



Intravenous literature: Chandonnet, C.J., Kahlon, P.S., Rachh, P., Degrazia, M., Dewitt, E.C., Flaherty, K.A., Spigel, N., Packard, S., Casey, D., Rachwal, C. and Agrawal, P.B. (2013) Health Care Failure Mode and Effect Analysis to Reduce NICU Line-Associated Bloodstream Infections. Pediatrics. May 20th. .

#### Abstract:

**OBJECTIVE:** Central line-associated bloodstream infections (CLABSIs) in NICU result in increased mortality, morbidity, and length of stay. Our NICU experienced an increase in the number of CLABSIs over a 2-year period. We sought to reduce risks for CLABSIs using health care failure mode and effect analysis (HFMEA) by analyzing central line insertion, maintenance, and removal practices.

**METHODS:** A multidisciplinary team was assembled that included clinicians from nursing, neonatology, surgery, infection prevention, pharmacy, and quality management. Between March and October 2011, the team completed the HFMEA process and implemented action plans that included reeducation, practice changes, auditing, and outcome measures.

**RESULTS:** The HFMEA identified 5 common failure modes that contribute to the development of CLABSIs. These included contamination, suboptimal environment of care, improper documentation and evaluation of central venous catheter dressing integrity, issues with equipment and suppliers, and lack of knowledge. Since implementing the appropriate action plans, the NICU has experienced a significant decrease in CLABSIs from 2.6 to 0.8 CLABSIs



## Study identifies five common failure modes that contribute to the development of CLABSIs | 2

per 1000 line days.

**CONCLUSIONS:** The process of HFMEA helped reduce the CLABSI rate and reinforce the culture of continuous quality improvement and safety in the NICU.

