Central Line-Associated Blood Stream Infection (CLABSI) Prevention

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Conflict of Interest

- I do not have conflicts of interest or the ability to control or influence the content of an educational activity; nor, do I have a financial relationship with a commercial interest, the products or services of which are pertinent to the content of this educational activity.
Objectives

Upon completion of this presentation participants will:

- Be able to identify the elements of a Central Line Bundle.
- Be able to verbalize that CLABSI are preventable through proper insertion techniques.
- Be able to describe barriers to compliance with use of the Central Line Bundle.
Evidence Based Practice: PICOT Question

For hospitalized adult Intensive Care Unit (ICU) patients (P), does use of the Central Venous Catheter (CVC) Insertion Bundle (I) compared with insertions without use of the CVC Insertion Bundle (C) reduce the rate of central line-associated blood stream infections (O) within 90 days of process improvement implementation (T)?
Evidence Based Practice:

- CDC reports a 46% decrease in CLABSIs in hospitals across the U.S. from 2008-2013, however:
  - Estimated 30,000 central line-associated bloodstream infections (CLABSI) still occur in intensive care units annually
  - CLABSI cause prolonged hospital stays, increased costs, and risk of death
  - CLABSI are preventable through proper insertion techniques and management of the central line
Healthcare-associated infections (HAIs) are infections patients can get while receiving medical treatment in a healthcare facility. Working toward the elimination of HAIs is a CDC priority. The standardized infection ratio (SIR) is a summary statistic that can be used to track HAI prevention progress over time; lower SIRs are better. The infection data are reported to CDC’s National Healthcare Safety Network (NHSN). HAI data for nearly all U.S. hospitals are published on the Hospital Compare website. This report is based on 2014 data, published in 2016.

**CLABSIs**

**Central Line-Associated Bloodstream Infections**

When a tube is placed in a large vein and not put in correctly or kept clean, it can become a way for germs to enter the body and cause deadly infections in the blood.

- U.S. hospitals reported a significant decrease in CLABSIs between 2013 and 2014.
- Among the 2,442 hospitals in U.S. with enough data to calculate an SIR, 10% had an SIR significantly higher (worse) than 0.50, the value of the national SIR.

**CAUTIs**

**Catheter-Associated Urinary Tract Infections**

When a urinary catheter is not put in correctly, not kept clean, or left in a patient for too long, germs can travel through the...
ALABAMA ACUTE CARE HOSPITALS

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CLABSIs

COLUMN LINE-ASSOCIATED BLOODSTREAM INFECTIONS

When a tube is placed in a large vein and not put in correctly or kept clean, it can become a way for germs to enter the body and cause deadly infections in the blood.

☐ Alabama hospitals reported no significant change in CLABSIs between 2013 and 2014.

21% Among the 39 hospitals in Alabama with enough data to calculate an SIR, 21% had an SIR significantly higher (worse) than 0.50, the value of the national SIR.

CAUTIs

CATHETER-ASSOCIATED URINARY TRACT INFECTIONS

When a urinary catheter is not put in correctly, not kept clean, or left in a patient for too long, germs can travel through the catheter and infect the bladder and kidneys.

☐ Alabama hospitals reported no significant change in CAUTIs
Central Venous Catheter (CVC) Insertion Bundle

What is a bundle?

- Bundles incorporate evidence-based science into practice.

- Bundles are described by the Institute for Healthcare Improvement (IHI) as “groupings of best practices with respect to a disease process that individually improves care, but when applied together result in substantially greater improvement. The science supporting the bundle components is sufficiently established to be considered standard of care.”

CVC Bundle Elements

- Hand Hygiene Prior to Insertion
- Use of Full Barrier Precautions
  - Sterile gown
  - Sterile gloves
  - Large sterile body drape on patient
  - Face mask
  - Cap/hat
- 2% Chlorhexidine with 70% Isopropyl alcohol application
- Optimal Catheter Selection
- Optimal Site Insertion Selection (avoid femoral insertions)
- Daily Line Review for Necessity; Prompt Removal if Unnecessary
- Dressing Changes Every Seven Days and/or PRN

Assessed Practice Gaps

Practice Gaps:

- Physicians do not routinely apply all elements of barrier precautions prior to line insertion

- Clinical Staff do not feel comfortable “Speaking Up” when physicians are noncompliant in practice

- Documentation of compliance with use of barrier precautions is lacking; therefore, monitoring and reporting physician compliance does not occur

- Dressing changes and line maintenance are critical in preventing CLABSI but compliance is difficult due to lack of standardization in processes and monitoring for compliance
Summary

- Estimated 30,000 central line-associated bloodstream infections (CLABSI) still occur in intensive care units annually.
  - This is an already vulnerable and compromised patient population.
  - CLABSI can lead to patient death.
  - CLABSI are preventable through application of evidence-based practice.
References


