

## PROFESSION

### Nationwide initiative cuts central-line infections by 40%

The checklist approach, first tried in Michigan hospitals, sees success in 44 states.

By **KEVIN B. O'REILLY**, amednews staff. *Posted Sept. 25, 2012.*

Additional evidence emerged in September to document the nation's patient safety breakthrough in reducing the toll of central line-associated bloodstream infections in hospital intensive care units.

More than 1,100 hospitals in 44 states participated in a federally funded initiative using an evidence-based tool kit that incorporates standardized checklists. They slashed central-line infections by 40% over four years. The overall infection rate among hospitals in the project fell from 1.903 infections for every 1,000 days patients have a central line inserted to a rate of 1.137 per 1,000 days.

"That 40% is not just a number — it means more than 500 lives saved and more than 2,000 fewer patients suffered an infection. And we avoided \$34 million in costs," said Carolyn M. Clancy, MD, director of the Agency for Healthcare Research and Quality.

The agency, part of the Dept. of Health and Human Services, funded the work done by the American Hospital Assn. to spread the prevention tool kit and collect data. Individual hospitals paid to implement the project, formally known as the Comprehensive Unit-based Safety Program. The tool kit is available at an AHRQ website ([ahrq.gov/cusptoolkit/](http://ahrq.gov/cusptoolkit/)).

Progress in preventing central-line infections has not been limited to the AHRQ-funded project. Nationwide, hospitals cut the infection rate by nearly 60% between 2001 and 2009, preventing 25,000 bloodstream infections, the Centers for Disease Control and Prevention estimated in the March 4, 2011, *Morbidity and Mortality Weekly Report* ([cdc.gov/mmwr/preview/mmwrhtml/mm6008a4.html](http://cdc.gov/mmwr/preview/mmwrhtml/mm6008a4.html)).

The national patient-safety initiative was inspired by statewide success in Michigan, where more than 100 hospitals cut their bloodstream infection rate by 66% and achieved a median rate of less than one infection per 1,000 line days. That rate has been sustained and documented in subsequent studies.

Central lines, or central venous catheters, are used to deliver medications and fluid and help monitor critically ill patients' health. About 25% of patients with bloodstream infections die, the CDC says.

#### How infections are prevented

Much of the safety progress is based on adherence to a standardized checklist that requires hand washing, using full-barrier precautions when inserting central lines, cleaning the skin with chlorhexidine, avoiding the femoral site for line insertion and removing unnecessary catheters. Another critical element, say physicians and nurses involved in the project, is to empower anyone in the ICU to take action to ensure that the checklist is followed and report problems that could lead to infections.

Careful measurement of infection rates helps gauge progress and encourage teamwork, experts said.

Seeing evidence that central-line infections could be virtually eliminated changed the thinking about what could be achieved in infection prevention, said Michael C. Tooke, MD, chief medical officer of Shore Health System in Maryland. The system's two hospitals took part in the project and have gone more than two years without a central-line infection in their ICUs.

"There was a shift in our thinking, that it was actually possible to eliminate something that we came to believe was inevitable," Dr. Tooke said. "We didn't have to accept the harm we were causing our patients. Eliminating the harm was possible. If that was the case, then the only possible target was zero."

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