TITLE: Port-A-Cath/IVAD

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Applies to: Registered Nurses

THIS IS A POST-ENTRY LEVEL COMPETENCY FOR REGISTERED NURSES THAT REQUIRES CERTIFICATION PRIOR TO PERFORMING.

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POLICY

A - GENERAL

1. Care of the Implanted Infusion Port/Vascular Access Device (IVAD) incorporates devices such as Port-A-Cath, Chemosite, P.A.S. Port.

2. Prior to initial use, radiological verification of correct Implanted Venous Access Device (IVAD) placement must be confirmed.

3. Use a 10-mL syringe or larger.

4. Always verify patency prior to infusing any solution into the IVAD.

5. All inpatients with an accessed IVAD will have a needleless positive pressure central line adaptor/cap (CLC 2000™) applied.

6. According to the site specific Infection Control Policy & Procedure change:
   - Parenteral nutrition solution including lipids every 24 hours, Parenteral nutrition administration set (with filter) every 72 hours.
     If lipids are piggybacked, both administration sets must be changed every 24 hours.
   - Administration sets and tubing every 72 - 96 hours.
   - IV solutions with additives every 24 hours.
- IV solutions without additives every 72 hours.
- Gripper needle and occlusive dressing every 7 days (gauze dressings should be changed daily).
- Needleless positive pressure adaptor (CLC2000™) weekly.

7. To treat an occluded IVAD the RN must be competent in the procedure – Care of an Occluded Central Venous Access Device.

8. Use only non-coring needles (e.g., Huber, Gripper) to access the port.

9. Never tilt or rock the needle once the port has been entered.

10. The port site is checked every shift for evidence of redness, tenderness, drainage, and dislodgement. (refer to e-learning module @ https://elearning.nshealth.ca for management of complications.)

11. IVAD care is an aseptic technique.

12. A mask is worn when performing a dressing and or gripper needle change and at any time the system is opened (i.e., changing needleless positive pressure adaptor).

13. When infusing blood products: In emergency situations that require rapid transfusions, a large gauge cannula is preferred; however, transfusions for therapeutic indications may be infused with cannulas ranging from 20-24gauge (INS, 2006).

14. If blood return is absent, rule out positional problems by:
   - asking the patient to deep breath, cough and move position.
   - removing the adaptor to attempt to withdraw blood using the syringe method.
   - flushing the port with 3-5mL N/S to assess for resistance and possibly reposition catheter.
   - additional N/S may be instilled or non-coring needle may be changed.
   - If these measures are not successful, notify physician. (For more details, see complications section of e-learning module @ https://elearning.nshealth.ca).

15. Use an infusion pump for continuous IV infusions.

16. If cyclosporine (CYA) is being administered via the IVAD, CYA levels should be drawn peripherally to ensure accurate measurement of serum drug levels. CYA adheres to the silicone walls of the internal catheter and can affect drug levels for days after infusing through the IVAD.

17. The plan of care is recorded in the Nursing Kardex (or Nursing/Multidisciplinary Care plan depending on the facility). Document relevant information in the Patient Health Record.

18. All connections should be secured and taped with waterproof tape.
B - ACCESSING THE IVAD

GUIDING PRINCIPLES
1. A gauze dressing covers the site for the first 24 hours then a transparent dressing may be applied if no drainage is noted at the insertion site or on the steri-strips.
2. As some patients find it painful to have this procedure performed, a local anaesthetic such as Emla cream can be ordered and applied to the site, prior to insertion. Many patients bring their own.
3. No Sting Barrier Film ™ (Wipes/swabsticks) may be applied to the area under the dressing to prevent skin tears/burns. It must be applied after the cleansing solution has dried completely. It must not be applied to the area that will be punctured by the gripper. It must be completely dry before the dressing is applied. It can be applied to irritated or broken skin as long as there is no drainage.

EQUIPMENT
• non-coring (Huber) needle with luer lock extension tubing
• Chlorhexidine 2% Gluconate with 70% Isopropyl Alcohol swab stick
• Sterile gloves
• mask
• 1-10mL syringe with 10mL normal saline
• adaptor (CLC 2000™) - 2 are needed if replacing Y-site cap as well
• transparent occlusive dressing
• tape
• dressing tray (optional)

PROCEDURE
1. Position patient in High Fowlers position.
2. Expose IVAD site and palpate port.
3. Assemble equipment and create sterile fields with the opened packages.
4. Mask and apply non-sterile gloves.
5. Cleanse port site with disinfectant in a circular motion from centre of port outward to cover an area approximately 4" in diameter. Repeat three times and allow to air dry 1 minute, and then wipe any excess with sterile gauze.
6. Attach adaptor to extension tubing (inpatients).
7. Attach saline filled syringe and prime the tubing and needle. Leave syringe attached to set and close the clamp. Be careful to maintain the sterility of the Huber needle and tubing by only touching tubing that will remain outside of the dressing.
8. Apply sterile gloves and palpate the port system with the non-dominant hand and stabilize the port edge with 2 or 3 fingers.
9. With the dominant hand, using firm, consistent pressure, insert the non-coring needle perpendicular (at a 90 degree angle) to the port septum until the back of the port chamber is
located. Rotate site with each access if last access site known.

10. Open the clamp on the extension tubing and verify patency by aspirating for blood return and instilling saline.

11. Slowly flush the system with 10mL of saline, disconnect syringe and close clamp. **Note:** If adaptor not being used then clamp tubing as the last 0.5mls of saline is instilled.

12. Connect to primed IV or heparin lock the system.

13. Remove clip on top of gripper needle and secure the needle and tubing to the Patient, using the 4-inch occlusive dressing.

C - HEPARIN LOCKING

POLICY
1. After saline flush, ports are flushed heparin to lock the system for intermittent access, when discontinuing access, and every 4 weeks to maintain patency. When the gripper needle is in place and heparin locked it does not need regular flushing if not used before gripper needle is next changed.

EQUIPMENT
• 10mL syringe containing 5mL Heparin Lock Flush Solution (100 units/mL)
• 10mL syringe containing 10mL sterile normal saline (without preservative)
• Chlorhexidine 2% Gluconate with 70% Isopropyl Alcohol swab

PROCEDURE
1. Cleanse top of adaptor with Chlorhexidine 2% Gluconate with 70% Isopropyl Alcohol swab. Allow to dry completely.
2. Attach syringe to adaptor.
3. Open clamp on extension tubing.
4. Verify patency and inject saline, disconnect syringe.
5. Inject heparin solution.
6. Disconnect syringe and clamp extension tubing.

D - IV THERAPY

EQUIPMENT
• 10mL syringe with 10 mL sterile normal saline (without preservative)
• tape
• intravenous solution as ordered with primed tubing
• Chlorhexidine 2% Gluconate with 70% Isopropyl Alcohol swab

PROCEDURE
1. Cleanse adaptor with Chlorhexidine 2% Gluconate with 70% Isopropyl Alcohol swab and

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allow to air dry.
2. Attach saline filled syringe and assess for patency.
3. Connect primed IV to adaptor.
4. Cleanse connection site with alcohol swab, allow to dry.
5. Secure connection with waterproof tape.
6. Infuse as per physician’s order.
**Note:** When discontinuing an IV infusion, flush the port with 10mL normal saline then 5 mL heparin solution 100units/mL

### E - BLOOD SAMPLING

#### EQUIPMENT
- Chlorhexidine 2% Gluconate with 70% Isopropyl Alcohol swab
- 10ml syringes
- Needle
- Double connector
- Vacutainer holder to transfer from syringe
- Vacutainer connector to transfer from syringe
- Non-sterile gloves
- Sterile normal saline
- Heparin solution 100 units/ml
- Requisition(s), label(s) and blood tubes

#### PROCEDURE
1. Prepare 10mls normal saline in 10-ml. syringe.

2. Prepare 5 mls heparin solution in 10ml syringe.

3. Apply non-sterile gloves.

4. Clean the y-injection port or adaptor (if heparin locked) with a Chlorhexidine 2% Gluconate in 70% Isopropyl Alcohol swab.

5. Attach a 10mL syringe or vacutainer system to adaptor/y injection port.

6. Withdraw 6 to 10mL of blood (1 red stoppered tube) and discard. For coagulation studies 20ml is discarded or obtain as last sample. If coagulation study appears to have been affected by heparin i.e. elevated, then draw specimen peripherally.

7. Withdraw the required amount of blood by attaching a 10ml syringe (or larger) to Adaptor or inserting additional blood tubes.

8. Flush the IVAD with 10mL normal saline

9. Flush the IVAD with 5mL heparin or resume IV therapy.

10. If using the syringe method take vacutainer, vacutainer connector and double connector to transfer blood from syringe to blood tubes.

### F- BLOOD CULTURES
EQUIPMENT
• Sterile dressing tray
• Sterile gloves
• Requisition(s), label(s) and culture bottles
• 10 or 20ml syringes
• Chlorhexidine 2% Gluconate with 70% Isopropyl Alcohol swab stick or swab
• Vacutainer holder
• Vacutainer adapter
• Double connector
• 10ml syringe with 10ml normal saline

PROCEDURE
1. Set up a sterile dressing tray.

2. Add supplies.

3. Don sterile gloves.

4. Cleanse y injection port or adaptor (if heparin locked) with a Chlorhexidine 2% Gluconate with 70% Isopropyl Alcohol swab. Repeat this twice, allow to dry.

5. Attach syringe or vacutainer system to adaptor/y injection port and withdraw blood. Keep culture bottles upright if using the vacutainer system. Use the first sample of blood obtained for culture (do not discard).

6. If anaerobic culture is required, fill this bottle first. Use vacutainer, vacutainer connector and double connector to transfer blood from syringe to blood tubes.

7. Flush the IVAD with 10mL normal saline

8. Flush the IVAD with 5mL heparin or resume IV therapy.

G - REMOVING AN IVAD NEEDLE (GRIPPER)

GUIDING PRINCIPLES
A bandage or dressing is not required over the site when it is not accessed.

EQUIPMENT
• Non-sterile gloves
• 5 mLs of heparin lock flush solution in 10 mL syringe
• 10 mLs sterile normal saline without preservative in 10 mL syringe
• 2" x 2" gauze
• Bandaid

PROCEDURE
1. If IV infusing, stop IV.

2. Apply gloves.
3. Cleanse y injection port or adaptor (if heparin locked) with Chlorhexidine 2% Gluconate with 70% Isopropyl Alcohol swab and allow to air dry.

4. Attach 10 mL syringe with 10cc normal saline, aspirate for blood return then instill saline

5. Disconnect saline syringe.

6. Attach syringe with 5mLs Heparin Lock Flush Solution and inject.

7. Loosen dressing from needle site.

8. Apply pressure to edges of port with 2 or 3 fingers while withdrawing the non-coring needle straight out with the other hand.

9. Apply pressure to the port site with a 2" x 2" gauze until bleeding stops and apply bandaid.

REFERENCES

Protocols

HISTORICAL DATES
February 2004

RELATED DOCUMENTS
E-Learning Modules on CVAD’s @ https://elearning.nshealth.ca
Proficiency Standards Skills Checklist 2 (Appendix 1-102A), 2a and 3 (Appendix 1-102B)

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