Field Guide:  
Central Line-Associated Blood Stream Infections

Definition and Harm Impact

A central venous catheter, also known as a central line, is a tube that physicians place in a large vein in the neck, chest, groin, or arm to give fluids, blood, or medications or to do medical tests quickly.¹

Central line-associated bloodstream infections (CLABSI) are serious, preventable infections that occur when microorganisms enter the bloodstream through the central line, resulting in thousands of deaths annually along with billions of dollars in added healthcare costs.² To prevent CLABSI, healthcare providers must follow strict evidence-based guidelines when inserting and maintaining the central line.³

Measurement

The Hospital Improvement Innovation Network (HIIN) goal for reduction in CLABSI standardized infection ratio (SIR) is 20 percent compared to the National Healthcare and Safety Network (NHSN) calendar year 2015 baseline SIRs. The SIR is calculated by dividing the number of observed events by the number of predicted events. Beginning with 2015 data, SIRs are calculated for CLABSI (excluding mucosal barrier injury laboratory-confirmed bloodstream infection, [MBI-LCBI] events) and, for acute care hospitals, MBI.

Known Improvement Strategies

Healthcare providers can take the following steps to help prevent CLABSI: ⁴

- Standardize the insertion process
  - Implement insertion checklist
  - Implement “Stop the Line”
  - Select optimal site
  - Guide line placement with ultrasound
  - Hand hygiene and aseptic technique
  - Prep with 2 percent chlorhexidine (CHG)

- Review line necessity
  - Daily review

- Standardize the maintenance process
  - Bundle elements together
  - Incorporate into daily assessment
  - Scrub the hub
• Specialize tactics—“Beyond the Bundles”
  – Use CHG dressings
  – Bathe with CHG
  – Use a non-suture securement
  – Use antiseptic or antimicrobial impregnated central venous catheters (CVCs)
  – Do not routinely replace CVCs
  – Involve patients and families
  – Develop prudent approach to antimicrobials

Engaging Patients and Families

Educate patients and families on all the steps being taken to prevent central line infection using the “teach-back” method. Patients and family education should include the purpose of a central line, expected duration of use, and why it is important to remove the central line as soon as it is no longer needed. Hand hygiene education should also be formalized. Educate both patients and visitors on the frequency, options (alcohol rub, soap and water), and proper hand hygiene techniques. Review products for use with patients who are not ambulatory and/or cannot easily perform hand hygiene.

Resources and Guides for Hospitals

• CDC—Centers for Medicare & Medicaid Services (CMS) Requirements for CLABSI Surveillance and Reporting: https://www.cdc.gov/nhsn/cms/index.html
• CDC—Paving the Path Forward: 2015 Rebaseline: https://www.cdc.gov/nhsn/2015rebaseline/index.html

2 Ibid.