

# Scrutiny Prompts Hospitals to Reduce Infections

One CMS-sponsored pilot project that focused on improving control cut overall infection rates by 27%.

BY ALICIA AULT  
Contributing Writer

Recent demands for disclosure of data on hospital infection rates have spurred efforts not only to measure and publicize the numbers but also to demonstrate progress in controlling infections. The pressure is on to improve performance, because many insurers, employers, state and federal regulatory agencies, and consumer groups view infection control as a proxy for quality and patient safety.

During the past year, 39 states introduced legislation and 6 states passed laws requiring hospitals to disclose nosocomial infections to the state, and—in many instances—also to the public (N. Engl. J. Med. 2005;353:225-7).

But most surveillance and measurement efforts have been made behind closed doors. For example, the Centers for Disease Control and Prevention lets hospitals compare infection rates with other hospitals through the National Healthcare Safety Network, but this information is not available to the public.

The Joint Commission on Accreditation of Healthcare Organizations says it does not maintain statistics on hospital infections, although it recently published a study tracking how well hospitals did in giving antibiotics to pneumonia patients, among other quality of care measures (N. Engl. J. Med. 2005;353:255-64).

And the Centers for Medicare and Medicaid Services (CMS) sponsored a pilot project in which hospitals that focused on

improving infection control were able to decrease the overall infection rate by 27%.

Robert A. Weinstein, M.D., recently said that those efforts are “a reality” and could lead to improved performance (N. Engl. J. Med. 2005;353:225-7). But to allow for meaningful comparisons among facilities and to spur better quality care, the measures should include such assessments as timely administration of perioperative antibiotic prophylaxis, vascular catheter insertion practices, and hand hygiene, said Dr. Weinstein, chairman of infectious diseases at the John H. Stroger Hospital of Cook County (Ill.). Infection control report cards should also track rates of infection in the ICU that are associated with central vascular catheters; reoperation or rehospitalizations for surgical site infections; rates of nosocomial influenza; and infections caused by multidrug-resistant organisms, he added.

## Focus Brings Improvement

Many of those suggested measures were used to track performance in a group of hospitals that participated in the National Surgical Infection Prevention Collaborative. The collaborative was sponsored by CMS and managed by Qualis Health, a Medicare Quality Improvement organization that monitors quality for Washington state, Idaho, and Alaska. Of the 56 hospitals that joined the 12-month project, 44 reported enough data to draw conclusions (Am. J. Surg. 2005;190:9-15).

At each hospital, a team identified a limited set of surgical procedures or surgeons and tracked them for at least 30 days

post procedure to determine the proportion of patients getting prophylactic drugs within an hour before the incision, the proportion getting appropriate agents, and the proportion who had prophylaxis discontinued within 24 hours. After identifying the procedures or surgeons to be monitored and gauging a baseline rate for each process to be measured, interdisciplinary teams worked on instituting ways to improve processes.

Over the year, 35,543 patients were tracked. The infection rate was 2.28% in the first 3 months (215 infections among 9,435 cases during that time period); it fell to 1.65% by the last 3 reporting months, constituting a 28% reduction.

Lead author E. Patchen Dellinger, M.D., chief of the division of general surgery at the University of Washington's Eastside Specialty Center, said in an interview that the collaborative focused partly on getting hospitals to more closely identify and monitor infections such as having a nurse check on a patient a set number of times post procedure, or conducting telephone follow-up to ask about problems with wound healing.

The hospitals did not receive any financial assistance for participation; for most, it cost the equivalent of a full-time nurse for the year, Dr. Dellinger estimated.

Achieving initial progress is the easy part, he observed. “The hardest thing is spreading the gains beyond the pilot population and then holding the gains and not backsliding.”

## Spreading and Holding the Gains

Evergreen Hospital is one facility that has managed to keep improving, said Stuart Schrader, R.N., director of surgical services for the 244-bed community facility

in Kirkland, Wash. The hospital did not have a grasp on baseline infection rates, although they appeared to be low (about 0.25% in 1999), Mr. Schrader said in an interview.

But the rate climbed each year, hitting 0.7% in 2001. After joining the project and learning some new surveillance techniques, the hospital found that its rate was closer to 1.1%.

Since then, the hospital has adopted quality improvement measures, such as using a convective warming blanket on patients preoperatively and requiring the anesthesiologist to shake hands with each patient—the “warm hands” test—to make sure he or she is normothermic during surgery. Patients are kept warm with the same blankets post procedure in order to ensure proper blood flow to the wound area and thus prevent infection. The hospital has also increased the temperature in its eight operating rooms, and purchased jackets and vests with pockets for cold packs to keep the staff and surgeons comfortable, Mr. Schrader said.

To ensure that patients always receive antibiotics an hour before the procedure, the anesthesiologist is required to call the holding room nurse, who administers the antibiotic.

Razors have been mostly replaced with clippers for shaving hair around surgical sites, which reduces nicks that could invite infection, Mr. Schrader said.

Evergreen has cut its infection rate to 0.85%.

Mr. Schrader expects infection control to continue to be an area of focus. “The hard part was putting the energy into making the changes,” he said. “Once the changes were made, it became a normal way of life.” ■

## Adult Pneumococcal Meningitis Rates Unaffected by Vaccinating Children

BY SHERRY BOSCHERT  
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SAN FRANCISCO — Population-wide rates of bacterial meningitis declined significantly from 1.9 cases per 100,000 people in 1998 to 1.5 per 100,000 in 2003, largely due to a pediatric vaccine that seems to have no herd effect in older people, Michael C. Thigpen, M.D., said.

Dr. Thigpen of the Centers for Disease Control and Prevention, Atlanta, and his associates analyzed surveillance data from nine geographic areas covering a population of 17 million in 1998 and 25 million in 2002. The 2,039 cases of bacterial meningitis in the study killed 16% of patients.

The pneumococcal 7-valent conjugate vaccine (PCV-7) was recommended in 2000 for infants aged 2-23 months; the incidence of pneumococcal meningitis subsequently declined 65% in that age

group. No decline in pneumococcal meningitis occurred in older people, as has been seen with other types of invasive pneumococcal disease after the introduction of PCV-7, he said at the annual meeting of the Infectious Diseases Society of America.

Cyclical changes in meningococcal disease also contributed to the reduced incidence of bacterial meningitis. Five pathogens cause 80% of bacterial meningitis: *Streptococcus pneumoniae*, *Neisseria meningitidis*, *Haemophilus influenzae* type b, group B streptococcus (GBS), and *Listeria monocytogenes*.

Recommendations in 2002 for universal GBS screening of pregnant women and the 2005 licensing of meningococcal conjugate vaccine (MCV-4) for youths aged 11-17 years may further affect the incidence of bacterial meningitis. “It remains to be seen how universal GBS screening and MCV-4

will change the epidemiology of bacterial meningitis,” he said.

Among 781 cases of bacterial meningitis reported in 2002-2003, the most common pathogen was *S. pneumoniae*, accounting for 61% of cases and 76% of deaths. *N. meningitidis* caused 16% of cases, GBS caused 14%, *H. influenzae* caused 7%, and *Listeria* caused 2%.

Because of the success in reducing pneumococcal meningitis in the youngest age group, the median age of patients rose to 39 years. The disease killed 5% of patients younger than 2 months and 28% of patients aged 65 years or older.

“As bacterial meningitis has become even more a disease of adults, with *S. pneumoniae* causing disease across all ages, further reductions using a targeted approach may be difficult. ... Broad strategies, including new vaccines to prevent adult cases of bacterial meningitis, should be considered,” he said. ■

## Sepsis Linked to Mortality In Hypotensive Emergencies

WASHINGTON — Hypotensive emergency department patients with sepsis had 2.7 times higher mortality than patients without sepsis, with the exception of patients in cardiogenic shock, Michael Filbin, M.D., reported in a poster presentation at the annual meeting of the American College of Emergency Physicians.

Dr. Filbin and his colleagues at Massachusetts General Hospital in Boston conducted a prospective study of 19,474 patients older than 18 years. Of these, 321 patients presented with hypotension or developed hypotension during their time in the emergency department. Hypotension was defined as at least two consecutive systolic blood pressures at or below 90 mm Hg.

Mortality among the pa-

tients with hypotension was 12% (38 of the 321 patients), and hypotension was significantly correlated with overall mortality. Overall mortality was 1.1% in the general emergency department population during the study period.

After adjustment for age, duration of hypotension, and frequency of systolic blood pressure assessment, mortality was highest among cardiogenic patients (23%) and septic patients (19%). However, when cardiogenic patients were excluded, septic patients had the highest mortality.

Although such a finding appears intuitive, few systematic studies have analyzed a consecutive series of patients with low blood pressure, the researchers noted.

—Heidi Splete