CLINICAL PRACTICE GUIDELINE

Peripherally Inserted Central Catheter (PICC)

This document should be read in conjunction with the Disclaimer

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Aim
To provide information on the insertion, management and access of PICC lines to reduce complications at King Edward Memorial Hospital.

Insertion

**KEY POINTS**

1. Insertion of a PICC can:
   - provide medium (7 days) to long term (up to 12 months) vascular access
   - monitor central venous pressure
   - provide an alternative to subclavian, jugular or femoral catheterisation when central venous access is required
   - be used for blood sampling where frequent phlebotomy proves unacceptable or technically difficult.

2. A thorough medical history should be taken prior to PICC insertion to determine contraindications or risk factors.

3. PICC lines are recommended when the intravenous therapy duration is likely to exceed 6 days.

4. Written consent must be obtained by the medical team and documented on the MR295 Generic Consent Form prior to insertion of a PICC.

5. PICC line insertion will be provided by nominated anaesthetists within the department.

6. All requested / referrals for PICC lines should be made to the duty anaesthetist (DA) on extension 6225.

7. PICC line placement will be provided as an elective service between 08:00 and 17:00 Mondays to Fridays.

8. For urgent central line access, contact the duty anaesthetist on extension 6225.

9. At KEMH insertion of a PICC is performed as a maximum sterile procedure in theatre.

10. Chlorhexidine 2% and alcohol 70% preparation is used in skin antisepsis to maximise infection control.

11. An improved 90% success rate by using ultrasound guidance during PICC insertion has been shown when compared against a 80% success rate with traditional non-ultrasound guidance.

12. Hand hygiene should be performed before and after any contact with the PICC or catheter site.

13. PICC placement is most commonly inserted into the ante brachial veins in the antecubital fossa: the cephalic, basilic and medial cubital veins.

14. The right arm is the preferred site, as it is a shorter route to the superior vena cava (does not cross the midline). The angle the brachiocephalic vein makes with the SVC is less acute and the catheter tip therefore less likely to abut the vein wall.

15. Placement should be ultrasound guided, preferably into the basilic vein, with skin puncture 5cm above the antecubital fossa where possible. This facilitates comfort and minimises risk of causing catheter kinks.

16. When possible a double lumen PICC should be inserted, especially if the line is to be used for the administration of TPN.
17. A PICC should not be inserted in the presence of a pacemaker or a pulmonary catheter.\textsuperscript{8}

18. Radiological confirmation of correct catheter placement should be verified prior to use.\textsuperscript{2} Confirmation of correct PICC placement should be documented by the anaesthetist in the medical records and on the MR 732 ‘CVC & PICC Line Care Plan’.

19. Blood pressure cuffs or tourniquets shall not be placed over the PICC site.\textsuperscript{6} It can cause risk for bleeding, thrombosis and catheter occlusions.\textsuperscript{4} Perform blood pressure measurements on the arm without the PICC line.\textsuperscript{6}

20. The internal and external length of the catheter should be documented in the medical records and on the MR 732 ‘CVC & PICC Line Care Plan’. **Do not readvance a PICC if it migrates**\textsuperscript{7}: Notify the anaesthetist immediately.

21. The catheter should be secured by using a suture-less anchoring device\textsuperscript{1} with the ports facing the lateral aspect of the upper arm. These methods should not impede inspection or palpation of the insertion site.

22. Positive pressure valves (e.g. Posiflow) shall be used with PICC lines in order to minimise the chance of catheter occlusion.

23. A Biopatch® should be placed around the PICC insertion site to reduce risk for catheter colonisation and infection.\textsuperscript{2} A transparent semi-permeable dressing (e.g. IV3000 or Tegaderm Transparent Adhesive Film Dressing) is recommended.\textsuperscript{1, 2}

24. After insertion the dressing should not be changed for 24 hours unless it is contaminated, loose or damaged.

25. The patient should receive education about the PICC line and the reporting of abnormalities.

26. PICC lines can be used with infusion pumps to a maximum flow rate of 800mL/hour.\textsuperscript{2} Rates in excess of this raise the intraluminal pressure in the catheter and may cause catheter rupture.\textsuperscript{2}

27. PICC lines are not routinely replaced.\textsuperscript{1}

28. Hair at the insertion site should only be removed with clippers (not shaved)\textsuperscript{7} to improve dressing adherence.\textsuperscript{9} Shaving can cause micro-abrasions, which may lead to infection.\textsuperscript{7}

**CONTRAINDICATIONS TO A PICC LINE**

- Skin infection at the potential insertion site\textsuperscript{10, 11}
- Known central vascular occlusions on the side of the intended PICC insertion site e.g. pacemaker\textsuperscript{11}
- Presence of a dialysis fistula or graft in the involved extremity\textsuperscript{11}
- Where possible avoid use in patients with end-stage renal disease or chronic renal insufficiency, or in patients who have conditions which may lead to end-stage renal disease. Preservation of upper extremity and central vein access is essential in case of need for a future dialysis fistula.\textsuperscript{11}
- Lymphoedema\textsuperscript{8}

**RELATIVE CONTRA-INDICATIONS INCLUDE:**

- A History of some congenital cardiac anomalies requiring surgery\textsuperscript{11}
- Haematological conditions e.g. thrombocytopenia, coagulopathy, hypercoagulability syndromes\textsuperscript{11}
• Sepsis or bacteraemia without subsequent negative blood cultures\textsuperscript{11}
• History of a radical mastectomy with node dissection of the side of the PICC insertion\textsuperscript{11}

COMPLICATIONS THAT CAN OCCUR FROM A PICC LINE
All complications should be reported immediately to the anaesthetist and medical team for review.
These include:
• Cardiac arrhythmia - occurs when the catheter tip is located in the right atrium.\textsuperscript{4} It can occur during or after insertion.\textsuperscript{12}
• Catheter migration/ dislodgement\textsuperscript{3, 6, 10-12}

Peripheral nerve damage\textsuperscript{11}

EARLY COMPLICATIONS INCLUDE:
• Malposition\textsuperscript{10, 12, 13}
• Line fracture/ damage\textsuperscript{10, 12}
• Haemorrhage\textsuperscript{11, 12}
• Line embolisation\textsuperscript{10} e.g. catheter breaking,\textsuperscript{10} dislodged thrombus, air entry into circulation \textsuperscript{6, 12, 13}

• Arterial puncture\textsuperscript{11, 12}
• Phlebitis/thrombophlebitis\textsuperscript{3, 6, 10-12}
• Infiltration/ extravasation\textsuperscript{10, 13}

LATE COMPLICATIONS INCLUDE:
• Venous thrombosis\textsuperscript{3, 6, 10-12, 14}
• Catheter related infection\textsuperscript{3, 6, 10-12, 1b}
• Accidental withdrawal\textsuperscript{12}
• AV fistula\textsuperscript{12}
• Line malfunctions/ occlusions\textsuperscript{3, 10} e.g. clamped/kinked catheter, precipitate build-up \textsuperscript{6, 12}

• Arrhythmia\textsuperscript{12} – from over-advancement of the line into the atrium.

PROCEDURE

Prior to the procedure
Dress the woman in a theatre gown or appropriate accessible clothing.\textsuperscript{2}
Ensure the consent is completed
Confirm there are no contra-indications to insertion of a PICC.\textsuperscript{8}
Accompany the woman to theatre; provide ‘hand-over’ to theatre staff.\textsuperscript{2}

The medical team obtains the written informed consent.\textsuperscript{2}
Include the woman’s medical history and any observations, medication and fluids required.\textsuperscript{2}

2. Technique

The catheter shall be inserted using Surgical Aseptic Technique as detailed in next page
The anaesthetist inserting the line must complete the IV therapy Identification card and Insertion sticker and place
Correct catheter tip placement shall be confirmed by X-ray\textsuperscript{2,10}

3. **Post Insertion**

Collect the patient from theatre.

Document the confirmation of correct catheter placement by chest X-ray on the MR 732 ‘CVC & PICC Line Care Plan’.

Document the date, site, and length of the external catheter length on the MR 732 ‘CVC & PICC line care plan’.

Prior to leaving the recovery room assess the PICC site:

- ensure the dressing is intact and stabilised
- note the presence of any exudate
- observe for signs of incorrect placement or complications\textsuperscript{10}

Placement complication signs/symptoms include catheter migration, redness, swelling, pain or aching

Ensure ongoing instructions for catheter management is available e.g. prescribed flushes or infusions.

4. **Patient education**

Provide the women with PICC education including:

- signs and immediate reporting of complications\textsuperscript{1,13}
- hygiene measures\textsuperscript{1}
- management and care of the site.\textsuperscript{13}

Give the woman the IV Therapy Identification card (from the insertion pack). This should be completed by the medical officer inserting the line.

Educate the woman that the catheter should be protected when showering by an impermeable cover.\textsuperscript{1,2}

Chlorhexidine 2% wash can be used for daily washing to reduce catheter related infections.\textsuperscript{1}

this in the patient notes. The lot number and product number must be included.

**DO NOT COMMENCE INFUSIONS UNTIL THE CORRECT CATHETER TIP LOCATION IS CONFIRMED.**\textsuperscript{10}
Insertion of a Peripherally Inserted Central Catheter (PICC)

**Prepare patient**
- Bedstead
- Position patient
- Assist patient
- Turn patient ready

**Apply hat & mask**
To protect central field from hair /septic contamination

**Clean hands**
With soap & water or alcohol gel

**Clean procedure trolleys**
As per local policy

**Open equipment**
Using NT-100 sterile drapes, leaving Key Parts in inner packs where possible

**Scrub hands & wrists**
As per local policy

**Apply gown**
Tissue draped without contaminating exterior

**Apply sterilized gloves using sterile gloved technique**

**Prepare Critical Aseptic Field using NT-1 to protect Key Parts where practical**

**Draw up local anaesthetic & saline using NTT**

**Apply sterilized drape under patient's arm**

**Disinfect skin**
Using 2% chlorhexidine /IPE alcohol NT, applicator for 30 secs. Allow to dry

**Apply sterilized drapes head to toe**

**Apply sterilized cover to ultrasound probe**

**Access vein & insert micro-introducer & measure for PICC**

**Insert PICC using forceps (NTT)**

**Apply dressing as per local policy**

**Dispose of waste & gloves**

**Clean hands immediately after gloved removal**

**Clean trolleys as per local policy**

**Clean hands with soap & water or alcohol gel**

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References


Monitoring / Dressing

KEY POINTS

1. The catheter insertion site shall be inspected regularly, at least daily,¹,² ideally at least once each shift³,⁴ and prior to any access, for signs of infection, phlebitis, catheter migration or damage, and exudate.²⁻⁶ The condition of the site shall be documented in the medical record and / or on the Gynaecology care plan (MR 286) following each inspection.¹

2. A sterile, transparent dressing that allows visual monitoring of the insertion site is preferred.⁶⁻⁸ This reduces the likelihood of bacterial colonisation, requires less frequent dressing changes, and allows palpation through the intact dressing.⁶ Palpate for tenderness at least daily, and if tender, or signs of exudate or infection, then dressing will be removed and the site assessed.¹

3. The Acute Pain Service (APS) team will review PICC line sites daily as part of their ward round, while the patient is hospitalised. Contact the APS as the first port of call for any concerns.

4. Observe:
   - Hand hygiene before and after any manipulation of vascular access devices or catheter sites.³,⁶,⁹ See Infection Control Manual: 2.2 Hand Hygiene.
   - An aseptic technique.³,⁶
   - Standard precautions.³ See Infection Control Policy 2.1 Standard Precautions.

5. PICC dressings are:
   - Changed 24 hours following insertion to remove any accumulated exudate, thereafter weekly.¹,³,⁷
   - Changed immediately if the integrity of the dressing is compromised or if moisture collects under the dressing.¹,³,⁶,⁷

6. The dressing change shall be documented on the PICC Line Care Plan (MR 732)³

EQUIPMENT³

- Sterile dressing pack
- Sterile gloves x2 ⁶
- Sterile transparent semi permeable dressing⁶,⁷
- Chlorhexidine 2% with 70% alcohol swab.
  - If chlorhexidine is contraindicated, use iodine, iodophor or 70% alcohol.⁶
- Biopatch® antimicrobial dressing
- Statlock® device
- Personal protective equipment.³
PROCEDURE

1. Explain the procedure to the woman and obtain verbal consent. Prepare the equipment.
2. Position the woman with her arm extended to achieve adequate access and patient comfort.
3. Perform hand hygiene and apply sterile gloves.
4. Using an aseptic technique, remove the dressing and Statlock® device and discard.
5. Assess/inspect the site for phlebitis, tenderness, catheter migration or kinking.
   - Do not advance catheters that have migrated. Notify the anaesthetist immediately.
6. Remove gloves and perform hand hygiene.
7. Apply a new set of sterile gloves and clean the catheter insertion site with Chlorhexidine 2% and alcohol 70% swab stick, using a back and forth scrubbing action, working from the insertion site.
8. Allow the catheter insertion site to dry. If after 1 minute the area is still wet, it can be dried using a single dab action with sterile gauze.
9. If appropriate, change the administration set.
10. Apply a Biopatch® antimicrobial dressing around the insertion site with blue side up and white side against the woman.
11. Replace the Statlock® device.
12. Apply the transparent dressing, ensuring it covers the whole insertion site and device.
13. The administration set should be positioned to avoid traction on the catheter, connections or clothing.
14. Document the date and time of the dressing change on the dressing, and on the PICC line Care Plan MR 732.
15. Dispose of the equipment appropriately and perform hand hygiene.

References

Flushing

KEY POINTS

1. Flushing of a PICC is required:
   - following insertion of a PICC (after correct placement is confirmed)
   - before and after each access – both for intermittent use and continuous infusions

   **Note:** After intermittent IV infusion (e.g. IVAB's), the line should be flushed with a 50mL saline bag and then flushed with the 10mL 0.9% sodium chloride after removing the infusion set.

   **Note:** After blood transfusion (if applicable), remove the infusion set and flush with 20mL 0.9% sodium chloride (using 2 x10mL syringes).
   - Prior to and following blood sampling
   - between the administration of incompatible fluids
   - every 8 hours while in hospital, unless there is a continuous infusion in situ
   - lumens which have been used for medication administration such as insulin, GTN, inotropes, require aspiration of 5 mL prior to flushing.

2. A PICC should be flushed 8 hourly if an infusion is not in progress. The written order for the flush is written on the MR 810 Medication Chart by the Medical Officer.

3. 0.9% sodium chloride solution is the preferred flushing solution.
should be flushed with 10mL Dextrose 5% followed by 10mL 0.9% sodium chloride

4. If the catheter is not used for more than 7 days but is still required, flush each port weekly with 0.9% normal saline followed by 50 units heparinised saline in 5 mL using a 10 ml syringe. Check manufacturer’s instructions for individual PICC brands.

5. Heparinised saline should not be administered to women with pre-eclampsia, coagulopathy, thrombocytopenia or autoimmune disease without consultation with the anaesthetist.

6. Valved catheters and positive pressure end caps have reduced the need for heparin locking,\(^3\) and should be used when a woman is not receiving continuous intravenous therapy.\(^1\)

7. The volume of the flush solution should be equal to at least twice the volume of the catheter and add-on devices which is usually 5-10 mL.\(^3\)

8. The minimum syringe size recommended for flushing a PICC is 10mL\(^1,2,\)\(^10\).\(^1\) The syringe size should also be checked with the manufacturer’s instructions.\(^3\) A luerlock syringe shall be used for flushing a PICC.

9. If the PICC has multiple lumens, each lumen must be managed separately, with regards to flushing.\(^12\)

10. The syringe shall be attached to a positive pressure valve. Do not use needles to access the valve.\(^3\)

11. The recommended flushing technique is the rapid push / pause method which is believed to create turbulence within the lumen of the catheter, decreasing the risk for occlusion.\(^1,3,10\)

12. Hand hygiene shall be performed before and after any manipulation of the vascular access device or catheter site.\(^6,13\)

13. Do not aspirate cytotoxics.\(^7\)

14. Systemic antimicrobial prophylaxis is not recommended, however a prophylactic antimicrobial lock solution can be used for women with long term catheters who have multiple catheter-related blood stream infections despite strict adherence to aseptic PICC management.\(^13\)

**Equipment**

10mL syringes (luerlock) x number of lumens to be flushed
10mL 0.9% sodium chloride ampoule for each lumen to be flushed
Chlorhexidine 2% and 70% Isopropyl Alcohol impregnated swab
Kidney dish / container
Non-Sterile gloves
Procedure

1. Explain the procedure to the woman and obtain verbal consent.\(^{14}\)
2. Inspect the PICC line for signs of catheter migration. If migration is suspected, do not proceed. Measure the catheter length and compare to the documented catheter length. Notify the anaesthetist of any discrepancy.
3. Perform hand hygiene.\(^6\)
4. Draw up 10mL of the required flush solution for each lumen.
5. Perform hand hygiene and don sterile gloves.
6. Swab the PICC positive pressure valve with a chlorhexidine and Isopropyl Alcohol impregnated swab.\(^{1,6}\)
7. Allow to dry.\(^1\)
8. Attach the syringe and administer the flush in a push / pause technique.\(^{1,3,6,10,11}\) If difficulty is experienced while flushing, do not proceed.\(^{1,6,11}\) Notify the medical team for review.\(^1\)
9. Repeat for each lumen.
10. Discard the equipment and perform hand hygiene.\(^6\)
11. Document the flush on the MR810 Medication chart.


References


Changing an Administration Set

Key points

1. Observe hand hygiene measures and standard precautions.
2. Administration sets and all connective devices used for standard (crystalloid) continuous infusions shall be changed at least every 7 days, however no more frequently than at 96 hour intervals, unless they are disconnected, used for blood, blood products or fat emulsions, or the PICC catheter is changed. Blood and fat emulsions encourage microbial growth and require more frequent administration set changes.¹
3. Replace intermittent administration sets every 24 hours,² ³ or earlier if required according to KEMH blood transfusion guidelines. No set frequency is
recommended by the CDC for routine replacement of intermittent administration sets.¹

4. At KEMH administration sets used for blood transfusion or products are replaced eight hourly or earlier if the flow is compromised. See Haematology Transfusion Medicine Protocol Administration of Blood Components – Standard Administration Checks and Filters.

5. Lipid containing fluids require administration sets to be changed within 24 hours of initiating infusion e.g. Total Parenteral Nutrition (TPN).¹,⁴

6. Add on devices including extension sets, three way taps and needle-less access ports should be of luerlock design and be replaced when the administration set is changed.¹,³ It is unnecessary to routinely change these more frequently than every 72 hours.¹ See also manufacturer instructions.¹

Equipment

- Add-on devices e.g. extension tubing / 3 way taps / connections
- Chlorhexidine 2% with 70% Isopropyl Alcohol swab
- Prescription e.g. TPN order on MR741 Parenteral Nutrition Order, or other prescribed fluids on the MR740 Intravenous Fluid Sheet.
- Appropriate administration sets
- 10mL sterile syringe
- 10mL of 0.9% normal saline
- Sterile Gloves

Procedure

- Explain the procedure and obtain verbal consent.
- Perform hand hygiene.¹
- Prepare the equipment.
- Position the woman for comfort and provide adequate access to the PICC line.⁵
- Using an aseptic technique assemble the administration set / add on devices and connections.¹
- Prime the line maintaining sterility. Consider whether the injection caps need to be replaced. Use a 10mL syringe with 0.9% sodium chloride to prime the injection caps / tabs that are being changed at the same time.⁵
- Close the roller clamp and hang the fluid from the infusion stand.
- Perform hand hygiene and don the gloves.
- Remove any tapes, dressings and / or securing device, to access the PICC connection. Close the roller on the line to be changed.
- Place the sterile drape appropriately. Close the sliding clamps on the PICC.
- Disconnect the administration set. Apply clean gloves and change any injection caps / taps as required. Clean the catheter hub thoroughly with the chlorhexidine and alcohol swab.¹,⁵ Allow to dry.³
- Connect the primed replacement set. Open the clamps(s) to the woman and the line, ensure the flow of fluids and set the rate of the infusion.
- Tape the administration set in a secure and comfortable manner. Ensure the catheter insertion site is visible to allow regular assessment of the site for infection, phlebitis, infiltration or extravasation.
- Discard the gloves and perform hand hygiene.\(^5\)
- Label the administration set with the date and time of change.
- Document on the MR 732 CVC and PICC Line Care Plan
- Discard of the equipment appropriately.
- Perform hand hygiene.\(^5\)

**References**


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**Removal of a PICC**

**Key Points**

1. Strategies to decrease the risk for infection shall be used including
   - An aseptic technique.\(^1\)
   - Hand hygiene measures according to the Infection Control Manual.\(^1\)
   - Standard precautions.
2. The PICC is removed:
   - As directed by the medical staff.\(^2\)
   - At the cessation of treatment
   - If catheter related complications are suspected.
3. A PICC may be removed by a registered Nurse / Midwife competent in the procedure.\textsuperscript{3,4}

4. The dressing should remain in situ for 72 hours following removal of the device.

5. A woman with haematological abnormalities should have a normal platelet count confirmed prior to the removal and after consultation with an anaesthetist.

**Equipment**

- Dressing pack\textsuperscript{2}
- Chlorhexidine 2\% in alcohol 70\% swab.\textsuperscript{2}
- Gloves – sterile and non-sterile.
- Personal Protective Equipment (PPE)\textsuperscript{5} e.g. goggles, gown mask, gloves\textsuperscript{4}
- Transparent semi permeable membrane dressing.
- Optional equipment e.g. sterile scissors, stitch cutter, sterile specimen jar (if catheter tip is required).

**Procedure**

1. Explain the procedure to the woman and obtain verbal consent. Review the written order and confirm removal.

2. Review the documentation regarding the insertion of the device noting any particulars such as catheter trimming.

3. A warm compress may be applied to the arm 20-30 minutes prior to the procedure to produce vasodilation. This may reduce irritation during removal.\textsuperscript{6,8}

4. Perform hand hygiene.

5. Prepare the equipment.

6. Position the woman supine with the arm supported and extended 45-90 degrees. A supine position aids the prevention of air embolism.\textsuperscript{9} The woman may be positioned in a 10 degree Trendelenburg’s position to promote venous filling and prevent air embolism on removal.\textsuperscript{4}

7. Put on the PPE.

8. Turn off any infusions and remove if present.\textsuperscript{4}


10. Remove the dressing and securing device or sutures and discard.

11. Perform hand hygiene and put on the sterile gloves.\textsuperscript{1,4}

12. Place the sterile towel from the dressing pack between the PICC and the practitioner, performing the procedure in an aseptic manner.
13. Clean the exit site with the Chlorhexidine 2% in 70% alcohol swab, from the inner aspect to the outer aspect with a back and forth motion.\textsuperscript{1, 4} Allow to air dry.

14. Place the sterile gauze over the exit site, grasp the catheter at the insertion site and slowly and continuously pull it out parallel to the skin in approximately 2.5cm increments.\textsuperscript{4, 8} Minimal pressure should be used and the catheter should not be stretched. Slow removal reduces the risk of venous spasm.\textsuperscript{6} Do not apply pressure over the exit site / vein during removal as this may cause the catheter to touch the vein wall which may cause spasm.

15. Instruct the woman to perform the Valsalva manoeuvre\textsuperscript{4, 8} as the last 5 – 10cm is withdrawn.\textsuperscript{3} The practitioner’s hand should move closer to the exit site as the device is removed to allow more control.\textsuperscript{9}

16. Stop the procedure if:
   - The woman experiences sharp pain or other sensations along the catheter tract.\textsuperscript{8}
   - Resistance is felt by the practitioner during removal. Most resistance is caused by venous spasm. Reposition the arm. Apply warm heat along the vein for 20-30 minutes prior to attempting removal again.\textsuperscript{2, 9, 11}

17. If resistance is still felt, cease the procedure and notify the medical team to review.

18. When removed, apply digital pressure to the site with sterile gauze until haemostasis is achieved.\textsuperscript{3, 8, 12}

19. Apply a sterile occlusive dressing and label with the date and time of removal.

20. Inspect the catheter tip to ensure completeness and that the tip is intact.\textsuperscript{3, 4} The length of the device should be the same as documented at the time of insertion.\textsuperscript{4, 12} Inform the medical team immediately if there is an abnormality found.

21. Collect the catheter tip in a sterile specimen jar if there are signs of infection\textsuperscript{2} or the catheter is broken or compromised and send for follow up.

22. Document the date, time, catheter length and the condition of the device on the MR 732: CVC and PICC Line Care Plan.

23. Perform a complete set of vital signs on the woman after removal while she is still supine.

24. Advise the woman to alert nursing / midwifery staff of any signs of infection or complications.

25. Assess the wound site daily. After 72 hours the dressing is removed\textsuperscript{5} or changed daily until epithelialisation / healing occurs. The dressing should be airtight and remain insitu for at least 24 – 72 hours to reduce the risk of a late air embolism.\textsuperscript{5}
26. Include any ongoing care in the discharge planning.

**Blood Sampling**

See the Central Venous Catheter Guideline

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**References**


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