

## Sample Policy

### Policy and Procedure PICC Line (Peripherally Inserted Central Catheter)

#### **Policy:**

##### Product Description and Indications:

- ❑ The Per-Q-Cath® PICC Line and the Groshong® PICC Line is indicated for short or long term peripheral access to the central venous system for intravenous therapy and blood sampling.
- ❑ The Per-Q-Cath® Midline and Groshong® Midline catheters are indicated for short term or long term peripheral access to the peripheral system for selected intravenous therapies and blood sampling (see contraindications)
- ❑ For blood therapy it is recommended that a 4 French or larger catheter be used.
- ❑ PICC Line and Midline catheters are made from specially formulated and processed medical grade materials for reliable long (greater than 30 days) and short (less than 30 days) vascular access
- ❑ PICC Line catheters are an effective vascular access device in adults, children and infants.
- ❑ Patient's who may benefit from a PICC Line are mid to long term IV therapy. These patients include (but are not limited to): chronic disease, have limited venous access, receive vesicant / irritant drugs, need antibiotic therapy, etc.
- ❑ PICC lines have been an accepted technology since 1975, with extensive published research.

##### Contraindications:

- ❑ The device is contraindicated whenever:
  - The presence of device related infection, device related bacteremia, or device related septicemia is known or suspected
  - The patient's body size is insufficient to accommodate the size of the inserted device
  - The patient is known or suspected to be allergic to materials contained in the device
  - Past irradiation of prospective insertion site
  - Previous episodes of venous thrombosis or vascular surgical procedures at the prospective placement site
  - Local tissue factors that will prevent proper device stabilization and/or access
- ❑ Midline catheter placement is contraindicated for patients requiring any of the following:
  - Solutions with final glucose concentrations above 10 percent
  - Solutions with protein concentrations above 5 percent
  - Continuous infusion of vesicants

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### Warnings:

- ❑ Polyurethane Per-Q-Cath® (only)
  - Use of ointments can cause failure of the device
  - Use of alcohol or acetone based solutions should not be used to clean the polyurethane Per-Q-Cath® catheter or skin site as the catheter may be adversely affected. Providone Iodine is the recommended antiseptic solution to be used
- ❑ Intended for single patient use. Do not reuse. Any device that has been contaminated by blood should not be reused or resterilized
- ❑ Providone-iodine is the suggested antiseptic to use. Acetone and tincture of iodine should not be used. 10% acetone / 70% isopropyl alcohol swabsticks used for dressing changes may be used for silicone Per-Q-Cath® and Groshong® PICC and Midline catheters
- ❑ After use this product may be a biohazard. Handle and discard with universal and blood / body fluid precautions in mind (state, federal, local laws and regulations and accepted medical practice)

### Qualification for Insertion:

- ❑ A licensed physician or a registered nurse who has demonstrated competency and have been educated in advanced intravenous therapy may insert a PICC Line or Midline catheter
- ❑ PICC Line and Midline catheters are commonly inserted into (but not limited to) the basilic, cephalic, median cubital veins of the antecubital area and upper arm. Care and maintenance shall be performed by persons knowledgeable of the risks involved and qualified in the procedures
- ❑ The tip of the PICC Line resides in the superior vena cava. The tip of the midline lies in the peripheral vein system below the axillary vein
- ❑ A physician's order is needed for PICC insertion.
- ❑ Tip verification is required by radiographic confirmation prior to initiation of infusion therapy (PICC Line only)
- ❑ For Bard Access Systems products: Per-Q-Cath PICC / Midline or Groshong PICC / Midline information, literature or video (insertion & maintenance techniques) may be obtained by contacting (800)-443-3385

### Precautions:

- ❑ Follow universal precautions when inserting and maintaining catheters
- ❑ Follow all contraindications, warnings, cautions, precautions, and instructions for all infusates specified by the manufacturer
- ❑ Use aseptic technique whenever the catheter lumen is opened or connected to other devices
- ❑ The fluid level in the catheter will drop if the connector is held above the level of the patient's heart and opened to air. To prevent a drop in the fluid level (and thus air

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entry) while changing injection caps, hold the connector below the level of the patient's heart before removing the injection cap.

### **Procedure:**

1. Prior to beginning the placement procedure, do the following:
  - ❑ Examine the package carefully before opening to confirm its integrity and that the expiration date has not been passed. Do not use package if it is damaged, opened or the expiration date has passed. Inspect kit for inclusion of all components
  - ❑ Flush the catheter with sterile normal saline or heparinized saline prior to use.
  
2. To avert device damage and /or patient injury during placement:
  - ❑ Avoid accidental device contact with sharp instruments and mechanical damage to the catheter material. Use only smooth edged atraumatic clamps or forceps
  - ❑ Avoid perforating, tearing, or fracturing the catheter when using a stylet
  - ❑ Do not use catheter if there is any evidence of mechanical damage or leaking
  - ❑ Avoid sharp or acute angles during implantation which could compromise the patency of the catheter lumen(s)
  - ❑ Do not place suture around the catheter as sutures may damage the catheter or compromise catheter patency. Groshong® catheters (only) the provided suture wings will secure the catheter without compromising catheter patency
  - ❑ Do not cut stylet
  
3. After placement, observe the following precautions to avoid device damage and / or patient injury
  - ❑ Do not use the device if there is any evidence of mechanical damage, or leaking. Damage to the catheter may lead to rupture, fragmentation and possible embolism and surgical removal. If the Groshong® catheter is damaged, it should be clamped with an atraumatic clamp, or kinked closed if a clamp is unavailable, until the catheter can be replaced or repaired.
  - ❑ Use only leuc lock connections for accessories and components used in conjunction with this device
  - ❑ If signs of extravasation exist discontinue injections. Begin appropriate medical intervention immediately
  - ❑ Infusion pressure greater than 25 psi (172 kPa) may damage blood vessels and viscous and is not recommended
  - ❑ Do not use a syringe smaller than a 10 cc (smaller syringes generate more pressure than larger syringes). A two-pound weight of equivalent force on the barrel of a 3-cc syringe generates in excess of 45 PSI. The same two-pound weight on the barrel of a 10-cc syringe generates less than 7 PSI of pressure.
  - ❑ Do not infuse against resistance. Follow standard institution policy / procedure to clear a blocked catheter
  - ❑ Published data indicates that a PICC Line may be damaged by the use of high pressure injectors in Radiology

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- ❑ Caution should be used when taking blood pressures on the arm of a patient with a PICC Line or Midline catheter in place as that could damage the catheter
- ❑ Caution should also be used by taking peripheral phlebotomies at or above the insertion site of a PICC Line or Midline as that could damage the catheter

### Possible Complications:

air embolism	Bleeding	Brachial plexus injury	Cardiac arrhythmia	cardiac tamponade
Catheter erosion through the skin	Catheter embolism	Catheter occlusion	Catheter related sepsis	endocarditis
Exit site infection	exit site necrosis	Extravasation	Fibrin sheath formation	hematoma
Intolerance reaction to implantable device	Laceration of vessels or viscus	Perforation of vessels or viscus	Phlebitis	spontaneous catheter malposition or retraction
Thrombo-embolism	Vessel thrombosis	vessel erosion	Risks normally associated with local or general anesthesia, surgery and post operative recovery	

### Insertion Instructions:

1. Evaluate chart for physician order (PICC Line requires a central line order) (Midline require a peripheral order or peripheral infusate order)
2. Review patient’s medical history, contraindications to device placement, indications to device placement, allergies, coagulation status and labs
3. Verify patient’s identity. Explain procedure to patient and family
4. Prepare a clean work area and gather the supplies
5. Wash hands with an antimicrobial soap prior to beginning the insertion procedure. In accordance with *Intravenous Nursing Policies and Procedures for Infusion Nursing 2000* “wash intended cannulation site with anti-infective soap and water if necessary” “remove excess hair from intended cannulation site with clippers or scissors (optional)” page 76-77
6. Select the appropriate vein by placing a tourniquet firmly around the upper arm. Examine the antecubital fossa and upper arm preferably basilic, cephalic or median cubital basilic veins are used) and select a vein (may use Site Rite® ultrasound).

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After selecting the vein, locate the brachial artery to avoid inadvertent puncture (may use Site Rite® ultrasound). Release the tourniquet, leaving it in place under the arm.

7. Position the patient supine with the arm to be accessed away from the trunk of the body at a 90-degree angle. (PICC Line and Midline). Have patient practice turning his/her head toward the arm of insertion and dropping his chin to the shoulder (PICC Line Only)
8. For (PICC Line only) and SVC placement measure from the planned insertion site to the right clavicle head, then down to the third intercostal space. For (Midline only) and peripheral placement, measure to desired tip location in the proximal portion of extremity, just distal to the shoulder and deltoid muscle. Note that the external measurement can never exactly duplicate the internal venous anatomy. Document measurement. Optional: measure mid arm circumference and document.
9. Taken from page 59 *Intravenous Nursing Society Policies and Procedures for Infusion Nursing* “Local anesthesia may include: transdermal analgesic cream “Use of transdermal (topical analgesic cream) apply layer of transdermal analgesic cream to cannulation site. Cover analgesic cream with transparent semipermeable membrane (TSM) dressing material for 60 minutes before venipuncture). Remove dressing material and disinfect site”
10. Optional: place a poly-lined drape under the arm to be cannulated.
11. Wash hands again with antimicrobial soap; gown, mask, and put on first pair of sterile gloves. Powdered gloves come in the Bard Access Systems full procedure tray. Should you have powdered gloves they should be washed before use with sterile saline. Powder on gloves can be removed by wiping gloves thoroughly with a sterile wet sponge, sterile wet towel, or other effective methods. Note the patient and inserter should put on masks per protocol.
12. Establish a sterile field for all supplies and place all supplies in the sterile field
13. Remove catheter from the tray and examine it along the entire length to ensure the stylet is straight. Any bending or kinks may make stylet removal difficult once the catheter is inserted into the vein.
14. Draw up 10 ml of 0.9% normal saline or normal heparinized saline and irrigate the catheter directly through the priming hub. Treat each lumen catheter as of a dual lumen catheter as though it were a separate catheter. Leave syringe attached during procedure.
15. Modification of catheter length (Per-Q-Cath product only) To modify the length of the catheter due to patient size, measure the distance from the insertion site to the desired tip location. Catheter depth markings are in centimeters. Retract the stylet to well behind the point the catheter is to be cut. Using a sharp scalpel or sterile

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scissors, carefully cut the catheter according to institutional policy. Caution: do not cut stylet. Inspect cut surface to assure there is no loose material.

16. Using aseptic technique prep the insertion site. *Intravenous Nursing Society Policy and Procedures for Infusion Nursing 2000 page 61-63* states “cleanse site using antiseptic solution (10% Providone-iodine / 2 to 3% aqueous chlorhexidine or 70% isopropyl alcohol ((use if patient is allergic to iodine))). Using friction, apply antiseptic solution in a circular motion. Begin at the center of intended insertion site and work to exterior edge. Allow antiseptic solution to air dry (i.e. do no blow or blot dry). If using chlorhexidene, apply using sterile water, work into lather; rinse thoroughly with sterile water. If using Providone-iodine as the initial antiseptic solution, do not apply isopropyl alcohol as the second antiseptic solution because alcohol will negate iodine’s effect. If using isopropyl alcohol, apply for a minimum of 30 seconds.” Reminder for Bard Access Systems Per-Q-Cath polyurethane products it is not recommended to use alcohol or acetone based solutions rather use Providone-iodine solutions.
17. Discard used supplies, remove prep gloves, wash hands, re-apply tourniquet above the intended insertion site to distend the vessel and put on new pair of sterile non powdered gloves. Powdered gloves should be rinsed before use. (Powder on gloves can be removed by wiping gloves thoroughly with a sterile wet sponge, a sterile wet towel or other effective method).
18. Position sterile drapes around the insertion site (fenestrated drape over the anticipated puncture site) and over the tourniquet. You will need to be able to release the tourniquet through the drape without compromising the sterile field
19. Palpate and locate the distended vessel.
20. Anesthetize the venipuncture site (optional). Taken from page 59 *Intravenous Nursing Society Policies and Procedures for Infusion Nursing* “Local anesthesia may include: transdermal analgesic cream, iontophoresis of lidocaine hydrochloride 2% with epinephrine 1:100,000 topical solution, intradermal injection of lidocaine hydrochloride 1% solution, intradermal injection of bacteriostatic 0.9% sodium chloride with benzyl alcohol preservative” “Use of iontophoresis follow manufacturer’s guidelines for anesthesia application” “Use of injectable (intradermal anesthetic – follow manufacturer’s guidelines for intradermal anesthesia injections. Disinfect site and allow to dry. Draw 0.3 cc of injectable anesthetic in tuberculin syringe. With needle bevel up, gently insert needle intradermally above intended cannulation site. Aspirate to confirm no blood return. Inject 0.1 cc to 0.3 cc anesthetic to form wheal at cannulation site. Remove needle and discard syringe in appropriate puncture resistant container. Monitor patient response.” For those utilizing the modified Seldinger® technique injectable anesthetic should be highly considered”

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21. If using Site Rite® ultrasound prepare roll up the sterile sleeve, add sterile gel into the sleeve, pull the sterile sleeve over the non-sterile probe, add needle guide (if applicable) to the sterile bagged probe, put sterile gel onto the outside of the sleeve at the probe surface, locate chosen vein and identify artery to avoid

22. Perform Venipuncture using vein access technique per institutional policy

<b>Technique for Groshong® single lumen PICC Lines and Midline catheters – Safety Excalibur® Introducer</b>	<b>Technique for Groshong® dual lumen PICC Line and Midline catheters &amp; All Per-Q-Cath® products Safety Excalibur® Introducer</b>
<input type="checkbox"/> Remove introducer needle cover	<input type="checkbox"/> Remove Introducer needle cover
<input type="checkbox"/> Stabilize vein below intended access site with non dominant had (unless using Site Rite® which is in non dominant hand)	<input type="checkbox"/> Stabilize vein below intended access site with non dominant had (unless using Site Rite®)
<input type="checkbox"/> Grip only the introducer flashback chamber during the insertion	<input type="checkbox"/> Grip only the introducer flashback chamber during insertion. Do not apply excessive pressure to the T-handles (peel apart sheath)
<input type="checkbox"/> Perform venipuncture using shallow technique 15 – 30 degree angle. For Site Rite® place introducer into needle guide and perform venipuncture. Use needle guide angle to guide needle puncture.	<input type="checkbox"/> Perform venipuncture using shallow technique 15 – 30 degree angle. For Site Rite® place peel away sheath (if available) into needle guide and perform venipuncture. Use needle guide angle to guide needle puncture.
<input type="checkbox"/> After confirmation of blood return, lower introducer angle and advance approximately ¼ to ½ inches further to ensure positive cannulation of the vein. For Site Rite® after confirmation of blood return pull needle from introducer.	After confirmation of blood return, lower peel apart sheath angle and advance approximately ¼ to ½ inches further to ensure positive cannulation of the vein. For Site Rite® after confirmation of blood return pull needle from peel apart sheath .
<input type="checkbox"/> Holding the needle stationary, advance the introducer into the vessel by pushing forward. Stabilize introducer, release tourniquet	<input type="checkbox"/> Holding the needle stationary, advance the peel apart sheath into the vessel by pushing forward. Stabilize introducer, release tourniquet
<input type="checkbox"/> Support the introducer to avoid displacement. Apply slight pressure to the vessel above the insertion site to minimize blood flow. Release the tourniquet. Withdraw the needle from the introducer.	Support the peel apart sheath to avoid displacement. Apply slight pressure to the vessel above the insertion site to minimize blood flow. Release the tourniquet. Withdraw the needle from the peel apart sheath.

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<ul style="list-style-type: none"> <li>❑ Apply pressure with nondominant hand over cannulated vein at tip of cannula to control bleeding and minimize blood exposure</li> </ul>	<ul style="list-style-type: none"> <li>❑ Apply pressure with nondominant hand over cannulated vein at tip of cannula to control bleeding and minimize blood exposure</li> </ul>
<ul style="list-style-type: none"> <li>❑ Insert the catheter through introducer (may use smooth non-grooved pick-ups to advance the catheter). Advance the catheter slowly. For central placement (PICC only) when the tip has advanced to the shoulder, have the patient turn head (chin on shoulder) towards the insertion side to prevent possible cannulation into the jugular vein.</li> </ul>	<ul style="list-style-type: none"> <li>❑ Insert the catheter through peel apart sheath (may use smooth non-grooved pick-ups to advance the catheter). Advance the catheter slowly. For central placement (PICC only) when the tip has advanced to the shoulder, have the patient turn head (chin on shoulder) towards the insertion side to prevent possible cannulation into the jugular vein. For peel apart sheath you may remove the sheath after the catheter tip has been advanced 10 cm</li> </ul>
<ul style="list-style-type: none"> <li>❑ Continue advancing catheter to measured point for PICC Line or Midline tip position. Catheter depth markings are in centimeters. (Arm at 90 degree angle) If difficulty is encountered, moving arm to shoulder height may ease passage. Warning: for PICC Line avoid positioning the catheter tip in the right atrium.</li> </ul>	<ul style="list-style-type: none"> <li>❑ Continue advancing catheter to measured point for PICC Line or Midline tip position. Catheter depth markings are in centimeters. (Arm at 90 degree angle) If difficulty is encountered, moving arm to shoulder height may ease passage. Warning: for PICC Line avoid positioning the catheter tip in the right atrium</li> </ul>
<ul style="list-style-type: none"> <li>❑ Stabilize the catheter position by applying pressure to the vein distal to the introducer. Withdraw the introducer from the vein. Slide the introducer catheter to the end of the PICC Line or Midline. Remove the suture wing from the delivery card. Squeeze the suture wing together so that it splits open. Place the wing around the catheter near the venipuncture site. Caution Note: To minimize the risk of embolization the suture wing must be secured in place</li> </ul>	<ul style="list-style-type: none"> <li>❑ Stabilize the catheter position by applying pressure to the vein distal to the split apart sheath. Withdraw the split apart sheath from the vein and away from the site. Split the sheath and peel it away from the catheter.</li> <li>❑ For Groshong® only: Remove the suture wing from the delivery card. Squeeze the suture wing together so that it splits open. Place the wing around the catheter near the venipuncture site. If the “Y” adapter of the dual lumen catheter is at the insertion site, the suture wing will not be needed Caution Note: To minimize the risk of embolization the suture wing must be secured in place</li> </ul>
<ul style="list-style-type: none"> <li>❑ Stabilize the catheter position by applying light pressure to the vein distal to the insertion site. Slowly remove the stylet. Caution: Never use force to remove the stylet. Resistance can damage the catheter. If resistance or bunching of the catheter is observed, stop stylet withdrawal and allow the catheter to return to normal shape.</li> </ul>	<ul style="list-style-type: none"> <li>❑ Per-Q-Cath® only – Disconnect the T-Lock from the catheter leur connector. Stabilize the catheter position by applying light pressure to the vein distal to the insertion site. Slowly remove the T-Lock and stylet</li> <li>❑ Groshong® dual lumen – Stabilize the catheter position by applying light pressure to the vein distal to the insertion site.</li> </ul>

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<p>Withdraw both the catheter and stylet together approximately 2 cm and reattempt stylet removal. Repeat this procedure until the stylet is easily removed.</p>	<p>Slowly remove the stylet.</p> <ul style="list-style-type: none"> <li>❑ All catheters - Caution: Never use force to remove the stylet. Resistance can damage the catheter. If resistance or bunching of the catheter is observed, stop stylet withdrawal and allow the catheter to return to normal shape. Withdraw both the catheter and stylet together approximately 2 cm and reattempt stylet removal. Repeat this procedure until the stylet is easily removed.</li> </ul>
<ul style="list-style-type: none"> <li>❑ Modification of catheter length for single lumen Groshong Catheters – Using a sharp scalpel or sterile scissors carefully cut the catheter leaving at least 4 cm – 7 cm of the catheter for connector attachment. Inspect the cut surface to assure there is no loose material</li> <li>❑ Attach connector to single lumen catheter – Retrieve the oversleeve portion of the connector and advance it over the end of the catheter. If you feel some resistance while advancing, gently twist back and forth or spin to ease its passage over the catheter. Gently advance the catheter onto the connector blunt until it butts up against the colored plastic body. The catheter should lie flat on the blunt without any kinks. With a straight motion slide the oversleeve portion of the connector and the winged portion of the connector together, aligning the grooves on the oversleeve portion of the connector with the barbs on the winged portion of the connector. Do not twist. Note: Connector portions must be gripped on plastic areas for proper assembly. Do not grip on distal (blue) portion of oversleeve. Advance completely until the connector barbs are fully attached. A tactile locking sensation will confirm that the two pieces are properly engaged. (There may be a small gap between the oversleeve and the winged portion of the connector).</li> <li>❑ Aspirate and flush – attach primed extension set and or saline filled syringe.</li> </ul>	<ul style="list-style-type: none"> <li>❑ Attach primed extension set and / or saline filled syringe.</li> <li>❑ Aspirate for adequate blood return and flush each lumen of the catheter with 10 cc of normal saline to ensure patency. Note: When infusion volume is a concern in small or pediatric patient's flush with 3 cc per lumen.</li> <li>❑ If the single lumen catheter will not aspirate and infuse immediately after insertion. If this situation persists, verify radiographically that the catheter is not kinked inside the vessel.</li> <li>❑ Caution: To reduce potential for blood backflow into the catheter tip, always remove needles and needless caps slowly while injecting the last 0.5 cc of saline.</li> </ul>

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<p>Aspirate for adequate blood return and flush each lumen of the catheter with 10 cc of normal saline to ensure patency. Note: When infusion volume is a concern in small or pediatric patient's flush with 3 cc per lumen. Note: If the single lumen catheter will not aspirate and infuse immediately after insertion and connector assembly, the catheter may be kinked within the connector assembly. If this is the case, trim the catheter just distal to the connector oversleeve (blue) and attach a new connector. If this situation persists, verify radiographically that the catheter is not kinked inside the vessel. Caution: To reduce potential for blood backflow into the catheter tip, always remove needles and needless caps slowly while injecting the last 0.5 cc of saline.</p>	
<ul style="list-style-type: none"> <li>❑ Verify placement (PICC only) – Verify catheter tip radiographically</li> </ul>	<ul style="list-style-type: none"> <li>❑ Verify placement (PICC only) – Verify catheter tip radiographically</li> </ul>
<ul style="list-style-type: none"> <li>❑ Securing the Groshong® catheter: Suture wing near venipuncture. Place two anchor tapes over suture wing or bifurcation. Form “s” curve in catheter. Place 3<sup>rd</sup> anchor tape sticky side up under catheter just above suture wings or bifurcation. Chevron 3<sup>rd</sup> anchor tape on top of first (2) anchor tapes. Place transparent dressing over suture wing or bifurcation and catheter hub</li> <li>❑ Apply Stat-Lock® if used in accordance with manufacturer instructions under transparent dressing to secure catheter</li> </ul>	<ul style="list-style-type: none"> <li>❑ Securing the Groshong® catheter: Suture wing near venipuncture. Place two anchor tapes over suture wing or bifurcation. Form “s” curve in catheter. Place 3<sup>rd</sup> anchor tape sticky side up under catheter just above suture wings or bifurcation. Chevron 3<sup>rd</sup> anchor tape on top of first (2) anchor tapes. Place transparent dressing over suture wing or bifurcation and catheter hub</li> <li>❑ Securing the Per-Q-Cath: Place S-Curve. Place 1<sup>st</sup> anchor tape over wings or bifurcation. Cover site and 1<sup>st</sup> anchor tape with transparent dressing up to hub, but not over hub. Place 2<sup>nd</sup> anchor tape sticky side up under hub and close to transparent dressing. Wedge tape between hub and wings. Anchor only one hub of dual lumen catheter. Chevron 2<sup>nd</sup> anchor tape on top of transparent dressing and place 3<sup>rd</sup> anchor tape over hub</li> <li>❑ Apply Stat-Lock® if used in accordance with manufacturer instructions under transparent dressing to secure catheter</li> </ul>

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<b>Micro-Introducer® Technique for all Groshong and Per-Q- Cath PICC Line and Midline Catheters</b>
<input type="checkbox"/> Remove introducer needle cover
<input type="checkbox"/> Stabilize vein below intended access site with non dominant had (unless using Site Rite® which is in non dominant hand)
<input type="checkbox"/> Grip only the introducer flashback chamber during the insertion
<input type="checkbox"/> Perform venipuncture using shallow technique 15 – 30 degree angle. For Site Rite® place introducer into needle guide and perform venipuncture. Use needle guide angle to guide needle puncture.
<input type="checkbox"/> After confirmation of blood return, lower introducer angle and advance approximately ¼ to ½ inches further to ensure positive cannulation of the vein.
<input type="checkbox"/> Holding the needle stationary, advance the introducer into the vessel by pushing forward. Stabilize introducer, release tourniquet.
<input type="checkbox"/> Support the introducer to avoid displacement. Apply slight pressure to the vessel above the insertion site to minimize blood flow. Release the tourniquet. Withdraw the needle from the introducer.
<input type="checkbox"/> Note: if using Protect-IV® from Johnson and Johnson follow manufacturer guidelines to activate safety mechanism. Push safety shield over needle until you hear an audible click.
<input type="checkbox"/> Note: if using Protect-IV® from Johnson and Johnson follow manufacturer guidelines to activate safety mechanism. Push safety shield over needle until you hear an audible click.
<input type="checkbox"/> Apply pressure with nondominant hand over cannulated vein at tip of cannula to control bleeding and minimize blood exposure
<input type="checkbox"/> Insert the flexible end of the guidewire into the needle. Advance the guidewire as far as appropriate.
<input type="checkbox"/> Gently withdraw and remove the needle, while holding the guidewire in place.
<input type="checkbox"/> Using the surgical blade make a small nick alongside each side of the guidewire.
<input type="checkbox"/> Advance the small sheath and dilator together as a unit over the guidewire, using a slight ortational motion. Advance the unit intot he vein as far as appropriate.
<input type="checkbox"/> Withdraw the dilator and guidewire, leaving the small sheath in place.
<input type="checkbox"/> Insert the catheter through introducer (may use smooth non-groved pick-ups to advance the catheter). Advance the catheter slowly. For central placement (PICC only) when the tip has advanced to the shoulder, have the patient turn head (chin on shoulder) towards the insertion side to prevent possible cannulation into the jugular vein.
<input type="checkbox"/> Continue advancing catheter to measured point for PICC Line or Midline tip position. Catheter depth markings are in centimeters. (Arm at 90 degree angle) If difficulty is encountered, moving arm to shoulder height may ease passage. Warning: for PICC Line avoid positioning the catheter tip in the right atrium.
<input type="checkbox"/> Stabilize the catheter position by applying pressure to the vein distal to the introducer. Withdraw the introducer from the vein and away from the site. Split the sheath and peel it away from the catheter. For Groshong®: Remove the suture wing from the

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<p>delivery card. Squeeze the suture wing together so that it splits open. Place the wing around the catheter near the venipuncture site. Caution Note: To minimize the risk of embolization the suture wing must be secured in place</p>
<ul style="list-style-type: none"> <li>❑ Per-Q-Cath® only – Disconnect the T-Lock from the catheter luer connector. Stabilize the catheter position by applying light pressure to the vein distal to the insertion site. Slowly remove the T-Lock and stylet</li> <li>❑ Groshong® dual lumen – Stabilize the catheter position by applying light pressure to the vein distal to the insertion site. Slowly remove the stylet.</li> <li>❑ All catheters - Caution: Never use force to remove the stylet. Resistance can damage the catheter. If resistance or bunching of the catheter is observed, stop stylet withdrawal and allow the catheter to return to normal shape. Withdraw both the catheter and stylet together approximately 2 cm and reattempt stylet removal. Repeat this procedure until the stylet is easily removed.</li> </ul>
<ul style="list-style-type: none"> <li>❑ Groshong® single lumen only: Modification of catheter length– Using a sharp scalpel or sterile scissors carefully cut the catheter leaving at least 4 cm – 7 cm of the catheter for connector attachment. Inspect the cut surface to assure there is no loose material</li> <li>❑ Attach connector to single lumen catheter – Retrieve the oversleeve portion of the connector and advance it over the end of the catheter. If you feel some resistance while advancing, gently twist back and forth or spin to ease its passage over the catheter. Gently advance the catheter onto the connector blunt until it butts up against the colored plastic body. The catheter should lie flat on the blunt without any kinks. With a straight motion slide the oversleeve portion of the connector and the winged portion of the connector together, aligning the grooves on the oversleeve portion of the connector with the barbs on the winged portion of the connector. Do not twist. Note: Connector portions must be gripped on plastic areas for proper assembly. Do not grip on distal (blue) portion of oversleeve. Advance completely until the connector barbs are fully attached. A tactile locking sensation will confirm that the two pieces are properly engaged. (There may be a small gap between the oversleeve and the winged portion of the connector).</li> <li>❑ vessel. Caution: To reduce potential for blood backflow into the catheter tip, always remove needles and needless caps slowly while injecting the last 0.5 cc of saline.</li> </ul>
<ul style="list-style-type: none"> <li>❑ Attach primed extension set and / or saline filled syringe.</li> <li>❑ Aspirate for adequate blood return and flush each lumen of the catheter with 10 cc of normal saline to ensure patency. Note: When infusion volume is a concern in small or pediatric patient’s flush with 3 cc per lumen.</li> <li>❑ If the single lumen catheter will not aspirate and infuse immediately after insertion. If this situation persists, verify radiographically that the catheter is not kinked inside the vessel</li> <li>❑ Caution: To reduce potential for blood backflow into the catheter tip, always remove needles and needless caps slowly while injecting the last 0.5 cc of saline.</li> </ul>
<ul style="list-style-type: none"> <li>❑ Verify placement (PICC only) – Verify catheter tip radiographically</li> </ul>
<ul style="list-style-type: none"> <li>❑ Securing the Groshong® catheter: Suture wing near venipuncture. Place two anchor tapes over suture wing or bifurcation. Form “s” curve in catheter. Place 3<sup>rd</sup> anchor tape sticky side up under catheter just above suture wings or bifurcation. Chevron 3<sup>rd</sup> anchor tape on top of first (2) anchor tapes. Place transparent dressing over suture wing or bifurcation and catheter hub</li> </ul>

## Sample Policy

- ❑ Securing the Per-Q-Cath: Place S-Curve. Place 1<sup>st</sup> anchor tape over wings or bifurcation. Cover site and 1<sup>st</sup> anchor tape with transparent dressing up to hub, but not over hub. Place 2<sup>nd</sup> anchor tape sticky side up under hub and close to transparent dressing. Wedge tape between hub and wings. Anchor only one hub of dual lumen catheter. Chevron 2<sup>nd</sup> anchor tape on top of transparent dressing and place 3<sup>rd</sup> anchor tape over hub
- ❑ Apply Stat-Lock® if used in accordance with manufacturer instructions under transparent dressing to secure catheter

23. Prior to initiation of therapy, radiographically confirm that the catheter tip is in the superior vena cava (PICC Line only)

24. Initiate prescribe therapy

25. Discard expended equipment in appropriate receptacles with universal precautions in mind

26. Document in patient’s medical record: Time, date, length of entire catheter, the amount of catheter remaining outside of insertion site, trimmed length (if applicable), name of vein, mid upper arm circumference (optional), location of catheter tip, verification of catheter tip placement (PICC Line only), patient instruction and response to procedure, catheter lot number, brand, gauge, number of lumens, right or left arm, description of sterile prep, complications if any during insertion, contraindications to use of line if any, precautions if any, number of attempts, date of insertion, informed consent with patient verbalization, any care and maintenance needs, PICC Line or Midline catheter.

27. Report to staff any complications that occurred during placement and expected patient criteria to monitor

28. See basic care and maintenance table

### Basic Care & Maintenance:

Action	Timeline
First Catheter dressing change	<ul style="list-style-type: none"> <li>❑ 24 hours</li> <li>❑ Assess the dressing in the first 24 hours for accumulation of blood, fluid or moisture beneath the dressing. During the dressing changes, assess the external length of the catheter to determine if migration of the catheter has occurred. Periodically confirm placement of tip location, patency, and security of dressing.</li> </ul>
Dressing changes after first change at 24 hours	<ul style="list-style-type: none"> <li>❑ 7 days or PRN if damp, loosened, or soiled</li> <li>❑ During the dressing changes, assess the external length of the catheter to determine if migration of the catheter has occurred. Periodically confirm placement of tip location, patency, and security of dressing.</li> </ul>

## Sample Policy

Injection cap change	<ul style="list-style-type: none"> <li><input type="checkbox"/> Every seven days (about 18 needle insertions).</li> <li><input type="checkbox"/> When the cap has been removed for any reason</li> <li><input type="checkbox"/> Anytime the cap appears damaged, is leaking, blood is seen in the catheter without explanation, or blood residue is observed in the cap</li> <li><input type="checkbox"/> After blood withdrawal through the injection cap</li> </ul>
Blood sampling	<ul style="list-style-type: none"> <li><input type="checkbox"/> 10 cc positive pressure fluid flush of sterile 0.9% sodium chloride (for open Per-Q-Cath products utilize heparin after saline)</li> <li><input type="checkbox"/> Change injection cap</li> </ul>
Catheter irrigation / flushing	<ul style="list-style-type: none"> <li><input type="checkbox"/> Groshong (only) every seven days or after IV administration of TPN, IV fluids, or medications. 10 cc syringe filled with 5 cc of sterile 0.9% sodium chloride. (use positive pressure flush)</li> <li><input type="checkbox"/> Per-Q-Cath (only) every 12 hours or after IV administration of TPN, IV fluids or medications. 10 cc syringe filled with 1 cc of sterile 0.9% sodium chloride and heparin in accordance with institution policy. (use positive pressure flush)</li> </ul>
Repair	<ul style="list-style-type: none"> <li><input type="checkbox"/> Groshong single lumen catheter may be permanently repaired by following procedure of placement of a catheter hub in insertion policy</li> <li><input type="checkbox"/> Per-Q-Cath can be repaired using a Per-Q-Cath repair kit, however, the repair kit only exists for certain catheter sizes.</li> </ul>
Blood occlusion	<ul style="list-style-type: none"> <li><input type="checkbox"/> Utilize thrombolytic agent</li> </ul>