RED	Not authorized
YELLOW	Authorized by LEMSA Medical Director per Title 22, Division 9, Chapter 3.1, § 100066.02/ 100066.04[L] or by California EMSA-approved LOSOP[S]
GREEN	Authorized by state regulation and local protocol

This document contains the authorized skills for EMT/AEMT/Paramedics or supervised EMT/AEMT/Paramedic students to perform when on-duty as part of the organized EMS system, while at the scene of a medical emergency or during transport, or during interfacility transfer.

BOUGIE

EMT	AEMT	PARAMEDIC

Indications
- Assist with endotracheal intubation

Contraindications

Notes
- Should be used routinely during intubations.
- After attempting to view with laryngoscope, may use to assist ET placement if unable to fully visualize vocal cords.

CARBOXYHEMOGLOBIN MONITOR

EMT	AEMT	PARAMEDIC

Indications
- Suspected or known carbon monoxide exposure

Contraindications

Notes
- Consider transport to facility with hyperbaric chamber for suspected carbon monoxide poisoning in the unconscious or pregnant patient.

SYNCHRONIZED CARDIOVERSION

EMT	AEMT	PARAMEDIC

Indications
- Unstable VT
- Unstable SVT
- Unstable atrial fibrillation/flutter with HR ≥180

Contraindications
- Pediatric patients if defibrillator unable to deliver <5 J or biphasic equivalent

Notes
- Remove chest transdermal medication patches prior to cardioversion.

CHEST SEAL

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• Occlusive dressing designed for treating open chest wound	

CPAP

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• Respiratory distress (suspected CHF/cardiac origin or non-cardiac origin) • Drowning with respiratory distress	• Unconscious • Non-verbal patients with poor head/neck tone may be too obtunded for CPAP • CPR • SBP <90 mmHg • Vomiting • Age <15 • Possible pneumothorax • Facial trauma • Unable to maintain airway

Notes

- EMT/AEMT: May perform CPAP when directed by an on-scene paramedic after assessment determines a clinical need.
- CPAP may be used only in patients alert enough to follow direction and cooperate with the assistance. BVM-assisted ventilation is the appropriate alternative.
- CPAP should be used cautiously for patients with suspected COPD or pulmonary fibrosis. Start low and titrate pressure.
- HEPA filters should be applied with aerosol-generated procedures.
- Some patients may find it difficult to tolerate CPAP. Coaching during CPAP application can enhance patient understanding, reduce anxiety, and improve mask tolerance. In many cases, patient anxiety is transient; however, some patients experience severe agitation that prevents effective oxygenation. If the patient remains unable to tolerate CPAP, consider administration of low-dose midazolam. Dose selection should be guided by patient's estimated weight and severity of agitation. Monitor the patient closely for ability to maintain airway.

MANUAL DEFIBRILLATION

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• VT (pulseless) • VF	

Notes
- Remove chest transdermal medication patches prior to defibrillation.

ECG MONITORING

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• Any situation where there is a potential for cardiac arrhythmia	

Notes
- Apply monitor before moving patient with chest pain, syncope, or in arrest.
- Continuous monitoring for unstable/STEMI/CPR patients required.
- Document findings on PCR and leave strip with patient.

12-LEAD ECG

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• Chest discomfort/pain and/or signs and symptoms suggestive of myocardial infarction (e.g., dyspnea, upper abdominal pain, fatigue) • Signs and symptoms of arrhythmia (e.g., syncope, near syncope, palpitations) • Suspected hyperkalemia • ROSC after cardiac arrest • To identify a rhythm	

Notes

- EMT/AEMT: May assist with placement of 12-lead ECG leads.
- Transmit 12-lead ECGs to receiving hospital.
- If STEMI suspected, immediately notify BH, transmit 12-lead ECG to appropriate STEMI receiving center and transport.
- Report LBBB, RBBB, or poor-quality ECG for consideration of a false positive reading STEMI.
- Repeat 12-lead ECG after arrhythmia conversion or any change in patient condition.
- Do not delay transport for a repeat 12-lead ECG.
- Attach ECG(s) or printout photo(s) to PCR.
- Document findings on the PCR and leave ECG printout with patient.

END-TIDAL CO_2 DETECTION DEVICE – CAPNOGRAPHY (QUALITATIVE)

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• All intubated patients <15 kg – unless quantitative end-tidal CO_2 available for patient <15 kg	

Notes

- Continuous monitoring after ET/PAA insertion is required.

END-TIDAL CO_2 DETECTION DEVICE – CAPNOGRAPHY (QUANTITATIVE)

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• All intubated patients • Respiratory distress or cardiovascular impairment • Trauma	

Notes

- Continuous monitoring after ET/PAA insertion is required.
- Use early in cardiac arrest.
- For $EtCO_2$ >0 mmHg, may place ET/PAA without interrupting compressions.
- If $EtCO_2$ rises rapidly during CPR, pause CPR and check for pulse.
- If quantitative is unavailable due to special circumstances, then use qualitative (optional equipment)

EXTERNAL CARDIAC PACING

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• Unstable bradycardia unresponsive to atropine	

Notes

- Document rate setting, milliamps, and capture.
- External cardiac pacing:
  - Set rate and energy per manufacturer's recommendations
  - Increase energy setting until capture occurs, usually between 50 mA and 100 mA
  - After electrical and mechanical capture achieved, increase energy by 10%
  - If patient remains hypotensive, increase rate in 5 bpm increments (not to exceed 100 bpm) to achieve and maintain adequate perfusion

GLUCOSE MONITORING

EMT [L]	AEMT	PARAMEDIC

Indications
- Hypoglycemia (suspected)
- Hyperglycemia
- Altered neurologic function

Contraindications

Notes
- Repeat BS not indicated enroute if patient is improving.
- Repeat BS must be done if patient left on scene and initial was abnormal (AMA/Release).

HEMOSTATIC GAUZE

EMT	AEMT	PARAMEDIC

Indications
- Life-threatening hemorrhage in the trauma patient when tourniquet cannot be used or to supplement tourniquet or bleeding unable to be controlled with direct pressure

Contraindications
- Bleeding controlled with direct pressure with standard gauze

Notes
- Should be applied with minimum 3 minutes of direct pressure.

INTRANASAL (IN)

EMT [L]	AEMT	PARAMEDIC

Indications
- When IN route is specified in protocol

Contraindications

Notes
- Volumes over 1 mL per nostril are likely too large and may result in runoff out of the nostril.
- If using a mucosal atomization device, see manufacturer's guidance on accounting for dead space.

INTRAMUSCULAR (IM)

EMT [L]	AEMT	PARAMEDIC

Indications	Contraindications
• When IM route is specified in protocol	

Notes

- Pediatric preferred site:
  - Vastus lateralis in patients less than 3 years of age (maximum of 2 mL volume).
- Adults:
  - Deltoid in patients ≥3 years of age (maximum of 2 mL volume). Use vastus lateralis as secondary site (maximum of 5 mL volume).

INTRAVENOUS (IV)

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• When IV route is specified in protocol	

INTUBATION – ET / STOMAL

EMT	AEMT	PARAMEDIC

Indications
- To facilitate ventilation and/or oxygenation in a patient who is unable to protect his/her own airway or maintain spontaneous respiration
- Ineffective ventilations for unconscious adult patient or decreasing LOC

Contraindications
- Suspected opioid OD prior to naloxone
- Gag reflex present
- Infants and pediatric patients
- <15 years of age that fit on the LBRT

Notes
- If able to maintain adequate ventilation, may attempt to insert ET tube up to 3 times. After 3 unsuccessful attempts, ventilate with BVM or SGA.
- An ET attempt is defined as insertion of a laryngoscope into the oropharynx with intent to intubate.
- Document and report **LEADSD**:
  - Lung sounds
  - $EtCO_2$
  - Absent abdominal sounds
  - Depth
  - Size
  - Document presence of $EtCO_2$ waveform and $EtCO_2$ numeric value at transfer of care
- Establishment of $EtCO_2$ prior to intubation:
  The presence of $EtCO_2$ greater than zero is required prior to ET tube/PAA placement.
  - If assessment rules out airway obstruction, but $EtCO_2$ remains zero despite effective BVM ventilation (including OPA/NPA placement), a PAA may be placed.
  - For patients with intractable vomiting or airway bleeding, initial management should focus on clearing the airway with patient positioning (i.e., logrolling), and mouth and oropharynx suctioning.
  - Immediately following insertion of an advanced airway, persistent $EtCO_2$ waveform and reading (other than zero) must be maintained or the ET tube/PAA must be removed.
- If $EtCO_2$ drops to zero and does not increase with immediate troubleshooting, extubate, and manually ventilate the patient via BVM.
- Continuous capnography monitoring after ET/PAA insertion is required.
- Report and document at a minimum:
  - capnography value, presence of waveform, abdominal sounds, and lung sounds before and after advanced airway placement;
  - at each patient movement, and;
  - at the transfer of care.
- Apply C-collar prior to moving patient to minimize head movement and potential ET dislodgement.

INTUBATION – PERILARYNGEAL AIRWAY ADJUNCTS (PAA)
SUPRAGLOTTIC AIRWAY (i-gel)

EMT	AEMT	PARAMEDIC

Indications
- Apnea or ineffective respirations for unconscious patient or decreasing LOC

Contraindications
- Suspected opioid OD prior to naloxone
- Gag reflex present
- Infants and pediatric patients
- <15 years of age that fit on the LBRT
- Ingestion of caustic substances
- Known esophageal disease
- Laryngectomy/stoma

Notes
- Extubate if placement issue.
- i-gel:
  - Use Size 3 (yellow) for small adult – 36-60kg. Use 12 french OG tube
  - Use Size 4 (green) for medium adult – 50-90kg. Use 12 french OG tube
  - Use Size 5 (orange) for large adult – 90+kg. Use 14 french OG tube
- Document and report **LEADSD**:
  - Lung sounds
  - $EtCO_2$
  - Absent abdominal sounds
  - Depth
  - Size
  - Document presence of $EtCO_2$ waveform and $EtCO_2$ numeric value at transfer of care
- Establishment of $EtCO_2$ prior to intubation:
  The presence of $EtCO_2$ greater than zero is required prior to ET tube/PAA placement.
  - If assessment rules out airway obstruction, but $EtCO_2$ remains zero despite effective BVM ventilation (including OPA/NPA placement), a PAA may be placed.
  - For patients with intractable vomiting or airway bleeding, initial management should focus on clearing the airway with patient positioning (i.e., logrolling), and mouth and oropharynx suctioning.
  - Immediately following insertion of an advanced airway, persistent $EtCO_2$ waveform and reading (other than zero) must be maintained or the ET tube/PAA must be removed.
- If $EtCO_2$ drops to zero and does not increase with immediate troubleshooting, extubate, and manually ventilate the patient via BVM.
- Continuous capnography monitoring after ET/PAA insertion is required.
- Report and document at a minimum:
  - capnography value, presence of waveform, abdominal sounds, and lung sounds before and after advanced airway placement;
  - at each patient movement, and;
  - at the transfer of care.
- Apply C-collar prior to moving patient to minimize head movement and potential PAA dislodgement.

LENGTH-BASED RESUSCITATION TAPE (LBRT)

EMT	AEMT	PARAMEDIC

Indications
- Determination of length for calculation of pediatric drug dosages and equipment sizes

Contraindications

Notes
- Base dosage calculation on length of child.
- Refer to pediatric chart for dosages (P-117).

MAGILL FORCEPS

EMT	AEMT	PARAMEDIC

Indications
- Airway obstruction from foreign body with decreasing LOC/unconscious

Contraindications

NASOGASTRIC / OROGASTRIC TUBE

EMT	AEMT	PARAMEDIC

Indications
- Gastric distention interfering w/ ventilations

Contraindications
- Severe facial trauma
- Known esophageal disease

Notes
- If NG tube needed in a patient with an i-gel, insertion should be via the suction/gastric port, if available.

NEBULIZER – OXYGEN POWERED

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• Respiratory distress with bronchospasm, wheezing, croup-like cough, or stridor	

Notes
- Flow rate 4-6 L/min via mouthpiece; 6-10 L/min via mask/ET.
- If concerned about aerosolized infectious exposure, substitute with MDI, if available.
- Consider applying HEPA filters with aerosol-generating procedures for in-line nebulizer treatments.

NEEDLE THORACOSTOMY

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• Adult: Severe respiratory distress with diminished or absent breath sounds (unilaterally or bilaterally), and SBP <90 mmHg, and suspected pneumothorax • Pediatric: Severe respiratory distress with diminished or absent breath sounds (unilaterally or bilaterally), and hypotensive for age, and suspected pneumothorax	

Notes
- Use 14-gauge, 3.25-inch IV catheter.
- Anterior axillary line needle thoracostomy placement is preferred as it has a lower failure rate than midclavicular line placement.
- Insert the catheter into the anterior axillary line 4th/5th ICS on the involved side (roughly nipple level / inframammary fold: preferred position).
  OR
  Insert the catheter into the midclavicular line 2nd/3rd ICS on the involved side (non-preferred position).
- Tape catheter securely to chest wall and leave open to air.

OBSTETRICAL MANEUVERS

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• Difficult deliveries	

Notes
- Nuchal cord (cord wrapped around neck):
  - Slip cord over the head and off neck
  - If cord wrapped too tightly, perform somersault maneuver
  - If unable to slip cord over the head and off neck and somersault maneuver unsuccessful, clamp and cut cord
- Prolapsed cord:
  - Place mother with her hips elevated on pillows
  - Insert a gloved hand into vagina and gently push presenting part off cord
  - Transport immediately while retaining this position. Do not remove hand until relieved by hospital personnel
  - Cover exposed cord with saline-soaked gauze
- Shoulder dystocia:
  - Hyperflex mother's knees to her chest
  - If shoulder still does not deliver, add suprapubic pressure

POSITIVE END-EXPIRATORY PRESSURE (PEEP)

EMT	AEMT	PARAMEDIC

Indications	Contraindications

• BVM ventilation	• Adult:
	  • CPR
	  • SBP <90 mmHg
	  • Possible pneumothorax
	• Pediatric:
	  • CPR
	  • Hypotensive for age
	  • Possible pneumothorax

Notes
- EMT/AEMT: May perform BVM ventilations with PEEP valve in place; may adjust settings when directed by an on-scene paramedic.
- Adult: PEEP should be increased slowly by 2-3 cmH_2O and titrated from 5 cmH_2O (initial setting) to a max of 15 cmH_2O closely monitoring response and vital sign changes.
- Pediatric: PEEP should be increased slowly by 2-3 cmH_2O and titrated from 5 cmH_2O (initial setting) to a max of 10 cmH_2O closely monitoring response and vital sign changes.

PREHOSPITAL PAIN SCALE

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• All patients with a traumatic or pain-associated chief complaint	

Notes
- Assess for presence and intensity of pain.

PULSE OXIMETRY

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• Assess oxygenation	

Notes
- Obtain room air saturation prior to O_2 administration, if possible.
- A pulse oximeter should be placed on newborn's right hand or wrist as soon as possible when receiving respiratory support or supplemental oxygen.

PREHOSPITAL STROKE SCREENING AND SEVERITY SCALES

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• All patients with suspected TIA or stroke	

Notes

- Bring witness to ED to verify time of symptom onset and provide consent for interventions. If witness unable to ride in ambulance, obtain accurate contact phone number.
- Use *BE-FAST* Prehospital Stroke Screening Scale in assessment of possible TIA or stroke patients:
  - **B** = Balance: Unsteadiness, ataxia
  - **E** = Eyes: Blurred/double or loss of vision
  - **F** = Face: Unilateral face droop
  - **A** = Arms and/or legs: Unilateral weakness exhibited by a drift or drop
  - **S** = Speech: Slurred, inability to find words, absent
  - **T** = Time: Accurate Last Known Well time
- Get specific last known well time in military time (hours: minutes).
- If *BE-FAST* is positive, calculate and report the *FAST-ED* Prehospital Stroke Severity Scale value:
  - **F** = Facial palsy
  - **A** = Arm weakness
  - **S** = Speech changes
  - **T** = Time
  - **E** = Eye deviation
  - **D** = Denial/neglect

RE-ALIGNMENT OF FRACTURE

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• Grossly angulated long bone fracture	

Notes

- Use unidirectional traction. Check for distal pulses prior to realignment and every 15 min thereafter.

REMOVAL OF IMPALED OBJECT OBSTRUCTING AIRWAY

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• Impaled object in face, cheek or neck causing total airway obstruction	

Notes
- Impaled objects not causing total airway obstruction should be immobilized and left in place.

SPINAL MOTION RESTRICTION

EMT	AEMT	PARAMEDIC

Indications	Contraindications

• Spinal pain of possible traumatic cause
• MOI suggests potential spinal injury consider:
  • ≥65 years and older
  • Acute neurological deficit following injury
  • Penetrating trauma with neurological deficit
• Victims of penetrating trauma (stabbing, gunshot wound) to the head, neck, and/or torso should not receive spinal stabilization unless there is one or more of the following:
  • Neurologic deficit
  • Priapism
  • Anatomic deformity to the spine secondary to injury	

Notes
- Pregnant patients (>6 mo) tilt 30° left lateral decubitus.
- See S-104 Attachment for **"Spinal Motion Restriction Algorithm"**
- **The Acronym "NSAIDS" should be used to remember the steps in algorithm**:
  - N = Neurologic exam
  - **S** = Sixty-five
  - **A** = Altered (including language barrier)
  - **I** = Intoxication
  - **D** = Distracting injury
  - **S** = Spine exam
- Spinal Motion Restriction is **not** required if **ALL the following are present and documented**:
  - No neuro complaints/ no abnormal exam
  - Not altered / no language barrier
  - Not intoxicated by drugs and/or alcohol
  - No significant competing, distracting pain
  - No spine pain or tenderness

- Spinal Motion Restriction:
  - The use of an appropriately sized cervical collar on a stretcher while limiting the movement of the spine and maintaining “neutral” in-line position.
  - Backboards should be limited to extrication whenever possible. In-line stabilization should be maintained with the patient supine and neutral on the gurney during transport.
  - If a patient is not able to tolerate the supine position during transport, document the reason and communicate to receiving hospital staff.
- Sports Injury Patient:
  - If a patient is helmeted and/or shoulder padded, patient helmet and pads should be removed while on scene.
- **Document a neurological examination including**:
  - Test of sensation and abnormal sensation (paresthesia) in all 4 extremities
  - Test of motor skills in all 4 extremities with active movements by the patient (avoid just reflexive movements like hand grasp) to include:
    - Wrist/finger extension and flexion
    - Foot plantar and dorsiflexion
- Pediatric Patient:
  - **N** = No altered LOC
  - **E** = Evidence of obvious injury absent
  - **C** = Complete spontaneous ROM without pain
  - **K** = Kinematic (mechanism) negative
- Pediatrics Patients and Car Seats:
  - **Infants restrained in a rear-facing car seat may** be immobilized and extricated in the car seat. The child may remain in the car seat if the immobilization is secure and his/her condition allows (no signs of respiratory distress or shock).
  - **Children restrained in a car seat** (with a high back) may be immobilized and extricated in the car seat; however, once removed from the vehicle, the child should be placed in spinal immobilization.
  - **Children restrained in a booster seat** (without a back) need to be extricated and immobilized following standard spinal immobilization procedures.

SALINE LOCK

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• Used to provide IV access in patients who do not require continuous infusion of intravenous solutions	

Notes
- Patient presentations which may require IV fluid replacement.

TOURNIQUET

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• Severely injured extremity when direct pressure or pressure dressing fails to control life-threatening hemorrhage	

Notes
- In MCI, direct pressure not required prior to tourniquet application.
- Tourniquet must be tight enough to occlude arterial flow/distal pulses. Assess and document distal pulses, time placed, and any subsequent adjustments.

VALSALVA MANEUVER

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• Stable SVT	

Notes
- Most effective with adequate BP.
- D/C after 5-10 sec if no conversion.

VIDEO LARYNGOSCOPE

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• To assist with endotracheal intubation using video laryngoscopy	

Notes
- Optional inventory item (recording capabilities preferred).
- See Intubation ET for comments.

VASCULAR ACCESS – EXTERNAL JUGULAR

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• When unable to establish other peripheral IV and IV is needed for definitive therapy ONLY	

VASCULAR ACCESS – EXTREMITY

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• Whenever an IV line is needed or anticipated for definitive therapy	

Notes
- Lower extremities remain standing order in the pediatric patient.

VASCULAR ACCESS – INDWELLING DEVICES

EMT	AEMT	PARAMEDIC

Indications
- Primary access site for patients with indwelling catheters if needed for definitive therapy

Contraindications
- Devices without external port (e.g., port-a-cath)

Notes
- Indwelling device contains concentrated dose of heparin. Aspirate 5 mL **prior** to infusion.
- Clean site for minimum of 15 seconds prior to accessing.
- Infuse at a rate to support continuous flow and prevent backflow into IV line.
- Needleless systems may require adapters.
- Examples include Groshong, Hickman, and PICC lines.

Figure 1. PICC Line

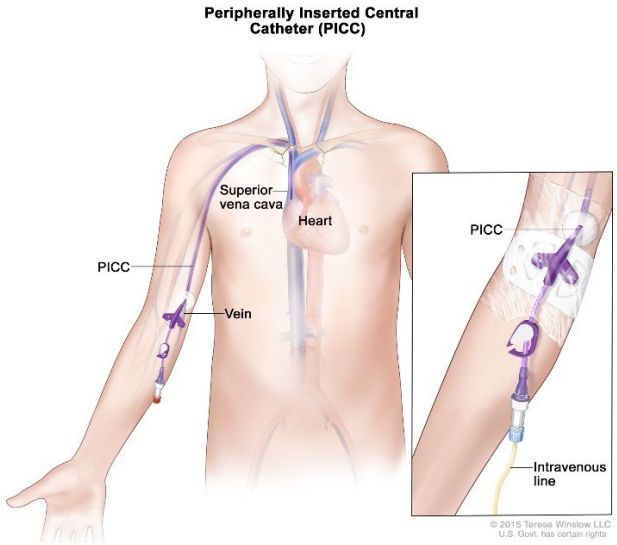
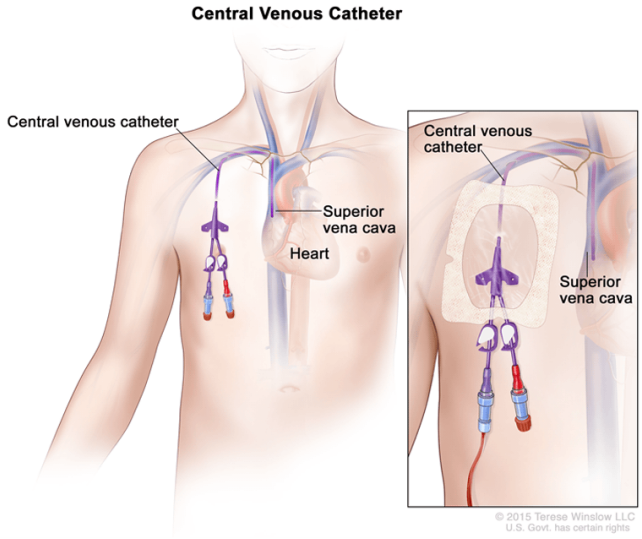


Figure 2. Tunneling Catheter (Groshong, Hickman)



VASCULAR ACCESS – INTRAOSSEOUS

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• Fluid/medication administration in patient when needed for definitive therapy and unable to establish venous access • Pediatric patient: unconscious	• Tibial fracture • Vascular disruption • Prior attempt to place in target bone • Humeral fracture (for humeral placement) • Local infection at insertion site

Notes

- AEMT: Authorized to establish and maintain IO access in a pediatric patient only.
- Splint extremity after placement.
- Observe carefully for signs of extravasation.
- Do not infuse into fracture site.
- Attempts to initiate tibial IO should be the priority when peripheral access is unavailable; however humeral IO insertion may be utilized when unable to access other sites.
- Avoid placement if potential fracture is on target bone.
- In conscious adult patients, slowly infuse lidocaine 40 mg IO prior to fluid/medication administration.

VASCULAR ACCESS – PERCUTANEOUS DIALYSIS CATHETER ACCESS (VASCATH)

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• If unable to gain other IV access and for immediate life threat only	

Notes

- Dialysis catheter contains concentrated dose of heparin. Aspirate 5 mL **prior** to infusion.
- Infuse at a rate to support continuous flow and prevent backflow into IV line.
- Needleless systems may require adapters.
- Annual training required.

VASCULAR ACCESS – AV SHUNT / GRAFT (DIALYSIS)

EMT	AEMT	PARAMEDIC

Indications	Contraindications
• If unable to gain other IV access and for immediate life threat only	

Notes

- Prior to access, check site for bruits and thrills.
- Access fistula on venous side (weaker thrill). Inflate BP cuff around IV bag to just above patient's systolic BP to maintain flow of IV. If unsuccessful, hold direct pressure over site for 10 min to stop bleeding.
- Do not apply pressure dressing.