



**PRACTICE GUIDELINE
CHILD HEALTH PROGRAM**

Title: Management of Central Vascular Access Devices (CVAD) in Pediatrics: Tunneled, Non-Tunneled, PICC and Implanted Ports	Approved By: Professional Advisory Committee	Approved Date: September 24, 2021
Authorization Child Health Medical/Surgical/Ambulatory Educator Group Child Health Patient Care Teams Children's Hospital Standards Committee Child Health Nursing Practice Shared Health (pending)	Revised Date:	Page 1 OF 11

1.0 PURPOSE:

- 1.1 To provide a process for the management of Central Vascular Access Devices (CVAD): tunneled, non-tunneled central venous catheters, peripherally inserted central catheters (PICC) and implanted subcutaneous ports (Port-A-Cath) in pediatric patients.
- 1.2 To prevent adverse events related to indwelling central venous access devices, standardization of central line practices, decrease prevalence of CVAD line infection, and enhance the stability of the catheter.
- 1.3 For CVAD care in Neonatal Care Areas (ie. NICU), please refer to the Neonatal Clinical Practice Guideline: Central Vascular Access Devices in NICU.
- 1.4 For information related to standard infusion therapy practices & guidelines, please refer to the Shared Health CPG 350.140.124 HSC - Infusion Therapy: Central, Peripheral, Subcutaneous, Intraosseous.
- 1.5 This clinical practice guideline does not support accessing, maintenance and/or discontinuing use of Dialysis-Type Central Vascular Access Devices (ie. Vas-Caths®). Refer to the Manitoba Renal Program for appropriate practice guidelines.

NOTE: All recommendations are approximate guidelines. Practitioners must take into account individual patient characteristics and situations. Concerns regarding appropriate treatment must be discussed with the Attending Physician/Admitting Service.

2.0 DEFINITIONS:

- 2.1 **Peripherally Inserted Central Catheter (PICC):** inserted by PICC Services and Pediatric Surgeons. A PICC Line is a soft, flexible central venous catheter inserted into a peripheral vein and advanced until the tip is positioned in the superior vena cava with caval atrial junction as optimal tip placement.
- 2.2 **PICC Services:** a team of specially-trained PICC Nurse Inserters who peripherally insert vascular lines under light sedation to achieve prolonged IV access for ongoing treatment. The PICC Nurse Inserter may also insert PICC lines in the operating room (under supervision of a Pediatric Surgeon) while the patient is under general anesthesia.
- 2.3 **Aseptic Non-Touch Technique:** using practices during a procedure to prevent contamination from external pathogens; applying the strictest cleaning techniques to minimize the risk of infection to the patient.
- 2.4 **Central Vascular Access Device (CVAD) or Surgical Line:** a CVAD is a silicone catheter that is inserted by a Pediatric Surgeon, Intensivist or Emergency Room Physician; may be placed by peripheral insertion, open procedure or "cut down" method to obtain prolonged vascular access.

Exception: Child Health OR (under the skill of a Pediatric Surgeon) - the surgical line may be inserted via direct vessel visualization and tunneled beneath the skin. The CVAD may have a cuff to adhere to the tissue for securement purposes.

3.0 GUIDELINES:

- 3.1 Aseptic technique is required for all CVAD line care.
- 3.2 Tip location of the CVAD must be confirmed by x-ray by the Admitting Service, Pediatric Surgeon or PICC Nurse prior to initial use.
 - 3.2.1 A Physician's order is required to confirm CVAD use once appropriate tip location has been confirmed.
 - 3.2.2 An x-ray is repeated if the PICC is pulled back more than 2cm in length.
 - 3.2.3 All CVADs should have an x-ray with any length manipulation.
 - 3.2.4 If there is suspicion that the CVAD has migrated further in or outwards, contact the admitting service to assess and determine need for x-ray.
 - 3.2.5 Document any changes on the Integrated Progress Note (IPN) and CVAD Flowsheet (#NS01068).
- 3.3 Continued need for the CVAD should be reassessed every 24 hours during daily rounds.
- 3.4 Types of Dressings:

Type of Dressing	Rationale/Indications
Transparent Semi-Permeable Dressing (TSM)	<ul style="list-style-type: none"> • TSM dressing is the dressing of choice and should be used as first line • Allows for visualization of catheter site • Fully adheres around catheter site • Exceptions: otherwise specified by PICC or Surgical team; documented skin reaction to TSM; exudate at catheter exit site
Gauze Dressing (with tape)	<ul style="list-style-type: none"> • Moisture, bleeding, oozing or exudate at catheter exit site • Documented skin reaction to TSM dressing
Hydrocolloid or Silicone Dressings	<ul style="list-style-type: none"> • Patient reaction to all other dressings & tapes • Best use for patients with very sensitive skin or have reacted to all other dressings

- 3.5 Frequency of Dressing Change:
 - 3.5.1 Frequency of scheduled dressing changes is determined based on type of dressing used (see table below).

Type of Dressing	Initial Dressing	Continued Dressing Changes
TSM Dressings +/- External Stabilization Device (ESD)	7 days (and PRN*)	Every 7 days and PRN
Gauze & Tape Dressings	48 hours (and PRN*) Exception: unless otherwise ordered by the Pediatric Surgeon	Every 48 hours and PRN
Hydrocolloid/Silicone Dressings	48 hours (and PRN*)	Every 48 hours and PRN
Suspected/Confirmed Site Infections	Once daily	Once daily

- 3.5.2 *PRN = Dressings are also to be changed at any anytime:
 - There is moisture, oozing, exudate or bleeding present at the catheter exit site
 - Dressing has become soiled
 - Dressing is lifting, loose, or has lost adherence to skin
 - Patient complains of new or unexplained pain at exit site of catheter and exit site not visible
- 3.6 Cleaning Solutions:
 - 3.6.1 Chlorhexidine Gluconate (CHG) 2% with 70% Isopropyl Alcohol is the preferred skin antiseptic agent.
 - 3.6.2 If there is a skin sensitivity or allergy to CHG, consider the following cleaning solutions in order as listed: Tincture of Iodine, Povidone-Iodine, 70% Isopropyl Alcohol or Normal Saline (0.9%).
NOTE: 0.9% saline should only be used when requested by the admitting physician due to the patient's inability to tolerate any other cleaning solutions
- 3.7 External Stabilization Devices (ESD):
 - 3.7.1 An adhesive-based ESD (ie. Statlock ®) may be used to keep the winged junction of a PICC line in place. The ESD must be changed with every dressing change or if there is presence/suspected contamination, infection or debris.
- 3.8 Catheter Site Care:
 - 3.8.1 Assess catheter site once per shift or prior to initiation of accessing the CVAD. The catheter exit site should be visualized for any abnormalities.

- 3.8.2 Assess catheter length for migration or length discrepancies.
- 3.8.3 Avoid use of topical ointments, lotions or creams at the catheter site.
- 3.8.4 If there is discharge or drainage from the catheter site, place an absorbable dressing directly over catheter exit site and secure with TSM dressing (ie. calcium alginate or hyper-fiber dressing).
- 3.8.5 With an order from the Pediatric Surgeon or Intensivist, remove sutures placed from cut-down incisions after 7-10 days. Do not remove sutures that are used to secure the CVAD catheter in place. Contact Pediatric Surgery if there are questions or concerns regarding the integrity of sutures or the securement of the CVAD. See 3.14 for CVAD Removal.
- 3.9 Loop, Dress and Secure:
 - 3.9.1 The principles of loop, dress & secure may reduce the potential for catheter breakage or potential line dislodgement.
 - 3.9.2 Loop the catheter around the exit site in a circular or “J” shape (if possible).
Exception: Polyurethane non-tunneled CVADs & Hemodialysis CVAD catheters must maintain a straight pathway.
 - 3.9.3 Secure the length of the catheter with tape for additional stability of the CVAD catheter.
 - 3.9.4 Consider covering the dressing with a tubular mesh stocking or cover the device with patient clothing to prevent potential dislodgement and minimize entanglement risks.
- 3.10 Line Access:
 - 3.10.1 Cleanse the injection cap for 15 seconds with two 70% alcohol swabs each and every time the line is accessed. Allow to dry completely.
 - 3.10.2 Flush with 0.9% saline prior to and after administration of medications or with blood draws until the line is clear.
 - 3.10.3 Clamp all other ports when injecting any flushes, medications or boluses.
 - 3.10.4 When removing the injection cap, additional precautions need to be applied as the CVAD system will be opened.
 - Apply procedural facemask to patient, caregiver(s), assistant and self
 - Don sterile gloves
 - Use two alcohol swabs, cleanse for 30 seconds
 - Ensure to clamp lumen(s) prior to removing the cap to prevent the chance of air emboli or blood loss
 - 3.10.5 To reduce the risk of developing an air embolism, remove all air from intravenous flushes, medications and IV tubing prior to administration.
- 3.11 Heparinizing CVAD:
 - 3.11.1 The heparin concentration and volume is dependent on type of CVAD and patient weight. Refer to [HSC Central Vascular Access Device \(CVAD\) Reference Chart: Pediatrics & Neonates](#) for heparin & 0.9% saline flush volumes.
 - 3.11.2 Heparin is a 2 nurse check prior to administration. Refer to the Shared Health Policy 350.120.311 HSC- Safety Control of High Alert Medications in Shared Health Facilities for additional information. for additional information.

Concentration	Rationale
10 units/ml	Patients less than 10kg Patients with pre-existing coagulopathy
100 units/ml	Pediatric patients equal to or greater than 10kg
1000 units/ml	For dialysis-type catheters use ONLY

3.11.3 Heparin Frequency

Type of CVAD	Frequency of Heparin Administration
Any PICC with a clamp CVADS (tunneled & non-tunneled)	Two times per week & PRN
Implanted Ports	Monthly & PRN
Any PICCs without a clamp	Weekly & PRN – flush with 0.9% saline only Heparin is NOT required EXCEPTION: <i>when ordered by PICC Services or Pediatric Surgeon</i>

- 3.12 Injection Cap Changes and Filtering Requirements:
 - 3.12.1 Refer to Shared Health CPG 350.140.124 HSC -Infusion Therapy: Central, Peripheral, Subcutaneous, Intraosseous Practice Guideline.
- 3.13 Tubing Changes:
 - 3.13.1 Change any “add-on” devices such as extension sets, filters and needless devices at the

- 3.13.2 same time as the administration set listed below.
- 3.13.2 Never cover tubing connections with tape.
- 3.13.3 If a new CVAD has been inserted, initiate a new IV solution and tubing set.

3.13.4 Frequency of Administration Set Changes:

Solution/Administration Set	Time Frame
Medication Tubing (closed) Continuous Administration Sets Continuous Infusion Medications Continuous Parenteral Nutrition - Basics	Q96Hours
Intermittent IV & Medication Tubing Electrolyte Solutions	Q24Hours
Continuous Parenteral Nutrition - Lipids	Q24Hours
Cyclic Parenteral Nutrition (Basics +/- Lipids)	Q24Hours
Blood Products	Every 4 Hours or when set to idle greater than 60 minutes

3.14 Removal/Discontinuation of CVADs:

- 3.14.1 Healthcare Providers that are able to remove CVADs are as follows: Attending Physician, Senior Resident, Pediatric Surgical Team, PICC Services, Physician Assistants, trained Nurse Clinicians and Advanced Practice Nurses.
- 3.14.2 Registered Nurses are not to remove any CVAD unless supervised by the above representatives.
Exception: CVADs can be removed by a Registered Nurse in Critical Care Areas (ie. PICU, CHOR or CHED).
- 3.14.3 Refer to the WRHA Clinical Practice Guideline: Removal of PICC Lines

3.15 Documentation:

- 3.15.1 CVAD care is to be documented on the CVAD Flowsheet (#NS01068). An Integrated Progress Note (IPN) may also be required to accurately document additional information. This may include assessments, changes in practice, type of care provided, abnormal findings, complications or other information such as type of antiseptic solution used, dressing type, time frame to complete, patient's response to the procedure, teaching/instructions provided to caregiver and any other additional information that should be noted.
- 3.15.2 Document the length of the CVAD catheter by pre-marked measurements on catheter towards insertion site once daily and with each dressing change. If the CVAD does not have pre-marked measurements, use a paper tape measure. Document on the Central Venous Access Device (CVAD) Flowsheet (#NS01068). Contact the Admitting Service or Surgeon if there is a variance in measurements of length. Document any discrepancies in length on an IPN and reference the CVAD Flowsheet as needed.


4.0 **PROCEDURE:**

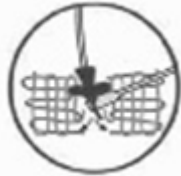
541 Prior to any procedure, review the following criteria:

- Review the patient's chart for allergies and skin sensitivities related to cleansing solutions
- Verify patient using two patient identifiers
- Explain the procedure to the patient (if able to understand) and the family or caregiver
- The nurse is to ensure the patient/caregiver has the required knowledge of the procedure, infection prevention practices and has identified their role in assisting with the procedure
- Hand hygiene is to be completed prior to contact with CVAD, after removal of old dressing, at the end of the procedure, as well as at any point during CVAD care when hand hygiene has become compromised
- When preparing for CVAD care, consider enlisting an assistant to help and gather all supplies prior to the procedure
- Checklists for all CVAD procedures can be found in the CVAD Resource Binder. Obtain a copy of the CVAD Checklist for the procedure you will be performing as a reference while providing care. This checklist can also be kept in the patient's kardex for ongoing/routine care throughout admission

- Healthcare providers, the patient and caregiver(s) are to wear procedural facemasks at all times when opening the CVAD system. (ie. removal of injection caps, remove of dressing, accessing an implanted port). If the patient is too young, ill or lacks the ability to wear a procedural face mask, ensure their face is turned away from the CVAD site throughout the procedure.
- Ensure you have a clean work surface for supplies
- At the end of each procedure, discard all used supplies & perform hand hygiene
- Document on the CVAD Flowsheet (#NS01068) and IPN according to Documentation (3.15)

4.2 Dressing Changes:

IMPORTANT STEPS	KEYPOINTS
<p><u>Removal of Dressing:</u></p> <ul style="list-style-type: none"> • Perform hand hygiene <p>Without ESD:</p> <ul style="list-style-type: none"> • Don non-sterile gloves • Remove TSM dressing by gently pulling the corners of the dressing towards the direction of catheter site • Ensure one hand is stabilizing the catheter over the dressing to prevent line dislodgement • Optional – to assist stabilizing a non-sutured or secured line, place a new CHG swabstick over the insertion site to hold line at exit site <p>With ESD:</p> <ul style="list-style-type: none"> • Don non-sterile gloves • Partially remove the TSM dressing in direction of catheter site, exposing the securement device and leaving the catheter site covered • Remove the adhesive-based ESD from the skin by applying alcohol swabs to the woven portion of the ESD • Using the extension leg(s), gently lift catheter from the securement device • Remove the remainder of the TSM dressing by gently peeling the dressing toward the catheter site • Ensure one hand or sterile CHG swabstick is stabilizing the catheter to prevent dislodgement 	<p>Note: If a securement device has been used to stabilize the patient's CVAD, it must be changed with each dressing change (ie. Statlock ®)</p>
<p><u>Assessment:</u></p> <ul style="list-style-type: none"> • Visually inspect catheter site and surrounding skin for inflammation, skin irritation or infection. • For non-tunneled CVADS inspect the condition of sutures securing the CVAD • Note any patient complaints of tenderness or pain • Note external measurement using a tape measure or pre-existing markings on the CVAD catheter <ul style="list-style-type: none"> ○ PICC: from winged junction to catheter insertion site ○ Tunneled & Non-tunneled CVADs: from lumen hub to the catheter insertion site • Discard soiled dressing, remove gloves and perform hand hygiene 	<p>Non-tunneled CVADs are sutured – if sutures are loose or missing, inform the Surgical/ PICC Services to assess for re-suturing or requiring an alternative securement device.</p> 

<ul style="list-style-type: none"> • Leave all masks on 	
<p><u>Cleaning Central Line Site:</u></p> <ul style="list-style-type: none"> • Don sterile gloves • If debris present at the catheter site, cleanse with CHG swabstick until debris is completely removed • With a new CHG swabstick, cleanse the skin of the CVAD starting at the catheter site by applying friction with a back and forth motion for a minimum of 15 seconds • Turn swab stick over (or use a new one) and cleanse in a side to side motion for a minimum of 15 seconds • With a new CHG swabstick, repeat the process on the other side of CVAD insertion site • Cleanse the length of the central line catheter with a new CHG swabstick from insertion site down to lumen for a minimum of 15 seconds, flip CHG swab over and repeat on the undersurface • All tissue resting beneath the catheter and dressing must be clean & dry • Cleanse area where ESD will be applied with CHG swabstick for 15 seconds • Allow area and device to air dry completely 	<p>The nurse may choose to use a sterile dressing tray. If not using a sterile dressing tray, ensure you are maintaining sterility when opening and handling supplies.</p> <p>Consider enlisting an assistant if you require support with managing the patient's position or handling of supplies.</p>  <p>Initiate cleaning at the catheter site and proceed outward with friction application method taking care to not cross over already cleansed catheter site.</p> <p>Do not blow on area, fan area or blot dry.</p> <p>A dressing applied to damp tissues, increases the risk for skin complications.</p>
<p><u>Application of ESD:</u></p> <ul style="list-style-type: none"> • Use skin preparation pad provided in ESD package • Insert the extension legs of CVAD into new ESD • Remove protective tape covers from the back of the securement device and apply to skin. Ensure adhesive contact with the skin 	<p>Ensure there are no kinks in the catheter.</p> <p>Prior to applying the dressing (with or without an ESD), use the method of looping, dressing & securing the catheter to prevent tension on the exit site. This will assist in preventing accidental dislodgement of the CVAD.</p>
<p><u>Dressing Application:</u></p> <ul style="list-style-type: none"> • Do not pull, place tension or stretch dressing. This increases the likelihood of tearing or increases pressure at catheter site • Place the TSM dressing so the catheter insertion site can be visualized through the dressing "window", extending a minimum of 2 cm in all directions from the catheter site, and covering the ESD (if required) • Smooth the dressing outward from the catheter site and secure all edges • Ensure the notched edges at the base of the dressing meet or overlap 	<p>Skin preparation is used to reduce the risk of Medical Adhesive Skin Injury and should be considered for use on children.</p> <p>Stretching of the dressing during application can cause skin sheering and damage.</p> <p>Do not use rolled gauze bandages with or without elastic, as it obscures device visualization, can impede circulation, and diminish flow of infusate.</p> <p>A tubular mesh dressing can be used to prevent patient from accessing/pulling at device & tubing.</p>

4.3 Cap Changes:

IMPORTANT STEPS	KEYPOINTS
<ul style="list-style-type: none"> • Apply procedural facemask to patient, caregiver(s), assistant and self • Perform hand hygiene • When preparing supplies, ensure the new injection cap has been primed with 0.9% NaCl • Don sterile gloves • Grasp central line lumen using a 4x4 sterile gauze, clamp CVAD and cleanse the connection between the lumen and injection cap connection with two 70% alcohol swabs for 30 seconds 	<p>Repeat steps if there is more than one lumen.</p> <p>Refer to HSC Educational Learning Package: CVAD</p>

<ul style="list-style-type: none"> • Remove the injection cap • If the hub of catheter under the cap is soiled, cleanse with a new alcohol swab until debris is removed completely • Attach a new pre-primed injection cap • Unclamp lumen • Flush the line with an appropriate volume of 0.9% saline • Heparinize CVAD or connect to IV solution 	<p>Reference Chart: Pediatrics and Neonates for appropriate flushing and heparinizing volumes based on type of CVAD.</p>
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4.4 Blood Draws (excluding Blood Cultures):

IMPORTANT STEPS	KEYPOINTS
<ul style="list-style-type: none"> • Stop all infusions to CVAD • Perform hand hygiene • Don non-sterile gloves • Cleanse the injection cap for a minimum of 15 seconds • Flush the line with an appropriate volume of 0.9% saline • With same syringe, draw a discard sample • Change to new syringe and draw blood for ordered tests • Transfer blood into the appropriate tube(s), flush line with 0.9% saline • Heparinize CVAD or connect to IV solution 	<p>For the appropriate order of draw and tube prioritization, refer to: Order of Draw in HSC Education Learning Package: Peripheral Intravenous Access.</p> <p>Refer to HSC Educational Learning Package: CVAD Reference Chart: Pediatrics and Neonates for appropriate flushing and heparinizing volumes based on type of CVAD.</p>

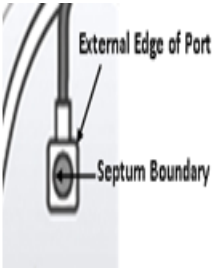
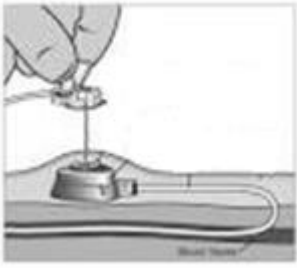
4.5 Drawing Blood Cultures:

IMPORTANT STEPS	KEYPOINTS
<ul style="list-style-type: none"> • Stop all infusions to CVAD • Apply procedural facemasks to patient, caregiver(s), assistant and self • Perform hand hygiene • Don sterile gloves • Clamp the CVAD lumen(s) • Grasp central line lumen using a 4x4 sterile gauze • Cleanse the connection between the lumen and injection cap with two 70% alcohol swabs for 30 seconds • Remove the injection cap • If the hub of catheter under the cap is soiled, cleanse with a new alcohol swab until debris is removed completely • Attach a new pre-primed injection cap • Unclamp lumen • Flush the line with an appropriate volume of 0.9% saline • With same syringe, draw a discard sample • Change to new syringe and draw blood for ordered tests • Transfer blood into the appropriate tube(s), flush line with 0.9% saline • Heparinize CVAD or connect to IV solution 	<p>Blood Cultures should be drawn first, followed by additional bloodwork as ordered by the physician/designate. For the appropriate order of draw and tube prioritization, refer to: Lab Information Manual</p> <p>Refer to HSC Educational Learning Package: CVAD Reference Chart: Pediatrics and Neonates for appropriate flushing and heparinizing volumes based on type of CVAD.</p>

4.6 In the Event of a Line Break or Crack:

IMPORTANT STEPS	KEYPOINTS
<ul style="list-style-type: none"> • Immediately wrap the external lumen with sterile gauze • Clamp the line using forceps as close to the break as possible • If unable to visualize crack, clamp as close to the catheter exit site as possible • Contact Pediatric Surgery or PICC Services immediately (24 hour coverage) • Note: Repair kits are housed in the PICC Services Office • Complete a Patient Safety Event Report (RL6) • Consider completing a Product Complaint Form if the break/crack as related to a defective product 	

4.7 Implanted Port Access & Gripper Removal:
4.7.1 Accessing Implanted Port

IMPORTANT STEPS	KEYPOINTS
<p>Apply topical anesthetic to the port site prior to accessing with a gripper needle:</p> <ul style="list-style-type: none"> • Consider use of topical anesthetics 30-60 minutes prior to insertion of the gripper needle (ie. EMLA®, Ametop®) to assist in reducing pain 	<p>In an emergent situation, topical anesthetics are not warranted due to delay in initiation of treatment.</p>
<p><u>Preparation of Supplies:</u></p> <ul style="list-style-type: none"> • Attach injection cap to the end of Gripper Needle tubing and prime with 0.9% saline • Leave syringe attached to injection cap 	
<p><u>Aseptic Precautions:</u></p> <ul style="list-style-type: none"> • Apply procedural facemask to patient, caregiver(s), assistant and self • Perform hand hygiene • Don sterile gloves 	
<p><u>Assessment of Site:</u></p> <ul style="list-style-type: none"> • Assess the port site and surrounding skin for signs and symptoms of infection, inflammation and skin breakdown 	<p>Do not access through an infected port site unless deemed appropriate by the ordering physician.</p>
<p><u>Cleaning Port Site:</u></p> <ul style="list-style-type: none"> • Using CHG swab stick (or alternate cleansing solution), cleanse the skin covering the implanted port extending 5 cm (2 inches) from middle of septum • Apply friction in an up and down motion for 15 seconds, flip CHG swabstick over and continue in a side to side motion for 15 seconds • Allow skin to air dry completely 	<p>Do not fan, blot or blow on the cleansed site.</p> <p>Dressings applied to wet skin cause increased risk of irritation/rash, infection and increase frequency of dressing changes.</p>
<p><u>Accessing Site:</u></p> <ul style="list-style-type: none"> • Palpate the external edges of the port and locate the boundaries of the septum in the middle of the port • Stabilize the port between thumb and index finger • Hold primed gripper needle perpendicular to skin • Insert needle straight down at 90° angle through skin into middle of septum until base of the portal reservoir is reached <ul style="list-style-type: none"> ○ Keeping the needle at a 90° angle 	<div style="display: flex; justify-content: space-around;">   </div> <p>Do not spin, twist or pivot the gripper needle in the</p>

prevents the needle from damaging the septum	implanted port membrane. This can damage and cut the membrane of the port.
<p><u>Ensuring Proper Placement:</u></p> <ul style="list-style-type: none"> • From the gripper needle extension tubing, aspirate to confirm position of needle in septum and port patency • If blood obtained, flush with 0.9% saline • Remove the safety engineered plastic clip • Apply TSM dressing over gripper • Heparinize the gripper extension tubing or attach IV solution 	<p>If unable to obtain blood, reposition the patient (ie., raise the same sided arm above their head and turn patients face away from port, ask patient to cough) to assist in opening chest wall.</p> <p>If still unable to get blood return, remove gripper needle & attempt to access again.</p>
<p>Exception: Low Profile Gripper Needle (ie. Gripper Micro ®)</p> <ul style="list-style-type: none"> • When accessing the implanted port, stabilize in the same manner as listed above • You are unable to withdraw blood until the safety needle has been removed • Stabilize the inserter base, press in the tab on safety arm and lift arm straight up until the needle clicks in locked position • Dispose of needle in sharps container • Blood can now be withdrawn from the gripper extension • If there is no blood return, try to reposition the patient. In the event that blood is unable to be withdrawn, the low profile gripper needle will need to be removed • Repeat steps as listed above to insert a new gripper needle 	

4.7.2 Removal of Gripper Needle from Implanted Port

IMPORTANT STEPS	KEYPOINTS
<p><u>Preparation:</u></p> <ul style="list-style-type: none"> • Perform hand hygiene & don non-sterile gloves • Discontinue and disconnect any infusions • Cleanse injection cap with two 70% alcohol swabs for a minimum of 15 seconds • Flush the gripper with an appropriate volume of 0.9% saline • Instill appropriate volume and concentration of Heparin 	<p>Refer to HSC Educational Learning Package: CVAD Reference Chart: Pediatrics and Neonates for volume of flushing and heparin requirements.</p>
<p><u>Dressing Removal:</u></p> <ul style="list-style-type: none"> • Remove dressing by gently pulling the corners of the dressing towards the center of the gripper site 	<p>Ensure one hand is stabilizing the gripper to prevent pulling on the implanted port.</p>
<p><u>Removal of Gripper Needle:</u></p> <ul style="list-style-type: none"> • Place gloved fingers on base of the implanted port to ensure stabilization of device • Lift the safety arm straight back until the needle “clicks” into the locked position • Apply a sterile 2x2 gauze directly to the puncture site with pressure until bleeding has resolved • Discard sharp in the sharps container 	
<p><u>Assessment:</u></p> <ul style="list-style-type: none"> • Assess the port site and surrounding skin for signs and symptoms of infection, inflammation, skin breakdown, and infiltration • Apply an adhesive bandage over the puncture site 	
<p>Exception: Low Profile Gripper Needle (ie. Gripper Micro ®)</p> <ul style="list-style-type: none"> • Place fingers on each side of the infusion site to stabilize the implanted port • With the other hand, lift the infusion site straight up • The device is now removed and safe as this a non-coring needle (similar to a blunt needle) • Apply a sterile 2x2 gauze directly to the puncture site with pressure until bleeding has resolved • Discard the used gripper in the sharps container • Assess the port site and surrounding skin for signs and symptoms of infection, inflammation, skin breakdown, and infiltration • Apply an adhesive bandage over the puncture site 	

5.0 **REFERENCES:**

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6.0 **RESOURCES:**

- 6.1 Nurse Educators, Child Health Services Children's Hospital
- 6.2 Nurse Clinician for CH5 and PSCU
- 6.3 Pediatric Surgery Department
- 6.4 Pediatric Infectious Disease