HEALTHCARE-ACQUIRED INFECTIONS (HAIs) remain a significant problem for most hospitals, despite a decade of focused improvement efforts using evidence-based guidelines. One type of HAI, central-line associated bloodstream infection (CLABSI), carries a mortality of 12% to 25%. CLABSIs also can be costly for hospitals, extending patient stays. The Centers for Medicare & Medicaid Services no longer reimburses hospitals for the cost of treating these infections.

Fortunately, we’ve made progress against CLABSIs. The Centers for Disease Control and Prevention (CDC) reports a 58% reduction in CLABSIs from 2001 to 2009. That’s an impressive decrease—but we still have room to improve. In 2009, about 18,000 intensive care unit patients were diagnosed with CLABSIs; an additional 23,000 cases occurred in acute-care unit patients and 37,000 in outpatient hemodialysis patients.

This article discusses basic practice bundles that have helped us achieve our current success and highlights several interventions beyond the bundles, which may further decrease CLABSIs.

In 2005, the Institute for Healthcare Improvement (IHI) launched the 100,000 Lives Campaign, which sought to reduce HAI morbidity and mortality through the use of bundled interventions. In particular, IHI promoted a central-line insertion bundle to reduce CLABSIs. Healthcare organizations that implemented the IHI bundle reduced CLABSIs significantly, as shown by the CDC’s national estimates. The concept and content of bundles now goes beyond those initially recommended by IHI.

Central-line insertion bundle
IHI’s insertion-bundle recommendations include proper hand hygiene, maximal barrier precautions, chlorhexidine skin antisepsis, optimal catheter site selection, and daily assessment for removal of unnecessary lines. The following practices related to central-line insertion go beyond the basic bundle and are supported by evidence:

- ultrasound-guided peripheral I.V. placement by registered nurses to reduce the need for central line access
- antimicrobial- or antiseptic-coated catheter use if the central line will stay in place beyond 6 days
- midline catheter as an alternative to a central line if therapy is likely to exceed 6 days
- ultrasound guidance for central-line placement to avoid multiple placement attempts
- dedicated advanced practice nurse teams for central-line insertion.

Central-line maintenance bundle
Most healthcare facilities use a maintenance bundle for ongoing care of patients with central lines. Typically, the bundle includes many of the recommendations in the CDC’s Guidelines for the Prevention of Intravascular Catheter-Related Infections or other professional society guidelines.

Basic maintenance bundle elements focus on proper hand hygiene, catheter disinfection before central-line access, and aseptic technique for site care, tubing, and dressing changes. Evidence-based interventions related to central-line maintenance that go beyond the basic bundle include:

- disinfectant caps that cover needleless connectors and injectable ports on tubing
- chlorhexidine-impregnated transparent dressings or sponges
- sutureless securement devices to stabilize catheters
- daily bathing with chlorhexidine alone or combined with mupirocin ointment to the nares.

Central-line patency bundle
Studies link catheter thrombosis with development
Beyond bundles
Nurses are uniquely positioned to influence CLABSI reduction. As keen observers during catheter insertion, we should feel empowered to stop the procedure if we see practice lapses. Also, we are primarily responsible for care and maintenance of all central lines, and are the main advocates for removal when these lines are no longer necessary. In addition, we teach patients and families how to care for their lines when they need to be transferred to another setting and another population? The researcher is responsible for providing “thick descriptions”—rich, vivid descriptions of participants, their experiences, and the setting. The quote from the obstetrics nurse above exemplifies a thick description of her experience. Artwork, photographs, and documents can augment patients’ verbal descriptions and enhance data richness. A study that contains thick descriptions can contribute to the body of evidence that helps you make judgments about implementing practice changes in your setting.

Evaluating qualitative research presents unique challenges not encountered with quantitative research. However, thoughtful examination of qualitative studies can help ensure such research is useful to nursing practice.

Barbara Williams is a nurse scientist at Meridian Health in the Ann May Center for Nursing and Allied Health in Neptune, New Jersey, and an instructor in the nursing program at William Patterson University in Wayne, New Jersey. She is coauthor of Anatomy of Research for Nurses.

Selected references


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