CLINICAL GUIDELINE	
Investigation and Diagnosis of Suspected Central Line Associated Blood Stream Infections (CLABSI) in Near-Term and Term Neonates	
Scope (Staff):	Medical and Nursing Staff
Scope (Area):	NICU PCH, NICU KEMH
Child Safe Organisation Statement of Commitment CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.	

This document should be read in conjunction with this DISCLAIMER

Background

Central line associated blood stream infections (CLABSI) are a significant cause of morbidity, mortality and prolonged length of stay in hospital. As such, CLABSI are on the Hospital-Acquired Complications (HAC) list, classified as Healthcare-Associated Infections (HAI). This list is endorsed by the Australian Government as a directive to improve national health outcomes for patients and decrease potentially avoidable demand for public hospital services.[1] After CLABSI were identified as a significant issue, The Australian Commission on Safety and Quality in Health Care (ACSQHC), along with Australian and New Zealand Intensive Care Society, conducted a project to support ICUs in reducing CLABSI occurrence.[2] Their recommendations include adhering to 'strict aseptic technique and maximal barrier precautions when inserting central lines'[2] as well as using an insertion checklist[3] and measuring compliance against insertion policies.[2] For neonates this would encompass the insertion of central lines, such as:

- Umbilical venous catheter (UVC)
- Peripherally inserted central catheters (PICC)/ long lines
- Short central venous catheters (CVC), including jugular and femoral CVCs

As CLABSI are on the HACs list, their occurrence needs to be identified and recorded for national reporting. This guideline outlines the criteria and procedure used for CLABSI identification in near term and term neonates.

Definitions

Near-term and term neonates: are defined as infants' ≥34 weeks of gestation

Diagnosis of CLABSI:

A laboratory-confirmed bloodstream infection in a patient where the central line was:

a) in place for >48 hours on the date of the event.

AND

b) the central line was in place on the date of the event or the day before.[1]

CLABSI Criteria 1:[1]

a) Patient has a recognised pathogenic* bacterial or fungal pathogen cultured from one or more blood cultures.

b) The organism cultured from blood is not related to an infection at another site.

*Potential recognised pathogenic bacteria includes, but not limited to: staph aureus, enterococcus spp, enterobacter spp, e. coli, klebsiella spp, proteus spp, providencia spp, pseudomonas aeruginosa, streptococcus spp (excluding viridans) and candida spp[1]

CLABSI Criteria 2:[1]

A patient < 1 year of age has:

a) At least one of the following signs or symptoms: fever (>38°C core), hypothermia (<36°C core), apnoea or bradycardia

AND

b) The organism cultured from blood is not related to an infection at another site

AND

c) The same (matching) potential contaminant** organism is cultured from **two or more** sets of blood cultures drawn on **separate occasions** within 24 hours.

** Potential contaminant organisms (referred to as common commensals by the NHSN) include: diphtheroids (Corynebacterium spp. not c. diphtheria), bacillus spp. (not b. anthracis), propionibacterium spp., coagulase negative staphylococci (including s. epidermidis), viridans group streptococci, aerococcus spp., micrococcus spp. and rhodococcus spp[1]

Blood culture sampling recommendation in suspected neonatal sepsis with recent/ current central access:

1. Blood cultures should be taken immediately, one after another, prior to giving antibiotics. A separate tray/ equipment should be used for each culture. The second, if challenging, should not delay antibiotic administration.

   2x blood cultures should be attempted to be obtained:

   a) Preferably, x1 peripheral AND x1 central line blood culture*

OR

   b) If CVC has been removed/unable to aspirate, attempt **x2 peripheral blood cultures from separate sites**[#]

2. If the central line is removed, the line tip should be sent for culture.

*** A central line culture alone is not sufficient. 1F (28G) and 2F (24G) PICC lines should not be attempted to be bled back. UVCs, and short CVCs or PICCs >3F should have an attempt to bleed back.**

[#] If it has taken >2 attempts to obtain a 1st peripheral blood culture, then a 2nd peripheral culture should not be attempted. There should not be >2 attempts at second peripheral blood culture.

Related CAHS internal policies, procedures and guidelines

CAHS

- Aseptic Technique
- Recognising and Responding to Acute Deterioration
- Open Disclosure

Neonatology

- Blood Sampling: Capillary, Venepuncture, Peripheral, Arterial, UAC, UVC and CVC
- Central Venous Access Devices: Insertion, Management and Removal
- Recognising and Responding to Clinical Deterioration
- Sepsis: Neonatal
- Umbilical Arterial and Venous Catheters: Insertion, Management and Removal

References

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4. McMullan R, Gordon A. Impact of a Central Line Infection Prevention Bundle in Newborn Infants. Infect Control Hosp Epidemiol [Internet]. 2016 [cited 2020 Sept 25]; 37 (9): 1029-1036. Available from: https://www.cambridge.org/core/journals/infection-control-and-hospital-epidemiology/article/impact-of-a-central-line-infection-prevention-bundle-in-newborn-infants/08D476AB02724607461A393045BE1C0A/core-reader
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