

**COUNTY OF SAN DIEGO EMERGENCY MEDICAL SERVICES
 POLICY/PROCEDURE/PROTOCOL
 SUBJECT: TREATMENT PROTOCOL – SKILLS LIST**

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SKILL	INDICATION	CONTRAINDICATION	COMMENTS
Bougie	Assist with intubations		Should be used for routine intubations. After attempting to view with laryngoscope, may use to assist ET placement if unable to fully visualize vocal cords.
Carboxyhemoglobin monitor	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.
Cardioversion: synchronized	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	Occlusive dressing designed for treating open chest wound	None	
CPAP	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.
Defibrillation	VT (pulseless) VF	None	Remove chest transdermal medication patches prior to defibrillation.

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SKILL	INDICATION	CONTRAINDICATION	COMMENTS
EKG monitoring	Any situation where there is a potential for cardiac dysrhythmia	None	<p>Apply monitor before moving patient with chest pain, syncope, or in arrest.</p> <p>Continuous monitoring for unstable/STEMI/CPR patients required.</p> <p>Document findings on PCR and leave strip with patient.</p>
12-lead EKG	<p>Chest pain and/or Signs and symptoms suggestive of myocardial infarction</p> <p>Suspected hyperkalemia</p> <p>ROSC after cardiac arrest</p> <p>To identify a rhythm</p>	None	<p>Transmit 12-lead EKGs to receiving hospital.</p> <p>If STEMI, notify BH immediately and transport to appropriate STEMI center.</p> <p>Report LBBB, RBBB or poor-quality EKG for consideration of a false positive reading STEMI.</p> <p>Repeat the 12 lead EKG if patient's condition worsens or following a successful arrhythmia conversion. Do not delay transport to repeat.</p> <p>Attach EKG(s) or printout photo(s) to PCR.</p> <p>Document findings on the PCR and leave EKG printout with patient.</p>
End tidal CO2 Detection Device (Qualitative)	All intubated patients <15 kgs - unless quantitative end tidal CO ₂ available for patient <15 kgs	None	Continuous monitoring after ET/ETAD/PAA insertion required.
End tidal CO2 Detection Device – Capnography (Quantitative)	<p>All intubated patients</p> <p>Respiratory distress or cardiovascular impairment</p> <p>Trauma</p>	None	<p>Continuous monitoring after ET/ETAD/PAA insertion required.</p> <p>Use early in cardiac arrest.</p> <p>For EtCO₂ > 0 mmHg, may place ET/PAA without interrupting compressions.</p> <p>If EtCO₂ rises rapidly during CPR, pause CPR and check for pulse.</p> <p>If quantitative is unavailable due to special circumstances, then use qualitative (optional equipment).</p>
External cardiac pacemaker	Unstable bradycardia unresponsive to atropine	None	<p>Document rate setting, milliamps and capture.</p> <p>External cardiac pacing:</p> <ul style="list-style-type: none"> • 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.

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SKILL	INDICATION	CONTRAINDICATION	COMMENTS
Glucose monitoring	Hypoglycemia (suspected) Hyperglycemia Altered neurologic function	None	Repeat BS not indicated en route if patient is improving. Repeat BS must be done if patient left on scene and initial was abnormal (AMA/Release).
Hemostatic gauze	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)	When IN route indicated	None	Volumes over 1 mL per nostril are likely too large and may result in runoff out of the nostril.
Injection (IM)	When IM route indicated	None	Pediatric preferred site: Vastus lateralis patients less than 3 years of age. (Maximum of 2 mL volume) Adults preferred site: Deltoid in patients greater than or equal to 3 years of age. (Maximum of 2 mL volume). Secondary site is vastus lateralis (max of 5 mL volume).
Injection (IV)	When IV route indicated	None	

SKILL	INDICATION	CONTRAINDICATION	COMMENTS
Intubation: ET/Stomal	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	3 attempts per patient SO. Additional attempts BHPO . An ET attempt is defined as an attempt to pass ET (not including visualizations and suctioning). Document and report LEADSD : Lung Sounds EtCO2 Absent Abdominal Sounds Depth Size Document presence of EtCO2 waveform and EtCO2 numeric value at Transfer of Care Establishment of EtCO2 prior to intubation: The presence of EtCO2 greater than zero is required prior to ET tube/ETAD/PAA placement. Exception to the mandatory use of EtCO2 prior to intubation with ET tube/ETAD/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 paramedic assessment determines that it is still necessary to intubate the patient after clearing the airway, an ET tube/ETAD/PAA may be inserted prior to obtaining EtCO2 readings in order to secure airway. -Immediately following insertion of the advanced airway, persistent EtCO2 waveform and reading (other than zero) must be maintained or the ET tube/ETAD must be removed. If EtCO2 drops to zero and does not increase with immediate troubleshooting, extubate, and manually ventilate the patient via BVM. Continuous capnography monitoring after ET/ETAD/PAA insertion is required. Report and document at a minimum: <ul style="list-style-type: none"> • 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.

SKILL	INDICATION	CONTRAINDICATION	COMMENTS
Intubation: Perilaryngeal airway adjuncts <ul style="list-style-type: none"> • ETAD/Combitube • Laryngeal-Tracheal/King Airway 	Apnea or ineffective respirations for unconscious patient or decreasing LOC	Gag reflex present 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 SO if placement issue, otherwise per BHO . <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 <u>ETAD:</u> Use Small Adult size tube in all patients under 6 feet. Report and document ventilation port number if using an ETAD. Document and report LEADSD: Lung Sounds EtCO2 Absent Abdominal Sounds Depth Size Document presence of EtCO2 waveform and EtCO2 numeric value at Transfer of Care Establishment of EtCO2 prior to intubation: The presence of EtCO2 greater than zero is required prior to ET tube/ETAD/PAA placement. Exception to the mandatory use of EtCO2 prior to intubation with ET tube/ETAD/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 paramedic assessment determines that it is still necessary to intubate the patient after clearing the airway, an ET tube/ETAD/PAA may be inserted prior to obtaining EtCO2 readings in order to secure airway. -Immediately following insertion of the advanced airway, persistent EtCO2 waveform and reading (other than zero) must be maintained or the ET tube/ETAD must be removed. If EtCO2 drops to zero and does not increase with immediate troubleshooting, extubate, and manually ventilate the patient via BVM.

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SKILL	INDICATION	CONTRAINDICATION	COMMENTS
Intubation: Perilaryngeal airway adjuncts • ETAD/Combitube • Laryngeal- Tracheal/King Airway (continued)			Continuous capnography monitoring after ET/ETAD/PAA insertion is required. Report and document at a minimum: <ul style="list-style-type: none"> • 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)	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	Airway obstruction from foreign body with decreasing LOC/unconscious	None	
Nasogastric / Orogastric tube	Gastric distention interfering w/ ventilations	Severe facial trauma Known esophageal disease	If NG tube needed in a patient with a King Airway, insertion should be via the suction port, if available.
Nebulizer, oxygen powered	Respiratory distress with: <ul style="list-style-type: none"> • 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 albuterol MDI, if available. Consider applying HEPA filters with aerosol-generating procedures for in-line nebulizer treatments.

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SKILL	INDICATION	CONTRAINDICATION	COMMENTS
Needle thoracostomy	<p>Severe respiratory distress with unilateral diminished breath sounds and SBP <90 mmHg (Adult)</p> <p>Severe respiratory distress with unilateral diminished breath sounds with hypotension for age (Pediatric)</p>	None	<p>Use 14 g, 3.25-inch IV catheter.</p> <p>Insert into 2nd/3rd ICS in mid-clavicular line on the involved side.</p> <p>OR</p> <p>Insert catheter into anterior axillary line 4th/5th ICS on involved side.</p> <p>Tape catheter securely to chest wall and leave open to air.</p>
Obstetrical maneuvers	Difficult deliveries	None	<p>Nuchal cord (cord wrapped around neck):</p> <ul style="list-style-type: none"> • Slip cord over the head and off neck • Clamp and cut cord, if wrapped too tightly <p>Prolapsed cord:</p> <ul style="list-style-type: none"> • 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 <p>Shoulder dystocia:</p> <ul style="list-style-type: none"> • Hyperflex mother's knees to her chest
Prehospital pain scale	All patients with a traumatic or pain-associated chief complaint	None	Assess for presence of pain and intensity.
Prehospital stroke scale	All patients with suspected Stroke/TIA	None	<p>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.</p> <p>Use BE FAST Prehospital Stroke Scale in assessment of possible TIA or stroke patients:</p> <p>B = Balance: Unsteadiness, ataxia</p> <p>E = Eyes: Blurred/double or loss of vision, asymmetric pupils</p> <p>F = Face: Unilateral face droop</p> <p>A = Arms and/or legs: Unilateral weakness exhibited by a drift or drop, numbness/tingling</p> <p>S = Speech: Slurred, inability to find words, absent</p> <p>T = Time: Accurate Last Known Well time</p> <p>Get specific Last Known Well time in military time (hours: minutes).</p>

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SKILL	INDICATION	CONTRAINDICATION	COMMENTS
Pulse oximetry	Assess oxygenation	None	Obtain room air saturation prior to O ₂ administration, if possible.
Re-alignment of fracture	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	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.

SKILL	INDICATION	CONTRAINDICATION	COMMENTS
Spinal motion restriction	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: <ul style="list-style-type: none"> • Neurologic deficit • Priapism • Anatomic deformity to the spine secondary to injury 	None	Pregnant patients (>6 mo) tilt 30 degree left lateral decubitus. See S-104 Attachment for “ Spinal Motion Restriction Algorithm ”. The mnemonic “NSAIDS” should be used to remember the steps in the 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: <ol style="list-style-type: none"> 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. -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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> - Wrist/finger extension and flexion - Foot plantar and dorsiflexion

SKILL	INDICATION	CONTRAINDICATION	COMMENTS
Spinal Motion Restriction (continued)			<p><u>Pediatric Patient</u> N=no altered LOC E=evidence of obvious injury absent C=complete spontaneous ROM without pain K=kinematic (mechanism) negative</p> <p><u>Pediatrics Patients and Car Seats:</u> 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)</p> <p>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.</p> <p>Children restrained in a booster seat (without a back) need to be extricated and immobilized following standard spinal immobilization procedures</p>
Saline lock	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	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	Stable SVT	None	Most effective with adequate BP. D/C after 5-10 sec if no conversion.

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SKILL	INDICATION	CONTRAINDICATION	COMMENTS
Video laryngoscope	To assist with endotracheal intubation using video laryngoscopy	None	Optional inventory item. See Intubation ET for comments.
VASCULAR ACCESS External jugular	When unable to establish other peripheral IV and IV is needed for definitive therapy ONLY	None	
Extremity	Whenever IV line is needed or anticipated for definitive therapy. BHPO if other than upper extremities or external jugular.	None	Lower extremities remain SO in the pediatric patient.
Indwelling Devices	Primary access site for patients with indwelling catheters if needed for definitive therapy	Devices without external port	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, PICC lines.

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SKILL	INDICATION	CONTRAINDICATION	COMMENTS
Intraosseous	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)	If unable to gain other IV access and no other medication delivery route available for immediate definitive therapy only BHPO	None	Vas Cath 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)	If unable to gain other IV access and no other medication delivery route available for immediate definitive therapy only BHPO	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.