UNIT TERMINAL OBJECTIVE
1-4 At the completion of this unit, the EMT-Intermediate student will be able to safely and precisely access the venous circulation.

COGNITIVE OBJECTIVES
At the completion of this unit, the EMT-Intermediate student will be able to:

1-4.1 Review the specific anatomy and physiology pertinent to intravenous access. (C-1)
1-4.7 Calculate intravenous infusion rates for adults, infants, and children. (C-2)
1-4.10 Discuss medical asepsis and the differences between clean and sterile techniques. (C-1)
1-4.11 Describe use of antiseptics and disinfectants. (C-1)
1-4.12 Describe the use of universal precautions and body substance isolation (BSI) procedures when administering a medication. (C-1)
1-4.13 Describe the indications, equipment needed, techniques utilized, precautions, and general principles of peripheral venous cannulation (Including saline locks). (C-1)
1-4.14 Describe the indications, equipment needed, techniques utilized, precautions, and general principles of intraosseous needle placement and infusion. (C-1)
1-4.15 Describe the indications, equipment needed, techniques utilized, precautions, and general principles of administering medications by the inhalation route (Including endotracheal route). (C-3)
1-4.22 Describe the purpose, equipment needed, techniques utilized, complications, and general principles for obtaining a blood sample. (C-1)
1-4.23 Describe disposal of contaminated items and sharps. (C-1)

AFFECTIVE OBJECTIVES
At the completion of this unit, the EMT-Intermediate student will be able to:

1-4.27 Comply with universal precautions and body substance isolation (BSI). (A-1)
1-4.29 Serve as a model for medical asepsis. (A-3)
1-4.31 Serve as a model for disposing of contaminated items and sharps. (A-3)

PSYCHOMOTOR OBJECTIVES
At the completion of this unit, the EMT-Intermediate student will be able to:

1-4.32 Use universal precautions and body substance isolation (BSI) procedures during medication administration. (P-2)
1-4.33 Demonstrate cannulation of peripheral veins (Including saline locks). (P-2)
1-4.34 Demonstrate intraosseous needle placement and infusion. (P-2)
1-4.40 Demonstrate preparation and techniques for obtaining a blood sample. (P-2)
1-4.41 Perfect disposal of contaminated items and sharps. (P-3)
DECLARATIVE

I. Medical direction
   A. Medication administration is bound by the EMT-Intermediate’s on-line or off-line medical direction
   B. Role of the medical director
   C. Patient management protocols
      1. Written standing orders
   D. Legal considerations - policies and procedures which specify regulations of medication administration

II. Medical asepsis
   A. Clean technique versus sterile technique
   B. Sterilization
   C. Antiseptics
   D. Disinfectants

III. Universal precautions and body substance isolation (BSI) in medication administration

IV. Venous access
   A. Peripheral intravenous cannulation
      1. General principles
      2. Indications
      3. Precautions
      4. Equipment
      5. Technique
         a. Extremity
            (1) Indications
            (2) Precautions
            (3) Equipment
            (4) Procedure
         b. External jugular
            (1) Indications
            (2) Precautions
            (3) Equipment
            (4) Procedure
         c. Saline locks
            (1) Indications
            (2) Precautions
            (3) Equipment
            (4) Procedure
   B. Intraosseous needle placement and infusion
      1. General principles
      2. Indications
      3. Precautions
      4. Equipment
      5. Technique
V. Medications administered by the inhalation route
   A. Bronchodilator (beta agonist) medications
      1. Other medications
   B. Equipment
      1. Oxygen or compressed air source
      2. Small volume nebulizer (SVN)
         a. Other inhaler equipment
         b. Other adapter equipment
         c. Modified inhaler equipment
   C. Administering medications by the inhalation route
      1. Indications
      2. Techniques
      3. Precautions
      4. General principles for administering medications by the inhalation route

D. Administering medications by the endotracheal tube
   1. Indications
   2. Techniques
   3. Precautions
   4. General principles for administering medications by the endotracheal tube

VI. Enteral medication administration
   A. Oral administration of medications
      1. Dosage forms of solid-form and liquid-form oral medications
         a. Capsules
         b. Time-released capsules
         c. Lozenges
         d. Pills
         e. Tablets
         f. Elixirs
         g. Emulsions
         h. Suspensions
         i. Syrups
      2. Equipment
         a. Souffle cup
         b. Medicine cup
         c. Medicine dropper
         d. Teaspoons
         e. Oral syringes
         f. Nipples
      3. General principles for administration of solid-form and liquid-form oral medications

VII. Obtaining a blood sample
   A. Purposes for obtaining a blood sample
   B. Equipment needed for obtaining a blood sample
   C. Locations from which to obtain a blood sample
      1. Anatomical sites
      2. From the established intravenous catheter
      3. Other locations
   D. Steps to preparing equipment for obtaining a blood sample
   E. Techniques for obtaining a blood sample
F. Complications

VIII. Disposal of contaminated items and sharps
   A. Follow local protocol for disposal of contaminated items and sharps