

Scrub the Hub: Decreasing Central Line Associated Bloodstream Infections (CLABSI) in the Pediatric Intensive Care Unit (PICU)



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Background

- CLABSIs are a significant cause of morbidity and mortality in hospitalized patients.
- Interventions geared towards the daily maintenance of central lines are crucial in preventing CLABSI in the PICU (Miller et al., 2010).
- Though improvements in CLABSI rates were achieved in our PICU with the implementation of a standardized technique to access all central lines, occurrences of CLABSI continued each quarter.

Aims

The purpose of this poster is to:

- Describe interventions put in place to improve the maintenance of central lines in PICU, including the implementation of the Chlorascrub™ swab (3.15% chlorhexidine gluconate/70% isopropyl alcohol) as an antibiologic when accessing intravenous (IV) tubing hubs
- Evaluate the effectiveness of Chlorascrub™ swabs in decreasing the incidence of CLABSI

Methods

December 2008 (Q2FY09)

- Planned trial of Chlorascrub™ swabs in place of alcohol when accessing central lines.
- Notified staff of the upcoming change
- Addressed questions and concerns about the use of chlorhexidine via email and staff meetings
- Shared data regarding the decline of CLABSIs in the neonatal and adult oncology units upon transition to chlorhexidine swabs.

January 2009 (Q3FY09)

- Provided information and a demonstration on use of Chlorascrub™ swabs during unit-based in-services
- Placed emphasis on scrubbing the IV hub for 15 seconds and allowing the solution to dry

February 2009 (Q3FY09)

- All nurses demonstrated during nursing annual competencies:
 - Accessing central lines
 - Changing central line dressing

March – April 2009 (Q3 and 4 FY09)

- Rounded weekly to ensure swabs were stocked, accessible to nurses at the patient's bedside, and were being used

Ongoing

- PICU managers update nursing staff on unit quality measures (including CLABSI) at staff meetings and unit based council meetings
- Nursing staff are regularly congratulated for the unit's success in decreasing rates of CLABSI and reminded to continue to follow unit standards
- Newly hired nurses receive training regarding accessing central lines before caring for patients

Results

In October – December of 2008 (Q2FY09), the PICU CLABSI rate was higher than the National Healthcare Safety Network (NHSN) mean (the hospitals' goal for CLABSIs). With the use of Chlorascrub™ in place of alcohol and other interventions geared towards central line maintenance, PICU CLABSIs dropped to below this NHSN mean and have remained under the NHSN mean to present. Furthermore, the PICU has had 0 CLABSI occurrences for 7 of the past 9 quarters (see graph below)

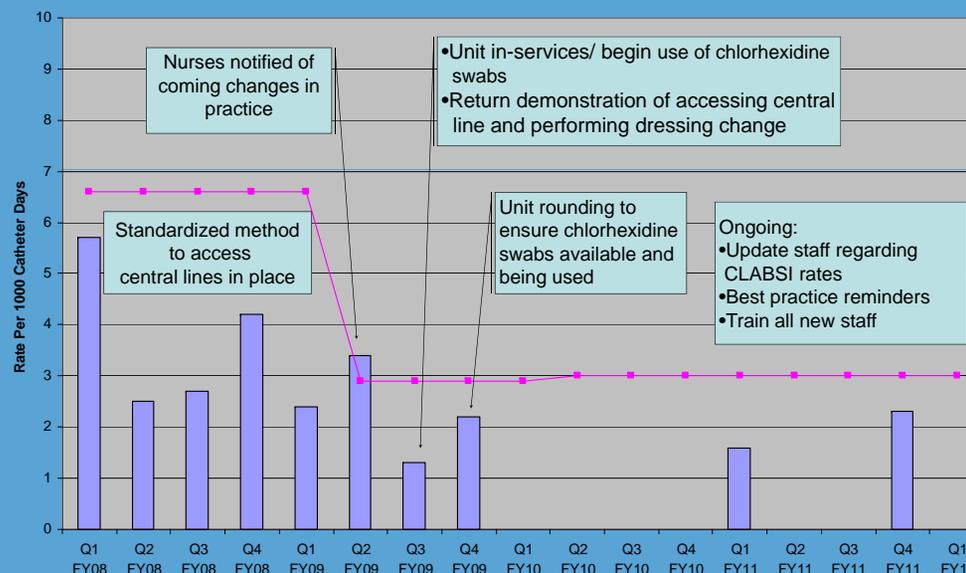
Clinical Implications

As a hospital goal for FY 2012, interventions aimed at decreasing CLABSIs should be aimed at sustaining a culture of prevention

Sustaining a low CLABSI rate in PICU attributed to:

- Use of chlorhexidine swabs in place of alcohol when accessing central lines
- A standardized method when accessing and changing dressings of central lines
- On-going updates to staff of CLABSI rate and reminders of best practice
- Training all new hires in care of central lines
- Support of unit nurse managers, educators, staff nurses, and medical staff

Central Line Related Blood Stream Infections
PICU/CICU



Reference

Miller, M. R., Griswold, M., Harris II, J. M., Yenokyan, G., Huskins, C., Moss, M., Rice, T. B., ... (2010). Decreasing PICU Catheter-Associated Bloodstream Infections: NACHRI's Quality Transformation Efforts. *Pediatrics*, 125 (2), p. 206-213.