Insertion of central venous line

Assessment of competences for ANP / ACP / SCP

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Please note: Practitioners can add DOPS, PBAs and CEXs as evidence.**

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|  | | **NOT competent** | **Competent** | **Signature and date** |
| Insertion of central venous line | | | | |
| 1 | Indications   * On induction * Access * For CVP monitoring * Fluid management * Delivery of medication * Inotropic support * Nutrition |  |  |  |
| 2 | Contraindications   * Patient declines consent * Uncooperative patient * Pulmonary embolism * Skin infection * Technically challenging * Pneumothorax or haemothorax on the contralateral side or only one functioning lung |  |  |  |
| 3 | Equipment   * Central venous catheter * Sterile gloves * Antiseptic solution with skin swab * Sterile drapes or towels * Sterile gown * Sterile saline flush, approx.. 30 mL * Lidocaine 1% (obtain additional vial of lidocaine 1% if needed) * Gauze * Dressing * Scalpel, no. 11 * Portable ultrasound machine |  |  |  |
| 4 | Describe anatomy   * External and internal jugular * Clavicle * Sternum * Head of sternal mastoid * Deltopectoral groove |  |  |  |
| 5 | Insertion   * Consent * Trendelenburg position (feet up, head down to increase vein size) * Clean area * Drape * Local anaesthetic if patient awake * ID landmarks – clavicle, deltopectoral groove, sternal notch * Internal jugular approach: Explain IJV located at the apex of the triangle formed by the sternocleidomastoid muscle and the clavicle. The SCV crosses under the clavicle just medial to the midclavicular point. Use USS to identify the anatomy. * Advance the needle perpendicular along the inferior lateral clavicle * One fingerbreadth lateral to the angle of the clavicle * Advance needle, under ultrasound while applying negative pressure to the syringe until a flash of blood is visualised * Seldinger technique (guidewire through the needle, which is then withdrawn to leave the guidewire only) * Insert the catheter, secure/suture and apply dressing * Chest radiograph to confirm position and exclude pneumothorax |  |  |  |
| 6 | Confirmation of correct line positions;   * Blood on aspiration * CXR 3rd – 4th ICS * CVP reading |  |  |  |
| 7 | Measurement   * Normal and abnormal readings * Significance hypovolaemia, SVC obstruction, raised interthoracic pressure, reduced intrathoracic pressure |  |  |  |
| 8 | Complications   * Malposition of the catheter * Air emboli * Haematoma * Catheter embolism * Arterial puncture * Thrombosis * Pneumothorax * Haemothorax * Haemorrhage * Cardiac tamponade * Sepsis * Cardiac arrhythmias |  |  |  |
| 9 | Causes of raised CVP   * Increased intrathoracic pressure * Impaired cardiac function (failure, tamponade, only useful for information regarding the right side of the heart) * Hypervolaemia * Superior vena cava obstruction   Causes of decreased CVP   * Hypovolaemia * Reduced intrathoracic pressure (e.g. inspiration) |  |  |  |
| **Assessor’s comments** – Describes the indication in relation to clinical findings/indication, the A&P, contraindications and complications. Completes insertion to include Trendelenburg position and Seldinger technique and using ultrasound. Confirmation of position – reviews the CXR in a systematic way and ensures they have identified the correct legal and clinical aspects. Practitioner should describe the action immediate and subsequent if a complication arises.  Practitioner should comment on communication with the multidisciplinary team and the documentation according to the practitioner’s professional body and code of conduct.  Assessor signs to say the practitioner is competent in insertion and has demonstrated the knowledge associated with the process: | | | | |
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| **This practitioner has completed these outcomes to the appropriate standard.**  **Assessor’s name:**  **Signature and date:** | | **Practitioner’s signature:**  **Date:** | | |