TIPQC Prevention of Hospital Acquired Infections (HAI) Key Driver Diagram

SMART Aim

A 25% relative reduction (compared to 2021-2023 institutional baseline data) in hospital acquired infections in infants less than or equal to 29.6 weeks gestational age in participating Tennessee NICUs by Q2 2027, final data by Q3 2027.

Global Aim

To reduce the mortality in infants less than or equal to 29.6 weeks gestational age by 25% of the Tennessee state baseline.

Primary Drivers / Interventions and Potentially Better Practices

Primary Drivers	Interventions and Potentially Better Practices
Culture of Safety	Form a multidisciplinary team; display and celebrate "days to since last HAI; conduct regular safety huddles and debriefs; implement leadership rounds to discuss barriers and recognize safe behaviors; focus on system fixes, not individual accountability.
Hand Hygiene	Standardize the hand hygiene process to include the actual process of handwashing, the use of sterile and nonsterile gloves, "bare below the elbows", nail polish, artificial nails, and compliance monitoring.
Environmental Cleaning	High-touch surfaces should be cleaned at least at the beginning of each shift. and as needed.
Central Line Insertion, Maintenance, and Removal Bundles	Use maximum sterile barriers during insertion of all central lines; minimize system manipulations; scrub hubs/ports per unit policy; use single-use alcohol port protectors, change tubing at least every 96 hours; use standardized bundle checklists; and, review line necessity daily during rounds Disinfect skin prior to central line insertion; bathe stable newborns very 3-4 days; utilize preventive measures to minimize MARSI and pressure injuries; change newborn position every 3-6 hours based on condition and tolerance; change diapers during hands-on care and position changes; develop unit-specific skin risk assessment tools and audit compliance, and consult would specialist as needed.
Skin Care and Antisepsis Protocols	Disinfect skin prior to central line insertion; bathe stable newborns very 3-4 days; utilize preventive measures to minimize MARSI and pressure injuries; change newborn position every 3-6 hours based on condition and tolerance; change diapers during hands-on care and position changes; develop unit-specific skin risk assessment tools and audit compliance, and consult would specialist as needed.
Respiratory Infection Prevention	Change ventilator tubing on a regular basis per manufacturer and unit guidelines; change inline suction catheters every other day for ventilated patients; change suction canisters and connecting tubing when grossly soiled or at least weekly; change nasal aspirators every 24 hours or as needed; clear suction lines with sterile water or saline after each use; change bulb syringes regularly per unit policy; provide routine oral care to intubated newborns; consider the use oral immune therapy; and assess all visitors for signs of communicable illnesses upon entry.
Family Engagement, including Exclusive Human Milk Feedings	Support unlimited parental presence and participation in newborn care; educate parents on hand hygiene and signs of illness that preclude visits; promote early and frequent SSC; provide lactation support for provision of mother's own milk; and facilitate OP colostrum administration.
Antibiotic Stewardship Programs	Form a multidisciplinary stewardship team; develop unit-specific pathways for early onset sepsis/late onset sepsis/NEC based on local antibiograms and pathogen surveillance; monitor AUR/DOT monthly and target reductions through education, antibiotic time outs and de-escalation protocols, and incorporate biomarkers for guided discontinuation in culture-negative cases.