Vascular Access Device Policy

Policy Owner: Nurse Manager • Iv Therapy Team

POLICY STATEMENT

This policy provides a framework to guide clinical practice as it relates to vascular access devices. It provides the actions to be followed to provide for appropriate and safe patient care.

AFFECTED STAKEHOLDERS

Indicate all entities and persons within the Enterprise that are affected by this policy:

☒ Hired Staff
☒ House staff, Residents, & Clinical Fellows
☒ Leased staff
☒ Medical Staff (includes Physicians, PAs, APNs)
☒ Vendors/Contractors
☐ Other: Include any other stakeholders not listed above.

DEFINITIONS

Central Venous Access Device (CVAD): A device placed in the venous system in which the tip of the device terminates at or close to the heart or in one of the great vessels (Aorta, pulmonary artery, superior vena cava, inferior vena cava, brachiocephalic veins, internal jugular veins, subclavian veins, external iliac veins, common iliac veins, femoral veins, and in neonates, umbilical artery/vein).

Certified Line: A central venous access device that is inserted by a qualified inserter and witnessed by a qualified observer who monitors and verifies that the CVL Bundle was met in its entirety to ensure safe venous access.

EPriv: Electronic Physician Privilege System

Intraosseous (IO)- a device specialized to be placed in hollow-bore needle through the cortex of a bone and into the medullary space. Recommended for 24-48 hours total time then removed.

Midline catheter: Peripherally placed venous catheter recommended for patients with anticipated therapy length 5 – 14 days (INS Standard 26 I 6b) page S75.

Peripheral Inserted Central: Peripherally inserted venous catheter in which the tip of the device terminates centrally in the superior or inferior vena cava.

Peripheral Intravenous: Catheter that is inserted peripherally into the venous system for short term use as it does NOT reside in the central venous system.

Peripheral Parental Nutrition (PPN): Administration of nutrients via a peripheral intravenous infusion, not through a central vein, by-passing the usual ingestion and digestive processes. Typically used in conjunction with other methods of nutrition; used for short period of time, and has a lower osmolality than that of total parental nutrition.

Total Parental Nutrition (TPN): Administration of nutrients via a central vein, by-passing the usual ingestion and digestive processes. Sole method of nutrition; can be used for longer periods of time, and has a higher osmolality than that of PPN.

Qualified Inserter: A physician, PA, or, an Advanced Practice RN who has met the following criteria and is listed in the ePriv as a qualified inserter:

- Successfully checked off by their service as competent in the insertion of central lines and credentialed for CVC insertion and has successfully demonstrated competent use of the CVL Bundle by attending the CVL Bundle Program sponsored by Infection Prevention.
- Following successful completion of Central Line Bundle training the Resident Bedside Procedure Policy will be adhered to.
- An Adult Vascular Access Team (AVAT/PVAT) RN may insert PICC catheters as well as midline catheters and are not listed in ePriv.

Qualified Observer: Vascular Access Team member or any registered nurse in critical care, operating room, or operating room like environment having received the required Central Line Bundle training.

See Attachment 1 – Scope of Practice for nursing staff.

PROCESS & PROCEDURES

A. Training

1. Personnel who insert, remove, or manipulate venous access devices shall undergo training and have current hospital privileges for Central Venous Access Device Insertion.

2. Medical staff members must have delineated clinical privileges to insert central venous access devices.

3. Privileges shall be checked utilizing the electronic physician privileges system (Epriv), as stated in the Resident Bedside Procedure Policy.

4. Personnel who insert ultrasound guided PIV shall undergo training by completing the required class and competency prior to independent placement.

B. Catheter Selection and Usage

1. See Attachment 2 – Adult Catheter Selection Algorithm.

2. See ***Attachment 3 –*** *Pediatric Catheter Selection Algorithm.*

a. Peripheral intravenous line (PIV)
   i. In pediatrics and neonates, catheter size is determined by patient age and vessel size. In adults, twenty (20) gauge or smaller catheters should be used for most PIVs. A minimum 20-gauge catheter is required for infusion of Peripheral Parenteral Nutrition (PPN). Use a 20g-24g PIV depending on vein size for blood transfusions but an eighteen (18) gauge catheter is recommended if rapid transfusion is required. (INS p. S75 II B5)

b. Extended dwell PIV
   i. The Arrow Extended Dwell Peripheral Catheter (EDC) System is designed to provide continuous and reliable peripheral IV therapy for the patients' entire length of stay.
   ii. A PIV order is required per hospital policy for all peripheral lines including the EDC.
   iii. The catheters are intended for peripheral medication infusions **ONLY**.
   iv. These catheters are FDA approved to remain in place until it is clinically necessary to remove them or therapy has been completed.
   v. The dressing should be changed every 7 days and PRN (i.e. visibly soiled, overly saturated antimicrobial disc, or non-occlusive dressing is noted) by the bedside nurse.
   vi. The Extended Dwell Catheter is placed by AVAT team members only, but can be removed by the bedside nurse.
   vii. Labs may be drawn from the (EDC).

c. A midline catheter is recommended for patients with anticipated therapy length of 1- 2 weeks. Central circulation concentrations **may not** be infused via midline catheters. These lines are placed by AVAT/PVAT only.

3. Weigh the benefits of placing a central venous access device (CVAD) at a recommended site to reduce infectious complications against the risk for mechanical complication.

a. Insert CVAD only when medically indicated.
   i. Central lines may be deemed medically necessary for, but not limited to, the following reasons:
      1) Administration of caustic materials
      2) Administration of Total Parenteral Nutrition (TPN)
      3) Hemodynamic monitoring to include but not limited to: central venous pressure monitoring; pulmonary artery catheters; and introducers for pulmonary artery catheters
      4) Treatment to include but not limited to: Plasmapheresis; Apheresis;

Hemodialysis; and Continuous Renal Replacement Therapy(CRRT)

5) Extended length of infusion
    a) Recommended time ≥ 14 days of treatment in adult population
    b) Recommended time of ≥ 7 days of treatment in the pediatric population
6) Poor venous access documented in medical record

b. Select appropriate CVAD (i.e. non-tunneled, tunneled or implanted or PICC) according to patient's needs along with the appropriate indication as listed above.
    i. All patients who have an order for the placement of a PICC Line will receive a Vascular Access Team consult (See Adult & Pediatric Inpatient Protocol).
    ii. A tunneled catheter or an implanted port is strongly recommended for patients in whom more than 12 weeks of venous access is anticipated.
    iii. Any patient who has an order to have a PICC placed for home IV antibiotic administration will require an **Infectious Disease consult prior to PICC line insertion** and discharge.

c. When available, use silver and/or chlorhexidine-impregnated central venous access catheters (CVACs) to reduce both catheter colonization and catheter related infections.

d. Use a central venous access device (CVAD) with the minimum number of ports or lumens essential for the management of the patient.

e. Use a single lumen CVAD preferably when a patient is to receive only Total Parental Nutrition (TPN). When a patient is receiving TPN and other fluids, one port of an existing multi-lumen catheter shall be designated for TPN and shall be clearly labeled as such. NICU exception – dual lumen UVCs and dual lumen 1.9 Fr PICCs may require splitting TPN to infuse through both lumens.

f. Use of large-caliber temporary venous access devices, such as introducers/sheath devices (e.g., Cordis), is limited to the ICUs, ED, OR, PACU and cardiac procedure labs.

C. Site Selection

Peripheral Intravenous lines (PIV)

1. An order is required for placement of a peripheral intravenous catheters (PIV), a midline catheter, and peripherally inserted central catheters (PICC).

2. The individual placing any peripherally inserted device shall avoid pre- or post- operative sites, areas that are edematous, injured or damaged, and the arm on the same side as a past or potential mastectomy, paralysis from stroke, or dialysis fistula (exception shall be made for diagnostic procedures, e.g. fistulogram).

3. The preferred insertion site for a PIV is the upper body extremity.

    a. PIVs will not be inserted in lower body extremities of adult patients unless there is clinical documentation of why all other PIV options are unacceptable and a physician order is obtained. PIVs should not be placed in the lower extremities of diabetic patients with the exception of neonatal and pediatric patients.

Central Lines

4. The preferred insertion site for each catheter site is:

    a. PICC or Midline catheter in the adult patient is the upper extremity.

    b. Patient-specific factors (e.g., renal failure, coagulopathy, anatomic deformity or cardiothoracic surgery) and relative risk of mechanical complications (e.g., subclavian vein stenosis, bleeding, and pneumothorax) shall be considered and should guide site selection. (INS standard 27 III B)

    c. If catheter placement requires use of a vein other than the "Optimal" site, the physician is required to document the rationale in the patient's medical record.

D. Insertion

1. An order is required to insert a venous access device that will not be inserted by a physician, nurse practitioner or physician's assistant.

2. Any subsequent PIV site changes are covered by the original authorized order.

3. For PICC placement, a Vascular Access Team consult, order and signed consent are required prior to placement. If a topical anesthetic cream is needed for a child having a PICC placed, a physician order is required.

4. Hand hygiene with hospital-approved soap and water or waterless alcohol-based cleanser is required before PIV insertion and prior to donning gloves.

5. The use of the "CVL Bundle" is required for all central venous access insertions, as well as midline catheters, central arterial catheters, peripheral arterial catheters, and umbilical vein and artery placement, see ***Attachment 5 – Infection Prevention Management of Intravascular Devices****.*

    a. Hand hygiene using a hospital-approved, chlorhexidine gluconate 5 minute surgical scrub prior to insertion of all Central Access Devices.
        i. Once initial five minute surgical scrub has been completed for the day, hospital approved surgical hand gel may be used in place of the surgical scrub for subsequent hand preps.
    b. Except in acute, life threatening situations, the operator and assistant shall use maximum barrier precautions for placement of CVADs in all areas of the hospital. Maximum barriers includes:
        i. Cap and beard cover, if applicable
        ii. Mask
        iii. Sterile gown
        iv. Sterile gloves
        v. Large sterile patient drape (cover head to toe) so the guidewire does not extend beyond the sterile field.
    c. All non-sterile persons in the room at the time of insertion are required, at minimum, to wear hat and mask during the procedure.
    d. Chlorhexidine gluconate will be used to prep the skin prior to insertion of CVAD. Exception: low birth weight infants, patients with poor skin integrity or intolerance to CHG will be prepped in the following manner:
        i. Cleanse skin with alcohol and allow to dry completely
        ii. Cleanse skin with betadine and allow to dry completely

iii. Cleanse skin with sterile normal saline and allow to dry completely

e. Optimal site selection will be utilized when placing a CVAD, but patient-specific factors should be considered to guide site selection.
   i. Avoid femoral veins in adult patients. If femoral lines are placed in adult patients they shall not be kept longer than 2 calendar days, unless under emergent situations. (https://www.ncbi.nlm.nih.gov/books/NBK459255/)

   ii. Avoid subclavian site in hemodialysis patients and patients with advanced kidney disease to prevent subclavian vein stenosis.

   iii. Avoid PICC lines in renal patients as they are contraindicated; consult with Nephrology when a PICC is requested.

f. Daily bathing with 2% chlorhexidine gluconate (CHG) shall be performed on all patients with central lines except babies less than two months of age and patients who have known allergies or contraindication to CHG. Patients with acute leukemia and bone marrow transplant regardless of their bedded location will also receive daily CHG bathing provided they are greater than two months of age. See attachment 6- Chlorohexidine Gluconate Daily Bathing SOP".

6. Central lines are inserted by a qualified inserter and certified by a qualified observer. Any staff or team member may halt the procedure at any time because of concern that the CVL Bundle is not being followed or a break in aseptic technique. The observer must document in the medical record whether or not each bundle element was met.

   a. Any central line not certified at the time of placement shall be removed in 24 hours or as soon as it is medically feasible, whichever comes first.

QUALIFIED INSERTER + OBSERVER + all elements of CVL bundle = CERTIFIED CVAD

7. Use ultrasound guidance to place central venous catheters when available, to reduce the number of cannulation attempts and mechanical complications. Ultrasound guidance should only be used by those fully trained in this technique. Fluoroscopy guidance may be utilized to place central venous catheters in designated settings.

8. Avoid cut down procedures as a means of establishing a vascular access site when possible.

9. Prior to use, confirmation of correct central line placement is required. Confirmation of proper placement by chest x-ray, fluoroscopy or tip navigation system is required for all central venous access devices with the exception of femoral lines in adults. The venous access device shall be flushed with normal saline and capped with an impregnated alcohol end cap pending confirmation. In emergency situations or in the OR, proper placement may be judged based on hemodynamic assessment until a chest x-ray can be obtained. Prior to use, an order allowing the medical staff to use the central venous access device is required.

10. Tunneled venous access devices, implanted ports, and tunneled dialysis/apheresis catheters will be placed in the operating room (OR) or other approved site.

Catheter stabilization shall be used to preserve the integrity of the access device, minimize catheter movement at the hub, and prevent catheter dislodgement and loss of access. Non-tunneled central venous access devices can be sutured in place. Approved alternative methods of stabilization in lieu

of sutures should be used whenever possible. Steri-strips or a securement device shall be used to secure PICCs.

11. Unused ports of multi-lumen central catheters shall be flushed, capped with a needleless connector, clamped (if the device has a clamp) and have a sterile alcohol impregnated cap placed on the end.

E. Site Assessment

Following venous access device insertion, during infusions, and when there is a primary care nurse change, the site will be assessed and if any signs of infection are identified, notify MD. Assessment will include: device type, location, pulses, security of luer-locking devices, perfusion of extremity (e.g., pink and warm with 1-2 second perfusion), range of motion of extremity, dressing security, infiltration, phlebitis or signs of infection, pain, redness, swelling, induration, disruption of flow, or lack of blood return. In neonatal and pediatric patients, extremity circumference is required to be documented at least once every 12 hours or when there is a primary care nurse change. If a gauze dressing is being utilized, assess for phlebitis and signs of infection at time of dressing change.

1. A nurse shall assess and flush the venous access site not in continuous use, in conjunction with established flushing parameters; see ***Attachment 4 – Flushing Guidelines***.

2. All central venous access devices, with the exception of hemodialysis lines, shall be assessed for catheter patency as defined by the Intravenous Nurses' Society (INS) standard of care (the nurse should aspirate the catheter for positive blood return to confirm patency prior to administration of medications and solutions. (Exception: NICU) If there is no blood return from the central venous access device, notify the patient's physician or the Vascular Access Team immediately. De-clotting procedures are addressed according to manufacturers' recommendations.

3. Phlebitis shall be graded and documented according to INS Standards of Practice, Phlebitis Scale.

F. Dressing Changes

1. Hand hygiene with hospital approved soap and water or hospital approved waterless alcohol-based sanitizer is required before catheter site care.

2. A semi-permeable polyurethane sterile transparent dressing in the appropriate size shall be used for all vascular access devices.

    a. Use a chlorhexidine impregnated disc or chlorhexidine dressing for all central catheters in patients greater than two months of age.
    b. **EXCEPTION:** An alternative impregnated disc is used on neonates less than two months of age and infants in the Neonatal Intensive Care Unit

3. Documentation completed at least once every 12 hours in adults, every 8 hours in pediatrics or

    a. Change **central line** dressings every 7 days and PRN (i.e. visibly soiled, overly saturated antimicrobial disc or gel pad, or non-occlusive dressing is noted).
        - Injection caps, stabilization devices, and approved antimicrobial foam disks (following manufacturers' guidelines) will be changed with each dressing change.

b. Consider the use of a hemostatic agent to control bleeding and reduce the need for additional dressing changes. If a hemostatic agent is used, it will be changed every 48 hours, and evaluated if further hemostatic agent use is warranted or if a semipermeable polyurethane sterile transparent dressing in the appropriate size shall be used at that time.
c. Avoid routinely placing gauze under a transparent dressing of any central venous access device.
d. Avoid circumferential dressing (i.e. coban) with gauze or over transparent dressing due to safety issues.

EXCEPTION: High humidity and extreme low birth weight infants.

EXCEPTION: For patients who have skin breakdown or oozing, an occlusive gauze dressing may be used, and changed when soiled or every 48 hours. **If gauze is required under a sterile transparent dressing, it will be considered a gauze dressing and changed every 48 hours and PRN.**

NICU: PICC dressings are changed every seven days and PRN if loose, soiled or there is excessive drainage underneath the dressing. Central venous access device dressing changes are a sterile procedure and require 2 nurses to change the dressing to avoid inadvertent removal of the line. The initial dressing for an infant less than 1000 grams or another patient where it is otherwise medically indicated should be a gauze/Coban dressing and changed every 48 hours. Once line in proper placement then tegaderm applied with algidex or silver patch for 28 days (or until loose/soiled). At 28 days dressing is changed. If skin is mature enough at this point dressing changes can then begin every 7 days.

4. Dialysis staff shall perform dressing changes on dialysis catheters per hospital policy. If a dialysis/apheresis catheter dressing becomes grossly soiled or loose, the nursing staff, following routine central venous access device guidelines, will perform the dressing change. In Pediatrics, these lines are maintained by the PVAT if not in use.

G. Line Usage

1. Unused ports shall be flushed, clamped (where clamp is present) and an antiseptic cap applied. Refer to "Blood Draws and Flushes" section of this policy for flush solution and frequency.

2. Implanted ports shall be re-accessed using a new port needle every 7 days and PRN. Sterile technique should be used.

3. Hemodialysis devices shall not be opened, flushed or used by non-dialysis staff except in a life-threatening emergency or when ordered by the nephrology attending or fellow.

a. A sign should be posted above the patient's bed designating the location of the access and special instruction such as "No blood drawing or blood pressures" from that extremity
b. The patient's physician will notify the attending nephrologist if a situation arises that may require deviation from this policy. An order must be written by the nephrology attending stating that the dialysis access may be used.
c. The physician may use the access during a CODE or other "life-threatening" emergency.

d. Vascular Access Devices used for dialysis at AU Medical Center
   i. External Access
      Subclavian double lumen catheter
      Femoral vein catheter
      Arteriovenous shunt
      Permcath jugular vein catheter
   ii. Internal Access
      Arteriovenous fistula
      Gortex graft
      Vein elevation fistula

H. Tubing

1. See Attachment 5 – Infection Prevention Management of Intravascular Devices regarding fluids, additives and tubing changes.

2. The administration set shall be changed when a new central venous access device is placed.

3. Injection ports, hubs and needless connector caps shall be cleaned with a 3.5% Chlorhexidine gluconate (CHG) / 70% alcohol (preferred) or 70% alcohol swab, or hospital approved antimicrobial agent before accessing the system. **Appropriate cleaning of the injection cap/hub is accomplished by vigorously scrubbing the site (all grooves and threads) with friction for at least 5 seconds and allow to dry (15 seconds for alcohol).** Apply antiseptic cap to needleless connectors and/or on lumens of all lines not being used whenever possible. **Use of antiseptic cap shall not replace above requirement for "scrubbing the hub" prior to penetration.**

4. Stopcocks may be used when it is necessary to balance a central venous access device for hemodynamic reading or for multiplication of IV lines. Use a stopcock with an integrated needleless connector rather than a solid cap, or replace the stopcock with a needleless connector to reduce stopcock contamination.

5. In order to minimize the risk of contamination, manipulation of the venous access device system shall be kept to an absolute minimum and a closed flushing system utilized for maintaining catheter patency whenever possible.

6. Except in the operating room and in emergency situations, all central venous access device fluids shall be administered by infusion pump. Refer to departmental guidelines for a list of specific fluids or medications that require an infusion pump.

   PICCs total infusion rate shall follow manufacturers' recommendations.

I. Blood Draws and Flushes

1. See ***Attachment 4 – Flushing Guidelines***.

2. A syringe no smaller than 10 ml shall be used to flush any central venous access device. Due to the potential for cross contamination, a syringe will be used to access only one lumen of the device.

   EXCEPTION: Hospital personnel placing central lines may use a syringe to access more than one lumen at the time of insertion, under sterile conditions.

3. Avoid obtaining blood from central venous access devices except when access is otherwise poor as documented in the patient's medical record and where additional venipuncture would be detrimental. Use aseptic technique in obtaining blood from central venous access devices. **Bedside nursing staff must be checked off using hospital approved competency tool prior to obtaining blood via Central Venous Access Devices.** ***A physician's order is required for each exception.***

- ***a.*** EXCEPTION: The following patient populations will allow blood obtainment from **tunneled** central venous access devices; Adult and Pediatric Hematology/Oncology/Bone Marrow Transplant Patients, Sickle Cell Patients, and Cystic Fibrosis patients. Use aseptic technique in obtaining blood from central venous access devices. ***A physician's order is required for each hospital encounter.***
- b. **NICU:** Do not draw blood from a PICC less than 3FR unless there is a physician's order and for the purpose of blood cultures only. Do not draw waste from the PICC when drawing blood cultures.
- c. **HEMODIALYSIS PATIENT:** If ordered by the HD attending or fellow, hemodialysis devices may be used for blood draws. Any individual who draws blood from a hemodialysis catheter must have specialized training.
- d. Blood should not be sampled from lumens infusing PPN/TPN except in RARE instances where another lumen is not available and peripheral blood sampling is not appropriate.
- e. Blood should be drawn from the distal port (largest) of a central device, ensuring all other lumens are clamped.
  Blood cultures (to include port-a-cath, HD catheters, and Non-tunneled catheters) through an intravascular device is STRONGLY DISCOURAGED. The **ONLY** exception to this is for patients where all resources have been exhausted, a line infection is suspected, or the nurse is unable to collect the adequate amount of blood for the specimen. In the event this occurs, the nurse must obtain an order from the physician. It is recommended that **ONLY** one set of blood cultures be obtained from a central line. If a second set is needed, a second physician's order must be obtained. **EXCEPTION:** Do not flush or discard blood prior to blood aspiration for culture. If antimicrobials are infusing in the only available lumen, consider collecting culture upon dose completion and after flushing.

4. **When in continuous use:** venous access devices shall be checked for patency prior to infusion of medications and solutions. Patency defined as the "ability to aspirate positive blood return". When in continuous use, each lumen of the device should be flushed as outlined in Attachment 4. Flushing should be documented on the electronic Medication Administration Record (eMAR).

   EXCEPTION: Shock Trauma, SICU, MICU, CCU, Neuro ICU, NICU, IMC, PACU, ED and PICU may omit flush/Check for "flash" while critical drips are infusing. ***However, Check for "flash" is required prior to initiation of the infusion.***

   EXCEPTION: Hep-lock flush may be used for line maintenance to meet specific patient need with physician order.

J. Intraosseous Catheters (IO)

1. IO is the preferred method of emergency central venous access in patients who are in a state of shock or cardiac compromise, respiratory compromise or during resuscitation where peripheral

IV attempts have been unsuccessful. Central Venous Access is not the preferred method of emergency central venous access.

2. The optimal site for placement in an adult patients is the Proximal humerus.

3. Insertion of intraosseous catheter is considered an aseptic technique. Staff training consist of class and competency prior to placing any IOs.
4. Intraosseous catheters should be removed as soon as possible but should remain no longer than 48 hours.

5. After placement of an intraosseous catheter, rapidly infuse saline to dislodge bone marrow. In adults use approximately 5-10 ml; in infants and children use 2-5ml.

6. Utilize a pressure bag when possible to infuse fluids

7. Administer medications at the same rate and dosage as used with a peripheral IV.

K. Catheter Damage/Rupture

1. Immediately upon discovery of catheter damage, the device should be clamped or sealed (e.g., closing an existing clamp, adding a gauze and clamp) between the patient and the damaged area to prevent air embolism or bleeding from the device.

2. Clean the broken end of the catheter with approved hospital skin antiseptic and allow to dry.

3. Secure the broken end of the catheter with sterile gauze and cover with a transparent dressing while protecting from recontamination.

4. Label the damaged catheter dressing with “Do Not Use” label while waiting for the repair procedure to be performed.

5. Immediately notify patient’s physician and complete documentation in patient record.

6. The patient’s physician will contact the appropriate surgeon or interventional radiologist to arrange for **urgent** repair of a broken tunneled catheter. Non-tunneled catheters should be removed or exchanged over a wire. If a catheter-related infection is suspected the catheter should not be exchanged over a wire, the catheter should be removed and replaced at a different site.

L. Removal and Replacement

1. Remove short peripheral, extended dwell, and midline catheters in pediatric and adult patients when clinically indicated, based on site assessment, clinical signs and symptoms of systemic complications (e.g. bloodstream infection) and/or manufacturers’ recommendation. Signs and symptoms of complications with or without infusion through the catheter include, but are not limited to, the presence of:
    a. Any level of pain/tenderness with or without palpation
    b. Changes in color (erythema or blanching)
    c. Edema
    d. Changes in skin temperature (hot or cold)
    e. Induration
    f. Leakage of fluid or purulent drainage from the puncture site
    g. Other types of dysfunction (e.g. resistance when flushing, absence of blood return)

2. Emergent PIV catheters placed in suboptimal aseptic conditions in any healthcare setting should be removed and replaced as soon as possible, preferably within 24 to48 hours.

3. All PIV removals should be documented appropriately in the medical record to include removal of intact catheters.

4. An order is required to discontinue a central venous access device.

5. The removal of a tunneled venous access device is a medical act and should be performed by a physician.

6. All central venous access devices are **reviewed daily** and the catheter promptly removed as soon as central access is no longer needed.
    a. All central venous access devices (except PICC line and implanted port) inserted without certification should be removed or reinserted within 24 hours or as soon as patient is clinically stable. Since it is unknown whether the CVL Bundle elements were met when inserting non- tunneled central venous access devices at outside facilities, these devices are not
    considered “certified” and should be reinserted within 24 hours from arrival.

    b. A PICC line with confirmation of tip placement by chest x-ray, able to aspirate blood and flush the catheter without resistance and site is assessed and has no signs and symptoms of infection. Does not need to be changed.

7. Appropriately trained health care providers who demonstrate competency may perform a central venous access device catheter exchange, utilizing "the CVL Bundle”, to replace a malfunctioning catheter, change a multi-lumen to a single lumen catheter, or exchange a pulmonary artery catheter for a central venous catheter when invasive monitoring is no longer needed and there are no signs of infection.
    a. Avoid use of guide wire-assisted catheter exchange when a catheter-related infection is *suspected (an exception may be the catheter-dependent patient, i.e. hemodialysis patient, in which the risk of losing the catheter site would be more detrimental than a catheter-related bloodstream infection).* If the patient requires continued vascular access, the implicated catheter is removed and replaced with a catheter at a different insertion site.

8. If there are signs of infiltration or infection at the insertion site or tunnel, or if the patient has a venous access device associated bacteremia, removing the catheter is strongly suggested.

9. An uncuffed hemodialysis central venous access device should dwell for no longer than clinically necessary. If an uncuffed hemodialysis central venous access device is selected for femoral placement, it should be used in bed-bound patient and removed as soon as clinically indicated.

10. When a central venous access device is removed, pressure shall be applied to the site until hemostasis is obtained. Patient shall be positioned supine flat or Trendelenburg, unless contraindicated, for any central venous access device removal. Per INS standards patient should remain in supine position for 30 minutes to one hour (dependent upon type) following central venous access device removal. In the event that a catheter is unexpectedly dislodged, apply pressure, notify the physician promptly, and document in the patient’s medical record. All central venous access removals should be documented in the medical record to include removal

of intact catheter. Appropriately trained staff may remove central venous access. (see attachment 1)

11. Upon removal of any central venous access device, antimicrobial ointment or petroleum based ointment and occlusive sterile dressing must be applied to site.

12. De-accessing a port: appropriately flush per policy, remove port needle, and apply hospital approved antimicrobial ointment or petroleum based ointment, gauze and transparent dressing to site and document in patient record.

13. A central access device should not be left in place if not in use, and for "just in case" basis. If emergent PIV access is needed; an IO can be placed by a physician or trained RN.

M. Documentation

1. A physician will write orders for the following:
    a. Insertion or discontinuation of any venous access device
    b. Type of IV fluid and rate of administration
    c. Access of the central line
        i. When placement verified with the tip navigation system by the Adult VATs, the VAT can initiate access orders via the PICC Insertion Protocol.
    d. Maintenance of central venous access device
    e. Blood draws only when necessary
    f. Initiate appropriate central line sub phase

2. Insertion shall be documented on the medical record, including gauge and type of device, anatomical site, date and time of insertion, and name of operator. Compliance with CVL Bundle will also be documented as outlined above.

3. ~~Staff~~ Appropriately trained hospital staff who inserts the device shall document confirmation of the central venous access device placement, including anatomical location, on the medical record. Appropriately trained staff other than the persons placing the central venous access device or assisting with insertion,
known as the "Observer", is required to be present for the entire procedure from hand hygiene to application of sterile dressing and is required to complete certification documentation.

4. Daily line necessity and dressing changes shall be documented in the patient's medical record.

5. A label must be applied to the central dressing with the date of change and initials of the staff who completed the dressing change.

6. Venous access device flushes shall be documented on the eMAR for inpatients and on a Progress Note for outpatients.

7. Reportable conditions, actions taken, and/or patient response shall be documented on the patient record, and the hospital approved variance reporting mechanism.

N. Post-Discharge Care

1. Patients being discharged with a venous access device shall receive home care instructions prior

to discharge and/or referral for home health and this shall be documented on the Patient Education Form.

2. The nurse shall document the teaching content provided; to whom it was provided; and the patient, caregiver, or legal authorized representative's response in the patient's permanent medical record.

3. If the situation warrants and the Vascular Access Team is available, PICC lines may be placed in the ED. Pediatric patients requiring sedation for venous access device line placement will require coordination through the Pediatric Sedation Service and Pediatric Vascular Access Team. Those procedures will be performed in hospital-approved sedation site (see sedation policy).

REFERENCES, SUPPORTING DOCUMENTS, AND TOOLS

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Attachment 1 – Scope of Practice
Attachment 2 – Adult Catheter Selection Algorithm
Attachment 3 – Pediatric Catheter Selection Algorithm
Attachment 4 – Venous Access Device Flushing Guidelines
Attachment 5 – Infection Prevention Management of Intravascular Devices
Attachment 6- Chlorohexidine Daily Bathing SOP

RELATED POLICIES

Adult and Pediatric Inpatient PICC Protocol

https://augusta.policytech.com/dotNet/documents/?docid=6522

Ethanol Lock Therapy for the Management of Central Line Associated Bloodstream Infections in the Pediatric Patients #6769

Hand Hygiene Policy, #1093

Moderate Sedation (Conscious Sedation) Policy # 6482

Resident Bedside Procedure Policy, # 4077