An internist clears an elderly woman for hip fracture surgery, but the anesthesiologist says she’s not stable. What’s the surgeon to do?

Staten Island (New York) University Hospital put the decision in the hands of specially trained hospital-based physicians who were granted privileges to perform preoperative assessments and clear patients for surgery.

A number of concerns led the 785-bed teaching hospital to create a uniform clearance protocol, including inconsistent pulmonary and cardiac preoperative assessments, variances in medication management, and disrupted surgery schedules caused by last-minute cancellations.

But the case that kicked off the system’s change was the death of a 78-year-old woman, who died in the OR during repair of a femur fracture that occurred at her nursing home. The woman’s medical history included chronic obstructive pulmonary disease, hypothyroidism, and laryngeal cancer. Her internist evaluated the patient prior to surgery and classified the patient as ASA 1 (American Society of Anesthesiologists physical status), with no contraindications for the OR. But the anesthesiologist evaluated the patient as ASA 3. Surgery proceeded, and the patient died after anesthesia induction.

Following a mortality review, the medical staff performance improvement subcommittee conducted a root cause analysis.

“Practitioner accountability cannot be minimized, but blaming an individual does little to make the system safer and prevent recurrence,” says Joseph Conte, vice president of quality and risk management.

The medical staff decided that a uniform, criteria-driven assessment protocol was essential and needed to be performed by physicians who received special training and were privileged, Conte says.

“The assessment of high-risk patients undergoing surgery has become a domain unto itself,” Conte says. The chairman of medicine, Tom McGinn, MD, embraced the concept and championed the protocol’s development and implementation.

The process improvement team, which included physician leaders of the departments of medicine, surgery, anesthesia, and critical care, as well as administrators from quality and risk management, developed the protocol.

Criteria were derived from sources such as the American College of Cardiology and the Goldman criteria of cardiac risk for noncardiac surgery.

“The assessment isn’t groundbreaking, but it’s good practice and sound medical management,” Conte says. “Physician buy-in was a lot easier because the protocol is evidence-based and criteria-driven.”

The hospital rolled out the uniform preoperative assessment in January 2001. Prior to implementation, Staten Island’s mortality rate for hip fracture repair surgery had been 4.9%, well within New York State’s benchmark average of 5.1%. Following implementation, the mortality rate decreased to 2.7% for both 2001 and 2002. In 2003, the mortality rate decreased to 1%—an 80% reduction from the baseline, Conte says.

Improved OR flow

The assessment protocol also had a dramatic impact on surgical flow.

“This type of situation was the worst for the OR,” Conte says. “The internist said OK to surgery, but the anesthesiologist said no. It created delay and confusion in the
OR schedule and turmoil for the patient’s family.”

Christine Griffiths, RN, associate vice president for perioperative services, says cancellations for hip fracture surgeries have plummeted since physicians began using the preoperative assessment. Although Griffiths does not have exact figures, she says OR labor and supply costs for fractured hip patients have decreased significantly, because “we’re not setting up, staffing, and breaking down rooms that aren’t being used.” The radiology department also saves because it isn’t paying for an x-ray technician to set up a fluoroscopy unit during surgery.

Also, because patients are more stable prior to surgery, they are more stable after surgery.

“They achieve higher Aldrete postanesthesia scores, have fewer complications, and require less intensive monitoring,” she says.

Is rushing to the OR necessary?

Initially, the only complaints Griffiths heard about the protocol were from orthopedic surgeons waiting for their patients to be cleared. “But once they saw how well their patients were doing, that stopped,” she says.

Conte adds that most of the orthopedic surgeons embraced the protocol because the medical management of their patients is closely monitored postoperatively. “Many of them use the clearance process for all of their elderly patients who sustain all types of traumatic fractures,” he says.

The uniform preoperative assessment goes against the long-held belief that hip-fracture repairs should be performed within 24 hours of fracture. A study published by Gretchen M. Orosz, MD, and colleagues in the Journal of the American Medical Association demonstrated that earlier surgery is not associated with improved mortality, although it is associated with reduced pain and length of stay for patients medically stable at admission. But most of the elderly patients, primarily women, who undergo hip fracture repairs at Staten Island are not medically stable at admission, Conte says.

“This is a very fragile population,” he says. “Seventy percent of these patients are at least 80 years old, and most are on poly-pharmaceuticals, have diabetes, heart failure, or pulmonary issues. They can’t stand a lot of insult.”

Surgery usually takes place within 48 hours of admission, but frequently, the assessment reveals unrecognized cardiac and pulmonary issues that must be stabilized before surgery.

In fact, Conte says the physicians involved in the protocol believe optimizing the patient’s cardiac and pulmonary status has been the key factor in the mortality decline, primarily from administering beta-blockers for hypertension prior to surgery to prevent myocardial infarction.

Privileged physicians

About 24 hospital-based physicians volunteered to begin performing the preoperative assessment protocol.

“These are medical and surgical intensivists, cardiologists, and hospitalists who already manage the complex patients, and they’re at the hospital 24/7,” Conte says.

Some internists resisted having other physicians placed in charge of clearing “their” patients for surgery, Conte says, “but we felt that to medically manage an elderly patient for surgery, a physician needed to be privileged.”

Approximately 45 additional physicians have become privileged after taking an in-house continuing medical education class or a 2-day class offered by Richmond County, where Staten Island is located. Other physicians attended a 2-day class offered in Philadelphia by Geno Merli, MD, coauthor of Medical Management of the Surgical Patient.

The privileged physicians also must agree to assess patients within 12 hours of admission.

The emergency department serves as the entry point for most of the patients who participate in the protocol, Conte says. “Any hip fracture patient in the emergency department who is 65 or older immediately goes into the protocol.”

In fact, the ED is integral to the success of the process, Conte says. “Their early
notification of a properly privileged provider to initiate medical clearance has been instrumental,” Conte says. “When variances occur, it generally is because of miscommunication at this level.”

Often, the orthopedic surgeon chooses which privileged physician will perform the assessment. “This is one way we can allow some flexibility in the system,” Conte says.

After clearance, the surgeon or designee adds the patient to the OR schedule. Out of 11 inpatient operating rooms, 1 is designated for add-on cases such as the hip fracture repairs.

A core group of OR nurses primarily staffs orthopedic cases, but any on-call night or weekend nurse also can be assigned. “Before they can take call, they must be able to perform all core competencies, and orthopedics is one of them,” Griffiths says.

The OR nurse is the gatekeeper, making sure the privileged physician has signed off on the preoperative medical evaluation.

“It is very nice to know everything is in place before they ever get to the OR,” Griffiths says. “Now if surgery is cancelled because a patient isn’t ready for surgery, it’s done on the medical-surgical floor or in the ER, not in the OR holding area when we’re all set up and ready to go.”

**Other procedures considered**

Process improvement is measured through morbidity and mortality conference data from the departments of surgery and medicine. The uniform preoperative assessment has been revised and improved 3 times, Conte says.

Other surgical procedures under consideration for a uniform preoperative assessment include vascular, cardiac, and unexpected abdominal surgeries for elderly patients.

The Joint Commission on Accreditation of Healthcare Organizations awarded Staten Island a 2004 Ernest A. Codman Award for effective use of performance measurement to improve the quality and safety of health care. The Hospital Association of New York State also recognized the project with its Pinnacle Award. Conte says he has received queries from hospitals around the country.

Conte concludes that the protocol is successful because it doesn’t rely merely on policy changes, introduction of forms, check-off sheets, or new devices.

“This project relied on education, training, privileging, and outcomes that were so dramatic that they could not be reasonably ascribed to change in acuity of patients or chance,” he says.

—Leslie Flowers

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*Staten Island’s preoperative evaluation form is at www.ormanager.com. Look under the OR Manager Tool Box.*

**References**

