



Zeroing in on CLABSI:

Sustained CLABSI Reduction Through Silver-Plated Disc Integration in the NICU

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Background

Central line-associated bloodstream infections (CLABSI) remain a major source of morbidity and mortality in neonatal intensive care units (NICUs). Despite adherence to insertion and maintenance bundles, CLABSI rates persisted above National Database for Nursing Quality Indicator (NDNQI) benchmarks, prompting exploration of additional evidence-based interventions. Silver-plated antimicrobial discs (SPADs) provide continuous antimicrobial protection at catheter insertion sites and reduces bacterial colonization.

Purpose

The purpose of this quality improvement initiative was to implement SPADs into the NICU central line bundle to reduce CLABSI rates.

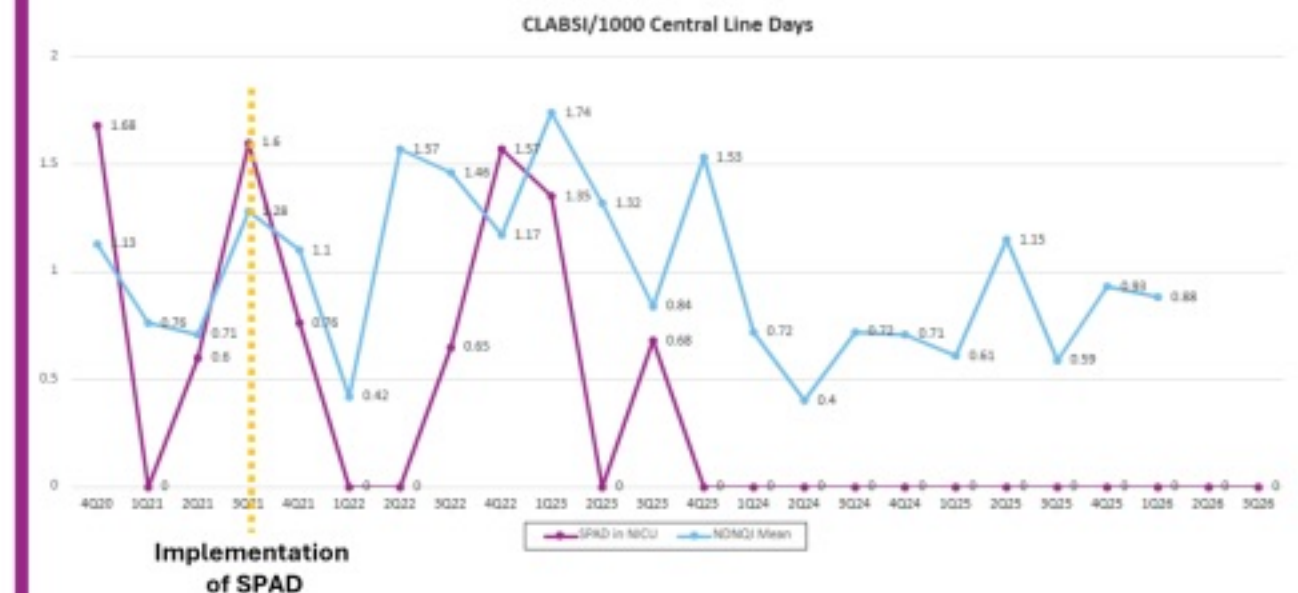
Method

A multidisciplinary team implemented evidenced-based SPADs as a standardized component of NICU central line maintenance bundles. Quarterly CLABSI rates were monitored and compared between pre- and post-intervention periods. Education addressed disc placement, dressing integrity, and replacement. Multiple Plan-Do-Check-Act (PDCA) cycles optimized SPAD use, focusing on education, securement, visualization, and dressing change frequency. Process measures included compliance with SPAD use and maintenance bundle adherence; the patient outcome measure was CLABSI rate per 1,000-line days.

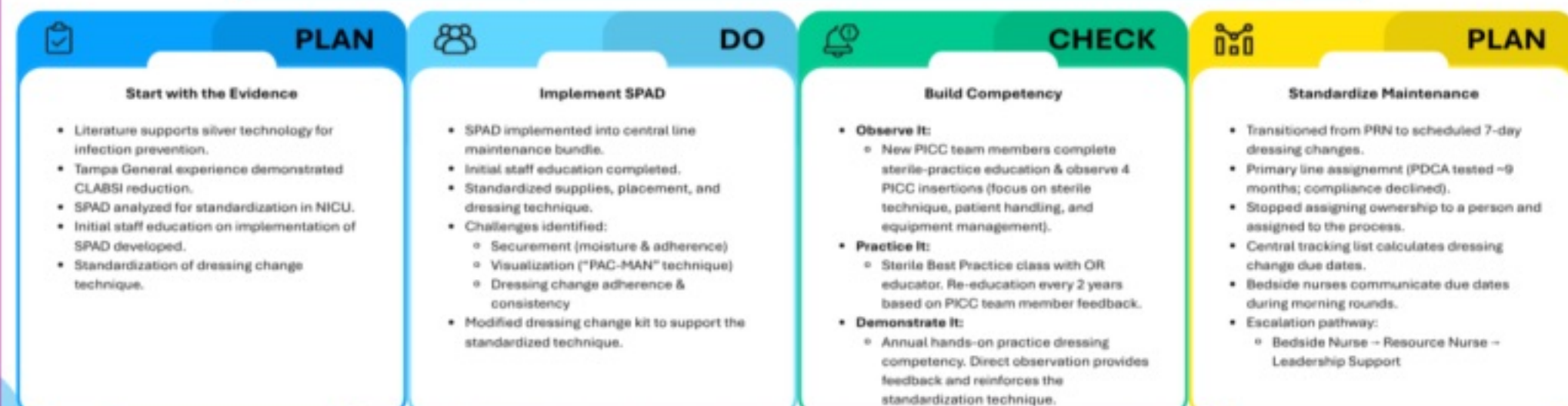


Results

Following SPAD implementation in September 2021, CLABSI rates dropped from 1.68 per 1,000 line days (Q3 2021) to 0.65 (Q3 2022), a 61% reduction within 12 months. Sustained monitoring confirmed zero CLABSI events for almost 3 years. Compliance exceeded 95% and no adverse skin reactions occurred.



PDCA: Implementation to Sustainability



GOAL: EVERY PATIENT. EVERY LINE. EVERY TIME.



Conclusion

Nurse-led integration of SPAD into the NICU central line bundle was safe, feasible, and effective, contributing to reduced CLABSI rates and improved consistency in central line dressing care. Standardized maintenance practices, ongoing education, and competency validation supported and sustained these improvements. While SPADs served as an important tool to enhance line maintenance, the combination of standardization, education, competency, accountability, collaboration, and continuous improvement transformed the intervention into sustainable clinical practice.