Aim

- To monitor pressure in the central venous circulation to detect potential problems and/or evaluate patient status.

Key points

1. Central venous pressure (CVP) relates to an adequate circulatory blood supply. Pressure depends on blood volume, cardiac contractility and vascular tone.<sup>1</sup>

2. CVP is measured in the right atrium or vena cava close to the heart and is a reflection of fluid volume<sup>1</sup> and guides fluid administration, replacement or diuretic administration.<sup>2</sup>

Normal range for CVP is 2 to 8mmHg or 3 to 10cmH<sub>2</sub>O.<sup>2</sup> The CVP may be measured with a manometer or transducer.

   - Low CVP may indicate hypovolaemia
   - Elevated CVP indicates right ventricular failure or volume overload.

3. Accurate measurement requires equipment levelled to a reference point on the patient. This point is the phlebostatic axis (at the intersection of the mid-axillary line and fourth intercostal space) and should be marked with indelible marker.<sup>1</sup> See Clinical Guideline, Obstetrics & Gynaecology: Arterial Line

4. Observe:

   - Hand hygiene before and after any manipulation of vascular access devices or catheter sites.<sup>3</sup> See Infection Prevention and Management, Hand Hygiene policy
   - An aseptic technique

5. Disposable transducers, pressure tubing and line are replaced at 96 hour intervals.<sup>3</sup>
For CVP monitoring with a transducer and monitor

**Equipment**
- Transducer / pressure tubing / fluid path
- Pressure bag
- Monitor
- Sodium chloride 0.9% 500mL

**Procedure**
- Obtain verbal consent
- Position patient supine or semi recumbent to 30-45 degree elevation
- Prime pressure tubing with Sodium chloride 0.9%, close connections
- Check flushing mechanism
- Apply the pressure bag and inflate to 300mmHg
- Connect to monitor transducer cable
- Calibrate zero and level the transducer to the phlebostatic axis
- Attach extension tubing to central venous catheter, open fluid path, and adjust rate
- Close the stopcock to the patient and open to air and read the display monitor at end of expiration
- Reopen stopcock to patient; recommence intravenous transfusion at prescribed rate
- Record the result
- Report abnormal readings or change in trends
- Monitor insertion site for infection, bleeding and disconnection. See KEMH Clinical Guideline, Obstetrics & Gynaecology: [Arterial Line](#)
References


Related WNHS policies, procedures and guidelines

KEMH Clinical Guidelines
- Infection Prevention and Management Manual: Hand Hygiene ; Standard Precautions
- Obstetrics & Gynaecology: Arterial Line

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