

Paediatric Intensive Care Unit

Monitoring of the Central venous Pressure (CVP) in a Paediatric Patient

Staff relevant to:	Medical & Nursing staff caring for children with a central venous line insitu.
Approval date:	April 2022
Version:	3
Revision due:	April 2025
Written by: Reviewed by:	J Burgess L Maughan
Trust Ref:	C49/2016

1. Introduction and Who Guideline applies to

Central Venous Pressure is a measure of pressure in the venae cavae, near the right atrium of the heart. The monitoring can be used as an estimation of preload and right atrial pressure. It is a useful tool to assess Right Ventricular function and can provide systemic fluid status of the critically ill child along with other parameters. The transducer level is important allowing the measurement to be close to the right atrium as possible.

All CVP monitoring should be taken from a central venous line with the tip positioned ideally in superior vena cava just outside of the right atrium. If however if this is not available a trend reading should be documented (from the femoral or other vein where the central line tip is localized).

2. CVP management

Resources

- Central Venous Catheter (COOK or Vygon)
- Transducer Set with appropriate flushing fluid

2.1 Process

Zeroing the Transducer set monitoring the CVP reading

- Transducer should be level with the phebostatic axis – where the 4th intercostal space and the mid axillary line cross each other.
- CVP line should be immediately zeroed post insertion or arrival from theatre and at least 4 - 6 hourly thereafter.
- Ensure pressure bag on fluid is inflated to 300mmHg
- To ensure the line remains patent, a continuous infusion should be running through the lumen or regular stat drugs are being given through it.
- Ensure no air/blood is visible in the line, if so, aspirate and flush immediately and re-calibrate.

Monitoring the CVP

- The monitoring of the CVP is taken from a central venous line inserted in the internal/external jugular veins or subclavian vein.
- The catheter used should be either a Vygon or Cook as stocked by cPICU/CICU.
- The lumen used is the distal port. This is the green lumen on a Vygon line and the white lumen on a Cook line.

Recording the CVP

- The CVP should be recorded on the PICU observation chart hourly.
- Ensure any infusion running on the lumen is turned off via the three way tap before measurement is recorded. If intropes are running on the lumen it should not be turned off but should be taken into account when reading the measurement.
- Avoid running any infusions on the lumen if possible.
- CVP parameter range should be documented in the notes, readings above or below should be discussed with medical staff regarding treatment.
- CVP monitoring and recording should continue until the patient no longer requires intropes or close monitoring.
- If unable to take a CVP reading it should be clearly documented in the notes or on PICU chart with reason.

3. Education and Training

None

4. Monitoring Compliance

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements

5. Supporting References

Cole E (2007) *Measuring Central Venous Pressure* Nursing Standard 22(7) 40 - 42

Jevon P Ewens (Eds)(2007) *Monitor the critically ill patient* Second Edition
Blackwell Science Oxford

6. Key Words

Atrial pressure, Transducer

The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs. As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

CONTACT AND REVIEW DETAILS	
Guideline Lead (Name and Title) L Maughan – Senior Sister/Charge Nurse	Executive Lead Chief Nurse
Details of Changes made during review: Introduction updated	