Rancho Los Amigos National Rehabilitation Center

ADMINISTRATIVE POLICY AND PROCEDURE

SUBJECT: **CENTRAL VENOUS CATHETER INSERTION AND MANAGEMENT GUIDELINES**

Policy No.: B845
Supersedes: October 2017
Revised: July 2021

PURPOSE/POLICY:

To outline the general guidelines as well as policies and procedures for the safe placement and maintenance of central venous catheters (CVCs) Special care and judgment should always be exercised in individual patients to obtain maximum benefit with minimal complications.

INDICATIONS FOR CENTRAL VENOUS CATHETER INSERTION INCLUDE BUT NOT LIMITED TO:

1. Inadequate peripheral I.V. access
2. Central Venous Pressure (CVP) monitoring
3. Hemodynamic instability
4. Administration of vesicant irritant medications
5. Hemodialysis
6. Total Parenteral Nutrition (TPN)
7. Long term administration of medication

CONSENT FOR PROCEDURE:

A properly executed informed consent is necessary for insertion of central venous catheters. This is obtained by the treating practitioner. In case of emergency, or if patient is unable to consent and family is unavailable, the physician may make the decision to perform the procedure after completing the necessary consent forms. Consent is to be placed in the medical record (Refer to Administrative Policy B519 – Informed Consent).

CENTRAL VENOUS CATHETER INSERTION TYPES:

I. NON-TUNNELED

Site of insertion: Internal Jugular, Subclavian, Femoral

1. WHO MAY INSERT?

- Privileged staff physicians
- Physician postgraduate may perform the procedures under the direct supervision of a credentialed physician, or physicians on call who have privileges to perform the procedure.
- Privileged Physicians Assistants

II. TUNNELED

- Including but not limited to Hickman, Broviac, Permacath, or Groshong
- Request via consultation

2. WHO MAY INSERT?

- Credentialed Surgical Staff

3. WHERE

- In the Operating Room or Radiology

III. PICC

Site of Insertion: Basilic, Cephalic or Brachial vein in upper extremity.

1. WHO MAY INSERT?

- Credentialed Medical Staff, credentialed Physician Assistants and trained Registered Nurses.

2. WHERE

At bedside or radiology procedure room.

KEY POINT

- The observer is to verify with the inserter the type of CVC that is to be inserted
- The person inserting the PICC line should document the length of the catheter that is in the vein in the progress note.
- Upon removal, it should be assured that the catheter has come out in its entirety. This can be accomplished by the following:
  1. Measuring the length of the catheter
  2. Making sure the distal tip of the catheter is intact
  3. Obtaining an x-ray when indicated

EQUIPMENT/SUPPLIES:

Prep Tray	Percutaneous Catheter Insertion Kit or CVP Kit
Appropriate IV Tubing	Appropriate IV Solutions – Saline, Heparin flush solution
Alcohol caps	Positive pressure valves (PPVs)
Syringes, Tape	Sterile Drape / Towels, etc.
Sterile Gowns, Mask & Gloves	Sterile Bowl (optional)
4x4 Gauzes	Bag-A-Jet
Sterile Gloves	Central line Dressing Kit
Skin Prep Kit	Catheter (of choice)
Lidocaine 1%	Ultrasound (portable is available) where appropriate with sterile probe covers
Chlorhexidine 2% solution	Bio – Patch,
Securement device	Electric shaver
(CDC has recommended the use of chlorhexidine rather than betadine for the skin prep)	

INSERTION OF CATHETER

Must perform hand hygiene and use maximum sterile barrier precautions:

- Cap

- Mask & shield
- Sterile gown
- Sterile gloves

After skin preparation, the patient will be properly draped by using a large sterile drape.
Perform a time out procedure (refer to policy B504.5 – Universal Protocol)

KEY POINT:

1. The observer has the authority to STOP the procedure if the sterility of the procedure has been compromised.
2. When planning internal jugular or subclavian venous punctures, it is better to prepare both the neck and the subclavicular areas on the same side in case the site must be changed.
3. All personnel assisting with the procedure must wear a mask.
4. If a multi-lumen catheter is used, flush all ports with normal saline solution.
5. Inject appropriate local anesthetic.
6. Use of portable ultrasound to guide insertion when appropriate.
7. Insert catheter.
8. Flush all lines after insertion, to prevent clotting.
9. Flush dialysis catheter with heparinized solution

II. REMOVAL OF CENTRAL VENOUS CATHETERS

1. WHO MAY REMOVE?

- **Non-Tunneled Catheters**
  - Physician or advanced practice provider who is qualified to insert and remove central lines.
  - Trained nurses as ordered by provider
- **Tunneled Catheters**
  - Physician or advanced practice provider who is qualified to insert and remove central lines.
- **PICC Lines**
  - Physician or Practitioner who is qualified to insert and remove central lines.
  - Trained nurses as ordered by provider

2. EQUIPMENT/SUPPLIES:

Suture Removal Kit	Sterile 4 x 4 gauze pads
Goggles	Mask
Clean gloves	Sterile gloves
Tape	Waste container

3. PROCEDURE

- Perform hand hygiene
- Open the suture removal kit
- Don personal protective equipment
- Position patient supine in slight Trendelenburg
- Have the patient turn his/her head away from the catheter
- Remove and discard dressing
- Remove clean gloves

- Perform hand hygiene
- Don sterile gloves
- Remove sutures
- Instruct the patient to take a deep breath and hold it
- Grasp the catheter with the dominant hand and withdraw in one continuous motion
  Key Point: If patient is mechanically ventilated, withdraw catheter during the inspiratory phase
- With the non-dominant hand, quickly apply pressure over the puncture site with a sterile 4 x 4
- Maintain pressure until hemostasis is achieved
- Apply an occlusive sterile dressing
- Discard used supplies in appropriate waste containers
- Perform hand hygiene

KEY POINT:

- Send catheter tip to the laboratory for culture and sensitivity testing if signs of infection are present. A positive catheter tip by itself is not diagnostic for catheter-related bloodstream infection. Routine culture of catheter tips on removal is not recommended.

III. MANAGEMENT:

1. The multi-disciplinary team should follow the five components of the central line bundle as follows:
   - Hand hygiene
   - Maximal barrier precautions
   - Chlorhexidine skin antisepsis
   - Appropriate catheter site
   - Administration system care and no routine replacement

2. Each CVC, including PICC and Tunneled lines, require:
   - A formal Central Line Insertion Procedure (CLIP) Note
   - An entry by a credentialed medical staff
   - A progress note by physician when line is discontinued
   - Upon discharge, the physician will document the present status of the central line.

3. Nursing will provide central line care and documentation.

4. Lines suspected to be infected must never be manipulated and/or replaced over a guide wire. A new procedure at a different site is indicated.

5. The dialysis unit process must address the status of central lines with each treatment.

6. At the time of discharge, nursing staff will document the presence and status of each central line.

7. Daily documentation of assessment of central line site and necessity of central line will be completed by provider.

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