

I. Purpose: To define training requirements for Emergency Medical Technician-Paramedics (EMT-P) and utilization of Pre-Existing Vascular Access Devices (PVADs) in the prehospital setting.

II. Policy: Paramedics shall successfully complete the PVAD training module at an Imperial County EMS Training Institute or Base Hospital prior to administering fluids and/or medications through a PVAD in the field setting.

III. Definition: A pre-existing vascular access device is an indwelling catheter/device placed into one of the central veins to provide vascular access for those patients requiring long term intravenous therapy or Hemodialysis.

IV. Content:

A. Types of Catheters

1. External indwelling catheters/devices

a. **Heparin/Saline Lock** - A temporary venous catheter placed in a peripheral vein and occluded with a cap. Heparin or saline is instilled prior to capping the catheter to maintain its patency. It may be accessed directly through the injection cap.

b. "**BROVIAC@** catheter", "**HICKMAN@** catheter", "**GROSHONG@** catheter", and others - a long catheter that is inserted into the right atrium, through a central vein. The catheter enters the skin through an incision in the chest. The line may be heparinized and may be accessed directly through the injection cap. These catheters are usually multi-lumened and any lumen can be used. If the catheter is color coded, the red lumen is usually the largest.

c. **Peripherally inserted central catheter (PICC)** - a long catheter inserted antecubitally into the subclavian vein or superior vena cava. It may be accessed through the injection cap.

2. Internal, indwelling devices

a. **Internal Subcutaneous Infusion Ports** - an access device embedded subcutaneously and must be accessed through the skin. **THIS DEVICE IS NOT TO BE USED BY PREHOSPITAL FIELD PERSONNEL.**

b. **Internal Hemodialysis Fistula** - A permanent access device that diverts blood flow from an artery to a vein and is usually located in the forearm or femoral area. It is used for dialysis.

B. Indications

1. Heparin/Saline Lock - any situation requiring access for IV fluids or medications.

2. External Indwelling Catheters - Urgent need to administer fluids and/or medications, which can only be given by the IV route, and a peripheral IV site is not readily available.

3. Hemodialysis Fistula - Urgent need to administer fluids and/or medications, which can only be given by the IV route and an alternate IV site is not readily available.

C. Fluids/Medications approved for infusion through PVAD.

1. IV fluids: Normal Saline
2. Medications: All EMT -P scope of practice medications recommended for venous administration.

D. Complications

1. Infection. Due to the location of the catheter end, strict adherence to aseptic technique is crucial when handling these devices. The injection cap must be cleansed thoroughly with an alcohol wipe. Sterile gloves are not necessary. Care must be used not to contaminate the needle used to access the line or the IV tubing used.
2. Air embolism. The devices provide a direct line into the circulation; therefore the introduction of air into the device is possible. Do not remove the injection cap from the catheter. Do not allow IV fluids to run dry. Clear all air from the IV tubing and syringes prior to administration of fluids or medications.
3. Thrombosis. Improper handling and maintenance of the device may dislodge a clot causing pulmonary embolus or vascular damage. Check patency of the line by slowly injecting 5 cc of NS (see Step 7 below). *Do not* inject medications or infuse fluids if resistance is met when establishing patency of the catheter. Flush line with 5 ml of normal saline after medication administration.
4. Catheter damage. These catheters are meant for long-term use. They usually require a surgical procedure and are costly to insert. Care must be taken to avoid any damage to the catheter. If damage to the catheter occurs, immediately clamp the catheter between the skin exit site and the damaged area to prevent air embolism or blood loss. Always use a 10 ml or larger syringe to prevent catheter damage from excess pressure when injecting directly. Use caution when inserting the needle into the injection port.

E. Procedure

1. Assemble necessary equipment – two (2) 10 cc syringes, NS for injection, IV tubing and fluid, alcohol wipes, 18 gauge needles or needleless system.
2. Disconnect any existing IV lines.
3. Prepare a 10 cc syringe with NS and set up IV line.
4. Prep injection cap with alcohol wipe.
5. Clamp catheter if unclamped.
6. Withdraw 5 cc's and discard syringe. If resistance is met, discontinue procedure.
7. Slowly inject 5 cc, if resistance is met, discontinue procedure.
8. Prep injection cap with alcohol wipe.

MEDICAL PROCEDURES

PRE-EXISTING VASCULAR ACCESS DEVICES (PVADs)

POLICY #7600

9. Attach 18-gauge needle or needless cap to IV tubing and insert into injection cap.
10. Regulate IV rate.
11. Tape needle to catheter to prevent dislodging.
12. Administer medications through IV line.
13. Flush line with IV fluid after medication administration.
14. Closely monitor IV line and Catheter.

APPROVAL



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