



MANITOBA RENAL PROGRAM

SUBJECT Hemodialysis Central Venous Catheter Dressing Change and Care of Catheter	SECTION 30.20 Hemodialysis
	CODE 30.20.05
AUTHORIZATION <ul style="list-style-type: none"> ▪ Professional Advisory Committee, Manitoba Renal Program ▪ Nursing Practice Council, St. Boniface Hospital 	EFFECTIVE DATE July 1995
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PURPOSE:

1. To provide a safe, standardized, evidence–informed process for hemodialysis Central Venous Catheter (CVC) dressing changes to ensure catheter securement and prevent infection.

BACKGROUND:

The incidence of catheter-associated infections can be reduced by implementing recommendations adopted from authoritative bodies such as Centers for Disease Control and Prevention (CDC), Infusion Nurses Society (INS), National Kidney Foundation Kidney Disease Outcomes Quality Initiative (KDOQI) Guidelines, the Canadian Society of Nephrology (CSN), Association for Professionals in Infection Control and Epidemiology (APIC), Kidney Disease: Improving Global Outcomes (KDIGO) & and the Canadian Association of Nephrology Nurses and Technicians (CANNT).

POLICY:

1. Nurses who have received instruction may change the Central Venous Catheter Dressing according to the following procedure.
2. Aseptic technique is required for all hemodialysis CVC dressing changes.
3. Dressing changes will occur at established intervals dependent on type of dressing and as necessary (prn). Transparent semi permeable (TSM) dressing is the preferred dressing. See Table A (page 4) for other options if antimicrobial ointment to be applied; drainage/discharge present; or if sensitivity/allergy to TSM present).
4. The exit site must be assessed prior to initiation of hemodialysis treatment or prior to use. The catheter exit site should be visually inspected for the presence of any abnormalities, including signs of infection. The external portion of the catheter should be assessed for migration. If transparent semi permeable (TSM) dressing is present and exit site is visible then this assessment can be performed without removing the dressing.
5. Non-tunneled CVC must always have intact sutures. Notify physician immediately if sutures not present or not intact. Secure the CVC temporarily with appropriate adhesive tape or an adhesive-based Engineered Stabilization Device (ESD) eg. Statlock, as per site practices.
6. Tunneled CVC must have exit site suture in place for a minimum of 10 weeks post insertion. Physician orders are required for removal of sutures. If suture not present or intact notify physician and follow site

practices. If ESD used to secure CVC it should be changed when dressing is changed.

7. If the CVC cuff is visible or the CVC appears to have migrated out, notify the physician immediately. Do not use the catheter.
8. Chlorhexadine Gluconate (CHG) 2% with 70% Isopropyl Alcohol is the preferred skin antiseptic agent. (See Table B, page 5, for other cleansing agent options if patient develops a true sensitivity or allergy to CHG with alcohol).
9. Application of topical antimicrobial ointments to the CVC exit site require a physician order and should take into consideration the catheter manufacturer's recommendations.

EQUIPMENT:

- 2 procedure masks
- non-sterile gloves
- Clean towel
- 2 -3 packages of antiseptic swab sticks
- Self-adhesive dressing (Transparent semi permeable TSM or gauze with adhesive)

KEY POINTS:

- 2%CHG with 70% alcohol is the cleanser of choice
- See Table B for alternate cleansing agents
- TSM is the dressing of choice
- See Table A for dressing types

OPTIONAL EQUIPMENT:

- 1 package sterile cotton tipped applicator (prn)
- Skin prep/barrier (prn)
- Culture swab and transport media package (prn)
- Sterile 0.9% NaCl and 1 package sterile cotton tipped applicator (prn)
- Adhesive-based Engineered Securement device (ESD) eg. Statlock (prn)
- To apply antimicrobial ointment if prescribed
- For removing crusting and exudates at exit site prior to sending swab

PROCEDURE:

1. Perform hand hygiene.
2. Don mask, mask patient.
3. Perform hand hygiene and don gloves.
4. Place a clean drape under the CVC exposing dressing and area surrounding.
5. Carefully remove the previous dressing.

KEY POINTS:

- APIC, CSN and KDOQI clinical practice guidelines recommend both patient and nurse mask during hemodialysis central line dressing change procedure to prevent organisms from the nasopharynx from contaminating the CVC.
- See Table A for key points for dressing removal
- If ESD is present, remove with dressing. Reapply after exit site is cleansed. See Table A.

PROCEDURE:

6. Remove gloves. Perform hand hygiene, don new gloves.

7. Assessment:

- Visually inspect and palpate the catheter exit site for redness, swelling, and drainage. Note any patient/client complaints of tenderness or pain.
- Palpate catheter pathway, noting any unusual swelling, redness, pain or discharge from exit site on palpation.
- Assess for catheter migration; does catheter appear to be longer or have slid out; is the cuff visible at the exit site; is the suture(s) at the exit site still present and attached to both catheter and skin (if no previous MD order to remove).

8. Remove gloves and perform hand hygiene.

9. Prepare a clean working field with necessary supplies.

10. Perform hand hygiene and apply new gloves.

11. Cleanse the skin and CVC section that will be covered by the dressing with antiseptic swabs.

12. Allow to dry completely.

13. If required, apply protective skin barrier to area where adhesive contact will be made, avoiding a 2.5 cm radius around the exit site.

14. Apply dressing.

15. Remove gloves. Perform hand hygiene.

16. Remove mask. Perform hand hygiene.

17. Remove patient mask. Perform hand hygiene.

DOCUMENTATION:

- Each treatment on Hemodialysis Treatment Record in Vascular Access box, under "Access Site Assessment".
- Progress Notes/Nursing Notes as needed.

Kardex:

- If weekly dressing changes, indicate the day of the week for regular changes.
- Special instructions for individual patients.

KEY POINTS:

- If exudate is present cleanse site with 0.9%NaCl prior to obtaining a swab for aerobic culture
- Notify Nephrologist/MD immediately if signs of infection
- If cuff is visible or catheter appears to have migrated do not use the CVC; notify the Nephrologist/MD immediately
- If exit site suture(s) is not present or intact (and has not been ordered removed) refer to Guidelines & Policies page 1.

- See Table B for instructions and key points on how to use various cleansing agents; CHG with 70% alcohol is the preferred cleansing agent.
- If ESD required, apply the securement device to the wings of the CVC and then apply the securement device to the skin. See Table A and Appendix A.

- See Table A for instructions and key points on how to apply various dressings; transparent semi permeable (TSM) dressings are the preferred dressing.

Table A: Recommended Dressing for Hemodialysis CVC's:

Dressing type (in order of recommended use)*	Frequency of dressing change and prn**	Key points for removal*** and application***
<p>1. Transparent semi permeable (TSM) eg. Tegaderm, IV3000</p> <p>(no gauze under)</p> <p>Note: IV3000 (due to expense) should be considered after trying alternative of fabric tape.</p>	<p>Q7 days</p> <p>(water resistant)</p>	<ul style="list-style-type: none"> Remove the TSM by gently peeling the dressing toward the catheter exit site; stretching the dressing prior to peeling it back releases the adhesive from the skin <u>Do not</u> stretch the TSM when applying to skin (can cause sheering, damage and reduce adherence) The TSM should be applied so the transparent portion of the dressing extends a minimum of 2 cm in all directions from the exit site. While removing the outer border, smooth the dressing outward from the exit site and then press to secure the edges. Ensure the split edges of the dressing meet/overlap under the catheter; apply one of the sterile tape strips included with the dressing below the catheter to seal the gap beneath and the second strip across the top of the catheter to ensure it is secure and not able to migrate If sutures present, ensure dressing covers sutures
<p>2. TSM with gauze over exit site</p> <p>(indications for use: antimicrobial ointment applied and/or drainage, discharge present at site)</p>	<p>Q treatment</p> <p>(water resistant)</p>	<ul style="list-style-type: none"> Same as above for removal After cleansing and allowing to dry, apply a sterile 5cm x 5cm gauze centered over the exit site; apply TSM as above.
<p>3. Gauze dressing secured with self adhesive fabric eg. Hypafix, Mefix</p> <p>(indications for use: patient sensitive to or allergic to TSM)</p>	<p>Q treatment</p> <p>(not water resistant)</p>	<ul style="list-style-type: none"> Remove the dressing by gently peeling the dressing toward the catheter exit site After cleansing and allowing to dry, apply a sterile 5cm x 5cm gauze over the exit site; apply a strip of self adhesive fabric tape over the gauze making sure the adhesive extends a minimum of 2 cm in all directions from the gauze; add another strip of self adhesive fabric tape to secure the catheter to the patient chest in such a way that the catheter cannot migrate
<p>4. Gauze dressing secured with paper tape</p> <p>(indications for use: patient sensitive to or allergic to TSM and fabric tape)</p>	<p>Q treatment</p> <p>(not water resistant)</p>	<ul style="list-style-type: none"> Same as above gauze dressing but using paper tape to secure Notify physician.
<p>*If patient is allergic to, or refuses all recommended dressings, notify Nephrologist for patient specific orders.</p>	<p>**prn includes, but is not limited to: dressing integrity is compromised; lifting, moisture, drainage or blood is present; or signs and symptoms of infection are present.</p>	<p>***Scissors or other sharps are never to be used when removing dressings; follow dressing manufacturer's recommendations for application and removal</p> <p>***If using a securement device (ESD) – see Appendix A. Statlock stabilization device should be replaced at least every 7 days per manufacturer recommendations. Remove the adhesive-based ESD from the skin by applying 70% alcohol pad to the woven portion of the ESD. Ensure the dressing covers both the exit site and the ESD whenever possible.</p>

Table B: Recommended Antiseptic Agents for Hemodialysis CVC dressing care:

Antiseptic skin cleansing agent (in order of recommended use)*	Cleansing time	Drying time	Method
1. CHG 2% with 70% alcohol swabsticks	30 secs	**until fully dry; may take 2-5 minutes	<ul style="list-style-type: none"> • ***using swabstick cleanse for 15 seconds applying friction, in back and forth motion starting at CVC exit site and proceeding outward; flip the swabstick and repeat for another 15 seconds in opposing direction, starting at the CVC exit site. • using a second swabstick, cleanse the portion of the catheter which will be covered by the dressing, starting at the exit site
2. CHG without alcohol (aqueous CHG) swabsticks <i>(indication for use: patient sensitive or allergic to CHG with alcohol)</i>	30 secs	**until fully dry; may take longer as no alcohol	<ul style="list-style-type: none"> • ***same as above for CHG with alcohol
3. Tincture of Iodine, Iodophors (Povidone-Iodine) swabsticks <i>(indication for use: patient sensitive or allergic to CHG with or without alcohol)</i>	30 secs	**until fully dry	<ul style="list-style-type: none"> • ***using swabstick begin cleansing at the CVC exit site and using friction in a circular motion clean the exit site, moving outward to cleanse surrounding skin which will be covered by the dressing • using a second swabstick, cleanse the portion of the catheter which will be covered by the dressing, starting at the exit site
4. 70% Isopropyl Alcohol swabsticks <i>(indication for use: patient sensitive or allergic to CHG and povidone)</i>	30 secs	**until fully dry	<ul style="list-style-type: none"> • same as above for Povidone-Iodine
*If patient is allergic to, or refuses all recommended cleansing agents, notify Nephrologist for patient specific orders	If culture swab required clean exit site with 0.9% NaCl using a sterile cotton applicator prior to sending culture swab. After culture swab sent, clean site with antiseptic.	Key Points: **do not blow on area, fan or blot dry **antiseptics must be allowed to dry to achieve antimicrobial effect **if antiseptic is not allowed to dry it can interact with adhesive from dressing to cause redness/itchiness **if pooling of antiseptic noted under CVC it may be necessary to elevate the CVC to allow adequate drying	Key points: ***may be necessary to squeeze excess antiseptic from swabstick while removing it from the package to avoid pooling and longer drying times ***if debris is present may need to use additional swabstick(s) to cleanse exit site; avoid excessive use of antiseptic as this can lead to skin irritation

REFERENCES:

Centers for Disease Control and Prevention (2011). *Guidelines for the prevention of intravascular catheter-related infections*.

Infusion Nurses Society (2010). *Infusion Nursing: An Evidence-Based Approach (3rd ed.)*. M. Alexander, A. Corrigan, L. Gorski, J. Hankins, & R. Perucca (Eds). St. Louis MO: Saunders Elsevier

Infusion Nurses Society (2011). Infusion nursing standards of practice, *Journal of Infusion Nursing*, 34(1S), S63.

Infusion Nurses Society (2016). Vascular access devices: Ongoing assessment, site care, and dressing change. *Policies and Procedures for Infusion Therapy (5th ed.)* Norwood MA: Publisher, Infusion Nurses Society.

Jindal, K., Chan, C. T., Deziel, C., Hirsch, D., Soroka, S. D., Tonelli, M., and Culleton, B.F. (2006) Clinical Practice Guidelines of the Canadian Society of Nephrology for Treatment of Patients with Chronic Kidney Disease. *Journal of the American Society of Nephrology*, 17 Suppl. 16-23.

National Kidney Foundation. (2006). K/DOQI Clinical practice guidelines for vascular access. *American Journal of Kidney Disease*, 48(Suppl. 1), 137-181.

Canadian Association of Nephrology Nurses and Technologists (CANNT). (2015). Nursing Recommendation for the Management of Vascular Access in Adult Hemodialysis Patients, *CANNT Journal*, 25(Suppl. 1), 30 and 31.

RESOURCES:

WRHA Clinical Practice Guideline : Standards for Central Vascular Access Device Dressing Changes (May 11, 2017)

Elsevier (2016). Central venous tunneled catheter: Dressing change (pediatric). Nursing Skills Online.

WHO best practices for infections and related procedures tool kit (2010) p.7

StatLock Stabilization Devices (2014). Safety and Efficacy Considerations.