CAREPATHrx™
Specialty Pharmacy & Infusion Solutions

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PERIPHERAL VEIN CATHETER INSERTION AND REMOVAL

Section: Nursing
Compliance: ACHC Infusion Pharmacy
INS Standards: 8, 10, 11, 16, 17, 18, 21, 36, 41, 42, 45, 46, 47, 48, 50
ACHC STANDARDS: DRX2-10D, DRX5-1D, DRX5-5E, DRX7-8I, DRX7-21A
TJC STANDARDS: IC.02.01.01, MM.05.01.07, MM.06.01.01, MM.06.01.03, NPSG.01.01.01, PC.02.01.01, PC.02.01.03, PC.02.02.05, PC.02.03.01
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I. POLICY

A peripheral intravenous catheter (PIVC) is inserted and removed by a nurse clinician who is trained in and demonstrated competence in PIVC insertion. Do not use PIVCs for continuous vesicant therapy, parenteral nutrition or infusates with osmolarity >900 mOsm/L. PIVCs will be removed if no longer included in the patient's plan of care, the PIVC has not been used for more than 24 hours, signs or symptoms of complications or in the event of extravasation of medication. A PIVC must be removed immediately if nerve damage is suspected or if an artery has been inadvertently accessed. A butterfly needle may be substituted for a peripheral catheter when administering a single dose of medication and must be removed following infusion.

II. PROCEDURES

PERIPHERAL INTRAVENOUS CATHETER INSERTION

A. Supplies required for peripheral access:

1. Gloves, nonsterile
2. Gloves, sterile (if the site is palpated after skin antisepsis)
3. Short PIVC with a safety mechanism (smallest diameter and length required for therapy)
4. Extension set (primed with 0.9% sodium chloride)
5. A luer-locking needleless connector
6. 0.9% sodium chloride prefilled syringes
7. Single-use tourniquet
8. Antiseptic solution (alcohol-based chlorhexidine solution, povidone-iodine or 70% alcohol)
9. Transparent semipermeable membrane (TSM) dressing (preferred)

10. Sterile gauze and sterile tape for dressing, if indicated
11. Label

B. Identify patient using at least 2 patient identifiers.

C. Review the prescriber's order for type of therapy and PIVC placement.

D. Perform hand hygiene (refer to CarepathRx (2022). *Hand Hygiene,* NUR018).

E. Clean and disinfect work area using an appropriate disinfectant

F. Educate the patient/caregiver on:

1. Procedure
2. Proper care of the access device
3. Activity precautions
4. Proper Aseptic Non-Touch Technique (ANTT) when accessing and deaccessing the device
5. Signs and symptoms of infection
6. Infection prevention strategies
7. Access device complications
8. Routine site inspection for redness, swelling or pain
9. Safe storage of medication (appropriate conditions of light and temperature) and supplies
10. The appropriate provider of treatment (the prescriber OR the pharmacist; BOTH the prescriber and the pharmacist) to contact during business hours, the availability of an answering system to receive calls during evenings, nights, weekends and holidays and the accessibility of a Pharmacist, Nurse, and Dietician 24 hours a day, 7 days a week. Notify pharmacy by calling the number listed at the top of the medication label; (Refer to CarepathRx (2022). BEST PRACTICE GUIDELINES, NUR 002; II. ALGORITHM FOR NOTIFICATION OF PHARMACIST AND PROVIDER).

G. Gather supplies on a clean, disinfected, aseptic field.

H. Inspect equipment and supplies for product integrity and function before use; inspect solutions for particulates or discoloration; inspect packaging for damage; verify expiration date.

I. Apply tourniquet 5-6 inches above selected vein site. Palpate vein to assess vein condition. Do not apply a tourniquet for more than 2-3 minutes. Remove tourniquet immediately after assessment. Reapply prior to insertion of catheter.

J. Locate vein site starting with distal veins first, and then advance proximally. Do not use lower extremities unless ordered by physician. Avoid compromised veins. Avoid areas of flexion or lateral surface of wrist for 4-5 inches. Avoid extremity on the side of breast surgery with axillary node dissection, presence of lymphedema, affected side post stroke, Deep Vein Thrombosis (DVT) and dialysis arteriovenous fistula.

K. Perform hand hygiene and don gloves.

L. Cleanse the skin 2-3 inches in diameter with antiseptic using a back-and-forth motion for approximately 30 seconds. Allow to dry thoroughly for 60 seconds. Do not wipe, fan, or blow on skin

to facilitate drying. **Do not touch or palpate the insertion site after skin antisepsis except with sterile gloves.**

M. Reapply tourniquet above intended insertion site.

N. Stabilize the vein below the venipuncture site with non-dominant hand. Using aseptic non touch technique, insert the needle into the skin at a 10–30-degree angle with bevel up. Observe for flashback. Insert the catheter by sliding the plastic catheter over the needle and into the vein. According to INS Standards, **no more than 2 attempts per 1 nurse should be made to insert an IV catheter**. If unable to insert catheter, notify the patient's physician who may elect to give an order for an additional number of attempts.

O. Remove tourniquet. Activate needle safety mechanism. Place gauze under the catheter hub, apply fingertip pressure to the skin proximal to the catheter tip (to limit blood loss from the hub) and attach the primed extension tubing and needleless connector (primed with 0.9% sodium chloride).

P. Flush with 0.9% sodium chloride, observing for signs of infiltration or resistance.

Q. Stabilize the catheter so that movement is minimalized and potential for infiltration is reduced. To stabilize the catheter, tape may be applied over the wings/cannula hub only, so that visual inspection of the insertions site is possible.

R. Apply transparent semipermeable membrane (TSM) dressing over the insertion site. Label with time and date of insertion, gauge and length of catheter and your initials.

S. Discard sharps in a sharp's container that is closeable, puncture resistant and leakproof. Remove gloves and perform hand hygiene.

T. Peripheral IV catheters should only be changed when clinically indicated based on clinical signs and symptoms of complications. There must be documentation of close monitoring of site. Note: If a butterfly needle was used to administer a single dose, it must be removed immediately following the infusion.

U. Documentation should include:

1. Site preparation
2. Infection prevention
3. Date and time of insertion, inserter's name and # of attempts
4. Site of catheter insertion, catheter gauge and length
5. Blood return and patency
6. Type of dressing and securement device (if applicable)
7. Patient's response to insertion
8. Patient education, receipt of education (verbal or written)

CATHETER REMOVAL

A. Supplies Needed:

1. Gloves (non-sterile)
2. Sterile 2X2 gauze
3. Adhesive dressing or Band aid
4. Tape

B. Identify patient using 2 identifiers.

C. Verify order for removal of catheter or standard protocol

D. Clean and disinfect work area using an appropriate disinfectant

E. Educate patient/caregiver on:

1. Procedure

F. Perform hand hygiene and don gloves.

G. Discontinue all infusates and clamp extension set.

H. Remove dressing from insertion site. Remove securement device if present.

I. Place sterile 2X2 gauze over the catheter insertion site and withdraw catheter parallel to the skin using gentle, even pressure.

J. Apply pressure until hemostasis achieved and apply gauze and tape or Band-aid.

K. Inspect catheter: intact, not jagged, and appropriate length.

L. Discard in appropriate container.

M. Remove gloves and perform hand hygiene.

N. Documentation:

1. Date and time of removal
2. Reason for removal
3. Condition of catheter upon removal
4. Condition of site
5. Dressing applied
6. Patient's response to removal procedure

REFERENCES

Infusion Nurses Society. 8th Edition (2021). *Infusion Therapy Standards of Practice. Journal of Infusion Nursing, Volume 44.*

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The Joint Commission. (2022). *Joint Commission Resources E-dition*