

NATIONAL INSTITUTES OF HEALTH
WARREN GRANT MAGNUSON CLINICAL CENTER
NURSING & PATIENT CARE SERVICES

Standards of Practice: Care of the Patient with Central and Peripheral Venous Access Device (VAD)

I. Essential Information

- A. This SOP applies to any inpatient or outpatient when under direct care of a Clinical Center nurse. This SOP does not dictate patient/family teaching standards.

II. Assessment

- A. Intravenous therapies, in the adult population, are assessed every four hours and with change of caregiver.
- B. Intravenous therapies in pediatric patients, patients with communication disorders, and high-risk patients are assessed every hour and with change of caregiver.
- C. Assessment of intravenous therapy will include
1. VAD exit site for signs and symptoms of complications
 2. VAD patency
 3. verification of fluids and additives
 4. infusion flow rate
 5. patient's response to therapy
- D. The idle VAD exit site is objectively and subjectively assessed daily for signs and symptoms of complications.
- E. Collaborate with the medical team prior to reinfusing blood in adult patients when obtaining blood specimen. CDC guidelines state that blood withdrawn prior to the sample from anywhere except from a closed-loop system (ex., stopcock method) must be discarded. Refer to procedure for assembly of a closed-loop system.
- F. Prior to use of any VAD, patency will be assessed including
1. Site assessment
 2. Ease of flushing
 3. Verification of blood return (NOTE: verification of blood return may not always be possible with a PIV; important to make judgment of PIV patency based on site assessment and ease of flushing).

III. Interventions

- A. Needle-less and luer-lock systems will be used with all intravenous devices and infusions.
- B. When hair removal is necessary for vein/site assessment, catheter placement, or dressing maintenance, hair will be clipped. Shaving and depilatories may cause abrasions or irritation.
- C. Flushing:

1. Prior to flush of any VAD, blood return must be obtained. If unable to obtain blood return, RN will refer to VAD Occlusion Verification Tree (Appendix A). As noted above, verification of blood return may not always be possible with a PIV; important to make judgment of PIV patency based on site assessment and ease of flushing).
 2. Prior to flush of dialysis catheters, discard fill volume.
 3. All VADs are flushed after every entry and as indicated on Standard Flush Solution Guidelines.
<http://www.cc.nih.gov/vads/lines.html>.
 4. All central VADs, except those with special valves (for example, Groshong™) catheters, are flushed with heparin. Heparin requires a medical order. Special catheters with valves (for example, Groshong™) are flushed with 0.9% NaCl. Prescriber protocol specific orders may supercede above recommendation.
 5. All peripheral VADs in adult patients and patients with coagulopathies are flushed with 1 mL 0.9% NaCl q 8 hours.
 6. For pediatric patients (without coagulopathies), peripheral VADs are flushed with heparin. Heparin requires a medical order.
 7. When flushing a multi-lumen catheter, a new syringe must be used for each lumen.
- D. The external length of any non-tunneled CVAD (ex., PICC, SICC) will be measured with each dressing change or whenever there is suspicion that position of CVAD has been altered. If external catheter length increases or decreases by > 2 cm, RN will notify prescriber to determine if chest x-ray is needed to confirm tip location.
- E. Intermittent infusion caps are changed every 72 hours, after blood is withdrawn through the cap, or every 4 to 6 hours during serial blood tests.
- F. Dressings:
1. For all central VADs and accessed subcutaneous venous access devices (SVAD), transparent dressings are changed every seven days, or when integrity of dressing is compromised.
 2. Peripheral VAD transparent dressings are changed every 72 hours, or when integrity of dressing is compromised.
 3. For all VADs, (both central & peripheral), gauze dressings are changed every 24 hours or when integrity of dressing is compromised.
 4. Anchoring devices (ex: Stat-lock™, Steri-Strips™)
 - a) Stat-Locks™ are changed when integrity of device is compromised
 - b) If Stat Locks™ are located beneath the dressing, Stat-lock™ will be changed with each dressing change
 - c) Steri-strips™ are changed with each dressing change
- G. Teflon peripheral VADs are changed at least q 72 hours. Steel/metal peripheral VADs are changed every 4 hours. If peripheral VAD needs to be in same site > 72 hours, physician order is required.
- H. Tubing/Stopcocks:
1. Primary and secondary intravenous administration tubing is labeled with the time and date of hanging and the nurse's initials.
 2. Primary and secondary intravenous administration tubing is changed every 72 hours, regardless of patient's immune status. For PICCs and SVADs, tubing is changed to the extension set as long as extension tubing was inserted under sterile conditions. For all other catheters, tubing is changed to the hub.
 3. Intravenous administration tubing for TPN/lipids is changed every 24 hours.
 4. Stopcock devices are changed with the intravenous tubing. If utilized for serial blood testing, they are changed every 4 to 6 hours.
 5. For SVADs, non-coring needle with extension tubing is changed at least every 7 days.
- I. All Intravenous solutions

1. Will be changed every 24 hours unless otherwise specified by treatment protocols or physicians order.
 2. Will be labeled with date, time hung, and nurse's initials.
 3. Solutions in a container specific for an ambulatory infusion device, may have an extended expiration date based on drug stability.
- J. Booklets are available for patients who are in need of instruction on the care of their catheter at home. These can be accessed at http://www.cc.nih.gov/cc/patient_education/index.html if patient booklets are not available on your unit.
- K. Patient/family teaching standards:
1. Cap change
 2. Flushing technique
 3. Dressing changes
 4. Site assessment
 5. Complications

IV. Documentation

- A. Assessment of intravenous therapies, including the site, in the adult population, is documented every four hours.
- B. Assessment of intravenous therapies, including the site, in pediatric patients, patients with communication disorders, and elderly and high risk patients is performed every hour and documented every four hours.
- C. The objective and/or subjective assessment of an idleVAD exit site is documented every day.
- D. Patient/Family teaching
- E. Interventions provided as appropriate and related to:
1. Dressing change
 2. Cap change
 3. VAD dysfunction
 - a) Catheter occlusion
 - b) Site infection
 - c) Unplanned removal
 - d) VAD repair
 4. Any measurements of external catheter length
 5. Flushes administered
 6. VAD patency
 7. Plan for removal
 8. SVAD access
 9. Response to interventions
- F. Insertion of peripheral IV to include site, gauge, and length of catheter

V. REFERENCES:

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