Pennsylvania Data Reveal High Cost of Hospital Infections

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Pennsylvania has issued hospital-specific data on infections among 1.6 million patients treated at 168 facilities statewide in 2005. The report, released by the Pennsylvania Health Care Cost Containment Council, marks the first time any state has issued data on individual hospitals, and is expected to establish a benchmark for future performance and quality improvement. It also overturns a lot of conventional wisdom about how infections occur.

"It’s a breakthrough in processes that creates infections," said Marc P. Volavka, executive director of the council, in an interview.

The detailed report, available at the council’s Web site (www.pchc4.org), shows just how costly infections can be for patients, payers, and hospitals.

Of 1.6 million patients treated at the 168 facilities, 19,154 had a hospital-acquired infection, for a rate of 12 per 1,000 cases. The infections accounted for 394,129 hospital days and $3.5 billion in charges.

The average length of stay was 20.6 days for those with an infection and 4.5 days for those without. Charges were $185,260 and $31,389, respectively. Similarly, mortality was 1.5% and 2%, respectively.

Most cases were covered by Medicare or Medicaid. Only 276,525 of the patients had commercial insurance; among them, 1,522 acquired an infection in the hospital. Private payers covered only about $53,000 of an infection-related stay, but the total payout was $82 million.

Even though all hospitals are reporting, it is likely that the data hugely underestimate what actually occurs, said Mr. Volavka. He noted that the council has not asked hospitals to track infections subsequent to discharge, which may be when most surgical site infections develop.

The data collection began in 2004, when hospitals were required to report on surgical site infections for circulatory, neurological, and orthopedic procedures; indwelling catheter-associated urinary tract infections; ventilator-associated pneumonia; and central-line-associated bloodstream infections. In the third and fourth quarters of 2005, hospitals had to expand to reporting to include all surgical site infections. In the fourth quarter of 2005, pneumonia, bloodstream, and urinary tract infections not related to devices were added.

Urinary tract infections (UTIs) were the most common, affecting 11,265 patients, for an infection rate of 7.2 per 1,000. Those infections were most commonly in heart failure patients, followed by those admitted for other cardiac conditions.

Surgical site infections had the second-highest incidence rate, at 5.2 per 1,000, affecting 1,615 patients. Intra-abdominal surgery accounted for the highest number of surgical site infections (9%), closely followed by angioplasty and surgery for osteoarthritis and leg fractures.

These surgical infections accounted for most of the infections in each age group, except for those patients older than 60 years, in whom UTIs were most common. Aside from UTIs, the number of infections actually declines as patients age, a fact that runs counter to prevailing theories about older patients’ being more vulnerable to infection, Mr. Volavka said. He added that more UTIs occur in the over-60 group because it comprises a preponderance of people who age in state hospitals, where they are catheterized instead of helped to the bathroom.

"It’s not because the patients are by definition more at risk. It’s because the behavior of the hospitals that puts them at risk,” he said.

Several recently published studies appear to support Mr. Volavka’s assertions. Researchers at Allegheny General Hospital in Pittsburgh found that they did not predict central-line bloodstream infections, and that the most common primary diagnoses among those infected—acute myocardial infarction, heart failure, respiratory failure, and nosocomial pneumonia—were not considered risk factors (Am. J. Med. Qual. 2006;21[suppl]:7S-16S). A group at a clinical research organization had similar findings, concluding that sicker patients were especially at higher risk for infections (Am. J. Med. Qual. 2006;21[suppl]:175-285).

Finally, a study found that hospital practices—in such as method of hair removal, hand-washing, and operating room traffic flow—were not found to be a big-ticket item.

The studies “make it clear that it is the process of care, not the underlying clinical condition of the patient, that is driving the epidemic of nosocomial infectious,” said Dr. David B. Nash, chairman of the department of health policy at Jefferson Medical College in Philadelphia.