

**Bard Access Systems  
Sample Policy**

**Policy and Procedure**

**Flushing and / or Blood withdrawal – Aspiration Procedure  
For PICC Line and Midline Catheters**

Purpose:

Blood Withdrawal:

- To obtain blood samples for laboratory evaluation, eliminating the need for peripheral vein puncture
- To verify venous placement prior to administration of hypertonic or vesicant solutions
- Note: If you encounter difficulties with blood withdrawal see troubleshooting guide-aspiration difficulties "*Bard Access Systems Groshong Peripherally Inserted Central Venous Catheter (P.I.C.C.) Nursing Procedure Manual*"

**Catheter Irrigation / Flushing**

- To maintain patency
- Prevent mixing of medications and/or solutions that are incompatible

Routine flushing shall be performed with the following:

- Administration of blood
- Blood sampling
- Administration of incompatible medications or solutions
- Administration of medication
- Intermittent therapy
- When converting from continuous to intermittent therapies

Supplies:

- Isopropyl alcohol (Note: do not use on body of polyurethane Per-Q-Cath®) and / or povidone-iodine wipes
- 10 cc syringe filled with 5 cc of sterile 0.9% sodium chloride (normal saline) – flush
- 10 cc syringe filled with 10 cc of sterile 0.9% sodium chloride (normal saline) – blood withdrawal
- Injection cap (blood withdrawal)
- 1 in needle or needless adapter
- Heparin solution in 10 cc syringe barrel in accordance with institution policy for Per-Q-Cath® catheters
- Gloves / sharps container
- Blood specimen tubes
- Vacuum blood collection needless device

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- Needless transfer devices

**Procedure:**

1. Identify patient assess patient's chart for any signs, symptoms or complications related to his/her vascular access device
2. Question patient about any concerns over their catheter or experience. Explain procedure to patient
3. Wash hands
4. Don gloves. Use aseptic technique and observe standard blood and body fluid precautions and universal precautions throughout procedure
5. Clean injection cap with alcohol or povidone-iodine wipe
6. Note: If resistance or complication occurs at any time during flushing, discontinue and notify physician

**Groshong® and Groshong NXT PICC and Midline Flush**

1. Connect saline-filled syringe to cannula via insertion into prepared cap or needleless device.
2. Bard Access System note: If blood is aspirated prior to infusion of medications (to verify venous placement), catheter should be irrigated with 10 cc of normal saline prior to attaching medication, syringe, IV or infusion pump tubing. Failure to do so may result in an occluded catheter, leading to difficulty in aspirating in the future.
3. Insert needle or needleless adapter on syringe filled with 5 cc of sterile 0.9% chloride (normal saline) into injection cap or needleless system.
4. Slowly inject flush maintaining positive pressure (infusing last 0.5 cc as the needle or needleless adapter is withdrawn from the injection cap. (Helps prevent vacuum which can pull a small amount of blood into tip of catheter)).

**Per-Q-Cath® and Poly Per-Q-Cath PICC and Midline Heparinized Saline flush**

1. Connect saline-filled syringe to cannula via insertion into prepared cap or needleless device.
2. Insert needle or needleless adapter on **syringe filled with 1 cc of sterile 0.9% chloride** (normal saline) into injection cap or needleless system. Slowly inject flush, maintaining positive pressure.

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3. Connect heparin filled syringe to injection cap with needle or needless system.
4. Slowly inject flush maintaining positive pressure (infusing last 0.5 cc as the needle or needless adapter is withdrawn from the injection cap. (Helps prevent vacuum which can pull a small amount of blood into tip of catheter).
5. Attach new injection cap or needless system.

**Per-Q-Cath® and Poly Per-Q-Cath PICC and Midline saline-only flush—when a Positive Pressure Device has been added**

The addition of a needless access device does not automatically indicate that the device is a positive pressure device, nor does it indicate that the device has been cleared by the FDA for “saline-only” flush. **Contact the manufacturer to make this determination.** Devices such as the **B Braun UltraSite® Needleless Access Device** and the **ICU Medical CLC2000™** are positive pressure devices that have been cleared by the FDA for saline-only flush protocols.

1. Swab injection cap/needleless adapter with alcohol swab prior to attaching saline-filled syringe.
2. Attach saline-filled syringe.
3. Slowly inject saline maintaining positive pressure (infusing last 0.5 cc as the syringe is detached from the needless adapter).
4. Close clamping mechanism on catheter extension leg or IV tubing. (**Note: do not close clamp until syringe has been removed from needless adapter**)

**Groshong and Groshong NXT PICC and Midline Blood withdrawal Hub to Hub Per-Q-Cath PICC and Midline Blood withdrawal**

1. Draw up 10 cc normal saline in syringe and set aside 0.9% sterile sodium chloride solution. If TPN is infusing draw up 20 cc of normal saline.
2. Stop any IV fluids infusing through the catheter including another lumen of the catheter. Remove cap/I.V. tubing from catheter hub. Clean catheter hub with alcohol and /or povidone-iodine. Attach an empty 10-cc syringe to catheter hub. Pull back syringe plunger 1-2 cc, pausing for 2 seconds to allow catheter valve to open and blood to come into the catheter. Slowly continue to aspirate 5 cc of blood.
3. Disconnect syringe and discard (saline in catheter dilutes specimen and may alter lab values) Clean injection cap with alcohol / povidone-iodine wipe.

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4. Attach empty syringe 10 cc syringe and aspirate by pulling back plunger 1-2 cc pausing for 2 seconds to allow the catheter valve to open and blood to come into the catheter. Slowly continue to withdraw amount of blood needed for testing.
5. Disconnect syringe and attach saline filled syringe. Flush the catheter with 10 cc normal saline. Slowly inject flush maintaining positive pressure (infusing last 0.5 cc as the needle or needless adapter is withdrawn from the injection cap. (Helps prevent vacuum which can pull a small amount of blood into tip of catheter).
6. Attach 1 in needle or needless adapter to blood sample syringe to transfer to blood collection tubes.

**Groshong, Groshong NXT PICC and Midline Per-Q-Cath, Poly Per-Q-Cath PICC and Midline Blood withdrawal Needle to needless adapter through injection cap (vacuum blood collection system or syringe)**

1. Draw up 10 cc normal saline in syringe and set aside 0.9% sterile sodium chloride solution. If TPN is infusing draw up 20 cc of normal saline.
2. Stop any IV fluids infusing through the catheter including another lumen of the catheter. Remove cap/I.V. tubing from catheter hub. Clean catheter hub with alcohol and /or povidone-iodine. Attach an empty 10-cc syringe to catheter hub. Pull back syringe plunger 1-2 cc, pausing for 2 seconds to allow catheter valve to open and blood to come into the catheter. Slowly continue to aspirate 5 cc of blood Note: A vacuum collection specimen tube may be used to withdraw the discard sample but be sure to use one with at least 5 cc capacity.
3. Disconnect syringe and discard (saline in catheter dilutes specimen and may alter lab values). Clean injection cap with alcohol / povidone-iodine wipe.
4. Insert vacuum blood collection system needle or needless adapter into the injection cap. Push blood specimen tube into vacuum collection device sleeve so that rubber stopper is pierced. Blood needed for specimen will flow into specimen tube. Change tubes as needed for required tests.
5. Clean injection cap with alcohol and / or povidone-iodine wipe. Insert needle or needless adapter of saline-filled syringe and flush the catheter with 10 cc of normal saline.
6. Slowly inject flush maintaining positive pressure (infusing last 0.5 cc as the needle or needless adapter is withdrawn from the injection cap. (Helps prevent vacuum which can pull a small amount of blood into tip of catheter).
7. If unable to flush all of the blood residue out of the injection cap, attach a new sterile injection cap.

**Flushing guidelines for small patients:**

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1. Use the same procedure as for adults with the following exceptions:
  - Use 2 cc normal saline for routine maintenance (Groshong) every seven days; or after IV administration, TPN, IV fluids, or medications
  - Use heparin solution (Per-Q-Cath) in accordance with institutional policy
  - Use 3 cc normal saline after blood aspiration for any reason, or when blood is observed in the catheter. Note: This amount is insufficient to clear blood from an injection cap. The injection cap should be changed following blood withdrawal