Policy:
1. Nurses must adhere to current infection control policies and procedures when caring for clients with vascular access devices (VAD) in order to prevent local and systemic infectious complications.
2. Clients/caregivers must be competent in infection control practices before administering intravenous medications or solutions and/or maintaining intravenous lines independently.
3. Manufacturer’s recommendations are always followed regarding the reuse of IV equipment and supplies. Supplies recommended for ‘single-use’ are never cleaned and reused.
4. All equipment surfaces that come in contact with the bloodstream or come into contact with a solution or equipment that will come into contact with the bloodstream must be sterile.

The following elements will help to guide infection control practice when caring for a client with a VAD.

A. Hand hygiene
B. Peripheral venous insertion sites
C. Use of personal protective equipment
D. Site care and maintenance
E. Equipment and supplies

Procedure
A. Hand Hygiene:
1) Perform hand hygiene:
   - Prior to coming in contact with the client, the intravenous system or intravenous equipment
   - Before performing an aseptic procedure
   - After contact with body fluids
After finishing a procedure, even if gloves were worn.

B. Peripheral Intravenous Insertion Sites:
1) Avoid sites near infected veins or open wounds
2) Site preparation: Prepare the site for insertion of a peripheral IV in one of three ways
   - 70% alcohol friction rub for one minute
   - Povidone-iodine 10% rub for two minutes (do not remove)
   - Chlorhexidine product (0.5% (with alcohol) to 2% concentration) for 30 seconds.
   Note: Allow to air dry before proceeding with insertion. Do not blow or fan area dry.
3) Clip hair with scissors, do not shave
4) Inspect site routinely for signs of catheter-related complications
5) Change peripheral IV sites every 72 hours and whenever there are signs and symptoms of phlebitis or infiltration including redness, swelling, warmth, hardness, tenderness, leaking, and/or malfunctioning.
   Note: If the site is free from inflammation and the client has limited sites available for restarts then the nurse may choose to delay restarting the IV. The reason for the delay, the condition of the site and client’s consent must be documented on the Vascular Access:Peripheral IV Flow Sheet and Progress Notes of the client record. Ensure client has been taught signs and symptoms of phlebitis and infiltration and to report these findings to the nurse.
6) Once inserted, anchor the cannula and cover with a transparent dressing and secure with tape.
7) Change the dressing on a peripheral site only when moist or loose, or to better visualize the site if infection is suspected and whenever the peripheral IV catheter is replaced.
C. Use of Personal Protective Equipment (PPE)
1. Use PPE including, gloves, masks, gowns, goggles as necessary i.e. if splashing is likely
2. Perform hand hygiene after removing gloves and after each client contact.

D. Site Care and Maintenance
1) Inspect site on every visit for signs of catheter-related complications
2) Rotate peripheral venous access sites routinely; every 72 hours i.e. different arm, different vein.
3) Change site dressing on a regular basis.
   - Peripheral IV dressing: change Transparent Semi-permeable (TSM) dressing at time of site rotation
   - Central lines, midlines: change TSM dressing every 7 days or prn.
Note: If a gauze and tape dressing or gauze under TSM is used, it must be changed every 48 hours.
4. Maintain closed system on infusion administration systems.

E. Equipment and Supplies
*Check expiration dates

Peripheral Cannulas:
1) Use a sterile cannula for each attempt at inserting a peripheral vascular access device (PVAD).
2) Use the smallest gauge cannula suitable for the proposed therapy.
3) Use only safety-engineered PVADs.
4) Visually inspect PVAD prior to insertion.

Tourniquets:
1) Use tourniquets once and discard.
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2) If a tourniquet must be reused, scrub it with 70% alcohol and allow it to dry.

**Solutions:**
1) Inspect all solutions containers for integrity prior to initiation of therapy
2) Do not use solutions beyond the expiry date printed on the container.
3) Do not use solutions that have visible turbidity, leaks, cracks, or particulate matter.
4) Replace all intravenous solutions every 24 hours and when the administration set is changed.

**Exceptions:**
   a) Discard lipid emulsions alone (not TNA or 3-in-1) within 12 hours of hanging the emulsion.
   b) Complete the infusion of blood or blood products within 4 hours of hanging the blood.
   c) Discard cassettes or containers from intravenous infusions for pain control from ambulatory infusion pump after 7 days or less.

**Multidose Vials/Containers:**
1) Record the date when first accessed on all multidose vials/containers.
2) Discard vials of hepalean one month after first being accessed; discard other multidose vials/containers according to the manufacturer’s instructions.
3) Cleanse the access diaphragm of multidose vials/containers after they are opened with 70% alcohol before inserting a device into the vial.
4) Always use a sterile device to access multidose vials/containers and avoid touch contamination of the device before penetrating the access diaphragm.
5) Never remove the syringe while leaving the needle inserted in the multidose vial or container. Self-sealing vial access devices may be left inserted in multidose containers.

6) Discard a multidose vial/container if sterility is suspect or compromised

Admixtures:
1) If at all possible, avoid preparing admixtures in the home setting. Use admixtures prepared under controlled conditions under a laminar flow hood

2) If preparing admixtures in the home, maintain strict aseptic technique throughout the procedure

3) Refrigerate all admixtures unless contraindicated

Administration Sets:
Change administration sets according to your area specific protocol. Change the continuous administration set every 96 hours. It is recommended to change the intermittent tubing every 24 hours; however certain CarePartners divisions have a CCAC specific protocol that specifies changing of the intermittent tubing every 72 hours.

1) Change continuous or intermittent intravenous administration sets (IV tubing):
   - Every 24-72 hours
   - Whenever the peripheral venous access device is re-sited
   - Immediately if contamination is suspected or integrity of the system has been compromised

3) Change administration sets on infusion pumps used for the continuous administration of intravenous or subcutaneous pain medication every 3-7 days, when the medication container/cassette is changed.
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4) Lipids/Blood Products

<table>
<thead>
<tr>
<th>Solutions</th>
<th>Administration Set Change Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parenteral Nutrition (Amino Acids)</td>
<td>Q 72 hours or integrity compromised</td>
</tr>
<tr>
<td>Lipids, Parenteral Nutrition Solutions containing lipids</td>
<td>Q 24 hours or when integrity compromised</td>
</tr>
<tr>
<td>Whole blood &amp; components (platelets, red blood cell concentrate)</td>
<td>4 hours or 2 Units and upon suspected contamination</td>
</tr>
<tr>
<td>Fractionated products (Albumin, Clotting Factors, IvIG)</td>
<td>Upon completion of infusion</td>
</tr>
</tbody>
</table>

5) Change Control-a-Flo's and similar non-electronic add-on devices every 72 hours when the administration set is changed

6) Use the simplest tubing with a minimum of connections

7) Inspect all administration sets, add-on devices, and junction securement devices prior to use to ensure protective coverings are intact and equipment has not been compromised

Extension Sets:
1) If the extension set was attached to the central line at the time of insertion, replace the extension set only if leaking or damaged
2) If the extension set was added after the insertion of the central line, replace the extension at time of tubing change

Injection Cap:
1) Change injection cap when:
   • Peripheral venous access device is changed
   • Injection port is contaminated

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Intravenous Therapy – Infection Control

- Immediately if leaking or after drawing blood
- Every 7 days or whenever it is necessary for CVADs
- Whenever there is blood in the injection cap

2) Clean injection caps with a 70% alcohol swab for 30 seconds and allow to dry prior to accessing the injection cap

Syringes:
1) Use syringes, needles and cannulas once and discard
2) Attach the date of preparation to all preloaded syringes and store preloaded syringes in the refrigerator. Use preloaded syringes within 72 hours. (Exception: Never refrigerate Lasix and use preloaded Lasix within 48 hours)

Central Line Dressings:
1) Change transparent dressing on central line, extended dwell and midline catheter every 7 days or whenever necessary (damp, loosened or soiled)
2) If gauze is used under transparent dressing or if a gauze and tape dressing is used, the dressing must be changed every 48 hours

Total Parenteral Nutrition
1) Designate one lumen exclusively for hyperalimentation if a multilumen catheter is used to administer parenteral nutrition.
2) Change administration sets every 24 hours for intermittent and continuous infusions of TPN.

Blood Draws:
1) Designate one lumen of a multi-lumen central line exclusively for blood draws, where possible.
Responding to a Possible Infection:
1) If a client develops symptoms of infection with a Peripheral Vascular Access Device:
   - If the client develops redness, tenderness, hardness or swelling at the peripheral site, remove the cannula.
   - If the client develops purulent drainage at the peripheral site, remove the cannula using aseptic technique and send the tip for culture in a sterile specimen container.

2) If the client develops symptoms of infection with a Central Venous Access Device:
   - If the client develops a fever, or redness, tenderness, swelling, or drainage at the exit site, contact the attending physician immediately for orders. (Remember that many immunocompromised clients do not show classic signs of inflammation when infection is present.)
   - Change the central line dressing and swab the exit site for culture and sensitivity.
   - Currently, CarePartners nurses do not perform blood cultures in the community setting.

Note: If the client has a fever of unknown origin, the intravenous set up should always be considered as a possible source of contamination. Change the intravenous solution, administration set, and cannula (if peripheral vascular access). The peripheral cannula should be sent for culture.

Disposal
1) Immediately place used sharps such as needles (including safety-engineered needles) and ampoules in a suitable
sharps container. Dispose in accordance with local municipal bylaws.

2) Dispose of used IV equipment that does not contain sharps in a plastic bag. Close that plastic bag and place in a larger plastic bag. Dispose with the household garbage unless prohibited by local municipal bylaws.

3) Ensure biohazard or sharps container is replaced when three quarters full.