IMPLANTED VASCULAR ACCESS PORT GUIDELINES

Section: Nursing
Compliance: ACHC Infusion Pharmacy
ACHC Standards: N/A
URAC Standards: N/A
TJC Standards: N/A
Policy ID: NUR113
Effective: 1/1/21
Reviewed: 5/1/21, 5/1/22, 3/1/24
Revised: 3/1/2024
Approved by: Kathleen Patrick, President 1/1/21, 5/1/21, 5/1/22, 3/1/24

I. SCOPE

A. Implanted vascular access ports (port) are a tunneled, cuffed central venous access device (CVAD) appropriate for:
   1. Patients with continuous long-term infusion therapy requiring infrequent or Intermittent vascular access, such as antineoplastic therapy and parenteral nutrition.
   2. Patients with whom traditional venous access sites have been exhausted, such as with end stage renal disease patients.
   3. The nurse clinician with documented competency in the care of implanted ports will Perform and teach Aseptic Non-Touch Technique (ANTT) according per Nursing policy for Aseptic Non-Touch Technique when providing port care.

II. NURSING OVERVIEW

A. The Port site should be assessed prior to port access and donning sterile gloves. If abnormal findings are assessed, do not access the port, and notify the provider and the pharmacist for orders. Assessment to include palpation and observation of the site for:
   1. Swelling
   2. Pain
   3. Erythema
   4. Drainage
   5. Erosion of the portal body through the skin
   6. Presence of venous collaterals on the chest wall; (may indicate occlusion)
   7. Signs of catheter-associated deep vein thrombosis (CA-DV)

B. Aseptic Non-Touch Technique (ANTT) must be followed for port access. Prior to port access, skin antisepsis should be performed, and the antiseptic must be fully dry prior to port access. The clinician must don sterile gloves to palpate or locate port site after skin antisepsis for port access with non-coring needle.

C. Ports are accessed with non-coring needles only to prevent damage of port septum. Port non-coring needle sets are a 90-degree non-coring needle with attached extension tubing.
    1. A safety engineered non-coring needle is recommended for clinician safety.
    2. The smallest gauge non-coring needle should be used to accommodate the ordered therapy, when accessing a port.
    3. Needle length should allow the external components (e.g., wings/disc) to sit level with the skin with the needle firmly seated in the port (touching the back of the port reservoir).
    4. When orienting the needle, the bevel of the non-coring needle should be turned in the opposite direction from the outflow channel (where the catheter is attached to the port body) to improve turbulent flow when flushing.

D. Power injectable ports must be accessed with a power injectable non-coring needle for use with power-injection equipment for radiologic imaging.
    1. Always use in accordance with manufacturer recommendations.
    2. May access with regular non-coring needle for general use.

E. Port access, needle replacement and flushing to be scheduled in accordance with provider orders and manufacturer recommendations. When continuous or daily use of a port is planned, the non-coring needle may remain in place for up to 7 days, requiring de-access and re-access every 7 days.

F. When the port is accessed with a noncoring needle, it must be covered with a sterile transparent semipermeable membrane (TSM) dressing over the access site.
    1. TSM dressing to be changed every 7 days with port needle change.
    2. If gauze is used over the non-coring needles and access site, the dressing is to be changed every 2 days. If gauze is used to support the wings of the non-coring needle under the TSM dressing, the dressing can be changed every 7 days if the if the access site is visible and able to be assessed. THE NEEDLE INSERTION SITE MUST ALWAYS BE VISIBLE.
    3. If the patient is showering, the non-coring needle extension tubing exits the dressing at the bottom to prevent water under the dressing.

G. If a port is multi-lumen, each lumen shall be treated as a separate line and must be accessed with its own non-coring needle. Troubleshooting a multi-lumen port may require both lumens to be accessed with non-coring needles.

H. If applicable, chlorhexidine impregnated (CHG) disc to be placed around needle. NOTE: must only touch CHG disc with sterile gloves.

I. Medication administration via implanted vascular access port may be administered by a nurse clinician completing the nursing orientation program. The port must be accessed with a non-coring needle to be used for continuous infusion, intermittent medications, or blood withdrawal.

J. Accessing the port with a noncoring needle for intravenous access is preferred over insertion of an additional vascular access device (VAD) such as a peripheral catheter unless port access is contraindicated.

K. Patient pain management preferences to be assessed prior to port access.

L. When appropriate, the caregiver may be taught to access the port.

M. Port removal will require a consult to interventional radiology or surgery for removal.

N. Port placement to be confirmed with each access by verifying blood return. See *Appendix A* for *Implanted Port Troubleshooting* Table.

O. Flushing and locking the port assesses port function and maintains patency. Frequency of port access and flushing is determined by provider order, as is locking solution. When a port is accessed, but not used for intravenous medications, the accessed port should be flushed daily.

P. Providers may order chest radiology imaging assessment for port position and integrity annually or upon abnormal assessment finding.

Q. Patients and caregivers will be educated to confirm the dressing is intact daily and manage activities of daily living to prevent needle dislodgement. Educate patients and caregivers to report non-occlusive dressings and signs and symptoms of infection or complications.

R. A port can be accessed immediately after placement is confirmed. Edema and tenderness may persist for about 72 hours after placement, making the device initially difficult to palpate and slightly uncomfortable for the patient, and a longer non-coring needle may be required.

III. Procedure

A. Port access Supplies may include, but are not limited to:

1. Central line dressing kit containing the following:
    a. Mask
    b. Sterile gloves
    c. 2% Chlorhexidine swab stick
    d. Skin protective swab
    e. 1 4x4 gauze sponge
    f. 1 split 2x2 gauze sponge
    g. Sterile transparent semipermeable membrane (TSM) dressing
    h. sterile drape
2. Injection cap
3. Tape
4. (2) Prefilled Normal saline syringes

5. (2) clean barrel sterile saline prefilled syringes or 1- sterile barrel and 1 clean barrel sterile saline prefilled syringes.
6. (1) Prefilled Heparin syringe
7. Sorbaview dressing, if applicable (may use transparent dressing in central line dressing change kit)
8. Appropriate size (gauge and length) non-coring needle (needle with extension tubing)
9. Chlorhexidine disc if appropriate

B. **Port Access with Non-coring Needle Insertion Procedure:**

1. Perform hand hygiene in accordance with Infection Control policy on *Hand Hygiene*
2. Explain procedure to patient.
3. Clean workspace and gather supplies.
4. Wash hands in accordance with Infection Control policy on *Hand Hygiene.*
5. Don gloves, if appropriate.
6. Locate the port. Assess the port through palpation and observation. If the condition of the port has changed from baseline, notify physician prior to accessing port.
7. Open and prepare supplies following Infection Control policy on *ANTT*.
8. Open the sterile dressing change kit. Remove gloves and mask from the kit.
9. Don mask.
10. Prepare sterile field using sterile drape in kit.
    a. Drop injection cap into sterile field.
    b. If a sterile syringe (or sterile saline vial and syringe with needle) is available, drop onto sterile field using sterile technique, then drop non-coring needle set (Huber) into sterile field. Prime non-coring needle and extension set after donning sterile gloves.
    c. If saline flush has a clean exterior, it cannot be dropped onto sterile field. Prime non-coring needle and extension set without touching the non-coring needle set tubing and place in sterile field, while placing syringe outside sterile field.
11. Open (2) prefilled saline syringes, loosen protective caps and place them outside of sterile field.
12. Don sterile gloves.
    a. If using sterile saline, prime the non-coring needle.
13. With a sterile gloved hand, open the Chlorhexidine packet and remove the swab from the package. Cleanse the area over the port with chlorhexidine using a back-and-forth friction scrub for 1 minute and allow to dry thoroughly for up to two minutes. Cleansing to include the area around the port to beyond where the edges of the dressing will stop.
    a. NOTE: DO NOT BLOT OR MOVE AIR TO DRY ANTESEPTIC.
14. With your non-dominant hand, palpate and stabilize the port, holding it in place.
15. With your dominant hand hold the non-coring needle and firmly insert straight in (90-degree angle) through the skin and into the septum of the port. The needle tip will touch the back of the port reservoir. Do not rock the needle once in place.
16. With the saline flush aspirate gently for blood return to ascertain placement. (Sometimes you are unable to withdraw blood, but able to infuse. If in doubt,

reposition or replace needle).
   a. NOTE: If using a clean (not sterile) saline flush, you should only touch the syringe with your non-dominant hand. The hand you touch the syringe with will NO LONGER BE STERILE.
   b. See *Implanted Port Troubleshooting* Table in *Appendix A.*
17. Flush the port with the remaining normal saline.
   a. NOTE: IF YOU MEET RESISTANCE, DO NOT PROCEED, NOTIFY PHYSICIAN.
18. Close clamp on noncoring needle extension tubing.
19. Paint the border of the dressing area with skin protectant swab stick and allow to dry.
20. Apply sterile TSM dressing over the port site.
   a. Do not touch the sticky side of the dressing, as it must remain sterile.
   b. Do not stretch the dressing over the port site.
   c. The bevel of non-coring needle to face opposite of port catheter outflow catheter.
   d. If the patient is showering, the non-coring needle extension tubing to exit the dressing at the bottom to prevent water under the dressing.
   e. Border dressing edges with tape as needed.
   f. Use integrated securement dressing if appropriate.
21. Prime injection cap with Heparin and leave syringe attached.
22. Remove saline syringe from non-coring needle set, attach injection cap then unclamp extension set.
23. Connect primed injection cap to non-coring needle extension tubing.
24. Flush with Heparin and close clamp on non-coring needle set before removing syringe, leaving 0.5-1mL of Heparin in the syringe.
25. Remove heparin syringe from injection cap.
26. Tape loose non-coring needle extension tubing to dressing or skin as needed.
27. Label dressing with date, time and clinician initials.
28. Dispose of equipment and waste as appropriate.
29. Doff gloves and mask.
30. Perform hand hygiene in accordance with Infection Control policy on *Hand Hygiene*

C. **Port De-Access Non-Coring Needle Removal Procedure:**

1. Perform hand hygiene in accordance with Infection Control policy on *Hand Hygiene*
2. Explain procedure to patient.
3. Clean workspace and gather supplies
4. Wash hands in accordance with Infection Control policy on *Hand Hygiene.*
5. Don non-sterile gloves.
6. Flush port with 5-10 mL of saline.
7. Lock port with prescribed locking solution (typically 3-5 mL of heparin 100u/mL).
   a. Leave 0.5-1 mL of solution in the syringe.
8. Clamp the extension tubing prior to removing syringe.
9. Gently remove the transparent dressing from the port site, noting drainage and while stabilizing the port. Discard dressing.
10. Stabilize the port by holding the safety with a non-dominate hand.
11. Grasp the needle with dominant hand and remove device, firmly pull the needle

straight out. There may be some resistance. As you pull up on the needle you will hold the safety in place, thus activating the safety mechanism.
12. If there is drainage from the site, apply pressure with a gauze pad for several seconds.
13. Dispose of equipment and waste as appropriate

D. **Documentation and Assessment to Include:**
1. Site of the implanted port
2. Condition of skin area over port and any noted drainage.
3. Site preparation, infection prevention and safety measures taken.
4. Type, gauge and length of non-coring needle used.
5. Appearance of plod return.
6. Ease or difficulty of flushing.
7. Any pump troubleshooting conducted and outcome.
8. Any unexpected outcomes of interventions/care.
9. The number of insertion attempts
10. The date and time of access, deaccess, and dressing changes.
11. Medications given, including flushing of heparin and saline volume and concentration.
12. Patient education provided.
13. Patient tolerance of procedure.
14. Reason for needle removal/change.

E. **Medication Administration via Implanted Port:**
1. Ports are central catheters, and all medications must be safe for CVAD administration.
2. Placement must be verified prior to a nurse starting an infusion. Patient administered therapies may not require their verifying blood return.
3. For medication administration refer to Nursing policies on *Medication Administration* and *Flushing and Locking Catheters.*

IV. TRAINING

This policy will be posted on the Company shared drive.

V. REFERENCES

Infusion Nurses Society. 9th Edition (2024). Infusion Therapy Standards of Practice. Journal of Infusion Nursing. Volume 47, Number 15.

Lippincott, Williams, & Wilkins. (2023) Lippincott Nursing Procedures, 9th Edition. Retrieved 1/15/2024. https://www.rxlibrary.com/Resource/Title/1975178580

Appendix A

Implanted Port Troubleshooting Table

Problem	Possible Cause	Troubleshooting
Problem Inability to flush the device or get blood return	Catheter lodged against the vessel wall	Reposition the patient. Raise arm on the same side as the port. Roll the patient to the opposite side of the port. Have patient cough, sit up, take deep breath, or perform Valsalva maneuver. Deaccess port and re-access with a new needle
	Clot/fibrin sheath on catheter	Assess patency by flushing port and changing position. Notify provider for thrombolytic orders.
	Incorrect needle placement	Deaccess port and re-access with a new needle. With re-access should feel needle hit the back of the port reservoir.
	Kinked Catheter, catheter migration or port rotation	Notify provider, may order chest x-ray and/or dye study. Rotation may require port manipulation for repositioning.
	Kinked or clamped extension tubing	Check tubing and clamp
Inability to palpate the device.	Deeply implanted port	Note the port chamber/access scars. Use deep palpation technique. Use a 1.5- or 2-inch non-coring needle to access the implanted port