



## MANITOBA RENAL PROGRAM

<b>SUBJECT</b> <ul style="list-style-type: none"> <li>Use of Closed Needleless Access Device with Hemodialysis Central Venous Catheters (CVC)</li> </ul>	<b>SECTION</b> 30.20 Vascular Access
	<b>CODE</b> 30.20.04
<b>AUTHORIZATION</b> <ul style="list-style-type: none"> <li>Professional Advisory Committee, Manitoba Renal Program</li> </ul>	<b>EFFECTIVE DATE</b> April 2010
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### PURPOSE:

- The Closed Needleless Access Device are a split septum connector utilized to convert the open CVC to a closed protected system.

### POLICY:

- Registered Nurses and Licensed Practical Nurses in Dialysis who have received instruction may access the CVC utilizing a Closed Needleless Access Device connector.
- Following demonstration of competency with the use of the Closed Needleless Access Device connectors, Home Hemodialysis training nurses may instruct and certify patients in the use of Closed Needleless Access Device connectors.
- Closed Needleless Access Device connectors must be changed after every five hemodialysis treatments or at least once weekly.

### EQUIPMENT:

### KEY POINT:

#### **A. Initiating Hemodialysis:**

- Clean towel
- 1- 4x4 gauzes
- 6 - chlorhexidine 2%/alcohol 70% prep pads
- 2 – 10 mL syringes 2 – 10 mL syringes for heparin/0.9% NaCl as ordered by a physician
- Sterile drape
- 2 - Masks - optional
- Non-sterile gloves

#### **B. Changing Closed Needleless Access Device Connectors:**

- Supplies listed for A. Initiating Hemodialysis
- 2 - Closed Needleless Access Device connectors in sterile packaging

- 2 chlorhexidine 2%/alcohol 70% swab sticks

**C. Discontinuing Dialysis:**

- Clean towel
- 2 4x4 gauzes
- 6 chlorhexidine 2%/alcohol 70% prep pads
- 2 syringes containing 10 ml of 0.9% NaCl
- 2 prepared syringes containing post instillation as per physician's order, equal to the volume of the CVC
- 2 Masks - optional
- Non-sterile gloves

**PROCEDURE:**

**A. Initiating Hemodialysis:**

1. Perform hand hygiene.
2. Put on mask and mask patient.
3. Place the drape under CVC
4. Perform hand hygiene don non-sterile gloves.
5. Scrub the Closed Needleless Access Device on the arterial extension with a chlorhexidine/alcohol swab, for at least 30 seconds.
  - a. Allow the surface to dry completely.
6. Aspirate the instillation:
  - a. Attach a 10 mL syringe
  - b. Open the clamp.
  - c. Aspirate 3 mL to remove the instillation.
  - d. If not able to aspirate, infuse the saline.
  - e. Close **the clamp**.
7. Scrub Closed Needleless Access Device end for 15-30 seconds and allow to dry completely.

**KEY POINT:**

- Optional
- Ensure CVC is clamped prior to any activation or disconnection.
- Move downwards only. Do not move the swab back up towards the Closed Needleless Access Device tip.

**ALERT:**

- Always hold on to the lower end of the Closed Needleless Access Device connector when attaching syringes or bloodlines. Ensure all connections meet the collar of the Closed Needleless Access Device
- The Closed Needleless Access Device is cleansed prior to each connection.
- Do not set down cleaned Closed Needleless Access Device until bloodline connected.
- Push the syringe straight in to the Closed Needleless Access Device and rotate the syringe until it stops. Ensure the syringe meets the collar
- The blood should flow freely into the syringe; occasionally a clot may flow into the syringe.
- **Ensure no air enters the catheter for all infusions.**
- If heparin from the lumen has been infused, do not administer the heparin prime or portion prime accordingly.
- Blood specimens may be drawn following aspiration of locking solution. Never aspirate with

8. Flush the arterial lumen with 0.9% NaCl
  - a. Attach a 10 mL syringe of 0.9% NaCl
  - b. Unclamp.
  - c. Push the saline into the catheter.
  - d. Clamp
  - e. Place arterial extension on drape.

a syringe less than 10ml

- Note how easily the saline instills.
- Optional: Remove the syringe

9. Attach the arterial bloodline
  - a. Disconnect the arterial bloodline from the drainage bag, maintaining sterility
  - b. Disconnect syringe (if not done previously). Scrub Closed Needleless Access Device end for 15-30 seconds and allow to dry
  - c. Attach the arterial bloodline to the Closed Needleless Access Device connector.

- Push the bloodline straight in to the Closed Needleless Access Device and rotate the bloodline until it stops. Ensure the bloodline meets the collar

10. Repeat steps 5-9 for venous extension

- Attach 10ml syringe containing heparin prime to flush (if ordered)

**Initiate dialysis as per machine specific procedure.**

**B. Changing Closed Needleless Access Device Connectors:**

1. Wash hands.
2. Put on mask and mask patient.
3. Prepare supplies as required.
4. Open the package of the sterile Closed Needleless Access Device connector, and without touching the connector (hold the connector from the outside of the package and do not remove it from the package) attach the two 10mL syringes of 5ml 0.9% NaCL to 2 Closed Needleless Access Device connectors. Leave the Closed Needleless Access Device syringe connection within the packaging.
5. Perform hand hygiene. Put on non- sterile gloves as per facility practice.
6. Place the sterile drape under CVC.
7. Scrub the Closed Needleless Access Device on the arterial extension with a chlorhexidine/ alcohol swab for at least 30 seconds.

- Ideally suggested to change at beginning of treatment.

- HHD: may use empty 10 ml syringe as per unit policy

- Ensure CVC is clamped prior to any activation or disconnection.

- a. Allow surface to dry completely.

**ALERT:**

- Always hold on to the lower end of the Closed Needleless Access Device connector when attaching syringes or bloodlines. Ensure all connections meet the collar of the Closed Needleless Access Device.
- The Closed Needleless Access Device is cleansed prior to each connection.

Do not set down cleaned Closed Needleless Access Device until bloodline connected.

**8. Replace the Closed Needleless Access Device:**

- a. Remove used Closed Needleless Access Device connector from the arterial catheter extension.
- b. Examine the end for any damage or debris.
- c. Use a chlorhexidine/alcohol swabstick to scrub hub for 30 seconds. .
- d. Allow the catheter extension to dry completely.
- e. Use the syringe attached to the new Closed Needleless Access Device connector and remove the sterility protector from the new Closed Needleless Access Device
- f. Attach the new Closed Needleless Access Device to the arterial catheter extension.

- Maintain sterility of the open end.
- This must be done with each Closed Needleless Access Device change. Begin cleaning at the open end and work down the extension
- Alternatively a chlorhexidine/alcohol prep-pad could be used with a no-touch technique

**9. Aspirate from the arterial extension as described in **Section A. Initiating Hemodialysis step 5.****

**10. Repeat steps 5-9 for venous extension.**

**C. Discontinuing Hemodialysis:**

Once all the blood is returned, close the clamps on BOTH the arterial and venous ports of the catheter, and on BOTH the arterial and venous bloodlines

**Follow unit policy for blood return:** Home Hemodialysis or in-center dialysis

1. Put on mask and mask patient.(optional)
2. Prepare supplies as required:
  - Have citrate/heparin syringes to correct volume for both the arterial and venous ports of the CVC
3. Put on non-sterile gloves.
4. Place the clean towel under the CVC.

**ALERT:**

5. Disconnect the arterial bloodline.
  - Ensure the catheter is clamped prior to any activation or disconnection.
  - Always hold on to the lower end of the Closed Needleless Access Device connector when attaching syringes or bloodlines. Ensure all connections meet the collar of the Closed Needleless Access Device
  - The Closed Needleless Access Device is cleansed prior to each connection.
  - Do not put down Closed Needleless Access Device until installation complete.
  
6. Scrub the end of the Closed Needleless Access Device connector up to the collar for 15-30 seconds. Allow to dry completely.
  
7. Flush the arterial extension:
  - a. Attach a 10 mL syringe 0.9% NaCl
  - b. Open the clamp.
  - c. Push the saline into the CVC.
  - d. Clamp.
  - e. Remove the syringe.
  
8. Scrub the end of the Closed Needleless Access Device connector up to the collar for 15-30 seconds. Allow to dry completely.
  
9. Instill locking solution into arterial extension
  - a. Ensure volume of locking solution is equal to the volume of the extension of the catheter.
  - b. Attach the syringe containing locking solution to the arterial extension.
  - c. Unclamp.
  - d. Instill locking solution
  - e. Clamp
  - f. Remove the syringe.
  - Ensure no air enters the catheter with all infusions.
  - If using TPA lock follow procedure #30.30.02 II. Procedure for Alteplase Lock
  - If using antibiotic lock follow procedure # 30.30.02 III .Procedure for Antibiotic Lock
  
10. Repeat step 6-11 for the venous connection.

**DOCUMENTATION:**

- Hemodialysis Treatment Record (indicate number of days Closed Needleless Access Device in use)

**REFERENCES:**

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