	Policies & Procedures  <b>RNSP: RN Procedure</b>  Title: <b>CENTRAL VENOUS CATHETERS - IMPLANTED PORTS (CENTRAL &amp; PERIPHERAL) ACCESSING AND DISCONTINUING ACCESS</b>  I.D. Number: <b>1032</b>
Authorization  [x] SHR Nursing Practice Committee	Source: Nursing Date Revised: March 2017 Date Effective: March, 1997 Scope: <b>SHR &amp; Affiliates</b>

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**DEFINITIONS**

**Client** - term used to refer to a client, patient or resident

**Implanted Port** - a port that is surgically placed in the chest or arm. It is used for long-term venous access for infusion of medications, parenteral nutrition, IV solutions, administering blood and blood sampling. It is accessed with a non-coring needle.

**ROLES**

**Graduate Nurses (GNs)** : GNs who have been identified by their manager in targeted practice settings may be certified in this RN Specialty Practice: RN Procedure: Central Venous Catheters – Implanted Ports (central and peripheral) Accessing and Discontinuing Access. The GN may only access and discontinue access of implanted ports under the direct supervision of a certified RN.

**Registered Nurses (RNs)** : RNs identified by their manager in targeted practice settings will be certified in this RN Specialty Practice: RN Procedure: Central Venous Catheters – Implanted Ports (central and peripheral) Accessing and Discontinuing Access .

**1. PURPOSE**

- 1.1 To maintain patency and minimize the risks of infiltration, infection, septal damage and other complications associated with the care and use of implanted ports.

**2. POLICY**

- 2.1 The RN/Grad Nurse certified in this RNSP will have first completed the following learning modules/activities prior to accessing and discontinuing access to implanted ports independently.

- Complete the required learning module and quiz ( teaching and learning methods may vary e.g. classroom and/or self- study using paper module or on line )
- Complete a skills checklist with a certified RN during simulation or during first access, to ensure safety checks are followed appropriately.
- Provide documentation of learning module quiz and skills checklist to educator/supervisor

2.2 Use only non-coring needles to access the port. Non-coring needles have a deflected point that avoids damage to the septum.

**Note:** Regular needles will damage the septum.

**See appendix D for instructions on using the non-coring safety needles**

**[Click here for access to brochure on line](#)**

**[Click here for Gripper Plus instruction video on line](#)**

**[Click here for Gripper Micro instruction video on line](#)**

2.3 Once the port is accessed, the needle may remain in the port up to 7 days. Needleless adapter if used is changed every 7 days, with the needle and extension tubing.

2.4 To prevent peripheral port occlusion and/or damage, avoid using an arm that has an implanted port for BPs or venipuncture.

2.5 If implanted port is accessed for continuous use, dress with a transparent semi permeable dressing

2.6 Implanted ports can be used for all types of intravenous therapy, including infusion of blood products, parenteral nutrition, and infusion of chemotherapy agents as well as for blood sampling.

### 3. PROCEDURE

#### 3.1 Accessing:

3.1.1 If ordered, apply anaesthetic cream to the skin over the port, 15 minutes in advance of procedure.

3.1.2 Supplies:

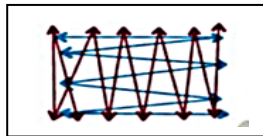
- anaesthetic cream (optional)
- dressing tray/set
- sterile gloves
- Chlorhexidine/alcohol - swab or swabstick
- 2 - 10mL syringes prefilled with 0.9% Sodium Chloride
- appropriately sized non-coring needle with extension tubing
- transparent semi permeable dressing
- Needleless adapter (if not included with non-coring needle set)
- Alcohol based hand sanitizer

3.1.3 Prior to accessing CVCs for any reason, nurses must perform hand hygiene for at least 15 seconds with alcohol-based hand rub or antiseptic soap and water.

- 3.1.4 Palpate the port to identify the septum. Report to physician any rotation or migration of port or any abnormal skin condition.
- 3.1.5 Open dressing tray. Add non-coring needle.

**Note:** Choose non-coring needle length (3/4 – 1 1/2) depending on the size of the port and the amount of subcutaneous tissue overlying the port. Ideally the bend in the needle rests on the skin when the port is accessed.

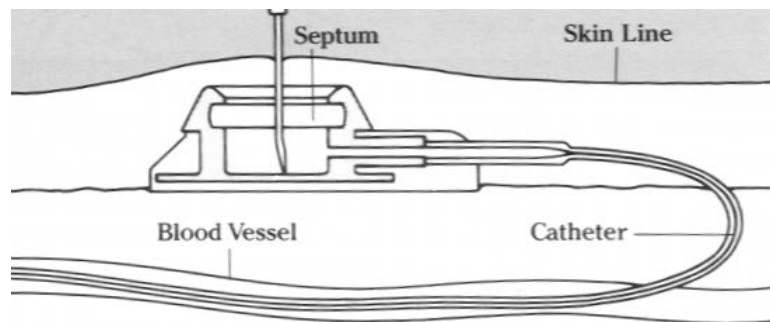
- 3.1.6 Disinfect skin over port with 2% Chlorhexidine/Alcohol 70% swab stick applicator. Using friction clean using a back and forth motion for 15 seconds. Flip the swab stick and moving in opposite direction clean area using a back and forth motion for another 15 seconds. For patients less than 2 months old wipe off chlorhexidine after 30 seconds with sterile 0.9% Sodium Chloride. Allow to dry completely.



- 3.1.7 While being careful not to contaminate the non-coring needle, attach saline filled syringe and prime with saline. Leave syringe attached to tubing.

**Note:** Acute Care Pediatrics attaches a needleless adapter for all IV infusions

- 3.1.8 Don sterile gloves.
- 3.1.9 Remove needle cover.
- 3.1.10 With non- dominant hand, locate port by palpation and secure between thumb and index finger.
- 3.1.11 Insert non-coring needle perpendicular to the port septum and push it firmly through the skin and septum until needle touches the bottom of the port.



**Note:** Once the septum is punctured, the needle should not be tilted or rocked; these actions may cause fluid leakage, extravasation and damage to the septum.

See Appendix D for manufacturers' instructions for use of Gripper Plus or Gripper Micro needles (activation of safety component on Insertion or removal of needle is different for each type). Please see online links in 2.2

- 3.1.12 Verify correct needle placement by gently withdrawing on the syringe to assess for blood return.

**Note:** *If unable to withdraw blood:*

- *make sure needle is at the bottom of the port*
- *reposition patient or ask to cough*
- *flush gently with saline*
- *if still unable to aspirate, remove needle and reattempt access using a new non-coring needle – a longer needle may be required*
- *if still unable to aspirate, report to physician (a referral may be made to Medical Imaging for a port contrast injection under fluoroscopy)*

- 3.1.13 Flush with saline (See Appendix A,B, C for flush amounts) **using a stop and start motion to create a turbulent flow** to clear all blood from the extension tubing, port and catheter. Observe for ease of flushing and any sign of subcutaneous infiltration. Clamp extension tubing, leaving syringe attached.

3.1.13.1 For continuous use of port, apply transparent dressing to cover the access site and to stabilize the needle in the port.

3.1.13.2 For blood withdrawal, or other intermittent use, attach needleless adapter.

3.1.13.3 For continuous medication/fluid administration attach appropriate tubing.

**Note:** *Acute Care Pediatrics attaches a needleless adapter for all IV infusions*

**Note:** *Clamp extension tubing during tubing or adapter changes to prevent air embolism or blood loss.*

## 3.2 Blood Withdrawal

3.2.1 Refer to policy: Central Venous Catheters – Blood Withdrawal #1042

## 3.3 Flushing and Heparin Locking

3.3.1 Refer to policy: Central Venous Catheters – Care of #1086. See attached Adult/Pediatric Standards (Appendix A, B & C) for amounts of flush.

## 3.4 Discontinuing Access

3.4.1 Ensure port is locked with heparin prior to removal of the needle.

3.4.2 Perform hand hygiene and don clean gloves.

3.4.3 Remove dressing.

3.4.4 Remove needle according to manufacturer's instructions (**see Appendix D**).

**Note:** *Please see online links in 2.2*

3.4.5 Cleanse the site with Chlorhexidine and allow to dry.

3.4.6 Apply a bandaid if required.

### 3.5 Documentation

- 3.5.1 Record Heparin administration on appropriate record.
- 3.5.2 Record fluid volumes as appropriate on In/Out Record

## 4. RELATED POLICIES

### **Other CVC policies:**

- #1086 Central Venous Catheters – Short Term, Tunneled, Implanted - Care of
- #1042 Central Venous Catheters – PICC, Short Term, Tunneled, Implanted – Blood Withdrawal

## 5. REFERENCES

Goss, L (2015) Guide to Preventing Central Line Associated Bloodstream Infections. Association for Professionals in Infection Control & Epidemiology (APIC)

Infection Prevention Solutions (2013) SoluPrep™ Swabs and Wipes Information Card. 3M Canada Company.

Infusion Nurses Society, Gorski, L, et al (2016) Vascular Device Management- Infusion Therapy Standards of Practice, Norwood, MA.

Marschall, J., Mermel, L., Fakhri, M., Hadaway, L., Kallen, A., O'Grady, N, Yokoe, D. (2014). Strategies to Prevent Central Line-Associated Bloodstream Infections in Acute Care Hospitals: 2014 Update. Infection Control and Hospital Epidemiology, 35(7), 753-771. doi:10.1086/676533. Retrieved from <http://www.jstor.org/stable/10.1086/676533> doi:10.1086/676533

Technical Services - MicroClave® Neutral Displacement Connector Change Recommendations. ICU Medical Inc.  
[http://www.icumed.com/media/137987/microclave\\_change\\_recommendation-web.pdf](http://www.icumed.com/media/137987/microclave_change_recommendation-web.pdf)  
Accessed on July 8, 2016.

Technical Services – Gripper needles. Smiths medical website: [www.smiths-medical.com](http://www.smiths-medical.com)

Perry, A, Potter, P. & Ostendorf, W (2014) Clinical Nursing Skills & Techniques –8th Edition. St. Louis, Missouri: Elsevier Mosby: Chapter 20: Safe Medication Preparation page 488.

## CENTRAL VENOUS CATHETERS - Adult Standards    November 2017

Prior to accessing CVC for any reason perform **Hand Hygiene** for at least 15 seconds with alcohol-based hand rub or antiseptic soap and water.

	PICC Clamp less, valved e.g. BioFlo PICC	PICC with clamps, non-valved	Short Term Percutaneous -jugular, subclavian or femoral	Tunneled Long term e.g. Hickman	Implanted Port chest or arm e.g. Port-a-Cath, P.A.S. port
<b>Accessing</b>	Syringe or IV tubing via needleless adapter				Non coring safety needle primed with 0.9% Sodium Chloride *See below for sizes available
<b>Check Placement</b>	<i>Gently aspirate to visualize blood return then flush with 0.9% Sodium Chloride</i>				
<b>Frequency of Flushing and Locking</b> <i>(Flushing and Locking not required for continuous IV infusion)</i>	Flush after each access or <b>Once a week</b> if unused	Flush after each access or <b>Q 24 h</b> if unused	Flush after each access or <b>Q 12 h</b> if unused	Flush & lock after each access or <b>Once a week</b> if unused	Flush & lock after each access or <b>Once a month</b> if unused
<b>Flush Volume (0.9% sodium chloride)</b>	10mLs before & after medication administration. 20mLs after blood administration or withdrawal				20mL
<b>Heparin Lock (100units/mL)</b>	N/A		N/A		3mL (300 units)
<b>Heparin Lock Syringe Size</b>	N/A		N/A		12mL
<b>Dressing changes</b>	<ul style="list-style-type: none"> <li>▪ Transparent semipermeable <b>q 5-7 days</b> and PRN when dressing soiled, wet or non-occlusive</li> <li>▪ Transparent semipermeable with gauze or gauze alone <b>q2 days</b></li> <li>▪ <b>Clean skin with saline prn, then for skin antisepsis use Chlorhexidine 2%/alcohol 70% swab stick.</b></li> </ul>				
<b>Needleless Adapter Change</b> <i>(Use needleless adapter on all unused and intermittent use CVC lumens)</i>	Once a week for unused lumens. Change every 96 hours if tubing is connected.				Once a week if port accessed
<b>Blood Sampling Discard Volume</b> <i>Use discard tube or 10 mL syringe</i>	1 tube or 5 mL			2 tubes or 7 mL	2 tubes or 7 mL

\* Stock # in SPD: **Gripper Plus Safety Needle:** 22G X 1-215487 22G X 3/4 -215484 22G X 5/8 -215485 21G X 1-215486 20G X 3/4- 215482 20G X 5/8 -215483  
**Gripper Micro Safety Needle:** 20G X 3/4 - 200939 22G X 3/4 - 200941 22G X 1 -200942



## CENTRAL VENOUS CATHETERS - Pediatric Standards

December 2016

Prior to accessing CVC for any reason perform **Hand Hygiene** for at least 15 seconds with alcohol-based hand rub or antiseptic soap and water.

	PICC (under 3 Fr)	PICC (3 Fr & over)	Short Term Percutaneous - jugular, subclavian or femoral	Tunneled Long term, e.g. Hickman	Implanted Port Chest or arm	
<b>Accessing</b>	Syringe or IV tubing via needleless adapter				Non coring safety needle primed with 0.9% Sodium Chloride	
<b>Check Placement</b>	Flush with 5 -10mLs 0.9% Sodium Chloride		<i>Gently aspirate to visualize blood return then flush with 0.9% Sodium Chloride</i>			
<b>Frequency of Flushing (0.9% sodium chloride)</b> <i>Flushing NOT required for continuous IV infusion</i>	Before & after medication administration		After each intermittent access Before & after medication administration After blood administration or withdrawal			
<b>Flush Volume (0.9% sodium chloride)</b>	5mL		Volume weight based: less than 10 kgs: 5mL greater than 10 kgs: 10 – 20mL		10 - 20mL	
<b>Frequency of Heparin Locking</b> <i>Locking NOT required for continuous IV infusion</i>	<b>N/A</b> *Unless physician specific orders written*		<b>N/A</b> After each intermittent access Q 24h to unused lumen		After each intermittent access Q 24 h if accessed but not used Once a month if deaccessed	
<b>Heparin Lock Volume</b> (100units/mL) wt. greater than 10 kgs or accessed 5 times or less/24 hrs.	<b>N/A</b>		<b>N/A</b>		1.5mL(150units)	
wt less than 10 kgs or accessed 6 times or more/24 hrs.			<b>N/A</b>		0. 2mL heparin (100 units/mL) added to 1.8 mLs 0.9% sodium chloride (20units)	2.5mL(250units)
<b>Heparin Lock Syringe Size</b>			<b>12mL</b>			
<b>Dressing Change</b>	<ul style="list-style-type: none"> <li>○ Transparent semipermeable with gauze or gauze alone <b>q2days</b></li> <li>○ Transparent semipermeable <b>q 5-7 days</b> and PRN when dressing soiled, wet or non-occlusive</li> <li>○ <b>Clean skin with saline prn, for skin antisepsis use 2% Chlorhexidine swabstick</b></li> </ul> <p style="margin-left: 20px;"><b>Note:</b> ages 2 months &amp; under – clean skin with chlorhexidine, let the skin dry then wipe off chlorhexidine with 0.9% sodium chloride</p>					
<b>Needleless Adapter Change</b> <i>use adapter on all CVC lumens</i>	Once a week on unused lumens. Change every 96 hours if tubing connected.				Once a week if ACCESSED	

<b>Blood Sampling Discard Volume</b> use discard tube or 12 mL syringe	<b>No blood sampling</b> <b>No blood transfusions</b>	3mL
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**PICU Central Venous Care Guidelines 2016**

**Appendix C (page 1 of 2)**

	<b>PICC under 3 French</b>	<b>PICC 3 French &amp; over</b>	<b>Percutaneous CVL/CVP</b>	<b>Long Term Tunneled Silicone</b>	<b>Long Term Implanted port</b>	<b>Umbilical Venous (Argyle)</b>
<b>Lumen Volume</b>	1.9Fr=0.105mL	3 Fr=0.145mL	Per pkg or lumen instruction	2.7Fr=0.15mL	Port-0.2-0.7mL Needle system-0.5-0.7 mL	Single Lumen 3.5 FR=0.15mL 5.0 Fr=0.30mL Multilumen-see pkg or lumen instructions
<b>Flush &amp; Locking</b>						
<b>Saline Flush/Lock</b> -use 6 -10 mL syringe -Use stop/start motion	-Before and after meds or bloodwork -Unused: q 24 hr. -Amount to clear lumen (at least 0.5 mL)	Before and after meds or bloodwork -Unused: q 24 hr. -Amount to clear lumen(at least 0.5 mL)	-Before and after meds or bloodwork -Amount to clear lumen(at least 0.5 mL)	-Before and after meds or bloodwork Volume: < 10 kg-5 mL > 10kg-10mL	-Before and after meds or bloodwork Volume: 2-5 mL	Before and after meds or bloodwork -Amount to clear lumen
<b>Heparin Lock</b> (Physician Order required)	25 units/mL 0.5-1mL q 8 hrs. and prn	No-Saline Lock at least q 24 hrs. <b>Note</b> -consider Heparin lock if patency problematic. Order required.	0.5-1.5mL of 25 units/mL q 8 hr. & prn	<b>Non Accessed:</b> 1.5 mL of 100 u/mL q 24 hrs. <b>Intermittent Access:</b> 1.5 mL of 10 units/mL q 8hrs& prn	<b>Non accessed:</b> 1.5 -2.5 mL of 100 u/mL monthly <b>Intermittent Access:</b> 1.5-2.5mL of 25 units/mL q 8hrs & prn	4 units/mL 2x lumen volume Q 6 hours
<b>Blood work draw</b>	No	Yes	Yes	Yes	Yes-use port closest to patient.	Yes
<b>Blood Discard</b>	n/a	2x lumen volume	2x lumen volume	3-5mL	2-5mL	n/a
<b>CVP Monitoring</b>	No, unless ordered	No, unless ordered	<b>Yes, Distal lumen</b>	No, unless ordered	No, unless ordered	As ordered



PICU Central Venous Care Guidelines 2016

Appendix C (page 2 of 2)

	<b>PICC under 3 French</b>	<b>PICC 3 French &amp; over</b>	<b>Percutaneous CVL/CVP</b>	<b>Long Term Tunneled Silicone</b>	<b>Long Term Implanted port</b>	<b>Umbilical Venous (Argyle)</b>
<b>Acceptable Meds</b> (CVL dilution if fluid restricted)	ALL IV meds	ALL IV meds	ALL IV meds	ALL IV meds	ALL IV meds	ALL IV meds
<b>Parenteral Nutrition</b>	Dextrose <= 30%, amino acids, lipids. Consider heparin in PN at low rates	Yes-all	Yes-all	Yes-all	Yes-all	Dextrose<= 50%, amino acids, lipids
<b>Blood administration</b>	NO	NO unless no other site	NO-unless no other site	NO-unless no other site	Yes	Yes
<b>Routine Care</b>						
<b>Tubing Change</b> (includin g stop cocks and caps not put on with sterile field)	TPN-q 24 hrs. IV -q 96 hr.	TPN-q 24 hrs. IV -q 96 hr.	TPN-q 24 hrs. IV/CVP -q 96 hr.	TPN-q 24 hrs. IV -q 96 hr.	TPN-q 24 hrs. IV -q 96 hr. <b>Access Needle-</b> q 7 days	Q 24 hours
<b>Dressing</b> -Sterile technique -Skin Asepsis with Chlorhexidine- wash off if < 2 month age	Transparent-q 7 days & prn Gauze-q 24 & prn	Transparent-q 7 days & prn Gauze-q 24 & prn	Transparent-q 7 days & prn Gauze-q 24 & prn	Transparent-q 7 days & prn Gauze-q 24 & prn	Transparent-q 7 days & prn Gauze-q 24 & prn	Transparent-q 7 days & prn Gauze-q 24 & prn

[Click here for access to brochure on line](#)

[Click here for Gripper Plus instruction video on line](#)

[Click here for Gripper Micro instruction video on line](#)

## Gripper Micro Instructions for Use

# GRIPPER® Micro

Blunt Cannula, Non-Coring Safety Needle

### Insertion



#### Access a port

Prepare the site according to facility protocol. Holding on to the inserter as shown, insert the needle into the port.



#### Remove the needle

- From the back of the inserter, place fingers on each side of the inserter's base to stabilize it.
- With the other hand, place a finger on the tip of the inserter's safety arm.
- **Press the tab in** and lift the safety arm straight back until the needle **CLICKS** into the locked position.

✓ **The sharp is now removed.**



#### Dispose in sharps container

- Dispose of the inserter in a sharps container.
- Apply a semi-permeable dressing over the infusion site, ensuring that a minimum 4cm area surrounding the site is covered.



#### Remove infusion site

Place fingers on each side of the infusion site. Stabilize the port with the other hand. Lift the infusion site straight up and discard per facility protocol.

### Removal



Smiths Medical, H.B., Inc.  
 25 Park Hill Street, Rock  
 Phone 1-800-426-2448  
 www.smiths-medical.com  
 Smiths Medical, Inc. is a subsidiary of Deltec.

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## Gripper Plus Instructions for Use



### Access port

Access a port with the GRIPPER PLUS® safety needle at a 90° angle.



### Remove clip

Remove the clip by sliding it towards the end of the needle arm and lifting.



### De-access with two fingers on base

To de-access the port, approach the GRIPPER PLUS® safety needle from behind. Place fingers on the base to stabilize it.



### Lift safety arm

With the other hand, place a finger on the tip of the safety arm. Lift the safety arm straight back. Notice that the needle comes out perfectly straight.



### “Click” needle into locked position

Continue lifting until the needle “clicks” into the locked position. The GRIPPER PLUS® safety needle is now ready for disposal into a sharps container.

*It's that easy.*