COLLABORATIVE REGIONAL BENCHMARKING GROUP

Arterial Line Management in Critical Care

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

Scope: All adult patients with arterial lines in Critical Care

ASSESS AND DOCUMENT

- Document date and time of insertion[1]

Each shift assess and document:

- insertion site for signs of infection using a recognised phlebitis assessment tool[2] e.g. VIP
- continued need for arterial line [2,4]

Arterial Cannulation

Arterial Cannulation allows for continuous blood pressure measurements and frequent arterial blood sampling

Contraindications include

Patient refusal	Surgery near proposed insertion site
Local sepsis	Presence of or potential for fistula
Coagulopathy	Anatomical abnormality
Limb ischaemia	

Seek advice from medical team in cases of haematoma, haemorrhage, distal pain, altered sensation, signs of infection or prolonged capillary refill

STANDARD ARTERIAL LINE MANAGEMENT

1	Effective hand hygiene and ANTT must be performed when accessing the arterial line for blood sampling[2].
2	Ensure the arterial line is secured by sutures or with a sutureless catheter securement device[1]
3	Always 'scrub the hub' with 2% Chorhexidine*/70% alcohol for 15 seconds and allow to dry before and after taking blood samples[2].
4	Ensure the flush bag is 0.9% Normal Saline, and the pressure is maintained at 300mmHg[3].
5	Re-calibrate (zero) the transducer each shift and after each patient repositioning[5].
6	Aseptic technique must be used when changing the dressing[2]. 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[2]. Change every 7 days or sooner if soiled, wet or no longer intact[2].
7	Change the transducer line at 96 hours unless advised otherwise by the manufacturer, the line has become disconnected, or the arterial line is replaced[2]

ADDITIONAL CONSIDERATIONS

- **Always** ensure arterial line alarms are switched on, and the insertion site is visible
- Ensure the line is always patent and free of blood.
- The infusion line and arterial line **must be clearly labelled/identifiable as ARTERIAL**[3]
- * **use alternative if chlorhexidine allergy present**.

NEVER

NEVER administer medications via the arterial line. It can lead to paraesthesia, severe pain, motor dysfunction, compartment syndrome, gangrene or limb loss

Please see your unit's full guidelines for more information.

V4 2026

	References
1	The Royal Marsden Manual of Clinical & Cancer Nursing Procedures online, 10th Edition. (2020) https://www.rmmonline.co.uk/
2	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 infectiosn in NHS Hospitals. Journal of Hospital Infection Vol 86 (Supp 1) S1-S70.
3	Bench,S, Credland, N & Hill, C (eds)(2025) Critical Care Manual of Clinical Procedures and Competencies. Wiley Blackwell. Second Edition
4	Guidelines for the Provision of Intensive Care Services V2.1 (GPICS)(2022) The Faculty of Intensive Care Medicine / Intensive Care Society.
5	Plowright C, Sumnall R (2022) Essential critical care skills 3: arterial line care. Nursing Times [online]; 118: 1, 24-26.