

THE BUG STOPS HERE

ALLEGHENY GENERAL HOSPITAL

- ◆ Pittsburgh, PA
- ◆ 724 Beds
- ◆ www.wpahs.org/agh

Allegheny General is an academic medical center on Pittsburgh's north side, with a Level I shock trauma center. It is part of West Penn Allegheny Health System.

S T E E E P

Safe

Reduction of CLAB infections and the resultant harm.

Efficient

Quality data are used in near real time, not retrospectively.

Patient-centered

Infections are considered in terms of number of patients affected, not in terms of rates per 1,000 line days.

THE PROBLEM

Central line-associated bloodstream (CLAB) infections have vexed hospitals performing interventional care for years. While the rate at Allegheny General Hospital (AGH) was no worse than the national average, it was decided that meeting that goal was unacceptably low and that patients were being needlessly harmed by CLAB infections.

THE SOLUTION

Declaring “zero tolerance” for CLAB infections, the AGH Coronary Care Unit (CCU)—site of many such infections—embarked on an ambitious project to eliminate them. Working with the Pittsburgh Regional Healthcare Initiative (PRHI), the CCU team endeavored to obtain as close to real-time information and convened at the bedside to assess what went wrong whenever possible.

RESULTS

- » Within a year of introducing new protocols, the CLAB infection rate dropped by 87 percent.
- » The CCU has gone more than a year without a single patient suffering from a CLAB infection.

BACKGROUND

U.S. hospitals average between two and seven CLAB infections per 1,000 line days, according to the CDC's National Nosocomial Infection Surveillance System. At Allegheny General, that rate was four CLAB infections per 1,000 line days. However, even the method of quantifying infections took the focus away from the patient, recalls Jerome E. Granato, MD, medical director of the hospital's CCU. “Four infections per 1,000 line days—what does that even mean?” Granato asks. “It meant that 30 to 40 patients were getting infections from central-venous catheter every year, and one-third of them were dying. Once we started to look at infections, not in terms of the rate, but in terms of the number of people affected, the number quickly became unacceptable.”

With the help of the PRHI, the hospital undertook an extensive analysis of existing clinical practices and all levels of staff involvement surrounding the use and maintenance of central lines. It was found that there was little consistency with regards to the techniques, supplies and barrier precautions used during central-line insertion and dressing changes.

“PRHI did an observation and came back with a report, and that was a real eye-opener,” says Joy Peters, RN, nursing director of the CCU. “We found that all these things we had learned in nursing school had gone completely by the wayside. In some instances dressings were being changed every 24 hours, in some instances it was every shift. It was chaos.”

TEAM MEMBERS

- » **Ronnie Andrews, RN**
Infection Control Practitioner
- » **Connie E. Cibrone**
President and CEO
- » **Kimberly Curry, RN**
Coronary Care Unit Facilitator
- » **Diane Frndak**
Vice President of Organizational Excellence, West Penn Allegheny Health System
- » **Jerome E. Granato, MD**
Medical Director, Coronary Unit
- » **Cheryl Herbert, RN**
Infection Control Director
- » **Joy Peters, RN**
Nursing Director, Coronary Care Unit
- » **Richard Shannon, MD**
Chairman, Department of Emergency Medicine

Making use of infection data the moment it became available, rather than two months later as had been done previously, the AGH team succeeded in changing the paradigm for central-line utilization, creating a new, safer standard of care. This included using a clear “biopatch” over the point of insertion so caregivers could see it without having to change dressings; banning use of central lines in the femoral vein and groin; standardizing sterilization procedures; and standardizing dressing change procedures.

“When this program began there was a one in 25 chance that a critically ill patient at AGH would get a central-line bloodstream infection,” Granato says. “Our most recent data reflects a one in 527 chance.”

An additional benefit: reduction in CLAB infections saves money. “If patients don’t get infections, we get them out of the hospital faster, we turn the bed over faster and we can get the next patient in there—and, in the process, it’s better for the patient,” says hospital CEO Connie Cibrone. “We didn’t do this because of cost, we did this because it was the right thing to do; but, we actually save money doing it.”

PRINCIPLES OF PERFORMANCE EXCELLENCE

Creation of High-Reliability Culture

The intervention’s success depended on buy-in from nurses in the CCU. Fortunately, that came quickly. “The infection-control nurse got on board right away—she was excited to be involved in a new way,” Peters says. “The nursing staff became very engaged. We’ve made infection control a team effort.” This is performed under a campaign called “The Bug Stops Here,” complete with promotional signs and t-shirts, designed to maintain the momentum for change and especially encourage new personnel to adhere to protocols.

Reducing Process Variation

The discovery that there was so little standardization with regard to treatment of central lines came as a shock. “Frontline caregivers are really keepers of the gate,” Peters says. “If they aren’t diligent, there’s a problem.” By implementing standardized protocols, AGH reduced variation and thus ensures that it adheres to a best practices standard.

CONTINUAL IMPROVEMENT

Procedures developed in Allegheny’s CCU were also tested in the intensive care unit (ICU) to demonstrate proof of concept. Once similar successes were shown in the ICU, they were taken hospital wide. The AGH CLAB infection project has prompted an equally aggressive focus on eliminating other common hospital-acquired infections like ventilator-associated pneumonia, MRSA and urinary-tract infections.

Ongoing education is important to the program’s success. All physicians are required to undergo 30 minutes of training with a mannequin to review how to prepare a patient for central-line insertion and how to don sterile clothing. Physician- and nurse-specific videos were created and are required viewing for staff. And, the hospital has received a grant from the APIC to create a series of training modules to develop these standards nationally.