

**HACKETTSTOWN REGIONAL MEDICAL CENTER
NURSING POLICY MANUAL**

IMPLANTABLE VASCULAR ACCESS DEVICE (PORTS)

Effective Date: 6/1/1998

Cross Referenced:

Reviewed Date: 10/2011

Revised Date: 2/14

Policy No: 8620.03B

Origin: Division of Nursing

Authority: Chief Nursing Officer

Page: 1 of 6

SCOPE

All RNs in Inpatient and Outpatient Areas

PURPOSE

To outline the nursing management of an implantable port, including steps for accessing, deaccessing, flushing and blood sampling.

DEFINITIONS

1. An implantable port is a subcutaneous vascular access device that functions similar to a triple lumen catheter, but it is surgically inserted under the skin without any portion exiting the body. It is used for patients who require vascular access for long term infusion therapy.
2. It is single or double port with a self sealing septum (partition) that is connected to a radiopaque catheter. The distal end of this catheter is positioned in the superior vena cava. Often referred to as a Port-A-Cath.
3. The implantable port system consists of three components: portal, needle and catheter

POLICY

1. Syringes used with ports must be at least 10 ml. Smaller syringes will cause more internal pressure in the device.
2. An implantable access vascular device allows for repeated entry into the vascular system through needle insertions for administration of IV fluids, medications, blood/blood products, chemotherapy, TPN and blood samples.
3. Must use noncoring Huber point needle (most commonly used). Regular needles will damage the portal septum.
4. Use the smallest size, noncoring safety needle that can accommodate the prescribed therapy.
5. Correct needle placement should be verified by positive aspiration of blood prior to administration of medications and/or any other therapy.
6. Needles should be changed every seven (7) days.
7. Palpation of the portal device determines the type of port and the length of needle to use for accessing. A longer needle must be used if the port is located in deeper subcutaneous tissue.
8. If the port is not in use, it will be flushed every four (4) weeks.
9. If the patient has a "dual" port, each septum must be accessed separately and flushed with normal saline. If only one port is required to remain accessed then start the therapy to that port. Heparin lock the other after flushing.
10. Infusion pressures must never exceed 25 psi or catheter, blood vessel or organ damage may occur.
*exception: power implantable ports that allow IV contrast to be given. Need to have a "power" needle as well.
11. Power Ports- When planning to use an implanted vascular access port for power injection (CT contrast); The power injection capability of the port needs to be identified at the time of the access and immediately prior to power injection.
 - Use 2 identification methods. 1)This would be the identification card, wristband or key chains provided by the manufacturer. 2)Review of operative procedure documentation and palpation of the port.
 - Though the Bard power ports have unique characteristics identifiable by palpation (triangular in shape, and three palpable bumps), this should not be the only identification method used.

**HACKETTSTOWN REGIONAL MEDICAL CENTER
NURSING POLICY MANUAL**

IMPLANTABLE VASCULAR ACCESS DEVICE (PORTS)

Effective Date: 6/1/1998

Cross Referenced:

Reviewed Date: 10/2011

Revised Date: 2/14

Policy No: 8620.03B

Origin: Division of Nursing

Authority: Chief Nursing Officer

Page: 2 of 6

- If you do not have access to information

If unable to get two of the identifications methods, you must treat the port as a non-power port until proven otherwise.

If the patient needs a contrast study, then a regular IV must be started for this. If IV access is not possible discuss an alternate diagnostic test for the patient with the physician. The physician can discuss the best test for the patient with a radiologist.

- Access Tubing- HRMC carries two sets of tubing for port access. Non-power access port tubing and Power Loc Safety Infusion set for power injection port access. The power injection tubing has a bluish hue color.

PROCEDURE

A. ACCESSING IMPLANTABLE PORT SYSTEM:

1. EQUIPMENT LIST:

- a. Central Line dressing change kit (mask, sterile gloves, dressing and chloraprep applicator)
- b. Appropriate Accessing needle
- c. (1) 10 mL syringe filled with NS
- d. Blue connector (clave adaptor)
- e. Needle/Gauge sizes
 - 19G : 1" and 3/4" Used for large volumes, blood
 - 20G: 1" and 3/4" Used for blood draw/Large volume infusion/blood products
 - 22G: 1" and 3/4" and 1" Used for IV infusions/Maintainence flushes

Needle length is determined by port visibility, ports accessibility to palpation, fatty tissue surrounding area, deepness of insertion. Use a longer needle for ports that are deeper or more difficult to visualize.

2. PROCEDURES STEPS:

- a. Explain procedure to patient after identifying patient using two identifiers.
- b. Identify site of port.
- c. Obtain Equipment.
- d. Wash hands thoroughly with soap for two (2) minutes
- e. Open Needle Access kit slightly to expose blue cap.
- f. Twist off blue cap and replace with posiflow valve clave connector.
- g. Keeping device sterile in packet flush device with NS and close clamps. (should only need about 0.5ml of NS to complete this) This prevents contamination and air embolism.
- h. Open CVP dressing kit, apply mask. Prevents introduction of microorganisms.
- i. Open needle kit completely to expose accessing device.
- j. Apply gloves.
- k. Have patient turn head away from site. Prevents patient contamination of the site i.e coughing.
- l. Scrub the area with chloraprep for 30 seconds, with a back and forth friction motion. Allow to air dry. This promotes asepsis by providing a prolonged antiseptic effect.
- m. Locate the base of the port with the non dominant hand. Triangulate the port between the thumb and the first two fingers of the non dominate hand Approximate the center of the port and aim for the center of these three fingers.
- n. Instruct the patient to perform the Valsalva maneuver.
- o. Insert the needle perpendicular to the port septum. Advance the needle through the skin septum until reaching the bottom of the reservoir. Tell the patient to breathe normally.

**HACKETTSTOWN REGIONAL MEDICAL CENTER
NURSING POLICY MANUAL**

IMPLANTABLE VASCULAR ACCESS DEVICE (PORTS)

Effective Date: 6/1/1998

Cross Referenced:

Reviewed Date: 10/2011

Revised Date: 2/14

Policy No: 8620.03B

Origin: Division of Nursing

Authority: Chief Nursing Officer

Page: 3 of 6

-
- p. Open the clamps and flush 0.5mL in, aspirate for a blood return. Do not continue to inject until placement is confirmed.
 - q. Once you have a blood return continuing flushing with remainder of solution. Close the clamps as the last 0.5mL of flush is injected.
 - r. Apply dressing.
 - s. Attach IV therapy as ordered.

B. FLUSHING (HEPARINIZATION) OF IMPLANTABLE PORT SYSTEM

1. EQUIPMENT LIST

- a. Sterile IMPLANTABLE PORT needle (22 gauge)
- b. Prefilled Heparinized Saline – five (5)cc (**100** Units/mL)
- c. 10cc syringe with Normal Saline
- d. Clave connector

2. PROCEDURE STEPS

- a. Explain procedure to patient.
- b. Follow steps 2a-2i of section A.
- c. Inject 5mL heparinized normal saline to flush port using a 10mL syringe. Continue flushing with remainder. Close the clamp as the last 0.5mL of injectate is instilled using positive pressure. Once the septum is punctured, do not tilt or rock the needle as this may cause fluid leakage or damage to the septum.
- d. Record procedure on the medication record and in the nurse's notes.
- e. When flushing after blood drawn, flush with 20mL of normal saline.

C. REMOVAL OF IMPLANTABLE PORT ACCESS NEEDLE

1. PROCEDURE STEPS

- a. **Complete the Flushing as stated in section B.**
- b. Hold down on base of needle, pull up until click is heard then lift needle **off of port.**
- c. Cleanse site and apply a band aid dressing.
- d. Dispose of sharps appropriately.
- e. Document removal (de-accessing) nurses notes

D. BOLUS INJECTION FOR IMPLANTABLE PORT SYSTEM

1. EQUIPMENT LIST:

- a. Implantable port Needle (Port-A-Cath needle with extension tubing)
- b. Three (3)-10mL syringes Normal Saline
- c. One (1) heparinized prefilled syringe (100 units/mL)
- d. IV Medication
- e. Clave connection

2. PROCEDURE STEPS:

- a. Explain procedure to patient after identifying patient with 2 identifiers.
- b. Follow steps 2c-2r of section A.
- c. Administer medication/injection. If multiple injections are required, flush with 10 mL Normal Saline between.

**HACKETTSTOWN REGIONAL MEDICAL CENTER
NURSING POLICY MANUAL**

IMPLANTABLE VASCULAR ACCESS DEVICE (PORTS)

=====

Effective Date: 6/1/1998
Cross Referenced:
Reviewed Date: 10/2011
Revised Date: 2/14

Policy No: 8620.03B
Origin: Division of Nursing
Authority: Chief Nursing Officer
Page: 4 of 6

- d. Inject 10mL of normal saline to flush port after final medication administration/injection.
- e. Inject 5mL heparinized normal saline to flush port using a 10mL syringe. (100 Units/mL, will avoid reflux and create a heparin lock).
- f. Continue flushing with remainder. Close the clamp as the last 0.5mL of injectate is instilled using positive pressure and remove syringe maintaining positive pressure on syringe. Once the septum is punctured, do not tilt or rock the needle as this may cause fluid leakage or damage to the septum. Removal Accessing needle as stated in section C. Dispose of appropriately.
- g. Apply band aid over the site.
- h. Record procedure in the medical record and document flush on medication sheet. Include flush volume as part of patient intake record.

E. BLOOD DRAW

1. EQUIPMENT LIST

- a. Port needle (Port-A-Cath Needle) 20G
- b. One (1)10mL syringe with Normal Saline
- c. Vacutainer.
- d. Proper lab tubes
- e. Prefilled heparinized Saline syringe (100 units/mL)
- f. Clave connector
- g. Central Dressing Kit

2. PROCEDURE STEPS:

- a. Explain procedure to patient after identifying patient using 2 identifiers.
- b. **IF AN IV IS RUNNING INTO PORT:** It must be turned off for one minute prior to blood draw.

IF IV therapy infusing is TPN OR CHEMOTHERAPY it can't be turned off and an alternative method for blood draw will be necessary.

- c. Follow steps 3-17 for accessing first.
- d. If already accessed and an IV is infusing, turn off for one minute, then flush port as per section B.
- e. Attach empty syringe for blood draw.
- f. Withdraw 10mL blood and discard.
- g. Withdraw amount of blood needed for lab test with vacutainer.
- h. Clamp tube and remove syringe or vacutainer.
- i. Flush with **20mL normal saline** and reattach to IV **OR Flush with 5cc** prefilled heparinized saline in 10ml and close clamp as the last 0.5mL injectate is instilled.
- j. Follow steps for de-accessing if last step is to heparinize the port.
- k. Record procedure in the medical record.

F. Infection Control

1. There is a reduced risk of infection since the ports are not externally exposed
2. If the port remains accessed, cover with a transparent sterile dressing.
3. Once the needle is removed, cover site with a dry sterile dressing.

**HACKETTSTOWN REGIONAL MEDICAL CENTER
NURSING POLICY MANUAL**

IMPLANTABLE VASCULAR ACCESS DEVICE (PORTS)

Effective Date: 6/1/1998
Cross Referenced:
Reviewed Date: 10/2011
Revised Date: 2/14

Policy No: 8620.03B
Origin: Division of Nursing
Authority: Chief Nursing Officer
Page: 5 of 6

G. Preventive Maintenance and Troubleshooting

<i>Problem</i>	<i>Possible Cause</i>	<i>Nursing Intervention</i>
Erythema	Infected incision or port pocket, poor healing postoperatively.	<ul style="list-style-type: none"> • Assess daily for redness/drainage. Notify physician. Antibiotics per physician order.
Inability to flush or withdraw from system	Kinked IV tubing Pump Malfunction Catheter lodged against the vein wall Incorrect needle placement Fibrin sheath formation Occlusion (clots) Catheter pinch off	<ul style="list-style-type: none"> • Check tubing • Check equipment • Reposition patient by moving upper torso and arms. • Verify correct positioning by blood aspiration. • Flush with 5ml sterile normal saline and repeat if necessary. Increase frequency of flushing as prevention. Use a fibrinolytic agent per physician order. • Use a fibrinolytic agent per physician order. • Notify physician to evaluate patient for catheter or port replacement.
Burning sensation in subcutaneous tissue	Dislodgement of needle into subcutaneous tissue	<ul style="list-style-type: none"> • Do not remove needle Stop infusion and immediately notify the physician.
Swollen neck and/or arm	Large clot formation in superior vena cava.	<ul style="list-style-type: none"> • Notify physician immediately.

H. Complications

The following are complication that may be associated with implanted subcutaneous vascular access devices

- Air embolism
- Bleeding
- Cardiac Dysrhythmias
- Catheter damage, embolism, or migration
- Hematoma
- Twiddler's syndrome- patients develop a habit of "twiddling" their port. It can cause the internal catheter that is attached to the port to dislodge.
- Inflammation
- Pneumothorax
- Port erosion, malposition, migration or occlusion
- Sepsis
- Thromboembolism

J. Documentation

1. All flushes documented on the patient's eMAR
2. Site accessing, de-accessing and blood draws noted in medical record. Note the date and time of insertion. Note type, length and the size of vascular access device used to access port.
3. Patient's response to insertions.
4. Site condition.
5. Label dressing on site to indicate the date the site was accessed and date dressing was applied.
6. Enter a nursing order for Huber needle change weekly.

**HACKETTSTOWN REGIONAL MEDICAL CENTER
NURSING POLICY MANUAL**

IMPLANTABLE VASCULAR ACCESS DEVICE (PORTS)

=====

Effective Date: 6/1/1998

Cross Referenced:

Reviewed Date: 10/2011

Revised Date: 2/14

Policy No: 8620.03B

Origin: Division of Nursing

Authority: Chief Nursing Officer

Page: 6 of 6

REFERENCES

Weinstein, Sharon. Plumer's Principles and Practice of Intravenous Therapy, 8th edition (Lippincott Williams and Wilkins) 2007. p300, 304-306

Infusion Nurses Society. Infusion of Nursing, Standards of Practice. (Lippincott Williams and Wilkins) 2011 S50.

Alexander, Mary . Corrigan, Ann. Gorski, Lisa. Phillips, Lynn. Core Curriculum for Infusion Nursing 4th Edition (Lippincott Williams and Wilkins) 2014. p25

Clinician Guide, Smiths Medical/Deltec Implantable Venous Access System. 2011. Accessed 1/15/2014.