

Title: An Innovative Approach to Central Line Catheter Related Blood Stream Infection (CLABSI) Reduction in a High Risk Cardiac Intensive Care Unit (ICU)

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Purpose and Rationale: Catheter-related bloodstream infections cause considerable morbidity, mortality, and healthcare costs.^{1,2} In a cardiac ICU with complex medical-cardiology patients including those awaiting heart transplantation, patients requiring advanced heart failure management, mechanical support for cardiogenic shock, targeted temperature management after cardiac arrest using central venous cooling catheters, and arrhythmia management we were challenged to reduce CLABSI rates due to high patient acuity, high risk cannulation sites, and long term central access.

Research Question: What nursing innovations can be developed to reduce CLABSI rates in this population?

Synthesis of Review of Literature: Best practice evidence for reducing CLABSI has been described.^{1,2} Engagement of frontline nurses to innovate methods of safer care can further enhance patient safety initiatives.³

Methods/Procedures: After an initial gap analysis and revision of policies and protocols consistent with current literature we instituted standardized methods to reduce CLABSIs. These considerations included the use of a central line insertion checklist, Chlorhexidine gluconate discs, alcohol impregnated intravenous caps, avoidance of routine line changes unless clinically indicated, and all-inclusive line insertion kits. Nursing engagement and innovations included real time BSI huddles with each event, the use of a daily “eyes on line” surveillance tool which provided real time peer to peer feedback related to the care of the central line in each patient, ambulation precautions, patient education and involvement which included the promotion of patient hand hygiene, torque reduction on lines, and use of alternative methods for securing Swan-Ganz Catheters that allowed for greater patient independence and a reduced risk of line tugging. Encouraging staff creativity and holding open forums for idea generation produced small tests of change. The team engagement and buy in resulted in enhanced CLABSI reduction effort.

Results:

During calendar year 2009-2012 the cardiac ICU incurred 18 CLABSIs with a rate of 2.67 per month. During the calendar year 2013 to May 2016 the cardiac ICU incurred 2 CLABSIs with a rate of .049 per month. This translates to a 98% reduction in CLABSIs. The poster will further highlight some of our successful strategies.

Discussion / Application to Practice: Preventing CLABSI events in high risk cardiac ICU populations is challenging. Engagement and empowerment of nurses to innovate ideas created a culture of safety and ownership in the CLABSI reduction efforts.

References:

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3. Wandersman A, Alia, KA, Cook B, Ramaswamy R. (2015) Integrating empowerment evaluation and quality improvement to achieve healthcare improvement outcomes. *BMJ Qual Saf* 24; 645-652.