



Collaborative Regional Benchmarking Group

Central Venous Access Device (CVAD) Management in Critical Care



Aim: To provide guidance on the management of central lines in Critical Care

Scope: All adult patients with central lines in Critical Care

ASSESS and DOCUMENT

- A CVAD insertion checklist should be used^{2,4}
- Document date & time of insertion¹
- Each shift assess and document insertion site for signs of infection using a recognised assessment tool⁶
- continued need for CVAD^{3,6}

Central Venous Cannulation

Indications for CVAD's in critical care include :

- Administration of vasoactive drugs, drugs with high osmolality or extremes of pH.
- Repeated collection of blood specimens
- Administration of Total Parental Nutrition (TPN)
- Monitoring of central venous pressure (CVP)

STANDARD CVAD MANAGEMENT

1	Effective hand hygiene and ANTT must be performed when accessing the CVAD for medication administration and blood sampling ³ .
2	Ensure the CVAD is secured by sutures or with a sutureless catheter securement device ¹
3	Always 'scrub the hub' with 2% Chlorhexidine*/70% alcohol for 15 seconds and allow to dry before and after medication administration and taking blood samples ³ .
4	Administration lines must be changed as follows : <ul style="list-style-type: none">• Continuous infusion lines and transducer sets at least every 96 hours• Blood /blood product administration lines at least every 12 hours or when transfusion episode is completed³• TPN/Lipid based solutions must have an exclusive lumen for administration and administration lines changed at least every 24 hours³
5	Aseptic technique must be used when changing the dressing. The insertion site must be cleaned with a single-use application of 2% chlorhexidine*/70% isopropyl alcohol. A sterile, semi permeable, polyurethane dressing should be used ³ . A chlorhexidine* impregnated sponge dressing may be used as part of local strategy. Change every 7 days or sooner if soiled, wet or no longer intact ³ .
6	Ensure the CVP flush bag is 0.9% Normal Saline, the pressure is maintained at 300mmHg and the transducer has been calibrated (zero'd) each shift and after each patient repositioning ⁵ .

ADDITIONAL CONSIDERATIONS

- Use of multi way connectors is acceptable providing this does not result in unnecessary, unused ports
- Any needle free ports in use should be changed as per manufacturers instructions
- Keep insertion site visible at all times if possible
- Lumens not used for continuous infusions should be flushed at least once per shift with sterile normal saline for injection to maintain patency³
- Consider the use of a daily wash with chlorhexidine* as part of local strategy to reduce Catheter Related Blood Stream Infections

*** use alternative if chlorhexidine allergy present.**

COMPLICATIONS

but not limited to :

- Infection
- Occlusion
- Dislodgement
- Air embolism
- Extravasation
- Thrombosis
- Pneumothorax
- Arrhythmias
- Arterial/Great vein puncture

Please see your units full guidelines for more information

(V3 2024)



	References
1	Royal College of Nursing (2016) Standards for Infusion Therapy 4th Edition.
2	<u>Bion J et al (2013) The Matching Michigan Collaboration & Writing Committee) Matching Michigan: A 2 year stepped nterventional programme to minimise central venous catheter blood stream infections in intensive care units in England. BMJ Quality&Safety 22:110-123</u>
3	Loveday HP, Wilson JA, Pratt RJ, Golsorkhi M, Tingle A, Bak A, Brown J, Prieto J, Wilcox M UK Department of Health (2014) EPIC3: National Evidence based gudielines for preventing healthcare-associated infectiousn in NHS Hospitals. Journal of Hospital Infection Vol 86 (Supp 1) S1-S70.
4	<u>Centre for Perioperative Care, National Safety Standards for Invasive Procedures 2 (NatSSIPs) https://cpoc.org.uk/sites/cpoc/files/documents/2022-12/CPOC_NatSSIPs2_Summary_2023.pdf</u>
5	Mallett J, Albarran J, Richardson A (eds)(2013) Critical Care Manual of Clinical Procedures and Competencies. Wiley Blackwell.
6	Guidelines for the Provision of Intensive Care Services V2.1 (GPICS)(2022) The Faculty of Intensive Care Medicine / Intensive Care Society.