

NATIONAL INSTITUTES OF HEALTH
CLINICAL CENTER
CLINICAL CENTER NURSING DEPARTMENT

Procedure: Central Venous Access Devices: Dressing Change

SUMMARY OF SIGNIFICANT CHANGES SINCE LAST REVIEW

- ❖ Initial insertion dressing change time frame clarified
- ❖ Addition of chlorhexidine impregnated sponge
- ❖ Hand Hygiene added to steps
- ❖ Use of a CCND dressing change kit recommended
- ❖ Information added for HAI Prevention Bundle
 - Wiping of high-touch area before using
 - 2-nurse dressing change

Clinical Nurse Specialist: Ellen Eckes
Primary Stakeholder(s): Tyhis Coates, Tonya Jenkins

Deletes or Replaces - [CVAD Dressing Change \(05/12\)](#) (94 KB) **PRO**
[CVAD Dressing Selection Guide \(02/12\)](#) (81 KB)

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Procedure: Central Venous Access Devices: Dressing Change

Approved:

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Procedure: Central Venous Access Devices: Dressing Change

Essential Information

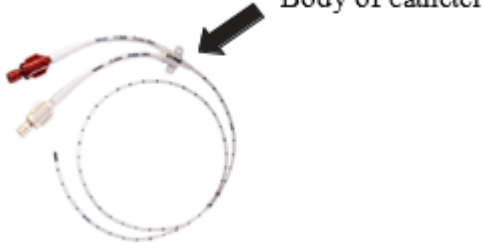
1. Central Venous Access Device (CVAD) Care and Maintenance Competency is required.
2. All inpatients with a CVAD will bathe with Chlorhexidine (CHG) cloths a minimum of every 24 hours (See Appendix E).
3. When using a transparent dressing and cleaning with chlorhexidine/alcohol applicator, change dressing every 7 days or as needed.¹
4. When using a transparent dressing and cleaning with povidone, change every 3 days.¹
5. Dressings that are non-transparent or have gauze inside are changed and site inspected every 48 hours.¹
6. Change dressings on an as needed basis if dressing is loosened, soiled, or compromised.¹
7. 2-Nurse dressing changes are done on specific patients: under the age of 18 years, critical care patients, patients who are non-adherent with guidelines, altered physical habitus (e.g. skin folds, obesity), location of site, and as identified by nursing judgement (See Appendix D).
8. Chlorhexidine impregnated sponge is changed minimally every 7 days with dressing change.
9. Chlorhexidine may cause a chemical burn if it is not allowed to completely dry prior to application of skin prep or dressing.
10. For lines placed in the operating room or in an outside facility, external length is documented in the VAD Observations Flowsheet with first dressing change.
11. See CVAD Dressing Selection Guide (see Appendix A).
12. Utilize Nursing Department approved kit for changing CVAD dressings.

Equipment

1. CVAD Dressing Change Kit (adult/peds)
 - Protective skin barrier swab stick
 - Alcohol swab stick package
 - 2 x 2 surgical sponge gauze
 - Sterile occlusive transparent dressing (adult only)
 - Chlorhexidine/alcohol applicator (ChlorPrep®)^{2,3}
 - Blank label
 - Two masks (adults)/ three masks (peds)
 - Alcohol based hand wipe
2. One (1) pair non-sterile gloves
3. One (1) pair sterile gloves
4. Chlorhexidine-impregnated sponge¹⁰
5. Adhesive remover (optional)
6. Sterile anchoring device/ securement device, as needed (i.e., Stat-lock or Grip-lok)
7. Securing material (tubular bandage, tape, compression bandage)
8. Needle free connector (if needed)
9. Alcohol pads (optional for tunneled catheters)
10. Sterile barrier (optional)
11. Sterile cotton tip applicator or sterile tongue depressor (optional)

Steps:	Key Points/Rationale:
1. Check documentation for previous external catheter length measurement.	1. Documentation is found in VAD Observation Flowsheet, initial insertion documentation and dressing.
2. Put on mask. ⁴	2. Ensure all individuals in the room wear masks.
3. Prepare the environment by wiping bedside table with hospital approved wipes per CCND Policy.	3. Minimizes microbial bioburden of the area.
4. Perform hand hygiene.	4. See Appendix C.
5. Have second nurse present if 2-Nurse dressing change is necessary.	5. Assist with specific patients (see Appendix D).
6. Set up sterile field with supplies.	6. N/A
7. Put on non-sterile gloves.	7. N/A
8. Instruct patient to put on mask or turn face away from exposed site.	8. This is to prevent contamination of site.
9. While stabilizing catheter, remove old dressing with chlorhexidine impregnated sponge and anchoring device from edges to exit site.	9. Chlorhexidine impregnated sponge should be easily removed with dressing when properly applied.
10. For PICC lines, remove dressing in the direction of the catheter towards the shoulder to help prevent accidental dislodgement of catheter.	10. PICCs are usually not sutured in place and require careful removal of dressing to prevent catheter migration. A sterile cotton tip applicator or tongue depressor placed on the PICC line may help stabilize the catheter while the dressing is being removed.
11. Inspect the catheter exit site, tunnel integrity, surrounding skin, and/or track of the vein for skin and suture (if applicable) integrity, signs and symptoms of infection, redness, swelling, and bleeding.	11. Patient condition and treatment can impact skin quality and immune response. Should the area under the Chlorhexidine impregnated sponge be red, notify LIP and wound nurse for possible change in dressing orders.
12. Notify license Independent Practitioner (LIP) of abnormal findings.	12. Sutures on tunneled lines should be removed from the insertion site within 10-14 days and exit site within 6-8 weeks of placement. Contact LIP and IR to have them removed. Upon receiving a patient with sutures, add date for sutures to be removed to the comment section.
13. Remove non-sterile gloves, perform hand hygiene utilizing the alcohol based hand wipe, and put on sterile gloves.	13. Non-sterile gloves are contaminated from handling the old dressing.

Steps:	Key Points/Rationale:
14. With sterile gauze, grasp catheter with non-dominant hand, lifting catheter to allow for better cleansing.	14. Use caution when scrubbing the skin to avoid dislodging catheter.
15. Clean the exit site and surrounding skin with chlorhexidine/alcohol swab applicator using a bidirectional scrub and allow to completely dry.	15. Chlorhexidine/alcohol swab applicator swabs should be applied to the site and allowed to air dry for at least 2 minutes to prevent chemical burn. ^{2,9} Do not blot, fan, blow, or wipe dry.
16. If a patient has sensitivity to a chlorhexidine product then povidone-iodine ³ or alcohol products are used. Povidone-iodine or alcohol swabs are used starting at site working outward in increasing concentric circles away from the site.	16. Consult with the LIP and Wound Nurse. Allow povidone-iodine to completely dry.
17. For tunneled catheters, clean the catheter with an alcohol swab stick by anchoring catheter at exit site and gently wiping from proximal to distal end of catheter.	17. You may clean the skin around the catheter with chlorhexidine/alcohol swab applicator but do not clean tunneled catheters with chlorhexidine/alcohol swab applicator as it may cause damage to the catheter. ⁶
18. Swab the area to be covered by the adhesive dressing with protective skin barrier and allow to dry.	18. Use of a skin protectant is highly recommended and is considered “best practice”. Use protective skin barrier only on intact skin.
19. Secure the catheter with anchoring device (i.e. Stat Lock) to provide stability and prevent catheter migration.	19. For non-tunneled percutaneous catheters, an anchoring device (i.e. Stat Lock) is required. ¹ For percutaneous catheters and subcutaneous ports, sterile steri-strips may be placed on the catheter or non-coring needle to provide stability and prevent catheter migration.
20. Apply chlorhexidine impregnated sponge.	20. Sponge is applied with name and double arrows visible, with slit underneath the catheter or slightly at either side of the catheter and in direct contact with the skin.
21. Additionally, PICCs, Hickman and midline catheters should be looped if length allows, insuring additional security. Loop the catheter towards the shoulder, avoiding the antecubital fossa.	21. N/A
22. Apply transparent dressing over catheter site. Form an occlusive seal by pinching the adhesive portion of the dressing around the catheter.	22. For patients with sensitive skin or allergic reactions to dressing materials, refer to dressing change algorithm listed under ‘VAD’ (see Appendix A).

Steps:	Key Points/Rationale:
23. For percutaneous catheters, measure length of the catheter from insertion site up to the area where the catheter that starts to widen (also called the ‘body of the catheter’; See Appendix B). 	23. N/A
24. If the catheter has migrated in or out 2 cm, notify LIP for possible X-ray confirmation of the catheter tip location.	24. Movement of catheter +/- 2cm from hub to external length may indicate migration of catheter.
25. Provide additional stability by securing the catheter extension tubing with tape, tubular bandage, or compression bandage.	25. Do not apply bandages too tightly. Do not tape directly over a transparent dressing, as the tape will interfere with the dressing’s one-way permeability.
26. Remove gloves and mask, and perform hand hygiene. ¹	26. N/A
27. Label the dressing with the date, and external length.	27. N/A
28. Document in approved electronic medical record.	28. N/A

References:

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- Chaiyakunapruk N, Veenstra DL, Lipsky BA, Saint S. (2004). Chlorhexidine compared with povidone-iodine solution for vascular catheter-site care: a meta-analysis. *Annals of Internal Medicine*, 136(11):792-801.
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- Siegel JD, Rhinehart E, Jackson M, Chiarello L. (2007). 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Health Care Settings. *Am J Infect Control*, 35(10 Suppl 2):S65-164.
- Mimoz O, Villeminey S, Ragot S, et al. (2007). Chlorhexidine-based antiseptic solution vs alcohol based povidone-iodine for central venous catheter care. *Arch Intern Med*, 167(19): 2066-2072.

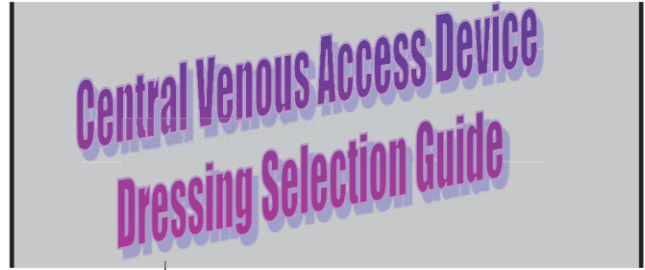
6. Cusack G. Vascular access devices. In: Gullate M, ed. *Clinical guide to antineoplastic therapy: A chemotherapy handbook*. 2nd ed. Pittsburgh: Oncology Nursing Society Press; 2007:527-570.
7. Policies and Procedures for Infusion Nursing 4th edition, 2011: pp 88-91.
8. Centers for Disease Control and Prevention. (2011). Basic Infection Control and Prevention Plan for Outpatient Oncology Settings. Found on the CDC website. Last updated November 9, 2011.

Contributing Policy, Procedure, Standard of Practice:

1. CVAD SOP
2. Appendix A: CVAD Dressing Selection Guide
3. CCND Hospital Acquired Infection (HAI) Prevention Policy

Appendix A

CVAD Dressing Selection Guide



First Line of Dressings
Criteria: no skin problems

Use: IV Opsite 3000 or Sorbaview

Second Line of Dressings
Criteria: skin surrounding insertion site is compromised

Use: Duoderm Window or Mepilex Window

Third Line of Dressings
Criteria: Skin needs a Dressing Holiday to give time to heal

Use: Primapore or Mepilex

The best prevention of line infection is to cleanse the skin for 30 seconds with Chloraprep and then cover with an occlusive dressing. This provides a 7 day kill of bacteria and leaves the dressing intact with the insertion site undisturbed.

The goal for the nurse is to maintain the occlusive dressing for 7 days and be able to view the insertion site.

The first line of dressings for CVAD's are as follows:

- Opsite IV3000 (transparent) or Sorbaview dressing (a clear center w/ a paper-tape border).

The second line of dressings for CVAD's are as follows:

- Create a Duoderm or Mepilex window. This is done using sterile procedure to cut a 1cm opening in the center of dressing. Apply to line site & cover with Opsite.

The third line of dressings for CVAD's are as follows:

- Primapore: a non-stick island dressing w/ paper tape border; very gentle
- Mepilex Border: a silicone island dressing; very gentle

*Stat-locks must be changed at each dressing change if under the sterile dressing. If outside the dressing then change weekly unless compromised.

Tricks of the trade:

- If Chloraprep is suspected to be the culprit in the skin reaction then one option is to turn the 7 day dressing change to a 3 day dressing change by eliminating the Chloraprep. The nurse can substitute use of alcohol and then betadine swabs, and still use the first line dressings, changing it every 3 days.
- When Chloraprep is applied, it must be allowed to dry completely. Vapors trapped under an occlusive dressing can severely irritate the skin and cause a reaction. Dry! Dry! Dry!
- 3M No Sting Skin Prep can be applied to the skin and allowed to dry completely, then dressed with one of the above options. This lays down a thin layer of plastic which reduces erosion with dressing removal. This can also help reduce reactions to certain adhesives.

Gentle Dressing Care can make a difference:

1. Skin prep is recommended under dressings. Allow to dry completely.
2. Adhesive remover for dressing removal
3. Using the "Push-Pull" technique w/ dressing removal. This is done by pulling up one corner of the dressing and holding while pushing away the skin gently with the other hand.
4. Apply dressings without applying "tension": When applying dressing gently pat dressing down. Do NOT stretch the dressing out over the skin to adhere. This will cause blisters.

Please place a WOCN consult if problems persist greater than one week.

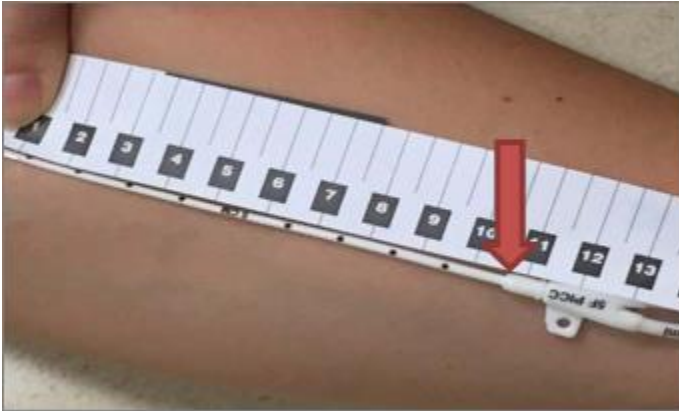
Created by KC Chandler-Axelrod RN, CWOCN@ 5/2007;

Revised: 9/2012, 2/2012 Reviewed: 2/2012, 12/2015

Appendix B

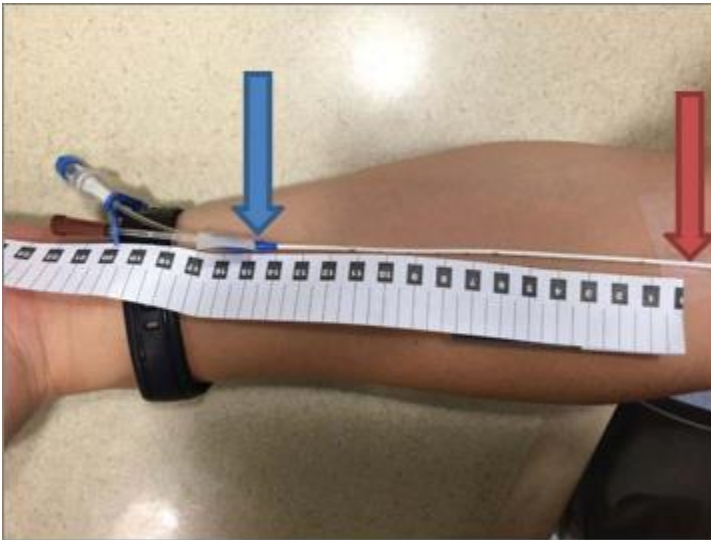
How to measure length of catheter

Measure all catheters to the body of catheter.



Red = Beginning of body of catheter

Non-tunneled catheter



Red = exit site

Blue = external catheter length

Tunneled catheter



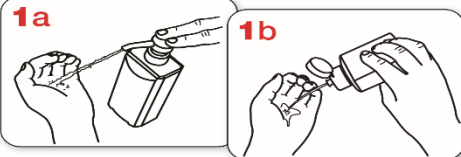
Orange = exit site

Blue = external length

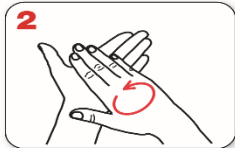
Appendix C.

How to Perform Hand Hygiene

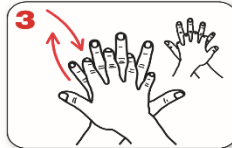
How to handrub? WITH ALCOHOL-BASED FORMULATION



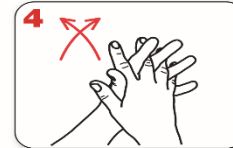
Apply a palmful of the product in a cupped hand and cover all surfaces.



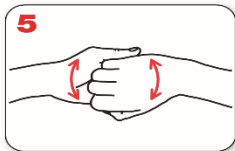
2 Rub hands palm to palm



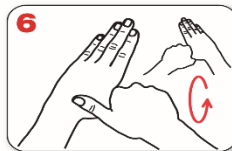
3 right palm over left dorsum with interlaced fingers and vice versa



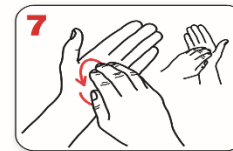
4 palm to palm with fingers interlaced



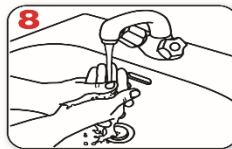
5 backs of fingers to opposing palms with fingers interlocked



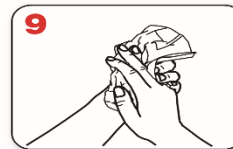
6 rotational rubbing of left thumb clasped in right palm and vice versa



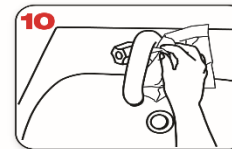
7 rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa



8 rinse hands with water



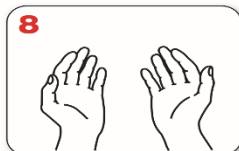
9 dry thoroughly with a single use towel



10 use towel to turn off faucet



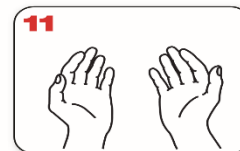
20-30 sec



8 ...once dry, your hands are safe.



40-60 sec



11 ...and your hands are safe.



WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.



October 2006, version 1.