

**HACKETTSTOWN REGIONAL MEDICAL CENTER
NURSING POLICY MANUAL
MIDLINE CATHETER CARE AND MAINTENANCE POLICY**

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Effective Date: December 1, 2014
Cross Referenced: 8620. 018b
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Policy No: 8620.252
Origin: Nursing
Authority: Chief Nurse Executive
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SCOPE

All patient care areas that care for patients with midlines.

PURPOSE

To outline the care of a midline catheter vascular access device, that bridges the gap between a short peripheral catheter and a central line. Midlines are classified as peripheral catheters, and are limited to the infusion of medications and solutions safe for peripheral administration.

DEFINITIONS

Midline catheter – a peripheral vascular infusion device up to 20cm in length, that terminates in the upper arm at the level of the axilla. The tip does not enter the central vasculature.

A midline catheter is between 10cm and 20cm long with the tip extending no further than the distal Axillary vein which enables the dwell time for 30 days due to the tip being in a larger vein.

Irritant – Medication that may cause itching, phlebitis, or reaction along the vessel or at the injection site.

Vesicant – A medication that can potentially cause blistering, tissue sloughing, or necrosis when extravasation occurs.

Extravasation – the inadvertent leakage or escape of a vesicant drug or solution from a vein or unintentional injection into surrounding healthy tissue.

Infiltration – the inadvertent administration of a non-vesicant solution or medication into surrounding tissues.

Phlebitis – the inflammation of the intima of the vein. Irritation of the endothelial cells of the vein intima causes a rough cell wall that platelets readily adhere to. Phlebitis is classified by its four causative factors; chemical, mechanical, bacterial, or post-infusion.

POLICY

HRMC policy is to provide guidelines for the care and maintenance of midline catheters to optimize safe patient care.

PROCEDURE

I. General Guidelines

- A. Physician order is needed for a midline catheter
- B. Only personnel trained in the procedure may insert a midline.
- C. Patient's primary nurse is responsible for assessments and care post insertion
- D. The infusates are the same as for short peripheral catheters.
- E. Sterile dressing change will be performed in 24 hrs after insertion.
- F. Midlines may not be appropriate or contraindicated for patients who may have a:
 - a. Dialysis fistula in situ or anticipated in the near future.
 - b. Serum creatinine greater than 2 and or/GFR less than 60. Notify MD of results. Patient may need renal consult r/t possible fistula candidate.
 - c. History of surgical alteration of venous pathways.
 - d. Abnormal coagulation status – at the discretion of the LIP
 - e. Know history of upper extremity DVT
 - f. Inadequate vessels of the antecubital fossa.

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- g. Local tissue factors that would prevent proper dressing securement.
- h. Past irradiation of prospective site.
- i. Therapies longer than 4 weeks duration.
- j. The patient is known or is suspected to be allergic to materials contained in the device.

G. Therapies not appropriate for a midline catheter:

- a. Continuous vesicants/irritant
- b. Parenteral Nutrition
- c. Solutions with a pH less than 5 and greater than 9
- d. Solutions with greater than 600 Osm/L

II. Assessments/care

- A. Assess daily the need to continue the vascular access.
- B. Assess and evaluate site every four (4) hours for signs of infiltration/ infection/thrombophlebitis.
- C. Measure circumference of arm daily in cm 3” proximal and 3” distal from insertion site and
- D. Flush peripheral access devices with 10cc of Normal Saline before and after administration of medications or every 12 hours if no continuous IV is infusing.
- E. Most Midlines are not recommended for drawing blood but if it becomes necessary flush with 20 mls of Normal Saline (NS) before and after. The Bioflo Midline catheter however, is approved for blood draws. Flush with 20mLs of NS before and after.
- F. Swab all access ports with alcohol before use
- G. Change Caps after blood draw, with dressing change and prn.
- H. If a patient is admitted with a midline catheter already in place, assess the midline for patency and blood return as well as obtain information on device.
 - 1. Manufacture and type
 - 2. Placement date
 - 3. Trim length
 - 4. Original external catheter length
 - 5. Original arm circumferences

If unable to obtain original insertion data follow assessment/ care protocol as per a non Bioflo Midline catheter.

III. Dressing care-

- A. Change every 7 days and/or when soiled using sterile technique and Central line dressing kit.
- B. Cleanse site with Chlorhexidine swab provided in central line kit
- C. Apply Biopatch and place a clear transparent dressing over site
- D. Complications
 - 1. Complications of Midline catheters are similar as that of short peripheral IV's. It should be noted, since upper arm veins run deeper, complications from infusion via midline catheters may not be recognized until a severe reaction/complication has occurred. There fore vesicants are contraindicated for midline infusion.
 - 2. Phlebitis
 - 3. Infiltration

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- 4.Extravasation
- 5.Infection
- 6.Nerve injury
- 7.Arterial Puncture/Cannulation
- 8.Compartment Syndrome
- 9.Embolus
10. Vasovagal Reactions during or shortly after insertion.
11. Bleeding from the insertion site.

IV. Reportable

- A. Notify physician for any catheter related complications.
- B. Notify the Vascular/Special Procedures Laboratory if the BioFlo Midline Catheter develops any patency issues.

V. Documentation

- A. Post insertion documentation and ongoing assessment which include-
 - 1.Site location/vessel selection
 - 2.Gauge and length
 - 3.Arm circumference measurements in cm, 3” proximal and 3” distal from insertion site
 - 4.Site assessments
 - 5.Complications and interventions
 - 6.Patient response
 - 7.Patient education
 - 8.Dressing changes

VI. Catheter Removal

- A. Midline catheters may be removed by IV certified personnel.
- B. Steps to remove the catheter
 - 1.Gather all necessary supplies needed for catheter removal.
 - 2.Place patient in relaxed comfortable supine position with the arm at the same angle at which the catheter was inserted. Support the elbow. Do not hypo or hyper extend.
 - 3.Do not use sharp instruments to remove the dressing. Remove dressing and securement device. Prep the site with chloraprep.
 - 4.Slowly withdraw the catheter to prevent vasospasm. Calm anxious patient and use vasodilatation techniques to reduce the risk of vasospasm. i.e. warm compress, pain management, repositioning, comfort measures exc.
 - 5.Observe vein track as you slowly remove the catheter ½ inch at a time. Do not apply pressure to the cannulated vein at the insertion site. Never pull against resistance.
 - 6.After removal, apply a sterile 2x2 gauze dressing.
- C. If difficulty is encountered in removing the catheter, continued attempts to remove it at this time may result in exacerbation of the vasospasm. **ALWAYS STOP IMMEDIATELY** if resistance is felt.

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1. Flushing the catheter during removal may rid the catheter tip of any fibrin residue that may be aggravating vasospasm.
2. If resistance is met during removal, apply temporary dressing and warm soaks to bicep/shoulder area. Wait 30-45 minutes and attempt again. If unsuccessful, notify MD for referral to IR physician or Vascular Surgeon. The catheter may have knotted or epithelialization may have occurred along catheter track.
3. If Catheter is shorter than length documented or patient reports a “snapping” sensation, immediately apply tourniquet to junction of arm at shoulder. Assure that arterial pressure maintained and transport patient to the emergency department immediately.
TOURNIQUET MAY ONLY BE REMOVED BY A PHYSICIAN.

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