

III – 303 Central Venous Catheter (CVC) Care

Original Date: 6/1/1985 Last Review Date: 8/5/04; 4/25/07

POLICY:

- I. In accordance with the standards and policies of Cincinnati Children's Hospital Medical Center, all personnel must adhere to the safe practices and procedures included in this policy and intended to prevent CVC-associated complications in patients and to promote healthcare worker safety.
- II. For the purpose of this policy, a central venous catheter (CVC) is defined as a vascular infusion device that terminates at or close to the heart (e.g. superior vena cava, right atrium) or in one of the great vessels. Included are tunneled, non-tunneled (percutaneous), PICC (peripherally inserted central catheter), ports (implanted beneath the skin), hemodialysis and apheresis catheters. Central catheter tip location shall be determined radiographically and documented prior to initiation of the prescribed therapy.
- III. All manipulations of a CVC must be performed by an RN who has completed the Clinical Development and Education CVC/PICC Module with competency facilitated and verified by a unit RN Preceptor.
- IV. Standard Precautions (i.e., hand hygiene, personal protective equipment) and medical and/or surgical asepsis, as indicated, must be adhered to when performing all CVC procedures.
- V. All entries to a CVC system (e.g., hub of the catheter, injection ports or y-sites located on IV tubing, and stopcocks) must be kept to the necessary minimum to prevent catheter related complications. The primary means of preventing CVC-associated blood stream infections is by maintaining a closed system. Anticipate patient needs and plan care in order to combine entries for infusions and blood draws.
- VI. Refer to Nursing Policy IV-105 Documentation Guidelines for Charting by Exception for CVC documentation.
- VII. Refer to Pharmacy & Therapeutics Policy II-111 Central Venous Catheters for additional guidelines and procedures pertaining to CVC placement, utilization and management.
- VIII. Refer to Clinical Practices Policy III-104 Parenteral Nutrition Order for additional guidelines and procedures pertaining to administration of TPN and lipids.

PURPOSE: To maintain safe practices and procedures for patients receiving Central Venous Catheter Care. These practices are intended to prevent CVC associated complications and to promote patient and healthcare worker safety.

GUIDELINE FOR PROCEDURE:

- I. **CVC SCRUB PROTOCOLS - All entries to the CVC system must be preceded by one of the following required sterile scrubs:**
 - A. **30 Second Sterile Scrub & 30 Second Air Dry with 2% Chlorhexidine Gluconate with Isopropyl Alcohol (Chloraprep™)**
 1. **Hub Entry (direct) CVC Hub**
 - a. Any time there is an opening or access of the CVC at the hub.
 - b. Any time a CVC cap is changed (e.g., weekly cap change, following a transfusion of blood/blood products, and following difficulty with blood aspiration or flushing.
 - c. When blood is drawn from CVC "hub".
 - d. Any time there is a break or opening of a closed/infusing CVC system below the level of the manifold.
 2. **Cap Entry (through the cap) from a capped CVC**
 - a. Any time a capped CVC is accessed through the cap.
 - b. Any entry to an injection port, stopcock or IV tubing connection located between the catheter hub and the manifold which is secured in a clean area.
 - c. When blood is drawn from CVC "cap".
 3. **Site Care**
 - a. Any time a CVC dressing is changed.
 4. **Removal**
 - a. Any time a CVC is removed.

B. 2 Minute Sterile Scrub & 1 Minute Air Dry with 2% Chlorhexidine Gluconate with Isopropyl Alcohol (Chloraprep™)

1. Insertion

- a. For all CVC insertions.
- b. Anytime a CVC is changed over a Guidewire.

C. 15 Second 70% Isopropyl Alcohol Scrub



1. Manifold Entry

- a. Any entry to an injection port, stopcock or IV tubing connection located at or above the manifold which is secured in a clean area.
- b. Any time a bottle, IV fluid bag, or medication syringe is changed.
- c. Under **emergent conditions** to access any CVC injection port or IV tubing junction.

II. A Chlorhexidine impregnated sponge, BioPatch™ should be used at the catheter site at insertion and with each dressing change. Exceptions may be made for the low birth weight, RCNIC patients.

III. DIRECTIONS TO PROCEDURES

A. To simplify understanding and compliance with this policy, text and procedures are color-coded as follows:

- 1. Red text indicates practices that may be associated with complications and is intended to remind the practitioner to use “caution” and is symbolized by a .**
- 2. Blue text indicates practice changes and is symbolized by a .**

B. When printing these procedures, use color printer to differentiate colored text. If black and white printer is used, note symbols.

C. To open individual procedures, click on desired procedure in the following index. This will open the document for review. To print in PDF (i.e. printer-friendly document file), click on the printer icon or click on “file” and “print”. To return to main policy, click on “file” then “close”.

D. To print CVC policy in its entirety, click here [Complete CVC Policy](#).

IV. INDEX OF CVC PROCEDURES

A. CVC CATHETER CARE PROCEDURES

1. HUB ENTRY (direct opening at hub) (green paper)

- a. [Continuous Infusion Administration Set Change](#)
- b. [Cap Change/With or Without Blood Draw](#)
- c. [Discard Volume](#) & [Heparin Concentration by CVC type](#)

2. CAP ENTRY (access through a cap) (blue paper)

- a. [Heparinization or Blood Draw From a Capped CVC](#)
- b. [Intermittent Fluid and Medication Administration/Single Medication Administration/Blood Infusion Administration](#)
- c. [Discard Volume](#) & [Heparin Concentration by CVC type](#)

3. MANIFOLD ENTRY (clean areas at manifold or above)

- a. [Change Administration Container \(Bottles, Bags, Syringes\)](#)

4. HEMODIALYSIS/APHERESIS CATHETER AND PORT HEPARIN INSTILLATION

- a. [Heparin Installation/Both Hub and Cap Entry](#)
- b. [Dialysis Catheter Priming Volumes](#) & [Heparin Concentration by CVC type](#)

B. CVC SITE CARE PROCEDURES

1. **TUNNELED AND NON-TUNNELED CATHETER SITE DRESSING (pink paper)**
 - a. [CVC Dressing Change](#)
(Picture Links: [Single Lumen Tunneled & Non-Tunneled CVC Dressing](#), [Double Lumen](#))
2. **IMPLANTED PORT CARE (orange paper)**
 - a. [Accessing and Dressing Change](#)
 - b. [De-Accessing an Accessed Implanted Port](#)
(Picture Link: [Dressing the Port](#))
 - c. [Discard Volume](#) & [Heparin Concentration by CVC type](#)
3. **PICC - PERIPHERALLY INSERTED CENTRAL CATHETER SITE CARE (yellow paper)**
 - a. [PICC Dressing Change](#)
 - b. [PICC Removal](#)
 - c. [PICC Insertion](#)
(Picture Links: [PICC dressing 1](#), [PICC dressing 2](#), [PICC dressing 3](#))

C. CVC EMERGENT CARE PROCEDURES

1. **EMERGENT CVC CARE (red paper)**
 - a. [Emergent Care of Any CVC by RN Personnel](#)
 - b. [Emergent Care of Implanted Port by RN Personnel](#)
 - c. [Emergent Care by Non-RN Personnel](#)
 - d. [CVC Vascular Access Nurse Procedure for Catheter Clearance for Occluded CVC](#)

V. DISCARD VOLUMES BY TYPE OF CVC

TYPE OF CVC	SIZE OF CVC	AMOUNT OF DISCARD VOLUME
PICC	3 Fr	1 mL
PICC	4 Fr and Larger	2 mL
PORT	All Sizes	3-5 mL
Non-Tunneled	All Sizes	1-2 mL
Tunneled	2.7 to 4.2 Fr	1 mL
Tunneled	6.0 to 8.0 Fr	3 mL
Apheresis Triumph Port	All Sizes	3-5 mL

VI. HEPARIN CONCENTRATIONS FOR **INTERMITTENT** FLUSHES

TYPE OF CVC	SIZE OF CVC	HEPARIN CONCENTRATION	VOLUME PER LUMEN	FREQUENCY OF CAPPED LUMEN
Apheresis Catheter (not including the Apheresis port)	All Sizes	1000 units/mL	Priming volume or 1 mL	3 times per week (Aspirate catheter contents first)
Apheresis Catheter (HEM-ONC patients weighing less than 40 Kg.)	All Sizes	Physician may specify use of 100 units/mL	Priming volume or 1 mL	Refer to Physician Order
Triumph-Apheresis port-deaccess	All Sizes	1000 units/mL	2 mL	Prior to deaccess
Triumph-Apheresis port accessed	All Sizes	10 units/mL	5mL	After each use or every 24 hours minimum
Hemodialysis Catheters	All sizes	1000 units/mL	Priming volume or 1 mL	3 times/week (aspirate catheter contents first)
PICC	2 Fr	10 units/mL	2 mL	After each use or every 8 hours minimum
PICC	3 & 4 Fr	10 units/mL	3 mL	After each use or every 12 hours minimum
PICC (RCNIC Patients)	1.9-2 Fr	2 units/mL	2 mL	Capped 1.9-2 Fr. PICC: After each use or every 8 hours minimum
PICC (RCNIC Patients)	3 Fr & larger	2 units/mL	2 mL	After each use or every 12 hours minimum
Port, Accessed	All Sizes	10 units/mL	5 mL	After each use or every 24 hours minimum
Port, Not Accessed	All Sizes	100 units/mL	5 mL	Every 3 to 4 weeks
Tunneled/Non-Tunneled	All Sizes	10 units/mL	3 mL	After each use or every 24 hours minimum
Tunneled/Non-Tunneled (RCNIC Patients)	All Sizes	2 units/mL	2 mL	After each use or every 24 hours minimum

VII. HEPARIN CONCENTRATIONS FOR **CONTINUOUS** FLUSHES

TYPE OF CVC	SIZE OF CVC	HEPARIN CONCENTRATION	VOLUME PER LUMEN	FREQUENCY PER LUMEN
PICC (RCNIC Patients)	2 Fr	0.25 units/mL in IV fluids	2 mL/hour	Refer to Physician Order
PICC (B6E/CICU patients)	All Sizes	2 units/mL	2 mL/hour	Refer to Physician Order
Tunneled/Non-Tunneled	All Sizes	2 units/mL	2 mL/hour	Refer to Physician Order
Umbilical Catheters (Arterial or Venous)	All Sizes	1 to 2 units/mL	1 mL/hour	Refer to Physician Order

VIII. DIALYSIS CATHETER PRIMING VOLUMES

BRAND OF CVC	TYPE OF CVC	INFUSION SITE	VOLUME OF FLUSH
Med-Comp	Tunneled	Arterial	0.9 mL
Med-Comp	Non-Tunneled	Venous	1 mL
Quinton Mahurkar	Non-Tunneled	Arterial	1.2 mL
Quinton Mahurkar	Non-Tunneled	Venous	1.3 mL
Quinton Permacath	10 Fr Tunneled, 28 cm.	Arterial	0.8 mL
Quinton Permacath	10 Fr Tunneled, 28 cm.	Venous	0.85 mL
Quinton Permacath	12.5 Fr Tunneled, 36 cm.	Arterial	1.2 mL
Quinton Permacath	12.5 Fr Tunneled, 36 cm.	Venous	1.3 mL
Quinton Permacath	12.5 Fr Tunneled, 40 cm.	Arterial	1.3 mL
Quinton Permacath	12.5 Fr Tunneled, 40 cm.	Venous	1.5 mL

IMPLEMENTATION: This policy will be maintained by the Nurse Practice Council, reviewed by the Vascular Access Team in conjunction with the Nurse Practice Council every three years and as necessary.

REFERENCES:

- (1) O'Grady N, et al. Guidelines for the Prevention of Intravascular Catheter-Related Infections. *Pediatrics* 2002: 110(5) – CDC guidelines.
- (2) Infusion Nursing Standards of Practice. *J Infusion Nursing* 2006: supplement Jan/Feb 2006
- (3) Casey AL, et al. A Randomized Trial Comparing Povidone-Iodine to a Chlorhexidine Gluconate-Impregnated Dressing for Prevention of Central Venous Catheter Infections in Neonates. *Pediatrics* 2001: 107(6)
- (4) Ryder M, Evidenced Based Practice in the Management of Vascular Access Devices for Home. *JPEN. Journal of Parenteral Nutrition: Jan/Feb 2006: 30(1)*
- (5) Maki DG, Mermel LA, Kluger DM, et al. The efficacy of chlorhexidine-impregnated sponge (BioPatch) for the prevention of intravascular catheter-related infection: a prospective randomized controlled multi-center trial. In: 40th Interscience conference on Antimicrobial Agents and Chemotherapy, September 17-20, 2000, Toronto, Canada. Washington, DC: American Society for Microbiology, 2000: 422-424. Abstract 1430
- (6) Knue MA, Doellman D, Rabin K, Jacobs BR. The efficacy and Safety of Blood Sampling Through Peripherally Inserted Central Catheter Devices in Children. *J Infusion Nursing* 2005, Vol 28 No. 1, January/February 2005, 30-35.

A. CVC Catheter Care Procedure:

1a. Hub Entry - Use for the following procedure: Continuous Infusion Administration Set Change

Equipment:

- * Sani-Cloth™ to clean work surface
- * Hub entry / Cap change kit (CHG Frepp Applicator, 4X4's, sterile gloves, mask, cap, sterile barriers)
- * Primed 72 hour administration set with sterile device to protect end of tubing

POLICY:

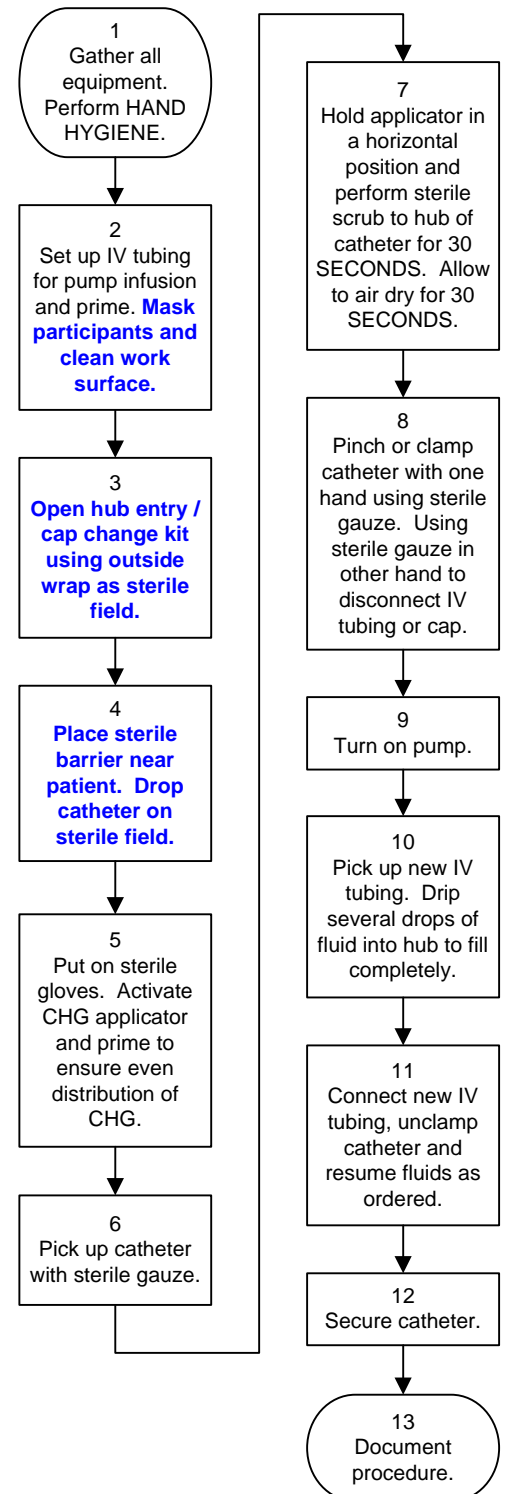
1. **△ All Primary and Secondary CONTINUOUS Administration Set tubing and add on devices (ports, t-pieces and stopcocks) MUST BE changed:**
 - a) Every 72 hours
 - b) Immediately upon suspected contamination
 - d) When the integrity of the product or system has been compromised
2. **Continuous Infusion Systems are connected directly to the catheter hub without a cap.**
 - △ Exceptions: Lipid Emulsions
 - a) Secondary IV tubing used for administration of lipid emulsions MUST BE changed within 24 hours of initiating the infusion.
 - b) Attach lipid tubing to the closest junction on the administration set to the catheter hub.
3. Prime all IV fluids using caution to protect sterility of fluid pathway, add sterile end cap.
4. **☞ The number of entries into a CVC MUST BE kept to the necessary minimum to prevent catheter related complications.**
5. A 30 second CHG scrub followed by a 30 second air dry MUST BE performed at the junction being opened prior to any entry into the IV system between the CVC hub and the pump or manifold.
6. All open ports, stopcocks MUST BE covered with an approved injection cap when not accessed with continuous fluids or medications.
7. IV tubing and bottles/bag that have been infusing through a peripheral catheter MUST NOT BE connected to a CVC system.
8. **☞ Sterile pre-filled syringes may be added to the sterile field of the hub entry / cap change procedure.**
9. **△ 10mL size syringes should be used for flushing a CVC per manufacturer recommendations.**
10. ALL connections on a CVC, tubing and add on devices, MUST BE luerlocked.

NURSING GUIDELINES:

1. **☞ Check each IV fluid container with MAR or MD order for CORRECT: patient, medication, concentration, IV fluid and rate of flow.**
2. All CVC entries should be documented.
3. Any discontinued medication or fluid should be removed from the IV system, unless nursing judgment or physician order deems otherwise. Precede removal with:
 - A 15 second alcohol scrub for any junction at or above the manifold.
 - A 30 second CHG scrub followed by 30 seconds air dry for ANY junction below the manifold, to and including, the catheter hub.
4. Dextrose concentrations 12.5% and greater MUST BE infused through a CVC; Dextrose concentrations that are less than 12.5%, may be infused through a peripheral IV or CVC that is peripherally placed.
5. 2 Fr catheters or smaller infusing at a low rate may require heparin to be added to the fluid. PHYSICIAN ORDER IS REQUIRED. (See Appendix VII.)

SAFETY GUIDELINES:

1. Hemostats MUST NOT BE used on a PICC or the hub, to prevent catheter injury.
2. Secure catheter using securement device as indicated for patient activity and developmental level.
3. Eliminate any air within IV system during priming of fluids.
4. PRIOR to line change, give consideration to medications that are remaining in the tubing; consider appropriate adjustments before performing line change.
5. CVC administration system and site should be checked hourly and assessment of the invasive line completed and documented at the beginning of each shift.
6. It is preferable to limit IV stopcock use with administration systems. If stopcocks are needed, the prefabricated manifold system is preferred.
7. Whenever a continuous infusion MUST BE interrupted, the end of the system MUST BE protected with a sterile device and maintained in a clean, safe area.



A. CVC Catheter Care Procedure:

1b. Hub Entry – Use for the following procedure: Cap Change / With or Without Blood Draw

Equipment:

- * Alcohol or Sani-Cloth® to clean work surface
- * Hub entry / Cap change kit
- * Extension piece with clamp as needed for PICC's
- * Syringe for discard of blood
- * Pre-filled syringe for heparinized saline
- * Sterile pre-filled syringe of normal saline
- * Syringes for appropriate amount of aspirated blood

POLICY:

1. A 30 second CHG scrub followed by 30 seconds air dry MUST BE performed prior to any entry to a CVC.
2. **△ A cap on a CVC MUST BE changed:**
 - a) Every 7 days
 - b) Within 24 hours of a transfusion of blood/blood products
 - c) Following difficulty with blood aspiration or flushing
 - d) Immediately upon suspected contamination
 - e) When the integrity of the product has been compromised
 - f) For capped CVC's/PICC's requiring extension piece with cap and clamp, the entire extension is considered part of the cap and the above requirements apply.

3. **☞ Sterile packaged pre-filled normal saline syringes may be added to a sterile field.**

Exception:

- a) **△ For low birth weight infants, saline is required to be drawn up using a sterile procedure, labeled and added to a sterile field (labels in the Hub entry / Cap change kit). A single-use vial MUST BE used for the procedure and discarded.**
4. **△ 10mL size syringes should be used for flushing a CVC per manufacturer recommendations.**
5. Small syringes (1mL, 3mL, 5mL) may be used for aspiration or medication administration, but NOT FOR FLUSHES

6. **☞ Discard blood MUST NOT BE used for labs or re-infused.**

Exception: With a physician order, discard blood may be re-infused to a neonate who is at significant risk for anemia. A closed blood draw system with heparin MUST BE ordered and followed.

7. **△ Routine blood draws should be through catheters and lumens of catheters, size 3 Fr or larger.**

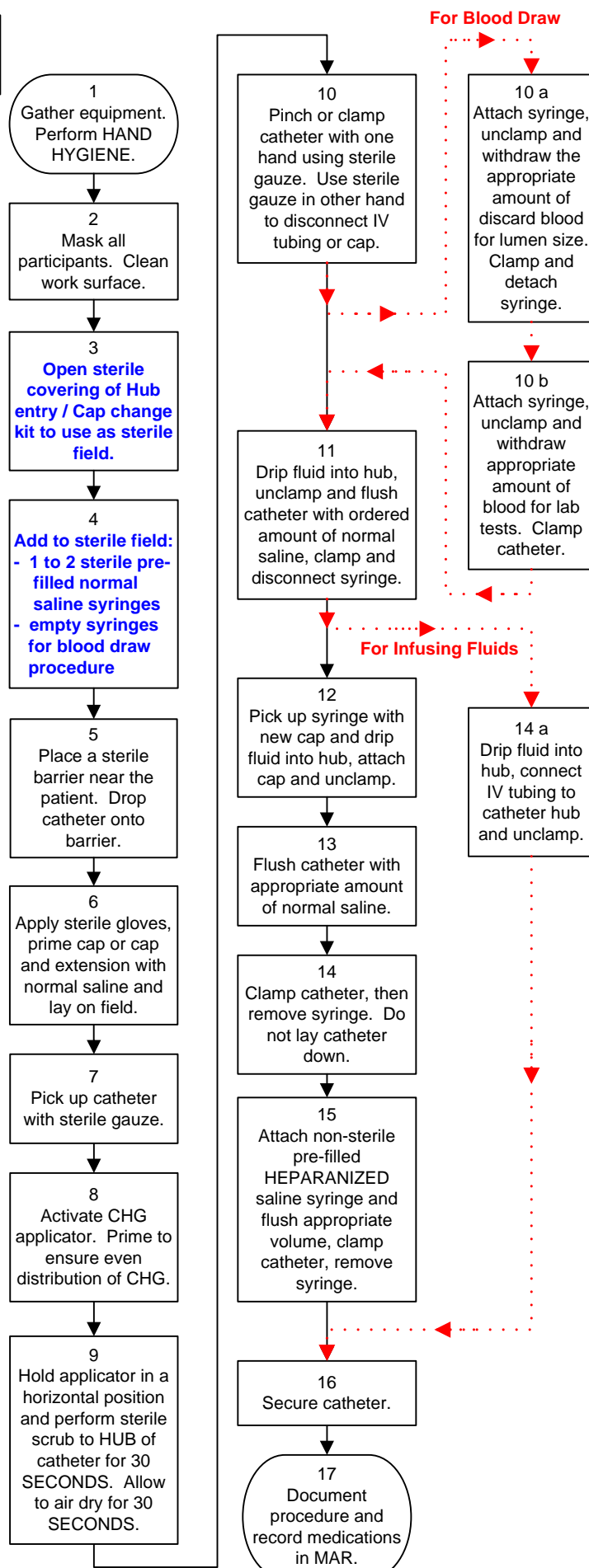
8. The number of entries into a CVC MUST BE kept to the necessary minimum to prevent catheter related complications.

NURSING GUIDELINES:

1. If unable to aspirate blood from the CVC lumen, reposition patient and flush CVC. Attempt aspiration again.
2. If repeated attempts for aspiration of blood fail at the catheter hub, call Vascular Access RN.
3. ALL CVC entries should be documented.

SAFETY GUIDELINES:

1. **☞ IF second lumen is infusing, stop the pump or clamp this lumen while withdrawing blood sample.**
2. Blood draw MUST BE at the catheter hub or from a cap attached near the catheter hub.
3. **☞ IF an infusing IV system MUST BE disconnected and later re-attached, protect sterile end of IV tubing with sterile device, and store in a clean, safe area.**
5. Use push/pause flush procedure, clamp CVC and then remove syringe to prevent aspiration of blood into the CVC.
6. Secure catheter as indicated for patient activity and developmental level.



A. CVC Catheter Care Procedure:

2a. Cap Entry: Heparinization or Blood Draw From a Capped CVC

Equipment:

- * Barrier (clean 4X4 gauze)
- * Prefilled syringe of heparinized saline
- * Non-sterile gloves
- * Chlorhexidine applicator (CHG) (Frepp)

POLICY:

1. A 30 second CHG scrub followed by 30 seconds air dry MUST BE performed:
 - a. Prior to heparinization for a capped CVC.
 - b. Each time blood is drawn from a CVC cap or injection port.
 - c. Before any entry into a cap for fluid or medication administration.
 - d. Any time the cap has likely been contaminated.
 2. A CAP on a CVC MUST BE changed:
 - a. **Every 7 days**
 - b. Within **24 hours** of a transfusion of blood/blood products
 - c. For difficult blood aspiration or flush
 - d. Immediately upon suspected contamination
 - e. When the integrity of the product for has been compromised
 - f. For capped CVC's/PICC's requiring extension piece with cap and clamp, the entire extension is considered part of the cap and the above requirements apply.
 3. **10mL size syringes MUST BE used for flushing a CVC.**
 4. Small syringes (1mL, 3mL, 5mL) may be used for aspiration or medication administration, NOT FOR FLUSHES.
 5. Non-sterile prefilled syringes may be used for cap entry.
 6. A CAPPED CVC MUST BE flushed with the ordered concentration, volume and frequency of heparinized saline and normal saline to promote and maintain patency and prevent mixing of incompatible medications and solutions (See Appendix for CVC flush volumes/frequency)
 7. Cap or hub entries MUST BE kept to the necessary minimum to decrease risk of catheter complications.
 8. **Discard blood MUST NOT BE used for blood culture and MUST NOT BE re-infused.**
- Exception:** Discard blood may be re-infused to a neonate who is at significant risk for anemia. A closed system blood draw procedure MUST BE followed.
9. **Routine blood draws and administration of blood products should be through catheters and lumens size 3 Fr or larger. ONLY blood cultures (not routine blood draws or blood transfusions) may be attempted through 2 Fr or smaller catheters.**

ADD if Blood Draw Required:

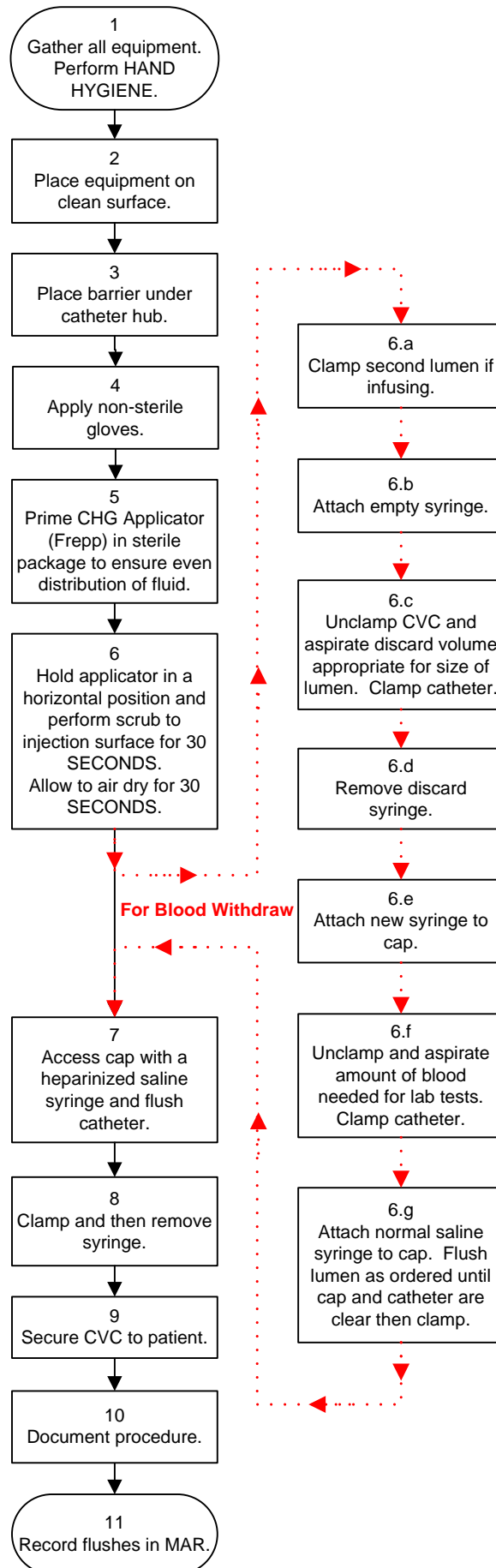
- * 10mL prefilled syringe of normal saline
- * Syringe for blood draw
- * Appropriate supplies for blood transfer

NURSING GUIDELINES:

1. For multiple lumen injection port flushes, scrub the ports **one at a time** to ensure a thorough scrub.
2. **Clamp all other infusing lumens prior to aspiration of blood.**
3. If unable to aspirate blood from the capped CVC lumen, reposition patient and flush CVC. Attempt aspiration again.
4. If still unsuccessful, have patient lift arms, cough, and deep breath, and repeat aspiration attempt.
5. If repeat attempts to aspirate blood through the cap fail, follow the "cap change" procedure to remove cap and draw blood from CVC hub. (See: Hub Entry: Cap Change With or Without Blood Draw)
6. If still unsuccessful, notify MD and Vascular Access RN.
7. Document all flush solutions in MAR. Document CVC entries.

SAFETY GUIDELINES:

1. **At the end of the flush procedure, clamp CVC and then remove syringe to prevent aspiration of blood into CVC.**
2. Blood draw attempts should be at or close to the catheter hub to help prevent catheter occlusion.
3. Any CVC without an attached clamp needs an extension piece with clamp and cap added.
4. Secure catheter with securement device as indicated for patient activity and developmental level.
5. Luer-Lok™ connections MUST BE used for ALL catheter junctions to prevent easy disconnect. Tape if age appropriate.
6. With the exception of back-to-back medications, a CVC MUST NOT BE left with syringes or other devices attached to cap.
7. **In an emergency, a 70% isopropyl alcohol scrub may be used to access any CVC port.**



A. CVC Catheter Care Procedure:

2b. Cap Entry – Use for the following procedures: Intermittent Fluid and Medication Administration Single Medication Administration Blood Infusion Administration

Equipment:

- * Barrier (clean 4X4 gauze)
- * Non-sterile 10 mL prefilled syringe of normal saline
- * Non-sterile prefilled syringe of heparinized saline
- * Non-sterile gloves
- * Chlorhexidine applicator (Use CHG Frepp applicator)

POLICY:

1. **△ A 30 second CHG scrub followed by a 30 second air dry MUST BE performed:**
 - a. Each time a cap or injection port is accessed to administer medications, fluids or blood products.
 - b. Each time blood is drawn from a CVC or injection port.
 - c. Immediately upon suspected contamination.
 - d. When integrity of the product or administration system has been compromised.

Exceptions: During sequential administration of medications (e.g. anesthesia induction, conscious sedation) the cap MUST BE cleaned prior to administration of the 1st medication and every 8 hours throughout the intermittent administration and immediately upon suspected contamination, and prior to blood draws.

2. **△ A primary intermittent administration set through a cap MUST BE changed EVERY 24 HOURS, immediately upon suspected contamination or when the integrity of the product or system has been compromised.**

3. **△ Single syringe IV tubing used for intermittent access or medications MUST BE discarded after each use.**

4. A capped CVC MUST BE flushed with the ordered concentration, volume, and frequency of heparinized saline and normal saline to promote and maintain patency and prevent mixing of incompatible medications and solutions. (See Appendix for CVC flush volumes/frequency.)

5. Cap or hub entries MUST BE kept to the necessary minimum to prevent catheter-related complications.

6. If an infusing manifold system is disconnected from the CVC, the connecting junction MUST BE kept sterile to ensure a sterile reconnect.

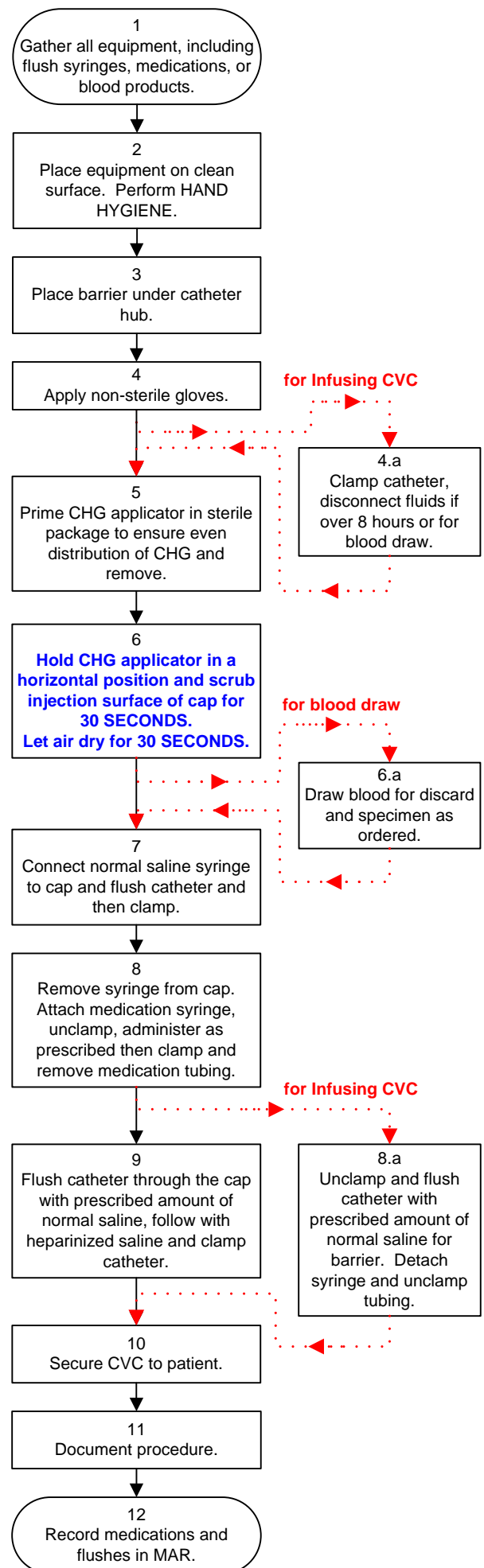
7. If an injection cap is accessed for administration of blood/blood products, it MUST BE changed within 24 hours of the infusion. This refers to blood products received from blood bank (See: Hub Entry: Cap Change With or Without Blood Draw)

NURSING GUIDELINES:

1. 2 Fr catheters or smaller infusing at a low rate may require heparin to be added to the fluid. PHYSICIAN ORDER IS REQUIRED. (See Appendix VII.)
2. Use **SASH** method for intermittent drug administration (**S**aline flush, followed by **A**ntibiotic/medication, followed by **S**aline flush, followed by **H**eparin flush,) is considered one line entry.
3. Small syringes (1 mL, 3 mL, 5mL) may be used for aspiration or medication administration, NOT for flushes.
4. **👉 10 mL size syringes MUST BE used for flushing a CVC.**
5. **👉 For medication administration into an infusing lumen, use only saline flush before and after medication.**
6. Administration of flush solutions MUST BE documented in the MAR.
7. Document all CVC entries.

SAFETY GUIDELINES:

1. Use push/pause flush procedure, clamp CVC and then remove syringe to prevent aspiration of blood into the CVC.
2. Secure catheter with a securement device as indicated for patient activity and developmental level.
3. For multiple lumen injection port flushes, scrub the ports one at a time to ensure a thorough scrub.
4. Luer-Lok™ connections MUST BE used for ALL catheter junctions to prevent easy disconnect. Tape if age appropriate.
5. CVC administration system and site should be checked hourly and assessment of the invasive line completed and documented at the beginning of each shift.
6. **Manufacturer recommendations suggest not using power injectors or manual flushes that exceed 25psi.**
7. **👉 In an emergency, a 70% isopropyl alcohol scrub may be used to access any CVC port.**
8. With the exception of back-to-back medications, a CVC MUST NOT BE left with syringes or other devices attached to cap.



A. CVC Catheter Care Procedure:

3a. **Manifold Entry:** Change Administration Container (Bottles, Bags, Syringes)



Equipment:


- * Non-sterile gloves
- * Large alcohol pads
- * Mask, for individuals with symptoms of respiratory symptoms

POLICY:

1. A 15 second alcohol scrub **MUST BE** performed:
 - a. At the connection or junction where the IV tubing connects to the medication or fluid container (i.e. bottle, bag or syringe)
 - b. Prior to the removal or entry into an injection port located at or above the manifold
 - c. To remove or add tubing that originates at or above the manifold
2. When additional administration tubing is primed and added to a manifold, it becomes part of the administration set when connected directly to the manifold port. A one time dose administration set attached through a cap needs to be discarded after that dose.
3. To add tubing that originates below the level of the manifold, up to and including the catheter hub, a 30 second CHG scrub followed by 30 seconds air dry should be performed. (See appropriate Hub or Cap Entry procedures.)
4. Dextrose concentrations of 12.5% and greater **MUST BE** infused through a CVC; Dextrose concentrations that are less than 12.5%, may be infused through a peripheral catheter.

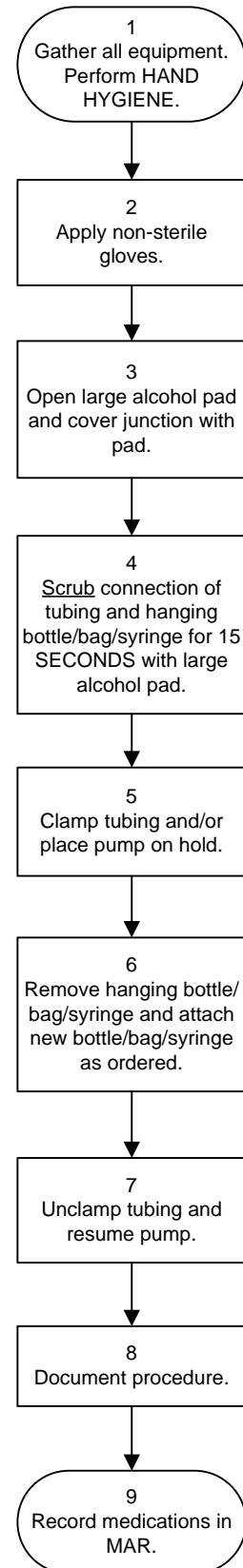
NURSING GUIDELINES:

1.  **Check: Bottle, bag or syringe against physician order or MAR for CORRECT: patient, medication, IV fluid, concentration and rate of flow.**
2. Hang: Like-to-like solutions or medications to existing tubing.
3. Change: IV tubing if IV fluids DO NOT match. If tubing and fluids DO NOT match, consider residual volume in current IV tubing, and consult physician as needed.
4. Any discontinued medication or fluid should be removed from the IV system, unless nursing judgment or physician order deems otherwise.
5.  **All stopcocks and open ports MUST BE covered with an approved injection cap, when not in use.**
6. If there is not a clamp on the CVC, add a Luer-Lok™ extension set with cap and clamp, and change the entire set every 7 days.
7. With an infusing administration set connected directly to an extension piece not through a cap, the extension piece is considered an add-on device and changes should coincide with the changing of the administration set.

Exception:  **To prevent catheter injury, an extension piece (without cap) will be added to all RCNIC 1.9 and 2 Fr. PICC's at insertion and not removed while the PICC is needed. (It is considered part of the catheter.)**

SAFETY GUIDELINES:

1. All individuals in room with symptoms of respiratory illness **MUST** mask during this procedure.
2. Check: Tubing for air and remove as indicated.
3. All tubing used for a CVC system **MUST** have luer-locked connections.
4. CVC administration system and site should be checked hourly and assessment of the invasive line completed and documented at the beginning of each shift.
5. To prevent CVC occlusion, syringes **MUST NOT BE** left attached to the cap, with the exception of back-to-back medication administration.



A. CVC Catheter Care Procedure:

4a. For Hemodialysis and Apheresis Catheters: Heparin Instillation - Both Hub and Cap Entry

Equipment:

- * Alcohol or Sani-Cloth™ - to clean work surface
- * Vial access cannulas
- * Vial of heparinized saline (check concentration)
- * Appropriate syringes

POLICY:

1. A CVC MUST BE prepped for entry using a 30 second CHG scrub with 30 seconds air dry for the following:

- Hub Entry procedures
- Cap Entry procedures

c. Exceptions: Manifold Entry and an Emergent Entry when a 15 second scrub with 70% Isopropal alcohol may be used

2. **Hemodialysis/apheresis catheters require instillation of 1000 unit/mL heparin 3 times a week as routine maintenance, unless otherwise specified by physician order.**

Exception: The physician may specify the use of 100 unit/mL heparinized saline for Hematology/Oncology patients under 40kg, with apheresis catheters. See physician order.

3. **Volume of heparinized saline is dependent on catheter lumen size. If priming volumes are not noted on the catheter, (See: Dialysis Catheter Priming Volumes & Heparin Concentrations).**

4. Management of hemodialysis/apheresis catheters MUST follow CVC policy for IV tubing change, flushing, dressing change, cap change, blood draws and emergent care.

△ a. A Triumph Port is placed specifically for apheresis, thus for care and access follow the Implanted Port Policy. For final heparinization follow the apheresis policy.

5. 10mL size syringes MUST BE used for flushing.

6. When a flush for a CVC MUST BE drawn up, use an unopened single-use vial with each entry.

7. A non-sterile pre-filled syringe may be used with cap entry procedures.

8. A sterile pre-filled syringe MUST BE used when it is added to the hub entry/cap change sterile field.

NURSING GUIDELINES:

1. Hemodialysis/Apheresis catheters may be tunneled or non-tunneled, follow appropriate procedure. (See: Site Care: Tunneled & Non-Tunneled Catheters, CVC Dressing Change.)

2. Small syringes (1mL-3mL, 5mL) may be used for aspiration, heparin instillation, or medication administration. **NOT FOR FLUSHES.**

3. **Make every attempt to aspirate the higher concentrations of heparinized saline (1000 or 100 units/mL) from the catheter. Follow the aspiration with a normal saline flush. Notify physician if unable to aspirate heparin.**

4. Notify Vascular Access RN and MD for difficulty aspirating/flushing at hub.

5. Use push/pause flush procedure, clamp CVC and then remove syringe to prevent aspiration of blood into the CVC.

6. CVC entries and flush solutions should be documented.

7. Hemodialysis catheters should only be used for hemodialysis unless ordered by MD.

ADD if Hub Entry:

- * Hub Entry / Cap Change Kit
- * 2 syringes of sterile pre-filled 0.9% normal saline syringes

ADD if Cap Entry:

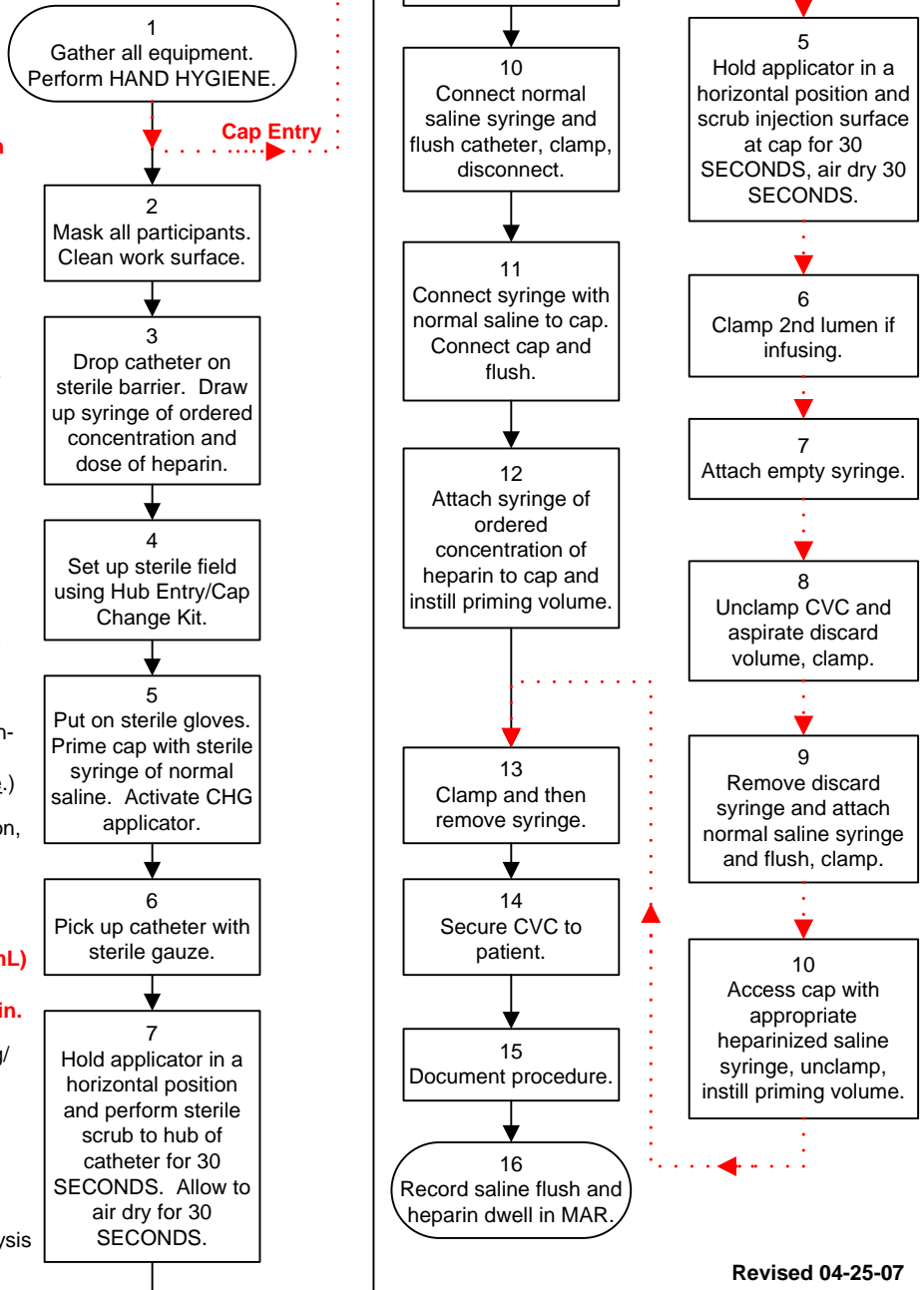
- * Barrier (clean 4X4 gauze)
- * Non-sterile gloves
- * CHG Applicator (Frepp)

SAFETY GUIDELINES:

1. Secure catheter as indicated for patient activity and developmental level.

2. Eliminate air within IV system during priming of fluids.

3. All tubing used for a CVC system MUST have luer-locked connections; tape connections if age appropriate.



B. CVC Site Care Procedure:

1a. Tunneled and Non-Tunneled Catheters: CVC Dressing Change

Equipment:

- * Mask
- * Alcohol or Sani-Cloth™ - to clean work surface
- * CVC dressing tray with Chloraprep (small transparent dressing included)
- * BioPatch® (0.4mm opening)
- * Sterile normal saline or alcohol swab (optional)
- * For securing the CVC, use tape, clamp, Coflex™, or X-Span™ dressing, or appropriate securement device as indicated.

POLICY:

1. **△ Change all CVC dressings every 7 days and when no longer clean, dry and occlusive.**

2. The CVC site **MUST BE** cleansed with a 30 second CHG scrub followed by a minimum of 30 second air dry..

Exception: **△ If a CHG scrub with alcohol is contra-indicated, clean site with a 60 second Povidone – Iodine scrub followed by a 60 second air dry. (MD order required.)**

3. **△ Apply BioPatch® to CVC site after site has dried completely. The BioPatch® should have 360° contact with the skin around the catheter.**

Exception: **△ The BioPatch® application does not apply to the RCNIC population unless ordered by MD.**

4. **△ Change BioPatch® with each dressing change.**
5. **△ For tunneled and non-tunneled dialysis or pheresis catheters, use BioPatch® (0.7mL opening). (See picture links in CVC policy outline: [Single Lumen Tunneled & Non-Tunneled CVC Dressing and Double Lumen.](#))**

NURSING GUIDELINES:

1. The CVC **MUST BE** checked hourly and documented with site assessment every shift and following dressing change.
2. Complete CVC site assessment includes inspection of skin surrounding catheter site and documentation each shift of the following:
 - Intact sutures
 - Skin integrity
 - Redness, drainage, induration
 - Visible or palpable cuff
 - Occlusiveness of dressing
 - Site pain or discomfort
3. A transparent adhesive dressing is the standard dressing covering (e.g. Tegaderm™, Opsite 3000™).

Exception: Skin breakdown or irritation may require an alternative to the standard dressing and frequency of dressing changes. Contact Vascular Access RN for recommendations.

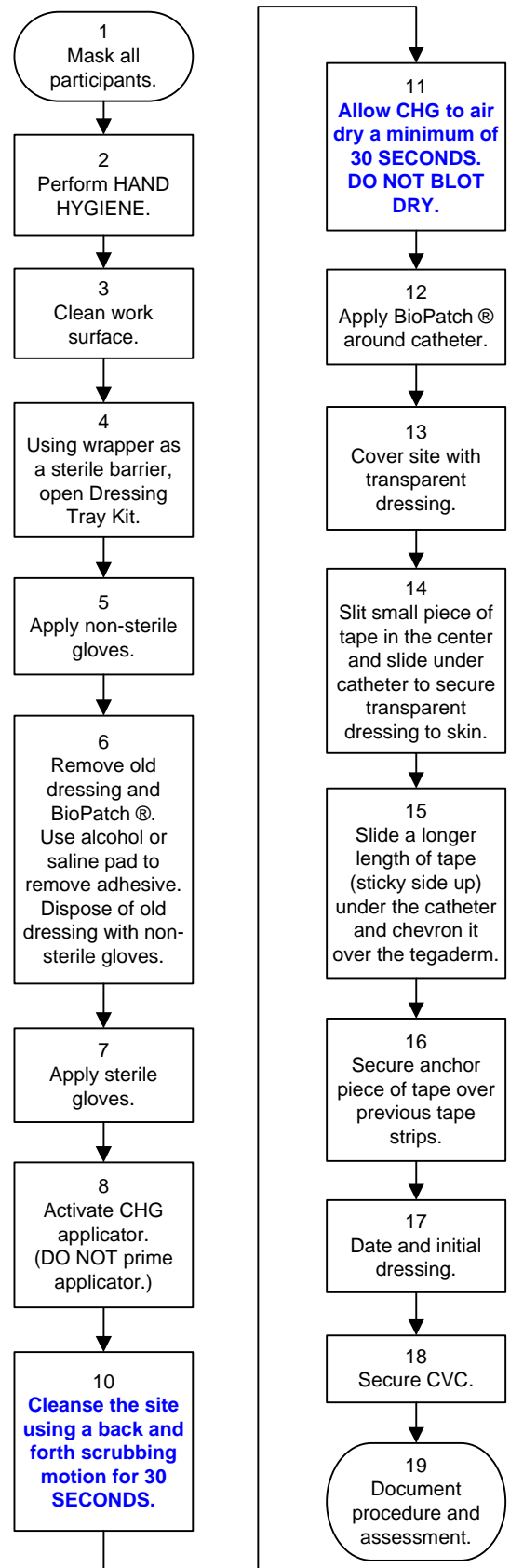
4. If any redness, induration or drainage is noted at the exit site a culture may be indicated. MD order needed and notify Vascular Access RN.
5. Redness or a white blanching under the BioPatch® should be reported and evaluated prior to replacement. Notify MD and Vascular Access RN.

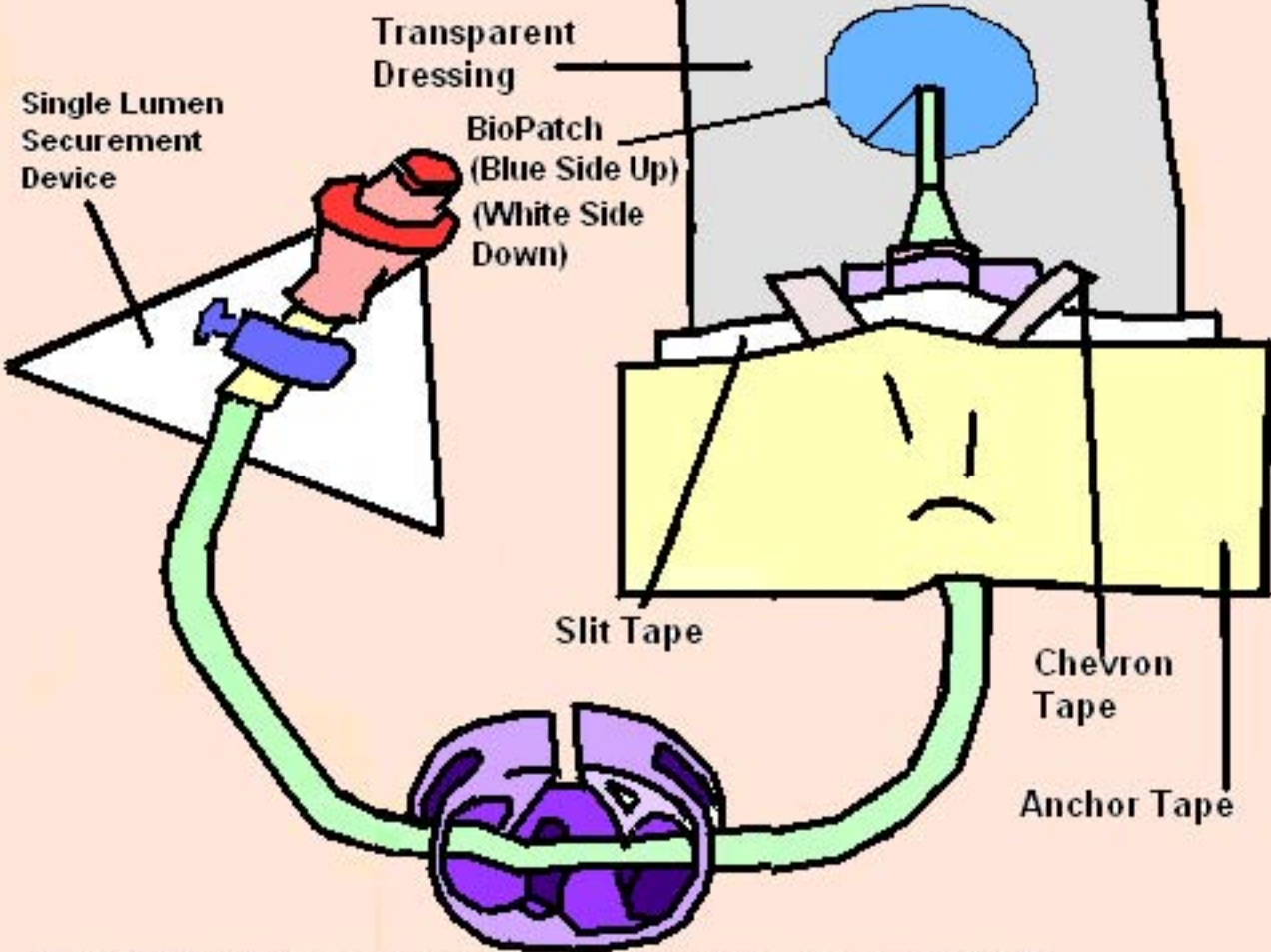
SAFETY GUIDELINES:

1. Any CVC **MUST BE** secured with appropriate securement device based on patient developmental and activity level to prevent drag or tension on catheter at exit site.

Examples for securing a CVC:

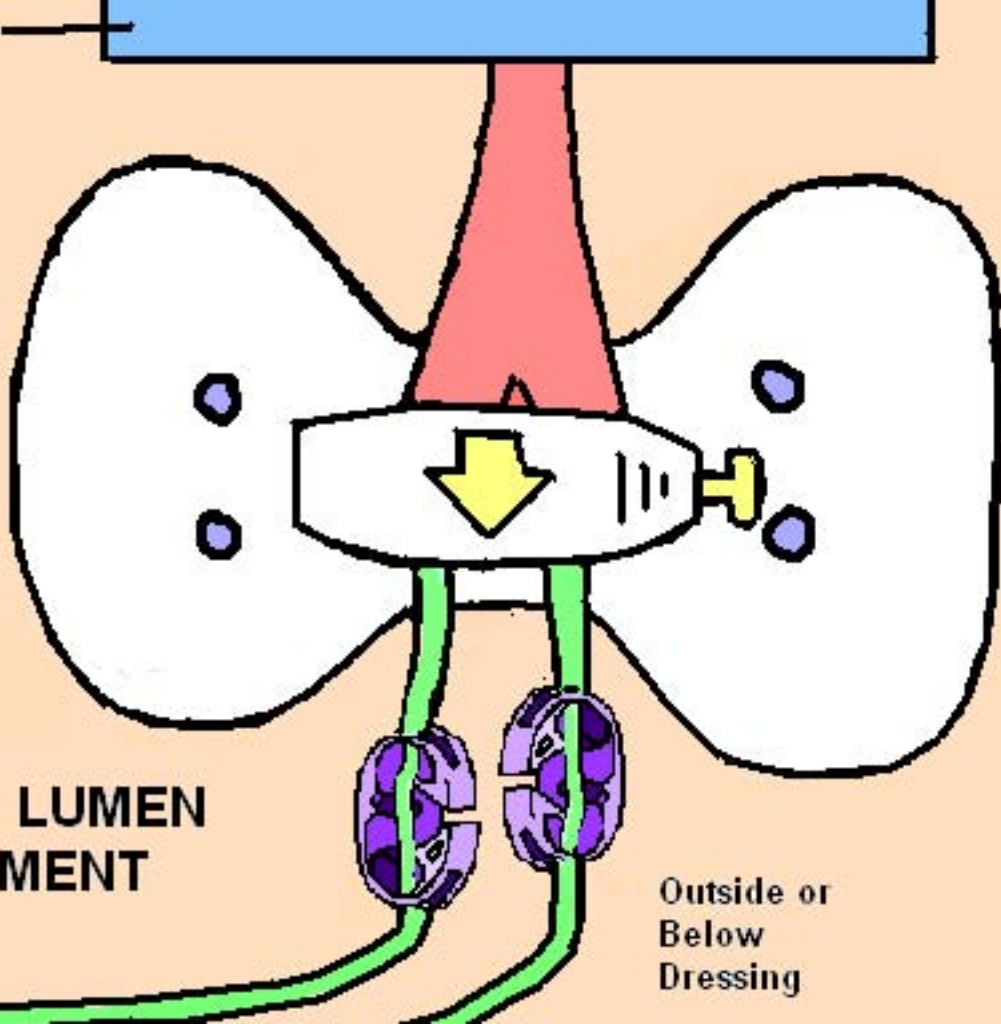
- a. Secure catheter with securement device.
 - b. Secure tape flap on CVC hub with clamp to undergarment or to tape flap secured to infant's body or X-span™.
 - c. Cut X-span™ tubular dressing into a vest to fit child and to hold catheter.
 - d. Clamp tape flap of catheter to clothing only on older school age or adolescent child.
2. **DO NOT** use scissors to remove tape or dressings.





TUNNELED & NON-TUNNELED DRESSING

Anchor
Tape
From
Dressing



**DOUBLE LUMEN
SECUREMENT
DEVICE**

Outside or
Below
Dressing

B. CVC Site Care Procedure:

2a. For Implanted Port: Accessing and Dressing Change

Equipment

- * Alcohol or Sani-Cloth™ to clean work surface
- * CVC dressing kit (CHG included)
- Sterile gloves (included)
- Transparent dressing (small included) (large needed)
- * Sterile barrier - for use near access site
- * Non-coring safety needle
- * ½" steri-strips, or Hub-Guard securement device
- * Prefilled 10 unit per mL heparinized saline syringe
- * Vial of 100 unit/mL heparinized saline (draw up and label as indicated for procedure)
- * Injection cap (if necessary)

POLICY:

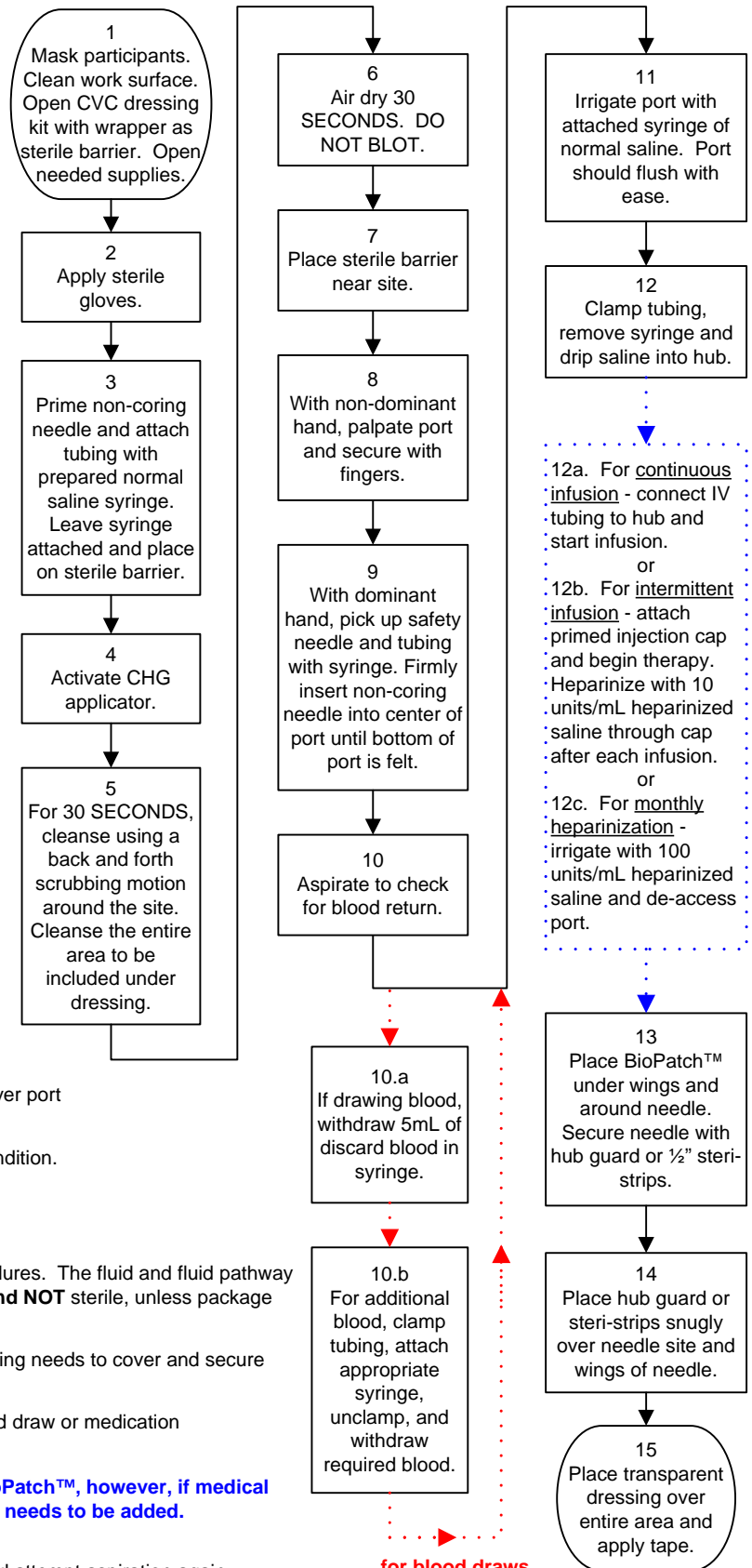
1. Ports are to be accessed ONLY with non-coring needles designed for port access.
2. A new, sterile non-coring needle is to be used for each port access.
3. Ports MUST BE re-accessed every 7 days with routine dressing change.
4. The port site MUST BE cleansed with CHG using a 30 second scrub, followed by 30 second air dry prior to port access.
5. **△ A BioPatch® needs to be applied directly to the skin, 360° around the accessed port needle under the needle wings. Allow skin to dry completely prior to adding BioPatch®.**
6. Apply ½" steri-strips or hub guard securement device over needle wings to secure port needle to skin.
7. The dressing MUST BE changed when indicated to keep it clean, dry and occlusive.
8. The port site MUST BE monitored hourly and an in depth assessment performed and documented at the beginning of each shift.
9. **🌀 100 unit/mL heparinized saline MUST BE used to maintain long term patency (maximum of 4 weeks).**
△ a. A Triumph Port is placed specifically for apheresis, thus for care and access follow the implanted port policy. For final heparinization follow the apheresis policy.
10. **🌀 10 unit/mL heparinized saline is used to maintain patency when port is accessed for intermittent use daily, including Triumph Apheresis Ports.**

NURSING GUIDELINES:

1. Lidocaine cream (topical anesthetic) may be ordered and placed over port site at least 1 hour prior to access.
2. Needle size and gauge is dependent upon patient age, size and condition.
Needle Length: 1/2", 3/4", 1", and 1 1/2"
Gauge Sizes: 19, 20, 22
3. Manufactured pre-filled syringes may be used with cap entry procedures. The fluid and fluid pathway are sterile **HOWEVER** the outside of the syringe is considered clean **and NOT** sterile, unless package indicates otherwise.
4. When both lumens of a dual port are accessed, a transparent dressing needs to cover and secure entire port and needle area.
5. A 10-20mL of sterile normal saline flush is recommended after blood draw or medication administration. Refer to physician order.
6. **△ Ports accessed for less than 24 hours DO NOT require a BioPatch™, however, if medical requirements change and longer access is required, a BioPatch™ needs to be added.**

SAFETY GUIDELINES:

1. If unable to aspirate blood from the port, flush with normal saline and attempt aspiration again.
2. Secure port base firmly during access attempt.
3. Secure port needle with hub guard or ½ steri-strip and transparent dressing to prevent unintended de-access, infiltration or extravasation.
4. Use slit tape, chevron and anchor tape to secure dressing. (See picture link in CVC policy outline: [Dressing the Port](#))
5. A rotator may be added to the hub of the port needle to prevent needle rotation (#1779 - ESI stock).



for blood draws

B. CVC Site Care Procedure:

2b. De-Accessing an Accessed Implanted Port

Equipment:

- * Gloves (non-sterile)
- * Vial of 100 unit/mL heparinized saline – draw up and label as indicated
- * Prefilled syringe of 10 unit/mL heparinized saline if appropriate
- * 4X3 gauze
- * Band-aid
- * 10 mL syringe
- * Vial access device

POLICY:

1. With each re-access of an implanted port, a new sterile non-coring needle **MUST BE** added.
2. Implanted ports **MUST BE** re-accessed every seven days with routine dressing change.
3. The dressing **MUST BE** changed when indicated to keep it clean, dry and occlusive.
4. **☞ Heparinized saline concentration of 100 unit/mL is used to maintain long-term patency. Ports MUST BE heparinized every 3-4 weeks.**
5. **☞ Heparinized saline concentration of 10 unit/mL is used daily and after each use to maintain patency when port is accessed for intermittent use.**

NURSING GUIDELINES:

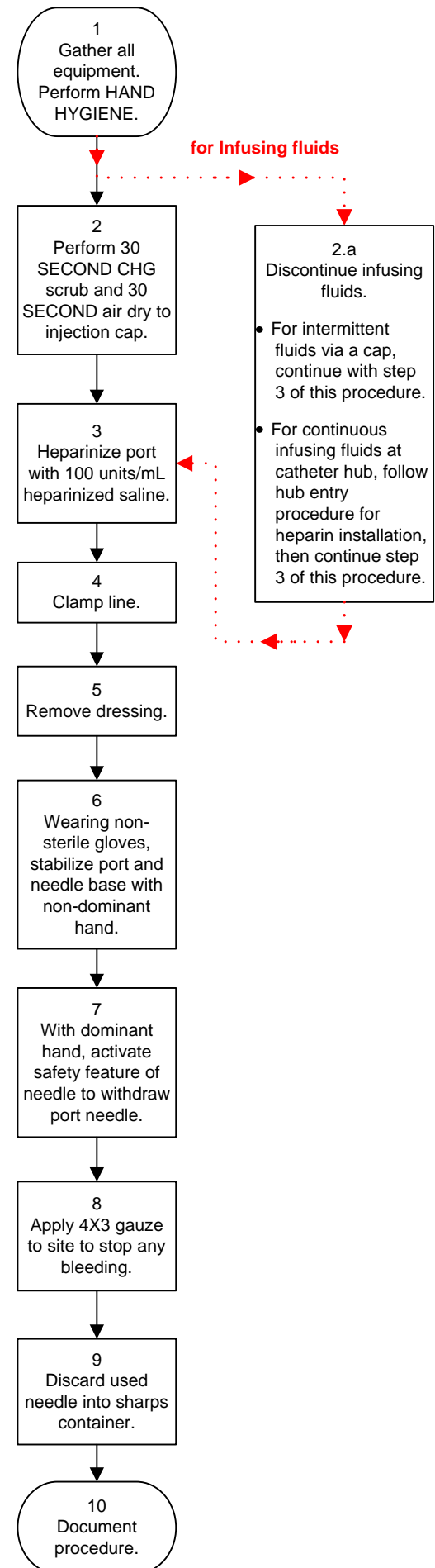
1. After dressing removal, assess site for skin breakdown and document.
2. To re-access port, obtain order and apply Lidocaine (topical anesthetic) for at least 1 hour prior to procedure.
3. Implanted ports **MUST BE** monitored hourly while infusing and assessment completed and documented each shift.
4. Needle size and gauge is dependent upon patient age, size, condition, and therapy ordered.

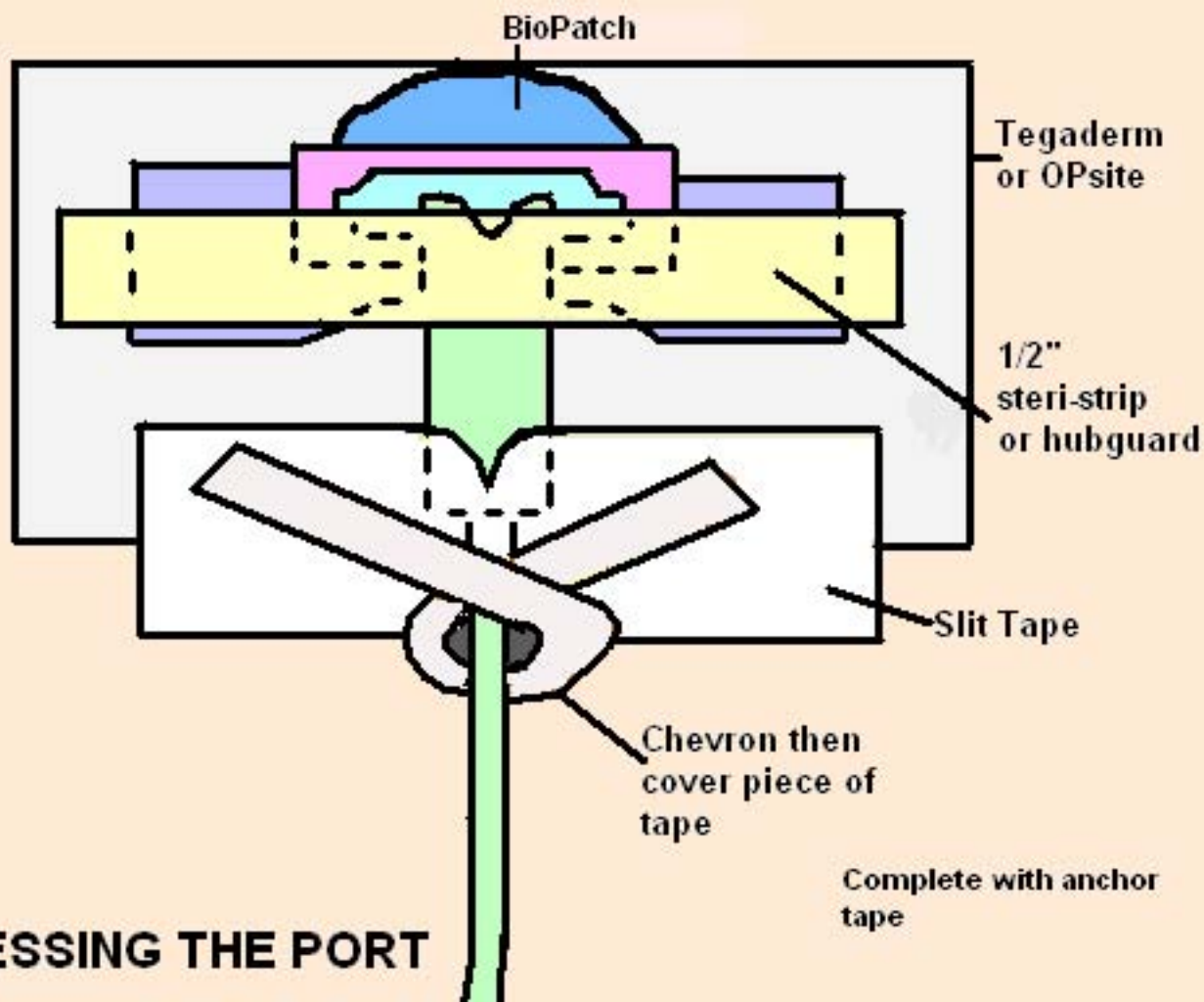
Needle Length: 1/2", 3/4", 1" and 1 1/2"

Gauge Sizes: 19, 20, 22

SAFETY GUIDELINES:

1. For patients receiving continuous infusions with a direct hub connection, discontinue fluids and protect connection prior to starting this procedure. (See: Hub Entry: Cap Change With or Without Blood Draw)
2. Secure port base and base of port needle during needle removal.
3. **☞ Always activate needle safety feature when de-accessing the port needle.**
4. Check site after needle is removed.
5. Cover and monitor de-accessed site as necessary for bleeding.





BioPatch

Tegaderm
or OPsite

1/2"
steri-strip
or hubguard

Slit Tape

Chevron then
cover piece of
tape

Complete with anchor
tape

DRESSING THE PORT

B. CVC Site Care Procedure:

3a. PICC Dressing Change

Equipment:

- * Alcohol or Sani-Cloth™ (to clean work surface)
- * Mask
- * Sterile barrier - for under extremity
- * CVC dressing tray (CHG included)
 - (2) Sterile gloves (1 included)
 - Appropriate size transparent dressing (small included)
 - Tape measure (included)
- * Normal saline pad and/or alcohol swab (optional)
- * Securement device
- * BioPatch® (0.4mm opening)
- * Package sterile ¼" steri-strips
- * Appropriate wrap to secure PICC

POLICY:

1. CVC site **MUST BE** cleaned with 30 second CHG scrub, followed by 30 second air dry. The ChlorPrep™ Sepp Applicator (.67 mL) may be used for site care of a small infant in place of the ChlorPrep™ One-Step Applicator (3 mL).

2. **△ Apply BioPatch® OVER PICC site, DO NOT place slit of BioPatch® under or around catheter.** (See picture links in CVC policy outline: [PICC Dressings 1, 2 and 3.](#))

3. Following PICC placement, the dressing will be changed every 7 days or when dressing is not clean, dry or occlusive.

Exception: If a pressure dressing of gauze is added on top of the BioPatch® at placement, or if bloody drainage is present, the dressing **MUST BE** changed within 24-48 hours. (See picture links in CVC policy outline: [PICC Dressings 1, 2 and 3.](#))

4. Any PICC, regardless of tip placement, **MUST BE** cared for using CVC policies and procedures.

5. PICC tip placement is verified by chest X-ray or fluoroscopy at the time of placement and documented.

6. A PICC that terminates outside the SVC, **MUST** have tip verification and physician order for continued use.

7. **☞ Pinch clamp as necessary. Never use hemostats, padded or unpadded to clamp the PICC.**

NURSING GUIDELINES:

1. External visible length (EVL) is the measurement in centimeters of CVC length from insertion site to the junction (eg, tapered tip, winged device) leading to CVC hub.

- a. The EVL documented at insertion **MUST BE** compared to the EVL with each dressing change.
- b. The EVL **MUST BE** documented following each dressing change.

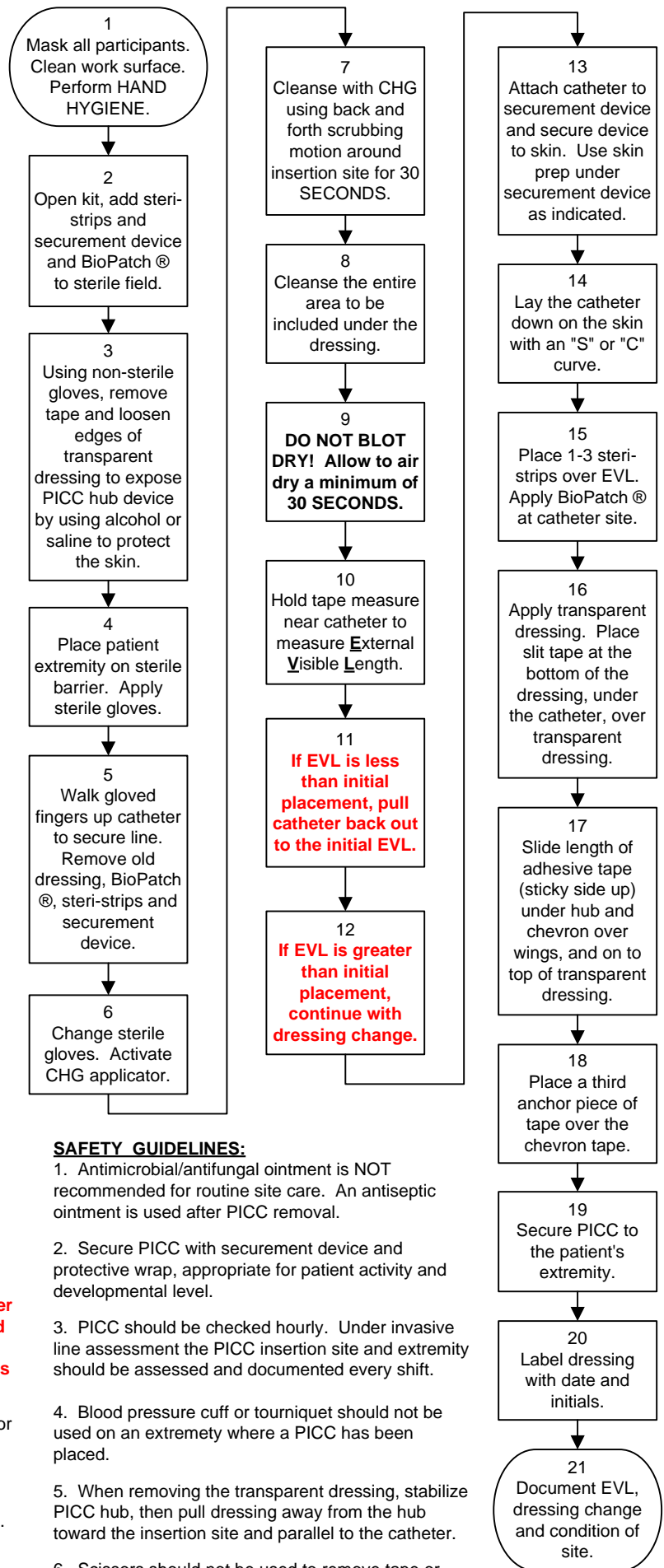
2. **☞ If the measured EVL is less than the EVL documented at insertion, the PICC has migrated into the patient and **MUST BE** pulled back to the documented EVL.**

3. **☞ If the measured EVL is greater than the EVL documented at insertion, **DO NOT ATTEMPT TO RE-INSERT PICC. Secure catheter to prevent further migration, redress site. Document new EVL and report findings to physician and Vascular Access RN. X-ray confirmation for tip placement may be needed if medications/fluids require central tip placement.****

4. If serous or bloody drainage is present at site, sterile normal saline or an alcohol swab may be used to help remove drainage prior to CHG scrub.

5. If signs/symptoms of site infection are noted, a culture of site will be obtained, ordered and documented. Call MD and Vascular Access RN.

6. If signs/symptoms of phlebitis are noted, report to MD and Vascular Access RN for treatment recommendations.



SAFETY GUIDELINES:

1. Antimicrobial/antifungal ointment is **NOT** recommended for routine site care. An antiseptic ointment is used after PICC removal.
2. Secure PICC with securement device and protective wrap, appropriate for patient activity and developmental level.
3. PICC should be checked hourly. Under invasive line assessment the PICC insertion site and extremity should be assessed and documented every shift.
4. Blood pressure cuff or tourniquet should not be used on an extremity where a PICC has been placed.
5. When removing the transparent dressing, stabilize PICC hub, then pull dressing away from the hub toward the insertion site and parallel to the catheter.
6. Scissors should not be used to remove tape or dressing.

B. CVC Site Care Procedure:

3b. PICC Removal

Equipment:

- * Alcohol or Sani-Cloth™ (to clean work surface)
- * CVC dressing tray; includes
 - (1) Sterile gloves (included)
 - Small transparent dressing (included)
 - Tape measure (included)
- * (1) Non-sterile gloves
- * Packet of antiseptic ointment
- * Sterile barrier - for under extremity
- * Mask (if tip culture is ordered)
- * Sterile specimen cup (if tip culture is ordered)

POLICY :

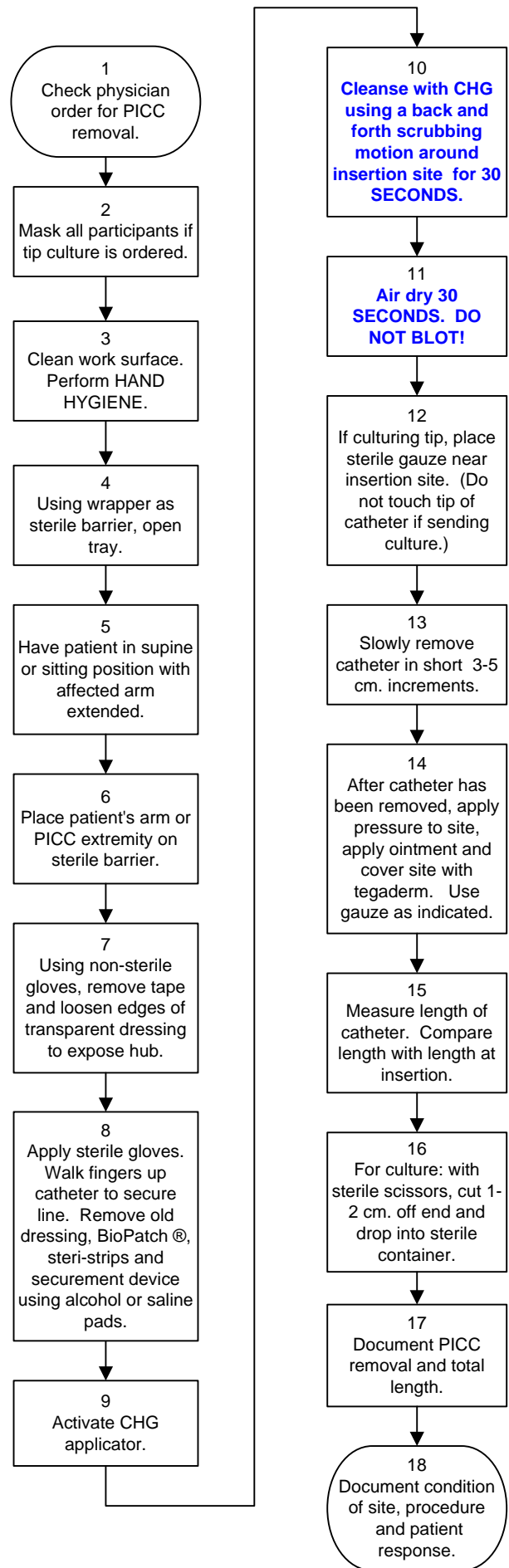
1. PICC removal may be accomplished by an RN who has completed the designated CVC/PICC Education Module and PICC Removal Competency.
2. A Physician Order **MUST BE** obtained prior to PICC removal.
3. After PICC removal, measurement of PICC **MUST BE** done to confirm an intact catheter has been removed and is equal to insertion length.
4. **In the event the PICC length after removal is less than the PICC length at insertion, the physician and Vascular Access RN MUST BE notified immediately.**
5. CVC site **MUST BE** cleaned with 30 second CHG scrub followed by 30 second air dry. The ChloroPrep™ Sepp Applicator (.67 mL) may be used for site care of a small infant in place of the ChloroPrep™ One-Step Applicator (3 mL).

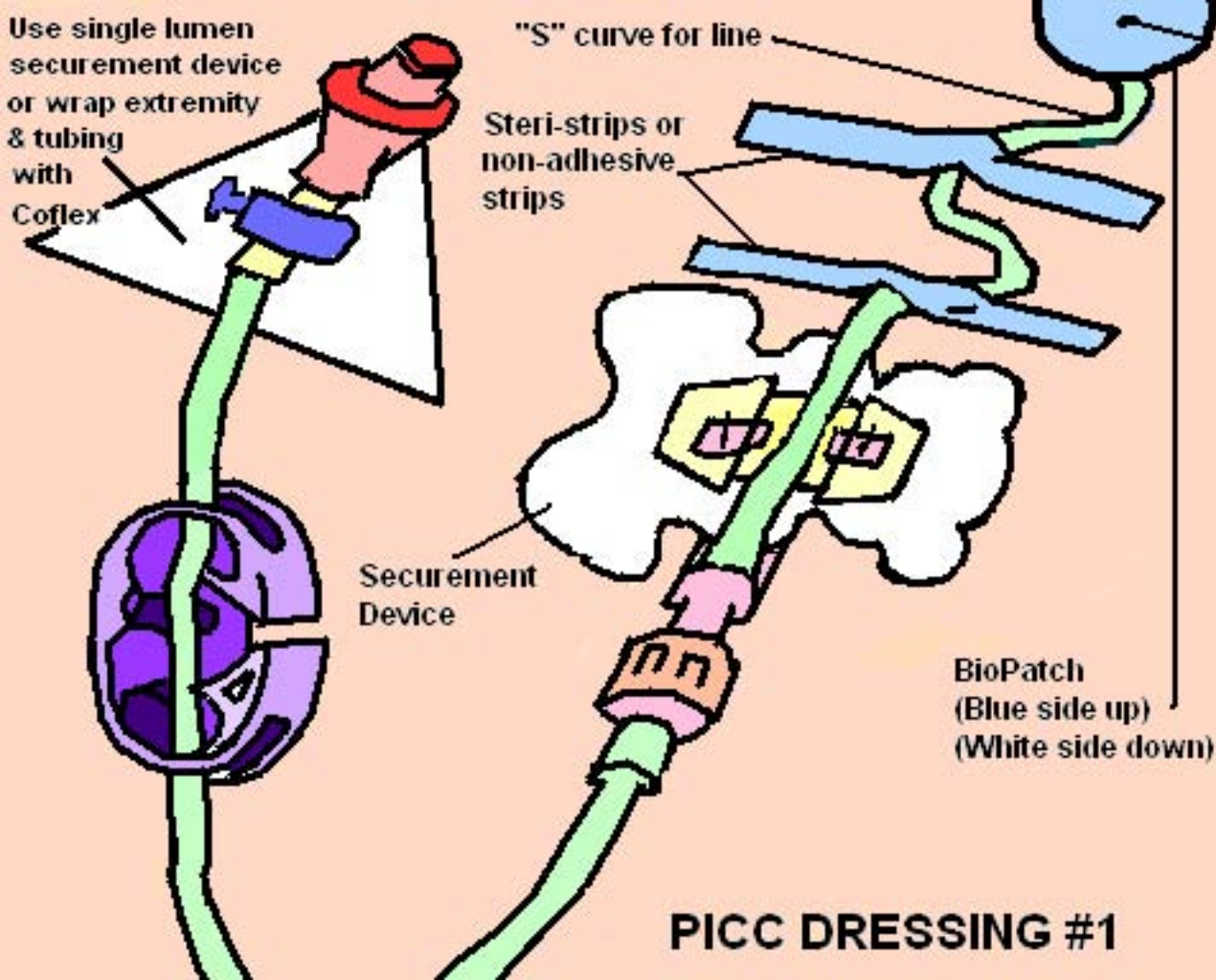
NURSING GUIDELINES:

1. Know total catheter length prior to performing PICC removal.
2. Routine tip cultures are not required; obtain order for culture if indicated (i.e. infection suspected).
3. **Do not pull catheter if any resistance is felt. Call Vascular Access RN for assistance.**
4. **Apply digital pressure until bleeding has stopped, then cover site with antiseptic ointment and a sterile occlusive dressing. (Use either Povidone-Iodine ointment or Vaseline gauze: use of an antibiotic ointment requires an MD order.)**
5. 24 hours after PICC removal, remove dressing.
6. Document length of catheter removed and date of removal.
7. Document patient tolerance to procedure and site assessment.

SAFETY GUIDELINES:

1. Review and document dressing care with patient/family.
2. Document education related to PICC removal, dressing care, and signs and symptoms of complications.
3. Notify physician if any problems occur with:
 - a. Extensive bleeding
 - b. Drainage
 - c. Swelling of extremity
 - d. Removed catheter length less than insertion length
 - e. Redness or irritation at site





PICC DRESSING #1

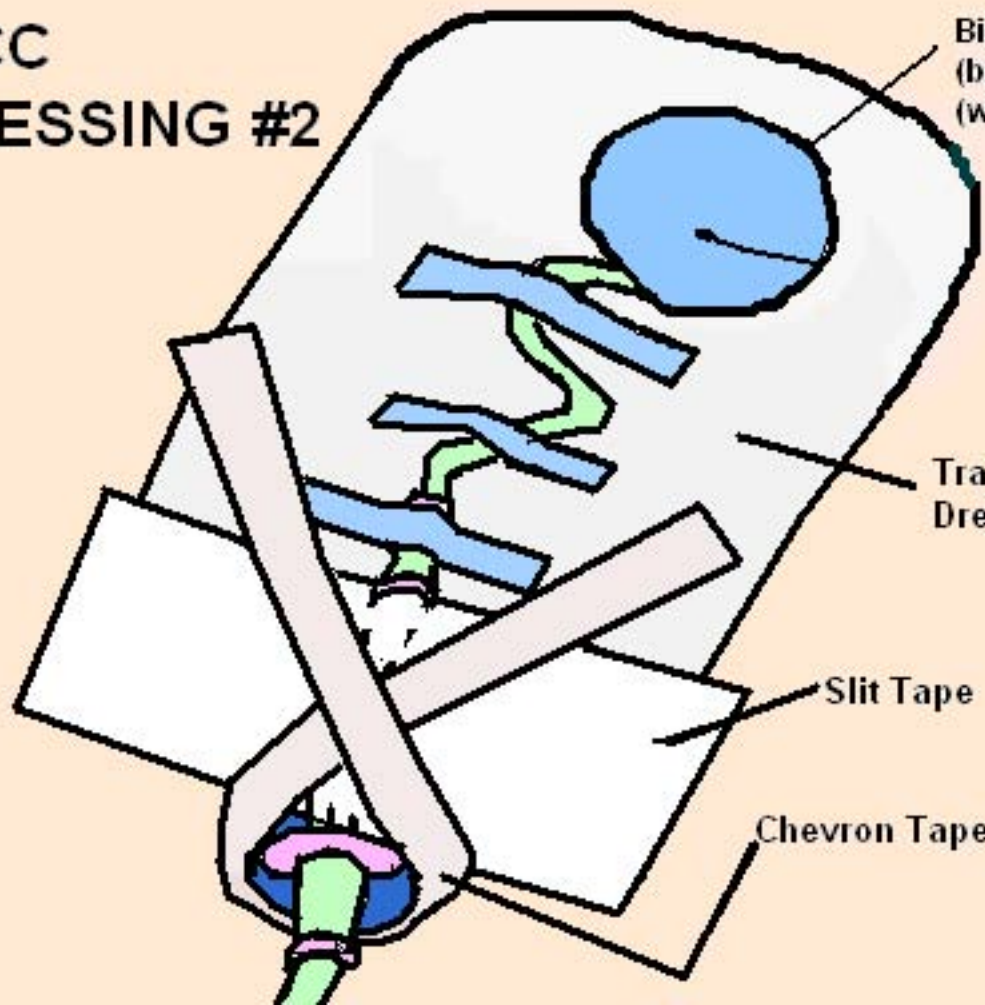
PICC DRESSING #2

BioPatch
(blue side up)
(white side down)

Transparent
Dressing

Slit Tape

Chevron Tape



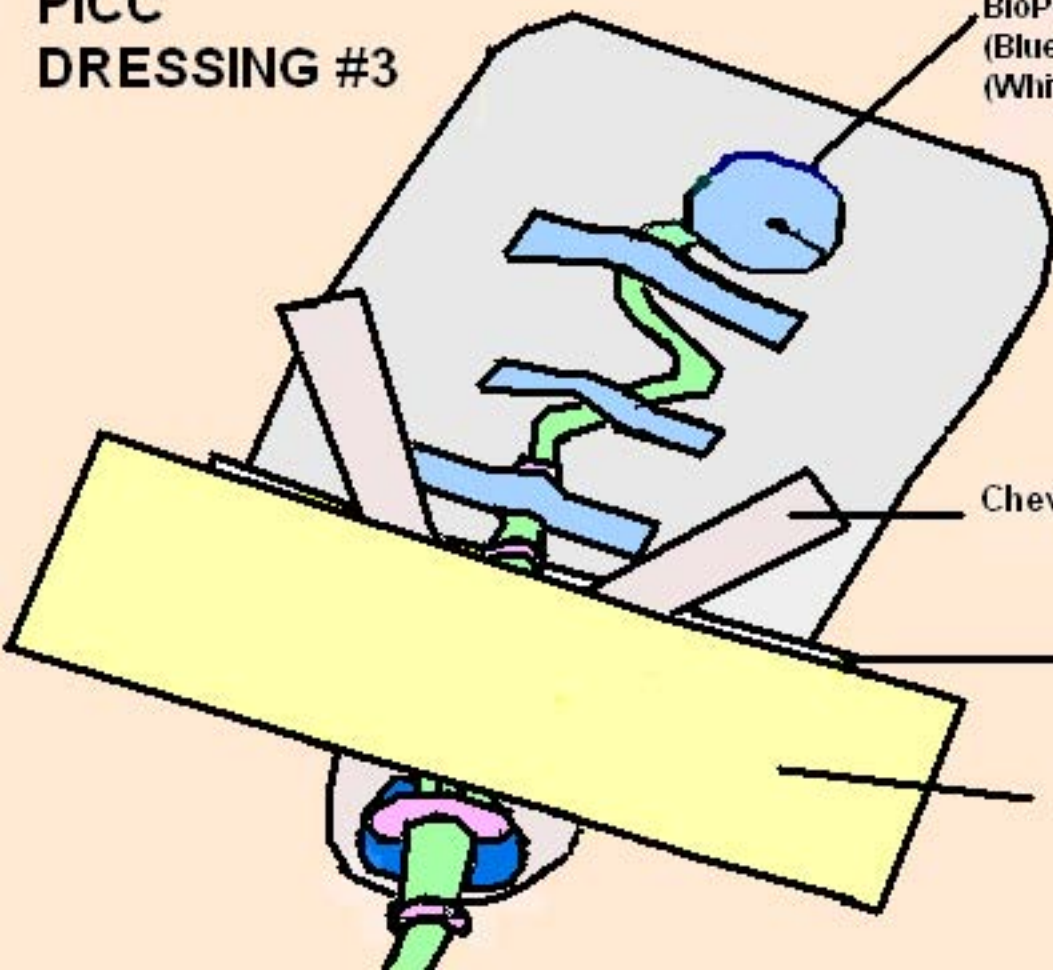
PICC DRESSING #3

BioPatch
(Blue side up)
(White side down)

Chevron

Slit Tape

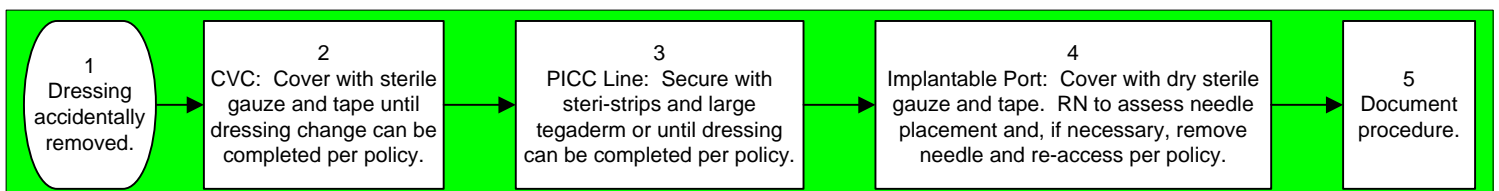
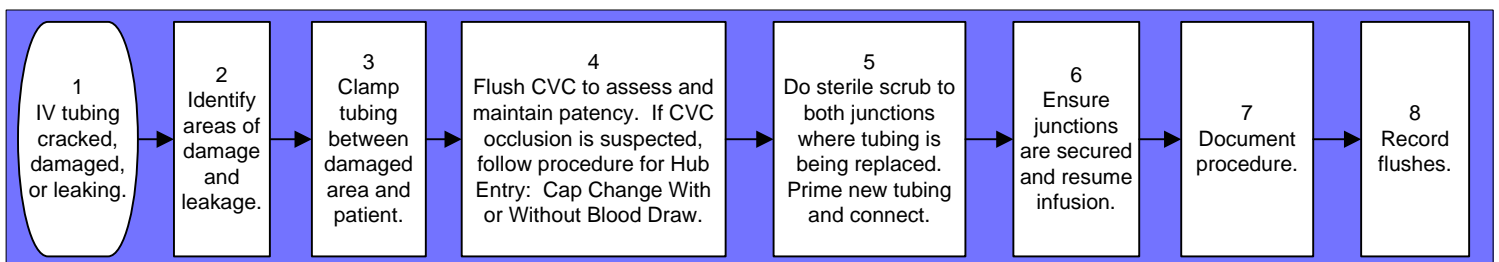
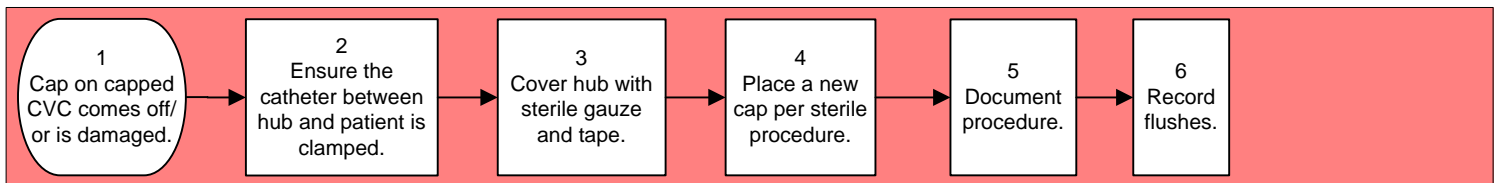
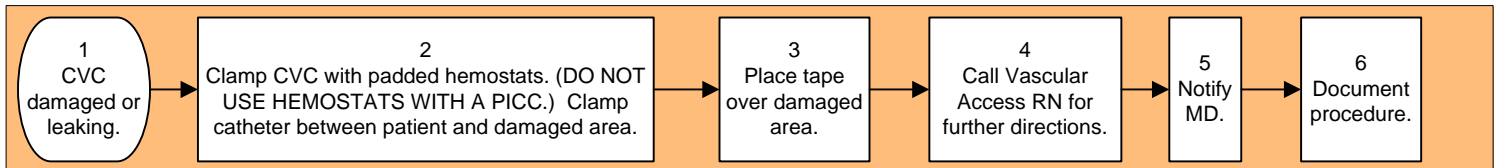
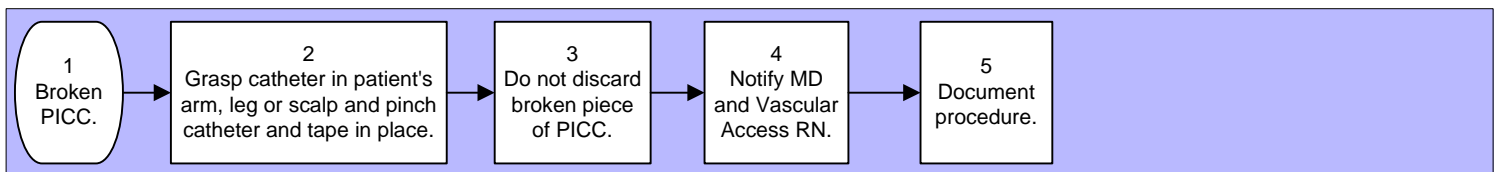
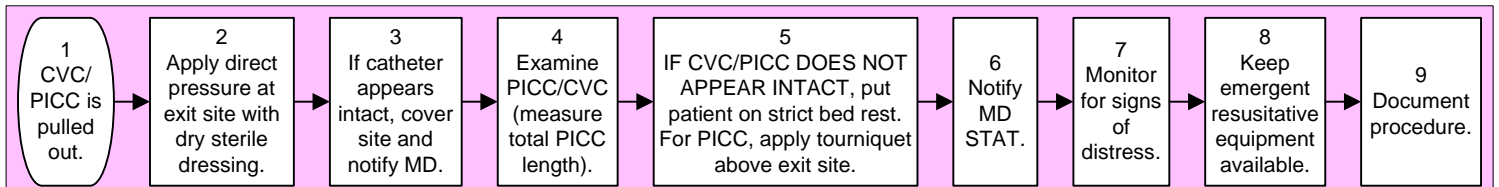
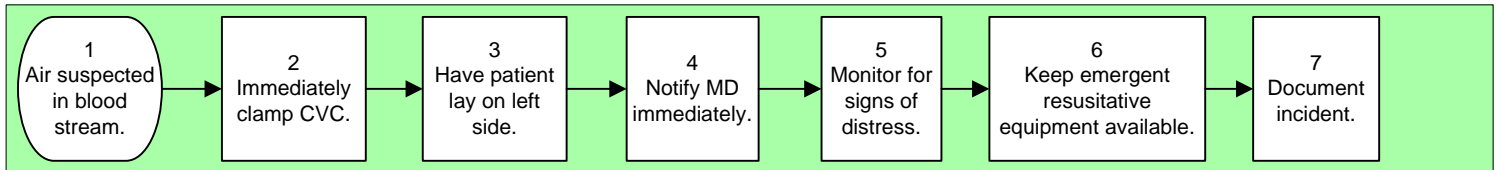
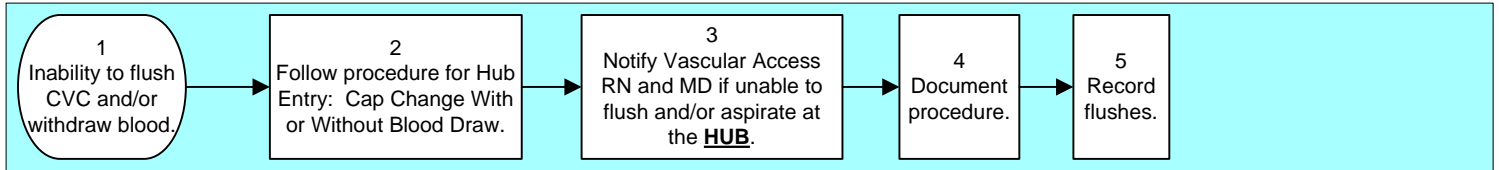
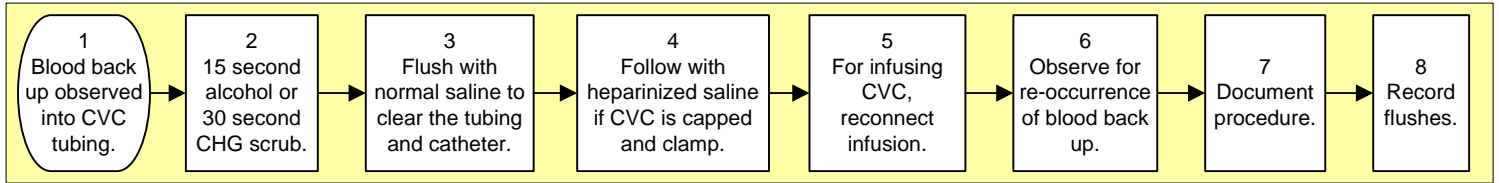
Anchor Tape



C. CVC Emergent Care Procedure:

1a. Emergent Care of Any CVC by RN Personnel

NOTE: Nursing and Safety Guidelines are continued on following page.



C. CVC Emergent Care Procedure:

1a. Emergent Care of Any CVC by RN Personnel

Equipment

- * Sterile 4X3 gauze
- * Tape
- * Optimal: padded hemostats
- * Non-sterile gloves
- * Prefilled syringe of heparinized saline
- * CHG 1.5mL Frepp Applicator or alcohol pad

POLICY:

1. Emergent care of a CVC MUST BE practiced by ALL CCHMC RN personnel who care for a child with a CVC.
2. Emergent care of a CVC MUST BE completed by an RN who has achieved competency using designated CVC module. This process MUST BE verified by an RN Preceptor.
3. Emergent care MUST BE taught with return demonstration to parents and care givers of patients with a CVC, who will be off unit, on pass or are being discharged.
(See: [CVC Emergent Care By Non-RN Personnel.](#))
4. Patients who are transported within CCHMC and who have a CVC MUST have padded hemostats with them at all times. Padded hemostats are used to clamp lines when there is an obvious break or leak in the line to prevent entry of air into blood stream.

Exception:

A PICC should NOT BE clamped with a padded hemostat. Pinch clamp and tape to occlude catheter.

5. Anyone transporting a patient with a CVC within CCHMC MUST HAVE completed the required education addressing the emergent management of a CVC.
6. Notify Vascular Access RN for catheter occlusions and for instillation of catheter clearance agents.
7. Notify Vascular Access RN for damaged/leaking CVC.

NURSING GUIDELINES:

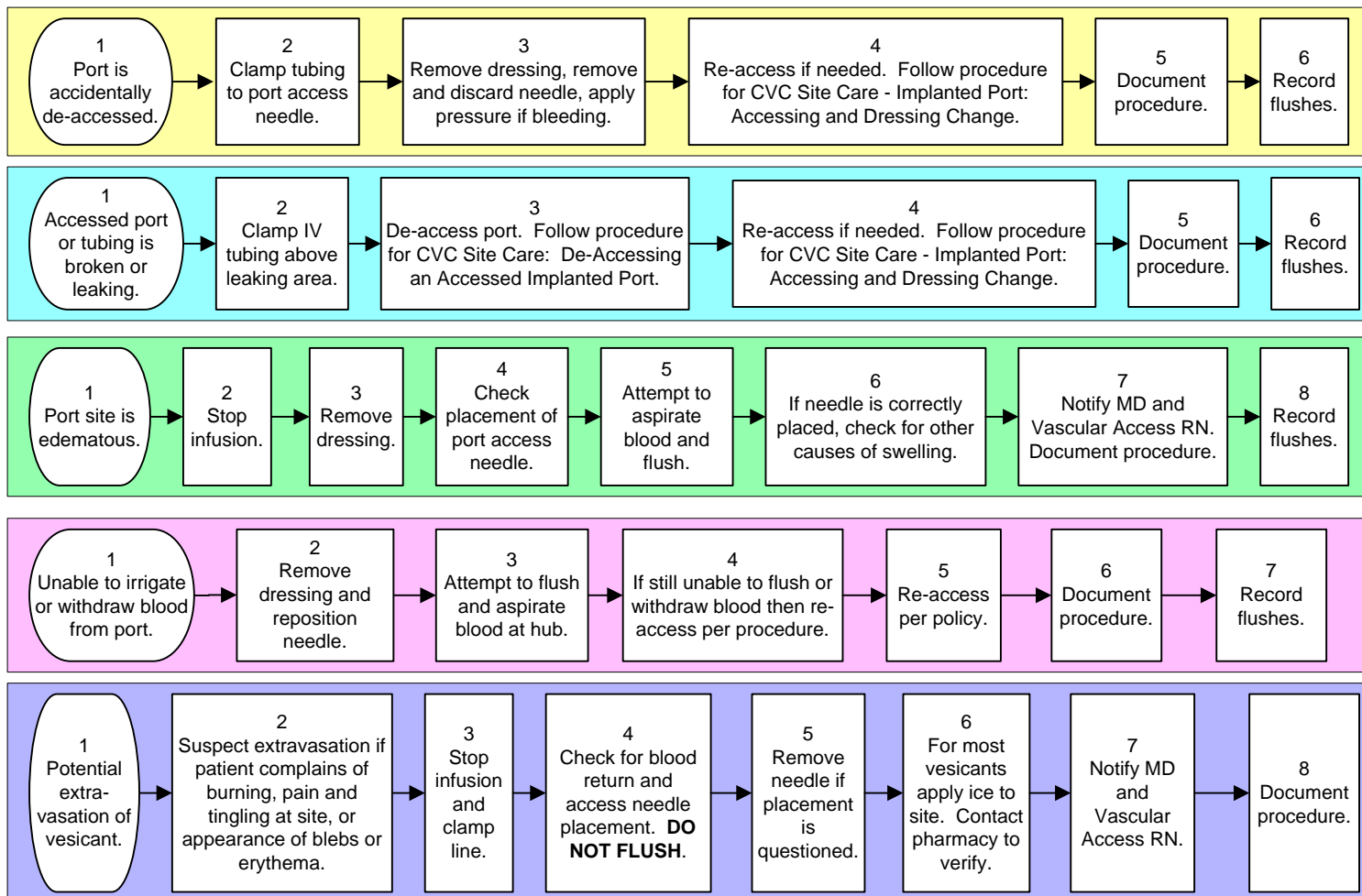
1. Use 30 second CHG scrub or 15 second alcohol scrub to access junction as determined by urgency of situation.
2. A CVC that is flushing well but lacks blood return, may indicate catheter complications.
(See: [Hub Entry: Cap Change With or Without Blood Draw.](#))
3. Signs of air or catheter embolism may include:
 - a. Sudden onset of audible sucking sound on inspiration.
 - b. Cyanosis
 - c. Dyspnea or shortness of breath
 - d. Tachycardia
 - e. Substernal chest pain
 - f. Anxiety
 - g. Fear of dying
 - h. Increased central venous pressure
 - i. Hypotension
4. Nerve injury is a potential complication with PICC insertion. Immediately report complications of the accessed extremity (ie. Pain, numbness, or tingling) to the Physician and the Vascular Access RN.

SAFETY GUIDELINES:

1. Use appropriate hand hygiene prior to and following CVC care.
2. NEVER attempt to force flush a CVC against resistance.
3. All tubing used for a CVC system MUST have Luer-Loked™ connections. Sliplock connections MUST NOT BE used on a CVC.
4. Secure CVC with securement device as indicated for patient activity and developmental level, to prevent catheter breakage.
5. If CVC cuff is exposed, secure CVC and redress site to prevent further displacement. Notify Vascular Access RN and physician.
6. NEVER use scissors to remove dressings.
7. A CVC without an attached clamp, needs a Luer-Loked™ extension piece with a clamp added, follow cap change policy for care practices.

C. CVC Emergent Care Procedure:

1b. Emergent Care of Implanted Port by RN Personnel



Equipment:

- * Padded hemostats
- * Sterile gauze
- * Tape
- * Non-sterile gloves
- * Prefilled syringe of heparinized saline
- * CHG 1.5mL Frepp Applicator or alcohol pad

POLICY:

1. Emergent care of the implanted port **MUST BE** completed by an RN who has achieved competency using designated CVC Module. This process **MUST BE** verified by an RN preceptor.
2. Patients who are transported within CCHMC and who have an accessed port **MUST** have padded hemostats with them at all times. Padded hemostats are used to clamp lines when there is an obvious break or leak in the line to prevent entry of air into blood stream.
3. Anyone transporting a patient with an accessed port within CCHMC **MUST** have completed the required education addressing the Emergent care of a CVC.
4. In order for a patient with an accessed port to travel outside CCHMC (e.g., out on pass), the caregiver **MUST** demonstrate knowledge of emergent care and **MUST** take necessary equipment for emergent care with them before leaving the patient care area. They will need to return to CCHMC to have the port checked after initial emergent care has been provided.
5. With an infiltration or extravasation of fluid or medications into the tissue surrounding the port site, check with pharmacy and the Extravasation policy for potential need of an antidote into the injured tissue.

NURSING GUIDELINES:

1. If unable to get a blood return and a vesicant is ordered, refer to pharmacy and therapeutics Policy [II-113 Vesicant Chemotherapy Extravasation](#).
2. If a patient's port flushes with difficulty, but improves when one of his/her arm(s) are up, this may indicate a complication. Notify CVC Resource and MD.
3. To assure needle securement use a hub guard or 1/2" steri strips.
4. Newly placed ports should be accessed with longer needles to allow for post surgical swelling.
5. Use 30 second CHG scrub or 15 second alcohol scrub to access junction as determined by urgency of situation.

SAFETY GUIDELINES:

1. **DO NOT** flush with a 1, 3 or 5 mL syringe due to the high pressures on a small barrel syringe.
2. **ALWAYS** activate needle safety device to de-access a port.
3. Devices that can be used in addition to the tubing securement device are: expand nets, sports bra, snug tank shirts and/or bull dog clamps.
4. Newly placed ports with continuous infusions should be closely monitored to evaluate post surgical swelling and to prevent extravasation/infiltration.

C. CVC Emergent Care Procedure:

1c. Emergent Care by Non-RN Personnel

Equipment:

- * Sterile 4x3's
- * Tape
- * Optimal: Padded hemostats and non-sterile gloves

PURPOSE - To provide a safe environment for all patients with a CVC.

POLICY:

1. Emergent care of a CVC **MUST BE** practiced by all CCHMC non-RN personnel who care for or transport a child with a CVC.
2. Emergent care **MUST BE** taught with return demonstration to parents and care givers of patients with a CVC, who will be off the unit, on pass or are being discharged.
3. Anyone caring for or transporting a patient with a CVC within CCHMC **MUST HAVE** completed the required education addressing the emergent management of a CVC.
(See: Policy IPB3 Emergency Care of a CVC by Licensed and Non-Nursing Personnel.) (See: P&T Policy II-111 for listing of required personnel.)

SAFETY GUIDELINES:

1. Use non-sterile gloves whenever possible.
2. Appropriate hand washing technique.
3. Never use hemostats on a PICC. Pinch catheter and secure with tape.
4. **DO NOT** throw anything away related to the CVC or tubing prior to review with an RN.
5. Report any problem with CVC to RN caring for patient.
6. If patient experiences sudden onset of shortness of breath, chest pain, or feeling faint, call for help immediately.

