

**Patient safety**

## High complication rate in older adults calls for well-planned care

**T**hough morbidity and mortality differences based on age might be expected, the degree of difference is staggering. Perioperative morbidity in older patients can be as high as twice that of younger patients, and mortality can be 3 to 7 times higher, finds a study in the *Archives of Surgery*. Another surprise was the type of complications (sidebar).

Preventing complications in older adults has become increasingly important with an aging population.

"People are living longer so we're now operating on people at an age we never thought we would," says Judy Dahle, RN, MS, MSG, Elder Support Services, Costa Mesa, California, who was an OR director for 16 years.

"One of the biggest misconceptions is that age should be an exclusion factor for many surgeries," agrees Marie Boltz, PhD, APRN, BC, director of practice initiatives at the Hartford Institute for Geriatric Nursing at New York University, New York. "In fact, older adults who have good functional status can do just as well after surgery as younger people. It's not a matter of age; it's what a person's health status is."

A program to reduce complications should include:

- tracking indicators
- performing a thorough assessment
- protecting patients intraoperatively
- providing education.

### Tracking quality indicators

Although current quality metrics focus on some of the outcomes that are different for elderly patients, Karl Bilimoria, MD, MS, one of the study authors, says, "We talk a lot about surgical site infections, but there are clearly other pulmonary and urinary complications that we don't follow, and we need to focus in on those."

Choosing a good tracking program is important.

"Being in a quality program is our key message. There is no way to understand if you have a problem and then target it unless you have the data," says Dr Bilimoria of the Department of Surgery, Feinberg School of Medicine, Northwestern University, and the American College of Surgeons (ACS), Chicago.

One option is to participate in the ACS National Surgical Quality Improvement Program (NSQIP), which uses a database to quantify 30-day, risk-adjusted surgical outcomes to promote quality improvement. Participating hospitals, which submit data on 136 variables, can produce reports online and compare their data with national averages.

"Enrolling in NSQIP is a good way for a hospital and group of providers

to start tracking their hospital-specific outcomes and complications," says David Bentrem, MD, lead author of the study and Harold L. and Margaret N. Method Research Professor in Surgery, Northwestern University.

"We know ahead of time when these patients are on the schedule so resources can be allocated based on this risk, such as an experienced team, adequate room and space, and (surgery scheduled) earlier in the day."

### **Assessing physical status**

Preoperative assessment is particularly important for older adults. A study in the September 2009 *Annals of Surgery* by Thomas Robinson, MD, and colleagues reported that preoperative markers related to 6-month mortality in older adults included:

- impaired cognition
- recent falls
- lower albumin
- greater anemia
- functional dependence
- increased comorbidities.

"Functional dependence was the strongest predictor of 6-month mortality," says Shirley Pfister, RN, MS, NP, one of the authors and a nurse practitioner for the anesthesia service at the VA Eastern Colorado Health Care System in Denver.

Having 4 or more markers predicted patient mortality with high sensitivity and specificity.

Pfister uses several of the techniques that were part of the study in her daily assessment, including asking patients to cross their arms before standing up from a hard chair, walk 10 feet, turn, and return to the chair.

"I find things that aren't necessarily apparent on a routine assessment," says Pfister.

### **Patients with comorbidities**

"It's very important to segregate the elderly into those with comorbid disease and those without," says David Young, MD, an anesthesiologist and medical director of presurgical testing at Advocate Lutheran General Hospital, Park Ridge, Illinois, and a partner in Surgical Directions, a consulting firm in Chicago.

"A 67-year-old person who fractured his ankle while training for a marathon has answered all your questions about fitness for surgery, as opposed to the one who fractured his ankle on the way to pick up his diabetic meds. People treat them the same way, and they shouldn't."

At Advocate, a hospitalist sees all patients with significant comorbidities who do not have a primary care physician on staff.

Dr Young recommends laboratory work and ECGs for older adults with comorbidities and agrees with Pfister that functional assessment is important. He uses the Metabolic Equivalent Task (MET) method, a ranking of activity level, to check functional status. A table of METs for common physical activities is at [www.americanheart.org/presenter.jhtml?identifier=3046878](http://www.americanheart.org/presenter.jhtml?identifier=3046878)

"I might ask them if they can walk up a flight of stairs briskly or carry their groceries from the car to the kitchen without getting out of breath," Dr Young says. "Answers to those types of questions give me a good idea of how well they maintain their ADLs (activities of daily living)."

### **Carve out time for assessment**

Dahle says the staff must carve out time to do a more in-depth assessment in older adults, particularly in patients 75 years or older. "In people 65 years or older, the problems are usually obvious; for example, they already have a heart problem. But in patients 75 or older, changes can be more subtle." Older adults might not exhibit the classic symptoms of a disease. For example, the only sign of a urinary tract infection may be incontinence or confusion instead of fever or dysuria.

Dahle recommends asking the patient, "Tell me what you do all day," to get a better understanding of the patient's function status. "They may be mobile and doing activities of daily living but aren't really doing anything else."

She says even a simple procedure such as a colonoscopy requires good patient history, including asking about the number of falls, which indicates frailty and sometimes depression.

### **Assessing mental status**

A good physical assessment should be paired with a mental status assessment.

"You want to know patients' ability to provide and receive information," says Boltz. She recommends asking people their name, what kind of surgery they are having, and where they live. "If they can't answer or try to divert your attention, that would indicate some degree of cognitive impairment."

Dr Young notes that the American Society of Anesthesiologists (ASA) encourages a mini-mental assessment for older patients to help determine those who might have an issue with delirium postoperatively. Other contributing factors include depression, low education, and substance abuse.

If there is any concern about mental status, Dr Young recommends that the family stays with the patient or has a "sitter" stay. He also conveys the information to nurses who can implement falls precautions.

### **Intraoperative care**

Intraoperative care should be based on assessment findings.

"When high-risk situations present themselves, we have to be more aware and work together as health care providers to prevent and quickly treat complications," says Dr Bentrem.

Christine Ives, RN, MSN, CNOR, OR manager at Eastern Colorado Health Care System, says OR nurses review the information obtained preoperatively and conduct their own assessment to identify potential problem areas. The staff in the OR also has a close relationship with the wound care nurse who oversees quality.

"If the wound care nurse sees a patient with a reddened area, the OR nurse goes to see it and then reviews the case in the OR to see what might have been done differently," says Ives, who adds that she has "a staff nurse who is a wound care champion."

### **Anesthesia issues**

Anesthesia is of particular concern in older patients. "Older adults have different capacities to metabolize anesthesia," says Boltz. The ASA has a syllabus on anesthesia in the elderly ([www.asahq.org/clinical/geriatrics/syllabus.htm](http://www.asahq.org/clinical/geriatrics/syllabus.htm)). Postop cognitive changes can sometimes be traced back to anesthesia.

"Older people have difficulty with thermoregulation, so they need blan-

kets," says Boltz. "They are also more prone to skin breakdown so you need to have sufficient padding." Dahle adds that it's important to allow patients to keep glasses and hearing aids with them whenever possible.

### **Managing pain**

Too often, older patients' pain is not adequately treated.

"You can safely use pain medications," says Boltz, "but start low and go slow. Older adults typically need lower doses." She emphasizes the need to assess the older patient's pain level diligently, particularly those with cognitive impairment.

"In that case, look at nonverbal signs, such as refusing care or grimacing." Boltz says to avoid meperidine and propoxyphene (Darvon), which tend to be neurotoxic in older adults. She also recommends having a hospital formulary that follows the Beers criteria for potentially inappropriate medication use in the elderly.

Advocate's postoperative pain service makes rounds on each patient every day, Dr Young notes. In addition, he says, "We have an aggressive block program (to manage pain)."

### **Discharge instructions**

Discharge instructions need to be appropriate for older patients, who may have visual problems, says Dahle. Patients may also not understand instructions because of undetected hearing problems. "Include whoever will be caring for the patient when you give discharge instructions," she adds, and advises providing a phone number for questions after discharge.

Dr Young emphasizes the need to keep the patient's primary care physician informed. "In surgery we tend to leave out primary care. Surgeons don't have the desire to manage patients after discharge; the primary care physician gets the calls but doesn't have the needed information."

### **Education**

Education is important in ensuring older people get the care they need. Dahle says that includes educating staff who conduct preoperative assessments and involving discharge planners, who need to be current on community resources.

Boltz suggests that education topics include:

- preventing skin breakdown
  - pain management
  - preventing hypothermia
  - fluid balance
  - general safety issues, such as not leaving patients alone on high stretchers
  - avoiding physical restraints, which can cause and increase confusion.
- "Nurses need to understand the impact of the hospital setting on the patient," she says. "It can cause confusion."

### **Plan for transitions**

Education shouldn't be limited to health care personnel, says Dahle. "Transition of care is a major issue," she says. "The public doesn't know and is unprepared when a loved one in an acute care setting is getting discharged to another level of care. Lots of information can fall through the cracks."

Nurses can help family members or other caregivers know what to ask before the patient leaves the hospital.

A good resource is the “Confidence-Based Learning Module for Perioperative Care of the Older Adult,” a module Dahle helped develop for AORN. The module uses scenarios to aid learning and provides reasons why answers to questions are or are not correct.

Another resource is Nurses Improving Care for Healthsystem Elders (NICHE). More than 270 hospitals participate in the program, designed to ensure that patients 65 and older receive exemplary care. NICHE has free tools for use with the elderly, including one for assessing pain.

### **A new attitude**

Developing a program to reduce complications in older patients requires a team approach. The ACS recognizes Advocate as having the lowest comorbidity of the organizations participating in NSQIP, says Dr Young. He credits that achievement to close collaboration among preadmission testing staff, hospitalists, intensivists, nurses, and anesthesiologists.

It also means a new attitude. “We are seeing older patients who are very healthy,” says Dr Bilimoria, who adds that it’s important not to base treatment decisions solely on age. “We need to look at the individual person.”

Dahle sums up by saying, “We need to pay as much attention to the care of older adults as we do to pediatric patients.” ❖

—Cynthia Saver, RN, MS

*Cynthia Saver (www.clsdevelopment.com) is a freelance writer in Columbia, Maryland.*

---

### **References**

- Bentrem D J, Cohen M E, Hynes D M, et al. Identification of specific quality improvement opportunities for the elderly undergoing gastrointestinal surgery. *Arch Surg.* 2009;144:1013-1020.
- Fick D M, Cooper J W, Wade W E, et al. Updating the Beers criteria for potentially inappropriate medication use in older adults. *Arch Int Med.* 2003;163:2716-2724.
- Massarweh N N, Legner V J, Symons R G, et al. Impact of advancing age on abdominal surgical outcomes. *Arch Surg.* 2009;144:1108-1114.
- Robinson T N, Eiseman B, Wallace J I, et al. Redefining geriatric preoperative assessment using frailty, disability and co-morbidity. *Ann Surg.* 2009;250:449-455.

---

## **Elderly complications**

In a new study, older adults were more likely than younger counterparts to experience these types of complications:

- cardiac (acute myocardial infarction and cardiac arrest)
- pulmonary (pneumonia, pulmonary embolism, and respiratory failure)
- urologic (urinary tract infection and renal failure).

Rates for surgical site infections, postoperative bleeding events, deep venous thromboses, and rates of return to the OR didn’t vary significantly by age.

—Bentrem D J, Cohen M E, Hynes D M, et al. *Arch Surg.* 2009;144:1013-1020.

## ***Polypharmacy and the elderly***

Evaluating an older patient's medication is an integral part of assessment.

Polypharmacy, or patients' use of multiple medications, is rampant, says David Young, MD, an anesthesiologist and medical director of presurgical testing at Advocate Lutheran General Hospital, Park Ridge, Illinois.

Even an electronic health record may not transfer from one facility to another. At his institution, a pharmacist or a pharmacy technician often sees or contacts patients preoperatively to review medications and detect issues that might arise in surgery. "Mostly, it's by surgeon referral, and we particularly encourage them to refer older patients."

He adds, "You have to have a good plan for what medications you are going to hold [during surgery], and everyone has to know the plan."

### **Face-to-face interviews**

One criterion for a face-to-face preadmission interview is if the patient is taking more than 4 medications for heart, lung, and blood pressure problems, says Barbara Moore, RN, nurse manager of the surgical admission teaching and testing unit at Mission Hospital in Asheville, North Carolina.

A pharmacist also sees the patient on the unit. Pharmacists interview patients who don't come in for a visit by telephone.

Pharmacists also might contact the prescribing physician to discuss combination medications and/or generics for cost-effectiveness or refer patients to agencies that provide medication financial assistance.

---

## ***New tool for assessing risks in elderly patients***

Hospitals participating in the American College of Surgeons (ACS) National Surgical Quality Improvement Program (NSQIP) will soon have a new tool: a risk estimate calculator surgeons can use to evaluate patients preoperatively.

After the surgeon enters the age and other factors, the tool "generates a risk graph and actual risk estimates for complications and mortality," says Karl Bilimoria, MD, MS, of Northwestern University and ACS, Chicago.

The tool will include 15 of the surgical procedures tracked in NSQIP and include data from the hospital where the physician practices.

Surgeons can use the results as part of the decision-making discussion with the patient about whether the surgery should be performed or is too risky.

The tool, which is in testing phase and should be available mid-summer of 2010, will be primarily used on a computer, with iPhone and Blackberry applications also available.

"The risk calculator is a huge step forward in the overall risk assessment of the elderly," says Dr Bilimoria.

## **Resources**

### **American Heart Association**

#### ***Metabolic Equivalent (METs)***

Helps estimate metabolic equivalents of activities.

—[www.americanheart.org/presenter.jhtml?identifier=3046878](http://www.americanheart.org/presenter.jhtml?identifier=3046878)

### **American Society of Anesthesiologists**

#### ***Syllabus on Geriatric Anesthesiology***

—[www.asahq.org/clinical/geriatrics/syllabus.htm](http://www.asahq.org/clinical/geriatrics/syllabus.htm)

### **AORN**

#### ***Care of the Older Adult***

Web page links to educational resources and suggested readings.

—[www.aorn.org/Education/EducationResources/CareOfOlderAdults/](http://www.aorn.org/Education/EducationResources/CareOfOlderAdults/)

#### ***Perioperative Care of the Older Adult***

Confidence-based Learning Module.

—[www.aorn.org/Education/ProfessionalDevelopment/](http://www.aorn.org/Education/ProfessionalDevelopment/)

### **NICHE**

#### ***Nurses Improving Care for Healthsystem Elders***

National initiative to improve care of older hospitalized adults from the Hartford Institute for Geriatric Nursing, New York University.

—[www.nicheprogram.org/](http://www.nicheprogram.org/)