# IV Therapy Policies

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POLICY STATEMENT: Peripherally Inserted Central Catheter (PICC) line care dressing change, maintenance and removal will be completed as outlined under this policy/procedure. *Unit specific policy in NICU and Pediatrics supersedes this policy.

SCOPE OF RESPONSIBILITY: RN/LPNII

GENERAL INSTRUCTIONS

BEFORE INSERTION:

1. PICC Lines are to be inserted in the Radiology Department (where applicable).
2. Obtain consent prior to procedure.
3. Special Procedure Nurse or Radiologist will document the length of the PICC line on the angiography sheet and in the progress note section of the chart.

AFTER INSERTION:

1. All aspects of PICC line usage and maintenance may be performed by an RN.
2. Only an RN trained in the removal of a PICC line may remove a PICC line with a Physician’s order.
3. If PICC line is sutured in place, an LPN II may perform the following, after demonstration of competency:
   a. Change tubing for infusions connected directly to the catheter or piggybacked into capped port.
   b. Administer IVPBs/Intralipids through capped port
   c. Administer selected IV Push Meds (see policy I-1)
   d. Draw Blood (See #10)
   e. Flush PICC line
   f. Routine PICC line care
4. RN must change the dressing 24 hours after insertion. After that, RN or LPN II will change the dressing every 6 days and injection cap every 72 hours. Dressing will also be changed anytime it becomes moist, loosened or soiled.
5. Clean PICC line site with Chloraprep one Step.
   a. Pinch the wings on the applicator to release Chloraprep into the sponge pad.
   b. Gently press the sponge against the treatment area until liquid is visible on the skin.
   c. Apply the Chloraprep solution using back and forth friction scrub for 30 seconds. Allow to dry.
d. Place BioPatch dressing around catheter with blue side up and white foam side next to the patient’s skin. To ensure easy removal, place BioPatch dressing so that the catheter edge rests upon radial slit.
e. Apply transparent film dressing in kit.
f. Label dressing with date dressing was changed, if the PICC line is sutured or non-sutured and the initials of nurse who changed the dressing.
g. Document on the appropriate form/screen.

6. All tubing will be changed every 72 hours except:
   a. Lipid tubing will be changed every 24 hours
   b. If lipids are IVPB into TPN, also change TPN tubing every 24 hours
   c. Change 3 in 1 TPN (TPN with lipids mixed in) every 24 hours

7. Leur loc connection must be used. Primary solutions must be administered via a volume control pump (i.e. Hospira pump).

8. Follow flushing guidelines below unless otherwise ordered by physician. Must use a 10 ml syringe to avoid excess pressure.
   After each use, flush with Normal Saline 3 ml followed by Heparin (100 units/ml) 3 ml.
   To maintain patency when catheter not in use, flush once daily with Normal Saline 6 ml followed by Heparin (100 units/ml) 3 ml.

9. Swab access port with alcohol before each use.

10. A PHYSICIAN’S ORDER IS NEEDED TO DRAW BLOOD FOR LAB THROUGH A LINE. A SPECIFIC ORDER IS NEEDED FOR DRAWING BLOOD CULTURES.

GENERAL INSTRUCTIONS
FOR REMOVAL:

SCOPE OF RESPONSIBILITY: RN who has demonstrated competency in removal.

1. Must be physician order to remove PICC line.
2. Dressing must be removed and site assessed.
3. If sutured in place, sutures must be removed.
4. Measurement is to be recorded in the progress section of the chart after PICC line removal.
5. Compare measurement with measurement documented at the time of insertion. If different, MD must be notified.
RESOURCES:
Baxter.com/doctors/iv therapies/education/iv therapy ce/basic one//basictwo2.html
barttersite/com/port/html

Bard Access System Package Insert
SUBJECT: PERIPHERAL INTRAVENOUS CATHETER INSERTION/CARE
(Please refer to I-13 “Administration of Local Anesthetics.”)

POLICY STATEMENT: Insertion and care of peripheral intravenous catheters will be performed according to this policy and procedure.

SCOPE OF RESPONSIBILITY: RN's and LPN's

GENERAL INSTRUCTIONS:

1. LPNs/LPTNs may perform the following:
   a. Change dressing and tubing.
   b. Hang solutions with the exception of blood and morphine.
   c. Hang IVPBs.
   d. Convert IV device to saline loc and administer saline flush.
   e. Remove peripheral IV device.

   LPNs/LPTNs, after training and demonstration of competency, may perform all procedures related to peripheral IV care, including insertion.

   Nurse Aides may d/c IV’s after training & demonstration of competency

2. Don’t use the lower extremities for an IV without a specific physician’s order

3. Prep IV site using Chloraprep antiseptic skin prep. DO NOT USE on children less than 2 months old.
   a. Pinch applicator once to break ampule - you should hear it pop.
   b. Saturate the tip with Chloraprep by gently pressing it against the treatment area.
   c. Using a back and forth scrubbing motion, completely wet the treatment area for 30 seconds. Allow to dry.

4. Apply transparency dressing or gauze and tape dressing. Do not use ointment.

5. Rotate the site at least every 72 hours. If unable to rotate site, reason must be documented.

6. Change tubings and/ or intermittent injection caps every 72 hours.
7. Change lipid tubing every 24 hours.
8. Saline locs are to be flushed with 2ml saline every 8 hours or after each use.

9. KVO IV rate is 25 ml/hr.

10. Document fluids hung and flushes on MAR and insertion / care on Last Word

REFERENCES:

1. Nursing Clinical Practice Committee.

2. Guidelines for I.V. admixture provided by BHMC Pharmaceutical Services.


SUBJECT: CENTRAL VENOUS CATHETER CARE (EXCLUDING INFUSAPORT, PICC AND QUINTON CATHETER)

POLICY STATEMENT: Care for Central Venous Catheters will be provided according to this policy and procedure.

SCOPE OF RESPONSIBILITY: RNs, LPNs

GENERAL INSTRUCTIONS:

1. LPNs may perform the following:
   a. Assist physician with insertion.
   b. Hang solutions with the exception of blood.
   c. Hang IVPB’s/Intralipids that infuse piggybacked through a primary line.

   LPNs may also perform the following (EXCLUDING Ports, Quinton Catheters and Permacaths) after additional training and demonstration of competency: (ie: IV class)

   a. Change tubing
   b. Flush Central Venous Catheter
   c. Draw blood
   d. Administer IVPBs/Intralipids
   e. Administer selected IV Push Meds (see policy I-18)
   f. Change dressing and injection caps.

   LPNs on Oncology, Renal and 4 B Short Stay Units may perform the above skills after demonstration of competency for the following Long term central Lines: Hickman, Broviac, Groshong.

2. Change dressing at least every 6 days, using transparent film dressing in kit, unless patient is allergic OR per specific physicians order. Change dressing anytime it becomes moist, loosened or soiled.
   Clean central line site with Chloraprep One Step.

   a. Pinch the wings on the applicator to release Chloraprep into the sponge pad.
   b. Gently press the sponge against the treatment area until liquid is visible on the skin.
c. Apply Chloraprep solution using back and forth friction scrub for 30 seconds. Allow to dry.
d. Place biopatch dressing around catheter with blue side up and white foam side next to the patient’s skin. To ensure easy removal, place biopatch dressing so that the catheter edge rests upon radial slit.

3. Change injection caps q 72 hours. All central line ports must have injection cap attached.

4. Change all tubing q 72 hours **except:**
   a. Change lipid tubing q 24 hours.
   b. If lipids are IVPB into TPN, also change TPN q 24 hours.
   c. Change 3 in 1 TPN (TPN with lipids mixed in) q 24 hours.

5. Flush with heparin 100 units/ml
   Hickman/Broviac 3 ml daily
   Subclavian 3 ml of saline followed by 3 ml of heparin q 12 hours

6. Groshong—flush with saline only
   q 7 days when not in use 5 ml
   after each use 5 ml
   after blood sample/transfusion 20 ml
   after TPN, before blood sample 30 ml

7. Swab clave access ports with alcohol before each use.

8. When IVPB tubing is not in use, double it back into its own clave. (Swab with alcohol first!)

9. KVO IV rate is 25 ml/hr.

10. Leur loc connections must be used. Primary solutions must be administered via a volume control pump.

11. **A PHYSICIANS ORDER IS NEEDED TO DRAW BLOOD THROUGH A LINE. A SPECIFIC ORDER IS NEEDED FOR DRAWING BLOOD CULTURES THROUGH A LINE.**

12. Use clean technique to remove catheter & cover site with gauze and tape dressing.

13. The only IV’s that should be filtered are TPN, mannitol, and any medication specifically indicated by Pharmacy.

15. If central line catheter is changed, all new tubing and solutions must be used. If TPN hanging, refer to TPN policy and procedure.

16. Lumen usage = Triple lumen catheters - if physician does not specify type of fluid/use of lumen, the following is recommended:
   a. **Proximal Lumen** - 18 gauge, longest pigtail. Use for blood administration, to draw blood samples, or give medications.
   b. **Middle Lumen** - 18 gauge, to give hyperalimentation.
   c. **Distal Lumen** - 16 gauge, shortest pigtail. Use for fat emulsion, blood administration, CVP monitoring, height volume/viscous fluid, medications.

17. RN's may remove short term central line (i.e., Subclavian, jugular, femoral) with physician's order.

18. Long Term central lines (i.e. Hickman, Broviac, Groshong) must be removed by physician.

   a. Hand hygiene.
   b. Put on gloves.
   c. Swab clave connector using alcohol swab.
   d. Attach syringe to clave by firmly pushing syringe tip into clave and twist until secure.
   e. Aspirate 10 ml blood for waste.
   f. Remove syringe from clave by twisting from clave until loose and discard in sharps container.
   g. Swab clave connector using alcohol swab.
   h. Attach syringe to clave by firmly pushing syringe tip into clave and twist until secure.
   i. Aspirate appropriate amount of blood for sample.
   j. Remove syringe from clave by twisting away from clave until loose.
   k. Connect syringe to blood transfer device.
   l. Fill blood tubes. Dispose of syringe in sharps container.
   m. Flush line per procedure.

REFERENCES:
4. Professional Practice Council
SUBJECT: TOTAL PARENTERAL NUTRITION/FAT EMULSION (LIPID) ADMINISTRATION

POLICY STATEMENT: All orders for total parenteral nutrition (TPN) will be administered in a 24 hours supply for any given patient. Therefore, each patient will receive a single bag of TPN daily. However, a single bag of TPN can contain up to 3 liters of nutrition. The nutrition contained in the TPN bag can contain carbohydrates, protein, electrolytes, vitamins, and minerals.

Initially, if rate changes and/or new bag is hung, two RNs, RN and Physician or RN and LPN, with demonstrated competency, must verify that ordered rate and volume are correctly programed into the pump and documented on the MAR.

Lipid concentration >20% must be infused via central line.
TPN with a dextrose concentrate > 10% must be infused via central line.

SCOPE OF RESPONSIBILITY: RN AND LPN

REMINDER: Check for allergies to soybeans, eggs, and/or glycerine prior to administration of lipids.

GENERAL INFORMATION:

TPN WILL BE ORDERED THROUGHOUT THE DAY AND CHANGED ACCORDINGLY

1) Ordering of TPN
   a) Changes in TPN should be made on the TPN order form.
   b) TPN ingredients should be ordered per day, NOT per liter.
   c) All TPN orders should reach the pharmacy daily by 1400 or the previous day’s order will be made.
   d) Exceptions for the 1400 deadline are: New admissions requiring TPN and post-op surgery patients that have not been transferred from PACU by 1400.
2) TPN Rate changes

a) Rate limit:
   TPN MUST be infused on a color-coded, specially marked micro pump. A corresponding color coded label will be applied to TPN bag by pharmacy prior to distributing to the Med/Surg telemetry unit. The rate cannot exceed 99.9 cc/hr.

b) Changes:
   If the TPN rate is changed, but no physician order is written concerning the contents of TPN, the following procedure will apply: Rate changes- all electrolyte additives in TPN bag will change proportionately.

3) Administration

TPN:

a) Verification and documentation

Initially, if rate changes and/or new bag is hung, two RNs, RN and Physician or RN and LPN, with demonstrated competency, must verify ordered rate and volume are correctly programed into the pump and documented on the MAR

b) All TPN MUST be infused on a color-coded, specially marked micro pump.
(Med/Surg, Telemetry, and Antenatal Units only). The only exception for using a different pump is for cyclic TPN (which infuses greater than 100 ml/hr) and the rare continuous TPN infusion that exceeds 100 ml/hr.

c) Time

1) All TPN will be hung at 2100 daily.

2) If a bag runs out prior to 2100, dextrose 10% will be hung until the TPN bag is available for the next 2100 administration time.

Exceptions: (a) New Admissions: If it is after 0900, Hang D10W IV unless the physician requests a STAT TPN bag. If it is before 0900, the pharmacy will make a TPN bag to last until 2100.

(b) Post Surgery Patients: A new TPN bag to last until 2100 will be prepared.

d) If a central line is discontinued because of a possible infection, discard TPN bag and all tubing. When new line is placed and placement verified, obtain all new tubing and follow these guidelines:
a) If new line is placed prior to 1500, notify IV Pharmacy and a new partial bag of TPN will be prepared.

b) If new line is placed after 1500, D10 should be infused, at TPN rate until 2100 when a new TPN bag is available.

**LIPID:**

a) Must be placed on infusion pump.

b) Filters are used **ONLY** if “3 in 1” TPN/lipid solution ordered. In that instance, a 1.2 micron filter or greater must be used.

c) Document lipid administration on MAR.

4) Care of the metabolically labile patient:

a) In situations in which additional ingredients are required, the ingredient can be sent from the pharmacy to the nurse for addition to the existing TPN bag.

   **Exceptions:** If supplemental potassium is needed, a potassium IVPB must be ordered by the physician or designee writing hyperalimentation orders. Potassium **WILL NOT** be sent to the nursing unit to be added to an existing TPN bag.

b) For situations in which a lab value is critically high, and the additive needs to be removed from the TPN the nurse may slow the rate of the bag that is hanging while the physician is notified for orders.

5) Tubing changes:

   All tubings and caps are changed every 72 hours **EXCEPT:**

a) Lipid tubing is changed every 24 hours.

b) If lipids are IVPB into TPN, lipid and TPN tubing are changed every 24 hours.

c) “3 in 1" TPN/lipid solution tubing is changed every 24 hours.
SUBJECT: MONITORING OF PATIENTS ON TOTAL PARENTERAL NUTRITION (TPN)

POLICY STATEMENT: Patients on TPN will be evaluated and monitored using a multidisciplinary approach to ensure that quality care is delivered.

SCOPE OF RESPONSIBILITY: Physician, Pharmacy, Clinical Dietitian, RN

GENERAL INSTRUCTION

1. The evaluation and monitoring of patients on TPN is accomplished through a multidisciplinary approach. Each discipline’s responsibilities are outlined below.

A. Physician

The Physician is ultimately responsible for the overall management of the patients receiving TPN. The Physician may write the TPN orders and monitor the response to therapy or the Physician may consult a Clinical Pharmacist to take over these responsibilities (BHMC-LR & NLR). At BHMC-LR, the patients must meet P & T approved TPN criteria, in order for the Clinical Pharmacist to take over these responsibilities.

B. Clinical Dietitian

The clinical dietitian will complete a nutritional assessment within 24-48 hours of the initiation of the TPN according to policy and standards of care in the Nutrition and Food Services department. The dietitian will make recommendations to ensure that the patient’s nutritional needs are met. The dietitian will follow up with the patient at a minimum of every 3 days until stable and then weekly. The dietitian will communicate with other disciplines as necessary regarding the nutrition care of the patient.

C. Pharmacy

1. For patients who receive a “Pharmacy Consult” for TPN monitoring, the Clinical Pharmacist in conjunction with the Clinical Dietitian will monitor the TPN admixture to ensure the following as outlined below:
a. Adequate calories / protein are being administered if possible, given other clinical aspects of the patient

b. Serum electrolytes, minerals and other metabolic profiles are adequately controlled.

Pharmacy will write orders as an agent of the physician to request appropriate lab draws with subsequent writing of a TPN admixture or mineral and electrolyte supplements to affect appropriate changes in the metabolic profile of the patient.

BHMC-LR

For patients at BHMC-LR who do not meet the P & T approved criteria for TPN, the clinical pharmacist will inform the consulting Physician that per P&T policy, pharmacists will not be able to initiate or manage the TPN. Under this policy the Physician is in no way prohibited from initiating and managing the TPN him/herself.

2. For a patient without a “Pharmacy Consult”, the staff pharmacist will ensure that all additives of a TPN mixture are compatible. The staff pharmacist will contact the prescribing physician if any additives of the TPN bag are thought to be incompatible. After discussing the situation with the physician, appropriate changes will be made to the TPN admixture.

D. Nursing

For patients receiving TPN, the Registered Nurse will complete an assessment of the central venous catheter (CVC) every shift which will include the following areas:

1. No pain with palpation.
2. No leakage or swelling.
3. Assure the dressing is occlusive and all connections are secure.
4. Visually inspect the catheter site if the patient develops tenderness at the insertion site, fever with or without obvious cause, or symptoms of local or bloodstream infections.
5. For inpatients who have large bulky dressings that prevent palpation or direct visualization of the catheter insertion site, remove the dressing, and visually inspect catheter site at least daily, and apply a new dressing.
The nursing staff will monitor the patients’ nutrition intake by documenting the percentage of meals and snacks consumed in the medical record. If patients are found to have an inadequate nutritional intake or other nutrition related problems, the nursing staff will notify the nutrition assistant or registered dietitian. The nursing staff will administer the TPN, per MD orders, monitor tolerance and document the patient’s therapeutic response.

RESOURCES:

Interdisciplinary CI Team for TPN Monitoring and Food and Drug Interactions 1998-99
Nutrition and Food Service Policy #10 (900) -022