IHI ID 20

SUSTAINING SYSTEM-LEVEL HIGH RELIABILITY FOR CLABSI: IMPACTS OF STANDARDIZATION, HUMAN FACTORS, AND DIRECT OBSERVATION OF KEY PROCESSES

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Background From 2007 to 2015, in our large, quaternary children's hospital, significant improvement was achieved and sustained in our rate of central line associated blood stream infections (CLABSI). However, a dramatic rate increase occurred in 2015; the control chart centerline shifted from 0.62 to 1.95/1000 line days despite process compliance consistently at/above 95%. Comprehensive investigations determined several system-level factors contributed to the deterioration, including widespread practice variation as units implemented uncoordinated changes without full appreciation of human factors implications.

Objectives Reduce inpatient CLABSI events by 20% or more by the end of FY17.

Methods A multidisciplinary retreat convened with key stakeholders to assess current state and redesign the CLABSI process bundle. Redesign of workflows, supply kits, and a multi-phase implementation plan included human factors considerations, 2:1 training, and peer coaching. Standardized, near real-time, multidisciplinary event review huddles focused on identifying themes. Bundle monitoring shifted from predominately chart review to direct observations.

Results From FY16 to FY17, CLABSI events decreased 28.7% (122 to 87), for an estimated \$1,925,000 cost savings. An additional 20% decrease was achieved in FY18, 70 events (\$935,000 saved) resulted in a downward centerline shift in the system-level control chart. Observed bundle compliance was 82% compared to 95% via chart review.

Conclusions Uncoordinated improvement efforts and inconsistent training contributed to a significant rise in CLABSI events. System-wide standardization informed by human factors considerations coupled with a process monitoring paradigm shift to direct observation led to significant and subsequently sustained improvement in CLABSI events in a single, quaternary children's hospital.

Abstract IHI ID 20 Figure 2

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