PERIPHERAL INTRAVENOUS CATHETER INSERTION AND INFUSION

POLICY:

Aseptic technique and Universal Precautions will be utilized when inserting and caring for intravenous catheters.

PURPOSE:

The percutaneous insertion of an indwelling catheter into a peripheral vein to administer fluids, blood, and/or medication into the vein.

SPECIAL INFORMATION:

1. Related policies/procedures:
   A. Peripheral IV Catheter Inserted Pre-Hospital
   B. IV Catheter Insertion and Infusion: Pediatrics
   C. Intermittent Infusion Injection Device

SUPPORTIVE DATA:

1. Intravenous infusions can be administered by RN’s, Paramedics, EMT-I’s, LPN’s, Paramedic and EMT-I students with supervision of Paramedics, RN students after completing classroom competency and with supervision of instructor or preceptor. LPN/RN competency is documented in employee file.
2. Physicians orders determine the type, amount, and rate of solution.
3. *Disposable gloves should be worn for performing venipuncture and other vascular access procedures. Sterile gloves may be worn, if non-sterile gloves are worn the fingers used to palpate the vein should be prepped also.
4. “Keep open” infusions should be maintained with 250cc solution and a control-a-flow regulator or infusion therapy pump.
5. The IV site shall be inspected PRN with documentation of “the site condition” at a minimum of once each shift. The transparent dressing is changed if curling is evident at the edges, if it is coming loose, or there is moisture or blood under dressing.
6. “Hang Times” are recommended as follows for peripheral IVs:
   Parenteral fluids: 72 hours
   Peripheral lipid containing parenteral nutrition (3 in 1 solutions): 24 hours
   Lipid emulsions only: 12 hours
   Blood/Blood products: 4 hours or completion of 2nd unit.
   “Flush Bags”: 72 hours
   PCA Syringes: 72 hours

   While changing the IV bag, a closed system should be maintained as much as possible. IV tubing including “piggy back tubing” and PCA tubing should be changed which 72 hour site change in adults.
7. IV site will be rotated at least every 72 hours to a new site unless physician orders it more frequently. Consider midline, PICC or central line for prolonged therapy.
8. IV site check is to be documented at least once per shift.
9. Assessment of discontinued IV site is to be documented at 24 and 48 hours during hospitalization.

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10. Pediatric IV sites may remain in place beyond 72 hours. Change sites if infiltrated or symptomatic (red, painful)

EQUIPMENT LIST:

1. IV solution
2. Primary tubing & Control-a Flow regulator & IV extension set
3. IV tray -
   a) Chloraprep
   b) transparent sterile dressing
   c) tape
   d) Xylocaine
   e) syringe/needle 25G
   f) intracath
   g) tourniquet
   h) razor
   i) disposable gloves
   j) emla gel (optional)

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<th>Procedure Steps</th>
<th>Key Points</th>
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<td>1. Inspect IV bag for defects and particles, expiration date. Identify correct patient solution. Note allergies.</td>
<td>1. Send to CSS with explanation if found.</td>
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<tr>
<td>2. Add medication if ordered and attach orange med sticker to bag. Note time, date, initials, med and dose on sticker.</td>
<td>2. LPN’s may administer commercially or pharmacist prepared IV’s with added medication after the initial dose.</td>
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<tr>
<td>3. Rotate bag slowly to circulate medication.</td>
<td>3. Prevent administration of bolus of med.</td>
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<td>4. Remove tubing from sterile pack. Inspect for defects.</td>
<td>4. Send to CSS with explanation if defect found.</td>
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<td>5. Attach Control-a-Flow regulator (if desired) and IV extension set.</td>
<td>5. Make sure all air is removed from tubing</td>
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<td>6. Remove cap from IV bag and “twist” puncture pin into port until well seated.</td>
<td>8a) Mark rate of flow as ordered. Monitor amount infused hourly to make sure it corresponds with doctor’s order.</td>
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<td>7. Fill drip chamber ½ full with fluid then fill tubing allowing at least 30cc to pass through tubing.</td>
<td>b) A Control-a-Flow doesn’t insure correct flow rate. Bags need to be monitored hourly.</td>
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<td>8. Attach 1” tape along volume numbers. Mark according to physicians prescribed rate of flow for infusion. If used set Control-a- Flow to prescribed rate.</td>
<td>11. Choose the most distal good vein.</td>
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<td>9. Check two forms of patient identification prior to procedure.</td>
<td>12. Should be tight enough to impede venous circulation, but should not impede arterial circulation. Avoid prolonged pressure.</td>
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<td>10. Explain procedure to patient and make patient comfortable.</td>
<td>13a) Transparent dressing will not adhere to hair.</td>
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<tr>
<td>11. Select site</td>
<td>b) Hair will allow track for bacteria to follow.</td>
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<tr>
<td>12. Apply tourniquet proximal to chosen site.</td>
<td>c) Tape removal will be more comfortable.</td>
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<tr>
<td>13. Carefully shave site if hair is noted.</td>
<td>d) Avoid abrasions that can lead to infection.</td>
</tr>
<tr>
<td>14. Remove Chloraprep from package and apply in linear manner. ALLOW TO AIR DRY THOROUGHLY.</td>
<td>14. Choose the most distal good vein.</td>
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</table>
15. While Chloraprep is drying get bioclusive out of package and get tape ready.

16. Apply gloves.

17. If using an #18 gauge or larger catheter; it is recommended to use Zylocaine or Emla cream intradermally prior to insertion of catheter.

18. Remove sheath. Ensure catheter hub and primary push-off tab are fully seated to the needle housing assembly.

19. Hold the device by the ribbed needle housing with thumb and fingers on opposite side. The needle bevel and push-off tabs should be in the UP position and lateral to the vein.

20. Anchor the vein with gentle skin traction. Insert the needle into the skin and vein at an appropriate angle. Blood flashback into the flash chamber confirms vein entry.

20a) If veins tend to roll, puncture skin on top of vein. To “search” if the vein rolls, hold the colored hub to prevent it from moving as you pull back on the catheter/gripper pads.

b) If the catheter is hard to thread, advance the needle an additional 3-5mm after confirmation of vein entry or onto the barrel of the catheter as you are trying to thread the catheter (essentially holding the part that you are trying to move).

21. If you find the catheter is curling back on itself as it is advancing,

a) You may be advancing the needle an additional 3-5mm after confirmation of vein entry. If you are not doing this there is a good chance that only the needle is in the vein and not the catheter.

b) If you find catheter feels flimsy when you are threading: You may not be advancing the needle an additional 3-5mm after confirmation of vein entry. If you are not doing this there is a good chance that only the needle is in the vein and not the catheter.
22. Holding the ribbed needle housing stable, place your finger on the primary push-off tab and thread the desired length of the catheter forward into the vein. As you thread the catheter, the needle guard begins to cover the needle. DO NOT REINSERT THE NEEDLE INTO THE CATHETER AT ANY TIME. The needle could cut the catheter, resulting in a catheter embolus.

23. Keep your finger on the primary push-off tab to stabilize the device, then retract the ribbed needle housing until it securely locks into place. Listen for the “click” which tells you the needle safely locked within the needle guard.

24. Remove the tourniquet, then apply digital pressure to the vein just beyond the tip of the catheter and secure the catheter hub. Remove the needle guard with the other hand by twisting slightly and pulling it out of the catheter hub.

25. Connect the Luer-lock device to catheter. Secure the connection with a firm push-and-twist motion. Take extra precaution when appropriate (e.g. neonates, critically ill, elderly) to ensure a firm and secure connection. Improper sacrement may lead to loss of vascular access.

26. Begin Fluid Flow

27. Attach sterile transparent dressing over puncture site and not higher than hub of intracath

28. Tape tubing securely.

29. Establish prescribed rate of flow.

30. Make patient comfortable and leave area neat and clean

31. Dispose of locked needle and housing needle in proper sharps container.

32. Write med, added on sticker with date, or area provided on CSS charge sheet. No more than 3 IV catheters will be charged in multiple attempts to start IV’s.

**DOCUMENTATION:**

IV Flowsheet in CPSI

**REFERENCE:**

1. The APIC Curriculum for Infection Control Practice, Vol. I Infection Control & Epidemiology Association for Practitioners 2000

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c) If you find you keep blowing the vein: You may be advancing the needle too far when you do your initial stick. You should be sure the actual catheter is in the vein when you are trying to thread off. (The catheter could actually be just at the outer surface of the vein, which will cause trauma to the vein when you try to thread. For this, simply advance 3-5mm further after your initial stick and then thread off.)

23. If you find the needle won’t “click”/lock-out: You should apply counter pressure behind the clear push off tab as you are pulling back on the gripper pads. (You absolutely need to apply some counter pressure behind the tab as you pull the gripper pads back...use whatever finger you use to thread the catheter off with) or you may not be pulling the gripper pads back far enough.

24. You should apply pressure at the tip of the catheter, approx. 1-1/4” to 1-1/2” from the hub. If you are doing this and still are having blood loss you may not be applying enough pressure to occlude the venous flow.

26. Check to be sure that fluid is not entering sub-q tissue.

28. Prevent taping over transparent dressing.

29. Using roller clamp or Control-a-Flow, or IV pump.