofessional abusive conduct. Often, the abusive and unprofessional behavior that comes to my attention occurs in the operating room (OR).

The notion of disrespectful, disruptive behavior—and its inappropriateness—is not a new concept for any adult, and across health care, there is no shortage of organizational codes of conduct. In my case, Brigham and Women's Hospital (BWH), Partners HealthCare System, Harvard Medical School, American Medical Association, American College of Surgeons, Association of American Medical Colleges, Joint Commission, and the Massachusetts Bureau of Registration in Medicine each delineates professionalism. Yet despite these codified expectations, inappropriate *unprofessional* behavior occurs, reoccurs, and remains a challenge for all of us. Indeed, we not only tolerate disrespectful abusive behavior, but—in the cases of high revenue rainmakers or some of our more senior staff—we actually reward it.

One component contributing to inappropriate conduct in and around the OR is the staggering pace at which today's surgeons are expected to administer safe, yet cost-effective care. (Imagine Harvey Cushing¹ who, in the 1920s, was able to call the OR to inform them he had finished his tea and was ready to have his patient taken in!)

Our current environment requires surgeons to cope with an increased volume of patients with higher acuity under constant pressure to reduce the length of stay in order to generate virtual capacity with which to accommodate that volume against stresses imposed by emerging technology and the increased burden of documentation (and adapting to electronic systems) for reduced reimbursement in the face of higher rates for liability protection. No wonder fuses grow ever shorter.

But even though we may be under more stress, we still need to behave. In 1999, the Accreditation Council for Graduate Medical Education (ACGME) endorsed general competencies² for residencies, including professionalism, which it defined as being epitomized by a clinician who is:

- competent
- available
- punctual
- a good listener
- respectful
- communicative
- empathetic
- reassuring

- personally responsible
- well (illnesses and problems addressed)
- able to cope with stress
- self-aware, and
- able to get along with others.

To meet the ACGME's professionalism competency requirements, residents must demonstrate:

- a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse population;
- respect, compassion, and integrity;
- a responsiveness to the needs of patients and society that supersedes self-interest;
- accountability to patients, society, and the profession;
- a commitment to excellence and ongoing professional development;
- a commitment to ethical principals pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices; and
- sensitivity and responsiveness to patient's culture, age, gender, and disabilities.

For residents to develop this core competency, we as their mentors must lead by example. As noted by Dr. David Leach, executive director of ACGME, "Whether consciously or not, the conduct of attending physicians influences how residents act and behave with colleagues and their patients... Unprofessional behavior is ... contagious."³

And in similar vein, Dr. Tom Russell, Executive Director for the American College of Surgeons wrote "We must always be aware of the impact our comments and demeanor might have on those who are just starting on the path to a career in surgery."⁴

We have all known colleagues, mentors, and residents who have exemplified egregious behavior, especially in the OR. At the symposia and conferences I attend as a CMO (where many of my colleagues are internists) I find it interesting that surgeons are those most frequently cited as behavior problems—acting out inappropriately, but getting away with it. We so love the high-revenue rainmakers that not only do we tolerate their bad behavior, we are held hostage by it—and often unwittingly reward it.

How do we, instead, reward the true professional?

Professionalism Standards

In 2005, BWH embarked on an institutional-wide initiative to educate its staff about professionalism and to establish a standard set of expectations for which they could be held ac-

countable. As nicely outlined by Dr. Lucian Leape, adopting standards represents a first step in establishing a model system to effectively deal with both impaired and disruptive physicians.⁵ The remaining three steps are compliance, monitoring performance, and responding to deficiencies.

The BWH initiative required senior management to become fully engaged in developing and implementing educational and workplace professionalism programs. In partnership with external consultants,⁶ BWH structured a program that initially educated 30 trainers, all volunteers from each academic department and key administrative area. These trainers, in turn, conduct two-hour sessions. At present they have trained the majority of our full-time medical staff. The response has been reassuringly positive, even from those initially skeptical (having been cajoled kicking and screaming to the training session).

BWH also created the role of the professionalism officer within each academic department (selected by the chair from volunteers). These individuals are required to exemplify professional behavior and create an environment conducive to staff members bringing forth their concerns regarding unprofessional behavior. Their responsibilities include documenting the facts and facilitating appropriate referral (i.e., to their own department chair, the CME, legal counsel, human resources, or appropriate counseling). Specifically *excluded* are conducting investigations, interviewing the instigator or witnesses, meeting with the instigator's supervisor, or volunteering legal advice.

The program has been in place for just over a year, so its impact remains unclear. What is perceptible, however, is an enhanced awareness of the consequences of inappropriate behavior and

I find it interesting that surgeons are those most frequently cited as behavior problems—acting out inappropriately, but getting away with it.

a definite increase in the number of incidents reported by staff to my office, human resources, and the offices of safety and risk management. Our surgeons also appreciate that any resultant liability is personal and therefore not covered under institutional or malpractice policies.

The metrics of success are not necessarily quantifiable, although the number of pertinent complaints and reports to the Massachusetts Commission Against Discrimination, the

Board of Registration in Medicine and Physician Health Services serve as appropriate surrogates. What is clear is the need to address and resolve work place issues before they disrupt the hospital environment or escalate to litigation. Physicians must set an example for others in the institution by behaving professionally and respectfully towards all members of the health care team, acting in concert with institutional policies and statutory obligations, and by taking action when it comes to our attention that others have not done so. As surgeons we cannot lose sight of our obligations as representatives of the highest of profession. ■

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- 6 Employment Learning Initiatives



Additional Reading

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Most of the resources listed below were selected from the PubMed (Medline) database of indexed biomedical literature published from 2000 through September 2007. Where available, links are provided to abstracts and full text.

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