PROTOCOL FOR: **Central Lines: Patient Care**

POLICY:

1. Aseptic technique must be utilized for all aspects of central line care. Refer to Appendix A for catheter characteristics.

2. Mandatory handwashing must be done immediately before performing any aspect of central line care.

3. IV tubing must be changed within 72 to 96 hours.

4. Patients with parenteral nutrition will have tubing changed every 24 hours.

5. Central line dressings will be changed:

   a. every 7 days for transparent dressing

   b. every 48 hours for gauze dressings (Note: gauze under a transparent dressing is a gauze dressing)

   c. when the integrity of the dressing is compromised or when the dressing is non-occlusive

   d. when the catheter is replaced

6. All add-on extension sets and stop cocks are considered a part of the tubing and are changed with tubing changes.

7. Needleless access ports for locked central catheters will be changed every 7 days and no more frequently than every 72 hours. They should be coordinated with the dressing change whenever possible.

8. Central line needleless port changes at the line hub are to be done with sterile technique using a mask, sterile gloves and chlorhexidine prep.

9. IV tubing changes and central line dressing changes are to be documented on the nursing flow sheet.

10. Central lines may only be removed by an MD/LIP.

DESIRED PATIENT OUTCOMES:

1. Patient’s skin integrity around exit site will be maintained.

2. Patient will experience minimal/no complications related to central venous access: infection, thrombosis or embolism.

3. Patency of the device will be maintained.

CLINICAL ASSESSMENT AND CARE:

1. Assess device for patency at least every 24 hours.

   a. Observations indicative of non-patency include: infiltration, phlebitis, swelling at the site, inability to flush easily, lack of blood return and inability to infuse IV solutions via gravity or pump. Such variances must be reported and documented.

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2. Inspect the site and palpate over the dressing to assess for erythema, swelling, drainage, tenderness, intact sutures, and catheter placement every 12 hours for transparent dressing.

   a. Assess site as able with intact gauze dressing at least every 12 hours; assess fully at time of dressing change.

   b. Remove the dressing and assess the site when patient reports tenderness or when a fever is present with no other locus of infection.

   c. Descriptors of infiltration and phlebitis (Protocol: IV Therapy: Peripheral) may be used for site description.

3. Assess dressing at least every twelve hours for occlusiveness, integrity, security of catheter and administration set.

4. Assess for systemic signs of infection at least every twelve hours.

OBTAINING BLOOD CULTURES FOR FEVER OR SUSPECTED INFECTION:

1. Two sets of blood cultures are usually ordered. The order may be written as "Blood cultures x 2."

   a. One set of blood cultures = 2 bottles (one aerobic and one anaerobic).

   b. Two sets = 4 bottles; 2 bottles are drawn from each site.

2. Each set of blood cultures is drawn from a different site; at least one set should be from a peripheral site. This will help determine if a positive culture is a contaminant or a true pathogen.

3. Prepare the tops of the bottles and the skin following the procedure in the Specimen Collection Manual of the Department of Laboratory Medicine.

4. Draw a volume of blood sufficient for the placement of 8 to 10 ml in each bottle. This volume of blood maximizes the yield from the culture.

PATIENT TEACHING:

1. Instruct the patient to report pain at the catheter site.

2. Instruct the patient/family about precautions that need to be taken with central catheters.

3. Instruct patient/family (as applicable) in post-discharge care as per specific protocols and teaching plans.

REPORTABLE CONDITIONS:

1. The following conditions should be reported to the physician/ licensed independent practitioner:

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a. Signs of infection/phlebitis/infiltration

b. Bleeding

c. Occlusion of catheter/non-patency

d. Pain at site

e. Cracked/broken tubing

f. IV fluid leaking from catheter

g. Accidental removal or changes in placement of catheter

h. Absence of suture

i. Signs and symptoms of heparin-induced thrombocytopenia

APPROVAL: Nursing Standards Committee

EFFECTIVE DATE: 4/83

REVISION DATES: 10/84, 3/86, 7/87, 11/88, 10/90, 7/93, 2/94, 9/96, 10/97, 8/00, 10/02, 12/02, 4/03, 10/05, 12/08, 5/09, 11/09

APPENDIX A
CATHETERS USED FOR VENOUS AND ARTERIAL ACCESS

Catheter Type	Entry Site	Length	Comments
Peripheral venous Catheters (short)	Usually inserted in veins of forearms or hand	<3 in	Phlebitis with prolonged use; rarely associated with bloodstream infection
Peripheral arterial catheters	Usually inserted in radial artery; can be placed in femoral, axillary, brachial, posterior tibial arteries	<3 in	Low infection risk; rarely associated with bloodstream infection
Midline catheters	Inserted via the antecubital fossa into the proximal basilica or cephalic veins; does not enter central veins	3-8 in	Anaphylactoid reactions have been reported with catheters made of elastomeric hydrogel; lower rates of phlebitis than short peripheral catheters
Nontunneled central venous catheters	Percutaneously inserted into central veins (subclavian, internal jugular, or femoral)	8 cm or longer, depending on patient size	Account for majority of catheter-related bloodstream infections
Pulmonary artery catheters	Inserted through a Teflon introducer in a central vein (subclavian, internal jugular, or femoral)	30 cm or longer, depending on patient size	Usually heparin bonded; similar rates of bloodstream infection as central venous catheter subclavian site preferred to reduce infection risk
Percutaneously-inserted central catheters (PICCs)	Inserted into basilic, cephalic, or brachial veins and enter the superior vena cava	20 cm or longer, depending on patient size	Lower rate of infection than nontunneled central venous catheters
Tunneled central venous catheters	Implanted into subclavian, internal jugular, or femoral veins	8 cm or longer, depending on patient size	Cuff inhibits migration of organisms into catheter tract, lower rate of infection than nontunneled central venous catheter
Totally implantable	Tunneled beneath skin and have devices subcutaneous port accessed with a needle; implanted in subclavian or internal jugular vein	8 cm or longer, depending on patient size	Lowest risk for catheter-related bloodstream infection; improved patient self-image; no need for local catheter site care; surgery required for catheter removal