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SKILL	EMS CLINICIAN	INDICATION	CONTRAINDICATION	COMMENTS
Bougie	EMT AEMT Paramedic	Assist with intubations		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	Suspected or known carbon monoxide exposure	None	Consider transport to facility with hyperbaric chamber for suspected carbon monoxide poisoning in the unconscious or pregnant patient.
Synchronized cardioversion	EMT AEMT Paramedic	Unstable VT Unstable SVT Unstable Atrial Fibrillation/Flutter with HR ≥180	Pediatric: If defibrillator unable to deliver <5 J or biphasic equivalent	Remove chest transdermal medication patches prior to cardioversion.
Chest seal	EMT AEMT Paramedic	Occlusive dressing designed for treating open chest wound	None	
CPAP	EMT AEMT Paramedic	Respiratory Distress: Suspected CHF/ cardiac origin Respiratory Distress: Suspected 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	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

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Manual defibrillation	EMT AEMT Paramedic	VT (pulseless) VF	None	Remove chest transdermal medication patches prior to defibrillation.
EKG monitoring	EMT AEMT Paramedic	Any situation where there is a potential for cardiac dysrhythmia	None	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 EKG	EMT AEMT Paramedic	Chest pain and/or Signs and symptoms suggestive of myocardial infarction Suspected hyperkalemia ROSC after cardiac arrest To identify a rhythm	None	Transmit 12-lead EKGs to receiving hospital. If STEMI suspected, immediately notify BH, transmit 12-lead EKG to appropriate STEMI receiving center and transport. Report LBBB, RBBB, or poor-quality EKG for consideration of a false positive reading STEMI. Repeat 12-lead EKG after arrhythmia conversion or any change in patient condition. Do not delay transport for a repeat 12-lead EKG. Attach EKG(s) or printout photo(s) to PCR. Document findings on the PCR and leave EKG printout with patient. EMT/AEMT: May assist with placement of 12-lead EKG leads.
End tidal CO_2 Detection Device (Qualitative)	EMT AEMT Paramedic	All intubated patients <15 kg - unless quantitative end tidal CO_2 available for patient <15 kg.	None	Continuous monitoring after ET/PAA insertion required.
End tidal CO_2 Detection Device – Capnography (Quantitative)	EMT AEMT Paramedic	All intubated patients Respiratory distress or cardiovascular impairment	None	Continuous monitoring after ET/PAA insertion required. Use early in cardiac arrest.

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End tidal CO_2 Detection Device – Capnography (Quantitative) (continued)		Trauma		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	Unstable bradycardia unresponsive to Atropine	None	Document rate setting, milliamps and capture External cardiac pacing: • Begin at rate 60/min • Dial up until capture occurs, usually between 50 and 100 mA • Increase by a small amount, usually about 10%, for ongoing pacing.
Glucose monitoring	EMT [L] AEMT Paramedic	Hypoglycemia (suspected) Hyperglycemia Altered neurologic function	None	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	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.	Bleeding controlled with direct pressure with standard gauze.	Should be applied with minimum 3 minutes of direct pressure.
Intranasal (IN)	EMT [L] AEMT Paramedic	When IN route indicated	None	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.
Injection (IM)	EMT [L] AEMT Paramedic	When IM route indicated	None	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)

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Injection (IV)	EMT AEMT Paramedic	When IV route indicated	None	
Intubation: ET/Stomal	EMT AEMT Paramedic	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.	Suspected opioid OD prior to naloxone Able to adequately ventilate with BVM Gag reflex present Infants and pediatric patients <15 years of age that fit on the LBRT	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** **L**ung Sounds **E**tCO_2 **A**bsent Abdominal Sounds **D**epth **S**ize **D**ocument presence of $EtCO_2$ waveform and $EtCO_2$ numeric value at Transfer of Care **Establishment of EtCO2 prior to intubation:** The presence of $EtCO_2$ greater than zero is required prior to ET tube/PAA placement. **Exception to the mandatory use of $EtCO_2$ prior to intubation with ET tube/PAA:** - When the patient presents with intractable vomiting or airway bleeding, initial airway management should be focused on clearing of the airway with positioning of the patient (i.e., logrolling), and suctioning of the mouth and oropharynx. - If the airway assessment determines that it is still necessary to intubate the patient after clearing the airway, an ET tube/PAA may be inserted prior to obtaining $EtCO_2$ readings to secure airway. - Immediately following insertion of the advanced airway, persistent $EtCO_2$ waveform and reading (other than zero) must be maintained or the ET tube/PAA must be removed.

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Intubation: ET/Stomal (continued)				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. When moving an intubated patient, apply C-collar prior to moving to minimize head movement and potential ET dislodgement.

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SKILL	EMS CLINICIAN	INDICATION	CONTRAINDICATION	COMMENTS
Intubation: Perilaryngeal airway adjuncts • Supraglottic airway (i-gel) • Retroglottic airway (King Airway)	EMT AEMT Paramedic	Apnea or ineffective respirations for unconscious patient or decreasing LOC	Gag reflex present For King Airway, patient <4 feet tall Ingestion of caustic substances Known esophageal disease Laryngectomy/stoma Suspected opioid OD prior to naloxone Able to adequately ventilate with BVM Infants and pediatric patients <15 years of age that fit on the LBRT	Extubate if placement issue. <u>i-gel:</u> 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 <u>King Airway:</u> Use Size 3 (yellow) for patients 4 feet – 5 feet tall Use Size 4 (red) for patients 5 feet – 6 feet tall Use Size 5 (purple) for patients ≥6 feet tall Document and report **LEADSD:** **L**ung Sounds **E**$EtCO_2$ **A**bsent Abdominal Sounds **D**epth **S**ize **D**ocument presence of $EtCO_2$ waveform and $EtCO_2$ numeric value at Transfer of Care **Establishment of EtCO2 prior to intubation:** The presence of $EtCO_2$ greater than zero is required prior to ET tube/PAA placement. **Exception to the mandatory use of $EtCO_2$ prior to intubation with ET tube/PAA:** - When the patient presents with intractable vomiting or airway bleeding, initial airway management should be focused on clearing of the airway with positioning of the patient (i.e., logrolling), and suctioning of the mouth and oropharynx. - If the airway assessment determines that it is still necessary to intubate the patient after clearing the airway, an ET tube/PAA may be inserted prior to obtaining $EtCO_2$ readings to secure airway. - Immediately following insertion of the advanced airway, persistent $EtCO_2$ waveform and reading (other than zero) must be maintained or the ET tube/PAA must be removed.

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				If $EtCO_2$ drops to zero and does not increase with immediate troubleshooting, extubate, and manually ventilate the patient via BVM.
Intubation: Perilaryngeal airway adjuncts • Supraglottic airway (i-gel) • Retroglottic airway (King Airway) (continued)				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. When moving an intubated patient, apply C-collar prior to moving to minimize head movement and potential ET dislodgement.
Length Based Resuscitation Tape (LBRT)	EMT AEMT Paramedic	Determination of length for calculation of pediatric drug dosages and equipment sizes.	None	Base dosage calculation on length of child. Refer to pediatric chart for dosages (P-117). Children ≥37 kg use adult medication dosages (using pediatric protocols) regardless of age or height.
Magill forceps	EMT AEMT Paramedic	Airway obstruction from foreign body with decreasing LOC/unconscious	None	
Nasogastric / Orogastric tube	EMT AEMT Paramedic	Gastric distention interfering w/ ventilations	Severe facial trauma Known esophageal disease	If NG tube needed in a patient with a King Airway/i-gel, insertion should be via the suction/gastric port, if available.

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Nebulizer, oxygen powered	EMT AEMT Paramedic	Respiratory distress with: • Bronchospasm • Wheezing • Croup-like cough • Stridor	None	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	Severe respiratory distress with diminished or absent breath sounds (unilaterally or bilaterally), and SBP <90 mmHg, and suspected pneumothorax (Adult) Severe respiratory distress with diminished or absent breath sounds (unilaterally or bilaterally), and hypotensive for age, and suspected pneumothorax (Pediatric)	None	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	Difficult deliveries	None	Nuchal cord (cord wrapped around neck): • Slip cord over the head and off neck. • Clamp and cut cord, if wrapped too tightly. 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.

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Positive end-expiratory pressure (PEEP) valve	EMT AEMT Paramedic	BVM ventilation	Adult: CPR SBP <90 mmHg Possible pneumothorax Pediatric: CPR Hypotensive for age Possible pneumothorax	Adult: PEEP should be increased slowly by 2-3 cmH20 and titrated from 5 cmH20 (initial setting) to a max of 15 cmH20 closely monitoring response and vital sign changes. Pediatric: PEEP should be increased slowly by 2-3 cmH2o and titrated from 5 cmH2o (initial setting) to a max of 10 cmH20 closely monitoring response and vital sign changes. EMT/AEMT: May perform BVM ventilations with PEEP valve in place, but may not adjust settings.
Prehospital pain scale	EMT AEMT Paramedic	All patients with a traumatic or pain-associated chief complaint	None	Assess for presence and intensity of pain.
Pulse oximetry	EMT AEMT Paramedic	Assess oxygenation	None	Obtain room air saturation prior to O_2 administration, if possible.
Prehospital stroke screening and severity scales	EMT AEMT Paramedic	All patients with suspected Stroke/TIA	None	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:

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				F = Facial palsy **A** = Arm weakness **S** = Speech changes **T** = Time **E** = Eye deviation **D** = Denial/neglect
Re-alignment of fracture	EMT AEMT Paramedic	Grossly angulated long bone fracture	None	Use unidirectional traction. Check for distal pulses prior to realignment and every 15 min thereafter.
Removal of impaled object obstructing airway	EMT AEMT Paramedic	Impaled object in face, cheek or neck causing total airway obstruction	None	Impaled objects not causing total airway obstruction should be immobilized and left in place.
Spinal motion restriction	EMT AEMT Paramedic	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	None	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 of the following are present and documented**: 1. No neuro complaints/ no abnormal exam 2. Not altered / no language barrier 3. Not intoxicated by drugs and/or alcohol 4. No significant competing, distracting pain 5. 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.

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				-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
Spinal Motion Restriction (continued)				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.

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Saline lock	EMT AEMT Paramedic	Used to provide IV access in patients who do not require continuous infusion of intravenous solutions	None	Patient presentations which may require IV fluid replacement.
Tourniquet	EMT AEMT Paramedic	Severely injured extremity when direct pressure or pressure dressing fails to control life-threatening hemorrhage	None	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	Stable SVT	None	Most effective with adequate BP. D/C after 5-10 sec if no conversion.
Video laryngoscope	EMT AEMT Paramedic	To assist with endotracheal intubation using video laryngoscopy	None	Optional inventory item (recording capabilities preferred). See Intubation ET for comments.
VASCULAR ACCESS External jugular	EMT AEMT Paramedic	When unable to establish other peripheral IV and IV is needed for definitive therapy ONLY	None	
Extremity	EMT AEMT Paramedic	Whenever IV line is needed or anticipated for definitive therapy	None	Lower extremities remain standing order in the pediatric patient.
Indwelling Devices	EMT AEMT Paramedic	Primary access site for patients with indwelling catheters if needed for definitive therapy	Devices without external port (i.e., port-a-cath)	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 adaptor. Examples include Groshong, Hickman, and PICC lines.

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Intraosseous	EMT AEMT Paramedic	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	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.
Percutaneous Dialysis Catheter Access (e.g., Vascath)	EMT AEMT Paramedic	If unable to gain other IV access and for immediate life threat only	None	Vascath contains concentrated dose of heparin which must be aspirated PRIOR to infusion. Infuse at a rate to support continuous flow and prevent backflow into IV line. Needleless systems may require adaptor. Annual training required.
Shunt/graft – AV (Dialysis)	EMT AEMT Paramedic	If unable to gain other IV access and for immediate life threat only	None	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.

EMT/AEMT/Paramedics or supervised EMT/AEMT/Paramedic students are authorized to perform these skills 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.