
Reducing central line-associated bloodstream infection rates

Initiative Type

Clinical Guideline

Status

Deliver

Added

07 February 2020

Last updated

27 February 2020

URL

<https://test.clinicalexcelsence.qld.gov.au/improvement-exchange/reducing-central-line-associated-bloodstream-infection-rates>

Summary

Central line associated bloodstream infections (CLABSI) in neonatal intensive care is associated with mortality, morbidity, increased length of stay and increased healthcare costs. Implementing a bundle of evidence-based interventions, continual audit and improvement and education and promotion of this led to a significant reduction in CLABSI rates and 157 consecutive CLABSI-free days.

Key dates

Feb 2020

Feb 2020

Implementation sites

Mater Neonatal Critical Care Unit

Partnerships

Multidisciplinary NCCU team working together

Key Contacts

Pita Birch

1822

william.vanheerden.ced

Director of Neonatology

Mater Health, Mater Group

07 3163 1918

pita.birch@mater.org.au

Aim

To maintain CLABSI rates below recommended benchmark of 3 per 1,000 catheter days in the Mater Children's Hospital Neonatal Intensive Care Unit.

Benefits

- Large reduction in CLABSI, achieving the goal in the second year of the project
- Reducing infection reduces mortality, morbidity and healthcare costs
- Parents appreciated keeping their baby infection free

Background

Central venous line associated bloodstream infections (CLABSI) in neonatal intensive care is associated with mortality, morbidity, increased length of stay and increased healthcare costs.

Solutions Implemented

Intensive sentinel event base reviews of all CLABSI events to learn lessons and improve practice Reporting of rates to the Neonatal Critical Care Unit (NCCU) team and executive monthly presentations. Bundles of care for all central lines, new equipment, hand hygiene audit and education, "scrub the hub" technique.

Evaluation and Results

Monthly audit of CLABSI rates:

- per 1,000 catheter line days
- total number of infections per admission at various gestational age groups and birth weights
- number of days without a CLABSI

Sentinel review of process for all cases of results:

From May to September 2019 the NCCU went CLABSI free for 157 consecutive days and the rates decreased from 4.7 per 1,000 catheter line days in 2018 to 2.939 per 1,000 catheter line days year to date for 2019.

Lessons Learnt

Maintaining the level of vigilance and constant adherence to the processes requires a lot of energy and effort.

References

1. Isaacs D. A ten year, multicentre study of coagulase negative staphylococcal infections in Australian neonatal units. *Arch Dis Child Fetal Neonatal Ed.* 2003;88(2):F89-93
2. Schlapback LJ, Aebischer M, Adams M, et al. Impact of sepsis on neurodevelopmental outcome in a Swiss National Cohort of extremely premature infants. *Pediatrics.* 2011;128(2):e348-57
3. Leroyer A, Bedu A, Lombrail P, et al. Prolongation of hospital stay and extra costs due to hospital-acquired infection in a neonatal unit. *J Hosp Infect.* 1997;35(1):37-45
4. Grey JE, Richardson DK, McCormick MC, et al. Coagulase-negative staphylococcal bacteraemia among very low birth weight infants: relation to admission, illness, severity, resource use, and outcome. *Pediatrics.* 1995;95(2):225-30
5. Schulman J, Stricof R, Stevens TP, et al. Statewide NICU central-line-associated bloodstream infection rates decline after bundles and checklists. *Pediatrics.* 2011;127(3):436-44

PDF saved 22/11/2024