Sustaining a Reduction in Catheter-Associated Bloodstream Infection Rate
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Problem: The catheter-associated bloodstream infection (CA-BSI) rate was unacceptably high in our level IIIc NICU.

Evidence: Several measures have been demonstrated to be associated with a reduction in CA-BSI, including hand hygiene, hub care, and use of chlorhexidine gluconate. (1-5)

Strategy/Practice Change: Interventions were introduced one at a time, taught and audited by multidisciplinary task force members. A strict “bundle-approach” was not used. Interventions included strict hand hygiene, creation of maximum sterile barrier kits, revitalization of the PICC team, revision of line policies/procedures and meticulous hub care. Eventually, careful use of chlorhexidine gluconate for skin antisepsis was implemented for babies of all gestational ages. Timely removal of central lines and dressing changes are a daily focus. Once the number of CA-BSI cases became manageable; the group began reviewing each CA-BSI immediately after it occurred, to identify risk factors and breaches in standards.

Evaluation/Results: At the start of this project, the hand hygiene rate for nurses was 62%, in 12/06. In 2/10, the hand hygiene rate was 100%. The CA-BSI rate dropped from 18.8 per 1000 line days in 2/07, to 4 in 12/07, to zero for the first time in 9/08. Mean CA-BSI has dropped from 10.2 in 2007, to 4.1 in 2008, to 3.6 in 2009, to zero for the first 3 months of 2010.

Recommendations/Lessons Learned: Dedication of the team has been obvious throughout the process. Continual examination of “next steps” is imperative to sustaining the improvement. Leaders of the project must advocate for staff involvement, be informed, involved, and courageous. Resistance to practice changes must be expected, and treated with education and respect. After new interventions are implemented, problems cannot lead to “knee-jerk” reactions, and reversal of progress, but rather thorough investigation of the problem, by the entire team. A combination of complete empowerment of the staff and strong unit leadership translates to widespread clinical practice improvements.

Bibliography


