



# Rancho Los Amigos National Rehabilitation Center

## DEPARTMENT OF NURSING

### CLINICAL

## POLICY AND PROCEDURE

**SUBJECT:** INTRAVENOUS THERAPY: GUIDELINES  
FOR CARE AND MAINTENANCE OF  
INTRAVASCULAR CATHETERS AND SITES

**Policy No.:** C122.16  
**Effective Date:** 8/96  
**Page:** 1 of 13

**Purpose:** To delineate the guidelines for the care and maintenance of intravascular catheter sites, including frequency of administrative set changes, dressing changes, and flushing to promote patient safety.

**Physician's Order Required:** Yes

**Performed by:** RNs, Affiliating Nursing Students under the direct supervision of an RN (only those functions specified below), LVNs with IV Certification (only those functions specified below).

#### **Equipment Required Central Venous Catheter (CVC) Dressing Change**

- CVC Dressing Kit
- Bag for disposal
- Antimicrobial Dressing
- Needleless connector valve
- Alcohol pads
- Appropriate CVC flushes
- Securement Device
- Alcohol Care Protectors

#### **Policy Statements:**

1. IV therapy will be performed by nurses who have acquired knowledge and skill in IV therapy and have demonstrated competency.
2. The nurse should know the indications for intravascular catheter use and proper procedures for the insertion and maintenance of intravascular catheters.
3. Scissors are not to be used to remove any access device dressings, tape, or stabilization devices due to the potential of severing the catheter or administration set and patient injury.
4. Evaluate all catheter insertion sites every shift and prn by palpation, every two (2) hours if infusing fluids/meds for adults and hourly for pediatrics; evaluate all IV insertion sites through the dressing to discern tenderness and by inspection if a transparent dressing is in use.  
**Key Point:** Be sure to use proper hand hygiene before and after palpation.
5. All IV sites should be flushed every shift and prn as described in Attachment A.
6. The physician is responsible for insertion, evaluation, replacement, or repair of a central line and/or midline.
7. Only PICC certified nurses may insert PICC lines. Nurses do not insert or repair central lines. Any nurse who has been trained can remove PICC or non-tunneled central lines as ordered by provider.
8. Only PICC certified nurses may insert midline catheters. Any nurse who has been trained can remove midline catheters as ordered by provider.
9. When possible, use a catheter stabilization device on all central lines.

10. Only RNs trained in administering alteplase are allowed to administer as ordered by the physician.

**STANDARDS OF PRACTICE:** Procedures for managing all IV access devices:

A. **Short Peripheral Catheter IV Sites** (RNs, Affiliating Students, and IV Certified LVNs):

The catheter is inserted in a peripheral vein, usually in the hand or forearm.

1. **Insertion**

- a. Use of paralyzed or immobile extremities should only be used if no other site is available.
- b. IV catheter placement in lower extremities require an order by Physician or Licensed Independent Practitioner (LIP).
- c. Should venipuncture be required on the extremity with a short peripheral catheter in place, it should be performed in a vein distal to the device or infusion.
- d. Prior to venipuncture, the IV site will be cleansed using chlorhexidine gluconate using a vigorous back and forth motion for at least 30 seconds and allow to air dry for 30 seconds.  
**Key Point:** Check patient allergies prior to using chlorhexidine, if allergic, use 70% alcohol only.
- e. After cleansing the planned IV site, the nurse should not palpate the site unless sterile gloves are being used.
- f. Upon completion, the site will be covered with a transparent dressing and labeled with gauge, date, time, and nurse's initials.

2. **Assessment**

- a. The site will be monitored every shift and PRN without removal of the IV dressing by:
  1. Palpating the IV insertion site for pain and tenderness (in patients with sensation).
  2. Inspecting the skin immediately surrounding the insertion site for evidence of infiltration, irritation, infection, inflammation, and check for disconnected tubing.
  3. Flushing the IV line to check for patency  
**Key Point:** Remove peripheral catheter if patient develops signs of phlebitis (warmth, tenderness, erythema or palpable venous cord, swelling, induration, purulence), infection, or a malfunctioning catheter.

3. **Care/Maintenance Guidelines:**

- a. When flushing site, maintain slight pressure on the barrel of the flush syringe while clamping the extension set.  
**Key Point:** This technique will prevent blood from backing up into catheter when syringe is removed from injection port.
- b. For information regarding frequency of dressing, administration sets, flushing, and site changes, see Attachment A.

B. **Midline Catheters:** Midline catheters are peripheral venous access devices inserted into the basilic, cephalic or median cubital veins for the purpose of providing short term intravenous access. Midline catheters are used for therapies anticipated to last 1-4 weeks. The tip of the midline ends below the level of the axillary line.

**Key point:** The catheter must be clearly labeled as a midline.

1. Any infusion that is acceptable for use in the peripheral IV may be infused through a midline.
2. Midlines can be used for blood draws.  
Key point: Alteplase is not to be used in midlines.

1. **Assessment:**

- a. Assess the following upon admission or transfers, with each dressing change, and a minimum of every shift:
  1. IV site

- For erythema, edema, irritation, heat along the catheterized vein or drainage
  - Signs of dislodgement
  - Dressing is dry, intact, and occlusive
2. Change in vital signs from baseline
  3. Deterioration in LOC
  4. Anxiety
  5. Abnormal lab results
  6. Post-Catheter Insertion:
    - X-ray is not needed prior to catheter use.
    - Monitor signs/symptoms of complications e.g. paresthesia in the arm/hand or pain in the chest.
    - If swelling or localized hyperthermia are present, elevate extremity and notify physician for evaluation and possible catheter removal.
- Key Point:** Any abnormal findings might indicate infection or other complications and should be reported to the physician immediately.

## 2. **Care and Maintenance Guidelines:**

- a. See Attachment A for complete catheter flushing, dressing, tubing change, and needleless connector valve change information.
- C. **Central Venous Catheters (CVCs):** CVCs are either long or short term. Both are used primarily for infusion therapy lasting longer than six (6) days. Long term catheters may remain in place for years. Implantable ports (e.g., PORT-A-CATH), tunneled catheters (e.g., Hickman, Broviac, Groshong) and peripherally inserted catheters (PICC) are examples of long-term catheters. Some complications of CVCs include: air embolism, pneumothorax, sepsis, malposition, migration of catheter, cardiac arrhythmias, catheter occlusion, fibrin sheath formation around catheter tip, and drug extravasation. A complete and thorough assessment is required.

### 1. **Assessment:**

- a. Assess the following after insertion, upon admission, transfer, with each dressing change, and a minimum of every shift:
  1. IV Site:
    - Redness, tenderness, swelling, drainage.
    - Signs of dislodgement (e.g. cuff protrusion, increased length of line).
  2. Dressing dry, intact, and occlusive.
  3. All ports are capped with needleless valves and alcohol caps and are clamped, if applicable, when not in use.
  4. Inspect the plastic and rubber catheter lumens for any cracking, tears or leaking of fluids.  
**Key Point:** Be sure clamps are clamped over the extra rubber sheath provided on rubber catheters to prevent puncture of catheter.
  5. Signs/symptoms of complications, e.g., systemic infection, pneumothorax, or air embolism
  6. Change in vital signs from baseline
  7. Change in LOC
  8. Anxiety
  9. SOB
  10. Chest pain
  11. Abnormal lab results (e.g. elevated WBC)  
**Key Point:** Inform Physician or Agent of Physician for any abnormal findings.

2. **Post-Catheter Insertion:**

- a. Ensure chest x-ray is taken and catheter tip position is confirmed by Physician. A physician order is required to access the catheter.
- b. If swelling is present, elevate extremity and notify Physician for evaluation/possible catheter removal.

3. **Care/Maintenance Guidelines:**

- a. See Attachment A for complete catheter flushing, dressing, tubing change, and needleless connector valve change information.

4. **Checking Patency of Catheter:**

- a. Patency is assessed with a minimum 10 mL syringe filled with 0.9% sodium chloride (NS) using a push-pause method (flushing with 1-2 mLs, pausing, then flushing again, until the syringe is left with about 0.25 mL), then discard syringe.
- b. Prior to administration of medications and solutions, the nurse should confirm a positive blood return from CVC by slowly aspirating the syringe until brisk blood return is obtained (about 3 mL in 3 seconds) and then instilling NS flush according to Attachment A.

**Key Point:** If resistance is met and/or no blood return noted, the nurse is to inform the physician for further instructions. **The catheter should not be forcibly flushed.**

- c. Thrombotic occlusion of a CVC can impede the ability to infuse fluid or withdrawal of blood through the catheter.
  - Partial occlusion is defined as the ability to infuse but not withdraw fluids.
  - Complete occlusion is the inability to withdraw and infuse fluids.
- d. If indicators of catheter occlusion are present (e.g. inability to infuse fluids; lack of free-flowing blood return; increased resistance when flushing, or sluggish flow) the nurse is to inform physician and follow Policy C122.17 – *Guidelines for use of Intravenous activase when Dec clotting Central Venous Catheters.*

5. **Dressing Changes – Procedural Steps**

- a. Perform hand hygiene.
- b. Don gloves and clamp catheters. Using aseptic technique, remove needleless connector valve and vigorously scrub exposed ports with alcohol pad for 15 seconds. Allow to air dry. Apply new needleless connector valves, **(RNs ONLY)**.

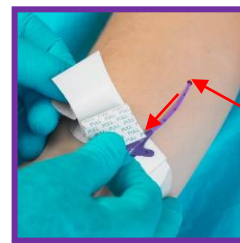
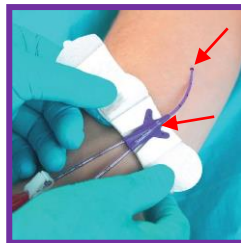
**Key Point:** Be sure to prime new valves prior to connecting to patient.

<b>When the patient has:</b>	<b>Is an Alcohol Cap/Tip Protector Required:</b>
Central Venous Catheter Line <b>(ONLY)</b> (Including PICCs, Port-a-cath, Broviac, and	<b>YES</b>
<b>(BOTH)</b> Central Venous Catheter Line and Peripheral Line	<b>YES</b>
Peripheral Line <b>(ONLY)</b>	<b>NO</b>

- 1. Place alcohol cap protectors on all ports, during initial set-up of central line, and on peripheral line ports, for patient who will have **both** central and peripheral lines. The cap remains in place until the port is accessed, (maximum time = 7 days).
- 2. Alcohol cap/tip protectors are for **one-time use only**; once removed, cap/tip is to be discarded.

3. Alcohol tip protectors are to be used to cap all IV tubing ends when disconnecting from the central/peripheral access ports.
4. Do not use cap/tip if the seal is broken, torn, punctured, or if the sponge inside appears to be dry.
5. Once cap/tip protector is pulled from the strip or opened, push and twist the cap onto the port/male luer connection. The cap/tip to remain on the port/luer connection for the minimum amount of time as indicated by the manufacturer.
6. If the cap/tip protector has been in place for less than the minimum amount of time indicated by the manufacturer, “scrub the hub” with alcohol wipes and use friction for a minimum of 15 seconds and allow drying prior to access. **When in doubt, “scrub the hub.”**  
**Key Point:** ICUs only – All ports for all patients need to be capped.

- c. Flush catheter lines according to Attachment A, **(RNs ONLY)**.
- d. Perform hand hygiene.
- e. Open first flap of kit, remove and apply mask, remove first pair of sterile gloves and set aside.
- f. Open remaining flaps of sterile package.
- g. Add a StatLock Securement Device to sterile field, if applicable.
- h. Don first pair of sterile gloves and remove transparent antimicrobial dressing and StatLock device.  
**Key Point:** Apply pressure to tubing or distal end of catheter while removing transparent dressing to ensure catheter remains in place.
- i. Discard transparent antimicrobial dressing, StatLock and gloves in bag.
- j. Encourage patient to turn head away from site, and not to cough or touch site during dressing change.
- k. Assess the insertion site and adjacent area for redness, swelling, discharge, odor, catheter displacement, and/or leaking.
- l. Don second pair of sterile gloves.
- m. Ensure a sterile field.
- n. Cleanse with chlorhexidine swab. Begin at insertion site. Use a repeated firm, back and forth stroke for 30 seconds and let air dry for 30 seconds.  
**Key Point:** Do not blot or wipe dry. Do not use on patients who are sensitive to CHG
- p. Measure catheter from insertion site to the hub.



- q. Apply barrier wipe to the skin area where the transparent dressing edges will make contact. Let dry until skin is tacky to the touch.
- r. Ensure catheter is secured with securement device.
- s. Place antimicrobial transparent dressing over catheter site ensuring all edges are sealed.
- t. Document date, time, and initials on label area of dressing.

**D. Safety** – Follow these safety measures with ALL CENTRAL CATHETERS:

1. Apply restraints/immobilizers when behavior or developmental age causes risk for CVC traumatic removal.
2. Do not obtain blood pressures or withdraw blood from extremity with catheter
3. If catheter becomes dislodged, measure and save catheter for Physician.

4. Change all rubberized-tipped port valves from outside facilities to needleless connector valves on admission.
5. Do not put antimicrobial ointments routinely on insertion sites due to their potential to promote fungal infections and antimicrobial resistance.  
**Exception:** Physician order.
6. Do not use Vacutainers on long-term catheters for blood withdraw as this may change the position of the catheter or damage the wall of the vein.
7. Keep CVC site dry.  
**Key Point:** Change dressing if it gets wet.

**E. Reportable Conditions:**

1. Notify Physician immediately for:
  - a. Signs/symptoms of infection, pneumothorax, or air embolism
  - b. Cuff exposure or loose/non-intact sutures
  - c. Swelling of extremity
  - d. Catheter occlusion or dislodgment
  - e. Leakage, redness, swelling, or tenderness at insertion site
  - f. Continuous bleeding at site
  - g. Patient has concerns regarding unusual signs/symptoms

**F. Patient Education:**

1. Instruct the patient or caregiver about:
  - a. The purpose for IV access
  - b. Proper IV catheter care and maintenance
  - c. Signs/symptoms of infection, occlusion, and dislodgement
  - d. Instruct the patient/caregiver to notify RN immediately for any problems with IV line (e.g. pain, bleeding, loose or soiled dressings, catheter displacement, leaking).
  - e. Protecting the IV line from trauma or water.
  - f. If the patient is to be discharged home with central line, initiate teaching of patient/family/caregiver for home management.
  - g. Document on the electronic health record.

**G. Documentation:**

1. IV insertions, assessments, and dressing changes are documented in the electronic health record.
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**Reviewed by:** Laurie Linares, BSN, RN, PCCN

**References:**

Infusion Nurses Society (2021). Infusion Nursing Standards of Practice, 8<sup>th</sup> Edition. *Journal of Infusion Nursing*. Norwood, MA. Volume 44, Num. 1S, [www.journalofinfusionnursing.com](http://www.journalofinfusionnursing.com)

Panepinto, R. et al. (2021). A Review of Best Practices Related to Intravenous Line Management for Nurses. *Nursing Clinics of North America*, 56(3) Elsevier BV p. 389–399. <https://doi.org/10.1016/j.cnur.2021.05.001>.

Peripherally Inserted Central Catheter (PICC) Dressing Change. *Lippincott Solutions*, Wolters Kluwer, 22 Aug. 2022, <https://lippincottsolutionssuite.lww.com/>. Accessed 20 Apr. 2023.

Zingg, Walter, et al. (2021) Best Practice in the Use of Peripheral Venous Catheters: A Scoping Review and Expert Consensus." *Infection Prevention in Practice*, 5 (2). p. 100271.

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**Reviewed/Revised:**

08/96- New

01/99- Revised

08/02- Revised

06/06- Revised

02/20- Revised

01/09- Revised

10/11- Revised

(combined with Policy 122.11)

02/17- Revised

06/23- Revised

03/12- Revised

07/13- Revised

11/15- Revised

07/17- Revised

## IV CATHETER CARE AND MAINTENANCE GUIDELINES

CATHETER	CATHETER FLUSHING	DRESSING	NEEDLELESS CONNECTOR VALVE	TUBING CHANGE	BLOOD WITHDRAWAL
<p><b>Peripheral Cannula</b></p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• Angiocath</li> <li>• Insyte Autoguard</li> </ul>	<p>Prior to accessing port, clean vigorously with alcohol wipe rotating clockwise and counterclockwise for 15 seconds.</p> <p>When in use, flush as follows:</p> <p>S – Saline</p> <p>Adult: 5 mLs of NS</p> <p>Pediatric: Amount needed to clear the line (usually 2-3 mLs of NS)</p> <p>A –Administer</p> <p>S – Saline</p> <p>Adult: 5 mLs of NS</p> <p>Pediatric: Amount needed to clear the line (usually 2-3 mLs of NS)</p> <p>When not in use, flush as follows:</p> <ul style="list-style-type: none"> <li>• Adult: flush q shift with 10 mLs NS</li> <li>• Pediatric: flush q shift with 5 mLs NS</li> </ul>	<p>Dressing Change:</p> <p><i>Transparent dressings</i> are preferred:</p> <ul style="list-style-type: none"> <li>• Change when the dressing is no longer clean, dry, or occlusive.</li> </ul> <p>Site Change:</p> <p><u>Adults:</u> Replace Peripheral IV (PIV) catheters only when clinically indicated and not to exceed 7 days.</p> <p><u>Pediatrics:</u> 8 years or younger, replace peripheral IV catheters only when clinically indicated and not to exceed 7 days.</p>	<p>Change as follows:</p> <ul style="list-style-type: none"> <li>• With every catheter change</li> <li>• When valve becomes ineffective (e.g. leaking, soiled, cracked, clogged)</li> <li>• Every time it is disconnected from catheter.</li> <li>• Use Alcohol Cap protectors on peripheral cannula only if patient also has a central line</li> </ul>	<p>Change tubing:</p> <p>In adults and pediatrics:</p> <p><u>When IV fluids are used continuously:</u></p> <ul style="list-style-type: none"> <li>• Every 96 hours</li> <li>• Every 24 hours when infusing TPN/Lipids</li> </ul> <p><u>When IV fluids used intermittently:</u></p> <ul style="list-style-type: none"> <li>• Every 24 hours including IVPB and extension tubing.</li> </ul>	<p>Blood should not be routinely drawn from a peripheral catheter.</p> <p>Blood may be drawn upon new venipuncture PRIOR to attachment of IV tubing or saline lock.</p>



## IV CATHETER CARE AND MAINTENANCE GUIDELINES

CATHETER	CATHETER FLUSHING	DRESSING	NEEDLELESS CONNECTOR VALVE	TUBING CHANGE	BLOOD WITHDRAWAL
<p><b><u>CVCs/PICCs – tunneled or non-tunneled:</u></b></p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• Broviac</li> <li>• Hickman</li> <li>• Arrow</li> <li>• Groshong</li> <li>• Single/ double lumen non-tunneled</li> <li>• Triple lumen non-tunneled</li> </ul>	<p>Prior to accessing port, clean vigorously with alcohol wipe rotating clockwise and counterclockwise for 15 seconds. If alcohol cap/tip is intact, remove and access the port.</p> <p>When in use, use as follows:</p> <p>S – Saline Adult: 10 mLs of NS Pediatric: Amount needed to clear the line (usually 3-5 mLs of NS)</p> <p>A – Administer S – Saline Adult: 10 mLs of NS Pediatric: Amount needed to clear the line (usually 3-5 mLs of NS)</p> <p>When not in use, flush as follows:</p> <p>Adult: flush q shift with 10 mLs NS Pediatric: flush q shift with 5 mLs NS</p> <p><u>Flush after administration of viscous fluids such as TPN/Blood:</u></p> <p>Adult: 20 mLs NS Pediatrics: Amount needed to clear the line (usually 3-5 mLs)</p>	<p>Dressing Change:</p> <p><i>Transparent dressings</i> are preferred:</p> <ul style="list-style-type: none"> <li>• Upon admission</li> <li>• Every 7 days or when no longer clean, dry, and occlusive.</li> </ul> <p>Site Change:</p> <p>Only trained nurses may remove PICC lines and non-tunneled catheters as ordered by provider.</p>	<p>Change as follows:</p> <ul style="list-style-type: none"> <li>• Every 7 days</li> <li>• With catheter change</li> <li>• When valve becomes ineffective (e.g. leaking, soiled, cracked, clogged)</li> <li>• Every time it is disconnected from catheter</li> <li>• Use Alcohol Cap protector on all ports</li> </ul>	<p>Change tubing:</p> <p>In adults and pediatrics:</p> <p><i>When IV fluids used continuously:</i></p> <ul style="list-style-type: none"> <li>• Every 96 hours.</li> <li>• Every 24 hours when infusing TPN/Lipids</li> </ul> <p><i>When IV fluids used intermittently:</i></p> <ul style="list-style-type: none"> <li>• Every 24 hours including IVPB and extension tubing.</li> </ul>	<p>Use only 10 mLs or larger syringes, do not use vacutainers or blood transfer devices.</p> <p>Place fluids infusing into other ports on hold prior to withdrawing blood.</p> <p><b>Exception: vasoactive drugs</b></p> <p>Adults:</p> <ul style="list-style-type: none"> <li>• Withdraw 5 mLs of blood and discard syringe</li> <li>• Withdraw required amount of blood needed using the syringe method</li> <li>• Flush with 20 mLs NS</li> </ul> <p>Pediatrics:</p> <ul style="list-style-type: none"> <li>• Withdraw 2-3 mLs blood and discard syringe</li> <li>• Withdraw amount of blood needed using the syringe method</li> <li>• Flush with 5 mLs NS or amount needed to clear the line</li> </ul>

## IV CATHETER CARE AND MAINTENANCE GUIDELINES

CATHETER	CATHETER FLUSHING	DRESSING	NEEDLELESS CONNECTOR VALVE	TUBING CHANGE	BLOOD WITHDRAWAL
<p><b>Implanted Ports: (Vascular Access Ports)</b></p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• Port-a-Cath</li> <li>• Infuse-a-Port</li> </ul>	<p><u>Use a non-coring needle to access implanted port.</u></p> <p>Prior to accessing implanted port, cleanse skin by rubbing with Chlorhexidine approximately 2 inches around insertion site for 30 seconds and allow to air dry (do not blot, blow, or fan dry) for 30 seconds.</p> <p>It may be left in place for continuous or intermittent use as a saline lock.</p> <p>S – Saline Adult: 5 mLs of NS Pediatric: Amount needed to clear the line (usually 3-5 mLs of NS)</p> <p>A – Administer S – Saline Adult: 5 mLs of NS</p> <p>Pediatric: Amount needed to clear the line (usually 3-5 mLs of NS)</p> <p><u>*H – Heparin: Terminal Flush/Lock</u></p> <p>Adults: 5 mLs of 100 units/mLs Pediatrics: &lt;12 kg 3 mLs of 10 units/mLs; &gt;12kg 3 mLs of 100 units/mLs</p> <p>Flush once a month when not in use. <b>*Physician order required for heparin flush</b></p>	<p>Needle and dressing change every 7 days when accessed and remains clean, dry, and occlusive.</p> <p>Secure needle to port with dressing (transparent preferred) if using intermittently or continuously.</p>	<p>With every catheter change</p> <ul style="list-style-type: none"> <li>• Every 7 days</li> <li>• With catheter change</li> <li>• When valve becomes ineffective (e.g. leaking, soiled, cracked, clogged)</li> <li>• Every time it is disconnected from catheter</li> </ul> <p>After blood withdrawal</p> <ul style="list-style-type: none"> <li>• Use Alcohol Cap protector on needleless connector when a non-coring needle in place</li> </ul>	<p>In adults and pediatrics:</p> <p><i>When IV fluids used continuously:</i></p> <ul style="list-style-type: none"> <li>• Every 96 hours</li> <li>• Every 24 hours when infusing TPN/Lipids</li> </ul> <p><i>When IV fluids used intermittently:</i></p> <p>Every 24 hours including IVPB and extension tubing.</p>	<p>Adult:</p> <ul style="list-style-type: none"> <li>• Withdraw 5 mLs of blood and discard syringe.</li> <li>• Withdraw required amount of blood needed</li> <li>• Flush with 5mLs of NS</li> <li>• Flush with Heparin for terminal flush/lock, 5mLs of 100 units/mL</li> </ul> <p>Pediatrics: withdraw 4 mLs of blood and discard syringe.</p> <p>Withdraw required amount of blood needed</p> <p>Flush with saline, amount needed to clear the line (usually 3-5 mLs of NS)</p> <p>Flush with Heparin for terminal flush/lock, &lt;12 kg, 3mLs of 10 units/mL; &gt;12 kg, 3 mLs of 100 units/mL</p>

## IV CATHETER CARE AND MAINTENANCE GUIDELINES

CATHETER	CATHETER FLUSHING	DRESSING	NEEDLELESS CONNECTOR VALVE	TUBING CHANGE	BLOOD WITHDRAWAL
<b>Midline Catheters</b>	<p>Prior to accessing port clean vigorously with alcohol wipe rotating clockwise and counterclockwise for 15 seconds.</p> <p>When in use, flush as follows:</p> <p>S – Saline Adult: 10 mLs of NS Pediatric: Amount needed to clear the line (usually 3-5 mLs of NS)</p> <p>A – Administer S – Saline Adult: 10 mLs of NS Pediatric: Amount needed to clear the line (usually 3-5 mLs of NS)</p> <p>When not in use, flush as follows:</p> <p>Adult: flush shift with 10 mLs NS Pediatric: flush shift with 5 mLs NS</p> <p>Flush after administration of viscous fluids such as Blood:</p> <p>Adult: 20 mLs NS Pediatric: Amount needed to clear the line (usually 3-5 mLs of NS)</p>	<p>Dressing Change:</p> <p>Transparent dressings are preferred:</p> <p>Upon admission Every 7 days or when no longer clean, dry and occlusive.</p> <p>Site Change: Only trained nurses may remove midline catheters as ordered by provider.</p>	<p>Change as follows:</p> <p>Every 7 days with dressing change</p> <p>When valve becomes ineffective (e.g. leaking, soiled, cracked, clogged)</p> <p>Every time it is disconnected from catheter.</p>	<p>Change tubing:</p> <p>In adults and pediatrics:</p> <p><i>When IV fluids used continuously:</i></p> <ul style="list-style-type: none"> <li>• Every 96 hours</li> <li>• Every 24 hours when infusing Peripheral Parenteral Nutrition (PPN)/Lipids</li> </ul> <p><i>When IV fluids used intermittently:</i></p> <p>Every 24 hours including IVPB and extension tubing.</p>	<p>Midlines can be used for blood draws</p>



## **Accessing Implanted Vascular Access Ports (RNs only)**

**Implantable Ports (e.g. PORT-A-CATH):** The implanted port is placed under the skin. The port is accessed with a non-coring (Gripper) needle used for infusion and changed every seven (7) days with dressing change. When no longer required, the needle is to be removed and discarded appropriately. Apply a band aid for 24 hours following removal. Use of implanted port involves the same risks associated with other CVCs, the same assessments, patency checks, and safety guidelines should be followed as described previously in this policy.

### **Equipment Required:**

CVP Dressing Kit  
Antimicrobial Dressing  
Needleless connector valve (Positive Pressure Valve)  
Non-coring needle with extension set  
NS 10mL flush  
Heparin 10 mL prefilled syringe flush (10-100IU/mL) – **MD order required**- Strength varies for pediatrics (see Attachment A)

**Key Point:** 10 mL of Heparin flush will be used as ordered every 4 weeks if site not in use. If the site is not expected to be used within the next four weeks, flush with Heparin as ordered prior to removing the non-coring needle.

### **Procedural Steps:**

1. Examine and palpate the portal pocket and catheter tract for erythema, swelling or tenderness, which might indicate system leakage
2. Perform hand hygiene
3. Open the non-coring needle package and remove the cap while keeping contents inside
4. Open needleless connector package, connect to NS flush and prime
5. Attach needleless connector to non-coring needle and prime the tubing set, leaving the syringe attached, and open the package completely ensuring the needle remains within the package to prevent contamination
6. Ask the patient to turn their face away from the site
7. Open the CVP dressing kit and apply the mask
8. Set aside pair of gloves
9. Drop Biopatch and transparent dressing onto sterile field
10. Don clean gloves
11. Remove dressing and needle and discard in sharps container
12. Remove gloves
13. Perform hand hygiene
14. Don sterile gloves
15. Prepare the site for sterile needle insertion using the chlorhexidine swab. Start at the center and use back and forth scrubbing motion for 30 seconds. Cleanse the area approximately two inches around the insertion site (four to five inches in diameter) and allow to air dry
16. Grasp the non-coring needle with dominant hand and remove the cap
17. Place the Biopatch dressing
18. Stabilize the implant by grasping around the edges with non-dominant hand
19. Insert the needle at a 90 degree angle until resistance is met
20. Aspirate for brisk blood return

**Key Point:** Difficulty in withdrawing blood may indicate catheter compression or occlusion. Notify physician per Nursing Policy C122.17 – Activase Administration Guidelines



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21. Flush using the push-pause method
22. Remove the needle holder
23. Apply skin protectant around the edges
24. Apply transparent dressing
25. Label dressing with time, date, and initials
26. Detach syringe and clamp tubing
27. Secure tubing with tape
28. Cover needleless connector with disinfecting port protector