A pilot pneumonia prevention program significantly reduced postoperative pneumonia in a hospital postsurgical unit.

“Postoperative pneumonia is a problem facilities face continually, but our research shows simple steps in prevention can have a substantial effect,” says Sherry Wren, MD, FACS, chief of general surgery at the Veterans Affairs (VA) Palo Alto Health Care System and professor of surgery in the Stanford University School of Medicine in California.

“This program, if expanded to other VA or private hospitals, could help improve patient care and lower morbidity, mortality, and overall health care costs.”

A quality improvement task force, formed in December 2006, met for 3 months to review evidence-based strategies. Eight interventions were adopted in April 2007:

- educating nursing staff about pneumonia prevention
- cough and deep-breathing exercises with incentive spirometer, a device that helps patients gauge lung function
- twice daily oral hygiene with chlorhexidine swabs
- ambulation with good pain control
- head of bed elevation to at least 30 degrees and sitting up for all meals
- quarterly discussion of progress and results with nursing staff
- pneumonia bundle documentation in the nursing documentation
- computerized pneumonia-prevention order set in the physician order entry system.

Researchers retrospectively reviewed all inpatient pneumonia cases documented in the VA National Surgical Quality Improvement Program (VA NSQIP) database from 2006 through 2007. Data was collected from April 2007 through 2008.

Pneumonia diagnosed on the surgical unit was found in 13 of 1,668 inpatient admissions (0.78%) in the preintervention period. In contrast, only 3 of 1,651 inpatient admissions (0.18%) with pneumonia were diagnosed on the unit in the postintervention study period. This is an 81% percent decrease in postoperative pneumonias from fiscal year 2006 compared to 2008, a highly statistically significant result.

Common complication

Postoperative pneumonia, a common complication among surgical patients, is the third most common infectious complication after urinary tract and surgical site infections.

According to the Institute for Healthcare Improvement, a facility that performed 10,000 noncardiac operations per year would be expected to
have about 150 cases of postoperative pneumonia. In the ICU, postop pneu-
monia can cost an additional $40,000 per patient and has an estimated mortal-
ty rate of 20% to 70%. National efforts have focused on reducing ICU-
acquired pneumonia, but there has been no program addressing hospital patients outside the ICU.

Reference