Health Sciences North
Horizon Santé-Nord

MEDICINE PROGRAM

PROCEDURE

CATEGORY: System-Level Clinical
ISSUE DATE: July 11, 2001 **REVISION DATE:** July 2020
SUBJECT: **CENTRAL VENOUS CATHETER – NON-TUNNELLED AND TUNNELLED ACCESSING FOR INFUSION, FLUSHING, DRESSING AND CONNECTOR CHANGE**

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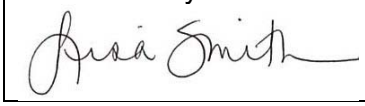
Approval: Lisa Smith, Executive Sponsor Clinical Policy & Procedure Committee 	**Date:** September 9, 2020

PURPOSE

To ensure the care and maintenance of central venous access catheter/device (CVAD) following established best practice guidelines.

PROCEDURE

Special Instructions

- **This procedure does not apply to dialysis catheters.** Dialysis catheters are only accessed by Nephology staff unless in an emergency situation or if specifically ordered by a nephrologist. In an emergency situation, ensure you remove 5 mL from the dialysis catheter before accessing.
- A certified Registered Nurse may perform the following on a non-tunnelled or tunnelled CVAD:
  - Access and flush
  - Connector change
  - Dressing change
- All CVAD lumens must have a connector (except when monitoring central venous pressure). Flush lumens through the connector – do not connect directly to the hub.
- Always flush lumens using a turbulent positive-pressure flush. Use a push-pause technique to create a turbulent flush and disconnect the syringe while injecting the last 0.5 mL of saline.
- All CVADs are flushed and aspirated for blood return prior to each infusion and during weekly cap and dressing changes to assess catheter function and prevent complications. Flush 2-3 mL of NS, aspirate gently (pull back 1 mL and pause for 1-2 seconds) for blood return, flush the remaining saline to the last 0.5 mL, then disconnect.
- Flush with 10 mL sterile NS weekly and pre/post use.
- Flush with 20 mL sterile NS post blood products, TPN or viscous medications and blood withdrawal.
- Flush pressure rated catheters with 20 mL saline after all medications and infusions, and when changing connectors.
- For double lumen catheters, flush each lumen post infusion (medications or solutions) whether utilized or not.

- Do not flush with anything smaller than a 10 mL barrel-sized syringe.
- Do not flush against resistance.
- Dressings must be changed:
  - After the initial 24 hours
  - Weekly, along with connectors
  - Anytime dressing integrity is compromised
- A gauze dressing used for bleeding at the insertion site or skin sensitivity must be changed every two days. Change the dressing daily if bleeding or exudate is present.
- An alternative skin antiseptic (i.e. tincture of iodine, povidone-iodine, or 70% alcohol) may be used if there is a contraindication, allergy or sensitivity to chlorhexidine in alcohol. Consider use of chlorhexidine without alcohol as an alternative.
- Use a single-use application product instead of a multi-use product (such as a bottle of antiseptic) to provide skin antisepsis.

Method
See Appendix A for Flushing and Accessing for Infusion through a Connector
See Appendix B for Dressing and Connector Change
See Appendix C for 3M Tegaderm IV Advanced Securement Dressing Removal
See Appendix D for 3M Tegaderm IV Advanced Securement Dressing Application

EDUCATION AND TRAINING

References and Related Documents

3M Canada Company. Technical Bulletin: Antiseptic Solutions: What you need to know about Multi-use Bottles, 2015.

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Gorski, L., Hadaway, L., Hagle, M., McGoldrik, M., Orr, M., Doellman, D. (2016). Infusion Therapy Standards of Practice. *Journal of Infusion Nursing. 39*(1S).

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O'Grady, N., Alexander, M., Burns, L., Dellinger, P., Garland, J., Heard, S., et al. (2011). *Guidelines for the Prevention of Intravascular Catheter-Related Infections.*

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APPENDIX A

Flushing and Accessing for Infusion through a Connector

Equipment (increase according to additional lumens)

- 10 mL sterile NS pre-filled syringe
- Non-sterile gloves
- Antiseptic swab x 2 (alcohol or chlorhexidine)
- Primed IV tubing

Method

Accessing for Infusion

1. Unclamp the catheter.
2. Vigorously cleanse the diaphragm and sides of the connector with an antiseptic swab for at least 30 seconds and let dry.
3. Attach the 10 mL syringe of sterile NS.
4. Flush using a turbulent positive-pressure flush (push-pause) with 4-5 mL NS, aspirate gently back to check for blood return, flush the remaining saline using a turbulent flush (push-pause) to the last 0.5 mL, then disconnect.
5. Cleanse the diaphragm and sides of the connector with an antiseptic swab for at least 30 seconds and let dry.
6. Attach the primed IV tubing to the connector.
7. Secure the luer lock connection and start the infusion.

Post Infusion

1. Disconnect the IV tubing from the connector.
2. Vigorously cleanse the diaphragm and sides of the connector with an antiseptic swab for at least 30 seconds and let dry.
3. Attach the 10 mL syringe of sterile NS.
4. Flush using a turbulent positive-pressure flush (push-pause) and disconnect the syringe while injecting the last 0.5 mL of saline. If a second syringe is required, cleanse the connector with an antiseptic swab, let dry and repeat with the second syringe, sliding the clamping at the last 0.5 mL.
5. Remove the syringe.

APPENDIX B

Dressing and Connector Change

Equipment

- Procedure masks x 2
- Sterile gloves x 1 pair
- Clean gloves x 2 pair
- Tegaderm securement dressing
- Chlorhexidine 2%, alcohol 70% swab stick x 2
- Chlorhexidine 2%, alcohol 70% wipe x 2 per connector
- 10 mL sterile NS in a pre-filled syringe x 1 per connector (2 per accessed lumen)
- 1 connector per lumen

Method

1. Place the patient in the supine position.
2. If the CVAD is accessed:
   A. Disconnect the IV tubing.
   B. Clean the connector with an antiseptic swab.
   C. Flush the catheter using a turbulent positive-pressure flush (push-pause) and disconnect the syringe while injecting the last 0.5 mL of saline.
   D. Clamp the catheter (if clamp present).
3. Don a mask.
4. Instruct the patient to don a mask or turn his/her head away from the site.
5. Perform hand hygiene and apply the first pair of clean gloves.
6. Slowly remove the old dressing in an upward motion to prevent dislodging the catheter. **(Appendix C)**
7. Inspect the catheter insertion site for redness, swelling and exudate. **If a non-tunnelled catheter,** ensure the sutures are also intact.
8. If any signs of infection are present, cleanse the site with saline, swab and send for C&S as per physician orders.
9. Remove the contaminated gloves, perform hand hygiene and don the second pair of clean gloves.
10. Open the chlorhexidine swab sticks, ensuring sterility of the stick end. With your non-dominant hand, gently lift the catheter and use the first swab stick to cleanse the catheter for 15 seconds.
11. Without putting the catheter down, use the second swab stick to cleanse the catheter insertion site in an area larger than the size of the dressing. Use a horizontal back-and-forth friction scrub for 15-30 seconds.
12. Turn the swab stick over and scrub the same area using a vertical back-and-forth friction scrub for 15-30 seconds.
13. Put the catheter down and allow the site/line to air dry for a minimum of two minutes.
14. Remove gloves and perform hand hygiene.
15. Open sterile gloves and Tegaderm securement dressing. Place the sterile securement dressing onto the sterile field of the sterile gloves inside the package.
16. Don sterile gloves.
17. Apply the dressing **(Appendix D)**. If the connectors do not need to be changed, date and initial the dressing label. If the connectors need to be changed, follow the connector change procedure below.

Connector Change

1. Follow Steps 1 to 17 above.
2. Connect the new connector cap to a NS syringe. Prime, remove the end cover and return it to the sterile packaging while keeping the syringe attached.
3. Ensure the clamp on the catheter is closed.
4. Open the chlorhexidine wipe and cleanse the existing/old connector line and connection area with friction for 15 seconds. Allow this area to dry for a minimum of 30 seconds to two minutes.
5. Remove the old connector using a new chlorhexidine wipe, attach a primed connector, open the clamp and flush using a turbulent positive-pressure flush for 4-5 mL. Check for blood return, flush the remaining saline using a push-pause technique, disconnect the syringe while injecting the last 0.5 mL of saline, then clamp the catheter.
6. Remove the syringe.
7. Repeat Steps 2-6 for each lumen.
8. Date and time the dressing label if not already done.
9. Document the dressing change in the patient's chart.

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APPENDIX C

3M Tegaderm IV Advanced Securement Dressing Removal

1. Remove the tape strips applied to the top of the dressing.	
2. Remove the pre-notch tape strip from underneath the catheter.	
3. Separate the stabilization border tabs and gently peel the dressing back toward the insertion site.	
4. Slowly peel the dressing back over itself while stabilizing the catheter and supporting the surrounding skin.	

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APPENDIX D

3M Tegaderm IV Advanced Securement Dressing Application

1. Position the notched side of the dressing over the catheter hub. Ensure all of the catheter line and wing is under the transparent portion of the dressing.	
2. Slightly overlap the stabilization border tabs under the hub. Press the transparent portion of the dressing into place.	
3. Smooth the entire dressing surface, working from the catheter insertion site out toward the dressing edge.	
4. Apply the pre-notch tape strip completely underneath the catheter's molded junction. The notch opening should face the insertion site. Peel the paper tabs from the liner corners.	
5. Prepare the documentation strip with the date and initials, and apply the strip over the top of the exposed molded junction.