PURPOSE:
To provide guidelines for the insertion, care and management of a PICC line for providing a reliable venous access for infusion therapy.

CONSIDERATIONS:
1. Instructions are supplied with each catheter. A video of insertion guidelines may be available. Contact your local supplier for information.
2. The insertion of a PICC line shall be performed by a nurse meeting the following requirements:
   a. Designated agency IV nurse.
   b. Evidence of knowledge and competency in the care of central venous access devices.
   c. Successful completion of an agency approved class for the insertion of a PICC line.
   d. Observed competency in performing actual insertion into a live subject by a qualified instructor or preceptor.
3. Patients must meet the following criteria for insertion of PICC lines:
   a. Objective data:
      (1) Lack of short-term peripheral venous access sites.
      (2) Infusion of hyper-osmolar solutions.
      (3) Infusion of chemotherapeutic agents.
      (4) Infusion of sclerosing, concentrated drugs.
      (5) Infusion of blood and/or blood products.
      (6) Long term therapy.
      (7) Blood drawing.
      (8) Geographic location.
   b. Subjective data:
      (1) Patient's preference.
      (2) Physician's order.
4. An evaluation visit and patient assessment must be performed by the nurse to:
   a. Assess the need for line placement.
   b. Assess peripheral vasculature for a vein large enough to accommodate selected/appropriate catheter size.
   c. Assess for history and/or presence of coagulopathy problems.
   d. Determine optimal tip placement.
   e. Assess patient's and caregiver's mental and physical ability and willingness to participate in the care and management of the catheter.
5. The nurse's choice of venous access site for the insertion of lines is determined by which venous system is presented best.
6. An extension set added at the time of insertion is treated as an integral part of the line. It should be changed at least weekly.
7. A 3.0 or larger French catheter is used to allow the greatest flexibility for therapies and blood sampling purposes in adults (2.0 for infants and children).
8. For patient's comfort and ease of insertion, only peel away plastic cannula technique will be used in the insertion of PICC lines.
9. The insertion of PICC lines requires adherence to strict sterile technique.
10. Application of a local anesthetic agent, i.e., EMLA cream or injection of lidocaine or normal saline, at the injection site may lessen the pain of insertion.
11. Catheter tip placement for PICC line: Tip resides in the superior vena cava. Placement is verified by X-ray.
12. A patient may be accessed a maximum of two attempts, at any given time, for the purpose of inserting a PICC line.
13. Suture according to manufacturer's instructions, if permitted by State Practice Act and agency policy.
14. Blood sampling can only be performed on adult patients with 3.0 French and larger size catheters.
15. Blood pressure cuffs or tourniquets should not be placed on the arm where the catheter is inserted.
16. A post-insertion evaluation and dressing change visit are performed within 24 hours of insertion of PICC lines.
17. Patient education is an ongoing process that is initiated prior to insertion and includes:
   a. Sterile and asepsis principles.
   b. Purpose of line insertion.
   c. Procedure for placement/insertion.
   d. Follow-up plan.
   e. Potential complications and patient/caregiver actions.
18. Maximum recommended dwelling times for PICC lines documented are up to 1 year.
19. Per Joint Commission recommendations, all tubes and catheters should be labeled to prevent the possibility of tubing misconnections. Staff should emphasize to all patients the importance of contacting a clinical staff member for assistance when there is an identified need to disconnect or reconnect devices.

EQUIPMENT:
Normal saline
Heparin solution (100 units/mL, or as prescribed)
Tourniquet
10 mL Syringes
Needles, sterile 20-gauge, 1 inch or needle less adaptor
Catheter and introducer
Injection port
4 inch extension set
Alcohol applicators (wipe/swab/disk/ampule)
Antimicrobial applicators (wipe/swab/disk/ampule)
4x4 gauze sponge, sterile
2x2 gauze sponge, sterile
Tape measure, sterile
PROCEDURE:
1. Adhere to Standard Precautions.
2. Explain procedure and purpose to patient/caregiver.
3. Assemble equipment on a clean surface close to the patient. Create a sterile field.
4. Place patient in comfortable position making sure that site is accessible.
5. Ensure adequate lighting.
6. Apply tourniquet 4 inches above the antecubital fossa and identify appropriate venous access insertion site. The basilic vein is recommended for cannulation. Mark insertion site, then release tourniquet. Leave tourniquet under patient's arm.
7. With a tape measure, measure the distance from the insertion site to proposed catheter tip placement site.
   a. Superior vena cava placement (PICC): Measure from the point of insertion along the vein tract to the sternal notch and down 3 intercostal spaces.
8. Position patient for insertion with arm extended at a 90-degree angle to the trunk. Teach patient how to turn his/her head toward the arm of insertion with chin touching the clavicle.
9. Put on mask, gown and protective eye wear (if indicated). Assist patient with putting on a mask (if indicated).
10. Open catheter kit and place all supplies on the sterile field.
11. Don sterile gloves.
12. Spread out sterile non-fenestrated drape and have patient position arm on top of sterile drape.
13. Using sterile techniques, clean insertion site vigorously with alcohol applicator three times, use a circular motion, starting from the center moving toward periphery. Allow to air dry. Repeat this procedure using three antimicrobial applicators and allow to air dry. DO NOT blot.
14. Prepare the remaining catheter insertion materials.
   a. Spread out second sterile non-fenestrated drape.
   b. Grasp catheter while holding the guide wire and lay out on sterile field. Use forceps or powderless gloves to handle the catheter.
   c. Using the sterile measuring tape, measure the catheter to the appropriate length. Cut the catheter according to manufacturer's instructions. DO NOT cut the guide wire.
   d. Flush extension tubing with saline solution.
15. Carefully place sterile fenestrated drape over the cleansed area, leaving the insertion site exposed.
17. Put on second pair of sterile gloves. Place sterile 4x4 gauze on top of tourniquet.
18. Using the peel away plastic cannula, perform venipuncture at a 15-30 degree angle.
19. When flashback of blood is noted, lower the needle until parallel to the vein, then advance the introducer and needle together another 1/4 (one-fourth) to 1/2 (one-half) inches to ensure that the lumen of the cannula is within the vein.
20. Grasp the end of the tourniquet with the sterile 4x4 gauze and release the tourniquet.
21. Remove the needle from the cannula and discard.
22. With the sterile forceps, pick up catheter, and thread through the introducer until 4-6 inches of the catheter has been threaded.
23. Carefully withdraw the peel away cannula 2-3 inches along the catheter and away from the site.
24. Remove cannula by grasping the wings of the cannula and peel towards the insertion site parallel to catheter.
25. Remove the guide wire.
26. Continue threading catheter to measured length using sterile forceps, a centimeter at a time.
27. Attach 10 mL syringe with saline to catheter hub, aspirate for blood return, then flush line with normal saline.
28. Connect extension tubing with intermittent injection port. Flush with prescribed amount of heparin.
29. Clean insertion site to remove any blood, etc., as a result of insertion before applying dressing. Use gauze dressings as wick or for pressure for first 24 hours.
30. Place steri strip over hub of catheter end.
31. Apply transparent permeable adhesive dressing. (See Infusion Therapy- PICC Maintenance and Management of Potential Complications.)
32. Administer medications per protocols or physician orders.
33. Discard soiled supplies in appropriate containers.

AFTER CARE:
1. Document in patient's record:
   a. Date and time procedure performed.
   b. Name of person inserting line.
   c. Catheter gauge, brand and lot number.
   d. Instructions given to patient/caregiver.
   e. Communication with physician.