BEYOND CENTRAL LINE BUNDLE: Evidence Based Practice and Variety of Educational Interventions

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Learning Objective:

- The participants will be able to design a program to assist in the prevention of Central Line-Associated Bloodstream Infections (CLABSI).
Our Motivation

- CLABSIs cause considerable morbidity, mortality and health care costs.
- CLABSIs kill approximately 31,000 people in the United States annually (approximately 28,000 of these are ICU patients).
- Cost of a CLABSI can vary from $3,700 - $29,000 per episode.

(IHI, 2012)
Beyond the Central Line Bundles

Implemented Central Line Insertion Bundle (2009)

- Catheter checklist
- Appropriate hand hygiene
- Avoid femoral vein insertion
- Catheter cart for supplies
- Maximal sterile barrier precautions
- Disinfect skin with a chlorhexidine-based antiseptic
Central Line Maintenance Bundle

Implemented Central Line Maintenance Bundle (2009)

- **Scrub-the-Hub**
- **Dressing changes every 7 days, every 2 days for gauze dressings, & PRN if loose or soiled, using a chlorhexidine based antiseptic**
- **Replace administration sets at 96 hours**
- **Perform regular surveillance for CLABSI**
- **Remove nonessential catheters**
Identification of Potential Causes of Increased CLABSI Rates

- 1\textsuperscript{st} & 2\textsuperscript{nd} Quarter 2014 – Increased CLABSI rates by over 60% from 3\textsuperscript{rd} & 4\textsuperscript{th} Quarter 2013.

Prevalence study (4/2014):

- Central line dressings not labeled with date/time/initials
- Gauze at insertion sites - not changed within 2 days
- Dressings not intact
- IV tubing not labeled consistently

Increased rates found not associated with line insertion, so line maintenance was targeted.
Evidence Based Practice Updates to Policies/Procedures & Supplies

8/2014 - 11/2014

- Policy and Procedures updated using Evidence Based Practice (Infusion Nurses Society (INS) & the Centers for Disease Control and Prevention (CDC).

  Designed a New Dressing Change Kit:

  - Hand sanitizer
  - Gloves – changed from large to medium size
  - 3.15% chlorhexidine gluconate
  - More advanced transparent dressing
  - BIOPATCH® (chlorhexidine disk)
Variety: The Key to Successful Learning

8/2014 - 11/2014

Learning Management System (LMS):

- CDC CLABSI criteria
- Recent increase in our CLABSI rates attributed to line maintenance
- Information about preventing CLABSI:
  - Plan for Your Day, Plan for Your Stay Rounds
  - I SAVE That Line! (from the Association for Vascular Access)
Calling All Educators

- Rounding on all Nursing Units by educators from three of the companies who make our dressing change supplies

- Presentations by a national speaker on central line maintenance
Low Fidelity Simulation Training

10/2014 – 12/2014

- Hands-on training in Simulation Lab for dressing changes with new dressing change kits for > 1000 RNs
- 30 minute sessions offered both day & night shift
- 1 Instructor : 6 RNs - 3 Instructors : 4 hour time block
- 1 coordinator for sign-in & as the time keeper
- Kept supply costs down using low fidelity simulation and creative supply gathering
Outcome of Education & EBP Changes

More than 50% reduction in CLABSI rates for 3rd & 4th Quarter 2014
Began monthly audits for CC & MS/Tele (1/2015) & repeat Prevalence Study 2/2015:

- IJ dressings not intact
- Hubbing of central lines & BIOPATCH® not able to be positioned correctly
- Electronic documentation for central lines needs updating with changing central line caps every 96 hours with tubing changes
- IV tubing not labeled consistently
- Limited discussion of line necessity during daily rounds
More Education & Interventions

- Line maintenance education on LMS with pre/post tests
- Targeted education for one nursing unit that had lines left in too long
- Began the process to standardize IV tubing labels
- Education to physicians & RNs about not hubbing lines
Repeat Prevalence Study 7/2015:

- **HomeCare**: Not using the same dressing change kits as the inpatient units
- Central Line & PIV dressings not labeled
- IV tubing not labeled consistently
- Loopled tubing
Ongoing Interventions

Formed a CLABSI workgroup

- Planning education and monitoring
- Standardized central line reporting at Daily Safety Huddle
- Standardized Apparent Cause Analysis Report for CLABSI
- Chlorhexidine bath wipes added to eMAR (ICUs)
- 2 Question Guideline
2 Question Guideline

1. Does this patient need a central line?
   - **NO**: Obtain Order to DC Central Line
   - **YES**: 2. Is this the most appropriate line for my patient?
     - **NO**: Collaborate with Physician to determine the most appropriate line for the patient
     - **YES**: Continue central line

   *Every RN and Physician, Every Day: Start back at the beginning and ask the 2 important questions*
ZERO!!!!!!!!!!!!

You’re a LIFESAVER

Summa Health System

CLABSI FREE in September!!!!
Potential Ongoing Monitoring

Future Audits:

- Compliance with Scrub-the-Hub
- Hand hygiene
- Use of 2 Question Guideline for line necessity in Daily Rounds
- Daily Unit Director Rounds for central line dressings & tubing
Ongoing Education

- Periodic education/re-education for RNs based on monitoring results
- Hands-on education for new hire & transfer RNs
- Education for Resident & Attending Physicians
How to Apply to Other Quality Initiatives

- Analyze Data
- Needs Assessment (Education, Equipment, Supplies, Resources)
- Action Register (Keep momentum by assigning action steps to individuals/groups)
- Repeat
CNO Support

- Plan for Your Day, Plan for Your Stay Rounds
- Funding mandatory education
- Daily Safety Huddle reporting of central lines
- 2 Question Guideline for line necessity
References


- Infusion Nursing Standards of Practice. (2011). *Journal of Infusion Nursing*, 34, 1S.


Questions????????

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