PURPOSE:

TO OUTLINE THE CARE AND MANAGEMENT OF THE ADULT PATIENT WITH A CENTRAL VENOUS ACCESS DEVICE (CVAD), AS WELL AS TO MINIMIZE COMPLICATIONS ASSOCIATED WITH CVADS.

STAKEHOLDERS:

Aspirus MedEvac

PERFORMED BY:

Registered Nurses

Critical Care Paramedics

Paramedics

APPLIES TO:

PICC: Peripherally Inserted Central Catheter

IVAD: Implanted Venous Access Device

Tunneled catheters

Multiple lumen catheters

POLICY:

I. **CARE AND MANAGEMENT OF ALL CVADs**
   a. **Assessment:**
      i. Site assessments completed with patient assessments.
      ii. Incision site / insertion site
      iii. Tunnel or pocket for bleeding with newly inserted long-term devices
      iv. Signs and symptoms of infection
      v. Dressing intact, if applicable
      vi. Catheter integrity; i.e., cracks, leaks, placement
      vii. Pain or discomfort
      viii. Verify patency with initial use, with each infusion or daily with continuous infusion. Patency is defined as a positive blood return and ability to infuse with no resistance on the lumen of the CVAD. Document positive blood return in the medical record. If absence of positive blood, take further steps to assess the patency of the catheter.
         1. For further information click link: Central Venous Access Device: Restoring Patency
         2. Verify placement if not verified during the procedure
         3. Check clamps, stopcocks, filter or kinking of tubing.
         4. Have patient change position, i.e., raise arms above head, turn side-to-side, and elevate HOB.

5. Have patient cough and deep breathe or perform Valsalva maneuver.

b. **Maintenance:**
   i. Solutions that are incompatible can be given sequentially through an individual lumen only after thorough flushing between solutions with normal saline.
   ii. Central venous pressure monitoring should be done using the distal port.
   iii. TPN infusions should be in a dedicated lumen. This line should not be accessed for any purpose other than TPN.
   iv. If possible, do not use the insertion arm for peripheral blood draws or blood pressure.
   v. Use needleless connectors only

MANIPULATION, ACCESSING, AND ANCHORING OF CVAD LINES

a. Perform hand hygiene before touching any part of a central line;
b. Sterile gloves shall be worn for when accessing the port of an implanted venous access device (IVAD, i.e., Port-A-Cath);
c. Clean gloves shall be worn for infusing or flushing all central lines;
d. Masks shall be worn by **the patient and staff;**
   1. When ***accessing*** the ***port*** of an IVAD masks are not necessary for staff or the patient when infusing or flushing any other central line.
e. Needle-less injection ports should be decontaminated using continuous disinfection caps; Use alcohol wipe for 15 seconds for additional sequential injections before each additional syringe.
f. Access the needle-less ports using only sterile devices:
g. After intermittent infusion of IV medications via secondary administration sets, always place a sterile cap on the end of the tubing;
h. After intermittent infusion of IV fluids via primary administration set, never "re-loop" the tubing and reconnect to a needle-less port.

TROUBLESHOOTING CENTRAL VENOUS CATHETERS

1. For troubleshooting guidelines for further information clink link:
   a. Central Venous Catheter- Troubleshooting
2. Document troubleshooting in the ePCR.
3. Follow instructions on ″Aspirus Adult Intravenous Therapy Guide" for guidelines when to measure arm circumference with PICC lines

PROCEDURE:

I. **FLUSHING OF CVADs**
   a. **EQUIPMENT**
      i. Continuous disinfection caps (Alcohol wipe if additional sequential injections will occur)
      ii. Normal Saline flush in ≥10 mL syringe (PICCS, multi-lumen CVAD, Groshong)
      iii. Pediatrics
         1. Accessing implanted device (Port) – flush with 3 mL of 10 units/mL heparin
         2. Removing Huber needle - flush port with 5 mL NS. Follow with 3 mL heparin (10 units/mL) flush
         3. Flushing CVADs- Heparin flush 10 units / mL only if indicated
         4. For further information click link: Central Venous Access Device: Flushing -- Pediatric Patient
   b. **GENERAL INSTRUCTION**
      i. Determine type of CVAD and flush as indicated in the guideline chart "Aspirus Intravenous Therapy Guide"
         1. If the provider orders a specific flush follow the provider order
      ii. Use ONLY 10 mL syringes or larger. Syringes with barrel capacities of less

than 10 mL should not be used to irrigate central lines.

iii. CVADs should be clamped while maintaining positive pressure on the plunger. This prevents reflux of blood into the catheter. Clamp between each step.
iv. CVADs should be flushed using a "pulse" or "start / stop" technique. This ensures that material is cleared from the valve.
v. In CVADs with valve technology each lumen needs to be flushed individually.
vi. For further information click link: Central Venous Catheter Care: Lumen – Flushing and Locking
vii. For further information click link: Implantable Venous Access Port – Flushing
viii. See Guideline Chart Attachment: "Aspirus Intravenous Therapy Guide"
ix. If a provider orders a specific flushing interval that is different from that found on the Aspirus Intravenous Therapy Guide, follow the provider order.

c. **CONTINUOUS DISINFECTION CAPS**
   i. Cap should be placed on:
      1. The end of all non-accessed central or midline catheters
      2. All Y-site ports along the IV tubing
      3. The end of disconnected IV tubing
   ii. Supplies of caps should be hung on the IV pole (do not carry in pocket)
   iii. After 1 minute on the port the site is clean
   iv. When line is not in use, caps may stay on for 7 days
   v. To access a line, remove the cap and discard, no scrubbing is necessary
   vi. If additional sequential injections are needed, scrub the port with an alcohol wipe for 15 seconds before each additional injection.
   vii. Saline locking
      1. Place cap on the cap that is connected to the line exiting the body
      2. Place a cap on the end of IV tubing if the tubing is saved for another infusion within the next 24 hours

REFERENCES:

- **Guidelines for the Prevention of Intravascular Catheter-Related Infections. (2011).** ADDENDUM A

BLOOD SPECIMEN COLLECTION – CENTRAL VENOUS ACCESS DEVICES

EQUIPMENT

12 mL Luer lock syringe

10 mL prefilled saline syringe

12 mL Luer lock syringe – filled with the appropriate amount heparin (see specific catheter)

Alcohol wipe

Non-sterile gloves

Luer-Lok Access Device

DRAWING BLOOD FROM A LONG TERM IMPLANTED CATHETER (Portacath)

1. Flush line with 10 mL of normal saline
2. Draw off and discard 10 mL blood
3. Draw off amount needed for labs.
4. Flush with 20 mL normal saline utilizing "pulse technique"

5. Restart IV fluids or flush with 500 units heparin (5 mL of 100units/mL)