

ABSTRACT TITLE: How a Lean Hospital Reduces CLABSI rates.

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Background: In 2014, Salem Hospital was experiencing an increase in Central Line Blood Stream Infections (CLABSIs), finishing the fiscal year with 15 infections across intensive care (including neonatal) and medical/surgical units.

Purpose: The purpose of this quality improvement was to review the literature, evaluate compliance with best practice and align current practice with best practice.

Methods: In early 2014 several CLABSIs were analyzed through a root cause analysis approach and interventions were deployed. CLABSIs continued to occur, determined to be associated with ongoing maintenance of central lines. A failure modes and effects analysis was implemented. To thoroughly understand current state, 'staff went to the Gemba' to observe various central line practices, including blood draws, blood administration, flushing the line, dressing changes, and medication administration. Standard work was developed based on evidence. Alcohol-based swab caps were added to all central line needleless connectors. Implementation of these tests of change were accomplished through education and return demonstration of all nursing staff. A thorough review of the literature highlighted additional opportunities for improvement. We divided the work into three components: 1) adherence to maintenance standards, 2) decreasing device days through introduction of alternative, and 3) application of new product – alcohol impregnated caps. Standards were implemented for auditing maintenance standard work.

Results: CLABSI standard infection ratios (SIRs) for 1st Quarter 2015 were 0.80. By 4th Quarter 2015 the CLABSI SIR dropped by 60% to 0.18. Days between CLABSI dropped from an average of 17 days to 96 days. To sustain the outcome, the multidisciplinary team established 'regenerate and improve' targets to audit adherence to standards for units that had a CLABSI in the last 90 days. Once audits are completed 100% of the time for 90 days with no further CLABSI or for units that have had no CLABSI in the last 90 days, the measure is moved to 'sustain & operate' to continue a lower volume of audits to prevent an increase in in Central Line Blood Stream Infections.

Conclusion: This quality improvement effort has drastically reduced CLABSI infections significantly and has shown to reduce device days. It is difficult to identify which intervention was responsible for the reduction or if all interventions contributed to the reduction of infections. .