Best Practices: The Nurse's Role in CLABSI Prevention and Surveillance

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Problem Statement

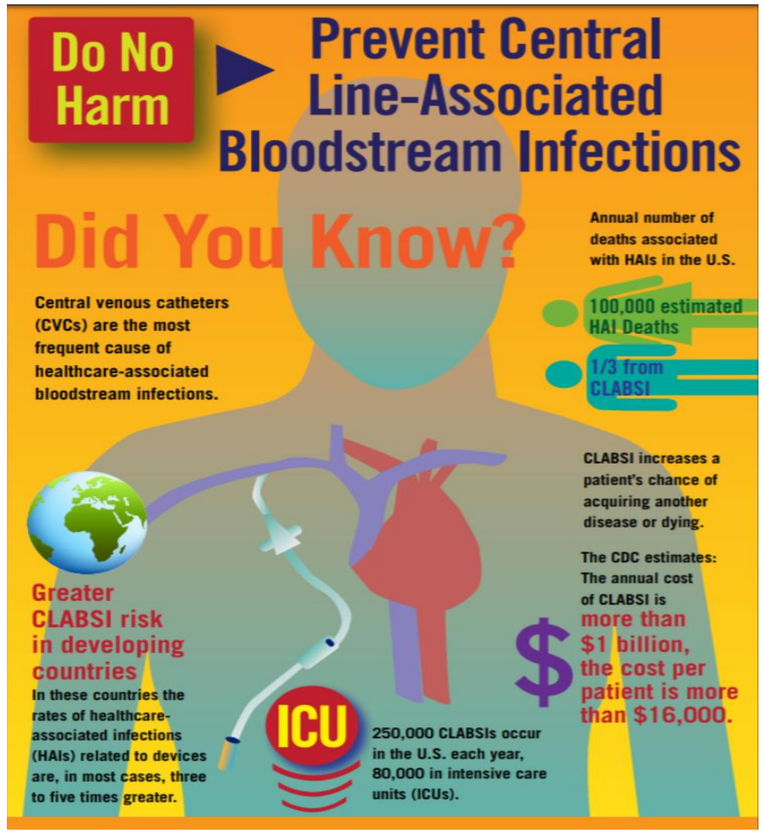
Infections, known as central line associated blood stream infections (CLABSI), are recognized complications of central venous catheters, resulting in increased morbidity, mortality, and healthcare costs.

Trends/Motivation

- 5 million patients in the United States have a CVC inserted annually, which equates to over 15 million CVC days.
- Catheters may be placed in the patient's neck, chest or groin areas.
- There are two types of CVC's, tunneled catheters and non-tunneled catheters.
  - Tunneled catheters are placed under the skin and used long-term
  - The hub of the catheter is exposed with non-tunneled catheters, and they are designed for temporary usage
- The two most common reasons for bacterial contamination of a CVC occur at the time of insertion where there has been a break in the standard aseptic precautions or a break in protocols during care and maintenance of the CVC by healthcare providers
- CLABSI must be confirmed via a laboratory report within 48 hours of CVC placement
- Infection must be specific to the CVC site.
- Incidence rates
  - Non-tunneled catheters have a higher incidence of CLABSI
  - **250,000 to 500,000 CLABSI cases occur** within the United States **yearly**
  - Healthcare expenses can cost up to $46,000 per case
  - Mortality rates range annually: 12%-25%
- CLABSI hospital **trends** have **drastically decreased by about 50%** due to the use of the **prevention bundle** in 2016-2018

Evidence-Based Protocol

- Interdisciplinary approach
- **CLABSI prevention bundle**
  - Hand hygiene
  - Chlorhexidine skin antisepsis
  - Optimal site selection
  - Maximum barrier precautions
  - Daily assessment
- **Daily assessment**:
  - Catheter care
  - Personal protective equipment
  - Scrub the hub
- **Patient education**
  - Teach patient and visitors to avoid touching tubing and practice proper hand hygiene



Surveillance

- Daily care and maintenance incorporate a bundle of interventions that are primarily nurse-driven making the **nurse's role in CLABSI prevention and surveillance pivotal**.
- Nurse's role in surveillance includes
  - assessment data (risk assessments) and care of the catheter site
  - ensuring that the dressing is secure and clean surrounding the insertion site
  - chart review
  - observations to ensure that sterile and aseptic techniques are adhered to.
- Nurses are essential in screening patients to ensure CVCs removal as soon as they no longer necessary

Conclusion

Implications of the review included preventive techniques per the development of universal guidelines that have aided in decreasing the incidence and prevalence of CLABSI. Hospital acquired infections are highly preventable, and the aim is to eliminate the occurrence of CLABSI by establishing the nurse's role in CLABSI prevention, as well as implementing guidelines that provide safety and quality care.