The following protocols define basic life support (BLS) and advanced life support (ALS) treatment and disposition standards for San Diego County.

1. Treatments are listed in sequential order for each condition. See Skills List (S-104) for skills criteria.

2. All treatments may be performed by the EMT (Emergency Medical Technician), AEMT (Advanced Emergency Medical Technician), and/or Paramedic via standing orders (SO) except for those stating, “Base Hospital Order (BHO)” or “Base Hospital Physician Order (BHPO)” or a variation from standard County of San Diego ALS protocols as ordered by the Base Hospital Physician (P-408).

All treatments requiring an order are at the discretion of the Base Hospital providing medical direction. EMTs, AEMTs, and Paramedics are authorized to implement standing orders without Base Hospital contact. Standing orders may be continued even after Base Hospital contact unless the Base Hospital directs otherwise.

3. EMT skills which took effect July 1, 2017 (including finger-stick blood glucose testing, intranasal naloxone administration, and epinephrine auto-injector assistance) may only be performed when a provider is on-duty operating as part of the organized EMS system, and in the prehospital setting including during interfacility transports.

4. Per Title 22, Chapter 1.5, § 100019, public safety personnel may administer intranasal naloxone when authorized by the County of San Diego EMS Medical Director.

5. BHPO: Mobile Intensive Care Nurses (MICNs) may relay BHPOs.

   See Physician on Scene (P-403) for situations with a physician on scene.

6. Abbreviations and definition of terms can be found in the Glossary of Terms (S-101) and List of Abbreviations (S-102).

7. All medications ordered are to be administered per protocols unless there is a contraindication, such as an allergy.

8. If there is a change in patient condition, a different protocol may be applied.

9. Personal protective equipment (PPE) must be used on all patient contacts per Guidelines for the Prevention of Transmission of Contagions and Contaminants (S-009).
BE FAST - Prehospital Stroke Scale in assessment of possible TIA or stroke patients

- **B** = Balance: Unsteadiness, ataxia
- **E** = Eyes: Blurred/double or loss of vision, asymmetric pupils
- **F** = Face: Unilateral face droop
- **A** = Arms and/or legs: Unilateral weakness exhibited by a drift or drop, numbness/tingling
- **S** = Speech: Slurred, inability to find words, absent
- **T** = Time: Accurate Last Known Well time

**Brief, Resolved, Unexplained Event (BRUE):** An episode involving an infant younger than 12 months where an observer reports a sudden, brief, yet resolved episode of one or more of the following:

1. Absent, decreased, or irregular breathing
2. Color change (cyanosis or pallor)
3. Marked change in muscle tone (hypertonia or hypotonia)
4. Altered level of responsiveness

**Definitive Therapy:** Immediate or anticipated immediate need for administration of a fluid bolus or medications.

**End-Tidal CO₂ (EtCO₂) (quantitative capnography):** Quantitative capnometer to continuously monitor end-tidal CO₂ is mandatory for use in the intubated patient. See Skills List (S-104) for exceptions.

**LEADSD:** Acronym for the steps to be performed in the assessment and documentation of endotracheal intubation attempts:

1. Lung Sounds
2. End-Tidal CO₂ Detection Device
3. Absence of Abdominal Sounds
4. Depth
5. Size
6. Documentation

**Nebulizer:** O₂-powered delivery system for administration of normal saline or medications.

**Opioid:** Any derivative, natural or synthetic, of opium, morphine or any substance that has effects on opioid receptors (e.g., analgesia, somnolence, respiratory depression).

**Opioid-Dependent Pain Management Patient:** An individual who is taking prescribed opioids for chronic pain management, particularly those with opioid infusion devices.

**Opioid Overdose (Symptomatic):** Decreased level of consciousness and/or respiratory depression (e.g., respiratory rate of <12 or EtCO₂ ≥ 40 mmHg).
San Diego County Emergency Medical Services Office
Policy / Procedure / Protocol

Pediatric Patient: Children known or appearing to be 14 years or younger.
A pediatric trauma patient is determined by age, regardless of weight.

- Neonate: From birth to 30 days.
- Infant: One month to one year.

Periaryngeal Airway Adjunct (PAA) Options

1. Esophageal-Tracheal Airway Device (ETAD): The “Combitube” is the only such airway approved for prehospital use in San Diego County.

2. Laryngeal-Tracheal (LT) airway: The “King Airway” is the only such airway approved for prehospital use in San Diego County.

Unstable
A patient who meets the following criteria:

1. ≥15 years (known or apparent age)
   SBP <90 mmHg and exhibiting any of the following signs/symptoms of inadequate perfusion, e.g.,
   - Altered mental status (decreased LOC, confusion, agitation)
   - Pallor
   - Diaphoresis
   - Significant chest pain of suspected cardiac origin
   - Severe dyspnea

2. <14 years (known or apparent age)
   Exhibiting any of the following signs/symptoms of inadequate perfusion, e.g.,
   - Altered mental status (decreased LOC, confusion, agitation)
   - Pallor, mottling, or cyanosis
   - Diaphoresis
   - Difference in peripheral vs. central pulses
   - Delayed capillary refill
   - Hypotension by age
     - <1 month: SBP <60 mmHg
     - 1 month – 1 year: SBP <70 mmHg
     - 1 year – 10 years: SBP <70 mm Hg + (2x age in years)
     - ≥10 years: SBP <90 mmHg
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA</td>
<td>Abdominal Aortic Aneurysm</td>
</tr>
<tr>
<td>AHA</td>
<td>American Heart Association</td>
</tr>
<tr>
<td>AED</td>
<td>Automated External Defibrillator</td>
</tr>
<tr>
<td>AEMT</td>
<td>Advanced Emergency Medical Technician</td>
</tr>
<tr>
<td>AICD</td>
<td>Automatic Implanted Cardiac Defibrillator</td>
</tr>
<tr>
<td>ALS</td>
<td>Advanced Life Support</td>
</tr>
<tr>
<td>AV</td>
<td>Arteriovenous (Fistula)</td>
</tr>
<tr>
<td>BEF</td>
<td>Basic Emergency Facility</td>
</tr>
<tr>
<td>BH</td>
<td>Base Hospital</td>
</tr>
<tr>
<td>BHO</td>
<td>Base Hospital Order</td>
</tr>
<tr>
<td>BHPO</td>
<td>Base Hospital Physician Order</td>
</tr>
<tr>
<td>BLS</td>
<td>Basic Life Support</td>
</tr>
<tr>
<td>BP</td>
<td>Blood Pressure</td>
</tr>
<tr>
<td>BPM</td>
<td>Beats Per Minute</td>
</tr>
<tr>
<td>BRUE</td>
<td>Brief, Resolved, Unexplained Event</td>
</tr>
<tr>
<td>BS</td>
<td>Blood Sugar (Blood Glucose)</td>
</tr>
<tr>
<td>BSA</td>
<td>Body Surface Area</td>
</tr>
<tr>
<td>BVM</td>
<td>Bag-Valve-Mask</td>
</tr>
<tr>
<td>CaCl₂</td>
<td>Calcium Chloride</td>
</tr>
<tr>
<td>C/C</td>
<td>Chief Complaint</td>
</tr>
<tr>
<td>CHF</td>
<td>Congestive Heart Failure</td>
</tr>
<tr>
<td>CO</td>
<td>Carbon Monoxide</td>
</tr>
<tr>
<td>CO₂</td>
<td>Carbon Dioxide</td>
</tr>
<tr>
<td>CPAP</td>
<td>Continuous Positive Airway Pressure</td>
</tr>
<tr>
<td>CPR</td>
<td>Cardiopulmonary Resuscitation</td>
</tr>
<tr>
<td>CVA</td>
<td>Cerebrovascular Accident</td>
</tr>
<tr>
<td>d/c</td>
<td>Discontinue</td>
</tr>
<tr>
<td>DCI</td>
<td>Decompression Illness</td>
</tr>
<tr>
<td>dL</td>
<td>Deciliter</td>
</tr>
<tr>
<td>D₁₀</td>
<td>10% Dextrose</td>
</tr>
<tr>
<td>D₅₀</td>
<td>50% Dextrose</td>
</tr>
<tr>
<td>EJ</td>
<td>External Jugular</td>
</tr>
<tr>
<td>EKG</td>
<td>Electrocardiogram</td>
</tr>
<tr>
<td>ePCR</td>
<td>Electronic Patient Care Record</td>
</tr>
<tr>
<td>EpiPen ®</td>
<td>Brand name for Epinephrine Auto-Injector</td>
</tr>
<tr>
<td>ET</td>
<td>Endotracheal Tube</td>
</tr>
<tr>
<td>ETAD</td>
<td>Esophageal Tracheal Airway Device</td>
</tr>
<tr>
<td>EtCO₂</td>
<td>End-Tidal CO₂</td>
</tr>
<tr>
<td>gm</td>
<td>Gram</td>
</tr>
<tr>
<td>GI</td>
<td>Gastrointestinal</td>
</tr>
<tr>
<td>GU</td>
<td>Genitourinary</td>
</tr>
<tr>
<td>HR</td>
<td>Heart Rate</td>
</tr>
<tr>
<td>ICS</td>
<td>Intercostal Space</td>
</tr>
<tr>
<td>IM</td>
<td>Intramuscular</td>
</tr>
<tr>
<td>IN</td>
<td>Intranasal</td>
</tr>
<tr>
<td>in</td>
<td>Inches</td>
</tr>
<tr>
<td>IO</td>
<td>Intraosseous</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Meaning</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>IV</td>
<td>Intravenous</td>
</tr>
<tr>
<td>J</td>
<td>Joule</td>
</tr>
<tr>
<td>kg</td>
<td>Kilogram</td>
</tr>
<tr>
<td>L</td>
<td>Liter</td>
</tr>
<tr>
<td>LBBB</td>
<td>Left Bundle Branch Block</td>
</tr>
<tr>
<td>LBRT</td>
<td>Length-Based Resuscitation Tape</td>
</tr>
<tr>
<td>LT Airway</td>
<td>Laryngeal-Tracheal Airway</td>
</tr>
<tr>
<td>LOC</td>
<td>Level of Consciousness or Loss of Consciousness</td>
</tr>
<tr>
<td>mA</td>
<td>Milliamperes</td>
</tr>
<tr>
<td>MAD</td>
<td>Mucosal Atomizer Device</td>
</tr>
<tr>
<td>max</td>
<td>Maximum</td>
</tr>
<tr>
<td>mcg</td>
<td>Microgram</td>
</tr>
<tr>
<td>MCI</td>
<td>Mass-Casualty Incident</td>
</tr>
<tr>
<td>MDI</td>
<td>Metered-Dose Inhaler</td>
</tr>
<tr>
<td>mEq</td>
<td>Milliequivalent</td>
</tr>
<tr>
<td>mg</td>
<td>Milligram</td>
</tr>
<tr>
<td>MICN</td>
<td>Mobile Intensive Care Nurse</td>
</tr>
<tr>
<td>min</td>
<td>Minute</td>
</tr>
<tr>
<td>mL</td>
<td>Milliliter</td>
</tr>
<tr>
<td>MOI</td>
<td>Mechanism of Injury</td>
</tr>
<tr>
<td>MPI</td>
<td>Multiple-Patient Incident</td>
</tr>
<tr>
<td>MR</td>
<td>May Repeat</td>
</tr>
<tr>
<td>MS</td>
<td>Morphine Sulfate</td>
</tr>
<tr>
<td>MTV</td>
<td>Major Trauma Victim</td>
</tr>
<tr>
<td>NaHCO₃</td>
<td>Sodium Bicarbonate</td>
</tr>
<tr>
<td>NC</td>
<td>Nasal Cannula</td>
</tr>
<tr>
<td>NG</td>
<td>Nasogastric</td>
</tr>
<tr>
<td>NPO</td>
<td>Nothing by Mouth (<em>Nil Per Os</em>)</td>
</tr>
<tr>
<td>NS</td>
<td>Normal Saline</td>
</tr>
<tr>
<td>NTG</td>
<td>Nitroglycerin</td>
</tr>
<tr>
<td>O₂</td>
<td>Oxygen</td>
</tr>
<tr>
<td>OD</td>
<td>Overdose</td>
</tr>
<tr>
<td>ODT</td>
<td>Oral Dissolving Tablet</td>
</tr>
<tr>
<td>OG</td>
<td>Orogastric</td>
</tr>
<tr>
<td>OPP</td>
<td>Organophosphate Poisoning</td>
</tr>
<tr>
<td>PAA</td>
<td>Perilaryngeal Airway Adjunct</td>
</tr>
<tr>
<td>PCR</td>
<td>Patient Care Record</td>
</tr>
<tr>
<td>PEA</td>
<td>Pulseless Electrical Activity</td>
</tr>
<tr>
<td>PO</td>
<td>By Mouth (<em>Per Os</em>)</td>
</tr>
<tr>
<td>POLST</td>
<td>Physician Orders for Life-Sustaining Treatment</td>
</tr>
<tr>
<td>PRN</td>
<td>As Needed (<em>Pro Re Nata</em>)</td>
</tr>
<tr>
<td>PVC</td>
<td>Premature Ventricular Complex</td>
</tr>
<tr>
<td>q</td>
<td>Every (<em>Quaque</em>)</td>
</tr>
<tr>
<td>RBBB</td>
<td>Right Bundle Branch Block</td>
</tr>
<tr>
<td>ROSC</td>
<td>Return of Spontaneous Circulation</td>
</tr>
<tr>
<td>SL</td>
<td>Sublingual</td>
</tr>
<tr>
<td>SMR</td>
<td>Spinal Motion Restriction</td>
</tr>
<tr>
<td>SO</td>
<td>Standing Order</td>
</tr>
<tr>
<td>SOB</td>
<td>Shortness of Breath</td>
</tr>
<tr>
<td>STEMI</td>
<td>ST-Elevation Myocardial Infarction</td>
</tr>
<tr>
<td>SVT</td>
<td>Supraventricular Tachycardia</td>
</tr>
<tr>
<td>TAH</td>
<td>Total Artificial Heart</td>
</tr>
<tr>
<td>TIA</td>
<td>Transient Ischemic Attack</td>
</tr>
<tr>
<td>TKO</td>
<td>To Keep Open</td>
</tr>
</tbody>
</table>

ABBREVIATION LIST

Protocol: S-102

7/1/2021

Disclaimer: Printed copies are for reference only. Please refer to the electronic copy for the latest version.
## ABBREVIATION LIST

<table>
<thead>
<tr>
<th>TOP</th>
<th>Topical</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOR</td>
<td>Termination of Resuscitation</td>
</tr>
<tr>
<td>VAD</td>
<td>Ventricular Assist Device</td>
</tr>
<tr>
<td>VF</td>
<td>Ventricular Fibrillation</td>
</tr>
<tr>
<td>VSM</td>
<td>Valsalva Maneuver</td>
</tr>
<tr>
<td>VT</td>
<td>Ventricular Tachycardia</td>
</tr>
<tr>
<td>?</td>
<td>Possible, Questionable, or Suspected</td>
</tr>
<tr>
<td>&lt;</td>
<td>Less Than</td>
</tr>
<tr>
<td>≥</td>
<td>Greater Than or Equal To</td>
</tr>
<tr>
<td>☀</td>
<td>Per Title 22, Chapter 1.5, § 100019, public safety personnel may administer when authorized by the County of San Diego EMS Medical Director.</td>
</tr>
</tbody>
</table>
I. PURPOSE

To identify a standardized inventory on all Basic Life Support (BLS) and Advanced Life Support (ALS) Transport Units.

II. AUTHORITY

Health and Safety Code, Division 2.5, Section 1797.204.

III. POLICY/PROCEDURE

Essential equipment and supplies are required by California Code of Regulations, Title 13, Section 1103.2(a)-2 (for vehicle requirements, refer to County of San Diego, Emergency Medical Services (CoSD EMS) Policy B-833 “Ground Ambulance Vehicle Requirements”). Any equipment or supplies carried for use in providing emergency medical care must be maintained in good working order. Each BLS or ALS Transporting Unit in San Diego County shall carry, at a minimum, the following:

<table>
<thead>
<tr>
<th>BLS Requirements</th>
<th>Minimum Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automated External Defibrillator</td>
<td>1</td>
</tr>
<tr>
<td>(Automated External Defibrillator not required for ALS)</td>
<td></td>
</tr>
<tr>
<td>Ambulance cot and collapsible stretcher – clean, mattress intact, and in good working order</td>
<td>1 each</td>
</tr>
<tr>
<td>Straps to secure the patient to the cot or stretcher</td>
<td>1 set</td>
</tr>
<tr>
<td>Ankle and wrist restraints</td>
<td>1 set</td>
</tr>
<tr>
<td>Linens (sheets, pillow, pillowcase, blanket, towels)</td>
<td>2 sets</td>
</tr>
<tr>
<td>Personal protective equipment (masks, gloves, gowns, shields)</td>
<td>2 sets</td>
</tr>
<tr>
<td>Oropharyngeal airways</td>
<td></td>
</tr>
<tr>
<td>- Adult</td>
<td>2</td>
</tr>
<tr>
<td>- Pediatric 0-5</td>
<td>1 each</td>
</tr>
<tr>
<td>- Neonate</td>
<td>1</td>
</tr>
<tr>
<td>- Premature</td>
<td>1</td>
</tr>
<tr>
<td>Pneumatic or rigid splints</td>
<td>4</td>
</tr>
<tr>
<td>Bag-valve-mask w/reservoir and clear resuscitation mask</td>
<td>-</td>
</tr>
<tr>
<td>- Adult</td>
<td>1</td>
</tr>
<tr>
<td>- Pediatric</td>
<td>1</td>
</tr>
<tr>
<td>- Neonate</td>
<td>1</td>
</tr>
<tr>
<td>- Premature</td>
<td>1</td>
</tr>
<tr>
<td>Oxygen cylinder w/wall outlet (H or M)</td>
<td>1</td>
</tr>
<tr>
<td>Oxygen tubing</td>
<td>1</td>
</tr>
<tr>
<td>Oxygen cylinder – portable (D or E)</td>
<td>2</td>
</tr>
<tr>
<td>Oxygen administration mask</td>
<td>-</td>
</tr>
<tr>
<td>- Adult</td>
<td>4</td>
</tr>
<tr>
<td>Item</td>
<td>Quantity</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Pediatric</td>
<td>2</td>
</tr>
<tr>
<td>Infant</td>
<td>1</td>
</tr>
<tr>
<td>Nasal cannulas (Adult)</td>
<td>4</td>
</tr>
<tr>
<td>Nasal airways (assorted sizes)</td>
<td>1 set</td>
</tr>
<tr>
<td>Nebulizer for use w/sterile H2O or saline</td>
<td>2</td>
</tr>
<tr>
<td>Blood glucose monitoring device &amp; supplies</td>
<td>1</td>
</tr>
<tr>
<td>Glucose paste/tablets</td>
<td>1</td>
</tr>
<tr>
<td>1 15 gm tube or 3 tabs</td>
<td></td>
</tr>
<tr>
<td>Naloxone intranasal</td>
<td>1</td>
</tr>
<tr>
<td>Epinephrine auto-injector adult 0.3 mg</td>
<td>1</td>
</tr>
<tr>
<td>(Auto-injector not required for ALS)</td>
<td></td>
</tr>
<tr>
<td>Epinephrine auto-injector pediatric 0.15 mg</td>
<td>1</td>
</tr>
<tr>
<td>(Auto-injector not required for ALS)</td>
<td></td>
</tr>
<tr>
<td>Bandaging supplies</td>
<td>-</td>
</tr>
<tr>
<td>4-inch sterile bandage compresses</td>
<td>12</td>
</tr>
<tr>
<td>3x3 gauze pads</td>
<td>4</td>
</tr>
<tr>
<td>2-, 3-, 4-, or 6-inch roller bandages</td>
<td>6</td>
</tr>
<tr>
<td>1-, 2-, or 3-inch adhesive tape rolls</td>
<td>2</td>
</tr>
<tr>
<td>Bandage shears</td>
<td>1</td>
</tr>
<tr>
<td>10-inch x30-inch or larger universal dressing</td>
<td>2</td>
</tr>
<tr>
<td>Emesis basin (or disposable bags)</td>
<td>1</td>
</tr>
<tr>
<td>Covered waste container</td>
<td>1</td>
</tr>
<tr>
<td>Portable suction equipment (30 L/min, 300 mmHg)</td>
<td>1</td>
</tr>
<tr>
<td>Suction device – fixed (30 L/min, 300 mmHg)</td>
<td>1</td>
</tr>
<tr>
<td>Suction catheter – tonsil tip</td>
<td>3</td>
</tr>
<tr>
<td>Pediatric suction catheter (5, 6, 10)</td>
<td>1 each</td>
</tr>
<tr>
<td>Adult suction catheter (8, 12, 18)</td>
<td>1 each</td>
</tr>
<tr>
<td>Spinal immobilization devices w/straps</td>
<td>1</td>
</tr>
<tr>
<td>Head immobilization device</td>
<td>2</td>
</tr>
<tr>
<td>Cervical collars – rigid</td>
<td>-</td>
</tr>
<tr>
<td>Adult</td>
<td>3</td>
</tr>
<tr>
<td>Pediatric (small, medium, large)</td>
<td>2 each</td>
</tr>
<tr>
<td>Infant</td>
<td>2</td>
</tr>
<tr>
<td>Thermometer</td>
<td>1</td>
</tr>
<tr>
<td>Traction splint*</td>
<td>-</td>
</tr>
<tr>
<td>Adult or equivalent</td>
<td>1</td>
</tr>
<tr>
<td>Pediatric or equivalent</td>
<td>1</td>
</tr>
<tr>
<td>Tourniquet (County-approved type)</td>
<td>2</td>
</tr>
<tr>
<td>Blood pressure manometer and cuff</td>
<td>-</td>
</tr>
<tr>
<td>Adult</td>
<td>1</td>
</tr>
<tr>
<td>Pediatric</td>
<td>1</td>
</tr>
<tr>
<td>Infant</td>
<td>1</td>
</tr>
<tr>
<td>Stethoscope</td>
<td>1</td>
</tr>
<tr>
<td>Obstetrical supplies to include:</td>
<td>1 kit</td>
</tr>
<tr>
<td>Sterile gloves, umbilical tape or clamps, dressings, head coverings</td>
<td>-</td>
</tr>
<tr>
<td>ID bands, towels, bulb syringe, sterile scissors or scalpel, clean</td>
<td>-</td>
</tr>
<tr>
<td>plastic bags</td>
<td>-</td>
</tr>
<tr>
<td>Potable water (1 gallon) or saline (2 liters)</td>
<td>1</td>
</tr>
<tr>
<td>Bedpan</td>
<td>1</td>
</tr>
<tr>
<td>Urinal</td>
<td>1</td>
</tr>
<tr>
<td>Item</td>
<td>Quantity</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Disposable gloves – non-sterile</td>
<td>1 box</td>
</tr>
<tr>
<td>Disposable gloves – sterile</td>
<td>4 pairs</td>
</tr>
<tr>
<td>Cold packs</td>
<td>2</td>
</tr>
<tr>
<td>Warming packs (not to exceed 110 degrees F) or</td>
<td>2</td>
</tr>
<tr>
<td>Warming device with blanket</td>
<td>-</td>
</tr>
<tr>
<td>Sharps container (OSHA approved)</td>
<td>1</td>
</tr>
<tr>
<td>Agency radio</td>
<td>1</td>
</tr>
<tr>
<td>EMS radio</td>
<td>1</td>
</tr>
<tr>
<td>Metronome (or audible equivalent device)</td>
<td>1</td>
</tr>
</tbody>
</table>

Optional items:
- Cardiac compression device
- Chest seals
- Hemostatic gauze
- Oxygen saturation monitoring device
  - Adult probe
  - Pediatric/Infant
- Positive pressure breathing valve, maximum flow 40 L/min
- Mark 1 kit(s) or equivalent

**ALS Requirements:** All supplies and equipment in BLS Requirements in addition to the following:

### A. Airway Adjuncts

<table>
<thead>
<tr>
<th>Item</th>
<th>Minimum Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative end tidal CO₂ monitor</td>
<td>1</td>
</tr>
<tr>
<td>Pediatric end tidal CO₂ detection device (if capnography not equipped to read EtCO₂ in patients weighing &lt;15kgs)</td>
<td>2</td>
</tr>
<tr>
<td>CPAP equipment</td>
<td>1</td>
</tr>
<tr>
<td>Endotracheal tubes</td>
<td>1 each</td>
</tr>
<tr>
<td>- 5.0, 5.5, 6.0, 6.5, 7.0, 7.5, 8.0 (cuffed)</td>
<td>1 each</td>
</tr>
<tr>
<td>Esophageal tracheal double lumen airway (kit)</td>
<td>1 each</td>
</tr>
<tr>
<td>- Combitube: Small adult</td>
<td>1</td>
</tr>
<tr>
<td>OR</td>
<td>-</td>
</tr>
<tr>
<td>Laryngeal/tracheal airway (King Airway: sizes 3, 4, 5)</td>
<td>1 each</td>
</tr>
<tr>
<td>ET adapter (nebulizer)</td>
<td>1 setup</td>
</tr>
<tr>
<td>Laryngoscope – handle</td>
<td>2</td>
</tr>
<tr>
<td>Laryngoscope – blade</td>
<td>1 each</td>
</tr>
<tr>
<td>- Straight sizes 0-4</td>
<td>1 each</td>
</tr>
<tr>
<td>- Curved sizes 2-4</td>
<td>1 each</td>
</tr>
<tr>
<td>Magill tonsil forceps – small and large</td>
<td>1 each</td>
</tr>
<tr>
<td>Stylet – 6 and 14 french, Adult</td>
<td>1 each</td>
</tr>
<tr>
<td>Bougie</td>
<td>1 each</td>
</tr>
<tr>
<td>HEPA/viral filter (for BVM, CPAP, nebulizer)</td>
<td>6</td>
</tr>
</tbody>
</table>

### B. Vascular Access/Monitoring Equipment

<table>
<thead>
<tr>
<th>Item</th>
<th>Minimum Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV administration sets</td>
<td>-</td>
</tr>
<tr>
<td>- Macro drip (2 must be vented)</td>
<td>4</td>
</tr>
<tr>
<td>- Micro drip or</td>
<td>2</td>
</tr>
<tr>
<td>- Multi-drip chambers</td>
<td>6</td>
</tr>
</tbody>
</table>
### IV tourniquets

<table>
<thead>
<tr>
<th>Needles:</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV cannula – 14 gauge</td>
</tr>
<tr>
<td>IV cannula – 16 gauge</td>
</tr>
<tr>
<td>IV cannula – 18 gauge</td>
</tr>
<tr>
<td>IV cannula – 20 gauge</td>
</tr>
<tr>
<td>IV cannula – 22 gauge</td>
</tr>
<tr>
<td>IV cannula – 24 gauge</td>
</tr>
<tr>
<td>IM – 21 gauge x 1 inch</td>
</tr>
<tr>
<td>Filter needles</td>
</tr>
<tr>
<td>Angiocath for needle decompression- 14 gauge, 3.25 inches</td>
</tr>
<tr>
<td>OR</td>
</tr>
<tr>
<td>15 mm (3-39 kg)</td>
</tr>
<tr>
<td>25 mm (40 kg and greater)</td>
</tr>
</tbody>
</table>

**Syringes:** 1 mL, 3 mL, 10 mL, 20 mL

**C. Monitoring**

| Capnography cannula | 2 |
| Defibrillator pads | 1 adult, 1 pediatric |
| Electrodes | 1 box |
| Electrode cables | 1 set |
| Monitor/defibrillator w/12 lead EKG and pacing capability | 1 |
| Oxygen saturation monitoring device | 1 |
| Adult probe | 1 |
| Pediatric/Infant probe | 1 |

**D. Other Equipment**

| Length Based Resuscitation Tape (LBRT) | 1 |
| Mucosal Atomizer Device (MAD) | 2 |
| Metronome (or equivalent device) | 1 |
| Nasogastric intubation setup (8, 10 or 12, 18 french) | 1 each |
| 60mL syringe for nasogastric tube confirmation and placement | 1 |
| Thermometer | 1 |
| Water soluble lubricant | 1 |

**E. Laminated Items**

| Pediatric Drug Chart (Policy P-117 “ALS Pediatric Drug Chart”) | 1 |

**F. Replaceable Medications**

| Acetaminophen IV 1000 mg/100 mL (requires vented tubing) | 2000 mg |
| Adenosine – 6 mg/2 mL and 12mg/4mL | 30 mg total |
| Albuterol – 2.5 mg/3 mL or 0.083% | 6 vials |
| Amiodarone 150 mg/3 mL | 2 |
| ASA, chewable – 81 mg each | 6 units |
| Atropine sulfate – 1 mg/10 mL | 2 |
Atropine sulfate – 8 mg/20 mL (0.4 mg/mL) | 1
Calcium chloride – 1 gm/10 mL | 1
Charcoal, activated (no sorbitol) – 50 gm | 1
Dextrose, 50% – 25 gm/50 mL | 2
Dextrose, 10% – 25 gm/250 mL | 2
Diphenhydramine hydrochloride – 50 mg/1 mL | 2
Epinephrine 1:1,000 – 1 mg/1 mL ampule | 6
Epinephrine 1:10,000 – 1 mg/10 mL | 6
Glucagon – 1 unit (mg)/1 mL | 1
Ipratropium bromide – 0.5 mg/2.5 mL | 2
Ketamine – 500 mg/10 mL (50 mg/mL) | 1
Lidocaine hydrochloride (preservative-free) – 100 mg/5 mL (2%) | 4
Midazolam – 5 mg/1 mL | 20 mg total
Morphine sulfate (injectable) – 10 mg/1 mL | 20 mg total
**OR** (units may carry morphine or fentanyl, but not both)
Fentanyl citrate – 100 mcg/2 mL | 200 mcg total
Naloxone hydrochloride – 2 mg/2 mL | 6 mg total
Nitroglycerin – 0.4 mg | 1 container
Ondansetron (injectable) – 4 mg/2 mL | 2
Ondansetron (PO/ODT) – 4 mg | 4
Sodium bicarbonate – 50 mEq/50 mL | 3

**IV Solutions:**
- Normal Saline – 1000 mL bag | 4
- Normal Saline – 250 mL bag | 2
- Normal Saline – 50 mL bag or 100 mL bag | 2

**G. Optional Items**
Albuterol MDI
Armboard – long
Armboard – short
Carboxyhemoglobin monitor
Chest seals
**Colorimetric carbon dioxide detector (if capnography not equipped to read EtCO₂ in patients weighing <15kgs)**
Curved laryngoscope blades – size 0, 1
Hemostatic gauze
IO power drive needle 45 mm (40 kg and greater w/excessive tissue)
IV extension tubing
Lidocaine 2% jelly – 5 mL tube
Mesh hood (spit sock or similar) – light color only (beige/white)
Leave Behind Naloxone kit(s)
Saline lock
Three-way stopcock w/extension tubing
Video laryngoscope

*Note: Pediatric required supplies denoted by italics
*One splint may be used for both adult and pediatric (e.g., Sager Splint)
<table>
<thead>
<tr>
<th>SKILL</th>
<th>INDICATION</th>
<th>CONTRAINDICATION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bougie</td>
<td>Assist with intubations</td>
<td>Should be used for routine intubations.</td>
<td>After attempting to view with laryngoscope, may use to assist ET placement if unable to fully visualize vocal cords.</td>
</tr>
<tr>
<td>Carboxyhemoglobin</td>
<td>Suspected or known carbon monoxide exposure</td>
<td>None</td>
<td>Consider transport to facility with hyperbaric chamber for suspected carbon monoxide poisoning in the unconscious or pregnant patient.</td>
</tr>
<tr>
<td></td>
<td>monitor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardioversion:</td>
<td>Unstable VT</td>
<td>Pediatric: If defibrillator unable to deliver &lt;5 J or biphasic equivalent</td>
<td>Remove chest transdermal medication patches prior to cardioversion.</td>
</tr>
<tr>
<td>synchronized</td>
<td>Unstable SVT</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unstable Atrial Fibrillation/Flutter with HR ≥180</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chest seal</td>
<td>Occlusive dressing designed for treating open chest wound</td>
<td>Unconscious</td>
<td>CPAP may be used only in patients alert enough to follow direction and cooperate with the assistance. BVM -assisted ventilation is the appropriate alternative.</td>
</tr>
<tr>
<td>CPAP</td>
<td>Respiratory Distress: Suspected CHF/ cardiac origin</td>
<td>Non-verbal patients with poor head/neck tone may be too obtunded for CPAP</td>
<td>CPAP should be used cautiously for patients with suspected COPD or pulmonary fibrosis. Start low and titrate pressure.</td>
</tr>
<tr>
<td></td>
<td>Respiratory Distress: Suspected non-cardiac origin.</td>
<td></td>
<td>HEPA filters should be applied with aerosol-generated procedures</td>
</tr>
<tr>
<td></td>
<td>Drowning with respiratory distress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defibrillation</td>
<td>VT (pulseless)</td>
<td>None</td>
<td>Remove chest transdermal medication patches prior to defibrillation.</td>
</tr>
<tr>
<td></td>
<td>VF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SKILL</td>
<td>INDICATION</td>
<td>CONTRAINDICATION</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>------------------------------</td>
<td>----------------------------------------------------------</td>
<td>------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>EKG monitoring</td>
<td>Any situation where there is a potential for cardiac dysrhythmia</td>
<td>None</td>
<td>Apply monitor before moving patient with chest pain, syncope, or in arrest.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Continuous monitoring for unstable/STEMI/CPR patients required.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Document findings on PCR and leave strip with patient.</td>
</tr>
<tr>
<td>12-lead EKG</td>
<td>Chest pain and/or Signs and symptoms suggestive of myocardial infarction</td>
<td>None</td>
<td>Transmit 12-lead EKGs to receiving hospital.</td>
</tr>
<tr>
<td></td>
<td>Suspected hyperkalemia</td>
<td></td>
<td>If STEMI, notify BH immediately and transport to appropriate STEMI center.</td>
</tr>
<tr>
<td></td>
<td>ROSC after cardiac arrest</td>
<td></td>
<td>Report LBBB, RBBB, or poor-quality EKG for consideration of a false positive reading STEMI.</td>
</tr>
<tr>
<td></td>
<td>To identify a rhythm</td>
<td></td>
<td>Repeat the 12-lead EKG if patient’s condition worsens or following a successful arrhythmia conversion. Do not delay transport to repeat.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Attach EKG(s) or printout photo(s) to PCR.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Document findings on the PCR and leave EKG printout with patient.</td>
</tr>
<tr>
<td>End tidal CO₂ Detection Device (Qualitative)</td>
<td>All intubated patients &lt;15 kg - unless quantitative end tidal CO₂ available for patient &lt;15 kg.</td>
<td>None</td>
<td>Continuous monitoring after ET/ETAD/PAA insertion required.</td>
</tr>
<tr>
<td>End tidal CO₂ Detection Device – Capnography (Quantitative)</td>
<td>All intubated patients</td>
<td>None</td>
<td>Continuous monitoring after ET/ETAD/PAA insertion required.</td>
</tr>
<tr>
<td></td>
<td>Respiratory distress or cardiovascular impairment</td>
<td></td>
<td>Use early in cardiac arrest.</td>
</tr>
<tr>
<td></td>
<td>Trauma</td>
<td></td>
<td>For EtCO₂ &gt; 0 mmHg, may place ET/PAA without interrupting compressions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>If EtCO₂ rises rapidly during CPR, pause CPR and check for pulse.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>If quantitative is unavailable due to special circumstances, then use qualitative (optional equipment)</td>
</tr>
<tr>
<td>External cardiac pacemaker</td>
<td>Unstable bradycardia unresponsive to Atropine</td>
<td>None</td>
<td>Document rate setting, milliamps and capture</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>External cardiac pacing:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Begin at rate 60/min</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Dial up until capture occurs, usually between 50 and 100 mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Increase by a small amount, usually about 10%, for ongoing pacing.</td>
</tr>
<tr>
<td>SKILL</td>
<td>INDICATION</td>
<td>CONTRAINDICATION</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>----------------</td>
<td>----------------------------------------------------------------------------</td>
<td>------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 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 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) |
| Injection (IV)     | When IV route indicated                                                   | None             |                                                                                              |
### SKILL

**Intubation:** ET/Stomal

<table>
<thead>
<tr>
<th>INDICATION</th>
<th>CONTRAINDICATION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>To facilitate ventilation and/or oxygenation in a patient who is unable to protect his/her own airway or maintain spontaneous respiration.</td>
<td>Suspected opioid OD prior to naloxone</td>
<td>3 attempts per patient SO. Additional attempts BHPO. An ET attempt is defined as an attempt to pass ET (not including visualizations and suctioning).</td>
</tr>
<tr>
<td></td>
<td>Able to adequately ventilate with BVM</td>
<td>Document and report LEADSD Lung Sounds EtCO₂ Absent Abdominal Sounds Depth Size</td>
</tr>
<tr>
<td></td>
<td>Gag reflex present</td>
<td>Document presence of EtCO₂ waveform and EtCO₂ numeric value at Transfer of Care</td>
</tr>
<tr>
<td></td>
<td>Infants and pediatric patients</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt;15 years of age that fit on the LBRT</td>
<td></td>
</tr>
</tbody>
</table>

**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 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 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:

- 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.
<table>
<thead>
<tr>
<th>SKILL</th>
<th>INDICATION</th>
<th>CONTRAINDICATION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intubation:</td>
<td>Apnea or ineffective respirations for unconscious patient or decreasing LOC</td>
<td>Gag reflex present</td>
<td>Extubate SO if placement issue, otherwise per BHO</td>
</tr>
<tr>
<td>Perilaryngeal airway adjuncts</td>
<td></td>
<td>Patient &lt;4 feet tall</td>
<td>King Airway:</td>
</tr>
<tr>
<td>ETAD/Combitube</td>
<td></td>
<td>Ingestion of caustic substances</td>
<td>ETAD:</td>
</tr>
<tr>
<td>Laryngeal-Tracheal/King Airway</td>
<td></td>
<td>Known esophageal disease</td>
<td>Document and report LEADSD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laryngectomy/stoma</td>
<td>Lung Sounds EtCO₂ Absent Abdominal Sounds Depth Size</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspected opioid OD prior to naloxone</td>
<td>Establishment of EtCO₂ prior to intubation:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Able to adequately ventilate with BVM</td>
<td>Exception to the mandatory use of EtCO₂ prior to intubation with ET tube/ETAD/PAA:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Infants and pediatric patients</td>
<td>-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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;15 years of age that fit on the LBRT</td>
<td>-If the airway 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 to secure airway.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-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.</td>
</tr>
</tbody>
</table>

If EtCO₂ drops to zero and does not increase with immediate troubleshooting, extubate, and manually ventilate the patient via BVM.
## SKILL
**Intubation:**
- Perilaryngeal airway adjuncts
  - ETAD/Combitube
  - Laryngeal-Tracheal/King Airway

<table>
<thead>
<tr>
<th>SKILL</th>
<th>INDICATION</th>
<th>CONTRAINDICATION</th>
<th>COMMENTS</th>
</tr>
</thead>
</table>
|       | Intubation: Perilaryngeal airway adjuncts | Continuous capnography monitoring after ET/ETAD/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. | |

<table>
<thead>
<tr>
<th>SKILL</th>
<th>INDICATION</th>
<th>CONTRAINDICATION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length Based Resuscitation Tape (LBRT)</td>
<td>Determination of length for calculation of pediatric drug dosages and equipment sizes.</td>
<td>None</td>
<td>Base dosage calculation on length of child. Refer to pediatric chart for dosages (P-117). Children $\geq$37 kg use adult medication dosages (using pediatric protocols) regardless of age or height.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SKILL</th>
<th>INDICATION</th>
<th>CONTRAINDICATION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magill forceps</td>
<td>Airway obstruction from foreign body with decreasing LOC/unconscious</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SKILL</th>
<th>INDICATION</th>
<th>CONTRAINDICATION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nasogastric / Orogastric tube</td>
<td>Gastric distention interfering w/ ventilations</td>
<td>Severe facial trauma Known esophageal disease</td>
<td>If NG tube needed in a patient with a King Airway, insertion should be via the suction port, if available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SKILL</th>
<th>INDICATION</th>
<th>CONTRAINDICATION</th>
<th>COMMENTS</th>
</tr>
</thead>
</table>
| Nebulizer, oxygen powered | 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 albuterol MDI, if available. Consider applying HEPA filters with aerosol-generating procedures for in-line nebulizer treatments. |
<table>
<thead>
<tr>
<th>SKILL</th>
<th>INDICATION</th>
<th>CONTRAINDICATION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle thoracostomy</td>
<td>Severe respiratory distress with unilateral or bilateral absent or diminished or absent breath sounds (unilaterally or bilaterally), and SBP &lt; 90 mmHg, and suspected pneumothorax (Adult)</td>
<td>None</td>
<td>Use 14-gauge, 3.25-inch IV catheter. Insert into 2nd/3rd ICS in mid-clavicular line on the involved side. OR Insert catheter into anterior axillary line 4th/5th ICS on involved side. Tape catheter securely to chest wall and leave open to air.</td>
</tr>
<tr>
<td></td>
<td>Severe respiratory distress with unilateral diminished breath sounds with hypotension for age (Pediatric)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obstetrical maneuvers</td>
<td>Difficult deliveries</td>
<td>None</td>
<td>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.</td>
</tr>
<tr>
<td>Prehospital pain scale</td>
<td>All patients with a traumatic or pain-associated chief complaint</td>
<td>None</td>
<td>Assess for presence of pain and intensity.</td>
</tr>
<tr>
<td>Prehospital stroke scale</td>
<td>All patients with suspected Stroke/TIA</td>
<td>None</td>
<td>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 Scale in assessment of possible TIA or stroke patients: B = Balance: Unsteadiness, ataxia E = Eyes: Blurred/double or loss of vision, asymmetric pupils F = Face: Unilateral face droop A = Arms and/or legs: Unilateral weakness exhibited by a drift or drop, numbness/tingling 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).</td>
</tr>
<tr>
<td>SKILL</td>
<td>INDICATION</td>
<td>CONTRAINDICATION</td>
<td>COMMENTS</td>
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</tr>
<tr>
<td>Pulse oximetry</td>
<td>Assess oxygenation</td>
<td>None</td>
<td>Obtain room air saturation prior to O₂ administration, if possible.</td>
</tr>
<tr>
<td>Re-alignment of fracture</td>
<td>Grossly angulated long bone fracture</td>
<td>None</td>
<td>Use unidirectional traction. Check for distal pulses prior to realignment and every 15 min thereafter.</td>
</tr>
<tr>
<td>Removal of impaled object</td>
<td>Impaled object in face, cheek or neck causing total airway obstruction</td>
<td>None</td>
<td>Impaled objects not causing total airway obstruction should be immobilized and left in place.</td>
</tr>
<tr>
<td>SKILL</td>
<td>INDICATION</td>
<td>CONTRAINDICATION</td>
<td>COMMENTS</td>
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</tr>
<tr>
<td>Spinal motion</td>
<td>Spinal pain of possible traumatic cause</td>
<td>None</td>
<td>Pregnant patients (&gt;6 mo) tilt 30° left lateral decubitus. See S-104 Attachment for “Spinal Motion Restriction Algorithm”</td>
</tr>
<tr>
<td></td>
<td>MOI suggests potential spinal injury</td>
<td></td>
<td>The Acronym “NSAIDS” Should Be Used to Remember the Steps in Algorithm:</td>
</tr>
<tr>
<td></td>
<td>≥65 years and older</td>
<td></td>
<td>N- Neurologic exam</td>
</tr>
<tr>
<td></td>
<td>Acute neurological deficit following injury</td>
<td></td>
<td>S- Sixty-five (including language barrier)</td>
</tr>
<tr>
<td></td>
<td>Penetrating trauma with neurological deficit</td>
<td></td>
<td>A- Altered (including language barrier)</td>
</tr>
<tr>
<td></td>
<td>Victims of penetrating trauma (stabbing, gunshot wound) to the head, neck,</td>
<td></td>
<td>I- Intoxication</td>
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<tr>
<td></td>
<td>and/or torso should not receive spinal stabilization unless there is one or</td>
<td></td>
<td>D- Distracting injury</td>
</tr>
<tr>
<td></td>
<td>more of the following:</td>
<td></td>
<td>S- Spine exam</td>
</tr>
<tr>
<td></td>
<td>• Neurologic deficit</td>
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<tr>
<td></td>
<td>• Priapism</td>
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<tr>
<td></td>
<td>• Anatomic deformity to the spine secondary to injury</td>
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<td></td>
<td>Backboards should be limited to extrication whenever possible. In-line</td>
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<td></td>
<td>stabilization should be maintained with the patient supine and neutral on</td>
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<tr>
<td></td>
<td>the gurney during transport.</td>
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<tr>
<td></td>
<td>- If a patient is not able to tolerate the supine position during</td>
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<tr>
<td></td>
<td>transport, document the reason and communicate to receiving hospital</td>
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</tr>
<tr>
<td></td>
<td>staff.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sports Injury Patient</td>
<td>If a patient is helmeted and/or shoulder padded, patient helmet and pads</td>
<td></td>
<td>Sports Injury Patient</td>
</tr>
<tr>
<td></td>
<td>should be removed while on scene.</td>
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</tr>
<tr>
<td>Document a neurological</td>
<td>Test of sensation and abnormal sensation (paresthesia) in all 4 extremities</td>
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</tr>
<tr>
<td>examination including</td>
<td>Test of motor skills in all 4 extremities with active movements by the</td>
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<tr>
<td></td>
<td>patient (avoid just reflexive movements like hand grasp to include:</td>
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<tr>
<td></td>
<td>- Wrist/finger extension and flexion</td>
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<tr>
<td></td>
<td>- Foot plantar and dorsiflexion</td>
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<td>SKILL</td>
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<td>CONTRAINDICATION</td>
<td>COMMENTS</td>
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</table>
| Spinal Motion Restriction     | Pediatric Patient                                                          | None             | **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. |
| (continued)                   |                                                                             |                  |                                                                                                                                                                                                         |
| 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.                                                                                                                                                                         |
<table>
<thead>
<tr>
<th>SKILL</th>
<th>INDICATION</th>
<th>CONTRAINDICATION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video laryngoscope</td>
<td>To assist with endotracheal intubation using video laryngoscopy</td>
<td>None</td>
<td>Optional inventory item.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Intubation ET for comments.</td>
</tr>
<tr>
<td>VASCULAR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCESS</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>External jugular</td>
<td>When unable to establish other peripheral IV and IV is needed for definitive therapy ONLY</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Extremity</td>
<td>Whenever IV line is needed or anticipated for definitive therapy</td>
<td>None</td>
<td>Lower extremities remain SO in the pediatric patient.</td>
</tr>
<tr>
<td></td>
<td><strong>BHPO</strong> if other than upper extremities or external jugular</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indwelling Devices</td>
<td>Primary access site for patients with indwelling catheters if needed for definitive therapy</td>
<td>Devices without external port</td>
<td>Clean site for minimum of 15 seconds prior to accessing.</td>
</tr>
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<td></td>
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<td></td>
<td>Infuse at a rate to support continuous flow and prevent backflow into IV line.</td>
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<td></td>
<td>Needleless systems may require adaptor.</td>
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<td></td>
<td>Examples include Groshong, Hickman, and PICC lines.</td>
</tr>
<tr>
<td>Skill</td>
<td>Indication</td>
<td>Contraindication</td>
<td>Comments</td>
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</tr>
<tr>
<td>Intraosseous</td>
<td>Fluid/medication administration in patient when needed for definitive therapy and unable to establish venous access</td>
<td>Tibial fracture</td>
<td>Splint extremity after placement.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vascular Disruption</td>
<td>Observe carefully for signs of extravasation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prior attempt to place in target bone</td>
<td>Do not infuse into fracture site.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Humeral fracture (for humeral placement)</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Local infection at insertion site</td>
<td>Avoid placement if potential fracture is on target bone.</td>
</tr>
<tr>
<td></td>
<td>Pediatric patient: unconscious</td>
<td></td>
<td>In conscious adult patients, slowly infuse lidocaine 40 mg IO prior to fluid/medication administration.</td>
</tr>
<tr>
<td>Percutaneous</td>
<td>If unable to gain other IV access and no other medication delivery route available for immediate definitive therapy only BHPO</td>
<td>None</td>
<td>Vascath contains concentrated dose of heparin which must be aspirated PRIOR to infusion.</td>
</tr>
<tr>
<td>Dialysis Catheter Access (e.g., Vascath)</td>
<td>If unable to gain other IV access and no other medication delivery route available for immediate definitive therapy only BHPO</td>
<td></td>
<td>Infuse at a rate to support continuous flow and prevent backflow into IV line. Needleless systems may require adaptor.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Annual training required.</td>
</tr>
<tr>
<td>Shunt/graft - AV (Dialysis)</td>
<td>If unable to gain other IV access and no other medication delivery route available for immediate definitive therapy only BHPO</td>
<td>None</td>
<td>Prior to access, check site for bruits and thrills.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Do not apply pressure dressing.</td>
</tr>
</tbody>
</table>
Spinal Motion Restriction Algorithm: NSAIDS

**NEURO COMPLAINTS/ EXAM ABNORMAL?**
- NO
- YES

**SIXTY FIVE YEARS OLD AND OLDER?**
- NO
- YES

**ALTERED?**
- NO
- YES

**INTOXICATED?**
* (drugs and/or alcohol)
- NO
- YES

**DISTRACTING INJURY?**
- NO
- YES

**SPINE PAIN OR TENDERNESS?**
- NO
- YES

**SPINAL MOTION RESTRICTION NOT REQUIRED**

**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.
The Acronym “NSAIDS” Should Be Used to Remember the Steps in Algorithm

N- Neurologic exam- Are there any abnormal sensory or motor findings? Weakness/numbness or complaints of paresthesia? Look for focal deficit, such as tingling, reduced strength, numbness in an extremity.

S-Sixty five- Greater than or equal to 65 years of age?

A- Altered- Is the patient oriented to person, place, time and situation? Is the patient altered in any way? Is there a language barrier? Is the patient cooperative?

I- Intoxication- Is there any indication that the person is impaired by drugs or alcohol?

D-Distracting injury- Is there any other injury which is capable of producing significant pain in this patient?

S- Spine exam- Does the patient complain of neck or back pain? Assess entire spine for point tenderness or spinal process tenderness.

SPECIAL CONSIDERATIONS

• Prehospital provider assessment will determine what method is needed. Every patient with trauma must receive an assessment. If any assessment component is positive, the patient requires spinal motion restriction.

• Patients with severe kyphosis or other anatomical or medical conditions (e.g., ankylosing spondylitis or rheumatoid arthritis) may be stabilized using a combination of pillow, blanket, or other devices.

• Spinal motion restriction should be accomplished using the most appropriate tool for the specific circumstance. May include, but are not limited to, vacuum splints, pneumatic splints, cervical collars, soft collars, straps, tape, as well as soft materials, such as pillows and blanket to minimize movement, compression, or distraction of the spine.

• Patients with acute or chronic difficulty breathing: Use spinal motion restriction with caution in patients presenting with dyspnea and place patient in position best suited to protect the airway.
<table>
<thead>
<tr>
<th>MEDICATION</th>
<th>INDICATIONS</th>
<th>PROTOCOL</th>
<th>COMMENTS</th>
<th>CONTRAINDICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACETAMINOPHEN</td>
<td>MILD pain (score 1 - 3) or MODERATE pain (score 4 - 6) or SEVERE pain (score 7 - 10) or Refusal / contraindication to ketamine</td>
<td>S-141, S-173</td>
<td>Maximum total daily dose: 4000 mg in 24 hours Give over 15 minutes BHPO required for: • Isolated head injury • Acute onset severe headache • Drug/ETOH intoxication • Major trauma with GCS &lt;15 • Suspected active labor</td>
<td>Severe hepatic impairment or active liver disease Known hypersensitivity or allergic reaction history If known or suspected total dose exceeding 4000 mg in a 24-hour period Acetaminophen IV &lt;2 years of age Pediatric administration requires signs of adequate perfusion</td>
</tr>
<tr>
<td>ADENOSINE</td>
<td>Stable (symptomatic) SVT</td>
<td>S-127, S-163</td>
<td>Patients with history of bronchospasm or COPD may suffer bronchospasm following administration</td>
<td>Second- or third-degree AV block Sick Sinus Syndrome (without pacemaker)</td>
</tr>
<tr>
<td>ALBUTEROL</td>
<td>Respiratory distress of non-cardiac origin Anaphylaxis with respiratory involvement Burns with respiratory distress with bronchospasm Suspected hyperkalemia in hemodialysis patient in presence of widened QRS complex or peaked T waves</td>
<td>S-122, S-124 S-131, S-136 S-162, S-167 S-170</td>
<td>Continuous administration via O₂ powered nebulizer or MDI If concerned about aerosolized infectious exposure, substitute with albuterol MDI, if available</td>
<td>Avoid in croup</td>
</tr>
<tr>
<td>AMIODARONE</td>
<td>Reported/witnessed ≥2 AICD firing and pulse ≥60 Stable VT Persistent pulseless VF/VT after 3 defibrillation attempts</td>
<td>S-127 S-163</td>
<td>Cardioversion first if unstable with severe symptoms</td>
<td></td>
</tr>
<tr>
<td>ASPIRIN</td>
<td>Pain/discomfort of cardiac origin</td>
<td>S-126</td>
<td>Aspirin 324 mg chewable PO should be given regardless of prior daily dose(s)</td>
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<tr>
<td>MEDICATION</td>
<td>INDICATIONS</td>
<td>PROTOCOL</td>
<td>COMMENTS</td>
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<tr>
<td>ATROPINE SULFATE</td>
<td>Unstable bradycardia</td>
<td>S-127, S-163</td>
<td>In organophosphate poisoning, titrate atropine to SLUDGEM symptoms, not to tachycardia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Symptomatic organophosphate poisoning</td>
<td>S-134, S-165</td>
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<tr>
<td>CALCIUM CHLORIDE (CaCl₂)</td>
<td>Suspected hyperkalemia in hemodialysis patient in presence of widened QRS complex or peaked T waves</td>
<td>S-127, S-163</td>
<td>Give IV over 30 seconds</td>
<td>Avoid use in small veins (feet/hands) as extravasation of CaCl₂ can cause necrosis</td>
</tr>
<tr>
<td></td>
<td>Suspected hyperkalemia in PEA/asystole</td>
<td>S-131</td>
<td></td>
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<tr>
<td></td>
<td>Suspected calcium channel blocker OD with SBP &lt;90 mmHg</td>
<td>S-134</td>
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<tr>
<td></td>
<td>Crush injury with compression of extremity or torso ≥2 hours (Adult)</td>
<td>S-139</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHARCOAL (no Sorbitol)</td>
<td>Ingestion</td>
<td>S-134, S-165</td>
<td>Assure patient has gag reflex and is cooperative</td>
<td>Isolated alcohol, heavy metal, caustic agents, hydrocarbons, or iron ingestion</td>
</tr>
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<td>If not vomiting and ingestion within 60 min, activated charcoal SO with any of the following:</td>
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<td></td>
<td>1. Acetaminophen</td>
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<td>2. Colchicine</td>
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<td>3. Beta blockers</td>
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<td>4. Calcium channel blockers</td>
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<td>5. Salicylates</td>
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<td>6. Sodium valproate</td>
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<td>7. Oral anticoagulants (including rodenticides)</td>
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<td>8. Paraquat</td>
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<td>9. Amanita mushrooms</td>
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<td></td>
<td>For pediatric ingestions, if ingestion within 60 minutes and recommended by Poison Center SO</td>
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<tr>
<td>MEDICATION</td>
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<td>PROTOCOL</td>
<td>COMMENTS</td>
<td>CONTRAINDICATIONS</td>
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<tr>
<td>DEXTROSE 50% (D50) (Adult) OR DEXTROSE 10% (D10) (Pediatric)</td>
<td>Symptomatic hypoglycemia with altered LOC or unresponsive to oral glucose agents with BS &lt;60 mg/dL (Neonate &lt;45 mg/dL)</td>
<td>S-123, S-161</td>
<td>Repeat BS not indicated en route if patient improving Repeat BS must be done if patient left on scene and initial was abnormal (AMA/Release)</td>
<td></td>
</tr>
<tr>
<td>DIPHENHYDRAMINE</td>
<td>Allergic reaction Anaphylaxis Extrapyramidal reactions</td>
<td>S-122, S-162 S-134, S-165</td>
<td>IV - administer slowly Diphenhydramine may be administered between epinephrine doses in anaphylaxis</td>
<td></td>
</tr>
<tr>
<td>EPINEPHRINE (PUSH-DOSE)</td>
<td>Anaphylaxis with SBP &lt;90 mmHg (Adult)/ with hypotension per age (Pediatric) Discomfort/Pain of cardiac origin with associated shock Unstable bradycardia (after max atropine or TCP) ROSC with SBP &lt;90mmHg (Adult)/ with hypotension per age (Pediatric) Newborn deliveries with sustained HR&lt;60 Non-traumatic, hypovolemic shock (Adult) Neurogenic shock (Adult) Neurogenic/ cardiogenic/ anaphylactic shock (Pediatric) Sepsis</td>
<td>S-122, S-162 S-126 S-127, S-163 S-133, S-166 S-138, S-168 S-143, S-177</td>
<td>Titrate to maintain systolic SBP &gt;90 mmHg (Adult) or adequate perfusion (Pediatric) Mixing instructions: 1. Remove 1 mL normal saline (NS) from the 10 mL NS syringe 2. Add 1 mL of epinephrine 1:10,000 (0.1 mg/mL) to 9 mL NS syringe The mixture now has 10 mL of epinephrine at 0.01 mg/mL (10 mcg/mL) concentration.</td>
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<td>COMMENTS</td>
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<tr>
<td>EPINEPHRINE</td>
<td>Cardiac arrest (VF/VT/PEA/Asystole)</td>
<td>S-122, S-162</td>
<td>Cardiac arrest with hypothermia: Limit epinephrine to 1 dose and withhold antiarrhythmic medications until temperature ≥86 °F / ≥30 °C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cardiac arrest with hypothermia</td>
<td>S-127, S-163</td>
<td>Epinephrine IM: Use caution if known cardiac history, history of hypertension, SBP &gt;150 mmHg, or age &gt;40</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anaphylaxis</td>
<td>S-136, S-167</td>
<td>Diphenhydramine may be administered between epinephrine doses in anaphylaxis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Severe respiratory distress/failure or inadequate response to albuterol/ipratropium bromide</td>
<td>S-168</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No improvement after epinephrine via nebulizer x2 or impending respiratory/airway compromise</td>
<td>S-170</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unstable bradycardia (Pediatric)</td>
<td>S-176</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Respiratory distress with stridor</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>MODERATE pain (score 4 - 6)</td>
<td>S-141, S-173</td>
<td>Changing route of administration requires BHO (e.g., IV to IM or IM to IN)</td>
<td></td>
</tr>
<tr>
<td>FENTANYL CITRATE</td>
<td>or SEVERE pain (score 7 - 10)</td>
<td></td>
<td>Changing analgesic requires BHO (e.g., fentanyl to ketamine)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or Refusal /contraindication to acetaminophen or ketamine</td>
<td></td>
<td>Treatment with opioids if SBP &lt;100 mmHg requires BHO</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>BHPO required for:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Isolated head injury</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Acute onset severe headache</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Drug/EtOH intoxication</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Major trauma with GCS &lt;15</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Suspected active labor</td>
<td></td>
</tr>
<tr>
<td>MEDICATION</td>
<td>INDICATIONS</td>
<td>PROTOCOL</td>
<td>COMMENTS</td>
<td>CONTRAINDICATIONS</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>GLUCAGON</td>
<td>Unable to start IV in patient with symptomatic hypoglycemia with altered LOC or unresponsive to oral glucose agents if BS &lt;60 mg/dL (Neonate &lt;45 mg/dL)</td>
<td>S-123, S-161 S-134 S-144</td>
<td>High doses of glucagon may cause nausea/vomiting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Suspected beta blocker OD with cardiac effects (e.g., bradycardia with hypotension)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPRATROPIUM BROMIDE</td>
<td>Respiratory distress of non-cardiac origin Anaphylaxis with respiratory involvement</td>
<td>S-122, S-162 S-136, S-167</td>
<td>Added to first dose of albuterol via continuous O2-powered nebulizer If concerned about aerosolized infectious exposure, use patient’s ipratropium bromide MDI, if available, or withhold ipratropium bromide</td>
<td></td>
</tr>
<tr>
<td>KETAMINE</td>
<td>For moderate to severe pain (score ≥5) with trauma, burns, or envenomation injuries</td>
<td>S-141</td>
<td>Must meet all requirements: • ≥15 years old • GCS of 15 • Not pregnant • No known or suspected alcohol or drug intoxication Changing route of administration requires BHO (e.g., IV to IM or IM to IN) Changing analgesic requires BHO (e.g., fentanyl to ketamine) Treatment with opioids if SBP &lt;100 mmHg requires BHPO BHPO required for: • Isolated head injury • Acute onset severe headache • Drug/EtOH intoxication • Major trauma with GCS &lt;15 • Suspected active labor Pediatric patients (14 years of age or younger)</td>
<td></td>
</tr>
<tr>
<td>MEDICATION</td>
<td>INDICATIONS</td>
<td>PROTOCOL</td>
<td>COMMENTS</td>
<td>CONTRAINDICATIONS</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------------------------------------------</td>
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<td>--------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>LIDOCAINE</td>
<td>Prior to IO fluid infusion in the conscious patient</td>
<td>S-127, S-163</td>
<td>Adult doses should be given in increments rounded to the nearest 20 mg amount.</td>
<td>Second- and third-degree heart block and idioventricular rhythm</td>
</tr>
<tr>
<td></td>
<td>Reported/witnessed ≥2 AICD firing and pulse ≥60</td>
<td></td>
<td>In the presence of shock, CHF or liver disease, the repeat bolus is recommended at 10-minute intervals.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pulse ≥60 status post-defibrillation (defibrillation/AED)</td>
<td></td>
<td>Cardioversion first if unstable with severe symptoms.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stable VT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Persistent pulseless VF/VT after 3 defibrillation attempts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIDOCAINE JELLY (2%) optional</td>
<td>Intubation or Nasopharyngeal airway</td>
<td></td>
<td>Apply to ET tube or nasal airway</td>
<td></td>
</tr>
<tr>
<td>MIDAZOLAM</td>
<td>Consider prior to cardioversion</td>
<td>S-123, S-161</td>
<td>Pre-cardioversion sedation is recommended whenever possible.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Severely agitated and/or combative patient requiring restraint for patient or provider safety</td>
<td>S-127, S-163</td>
<td>Consider lower dose of midazolam for pre-cardioversion with attention to age and hydration status.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consider prior to external pacemaker</td>
<td>S-133, S-166</td>
<td>For severely agitated or combative patients, IN or IM midazolam is the preferred route to decrease risk of injury to the patient and personnel.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Status epilepticus seizure</td>
<td>S-142, S-175</td>
<td><strong>Alert:</strong> Co-administration of midazolam in patients with alcohol intoxication can cause respiratory depression. Consider avoiding or reducing midazolam dose.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Partial seizure lasting &gt;5 minutes (includes seizure time prior to arrival of prehospital provider)</td>
<td></td>
<td>Severe agitated and/or combative patient requiring restraint for patient or provider safety midazolam SO ≥8 years, BHO &lt;8 years</td>
<td></td>
</tr>
<tr>
<td>MEDICATION</td>
<td>INDICATIONS</td>
<td>PROTOCOL</td>
<td>COMMENTS</td>
<td>CONTRAINDICATIONS</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------</td>
<td>----------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MORPHINE SULPHATE</td>
<td>MODERATE pain (score 4 - 6) or SEVERE pain (score 7 - 10) or Refusal /contraindication to acetaminophen or ketamine</td>
<td>S-141, S-173</td>
<td>Changing route of administration requires <strong>BHO</strong> (e.g., IV to IM or IM to IN) Changing analgesic requires <strong>BHO</strong> (e.g., fentanyl to ketamine) Treatment with opioids if SBP &lt;100 mmHg requires <strong>BHO</strong> <strong>BHPO</strong> required for: • Isolated head injury • Acute onset severe headache • Drug/EtOH intoxication • Major trauma with GCS &lt;15 • Suspected active labor</td>
<td></td>
</tr>
<tr>
<td>NALOXONE</td>
<td>Symptomatic suspected opioid OD with respiratory depression (RR&lt;12, SpO2&lt;96%, or ETCO2 &gt;40 mmHg). Titrate slowly in opioid-dependent patients.</td>
<td>S-123, S-161, S-134, S-165</td>
<td>If patient refuses transport, give additional naloxone IM SO If patient refuses transport, consider dispensing Leave Behind Naloxone 4 mg nasal spray preloaded device with education for patient and household members SO</td>
<td></td>
</tr>
<tr>
<td>NITROGLYCERIN (NTG)</td>
<td>Discomfort/pain of suspected cardiac origin with SBP ≥100mmHg Respiratory distress with suspected CHF/cardiac origin Fluid overload with rales in hemodialysis patient</td>
<td>S-126, S-131, S-136</td>
<td>Suspected intracranial bleed NTG is contraindicated in patients who have taken: • erectile dysfunction medications such as sildenafil (Viagra®), tadalafil (Cialis®), and vardenafil (Levitra®) within 48 hours; and • pulmonary hypertension medications such as sildenafil (Revatio®) and epoprostenol sodium (Flolan® and Veletril®).</td>
<td></td>
</tr>
<tr>
<td>NORMAL SALINE</td>
<td>Definitive therapy</td>
<td>All</td>
<td>Definitive therapy defined as immediate or anticipated immediate need for administration of a fluid bolus or medications Rales is a relative contraindication for fluid bolus Fluid bolus may be administered regardless of lung sounds in adult sepsis (S-143), and one time only in pediatric sepsis (S-177)</td>
<td></td>
</tr>
<tr>
<td>MEDICATION</td>
<td>INDICATIONS</td>
<td>PROTOCOL</td>
<td>COMMENTS</td>
<td>CONTRAINDICATIONS</td>
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<tr>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------</td>
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<td>-------------------</td>
</tr>
<tr>
<td>ONDANSETRON</td>
<td>Nausea and/or vomiting</td>
<td>S-120</td>
<td>S-174</td>
<td></td>
</tr>
<tr>
<td>SODIUM BICARBONATE (NaHCO₃)</td>
<td>Suspected hyperkalemia in PEA/asystole</td>
<td>S-127, S-163</td>
<td>S-134, S-165 S-131 S-139, S-169</td>
<td>Flush IV tubing between medication administration</td>
</tr>
<tr>
<td>MEDICATION</td>
<td>DOSE</td>
<td>MAXIMUM SINGLE DOSE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------------</td>
<td>---------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acetaminophen IV &lt; 2 years of age</td>
<td>contraindicated</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acetaminophen IV &gt; 2 years of age</td>
<td>15 mg/kg</td>
<td>1 gm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adenosine IV 1st</td>
<td>0.1 mg/kg</td>
<td>6 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adenosine IV 2nd/3rd</td>
<td>0.2 mg/kg</td>
<td>12 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albuterol Nebulized</td>
<td>5 mg (6 mL)</td>
<td>5 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amiodarone IV/IO</td>
<td>5 mg/kg</td>
<td>300 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atropine (Bradycardia) IV/IO</td>
<td>0.02 mg/kg</td>
<td>0.5 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atropine (OPP) IV/IM</td>
<td>0.02 mg/kg</td>
<td>2 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium Chloride IV/IO</td>
<td>20 mg/kg</td>
<td>500 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charcoal PO</td>
<td>1 gm/kg</td>
<td>50 gm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dextrose 10% IV</td>
<td>1 gm/kg</td>
<td>25 gm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diphenhydramine IV/IM</td>
<td>1 mg/kg</td>
<td>50 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Epinephrine IV/IO Cardiac Arrest (1:10,000)</td>
<td>0.01 mg/kg</td>
<td>1 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Epinephrine IV/IO Push-Dose (1:100,000)</td>
<td>0.001 mg/kg</td>
<td>0.01 mg (10 mcg)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Epinephrine Nebulized (1:1,000)</td>
<td>2.5 mg - 5 mg</td>
<td>5 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fentanyl Citrate IN &lt;10 kg</td>
<td>1 mcg/kg</td>
<td>10 mcg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fentanyl Citrate IV &lt;10 kg</td>
<td>1 mcg/kg</td>
<td>10 mcg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fentanyl Citrate IN ≥10 kg</td>
<td>1.5 mcg/kg</td>
<td>50 mcg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fentanyl Citrate IV ≥10 kg</td>
<td>1 mcg/kg</td>
<td>50 mcg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glucagon IM</td>
<td>0.05 mg/kg</td>
<td>1 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ipratropium Bromide Nebulized</td>
<td>0.5 mg (2.5 mL)</td>
<td>0.5 mg (2.5 mL)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lidocaine 2% IV/IO</td>
<td>1 mg/kg</td>
<td>35 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midazolam IN/IM</td>
<td>0.2 mg/kg</td>
<td>5 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midazolam IV slow</td>
<td>0.1 mg/kg</td>
<td>3.5 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morphine Sulfate IV/IM</td>
<td>0.1 mg/kg</td>
<td>3.5 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naloxone IN/IM/IV</td>
<td>0.1 mg/kg</td>
<td>2 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal Saline Fluid Bolus</td>
<td>20 mL/kg</td>
<td>500 mL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ondansetron IM/IV/ODT 6 months - 3 years</td>
<td>2 mg</td>
<td>2 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ondansetron IM/IV/ODT &gt;3 years of age</td>
<td>4 mg</td>
<td>4 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium Bicarb IV</td>
<td>1 mEq/kg</td>
<td>35 mEq</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**LBRT Color:**

| Color | GREY | PINK |

**Age Range:** Newborn to 6 months

**Weight Range:** <8 kg

**Approximate kg:** 5 kg

**Approximate lbs:** 10 lbs

**NG tube size:** 5 Fr (or clinically equivalent biphasic energy dose)

**Approximate kg:**
- **1st Defib:** 10 J
- **2nd Defib:** 20 J
- **3rd Defib:** 20 J

**Approximate lbs:**
- **1st Cardiovert:** 5 J
- **2nd Cardiovert:** 10 J
- **3rd Cardiovert:** 10 J

**Normal vital signs**
- HR: 100-160
- RR: 25-60
- SBP: >60 mmHg

### VOL | MEDICATION | DOSE | CONCENTRATION
--- | --- | --- | ---
- | Acetaminophen **DO NOT ADMINISTER** | - | -
0.2 mL | Adenosine IV 1st | 0.5 mg | 6 mg/2 mL
0.4 mL | Adenosine IV 2nd/3rd | 1 mg | 6 mg/2 mL
6 mL | Albuterol Nebulized | 5 mg | 2.5 mg/3 mL
0.5 mL | Amiodarone (VF/Pulseless VT) IV/IO | 25 mg | 150 mg/3 mL
1 mL | Atropine (Bradycardia) IV/IO | 0.1 mg | 1 mg/10 mL
0.3 mL* | Atropine (OPP) IV/IM | 0.1 mg | 8 mg/10 mL
1 mL | Calcium Chloride IV/IO | 100 mg | 1 gm/10 mL
24 mL | Charcoal PO | 5 gm | 50 gm/240 mL
25 mL | Dextrose 10% IV | 2.5 gm | 25 gm/250 mL
0.1 mL | Diphenhydramine IV/IM | 5 mg | 50 mg/1 mL
0.1 mL* | Epinephrine IM | 0.05 mg | 1:1,000 1 mg/1 mL
0.5 mL | Epinephrine IV/IO | 0.05 mg | 1:10,000 1 mg/10 mL
0.5 mL | Epinephrine (Push-Dose) IV slow/IO | 0.005 mg | 1:100,000 0.1 mg/10 mL
2.5 mL | Epinephrine Nebulized | 2.5 mg | 1:1,000 1 mg/1 mL
0.1 mL | Fentanyl IV BHO | 5 mcg | 100 mcg/2 mL
0.1 mL | Fentanyl IN BHO | 5 mcg | 100 mcg/2 mL
0.3 mL* | Glucagon IM | 0.25 mg | 1 unit (mg)/1 mL
1.25 mL | Ipratropium Bromide Nebulized | 0.25 mg | 0.5 mg/2.5 mL
0.3 mL* | Lidocaine 2% IV/IO | 5 mg | 100 mg/5 mL
0.1 mL | Midazolam IV slow | 0.5 mg | 5 mg/1 mL
0.2 mL | Midazolam IN/IM | 1 mg | 5 mg/1 mL
NONE | Morphine Sulfate IV/IM | NONE | 10 mg/1 mL
0.5 mL | Naloxone IN/IM/IV | 0.5 mg | 2 mg/2 mL
5 mL | Naloxone IV titrated increments | 0.5 mg | Diluted to 1 mg/10 mL
100 mL | Normal Saline Fluid Bolus | Standard | 1 mL
| Ondansetron IM/IV 6 months - 3 years | 2 mg | 4 mg/2 mL
½ tablet | Ondansetron ODT 6 months - 3 years | 2 mg | 4 mg tablet
5 mL | Sodium Bicarbonate IV BHO | 5 mEq | 50 mEq/50 mL

- Neonates involve base physician.
- To assure accuracy, be sure the designated concentration of medication is used.
- Volume rounded for ease of administration
- Antiarrhythmic dosing for stable VT per BHPO
# Subject: Pediatric Treatment Protocol

## ALS Pediatric (<15) Drug Chart

### Age Range: 6 months to 3 years

<table>
<thead>
<tr>
<th>VOL</th>
<th>MEDICATION</th>
<th>DOSE</th>
<th>CONCENTRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>Acetaminophen <strong>DO NOT ADMINISTER</strong></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>0.3 mL*</td>
<td>Adenosine <strong>IV fast 1st</strong></td>
<td>1 mg</td>
<td>6 mg/2 mL</td>
</tr>
<tr>
<td>0.7 mL*</td>
<td>Adenosine <strong>IV fast 2nd/3rd</strong></td>
<td>2 mg</td>
<td>6 mg/2 mL</td>
</tr>
<tr>
<td>6 mL</td>
<td>Albuterol <strong>Nebulized</strong></td>
<td>5 mg</td>
<td>2.5 mg/3 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Amiodarone (VF/Pulseless VT) <strong>IV/IO</strong></td>
<td>50 mg</td>
<td>150 mg/3 mL</td>
</tr>
<tr>
<td>2 mL</td>
<td>Atropine (Bradycardia) <strong>IV/IO</strong></td>
<td>0.2 mg</td>
<td>1 mg/10 mL</td>
</tr>
<tr>
<td>0.5 mL</td>
<td>Atropine (OPP) <strong>IV/IM</strong></td>
<td>0.2 mg</td>
<td>8 mg/20 mL</td>
</tr>
<tr>
<td>2 mL</td>
<td>Calcium Chloride <strong>IV/IO</strong></td>
<td>200 mg</td>
<td>1 gm/10 mL</td>
</tr>
<tr>
<td>50 mL*</td>
<td>Charcoal <strong>PO</strong></td>
<td>10 gm</td>
<td>50 gm/240 mL</td>
</tr>
<tr>
<td>50 mL</td>
<td>Dextrose 10% <strong>IV</strong></td>
<td>5 gm</td>
<td>25 gm/250 mL</td>
</tr>
<tr>
<td>0.2 mL</td>
<td>Diphenhydramine <strong>IV/IM</strong></td>
<td>10 mg</td>
<td>50 mg/1 mL</td>
</tr>
<tr>
<td>0.1 mL</td>
<td>Epinephrine <strong>IM</strong></td>
<td>0.1 mg</td>
<td><strong>1:1,000</strong> 1 mg/1 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Epinephrine <strong>IV/IO</strong></td>
<td>0.1 mg</td>
<td><strong>1:10,000</strong> 1 mg/10 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Epinephrine (Push-Dose) <strong>IV slow/IO</strong></td>
<td>0.01 mg</td>
<td><strong>1:100,000</strong> 0.1mg/10 mL</td>
</tr>
<tr>
<td>2.5 mL</td>
<td>Epinephrine <strong>Nebulized</strong></td>
<td>2.5 mg</td>
<td><strong>1:1,000</strong> 1 mg/1 mL</td>
</tr>
<tr>
<td>0.3 mL</td>
<td>Fentanyl <strong>IN</strong></td>
<td>15 mcg</td>
<td>100 mcg/2 mL</td>
</tr>
<tr>
<td>0.2 mL</td>
<td>Fentanyl <strong>IV</strong></td>
<td>10 mcg</td>
<td>100 mcg/2 mL</td>
</tr>
<tr>
<td>0.5 mL</td>
<td>Glucagon <strong>IM</strong></td>
<td>0.5 mg</td>
<td>1 unit (mg)/1 mL</td>
</tr>
<tr>
<td>1.25 mL</td>
<td>Ipratropium Bromide <strong>Nebulized</strong></td>
<td>0.25 mg</td>
<td>0.5 mg/2.5 mL</td>
</tr>
<tr>
<td>0.5 mL*</td>
<td>Lidocaine <strong>2% IV/IO</strong></td>
<td>10 mg</td>
<td>100 mg/5 mL</td>
</tr>
<tr>
<td>0.2 mL</td>
<td>Midazolam <strong>IV slow</strong></td>
<td>1 mg</td>
<td>5 mg/1 mL</td>
</tr>
<tr>
<td>0.4 mL</td>
<td>Midazolam <strong>IN/IM</strong></td>
<td>2 mg</td>
<td>5 mg/1 mL</td>
</tr>
<tr>
<td>0.1 mL</td>
<td>Morphine Sulfate <strong>IV/IM</strong></td>
<td>1 mg</td>
<td>10 mg/1 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Naloxone <strong>IN/IM</strong></td>
<td>1 mg</td>
<td>2 mg/2 mL</td>
</tr>
<tr>
<td>10 mL</td>
<td>Naloxone <strong>IV titrated increments</strong></td>
<td>1 mg</td>
<td>Diluted to 1 mg/10 mL</td>
</tr>
<tr>
<td>200 mL</td>
<td>Normal Saline Fluid Bolus</td>
<td></td>
<td><strong>Standard</strong></td>
</tr>
<tr>
<td>1 mL</td>
<td>Ondansetron <strong>IM/IV</strong> 6 months - 3 years</td>
<td>2 mg</td>
<td>4 mg/2 mL</td>
</tr>
<tr>
<td>½ tablet</td>
<td>Ondansetron <strong>ODT</strong> 6 months - 3 years</td>
<td>2 mg</td>
<td>4 mg tablet</td>
</tr>
<tr>
<td>2 mL</td>
<td>Ondansetron <strong>IM/IV</strong> &gt;3 years of age</td>
<td>4 mg</td>
<td>4 mg/2 mL</td>
</tr>
<tr>
<td>1 tablet</td>
<td>Ondansetron <strong>ODT</strong> &gt;3 years of age</td>
<td>4 mg</td>
<td>4 mg tablet</td>
</tr>
<tr>
<td>10 mL</td>
<td>Sodium Bicarbonate <strong>IV</strong></td>
<td><strong>BHO</strong> 10 mEq</td>
<td>50 mEq/50 mL</td>
</tr>
</tbody>
</table>

- Neonates involve base physician.
- To assure accuracy, be sure the designated **concentration** of medication is used.
- Volume rounded for ease of administration
- **Antiarrhythmic dosing for stable VT per BHPO**
### ALS PEDIATRIC (<15) DRUG CHART

**SUBJECT:** PEDIATRIC TREATMENT PROTOCOL

**Date:** 07/01/2021

<table>
<thead>
<tr>
<th>VOL</th>
<th>MEDICATION</th>
<th>DOSE</th>
<th>CONCENTRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>22 mL</td>
<td>Acetaminophen IV (≥2 years of age)</td>
<td>220 mg</td>
<td>1 gm/100 mL</td>
</tr>
<tr>
<td>0.5 mL</td>
<td>Adenosine IV fast 1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>1.5 mg</td>
<td>6 mg/2 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Adenosine IV fast 2&lt;sup&gt;nd&lt;/sup&gt;/3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>3 mg</td>
<td>6 mg/2 mL</td>
</tr>
<tr>
<td>6 mL</td>
<td>Albuterol Nebulized</td>
<td>5 mg</td>
<td>2.5 mg/3 mL</td>
</tr>
<tr>
<td>1.5 mL</td>
<td>Amiodarone (VF/pulseless VT) IV/IO</td>
<td>75 mg</td>
<td>150 mg/3mL</td>
</tr>
<tr>
<td>3 mL</td>
<td>Atropine (Bradycardia) IV/IO</td>
<td>0.3 mg</td>
<td>1 mg/10 mL</td>
</tr>
<tr>
<td>0.8 mL</td>
<td>Atropine (OPP) IV/IM</td>
<td>0.3 mg</td>
<td>8 mg/20 mL</td>
</tr>
<tr>
<td>3 mL</td>
<td>Calcium Chloride IV/IO</td>
<td>300 mg</td>
<td>1 gm/20 mL</td>
</tr>
<tr>
<td>70 mL*</td>
<td>Charcoal PO</td>
<td>15 gm</td>
<td>50 gm/240 mL</td>
</tr>
<tr>
<td>75 mL</td>
<td>Dextrose 10% IV</td>
<td>7.5 gm</td>
<td>25 gm/250 mL</td>
</tr>
<tr>
<td>0.3 mL</td>
<td>Diphenhydramine IV/IM</td>
<td>15 mg</td>
<td>50 mg/1 mL</td>
</tr>
<tr>
<td>0.2 mL*</td>
<td>Epinephrine IM</td>
<td>0.15 mg</td>
<td>1:1,000 1 mg/1 mL</td>
</tr>
<tr>
<td>1.5 mL</td>
<td>Epinephrine (Cardiac Arrest) IV/IO</td>
<td>0.15 mg</td>
<td>1:10,000 1 mg/10 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Epinephrine (Push-Dose) IV slow/IO</td>
<td>0.01 mg</td>
<td>1:100,000 0.1 mg/10 mL</td>
</tr>
<tr>
<td>5 mL</td>
<td>Epinephrine Nebulized</td>
<td>5 mg</td>
<td>1:1,000 1 mg/1 mL</td>
</tr>
<tr>
<td>0.5 mL</td>
<td>Fentanyl IN</td>
<td>25 mcg</td>
<td>100 mcg/2 mL</td>
</tr>
<tr>
<td>0.3 mL</td>
<td>Fentanyl IV</td>
<td>15 mcg</td>
<td>100 mcg/2 mL</td>
</tr>
<tr>
<td>0.8 mL*</td>
<td>Glucagon IM</td>
<td>0.75 mg</td>
<td>1 unit (mg)/1 mL</td>
</tr>
<tr>
<td>2.5 mL</td>
<td>Ipratropium Bromide Nebulized</td>
<td>0.5 mg</td>
<td>0.5 mg/2.5 mL</td>
</tr>
<tr>
<td>0.8 mL*</td>
<td>Lidocaine 2% IV slow/IO</td>
<td>15 mg</td>
<td>100 mg/5 mL</td>
</tr>
<tr>
<td>0.6 mL</td>
<td>Midazolam IN/IM</td>
<td>3 mg</td>
<td>5 mg/1 mL</td>
</tr>
<tr>
<td>0.3 mL</td>
<td>Midazolam IV slow</td>
<td>1.5 mg</td>
<td>5 mg/1 mL</td>
</tr>
<tr>
<td>0.2 mL*</td>
<td>Morphine Sulfate IV/IM</td>
<td>1.5 mg</td>
<td>10 mg/1 mL</td>
</tr>
<tr>
<td>1.5 mL</td>
<td>Naloxone IN/IM/IV</td>
<td>1.5 mg</td>
<td>2 mg/2 mL</td>
</tr>
<tr>
<td>15 mL</td>
<td>Naloxone IV titrated increments</td>
<td>1.5 mg</td>
<td>Diluted to 1 mg/10 mL</td>
</tr>
<tr>
<td>300 mL</td>
<td>Normal Saline Fluid Bolus</td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>1 mL</td>
<td>Ondansetron IM/IV 6 months - 3 years</td>
<td>2 mg</td>
<td>4 mg/2 mL</td>
</tr>
<tr>
<td>½ tablet</td>
<td>Ondansetron ODT 6 months - 3 years</td>
<td>2 mg</td>
<td>4 mg tablet</td>
</tr>
<tr>
<td>2 mL</td>
<td>Ondansetron IM/IV &gt;3 years of age</td>
<td>4 mg</td>
<td>4 mg/2 mL</td>
</tr>
<tr>
<td>1 tablet</td>
<td>Ondansetron ODT &gt;3 years of age</td>
<td>4 mg</td>
<td>4 mg tablet</td>
</tr>
<tr>
<td>15 mL</td>
<td>Sodium Bicarbonate IV</td>
<td>BHO</td>
<td>15 mEq</td>
</tr>
</tbody>
</table>

- To assure accuracy be sure the designated concentration of medication is used.
- Volume rounded for ease of administration
- Antiarrhythmic dosing for stable VT per BHPO

**Normal vital signs**

| HR: 80-130 | RR: 20-30 | SBP: >75 mmHg |

**Notes:**

- **LBRT Color:** WHITE

**Age Range:** 4-5 years

**Weight Range:** 15-18 kg

**Approximate kg:** 15 kg

**Approximate lbs:** 30 lbs

**NG tube size:** 10 Fr

**Defib:** 30 J 60 J 60 J

**Cardiovert:** 15 J 30 J 30 J

**Defibrillation:**

<table>
<thead>
<tr>
<th>1&lt;sup&gt;st&lt;/sup&gt;</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt;</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 J</td>
<td>60 J</td>
<td>60 J</td>
</tr>
</tbody>
</table>

**Cardioversion:**

<table>
<thead>
<tr>
<th>1&lt;sup&gt;st&lt;/sup&gt;</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt;</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 J</td>
<td>30 J</td>
<td>30 J</td>
</tr>
</tbody>
</table>

**NG tube size:** 10 Fr (or clinically equivalent biphasic energy dose)

**Color:** WHITE

**Age Range:** 4-5 years

**Weight Range:** 15-18 kg

**Approximate kg:** 15 kg

**Approximate lbs:** 30 lbs

**NG tube size:** 10 Fr (or clinically equivalent biphasic energy dose)

**Normal vital signs**

| HR: 80-130 | RR: 20-30 | SBP: >75 mmHg |

**Volume rounded for ease of administration**

**Antiarrhythmic dosing for stable VT per BHPO**
**ALS Pediatric (<15) Drug Chart**

<table>
<thead>
<tr>
<th>VOL</th>
<th>MEDICATION</th>
<th>DOSE</th>
<th>CONCENTRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 mL</td>
<td>Acetaminophen IV</td>
<td>300 mg</td>
<td>1 gm/100 mL</td>
</tr>
<tr>
<td>0.7 mL*</td>
<td>Adenosine IV fast 1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>2 mg</td>
<td>6 mg/2 mL</td>
</tr>
<tr>
<td>1.3 mL*</td>
<td>Adenosine IV fast 2&lt;sup&gt;nd&lt;/sup&gt;/3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>4 mg</td>
<td>6 mg/2 mL</td>
</tr>
<tr>
<td>6 mL</td>
<td>Albuterol Nebulized</td>
<td>5 mg</td>
<td>2.5 mg/3 mL</td>
</tr>
<tr>
<td>2 mL&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Amiodarone (VF/pulseless VT) IV/IO</td>
<td>100 mg</td>
<td>150 mg/3 mL</td>
</tr>
<tr>
<td>4 mL</td>
<td>Atropine (Bradycardia) IV</td>
<td>0.4 mg</td>
<td>1 mg/10 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Atropine (OPP) IV/IM</td>
<td>0.4 mg</td>
<td>8 mg/20 mL</td>
</tr>
<tr>
<td>4 mL</td>
<td>Calcium Chloride IV/IO</td>
<td>400 mg</td>
<td>1 gm/10 mL</td>
</tr>
<tr>
<td>100 mL*</td>
<td>Charcoal PO</td>
<td>20 gm</td>
<td>50 gm/240 mL</td>
</tr>
<tr>
<td>100 mL</td>
<td>Dextrose 10% IV</td>
<td>10 gm</td>
<td>25 gm/250 mL</td>
</tr>
<tr>
<td>0.4 mL</td>
<td>Diphenhydramine IV/IM</td>
<td>20 mg</td>
<td>50 mg/1 mL</td>
</tr>
<tr>
<td>0.2 mL</td>
<td>Epinephrine IM</td>
<td>0.2 mg</td>
<td>1:1,000 1 mg/1 mL</td>
</tr>
<tr>
<td>2 mL</td>
<td>Epinephrine (Cardiac Arrest) IV/IO</td>
<td>0.2 mg</td>
<td>1:10,000 1 mg/10 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Epinephrine (Push-Dose) IV slow/IO</td>
<td>0.01 mg</td>
<td>1:100,000 0.1 mg/10 mL</td>
</tr>
<tr>
<td>5 mL</td>
<td>Epinephrine Nebulized</td>
<td>5 mg</td>
<td>1:1,000 1 mg/1 mL</td>
</tr>
<tr>
<td>0.6 mL</td>
<td>Fentanyl IN</td>
<td>30 mcg</td>
<td>100 mcg/2 mL</td>
</tr>
<tr>
<td>0.4 mL</td>
<td>Fentanyl IV</td>
<td>20 mcg</td>
<td>100 mcg/2 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Glucagon IM</td>
<td>1 mg</td>
<td>1 unit (mg)/1 mL</td>
</tr>
<tr>
<td>2.5 mL</td>
<td>Ipratropium Bromide Nebulized</td>
<td>0.5 mg</td>
<td>0.5 mg/2.5 mL</td>
</tr>
<tr>
<td>1 mL&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Lidocaine 2% IV slow/IO</td>
<td>20 mg</td>
<td>100 mg/5 mL</td>
</tr>
<tr>
<td>0.8 mL</td>
<td>Midazolam IN/IM</td>
<td>4 mg</td>
<td>5 mg/1 mL</td>
</tr>
<tr>
<td>0.4 mL</td>
<td>Midazolam IV slow</td>
<td>2 mg</td>
<td>5 mg/1 mL</td>
</tr>
<tr>
<td>0.2 mL</td>
<td>Morphine Sulfate IV/IM</td>
<td>2 mg</td>
<td>10 mg/1 mL</td>
</tr>
<tr>
<td>2 mL</td>
<td>Naloxone IN/IM/IV</td>
<td>2 mg</td>
<td>2 mg/2 mL</td>
</tr>
<tr>
<td>20 mL</td>
<td>Naloxone IV titrated increments</td>
<td>2 mg</td>
<td>Diluted to 1 mg/10 mL</td>
</tr>
<tr>
<td>400 mL</td>
<td>Normal Saline Fluid Bolus</td>
<td></td>
<td>Standard</td>
</tr>
<tr>
<td>2 mL</td>
<td>Ondansetron IM/IV &gt;3 years of age</td>
<td>4 mg</td>
<td>4 mg/2 mL</td>
</tr>
<tr>
<td>1 tablet</td>
<td>Ondansetron ODT &gt;3 years of age</td>
<td>4 mg</td>
<td>4 mg tablet</td>
</tr>
<tr>
<td>20 mL</td>
<td>Sodium Bicarbonate IV BHO</td>
<td>20 mEq</td>
<td>50 mEq/50 mL</td>
</tr>
</tbody>
</table>

- To assure accuracy be sure the designated **concentration** of medication is used.
- Volume rounded for ease of administration
- Antiarrhythmic dosing for stable VT per BHPO
### LBRT Color: ORANGE

**Age Range:** 8-10 years  
**Weight Range:** 24-29 kg  
**Approximate kg:** 25 kg  
**Approximate lbs:** 50 lbs  
**NG tube size:** 14-18 Fr

**Defib**: 50 J  
**Cardiovert**: 25 J  
**(or clinically equivalent biphasic energy dose)**

<table>
<thead>
<tr>
<th>VOL</th>
<th>MEDICATION</th>
<th>DOSE</th>
<th>CONCENTRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>37 mL</td>
<td>Acetaminophen IV</td>
<td>370 mg</td>
<td>1 gm/100 mL</td>
</tr>
<tr>
<td>0.8 mL*</td>
<td>Adenosine IV fast 1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>2.5 mg</td>
<td>6 mg/2 mL</td>
</tr>
<tr>
<td>1.7 mL*</td>
<td>Adenosine IV fast 2&lt;sup&gt;nd&lt;/sup&gt;/3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>5 mg</td>
<td>6 mg/2 mL</td>
</tr>
<tr>
<td>6 mL</td>
<td>Albuterol Nebulized</td>
<td>5 mg</td>
<td>2.5 mg/3 mL</td>
</tr>
<tr>
<td>2.5 mL◊</td>
<td>Amiodarone (VF/pulseless VT) IV/IO</td>
<td>125 mg</td>
<td>150 mg/3 mL</td>
</tr>
<tr>
<td>5 mL</td>
<td>Atropine (Bradycardia) IV/IO</td>
<td>0.5 mg</td>
<td>1 mg/10 mL</td>
</tr>
<tr>
<td>1.3 mL*</td>
<td>Atropine (OPP) IV/IM</td>
<td>0.5 mg</td>
<td>8 mg/20 mL</td>
</tr>
<tr>
<td>5 mL</td>
<td>Calcium Chloride IV/IO</td>
<td>500 mg</td>
<td>1 gm/10 mL</td>
</tr>
<tr>
<td>120 mL</td>
<td>Charcoal PO</td>
<td>25 gm</td>
<td>50 gm/240 mL</td>
</tr>
<tr>
<td>125 mL</td>
<td>Dextrose 10% IV</td>
<td>12.5 gm</td>
<td>25 gm/250 mL</td>
</tr>
<tr>
<td>0.5 mL</td>
<td>Diphenhydramine IV/IM</td>
<td>25 mg</td>
<td>50 mg/1 mL</td>
</tr>
<tr>
<td>0.25 mL</td>
<td>Epinephrine IM</td>
<td>0.25 mg</td>
<td>1:1,000 1 mg/1 mL</td>
</tr>
<tr>
<td>2.5 mL</td>
<td>Epinephrine (Cardiac Arrest) IV/IO</td>
<td>0.25 mg</td>
<td>1:10,000 1 mg/10 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Epinephrine (Push-Dose) IV slow/IO</td>
<td>0.01 mg</td>
<td>1:100,000 0.1 mg/10 mL</td>
</tr>
<tr>
<td>5 mL</td>
<td>Epinephrine Nebulized</td>
<td>5 mg</td>
<td>1:1,000 1 mg/1 mL</td>
</tr>
<tr>
<td>0.7 mL</td>
<td>Fentanyl IN</td>
<td>35 mcg</td>
<td>100 mcg/2 mL</td>
</tr>
<tr>
<td>0.5 mL</td>
<td>Fentanyl IV</td>
<td>25 mcg</td>
<td>100 mcg/2 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Glucagon IM</td>
<td>1 mg</td>
<td>1 unit (mg)/1 mL</td>
</tr>
<tr>
<td>2.5 mL</td>
<td>Ipratropium Bromide Nebulized</td>
<td>0.5 mg</td>
<td>0.5 mg/2.5 mL</td>
</tr>
<tr>
<td>1.3 mL◊</td>
<td>Lidocaine 2% IV slow/IO</td>
<td>25 mg</td>
<td>100 mg/5 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Midazolam IN/IM</td>
<td>5 mg</td>
<td>5 mg/1 mL</td>
</tr>
<tr>
<td>0.5 mL</td>
<td>Midazolam IV slow</td>
<td>2.5 mg</td>
<td>5 mg/1 mL</td>
</tr>
<tr>
<td>0.3 mL*</td>
<td>Morphine Sulfate IV/IM</td>
<td>2.5 mg</td>
<td>10 mg/1 mL</td>
</tr>
<tr>
<td>2 mL</td>
<td>Naloxone IN/IM/IV</td>
<td>2 mg</td>
<td>2 mg/2 mL</td>
</tr>
<tr>
<td>20 mL</td>
<td>Naloxone IV titrated increments</td>
<td>2 mg</td>
<td>Diluted to 1 mg/10 mL</td>
</tr>
<tr>
<td>500 mL</td>
<td>Normal Saline Fluid Bolus</td>
<td></td>
<td>Standard</td>
</tr>
<tr>
<td>2 mL</td>
<td>Ondansetron IM/IV &gt;3 years of age</td>
<td>4 mg</td>
<td>4 mg/2 mL</td>
</tr>
<tr>
<td>1 tablet</td>
<td>Ondansetron ODT &gt;3 years of age</td>
<td>4 mg</td>
<td>4 mg tablet</td>
</tr>
<tr>
<td>25 mL</td>
<td>Sodium Bicarbonate IV BHO</td>
<td>25 mEq</td>
<td>50 mEq/50 mL</td>
</tr>
</tbody>
</table>

- To assure accuracy be sure the designated concentration of medication is used.  
- Volume rounded for ease of administration  
- Antiarrhythmic dosing for stable VT per BHPO
### LBRT Color:

**GREEN**

#### Age Range: 10-12 years

#### Weight Range: 30-36 kg

<table>
<thead>
<tr>
<th>VOL</th>
<th>MEDICATION</th>
<th>DOSE</th>
<th>CONCENTRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>52 mL</td>
<td>Acetaminophen IV</td>
<td>520 mg</td>
<td>1 gm/100 mL</td>
</tr>
<tr>
<td>1.2 mL</td>
<td>Adenosine IV fast 1st</td>
<td>3.5 mg</td>
<td>6 mg/2 mL</td>
</tr>
<tr>
<td>2.3 mL</td>
<td>Adenosine IV fast 2nd/3rd</td>
<td>7 mg</td>
<td>6 mg/2 mL</td>
</tr>
<tr>
<td>6 mL</td>
<td>Albuterol Nebulized</td>
<td>5 mg</td>
<td>2.5 mg/3 mL</td>
</tr>
<tr>
<td>3 mL</td>
<td>Amiodarone (VF/pulseless VT) IV/IO</td>
<td>150 mg</td>
<td>150 mg/3 mL</td>
</tr>
<tr>
<td>5 mL</td>
<td>Atropine (Bradycardia) IV/IO</td>
<td>0.5 mg</td>
<td>1 mg/10 mL</td>
</tr>
<tr>
<td>1.8 mL</td>
<td>Atropine (OPP) IV/IM</td>
<td>0.7 mg</td>
<td>8 mg/20 mL</td>
</tr>
<tr>
<td>5 mL</td>
<td>Calcium Chloride IV/IO</td>
<td>500 mg</td>
<td>1 gm/10 mL</td>
</tr>
<tr>
<td>170 mL</td>
<td>Charcoal PO</td>
<td>35 gm</td>
<td>50 gm/240 mL</td>
</tr>
<tr>
<td>175 mL</td>
<td>Dextrose 10% IV</td>
<td>17.5 gm</td>
<td>25 gm/250 mL</td>
</tr>
<tr>
<td>0.7 mL</td>
<td>Diphenhydramine IV/IM</td>
<td>35 mg</td>
<td>50 mg/1 mL</td>
</tr>
<tr>
<td>0.3 mL</td>
<td>Epinephrine IM</td>
<td>0.3 mg</td>
<td>1:1,000 1 mg/1 mL</td>
</tr>
<tr>
<td>3.5 mL</td>
<td>Epinephrine (Cardiac Arrest) IV/IO</td>
<td>0.35 mg</td>
<td>1:10,000 1 mg/10 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Epinephrine (Push-Dose) IV slow/IO</td>
<td>0.01 mg</td>
<td>1:100,000 0.1 mg/10 mL</td>
</tr>
<tr>
<td>5 mL</td>
<td>Epinephrine Nebulized</td>
<td>5 mg</td>
<td>1:1,000 1 mg/1 mL</td>
</tr>
<tr>
<td>1.0 mL</td>
<td>Fentanyl IN</td>
<td>50 mcg</td>
<td>100 mcg/2 mL</td>
</tr>
<tr>
<td>0.7 mL</td>
<td>Fentanyl IV</td>
<td>35 mcg</td>
<td>100 mcg/2 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Glucagon IM</td>
<td>1 mg</td>
<td>1 unit (mg)/1 mL</td>
</tr>
<tr>
<td>2.5 mL</td>
<td>Ipratropium Bromide Nebulized</td>
<td>0.5 mg</td>
<td>0.5 mg/2.5 mL</td>
</tr>
<tr>
<td>1.8 mL</td>
<td>Lidocaine 2% IV slow/IO</td>
<td>35 mg</td>
<td>100 mg/5 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Midazolam IN/IM</td>
<td>5 mg</td>
<td>5 mg/1 mL</td>
</tr>
<tr>
<td>0.7 mL</td>
<td>Midazolam IV slow</td>
<td>3.5 mg</td>
<td>5 mg/1 mL</td>
</tr>
<tr>
<td>0.4 mL</td>
<td>Morphine Sulfate IV/IM</td>
<td>3.5 mg</td>
<td>10 mg/1 mL</td>
</tr>
<tr>
<td>2 mL</td>
<td>Naloxone IN/IM/IV</td>
<td>2 mg</td>
<td>2 mg/2 mL</td>
</tr>
<tr>
<td>20 mL</td>
<td>Naloxone IV titrated increments</td>
<td>2 mg</td>
<td>Diluted to 1 mg/10 mL</td>
</tr>
<tr>
<td>500 mL</td>
<td>Normal Saline Fluid Bolus</td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>2 mL</td>
<td>Ondansetron IM/IV &gt;3 years of age</td>
<td>4 mg</td>
<td>4 mg/2 mL</td>
</tr>
<tr>
<td>1 tablet</td>
<td>Ondansetron ODT &gt;3 years of age</td>
<td>4 mg</td>
<td>4 mg tablet</td>
</tr>
<tr>
<td>35 mL</td>
<td>Sodium Bicarbonate IV BHO</td>
<td>35 mEq</td>
<td>50 mEq/50 mL</td>
</tr>
</tbody>
</table>

- To assure accuracy be sure the designated concentration of medication is used.
- * Volume rounded for ease of administration
- ◊ Antiarrhythmic dosing for stable VT per BHPO
Length Exceeds LBRT

Pediatric patients up to age 15 who are longer than the LBRT are treated with adult doses.
Approximate kg: >36 kg
Approximate lbs: >70 lbs
NG tube size: 18 Fr

<table>
<thead>
<tr>
<th>VOL</th>
<th>MEDICATION</th>
<th>DOSE</th>
<th>CONCENTRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 mL</td>
<td>Acetaminophen IV</td>
<td>1,000 mg</td>
<td>1 gm/100 mL</td>
</tr>
<tr>
<td>2 mL</td>
<td>Adenosine IV fast 1st</td>
<td>6 mg</td>
<td>6 mg/2 mL</td>
</tr>
<tr>
<td>4 mL</td>
<td>Adenosine IV fast 2nd/3rd</td>
<td>12 mg</td>
<td>6 mg/2 mL</td>
</tr>
<tr>
<td>6 mL</td>
<td>Albuterol Nebulized</td>
<td>5 mg</td>
<td>2.5 mg/3 mL</td>
</tr>
<tr>
<td>6 mL</td>
<td>Amiodarone (VF/Pulseless VT) IV/O</td>
<td>300 mg</td>
<td>150 mg/3 mL</td>
</tr>
<tr>
<td>5 mL</td>
<td>Atropine (Bradycardia) IV/O</td>
<td>0.5 mg</td>
<td>1 mg/10 mL</td>
</tr>
<tr>
<td>5 mL</td>
<td>Atropine (OPP) IV/IM</td>
<td>2 mg</td>
<td>8 mg/20 mL</td>
</tr>
<tr>
<td>5 mL</td>
<td>Calcium Chloride IV/O</td>
<td>500 mg</td>
<td>1 gm/10 mL</td>
</tr>
<tr>
<td>240 mL</td>
<td>Charcoal PO</td>
<td>50 gm</td>
<td>50 gm/240 mL</td>
</tr>
<tr>
<td>250 mL</td>
<td>Dextrose 10% IV</td>
<td>25 gm</td>
<td>25 gm/250 mL</td>
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<tr>
<td>1 mL</td>
<td>Diphenhydramine IV/IM</td>
<td>50 mg</td>
<td>50 mg/1 mL</td>
</tr>
<tr>
<td>0.3 mL</td>
<td>Epinephrine IM</td>
<td>0.3 mg</td>
<td>1:1,000 1 mg/1 mL</td>
</tr>
<tr>
<td>10 mL</td>
<td>Epinephrine (Cardiac Arrest) IV/O</td>
<td>1 mg</td>
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</tr>
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<td>1:100,000 0.1 mg/10 mL</td>
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<td>5 mg</td>
<td>1:1,000 1 mg/1 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Fentanyl IN</td>
<td>50 mcg*</td>
<td>100 mcg/2 mL</td>
</tr>
<tr>
<td>2 mL</td>
<td>Fentanyl IV</td>
<td>100 mcg*</td>
<td>100 mcg/2 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Glucagon IM</td>
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</tr>
<tr>
<td>‡,◊</td>
<td>Lidocaine 2% IV slow/IO</td>
<td>‡</td>
<td>100 mg/5 mL</td>
</tr>
<tr>
<td>1 mL</td>
<td>Midazolam IN/IM/IV</td>
<td>5 mg</td>
<td>5 mg/1 mL</td>
</tr>
<tr>
<td>‡</td>
<td>Morphine Sulfate IV/IM</td>
<td>‡</td>
<td>10 mg/1 mL</td>
</tr>
<tr>
<td>2 mL</td>
<td>Naloxone IN/IM/IV</td>
<td>2 mg</td>
<td>2 mg/2 mL</td>
</tr>
<tr>
<td>20 mL</td>
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</tr>
<tr>
<td>1 tablet</td>
<td>Ondansetron ODT</td>
<td>4 mg</td>
<td>4 mg tablet</td>
</tr>
<tr>
<td>‡</td>
<td>Sodium Bicarbonate IV</td>
<td>‡</td>
<td>50 mEq/50 mL</td>
</tr>
</tbody>
</table>

- To assure accuracy be sure the designated concentration of medication is used.
- Ketamine only for 15 years of age or older
- First dose of fentanyl up to 100mcg IV or 50 mcg IN
- Administer appropriate adult weight-based medication dosages
- Antiarrhythmic dosing for stable VT per BHPO
# Abdominal Discomfort / GI / GU (Non-Traumatic)

**Date:** 7/1/2021

<table>
<thead>
<tr>
<th><strong>BLS</strong></th>
<th><strong>ALS</strong></th>
</tr>
</thead>
</table>
| • Ensure patent airway  
• O₂ saturation PRN  
• O₂ and/or ventilate PRN  
• NPO  
• Transport suspected symptomatic AAA to facility with surgical resources immediately available | • Monitor/EKG  
• IV/IO SO  
• Treat per Pain Management Protocol (S-141)  

**Suspected volume depletion**  
• 500 mL fluid bolus IV/IO SO, MR x 1 SO  

**Suspected AAA**  
• 500 mL fluid bolus IV/IO SO to maintain a SBP of 80, MR x1 SO  

**For nausea or vomiting**  
• Ondansetron 4 mg IV/IM/ODT SO, MR x 1 q10 min SO
<table>
<thead>
<tr>
<th>BLS</th>
<th>ALS</th>
</tr>
</thead>
</table>
| **For conscious patient**  
- Reassure, encourage coughing  
- O₂ PRN | **If patient becomes unconscious or has decreasing LOC**  
- Direct laryngoscopy and Magill forceps SO, MR PRN  
- Capnography SO PRN |
| **For inadequate air exchange**  
Airway maneuvers (AHA)  
- Abdominal thrusts  
- Use chest thrusts in obese or pregnant patients | **Once obstruction is removed**  
- Monitor/EKG  
- IV/IO SO |
| **If patient becomes unconscious or is found unconscious**  
- Begin CPR |  
| **Once obstruction is removed**  
- Ventilate with high-flow O₂ PRN  
- O₂ saturation |  
| **Treat per Respiratory Distress Protocol (S-136)** |  

**Note:** If unable to ventilate effectively, transport immediately while continuing CPR (unconscious patient)
**BLS**

- Ensure patent airway
- \(O_2\) saturation PRN
- \(O_2\) and/or ventilate PRN
- Attempt to identify allergen & route (injected, ingested, absorbed, or inhaled)
- Safely remove allergen (e.g., stinger, injection mechanism), if possible
- Epinephrine auto-injector 0.3 mg IM x1
- May assist patient to self-medicate own prescribed epinephrine auto-injector or albuterol MDI **once only**. BH contact required for additional dose(s).

**ALS**

- Monitor/EKG
- IV/IO SO
- Capnography SO PRN

### Allergic Reactions (skin signs only)

- Urticaria (hives, rash)
- Erythema (flushing)
- Pruritus (itching)
- Diphenhydramine 50 mg IV/IM SO

### Suspected Anaphylactic Reactions

- Respiratory: throat tightness, hoarse voice, wheezing/stridor, cough, SOB
- Cardiovascular: fainting, dizziness, tachycardia, low BP
- GI: nausea, vomiting, abdominal cramping
- Tissues: angioedema of eyelids, lips, tongue, face

### Anaphylaxis Treatment

**Anaphylaxis with respiratory involvement**

- Albuterol 6 mL 0.083% via nebulizer* SO, MR SO
- Ipratropium bromide 2.5 mL 0.02% via nebulizer† added to first dose of albuterol SO

**Anaphylaxis with SBP <90 mmHg**

- 500 mL fluid bolus IV/IO MR to maintain SBP \(\geq\) 90 mmHg SO
- Push-dose epinephrine 1:100,000 (0.01 mg/mL)
  1 mL IV/IO BHO, MR q3 min, titrate to SBP \(\geq\) 90 mmHg BHO

#### Push-dose epinephrine mixing instructions

1. Remove 1 mL normal saline (NS) from the 10 mL NS syringe
2. Add 1 mL of epinephrine 1:10,000 (0.1 mg/mL) to 9 mL NS syringe

The mixture now has 10 mL of epinephrine at 0.01 mg/mL (10 mcg/mL) concentration.

---

*Infection control*: If concerned about aerosolized infectious exposure, substitute with albuterol MDI, if available

†Infection control*: If concerned about aerosolized infectious exposure, use patient’s ipratropium bromide MDI, if available, or withhold ipratropium bromide
ALTED NEUROLOGIC FUNCTION
(NON-TRAUMATIC)

**TREATMENT PROTOCOL**

**BLS**

- Ensure patent airway
- O\textsubscript{2} saturation, O\textsubscript{2} and/or ventilate PRN
- Spinal motion restriction PRN
- Position on affected side if difficulty managing secretions
- Do not allow patient to walk
- Restrain PRN
- Monitor blood glucose SO

**ALS**

- Monitor/EKG
- Capnography SO PRN
- IV/IO SO

**Symptomatic suspected opioid OD with RR <12.**
*Use with caution in opioid-dependent, pain-management patients.*

- Naloxone 4 mg via nasal spray preloaded single-dose device. Administer full dose in one nostril OR
- Naloxone 2 mg via atomizer and syringe. Administer 1 mg into each nostril.

*EMTs may assist family or friend to medicate with patient’s prescribed naloxone in symptomatic suspected opioid OD*

**Suspected hypoglycemia or patient’s blood sugar is <60 mg/dL**

- If patient is awake and able to manage oral secretions, give 3 oral glucose tabs or paste (15 gm total)
- Patient may eat or drink, if able
- If patient is unconscious, NPO

**Stroke/TIA**

- Treat per Stroke and Transient Ischemic Attack (S-144)
- Pediatric patients presenting with stroke symptoms should be transported to Rady Children’s Hospital

**Seizures**

- Protect airway and protect from injury
- Treat associated injuries

**Symptomatic suspected opioid OD with respiratory depression (RR<12, SpO\textsubscript{2}<96%, or EtCO\textsubscript{2}≥40 mmHg).** Titrte slowly in opioid-dependent patients.

- Naloxone 2 mg IN/IM/IV SO, MR SO. Titrate IV dose to effect, to drive the respiratory effort
- If patient refuses transport, give additional naloxone 2 mg IM SO
- If patient refuses transport, consider dispensing Leave Behind Naloxone 4 mg nasal spray preloaded device with education for patient and household members SO

**Symptomatic hypoglycemia with altered LOC or unresponsive to oral glucose agents**

- D\textsubscript{50} 25 gm IV SO if BS <60 mg/dL
- If patient remains symptomatic and BS remains <60 mg/dL, MR SO
- If no IV, glucagon 1 mL IM SO if BS <60 mg/dL

**Symptomatic hyperglycemia with diabetic history**

- 500 mL fluid bolus IV/IO if BS ≥350 mg/dL or reads “high” SO x1, MR BHO

**Status epilepticus (generalized, ongoing, and recurrent seizures without lucid interval)**

- Patients ≥40 kg: midazolam 10 mg IM SO
- Patients <40 kg: midazolam 0.2 mg/kg IM SO

**Partial seizure lasting ≥5 min (includes seizure time prior to arrival of prehospital provider)**

- Midazolam 0.2 mg/kg IN/IM/IV/IO SO to max dose of 5 mg SO, MR x1 in 10 min SO. Max 10 mg total, d/c if seizure stops.

**Eclamptic seizure of any duration**

- Treat per Obstetrical Emergencies / Newborn Deliveries (S-133)

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*Per Title 22, Chapter 1.5, § 100019 public safety personnel may administer nasal naloxone when authorized by the County of San Diego EMS Medical Director*
## TREATMENT PROTOCOL

**BURNS**

**Date:** 7/1/2021

<table>
<thead>
<tr>
<th>BLS</th>
<th>ALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Move patient to safe environment</td>
<td>• Monitor/EKG</td>
</tr>
<tr>
<td>• Break contact with causative agent</td>
<td>• IV/IO SO</td>
</tr>
<tr>
<td>• Ensure patent airway, O₂, and/or ventilate PRN</td>
<td>• Capnography SO PRN</td>
</tr>
<tr>
<td>• O₂ saturation PRN</td>
<td>• Treat pain per Pain Management Protocol (S-141)</td>
</tr>
<tr>
<td>• Treat other life-threatening injuries</td>
<td>For patients with &gt;20% partial-thickness or &gt;5% full-thickness burns and ≥15 years</td>
</tr>
<tr>
<td>• Carboxyhemoglobin monitor PRN, if available</td>
<td>• 500 mL fluid bolus IV/IO SO, then TKO SO</td>
</tr>
</tbody>
</table>

**Thermal burns**

- For burns <10% BSA, stop burning with non-chilled water or saline
- For burns ≥10% BSA, cover with dry dressing and keep patient warm
- Do not allow patient to become hypothermic

**Toxic inhalation (e.g., CO exposure, smoke, gas)**

- Move patient to safe environment
- 100% O₂ via mask
- Consider transport to facility with hyperbaric chamber for suspected CO poisoning, particularly in unconscious or pregnant patients

**Chemical burns**

- Brush off dry chemicals
- Flush with copious amounts of water

**Tar burns**

- Do not remove tar
- Cool with water, then transport

---

*Infection control*: If concerned about aerosolized infectious exposure, substitute with albuterol MDI, if available

Contact UCSD Base Hospital for patients meeting burn center criteria†

See Base Hospital Contact/Patient Transportation and Report (S-415)

†Burn center criteria

Patients with burns involving
- >20% partial-thickness or >5% full-thickness burns over BSA
- Suspected respiratory involvement or significant smoke inhalation
- Circumferential burn or injury to face, hands, feet, or perineum
- Electrical injury due to high voltage (>120 volts)
<table>
<thead>
<tr>
<th><strong>BLS</strong></th>
<th><strong>ALS</strong></th>
</tr>
</thead>
</table>
| • Ensure patent airway  
• O₂ saturation PRN  
• Use supplemental O₂ to maintain saturation at 94-98%  
• O₂ and/or ventilate PRN  
• Do not allow patient to walk  
• If SBP ≥100 mmHg, may assist patient to self-medicate own prescribed NTG* SL (maximum 3 doses, including those the patient has taken)  
• May assist with placement of 12-lead EKG leads  
• May assist patient to self-medicate own prescribed aspirin up to a max dose of 325 mg | • Monitor/EKG  
• IV SO  
• Obtain 12-lead EKG and transmit to receiving hospital  
• If STEMI, notify BH immediately and transport to appropriate STEMI center  
• Report LBBB, RBBB or poor-quality EKG  
• Aspirin 324 mg chewable PO SO should be given regardless of prior daily dose(s)  
• NTG* 0.4 mg SL SO, MR q3-5 min SO  
• Treat pain per Pain Management Protocol (S-141)  
• May assist with placement of 12-lead EKG leads  
• May assist patient to self-medicate own prescribed aspirin up to a max dose of 325 mg |

**Discomfort/pain of suspected cardiac origin with associated shock**
- 250 mL fluid bolus IV/IO with no rales SO, MR to maintain SBP ≥90 mmHg SO

**If BP refractory to second fluid bolus**
- Push-dose epinephrine 1:100,000 (0.01 mg/mL)  
  1 mL IV/IO BHO, MR q3 min, titrate to SBP ≥90 mmHg BHO

**Push-dose epinephrine mixing instructions**
1. Remove 1 mL normal saline (NS) from the 10 mL NS syringe  
2. Add 1 mL of epinephrine 1:10,000 (0.1 mg/mL) to 9 mL NS syringe  
The mixture now has 10 mL of epinephrine at 0.01 mg/mL (10 mcg/mL) concentration.

*NTG is contraindicated in patients who have taken
- erectile dysfunction medications such as sildenafil (Viagra®), tadafalil (Cialis®), and vardenafil (Levitra®) within 48 hours; and
- pulmonary hypertension medications such as sildenafil (Revatio®) and epoprostenol sodium (Flolan® and Veletri®)
**BLS**
- Continuous compressions of 100-120/min with ventilation rate of 10-12/min
- Use metronome or other real-time audiovisual feedback device
- Rotate compressor at least every 2 min
- Use mechanical compression device (unless contraindicated)
- O₂ and/or ventilate with BVM
- Monitor O₂ saturation
- Apply AED during CPR and analyze as soon as ready

**VAD**
- Perform CPR
- Contact BH for additional instructions

**TAH**
- Contact BH for instructions

**ALS**
- Apply defibrillator pads during CPR. Defibrillate immediately for VF/pulseless VT.
- IV/IO SO
- Capnography SO with waveform and value
- ET/PAA SO without interrupting compressions
- NG/OG tube PRN SO
- Provide cardiac monitor data to agency QA/QI department

**Team leader priorities**
- Monitor CPR quality, rate, depth, full chest recoil, and capnography value and waveform
- Minimize interruption of compressions (<5 sec) during EKG rhythm checks
- Charge monitor prior to rhythm checks. Do not interrupt CPR while charging.

**VAD/TAH**
- See Adjunct Cardiac Devices section

**Capnography**
- For EtCO₂ > 0 mmHg, may place ET/PAA without interrupting compressions
- If EtCO₂ rises rapidly during CPR, pause CPR and check for pulse

**Specific protocols (see below)**
- Arrhythmias
  - Unstable bradycardia
  - Supraventricular tachycardia
  - Atrial fibrillation / flutter
  - Ventricular tachycardia
  - Ventricular fibrillation / pulseless VT
  - Pulseless electrical activity / asystole
- Return of Spontaneous Circulation
- Adjunct Cardiac Devices
- Termination of Resuscitation
UNSTABLE‡ BRADYCARDIA

‡BP < 90 mmHg and exhibiting any of the following signs/symptoms of inadequate perfusion, e.g.,
- Altered mental status (decreased LOC, confusion, agitation)
- Pallor
- Diaphoresis
- Significant chest pain of suspected cardiac origin
- Severe dyspnea

*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

- Obtain 12-lead EKG
- Atropine 1 mg IV/IO SO, MR q3-5 min to max 3 mg SO
- If SBP < 90 mmHg and rales not present, 250 mL fluid bolus IV/IO SO, MR SO

Rhythm unresponsive to atropine
- Midazolam 1-5 mg IV/IO PRN pre-pacing SO
- External cardiac pacing* SO
- If capture occurs and SBP ≥ 100 mmHg, treat per Pain Management Protocol (S-141)

If SBP < 90 mmHg after atropine or initiation of pacing
- 250 mL fluid bolus IV/IO SO, MR x1 SO
- Push-dose epinephrine 1:100,000 (0.01 mg/mL) 1 mL IV/IO BHO. MR q3 min, titrate to SBP ≥ 90 mmHg BHO.

Push-dose epinephrine mixing instructions
1. Remove 1 mL normal saline (NS) from the 10 mL NS syringe
2. Add 1 mL of epinephrine 1:10,000 (0.1 mg/mL) to 9 mL NS syringe
The mixture now has 10 mL of epinephrine at 0.01 mg/mL (10 mcg/mL) concentration.
SUPRAVENTRICULAR TACHYCARDIA

- Obtain 12-lead EKG

Stable (symptomatic)
- If SBP < 90 mmHg and rales not present, 250 mL fluid bolus IV/IO SO, MR SO
- VSM SO
- Adenosine 6 mg rapid IV/IO followed by 20 mL NS rapid IV/IO SO
- Adenosine 12 mg rapid IV/IO followed by 20 mL NS rapid IV/IO SO, MR x1 SO

Unstable‡ (or refractory to treatment)
- Consider midazolam 1-5 mg IV/IO pre-cardioversion SO
- Synchronized cardioversion at manufacturer’s recommended energy dose SO, MR x2 SO, MR BHO
- After successful cardioversion
  - Check BP. If SBP < 90 mmHg and rales not present, 250 mL fluid bolus IV/IO SO, MR SO.
  - Obtain 12-lead EKG

‡SBP < 90 mmHg and exhibiting any of the following signs/symptoms of inadequate perfusion, e.g.,
- Altered mental status (decreased LOC, confusion, agitation)
- Pallor
- Diaphoresis
- Significant chest pain of suspected cardiac origin
- Severe dyspnea
ATRIAL FIBRILLATION / FLUTTER

- Obtain 12-lead EKG
- If SBP <90 mmHg and rales not present, 250 mL fluid bolus IV/IO SO, MR SO

Rate >180 and unstable‡
- Consider midazolam 1-5 mg IV/IO pre-cardioversion SO
- Synchronized cardioversion at manufacturer’s recommended energy dose SO, MR x2 SO, MR BHO
- After successful cardioversion
  - Check BP. If SBP <90 mmHg and rales not present, 250 mL fluid bolus IV/IO SO, MR SO.
  - Obtain 12-lead EKG

‡SBP <90 mmHg and exhibiting any of the following signs/symptoms of inadequate perfusion, e.g.,
- Altered mental status (decreased LOC, confusion, agitation)
- Pallor
- Diaphoresis
- Significant chest pain of suspected cardiac origin
- Severe dyspnea
VENTRICULAR TACHYCARDIA

- Obtain 12-lead EKG

**Stable**
- If SBP < 90 mmHg and rales not present, 250 mL fluid bolus IV/IO SO, MR SO
- Amiodarone 150 mg in 100 mL of NS over 10 min IV/IO SO, MR x1 in 10 min SO
  OR
- Lidocaine 1.5 mg/kg IV/IO SO, MR at 0.5 mg/kg IV/IO q8-10 min to max 3 mg/kg SO

**Unstable‡**
- Consider midazolam 1-5 mg IV/IO pre-cardioversion SO
- Synchronized cardioversion at manufacturer’s recommended energy dose SO, MR x2 SO, MR BHO
- After successful cardioversion
  - Check BP. If SBP < 90 mmHg and rales not present, 250 mL fluid bolus IV/IO SO, MR SO
  - Obtain 12-lead EKG

‡SBP < 90 mmHg and exhibiting any of the following signs/symptoms of inadequate perfusion, e.g.,
- Altered mental status (decreased LOC, confusion, agitation)
- Pallor
- Diaphoresis
- Significant chest pain of suspected cardiac origin
- Severe dyspnea
## VENTRICULAR FIBRILLATION / PULSELESS VT

- CPR
- Defibrillate as soon as monitor available/charged
- Defibrillate q2 min while VF/VT persists
- Epinephrine 1:10,000 1 mg IV/IO q3-5 min SO

### Persistent VF/VT after 3 defibrillation attempts

- Amiodarone 300 mg IV/IO, MR 150 mg (max 450 mg) SO
- OR
- Lidocaine 1.5 mg/kg IV/IO SO, MR at 0.5 mg/kg IV/IO q5 min to max 3 mg/kg SO

**Early Base Hospital contact should be considered for persistent or recurrent VF/pulseless VT**
PULSELESS ELECTRICAL ACTIVITY

- CPR
- Epinephrine 1:10,000 1 mg IV/IO q3-5 min SO

Suspected hyperkalemia
- CaCl₂ 500 mg IV/IO SO
- NaHCO₃ 1 mEq/kg IV/IO BHO

Suspected hypovolemia
- 1 L fluid bolus IV/IO, MR x2 SO

Suspected poisoning/OD
- Contact BH
- May consider treatment per Poisoning/Overdose Protocol (S-134)

For consideration of non-transport, see Asystole/Termination of Resuscitation protocol
**ASYSTOLE / TERMINATION OF RESUSCITATION**

**ASYSTOLE**
- CPR
- Epinephrine 1:10,000 1 mg IV/IO q3-5 min SO

**TERMINATION OF RESUSCITATION (TOR)**

Resuscitation may be terminated on SO§ if all of the following conditions are met:
- Persistent asystole (NO other rhythms detected)
- Unwitnessed arrest (by bystanders or EMS)
- No bystander CPR
- No AED or other defibrillation
- No return of pulses
- >20 min on-scene resuscitation time

**Base Hospital contact is not required** if all criteria are met, even if ALS interventions are performed
- Document time of death recognition, full name of paramedic making determination of apparent death, and circumstances under TOR determination

**BHPO is required** for TOR for all other presentations, rhythms, and situations
- Document time of death pronouncement, full name of physician, and circumstances under which TOR was ordered

§Applies to cardiac arrests of presumed cardiac origin. Excludes drowning, hypothermia, trauma, and electrocution.
RETURN OF SPONTANEOUS CIRCULATION

- Ventilate PRN (goal of EtCO\(_2\) = 40 mmHg)
- Obtain BP
- Obtain 12-lead EKG
- Transport to closest STEMI Center regardless of 12-lead EKG reading SO
- Provide cardiac monitor data to agency QA/QI department

SBP <90 mmHg
- If rales not present, 250 mL fluid bolus IV/IO SO, MR SO
- Push-dose epinephrine 1:100,000 (0.01 mg/mL) 1 mL IV/IO BHO. MR q3 min, titrate to SBP ≥90 mmHg BHO

<table>
<thead>
<tr>
<th>Push-dose epinephrine mixing instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Remove 1 mL normal saline (NS) from the 10 mL NS syringe</td>
</tr>
<tr>
<td>2. Add 1 mL of epinephrine 1:10,000 (0.1 mg/mL) to 9 mL NS syringe</td>
</tr>
<tr>
<td>The mixture now has 10 mL of epinephrine at 0.01 mg/mL (10 mcg/mL) concentration.</td>
</tr>
</tbody>
</table>
ADJUNCT CARDIAC DEVICES

<p>| • Transport equipment and any knowledgeable family/support persons to ED with patient |
| <strong>VAD</strong> |
| • Contact BH and VAD coordinator |
| • Follow protocols for CPR and treatment of arrhythmias, including use of cardioversion, pacing, and defibrillation PRN |
| <strong>TAH</strong> |
| • Contact BH and TAH coordinator |
| • Treatment per BHO |
| <strong>Wearable defibrillators (vest)</strong> |
| • If vest device is broadcasting specific verbal directions, follow device’s prompts |
| • If device not broadcasting directions and patient requires CPR or cardiac treatment, remove vest and treat |
| <strong>Malfunctioning pacemakers</strong> |
| • Treat per applicable arrhythmia protocol |
| • Treat pain per Pain Management Protocol (S-141) PRN |
| <strong>Reported/witnessed AICD firing &gt;2</strong> |
| Pulse &gt;60 |
| • Lidocaine 1.5 mg/kg IV/IO SO, MR at 0.5 mg/kg IV/IO q8-10 min to max 3 mg/kg SO OR |
| • Amiodarone 150 mg in 100 mL of NS over 10 min IV/IO SO, MR x1 in 10 min SO |</p>
<table>
<thead>
<tr>
<th>BLS</th>
<th>ALS</th>
</tr>
</thead>
</table>
| • O₂ and/or ventilate PRN  
• If antivenin available on site, transport with patient to hospital | • IV SO  
• Treat per Pain Management Protocol (S-141) |
| **Jellyfish sting**  
• Liberally rinse with seawater  
• Scrape to remove stinger(s)  
• Heat as tolerated (not to exceed 110 °F / 43 °C) | |
| **Stingray or sculpin injury**  
• Immersion in hot water (as hot as tolerated, not to exceed 110 °F / 43 °C) | |
| **Snakebite**  
• Mark proximal extent of swelling and/or tenderness  
• Keep involved extremity at heart level and immobile  
• Remove constrictive device(s)  
• Remove jewelry distal to bite | |
## BLS
- Ensure patent airway
- O₂ saturation PRN
- O₂ and/or ventilate PRN
- Remove excess/wet clothing
- Obtain baseline temperature

### Heat exhaustion
- Cool gradually
- Fan and sponge with tepid water
- Avoid shivering
- If conscious, give small amounts of fluids

### Heat stroke
- Rapid cooling
- Spray with cool water and fan
- Avoid shivering
- Apply ice packs to carotid, inguinal, and axillary regions

### Cold exposure
- Gentle warming
- Apply blankets, warm packs, and dry dressings
- Avoid unnecessary movement or rubbing
- If alert, give warm liquids. If altered LOC, NPO.
- Prolonged CPR may be indicated

### Drowning
- CPR, if cardiac arrest. Emphasize ventilations.
- High-flow O₂ if spontaneous respirations
- Remove wet clothing
- Spinal motion restriction PRN

## ALS
- Monitor/EKG
- IV/IO SO
- Capnography SO PRN

### Cardiac arrest with hypothermia
- CPR
- Persistent VF/VT, defibrillate per CPR / Arrhythmias Protocol (S-127) *
- Epinephrine 1:10,000 1 mg IV/IO x1 SO†
- Rewarm

### Heat exhaustion/heat stroke
- 500 mL fluid bolus IV/IO SO, if no rales MR x1 SO

### Drowning with respiratory distress
- CPAP at 5-10 cmH₂O SO for respiratory distress

*Defibrillation attempts may be unsuccessful during rewarming until temperature ≥86 °F / ≥30 °C
†Limit epinephrine to 1 dose and withhold antiarrhythmic medications until temperature ≥86 °F / ≥30 °C
BLS
- Ensure patent airway
- O₂ saturation
- Give O₂ to maintain SpO₂ at 94% to 98%
- Ventilate PRN

ALS
- Monitor/EKG
- Determine time of last dialysis
- IV in upper extremity without working graft/AV fistula SO

For immediate definitive therapy only
- EJ/IO access prior to accessing graft
- Monitor and administer via existing external vascular access SO (aspirate 5 mL prior to infusion*) or
- Access graft/AV fistula BHPO

Fluid overload with rales
- Treat CHF per Respiratory Distress Protocol (S-136)

Suspected hyperkalemia (widened QRS complex or peaked T-waves)
- Obtain 12-lead EKG
- If widened QRS complex, immediately administer CaCl₂ 500 mg IV/IO SO
- NaHCO₃ 1 mEq/kg IV/IO x1 SO
- Continuous albuterol 6 mL 0.083% via nebulizer SO

*Hemodialysis catheter contains concentrated dose of heparin which must be aspirated prior to infusion
BLS

- 100% O₂ and/or ventilate PRN
- O₂ saturation PRN
- Spinal stabilization PRN

ALS

- Monitor/EKG
- IV/IO SO

Diving victim: A person (including a free-diver) with any symptoms after breathing sources of compressed air below the water’s surface

Minor presentation (non-progressive): Minimal localized joint pain, mottling of skin surface, or localized swelling with pain

Major presentation: Symptoms listed above that are severe and/or rapidly progressing, vertigo, altered LOC, progressive paresthesia, paralysis, severe SOB, blurred vision, crepitus, hematemesis, hemoptysis, pneumothorax, trunk pain, or girdle or band-like burning discomfort

Diving victim disposition

Minor presentation
- Major trauma patient: Catchment trauma center
- Non-military patient: Routine
- Active-duty military personnel: Transport to Military Recompression Chamber, if possible. Base Hospital will contact military at (619) 556-7130 to determine chamber location.

Major presentation
- Transport all major presentations to UCSD Hillcrest
- Trauma injuries are secondary in presence of major presentation
- Divert to closest BEF, if airway is unmanageable

Military Recompression Chamber location: Naval Station 32nd Street and Harbor Drive, San Diego, CA 92136

Note: Obtain dive computer or records, if possible. Hyperbaric chamber must be capable of recompression to 165 feet.
### PreDelivery

<table>
<thead>
<tr>
<th>BLS</th>
<th>ALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ensure patent airway</td>
<td>• Monitor/EKG</td>
</tr>
<tr>
<td>• O₂ saturation PRN</td>
<td>• IV SO</td>
</tr>
<tr>
<td>• O₂ and/or ventilate PRN</td>
<td>• Capnography SO PRN</td>
</tr>
<tr>
<td>• If no time for transport and delivery is imminent (crowning and pushing), proceed with delivery</td>
<td>Direct to labor/delivery area BHO if ≥20 weeks gestation</td>
</tr>
<tr>
<td>• If no delivery, transport on left side</td>
<td>Eclampsia (seizures)</td>
</tr>
<tr>
<td>• Keep mother warm</td>
<td>• Midazolam IN/IM/IV/IO to a max dose of 5 mg (d/c if seizure stops) SO, MR x1 in 10 min SO. Max 10 mg total.</td>
</tr>
</tbody>
</table>

**Third-trimester bleeding**
- Transport immediately to facility with obstetrical services per BH direction

**Eclampsia (seizures)**
- Protect airway
- Protect from injury

### Delivery

<table>
<thead>
<tr>
<th>BLS and ALS</th>
</tr>
</thead>
</table>

**Routine delivery**
- If placenta delivered, massage fundus. Do not wait on scene.
- Wait 60 sec after delivery, then clamp and cut cord between clamps
- Document name of person cutting cord, time cut, and delivery location (address)
- Place identification bands on mother and newborn(s)
- Complete Out of Hospital Birth Report Form (S-166A) and provide to parent

**Difficult deliveries**
- High-flow O₂
- Keep mother warm

**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

Breech birth (arm or single foot visible)
- Rapid transport

Frank breech or double footling and imminent delivery with long transport
- Allow newborn to deliver to the waist without active assistance (support only)
- When legs and buttocks are delivered, assist head out keeping body parallel to the ground. If head does not deliver within 1-2 min, insert gloved hand into the vagina to create airway for newborn.
- Transport immediately if head undelivered

Eclampsia (seizures)
- Protect airway, and protect from injury
- **ALS:** Midazolam IN/IM/IV/IO to a max dose of 5 mg (d/c if seizure stops) SO, MR x1 in 10 min SO. Max 10 mg total.

### MOTHER POST-DELIVERY

<table>
<thead>
<tr>
<th>BLS</th>
<th>ALS</th>
</tr>
</thead>
</table>
| **Post-partum hemorrhage**  
- Massage fundus vigorously  
- Baby to breast  
- High-flow O₂  
- Keep mother warm | **Post-partum hemorrhage**  
- Monitor/EKG  
- Capnography |

**Post-partum hemorrhage with SBP <90 mmHg**  
- 500 mL fluid bolus IV/IO PRN SO, MR x2 q10 min SO

**Eclampsia (seizures)**  
- Midazolam IN/IM/IV/IO to a max dose of 5 mg (d/c if seizure stops) SO, MR x1 in 10 min SO. Max 10 mg total.

### NEONATAL POST-DELIVERY

<table>
<thead>
<tr>
<th>BLS and ALS</th>
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</thead>
</table>
| **Warm, dry, and stimulate newborn**  
- Wrap newborn in warm, dry blanket. Keep head warm.  
- Assess breathing, tone, and HR. Palpate HR via umbilical cord.  
- If placing pulse oximeter, use newborn’s right hand  
- APGAR at 1 and 5 min (do not delay resuscitation to obtain score)  
- Confirm identification bands placed on mother and newborn(s)  
- Bring mother and newborn(s) to same hospital  
- Complete Out of Hospital Birth Report Form (S-166A) and provide to parent |

**Full-term newborn with good tone and breathing**  
- Keep newborn warm  
- Ensure patent airway  
- If excessive secretions, suction mouth then nose with bulb syringe  
- O₂ saturation on newborn’s right hand PRN  
- Baby to breast  
- Ongoing assessment q30 sec
### Newborn HR ≥100 with respiratory distress or central cyanosis
- Blow-by O₂

### Newborn HR <100, poor respiratory effort or persistent central cyanosis
- Ventilate with BVM on room air
- Monitor/EKG
- Recheck pulse q30 sec
- For persistently poor respiratory rate/effort, or cyanosis despite correct BVM technique, add high-flow O₂ 15 L/min to BVM
- **Stop BVM when patient breathing well and HR ≥100**
- **ALS:** IV/IO SO (do not delay transport)
- **ALS:** NG tube PRN SO

### Newborn HR <60
- Continue BVM with high-flow O₂
- Chest compressions at rate of 120/min
- 3:1 compression to ventilation ratio
- Check pulse q1 min
- Stop compressions when HR ≥60
- **ALS:** Epinephrine 1:10,000 per drug chart IV/IO SO, MR q3-5 min SO
- **ALS:** Fluid bolus per drug chart IV/IO SO, MR x 1 in 10 min SO

### Premature and/or low birth weight newborn
- If amniotic sac intact, remove neonate from sac after delivery
- Place neonate in plastic bag up to axilla to minimize heat loss
- Transport immediately
- CPR need **not** be initiated if there are no signs of life and gestational age <24 weeks
### BLS
- Ensure patent airway
- $O_2$ saturation PRN
- $O_2$ and/or ventilate PRN
- Carboxyhemoglobin monitor PRN, if available

### Ingestions
- Identify substance
- Transport pill bottles and containers with patient, PRN

### Skin contamination*
- Remove clothes
- Brush off dry chemicals
- Flush with copious water

### Toxic inhalation (e.g., CO exposure, smoke, gas)
- Move patient to safe environment
- 100% $O_2$ via mask
- Consider transport to facility with hyperbaric chamber for suspected CO poisoning, particularly in unconscious or pregnant patients

### Symptomatic suspected opioid OD with RR <12. Use with caution in opioid-dependent, pain-management patients.
- Naloxone 4 mg via nasal spray preloaded single-dose device. Administer full dose in one nostril
- OR
  - Naloxone 2 mg via atomizer and syringe. Administer 1 mg into each nostril.

EMTs may assist family or friend to medicate with patient’s prescribed naloxone in symptomatic suspected opioid OD

### Hyperthermia from suspected stimulant intoxication
- Initiate cooling measures
- Obtain baseline temperature, if possible

### ALS
- Monitor/EKG
- IV/IO SO
- Capnography SO PRN

### Ingestions
- Assure patient has gag reflex and is cooperative
- If not vomiting and within 60 min, activated charcoal 50 gm PO ingestion with any of the following SO:
  1. Acetaminophen
  2. Colchicine
  3. Beta blockers
  4. Calcium channel blockers
  5. Salicylates
  6. Sodium valproate
  7. Oral anticoagulants (including rodenticides)
  8. Paraquat
  9. Amanita mushrooms

### Symptomatic suspected opioid OD with respiratory depression (RR<12, $SpO_2<96\%$, or $EtCO_2 \geq 40$ mmHg). Titrate slowly in opioid-dependent patients.
- Naloxone 2 mg IN/IM/IV SO, MR SO. Titrate IV dose to effect, to drive the respiratory effort
- If patient refuses transport, give additional naloxone 2 mg IM SO
- If patient refuses transport, consider dispensing Leave Behind Naloxone 4 mg nasal spray preloaded device with education for patient and household members SO

### Symptomatic organophosphate poisoning
- Atropine 2 mg IV/IM/IO SO, MR q3-5 min SO. MR q3-5 min BHO

### Extrapyramidal reactions
- Diphenhydramine 50 mg slow IV/IM SO

### Suspected tricyclic antidepressant OD with cardiac effects (e.g., hypotension, heart block, or widened QRS)
- $NaHCO_3$ 1 mEq/kg IV/IO SO
Suspected beta blocker OD with cardiac effects (e.g., bradycardia with hypotension)
- Glucagon 1-3 mg IV BHO, MR 5-10 min BHO, for a total of 10 mg

Suspected calcium channel blocker OD (SBP <90 mmHg)
- CaCl₂ IV/IO 20 mg/kg BHO, MR x1 in 10 min BHO

Suspected cyanide poisoning
If cyanide kit available on site (e.g., industrial site), may administer if patient is exhibiting significant symptoms
- Amyl nitrite inhalation (over 30 seconds) SO
- Sodium thiosulfate 25%, 12.5 gm IV SO or Hydroxocobalamin (CYANOKIT®) 5 gm IV SO

Per Title 22, Chapter 1.5, § 100019 public safety personnel may administer nasal naloxone when authorized by the County of San Diego EMS Medical Director.

* For radioactive material, treatment of traumatic injuries takes precedence over decontamination
### BLS

- If patient or accompanying person able to manage existing device, proceed with transport
- Bring back-up equipment/batteries as appropriate

**Established electrolyte and/or glucose-containing peripheral IV lines**
- Maintain at preset rates

**Established IV pumps or other existing devices**
Contact BH for direction, if person responsible for operating IV pump or device is unable to accompany patient and manage IV during transport

**BH may only direct BLS personnel to leave device as found or turn the device off, then transport patient or wait for ALS arrival**

**Transdermal medication**
- Remove patches PRN SO (e.g., unstable, CPR status)

**Transports to another facility or home**
- No waiting period is required after medication administration
- IV solutions with added medications or other ALS treatment/monitoring modalities require ALS personnel (or RN/MD) in attendance during transport
- Cap end of catheter with device that occludes end if there is a central line. Initiate cooling measures

### ALS

**Labeled IV medication delivery systems**
- Maintain at preset rates SO
- Adjust rate or d/c BHO

**IV delivery systems containing unknown medications**
- Contact BH prior to adjusting infusion rate

**Existing external vascular access with external port**
- To be used for definitive therapy only
TREATMENT PROTOCOL

RESPIRATORY DISTRESS

Date: 7/1/2021 Page 1 of 1

BLS

• Ensure patent airway
• Reassurance
• Dislodge any airway obstruction. Treat per Airway Obstruction Protocol (S-121).
• O₂ saturation
• O₂ and/or ventilate PRN
• Transport in position of comfort
• Carboxyhemoglobin monitor PRN, if available
• May assist patient to self-medicate own prescribed MDI once only. BH contact required for additional dose(s).

Toxic inhalation (e.g., CO exposure, smoke, gas)

• Move patient to safe environment
• 100% O₂ via mask
• Consider transport to facility with hyperbaric chamber for suspected CO poisoning for unconscious or pregnant patients

Croup-like cough

• Aerosolized saline or water 5 mL via O₂-powered nebulizer/mask, MR PRN

ALS

• Monitor/EKG
• Capnography SO PRN
• IV/IO SO
• Intubate SO PRN
• NG/OG PRN SO

Suspected CHF/cardiac origin

• NTG SL
  • If systolic BP >100 but <150: NTG 0.4 mg SL SO, MR q3-5 min SO
  • If systolic BP ≥150: NTG 0.8 mg SL SO, MR q3-5 min SO
• CPAP 5-10 cmH₂O SO

Suspected non-cardiac origin

• Albuterol 6 mL 0.083% via nebulizer* SO, MR SO
• Ipratropium bromide 2.5 mL 0.02% via nebulizer† added to first dose of albuterol SO
• CPAP 5-10 cmH₂O SO

Severe respiratory distress/failure or inadequate response to albuterol/ipratropium bromide consider

History of asthma or suspected allergic reaction

• Epinephrine 0.3 mg 1:1,000 IM SO, MR x2 q5 min SO
  No definitive history of asthma
  • Epinephrine 0.3 mg 1:1,000 IM BHPO, MR x2 q5 min BHPO

Notes

• For respiratory arrest, administer 5 quick breaths
• NTG is contraindicated in patients who have taken erectile dysfunction medications such as sildenafil (Viagra®), tadalafil (Cialis®), and vardenafil (Levitra®) within 48 hours
• NTG is contraindicated in patients who are taking similar medications for pulmonary hypertension, such as sildenafil (Revatio®) and epoprostenol sodium (Flolan® and Veletri®)
• Use caution with CPAP in patients with COPD. Start low and titrate pressure.
• Epinephrine IM: Use caution if known cardiac history, history of hypertension, SBP >150 mmHg, or age >40
• Fireline paramedics without access to O₂ may use albuterol MDI

*Infection control: If concerned about aerosolized infectious exposure, substitute with albuterol MDI, if available
†Infection control: If concerned about aerosolized infectious exposure, use patient’s ipratropium bromide MDI, if available, or withhold ipratropium bromide
TREATMENT PROTOCOL

SHOCK

Date: 7/1/2021

Page 1 of 1

BLS

- O₂ saturation
- O₂ and/or ventilate PRN
- Control obvious external bleeding
- Treat associated injuries
- NPO, anticipate vomiting
- Remove transdermal patch
- Keep patient warm

ALS

- Monitor/EKG
- IV/IO SO
- Capnography SO PRN

Non-traumatic, hypovolemic shock*
- 500 mL fluid bolus IV/IO SO, MR to maintain SBP >90 mmHg SO
- SBP <90 mmHg after second fluid bolus
  - Push-dose epinephrine 1:100,000 (0.01 mg/mL)
    1 mL IV/IO BHO, MR q3 min, titrate to SBP ≥90 mmHg BHO

Neurogenic shock
- 500 mL fluid bolus IV/IO SO, MR to maintain SBP >90 mmHg SO
- SBP <90 mmHg after second fluid bolus
  - Push-dose epinephrine 1:100,000 (0.01 mg/mL)
    1 mL IV/IO BHO, MR q3 min, titrate to SBP ≥90 mmHg BHO

Push-dose epinephrine mixing instructions
1. Remove 1 mL normal saline (NS) from the 10 mL NS syringe
2. Add 1 mL of epinephrine 1:10,000 (0.1 mg/mL) to 9 mL NS syringe
   The mixture now has 10 mL of epinephrine at 0.01 mg/mL (10 mcg/mL) concentration.

*If suspected AAA, fluid boluses to maintain SBP of 80 mmHg. Treat per Abdominal Discomfort / GI / GU (Non-Traumatic) Protocol (S-120).
**BLS**

- Ensure patent airway
- Protect C-spine
- Control obvious bleeding
- Spinal motion restriction per Skills List (S-104) except in penetrating trauma without neurological deficits
- \( O_2 \) saturation. Maintain \( SpO_2 \) at 94% to 98%
- \( O_2 \) and/or ventilate at a rate of 10/min PRN
- Keep warm
- Hemostatic gauze

**Abdominal trauma**

- Cover eviscerated bowel with saline pads

**Chest trauma**

- Cover open chest wound with three-sided occlusive dressing. Release dressing if tension pneumothorax develops.
- Chest seal PRN

**Extremity trauma**

- Splint neurologically stable fractures in position as presented. Traction splint PRN.
- Reduce grossly angulated long bone fractures with no pulse or sensation PRN BHO
- Direct pressure to control external hemorrhage
- Apply gauze or hemostatic dressing PRN
- Tourniquet PRN
- In MCI, direct pressure not required prior to tourniquet application

**Impaled objects**

- Immobilize and leave impaled objects in place
- Remove object impaled in face, cheek, or neck if there is total airway obstruction SO

**Any suspicion of neurological injury (mechanism, GCS, examination)**

- High-flow \( O_2 \) PRN
- Monitor \( SpO_2 \), BP, and HR q3-5 min
- If \( SpO_2 \) <90% or hypoventilation (despite high-flow \( O_2 \)), assist ventilations with BVM

**ALS**

- Monitor/EKG
- IV/IO SO
- Capnography SO. Maintain EtCO2 35-45 mmH2O SO PRN.
- Treat pain per Pain Management Protocol (S-141)

**SBP <80 mmHg or signs of shock**

- 500 mL fluid bolus IV/IO SO, MR x3 q15 min to maintain SBP ≥80 mmHg

**Crush injury with compression of extremity or torso ≥2 hours**

- Just prior to extremity being released
  - 500 mL fluid bolus IV/IO, then TKO SO
  - \( NaHCO_3 \) 1 mEq/kg IV/IO SO
  - \( CaCl_2 \) 500 mg IV/IO over 30 sec BHO

**Grossly angulated long bone fractures**

- Reduce with gentle unidirectional traction for splinting SO

**Severe respiratory distress with diminished or absent breath sounds (unilaterally or bilaterally), and SBP <90 mmHg, and suspected pneumothorax**

- Needle thoracostomy SO
<table>
<thead>
<tr>
<th>Pregnancy ≥6 months</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Where spinal motion restriction indicated, tilt patient to the left 30°</td>
<td></td>
</tr>
</tbody>
</table>

**Blunt traumatic arrest**

- Consider request for pronouncement at scene BHPO per Prehospital Determination of Death Protocol (S-402)

**Penetrating traumatic arrest**

- Rapid transport
- Consider pronouncement at scene BHPO

### Transportation and Destination Guidelines

Pediatric patients who meet criteria outlined in T-460 (Identification of the Pediatric Trauma Center Patient) should be transported to the Designated Pediatric Trauma Center, except in the following situations.

1. **Adult with child**
   a. If there is a single ambulance (air/ground) with both a pediatric trauma center patient and an adult trauma center patient, the ambulance should first transport the more critical patient to the appropriate facility. If both patients are critical, or if there are other questions, both may be transported to the designated adult trauma center.
   b. Field personnel should consider splitting the team using additional ALS transport vehicles, or aeromedical resources to transport the pediatric patient to the pediatric trauma facility and the adult patient to the catchment area trauma facility.

2. **Trauma center diversion**
   The pediatric patient who is identified as a trauma patient shall be transported to the designated pediatric trauma center. When the pediatric trauma center is on diversion, including age-specific diversion, the pediatric patient shall be transported to the county-designated backup pediatric trauma center, the University of California, San Diego (UCSD).

3. **Pregnant pediatric patient**
   A pediatric pregnant trauma patient shall be transported to UCSD.
# Pain Management

**TREATMENT PROTOCOL**

**Date:** 7/1/2021

## BLS

- Assess level of pain
- Ice, immobilize, and splint PRN
- Elevation of extremity PRN

## ALS

- Continue to monitor and reassess pain using standardized pain scores
- Document vital signs before and after each medication administration

### Special considerations for all pain medications except acetaminophen

1. Changing route of administration requires BHO (e.g., IV to IM or IM to IN)
2. Changing analgesic requires BHO (e.g., fentanyl to ketamine)
3. Treatment with opioids if SBP <100 mmHg requires BHO
4. BHPO required prior to administration if
   - Isolated head injury
   - Acute onset severe headache
   - Drug/EtOH intoxication
   - Major trauma with GCS <15
   - Suspected active labor

### For mild pain (score 1-3), moderate pain (score 4-6), or severe pain (score 7-10)

For mild pain, no severe hepatic impairment, active liver disease or, refusal of opioids
- Acetaminophen 1000 mg IV over 15 min SO

### For moderate pain (score 4-6), severe pain (score 7-10)*

#### Fentanyl (IV dosing)
- Up to 100 mcg IV SO
- MR up to 50 mcg IV q5 min x2 SO
- Maximum total SO dose 200 mcg IV

#### Fentanyl (IN dosing)
- Up to 50 mcg IN q15 min x2 SO
- 3rd dose fentanyl 50 mcg IN BHO

### If fentanyl unavailable

#### Morphine (IV dosing)
- Up to 0.1 mg/kg IV SO
- MR in 5 min at half initial IV dose SO
- MR in additional 5 min at half initial IV dose BHO

#### Morphine (IM dosing)
- Up to 0.1 mg/kg IM SO
- MR in 15 min at half initial IM dose SO
- MR in additional 15 min at half initial IM dose BHO
For moderate to severe pain (score ≥5) with trauma, burns, or envenomation injuries
Ketamine requirements (must meet all)
• ≥15 years old
• GCS of 15
• Not pregnant
• No known or suspected alcohol or drug intoxication

Ketamine (IV dosing)
• 0.2 mg/kg in 100 mL of NS slow IV drip over 15 min SO. Maximum for any IV dose is 20 mg.
• MR x 1 in 15 min if pain remains moderate or severe SO

Ketamine (IN dosing)
• 0.5 mg/kg IN (50 mg/mL concentration) SO. Maximum for any IN dose is 50 mg.
• MR x 1 in 15 min if pain remains moderate or severe SO

*Also applies to patients with mild pain (score 1-3) who refuse or have contraindications to acetaminophen and ketamine
## Treatment Protocol

### Psychiatric / Behavioral Emergencies

**Date: 7/1/2022**  
**Page 1 of 1**

<table>
<thead>
<tr>
<th>BLS</th>
<th>ALS</th>
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</thead>
</table>
| • Ensure patent airway, \( \text{O}_2 \) and/or ventilate PRN  
• \( \text{O}_2 \) saturation PRN  
• Treat life-threatening injuries  
• Ask patient: “Do you have any weapons?”  
• Attempt to determine if behavior is related to injury, illness, or drug use  
• Restrain only if necessary to prevent injury  
• Document distal neurovascular status q15 min, if restrained  
• Avoid unnecessary sirens  
• Consider law enforcement support and/or evaluation of patient  
• Law enforcement or EMS may remove Taser* barbs | • Monitor/EKG  
• IV SO adjust PRN  
• Capnography SO PRN  

**Severely agitated and/or combative patient requiring restraint for patient or provider safety**

• Midazolam\( \dagger \) 5 mg IM/IN/IV SO, MR x1 in 5-10 min SO  
If midazolam administered, as soon as able  
• Monitor/EKG/capnography  
• \( \text{O}_2 \) SO  
• Ventilate PRN SO  
• 500 mL fluid bolus IV/IO SO PRN, MR x1 SO, MR BHO |

*Taser barb considerations

• Taser discharge for simple behavioral control is usually benign and does not require transport to BEF for evaluation  
• Patients who are injured; appear to be under the influence of drugs; or present with altered mental status or symptoms of illness should have medical evaluation performed by EMS personnel before being transported to BEF  
• If barbs are impaled in anatomically sensitive location such as eye, face, neck, finger/hand, or genitalia, do not remove the barb. Transport patient to BEF.

\( \dagger \)For severely agitated or combative patients, IN or IM midazolam is the preferred route to decrease risk of injury to the patient and personnel.  
**Alert:** Co-administration of midazolam in patients with alcohol intoxication can cause respiratory depression. Consider avoiding or reducing midazolam dose.
<table>
<thead>
<tr>
<th>BLS</th>
<th>ALS</th>
</tr>
</thead>
</table>
| • O₂ saturation PRN  
• O₂ and/or ventilate PRN  
• NPO, anticipate vomiting  
• Remove transdermal patch SO, if present  
• Obtain baseline temperature | • Monitor/EKG  
• IV/IO SO  
• Capnography SO |

**Suspected sepsis**
If history suggestive of infection and two or more of the following are present, suspect sepsis and report to BH and upon transfer of care at receiving hospital:

1. Temperature ≥100.4 °F (38.0 °C) or <96.8 °F (36.0 °C)
2. HR >90
3. RR >20
4. EtCO₂ <25 mmHg

• 500 mL fluid bolus regardless of initial BP or lung sounds IV/IO SO  
• If BP <90 after initial fluid bolus, give second 500 mL fluid bolus regardless of lung sounds SO

**If BP refractory to fluid boluses**

- Push-dose epinephrine 1:100,000 (0.01 mg/mL)  
  1 mL IV/IO BHO, MR q3 min, titrate to SBP ≥90 mmHg BHO

**Push-dose epinephrine mixing instructions**

1. Remove 1 mL normal saline (NS) from the 10 mL NS syringe
2. Add 1 mL of epinephrine 1:10,000 (0.1 mg/mL) to 9 mL NS syringe

The mixture now has 10 mL of epinephrine at 0.01 mg/mL (10 mcg/mL) concentration.
### BLS

For patients with symptoms suggestive of TIA or stroke with onset of symptoms known to be ≤24 hours in duration
- Maintain O₂ saturation at 94% to 98%
- Keep head of bed (HOB) at 15° elevation. If SBP <120 mmHg and patient tolerates, place HOB flat.
- Expedite transport
- Make BH initial notification early to confirm destination
- Notify accepting Stroke Receiving Center of potential stroke code patient enroute
- Provide list of all current medications, especially anticoagulants, upon arrival to Emergency Department

**Important signs/symptoms to recognize, report, and document**

Use **BE FAST** Prehospital Stroke Scale in assessment of possible TIA or stroke patients

- **B** = Balance: Unsteadiness, ataxia
- **E** = Eyes: Blurred/double or loss of vision, asymmetric pupils
- **F** = Face: Unilateral face droop
- **A** = Arms and/or legs: Unilateral weakness exhibited by a drift or drop, numbness/tingling
- **S** = Speech: Slurred, inability to find words, absent
- **T** = Time: Accurate Last Known Well time
  - Sudden severe headache with no known cause
  - Get specific Last Known Well time in military time (hours: minutes)

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.

Obtain blood glucose. If blood glucose <60 mg/dL, treat for hypoglycemia.
- If patient is awake and able to swallow, give 3 oral glucose tabs or paste (15 gm total)
- Patient may eat or drink, if able
- If patient is unconscious, NPO

### ALS

- IV SO (large-bore antecubital site preferred)
- 250 mL fluid bolus IV/IO to maintain BP ≥120 mmHg if no rales SO, MR SO
## AIRWAY OBSTRUCTION

### For conscious patient
- Reassure, encourage coughing
- O₂ PRN

### For inadequate air exchange
**Airway maneuvers (AHA)**
- Abdominal thrusts
- For obese or pregnant patients, perform chest thrusts
- For infants <1 year, perform 5 back blows and 5 chest thrusts, MR PRN

### If patient found or becomes unconscious
- Begin CPR

### Once obstruction is removed
- Ventilate with high-flow O₂ PRN
- O₂ saturation

### If suspected epiglottitis
- Place patient in sitting position
- Do not visualize the oropharynx

### Treat per Respiratory Distress Protocol (S-167)

### BLS

### ALS

### If patient becomes unconscious or has a decreasing LOC
- Direct laryngoscopy and Magill forceps SO, MR PRN
- Capnography SO PRN

### Once obstruction is removed
- Monitor/EKG
- IV/IO SO

**Note:** If unable to ventilate effectively, transport immediately while continuing CPR (unconscious patient)
## Pediatric Treatment Protocol

### Altered Neurologic Function (Non-Traumatic)

**BLS**

- Ensure patent airway
- \( \text{O}_2 \) saturation, \( \text{O}_2 \) and/or ventilate PRN
- Spinal motion restriction PRN
- Position on affected side, if difficulty managing secretions
- Do not allow patient to walk
- Restrain PRN
- Monitor blood glucose SO

**ALS**

- Monitor/EKG
- Capnography SO PRN
- IV SO

**Symptomatic suspected opioid OD with RR low for age. Use with caution in opioid-dependent, pain-management patients.**

Patients <35 kg (77 lbs)

- Ventilate PRN
- Call for ALS

Patients \( \geq \) 35 kg

- Naloxone 4 mg via nasal spray preloaded single-dose device. Administer full dose in one nostril.
  - OR
  - Naloxone 2 mg via atomizer and syringe. Administer 1 mg into each nostril.

EMTs may assist family or friend to medicate with patient’s prescribed naloxone in **symptomatic suspected opioid OD**

**Suspected hypoglycemia or patient’s blood sugar is <60 mg/dL (<45 mg/dL for neonates)**

- If patient is awake and able to manage oral secretions, give oral glucose paste or 3 tablets (15 gm total)
- Patient may eat or drink, if able
- If patient is unconscious, NPO

**Stroke/TIA**

- Treat per Adult Stroke and Transient Ischemic Attack (S-144)
- Pediatric patients presenting with stroke symptoms should be transported to Rady Children’s Hospital

**Seizures**

- Protect airway and protect from injury
- Treat associated injuries
- If febrile, remove excess clothing/covering

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\*\*Authorized by County of San Diego EMS Medical Director for public safety personnel per Title 22, Chapter 1.5, \$100019**
**BLS**

- Ensure patent airway
- \( O_2 \) saturation PRN
- \( O_2 \) and/or ventilate PRN
- Attempt to identify allergen and route (injected, ingested, absorbed, or inhaled)
- Safely remove allergen (e.g., stinger, injection mechanism), if possible
- Epinephrine auto-injector
  - Patient 15 to 33 kg (33 to 73 lbs), 0.15 mg IM \( \times 1 \)
  - Patient \( \geq 33 \) kg (\( \geq 73 \) lbs), 0.3 mg IM \( \times 1 \)
- May assist patient to self-medicate own prescribed epinephrine auto-injector or albuterol MDI once only. BH contact required for additional dose(s).

**Assess for hypotension**

- \(< 1 \) month: SBP \(< 60 \) mmHg
- 1 year – 10 years: SBP \(< 70 \) mmHg
- 10 years:
  - SBP \(< 70 \) mmHg + (2x age in years)
  - \( \geq 10 \) years: SBP \(< 90 \) mmHg

**ALS**

- Monitor/EKG
- IV/IO SO
- Capnography SO PRN

**Allergic reactions (skin signs only)**

- Urticaria (hives, rash)
- Erythema (flushing)
- Pruritus (itching)
- Diphenhydramine per drug chart IV/IM SO

**Suspected anaphylactic reactions**

- Respiratory: throat tightness, hoarse voice, wheezing/stridor, cough, SOB
- Cardiovascular: fainting, dizziness, tachycardia, low BP
- GI: nausea, vomiting, abdominal cramping
- Tissues: angioedema of eyelids, lips, tongue, face

**Anaphylaxis treatment**

- Epinephrine 1:1,000 (1 mg/mL) per drug chart IM (lateral thigh) SO, MR \( \times 2 \) q5 min SO then
- Diphenhydramine per drug chart IV/IM SO

**Anaphylaxis with respiratory involvement**

- Albuterol per drug chart via nebulizer* SO, MR SO
- Ipratropium bromide per drug chart via nebulizer† added to first dose of albuterol SO

**Anaphylaxis with hypotension for age**

- Fluid bolus IV/IO per drug chart SO to maintain adequate perfusion. MR SO.
- Push-dose epinephrine 1:100,000 (0.01 mg/mL) per drug chart IV/IO BHO, MR q3 min, titrate to maintain adequate perfusion BHO.

**Push-dose epinephrine mixing instructions**

1. Remove 1 mL normal saline (NS) from the 10 mL NS syringe
2. Add 1 mL of epinephrine 1:10,000 (0.1 mg/mL) to 9 mL NS syringe
   The mixture now has 10 mL of epinephrine at 0.01 mg/mL (10 mcg/mL) concentration.

*Infection control: If concerned about aerosolized infectious exposure, substitute with albuterol MDI, if available
†Infection control: If concerned about aerosolized infectious exposure, use patient’s ipratropium bromide MDI, if available, or withhold ipratropium bromide

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## BLS
- Compression rate 100-120/min
- Ventilation rate (compression-to-ventilation ratio)
  - Neonate: 20-30/min (3:1)
  - Pediatric: 10-12/min (15:2)*
- Use metronome or other real-time audiovisual feedback device
- Rotate compressor at least every 2 min
- Use mechanical compression device, if size-appropriate available
- O₂ and/or ventilate with BVM
- Monitor O₂ saturation
- Apply AED during CPR and analyze as soon as ready

## ALS
- Apply defibrillator pads during CPR. Defibrillate immediately for VF/pulseless VT.
- IV/IO SO
- Capnography SO PRN with waveform and value
- NG/OG tube PRN SO

### Team leader priorities
- Monitor CPR quality, rate, depth, full chest recoil, and capnography value and waveform
- Minimize interruption of compressions (<5 sec) during EKG rhythm checks
- Charge monitor prior to rhythm checks. Do not interrupt CPR while charging.

### VAD/TAH
- See Adjunct Cardiac Devices section

### Capnography
- If EtCO₂ rises rapidly during CPR, pause CPR and check for pulse

### Specific protocols (see below)
- Arrhythmias
  - Unstable bradycardia
  - Supraventricular tachycardia
  - Ventricular tachycardia
  - Ventricular fibrillation / pulseless VT
  - Pulseless electrical activity / asystole
- Return of Spontaneous Circulation
- Adjunct Cardiac Devices

*Continuous compressions are an acceptable alternative for pediatric CPR*
UNSTABLE‡ BRADYCARDIA

- Obtain 12-lead EKG, when able

Infant/child (<9 years) with HR <60 BPM
OR
Child (9-14 years) with HR <40 BPM
- Ventilate with BVM

If no increase in HR after 30 sec of BVM ventilations
- If unconscious, begin CPR
- Epinephrine 1:10,000 per drug chart IV/IO SO, MR x2 q3-5 minutes SO.
  MR q3-5 minutes BHO.
- After 3 doses of epinephrine
  - Atropine per drug chart IV/IO SO, MR x1 in 5 min SO
  - Consider midazolam per drug chart IV/IO PRN pre-pacing BHO
  - Consider cardiac pacing BHO

‡Exhibiting any of the following signs/symptoms of inadequate perfusion, e.g.,
- Altered mental status (decreased LOC, confusion, agitation)
- Pallor, mottling, or cyanosis
- Diaphoresis
- Difference in peripheral vs. central pulses
- Delayed capillary refill
- Hypotension by age
  - <1 month: SBP <60 mmHg
  - 1 month – 1 year: SBP <70 mmHg
  - 1 year – 10 years: SBP <70 mmHg + (2x age in years)
  - ≥10 years: SBP <90 mmHg
### SUPRAVENTRICULAR TACHYCARDIA

- Obtain 12-lead EKG

**Infant/child (<4 years) with HR ≥220 BPM**
- OR

**Child (≥4 years) with HR ≥180 BPM**

#### Stable (symptomatic)
- Consider VSM SO
- Fluid bolus per drug chart IV/IO SO
- Adenosine per drug chart rapid IV/IO, followed with 20 mL NS rapid IV/IO SO, MR x2 SO

#### Unstable‡ (or refractory to treatment)
- Consider midazolam per drug chart IV/IO pre-cardioversion BHPO
- Synchronized cardioversion at manufacturer’s recommended energy dose BHPO, MR x2 BHPO
  - If no manufacturer recommendation, synchronized cardioversion per drug chart BHPO, MR x2 BHPO

‡Exhibiting any of the following signs/symptoms of inadequate perfusion, e.g.,
- Altered mental status (decreased LOC, confusion, agitation)
- Pallor, mottling, or cyanosis
- Diaphoresis
- Difference in peripheral vs. central pulses
- Delayed capillary refill
- Hypotension by age
  - <1 month: SBP <60 mmHg
  - 1 month – 1 year: SBP <70 mmHg
  - 1 year – 10 years: SBP <70 mmHg + (2x age in years)
  - ≥10 years: SBP <90 mmHg
VENTRICULAR TACHYCARDIA

- Obtain 12-lead EKG

**Stable**
- Fluid boluses per drug chart IV/IO to maintain SBP appropriate for age SO
- Amiodarone per drug chart BHPO
  OR
- Lidocaine per drug chart BHPO

**Unstable‡**
- Consider midazolam per drug chart IV/IO pre-cardioversion BHPO
- Synchronized cardioversion at manufacturer’s recommended energy dose BHPO, MR x2 BHPO
  - If no manufacturer recommendation, synchronized cardioversion per drug chart BHPO, MR x2 BHPO
- After successful cardioversion
  - Check BP. If hypotensive for age§ and rales not present, fluid bolus per drug chart IV/IO SO, MR SO.
  - Obtain 12-lead EKG

‡Exhibiting any of the following signs/symptoms of inadequate perfusion, e.g.,
- Altered mental status (decreased LOC, confusion, agitation)
- Pallor, mottling, or cyanosis
- Diaphoresis
- Difference in peripheral vs. central pulses
- Delayed capillary refill
- §Hypotension by age
  - <1 month: SBP <60 mmHg
  - 1 month – 1 year: SBP <70 mmHg
  - 1 year – 10 years: SBP <70 mmHg + (2x age in years)
  - ≥10 years: SBP <90 mmHg

§Hypotension by age
- <1 month: SBP <60 mmHg
- 1 month – 1 year: SBP <70 mmHg
- 1 year – 10 years: SBP <70 mmHg + (2x age in years)
- ≥10 years: SBP <90 mmHg
VENTRICULAR FIBRILLATION / PULSELESS VT

- CPR
- Defibrillate as soon as monitor available/charged
- Defibrillate q2 min while VF/VT persists
- Epinephrine 1:10,000 per drug chart IV/IO q3-5 min SO

Persistent VF/VT after 3 defibrillation attempts
- Amiodarone per drug chart IV/IO, MR per drug chart x2 SO
  OR
- Lidocaine per drug chart IV/IO SO, MR per drug chart IV/IO q5 min SO
PULSELESS ELECTRICAL ACTIVITY / ASYSTOLE

- CPR
- Epinephrine 1:10,000 per drug chart IV/IO q3-5 min SO

Suspected hyperkalemia
- CaCl₂ per drug chart IV/IO SO
- NaHCO₃ per drug chart IV/IO BHO

Suspected hypovolemia
- Fluid bolus per drug chart IV/IO, MR x2 SO

Suspected poisoning / OD
- Consider treatment per Poisoning / Overdose Protocol (S-165) BHO

Prolonged asystole / PEA
- After >20 min, contact BH physician for direction
## RETURN OF SPONTANEOUS CIRCULATION

- Ventilate PRN (goal of EtCO₂ = 40 mmHg)
- Obtain BP
  - If hypotensive§ and rales not present, fluid bolus per drug chart IV/IO SO, MR SO
    - If unresponsive to fluid boluses, push-dose epinephrine 1:100,000 (0.01 mg/mL) per drug chart IV/IO BHPO, MR q3 min BHPO
- Obtain 12-lead EKG
- Provide cardiac monitor data to agency QA/QI department

### Push-dose epinephrine mixing instructions

1. Remove 1 mL normal saline (NS) from the 10 mL NS syringe
2. Add 1 mL of epinephrine 1:10,000 (0.1 mg/mL) to 9 mL NS syringe

The mixture now has 10 mL of epinephrine at 0.01 mg/mL (10 mcg/mL) concentration.

§Hypotension by age
- <1 month: SBP <60 mmHg
- 1 month – 1 year: SBP <70 mmHg
- 1 year – 10 years: SBP <70 mmHg + (2x age in years)
- ≥10 years: SBP <90 mmHg
**ENVENOMATION INJURIES**

**BLS**
- O₂ and/or ventilate PRN
- If antivenin available on site, transport with patient to hospital

**Jellyfish sting**
- Liberally rinse with seawater
- Scrape to remove stinger(s)
- Heat as tolerated (not to exceed 110 °F / 43 °C)

**Stingray or sculpin injury**
- Immersion in hot water (as hot as tolerated, not to exceed 110 °F / 43 °C)

**Snakebite**
- Mark proximal extent of swelling and/or tenderness
- Keep involved extremity at heart level and immobile
- Remove constrictive device(s)
- Remove jewelry distal to bite

**ALS**
- IV SO
- Treat per Pain Management Protocol (S-173)
<table>
<thead>
<tr>
<th><strong>BLS</strong></th>
<th><strong>ALS</strong></th>
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</thead>
</table>
| • Ensure patent airway  
• O₂ saturation PRN  
• O₂ and/or ventilate PRN  
• Carboxyhemoglobin monitor PRN, if available | • Monitor/EKG  
• IV/IO SO  
• Capnography SO prn |
| **Ingestions**  
• Identify substance  
• Transport pill bottles and containers with patient PRN | **Ingestions**  
• Assure patient has gag reflex and is cooperative  
• Charcoal per drug chart PO if ingestion within 60 minutes and recommended by Poison Center SO  
• In oral hypoglycemic agent ingestion, any change in mentation requires blood glucose check or recheck SO |
| **Skin contamination***  
• Remove clothes  
• Brush off dry chemicals  
• Flush with copious water | **Symptomatic suspected opioid OD with respiratory depression (RR low for age, SpO₂<96%, or EtCO₂ ≥40 mmHg)**  
• Naloxone per drug chart IN/IV/IM SO, MR SO  
• In opioid-dependent patients, dilute and titrate slowly per drug chart |
| **Toxic inhalation (e.g., CO exposure, smoke, gas)**  
• Move patient to safe environment  
• 100% O₂ via mask  
• Consider transport to facility with hyperbaric chamber for suspected CO poisoning, particularly in unconscious or pregnant patients | **Symptomatic organophosphate poisoning**  
• Atropine per drug chart IV/IM/OO SO, MR x2 q3-5 min SO. MR q3-5 min PRN BHO. |
| **Symptomatic suspected opioid OD with RR low for age. Use with caution in opioid-dependent, pain-management patients.***  
Patients <35 kg (77 lbs)  
• Ventilate PRN  
• Call for ALS  
Patients ≥35 kg  
• Naloxone 4 mg via nasal spray preloaded single-dose device. Administer full dose in one nostril OR  
• Naloxone 2 mg via atomizer and syringe. Administer 1 mg into each nostril. EMTs may assist family or friend to medicate with patient’s prescribed naloxone in symptomatic suspected opioid OD | **Extrapyramidal reactions**  
• Diphenhydramine per drug chart slow IV/IM SO |
| **Symptomatic suspected opioid OD with cardiac effects (e.g., hypotension, heart block, or widened QRS)**  
• NaHCO₃ per drug chart IV x1 BHO | **Suspected tricyclic antidepressant OD**  
• NaHCO₃ per drug chart IV x1 BHO |

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*Authorized by County of San Diego EMS Medical Director for public safety personnel per Title 22, Chapter 1.5, § 100019

*For radioactive material, treatment of traumatic injuries takes precedence over decontamination
## PREDELIVERY

<table>
<thead>
<tr>
<th>BLS</th>
<th>ALS</th>
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</thead>
</table>
| - Ensure patent airway  
- O₂ saturation PRN  
- O₂ and/or ventilate PRN  
- If no time for transport and delivery is imminent (crowning and pushing), proceed with delivery  
- If no delivery, transport on left side  
- Keep mother warm  
**Third-trimester bleeding**  
- Transport immediately to facility with obstetrical services per BH direction  
**Eclampsia (seizures)**  
- Protect airway  
- Protect from injury  | - Monitor/EKG  
- IV SO  
- Capnography SO PRN  
**Direct to labor/delivery area BHO if ≥20 weeks gestation**  
**Eclampsia (seizures)**  
- Midazolam IN/IM/IV/IO to a max dose of 5 mg (d/c if seizure stops) SO, MR x1 in 10 min SO. Max 10 mg total. |

## DELIVERY

<table>
<thead>
<tr>
<th>BLS and ALS</th>
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</thead>
</table>
| **Routine delivery**  
- If placenta delivered, massage fundus. Do not wait on scene.  
- Wait 60 sec after delivery, then clamp and cut cord between clamps  
- Document name of person cutting cord, time cut, and delivery location (address)  
- Place identification bands on mother and newborn(s)  
- Complete Out of Hospital Birth Report Form (S-166A) and provide to parent  
**Difficult deliveries**  
- High-flow O₂  
- Keep mother warm  
**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 |
**Breech birth (arm or single foot visible)**
- Rapid transport

**Frank breech or double footling and imminent delivery with long transport**
- Allow newborn to deliver to the waist without active assistance (support only)
- When legs and buttocks are delivered, assist head out keeping body parallel to the ground. If head does not deliver within 1-2 min, insert gloved hand into the vagina to create airway for newborn.
- Transport immediately if head undelivered

**Eclampsia (seizures)**
- Protect airway, and protect from injury
- **ALS:** Midazolam IN/IM/IV/IO to a max dose of 5 mg (d/c if seizure stops) SO, MR x1 in 10 min SO. Max 10 mg total.

<table>
<thead>
<tr>
<th>MOTHER POST-DELIVERY</th>
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<tbody>
<tr>
<td><strong>BLS</strong></td>
</tr>
<tr>
<td>Post-partum hemorrhage</td>
</tr>
<tr>
<td>- Massage fundus vigorously</td>
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<tr>
<td>- Baby to breast</td>
</tr>
<tr>
<td>- High-flow O₂</td>
</tr>
<tr>
<td>- Keep mother warm</td>
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</tbody>
</table>

**Eclampsia (seizures)**
- Protect airway
- Protect from injury

**NEONATAL POST-DELIVERY**

<table>
<thead>
<tr>
<th>BLS and ALS</th>
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<tbody>
<tr>
<td>Warm, dry, and stimulate newborn</td>
</tr>
<tr>
<td>- Wrap newborn in warm, dry blanket. Keep head warm.</td>
</tr>
<tr>
<td>- Assess breathing, tone, and HR. Palpate HR via umbilical cord.</td>
</tr>
<tr>
<td>- If placing pulse oximeter, use newborn’s right hand</td>
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<tr>
<td>- APGAR at 1 and 5 min (do not delay resuscitation to obtain score)</td>
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<tr>
<td>- Confirm identification bands placed on mother and newborn(s)</td>
</tr>
<tr>
<td>- Bring mother and newborn(s) to same hospital</td>
</tr>
<tr>
<td>- Complete Out of Hospital Birth Report Form (S-166A) and provide to parent</td>
</tr>
</tbody>
</table>

**Full-term newborn with good tone and breathing**
- Keep newborn warm
- Ensure patent airway
- If excessive secretions, suction mouth then nose with bulb syringe
- O₂ saturation on newborn’s right hand PRN
- Baby to breast
- Ongoing assessment q30 sec
### Newborn HR ≥100 with respiratory distress or central cyanosis
- Blow-by O₂

### Newborn HR <100, poor respiratory effort or persistent central cyanosis
- Ventilate with BVM on room air
- Monitor/EKG
- Recheck pulse q30 sec
- For persistently poor respiratory rate/effort, or cyanosis despite correct BVM technique, add high-flow O₂ 15 L/min to BVM
- **Stop BVM when patient breathing well and HR ≥100**
  - **ALS:** IV/IO SO (do not delay transport)
  - **ALS:** NG tube PRN SO

### Newborn HR <60
- Continue BVM with high-flow O₂
- Chest compressions at rate of 120/min
- 3:1 compression to ventilation ratio
- Check pulse q1 min
- **Stop compressions when HR ≥60**
  - **ALS:** Epinephrine 1:10,000 per drug chart IV/IO SO, MR q3-5 min SO
  - **ALS:** Fluid bolus per drug chart IV/IO SO, MR x 1 in 10 min SO

### Premature and/or low birth weight newborn
- If amniotic sac intact, remove neonate from sac after delivery
- Place neonate in plastic bag up to axilla to minimize heat loss
- Transport immediately
- **CPR need not be initiated if there are no signs of life and gestational age <24 weeks**
# Out of Hospital Birth Report

<table>
<thead>
<tr>
<th>Name of Mother</th>
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<table>
<thead>
<tr>
<th>Date and Time of Delivery</th>
<th>Address of Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>Street:</td>
</tr>
<tr>
<td>Time:</td>
<td>City:</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Name</th>
<th>*If person who cut the umbilical cord/delivered placenta is an EMT or Paramedic fill out below info:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person who cut umbilical cord*:</td>
<td></td>
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<tr>
<td>First Name:</td>
<td></td>
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<tr>
<td>Last Name:</td>
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<tr>
<td>Certification/ License #:</td>
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<tr>
<td>Agency:</td>
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<td>Agency Phone #:</td>
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<td>Signature:</td>
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</tbody>
</table>

| Person who delivered placenta (if delivered)*: |
| First Name: |
| Last Name: |
| Certification/ License #: |
| Agency: |
| Agency Phone #: |
| Signature: |

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<thead>
<tr>
<th>Weight and Apgar Scores (if taken)</th>
<th>CAD Incident #:</th>
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<tr>
<td>Weight:</td>
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<tr>
<td>APGAR Score:</td>
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</table>

DISCLAIMER: PRINTED COPIES ARE FOR REFERENCE ONLY. PLEASE REFER TO THE ELECTRONIC COPY FOR THE LATEST VERSION.
KEEP THIS FORM – It will be required when you visit the Office of Vital Records.

Failure to register a child’s birth in a timely manner could prohibit parents from obtaining a social security card, passport, medical insurance, and cash aid.

For more information on required documents and fees, search “out of hospital births” on the County web site: www.sandiegocounty.gov

Por Favor de mantener esta forma - Esta requerida cuando llegue a su visita con la Oficina de Vital Records.

Fracaso de no registrar el nacimiento de su niño a tiempo, se podrá prohibir de obtener el número del seguro social, pasaporte, seguro medica, y ayuda financiera.

Para información sobre documentos requeridos y el costo, por favor buscar, solo en inglés, “out of hospital births” en el sitio del Condado: www.sandiegocounty.gov

COUNTY OF SAN DIEGO

HHSA

HEALTH AND HUMAN SERVICES AGENCY

County of San Diego

Health and Human Services Agency

Office of Vital Records

3851 Rosecrans Street, Suite 802

San Diego, CA 92110

619-692-5733
**BLS**

- Ensure patent airway
- Reassurance
- Dislodge any airway obstruction. Treat per Airway Obstruction Protocol (S-160).
- O₂ saturation
- O₂ and/or ventilate PRN
- Transport in position of comfort
- Carboxyhemoglobin monitor PRN, if available
- May assist patient to self-medicate own prescribed albuterol MDI *once only*. BH contact required for additional dose(s).

**Toxic inhalation (e.g., CO exposure, smoke, gas)**

- Move patient to safe environment
- 100% O₂ via mask
- Consider transport to facility with hyperbaric chamber for suspected CO poisoning for unconscious or pregnant patients

**Croup-like cough**

- Aerosolized saline or water 5 mL via O₂-powered nebulizer/mask, MR PRN

**Suspected bronchiolitis (<2 years old with no prior albuterol use)**

- Place in position of comfort
- Suction nose with bulb syringe PRN

**ALS**

- Monitor/EKG
- Capnography SO PRN
- IV SO
- BVM PRN

**Respiratory distress with bronchospasm**

- Albuterol per drug chart via nebulizer* SO, MR SO
- Ipratropium bromide per drug chart via nebulizer† added to first dose of albuterol SO

**Severe respiratory distress/failure or inadequate response to albuterol/ipratropium bromide consider**

- Epinephrine 1:1,000 per drug chart IM SO, MR x2 q5 min SO

**Respiratory distress with stridor at rest**

- Epinephrine 1:1,000 per drug chart (combined with 3 mL normal saline) via nebulizer, MR x1 SO

No improvement after epinephrine via nebulizer x2 or impending respiratory/airway compromise

- Epinephrine 1:1,000 per drug chart IM SO, MR x2 q5 min SO

If history suggests epiglottitis, do not visualize airway. Use calming measures.

*Infection control: If concerned about aerosolized infectious exposure, substitute with albuterol MDI, if available

†Infection control: If concerned about aerosolized infectious exposure, use patient’s ipratropium bromide MDI, if available, or withhold ipratropium bromide
SHOCK

Date: 7/1/2021
Page 1 of 1

BLS
- O₂ saturation
- O₂ and/or ventilate PRN
- Control obvious external bleeding
- Treat associated injuries
- NPO, anticipate vomiting
- Remove transdermal patch
- Keep patient warm

Assess for hypotension
- <1 month: SBP <60 mmHg
- 1 month – 1 year: SBP <70 mmHg
- 1 year – 10 years: SBP <70 mmHg + (2x age in years)
- ≥10 years: SBP <90 mmHg

ALS
- Monitor/EKG
- IV/IO SO
- Capnography SO PRN

Hypovolemic shock
- IV/IO fluid bolus per drug chart SO, MR SO if no rales

Neurogenic/cardiogenic/anaphylactic shock
- IV/IO fluid bolus per drug chart SO, MR SO if no rales

Hypotensive for age after second fluid bolus
- Push-dose epinephrine 1:100,000 (0.01 mg/mL) IV/IO per drug chart BHO, MR q3 min BHO, titrate until adequate perfusion

Push-dose epinephrine mixing instructions
1. Remove 1 mL normal saline (NS) from the 10 mL NS syringe
2. Add 1 mL of epinephrine 1:10,000 (0.1 mg/mL) to 9 mL NS syringe
The mixture now has 10 mL of epinephrine at 0.01 mg/mL (10 mcg/mL) concentration.
**BLS**

- Ensure patent airway
- Protect C-spine
- Control obvious bleeding
- Spinal motion restriction per Skills List (S-104) except in penetrating trauma without neurological deficits
- \(\text{O}_2\) saturation. Maintain \(\text{SpO}_2 \geq 90\%\).
- \(\text{O}_2\) and/or ventilate PRN
- Keep warm
- Hemostatic gauze

**Abdominal trauma**

- Cover eviscerated bowel with saline pads

**Chest trauma**

- Cover open chest wound with three-sided occlusive dressing. Release dressing if tension pneumothorax develops.
- Chest seal PRN

**Extremity trauma**

- Splint neurologically stable fractures in position as presented. Traction splint PRN.
- Reduce grossly angulated long bone fractures with no pulse or sensation PRN BHO
- Direct pressure to control external hemorrhage
- Apply gauze or hemostatic dressing PRN
- Tourniquet PRN
- In MCI, direct pressure not required prior to tourniquet application

**Impaled objects**

- Immobilize and leave impaled objects in place
- Remove object impaled in face, cheek, or neck if there is total airway obstruction SO

**Any suspicion of neurological injury (mechanism, GCS, examination)**

- High-flow \(\text{O}_2\) PRN
- Monitor \(\text{SpO}_2\), BP, and HR q3-5 min
- If \(\text{SpO}_2 < 90\%\) or inadequate respirations (despite high-flow \(\text{O}_2\)), assist ventilations with BVM

**ALS**

- Monitor/EKG
- IV/IO SO
- Capnography SO. Maintain \(\text{EtCO}_2\) 35-45 mmHg SO PRN.
- Treat pain per Pain Management Protocol (S-173)

**Signs of shock or hypotensive for age**

- Fluid bolus IV/IO SO per drug chart, MR x3 q15 min to maintain adequate perfusion

**Crush injury with compression of extremity or torso \(\geq 2\) hours**

Just prior to extremity being released
- IV/IO fluid bolus per drug chart
- \(\text{NaHCO}_3\) IV/IO per drug chart SO

**Grossly angulated long bone fractures**

- Reduce with gentle unidirectional traction for splinting SO

**Severe respiratory distress with unilateral diminished breath sounds and hypotensive for age**

- Needle thoracostomy SO
Pregnancy ≥6 months
- If spinal motion restriction indicated, tilt patient to the left 30°

Traumatic cardiac arrest
- Rapid transport
- For blunt trauma, may consider pronouncement at scene BHPO

Hypotension by age
- <1 month: SBP <60 mmHg
- 1 month – 1 year: SBP <70 mmHg
- 1 year – 10 years: SBP <70 mmHg + (2x age in years)
- ≥10 years: SBP <90 mmHg

Transportation and Destination Guidelines
Pediatric patients who meet criteria outlined in T-460 (Identification of the Pediatric Trauma Center Patient) should be transported to the Designated Pediatric Trauma Center, except in the following situations.
1. Adult with child
   a. If there is a single ambulance (air/ground) with both a pediatric trauma center patient and an adult trauma center patient, the ambulance should first transport the more critical patient to the appropriate facility. If both patients are critical, or if there are other questions, both may be transported to the designated adult trauma center.
   b. Field personnel should consider splitting the team using additional ALS transport vehicles, or aeromedical resources to transport the pediatric patient to the pediatric trauma facility and the adult patient to the catchment area trauma facility.
2. Trauma center diversion
   The pediatric patient who is identified as a trauma patient shall be transported to the designated pediatric trauma center. When the pediatric trauma center is on diversion, including age-specific diversion, the pediatric patient shall be transported to the county-designated backup pediatric trauma center, the University of California, San Diego (UCSD).
3. Pregnant pediatric patient
   A pediatric pregnant trauma patient shall be transported to UCSD.
**BLS**

- Move to a safe environment
- Break contact with causative agent
- Ensure patent airway, O₂, and/or ventilate PRN
- O₂ saturation PRN
- Treat other life-threatening injuries
- Carboxyhemoglobin monitor PRN, if available

**Thermal burns**

- For burns of <10% BSA, stop burning with non-chilled water or saline
- For burns of ≥10% BSA, cover with dry dressing and keep patient warm
- Do not allow patient to become hypothermic

**Toxic inhalation (e.g., CO exposure, smoke, gas)**

- Move patient to safe environment
- 100% O₂ via mask
- Consider transport to facility with hyperbaric chamber for suspected CO poisoning, particularly in unconscious or pregnant patients

**Chemical burns**

- Brush off dry chemicals
- Flush with copious amounts of water

**Tar burns**

- Do not remove tar
- Cool with water, then transport

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**ALS**

- Monitor/EKG
- IV/IO SO
- Capnography SO PRN
- Treat pain per Pain Management Protocol (S-173)

**Patients with >10% partial-thickness or >5% full-thickness burns**

- Fluid bolus IV/IO per drug chart SO then TKO SO

**Respiratory distress with bronchospasm**

- Albuterol per drug chart via nebulizer SO, MR SO

**Respiratory distress with stridor**

- Epinephrine 1:1,000 per drug chart (combined with 3 mL normal saline) via nebulizer SO, MR x1 SO
- If not improved after epinephrine via nebulizer x2 or impending airway compromise
  - Epinephrine 1:1,000 per drug chart IM SO, MR x2 q5 minutes SO

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**Infection control**: If concerned about aerosolized infectious exposure, substitute with albuterol MDI, if available

Contact UCSD Base Hospital for patients meeting burn center criteria†

See Base Hospital Contact/Patient Transportation and Report (S-415)

†**Burn center criteria**

Patients with burns involving
- >10% BSA partial thickness or >5% BSA full thickness
- Suspected respiratory involvement or significant smoke inhalation
- Circumferential burn injury or injury to face, hands, feet, or perineum
- Electrical injury due to high voltage (>120 volts)
<table>
<thead>
<tr>
<th><strong>BLS</strong></th>
<th><strong>ALS</strong></th>
</tr>
</thead>
</table>
| • Ensure patent airway  
• O₂ saturation  
• O₂ and/or ventilate PRN  
• Monitor blood glucose SO  
**Suspected hypoglycemia or patient’s blood sugar is <60 mg/dL (<45 mg/dL for neonates)**  
• If patient is awake and able to manage oral secretions, give oral glucose paste or 3 tablets (15 gm total)  
• Patient may eat or drink, if able  
• If patient is unconscious, NPO  
**BLS transport for currently asymptomatic patient with history of 1 or more of the following**  
• Absent, decreased, or irregular breathing  
• Color change (cyanosis, pallor)  
• Marked change in muscle tone (hypertonia or hypotonia)  
• Altered level of responsiveness | • Monitor/EKG  
• IV SO PRN  
**ALS transport for symptomatic patient** |
# PEDIATRIC TREATMENT PROTOCOL

## S-173

### PAIN MANAGEMENT

**Date:** 7/1/2022  
**Page:** 1 of 1

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### BLS

- Assess level of pain
- Ice, immobilize, and splint PRN
- Elevate extremity trauma PRN

### ALS

- Continue to monitor and reassess pain as appropriate

### Treatment PRN if signs of adequate perfusion

- <10 kg, fentanyl IV/IN per drug chart BHO, MR BHO
- ≥10 kg, fentanyl IV/IN per drug chart SO, MR BHO
- If fentanyl unavailable, morphine IV/IM per drug chart SO, MR BHO
- Acetaminophen* IV per drug chart in 100 ml of NS over 15 min SO

### Special considerations

1. Changing route of administration requires BHO (e.g., IV to IM or IN to IV)
2. Changing type of opioid analgesic while treating patient requires BHO (e.g., changing from morphine to fentanyl)
3. BHPO required for treatment if patient presents with
   - Isolated head injury
   - Acute onset severe headache
   - Drug/EtOH intoxication
   - Multiple trauma with GCS <15
   - Suspected active labor

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*IV acetaminophen contraindicated if patient <2 years of age

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**ABDOMINAL DISCOMFORT / GI / GU**
**(NON-TRAUMATIC)**

**BLS**
- Ensure patent airway
- \(O_2\) saturation PRN
- NPO

**ALS**
- Monitor/EKG
- IV/IO SO
- Fluid bolus IV/IO for suspected volume depletion per drug chart SO
- Treat pain per Pain Management Protocol (S-173)

**For nausea or vomiting**
≥6 months
- Ondansetron ODT/IV/IM per drug chart SO
PSYCHIATRIC / BEHAVIORAL EMERGENCIES

Date: 7/1/2021 Page 1 of 1

**BLS**
- Ensure patent airway, O₂ and/or ventilate PRN
- O₂ saturation PRN
- Treat life-threatening injuries
- Ask patient: "Do you have any weapons?"
- Attempt to determine if behavior is related to injury, illness, or drug use
- Restrain only if necessary to prevent injury
- Document distal neurovascular status q15 min, if restrained
- Avoid unnecessary sirens
- Consider law enforcement support
- Law enforcement or EMS may remove Taser* barbs

**ALS**
- Monitor/EKG
- IV SO adjust PRN
- Capnography SO PRN

Severely agitated and/or combative patient requiring restraint for patient or provider safety

Patient ≥8 years
- Midazolam† per drug chart IM/IN/IV SO, MR x1 in 10 min SO

Patient <8 years
- Midazolam† per drug chart IM/IN/IV BHO, MR x1 in 10 min BHO

If midazolam administered, as soon as able
- Monitor/EKG/capnography
- O₂ SO
- Ventilate PRN SO
- Fluid bolus IV/IO per drug chart SO PRN, MR x1 SO, MR BHO

* **Taser barb considerations**
  - Taser discharge for simple behavioral control is usually benign and does not require transport to BEF for evaluation
  - Patients who are injured; appear to be under the influence of drugs; or present with altered mental status or symptoms of illness should have medical evaluation performed by EMS personnel before being transported to BEF
  - If barbs are impaled in anatomically sensitive location such as eye, face, neck, finger/hand, or genitalia, do not remove the barb. Transport patient to BEF.

† For severely agitated or combative patients, IN or IM midazolam is the preferred route to decrease risk of injury to the patient and personnel.

**Alert:** Co-administration of midazolam in patients with alcohol intoxication can cause respiratory depression. Consider avoiding or reducing midazolam dose.
**Environmental Exposure**

**BLS**
- Ensure patent airway
- \( O_2 \) saturation PRN
- \( O_2 \) and/or ventilate PRN
- Remove excess/wet clothing
- Obtain baseline temperature

**Heat exhaustion**
- Cool gradually
- Fan and sponge with tepid water
- Avoid shivering
- If conscious, give small amounts of fluids

**Heat stroke**
- Rapid cooling
- Spray with cool water and fan
- Avoid shivering
- Apply ice packs to carotid, inguinal, and axillary regions

**Cold exposure**
- Gentle warming
- Apply blankets, warm packs, and dry dressings
- Avoid unnecessary movement or rubbing
- If alert, give warm liquids. If altered LOC, NPO.
- Prolonged CPR may be indicated

**Drowning**
- CPR, if cardiac arrest. Emphasize ventilations.
- High-flow \( O_2 \) if spontaneous respirations
- Remove wet clothing
- Spinal motion restriction PRN

**ALS**
- Monitor/EKG
- IV/IO SO
- Capnography SO PRN

**Cardiac arrest with hypothermia**
- CPR
- Persistent VF/VT, defibrillate per S-163*
- Epinephrine per drug chart IV/IO x1 SO†
- Rewarm

**Heat exhaustion/heat stroke**
- Fluid bolus IV/IO SO per drug chart, if no rales MR x1 SO

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*Defibrillation attempts may be unsuccessful during rewarming until temperature \( \geq 86 \, ^\circ F \) / \( \geq 30 \, ^\circ C \)
†Limit epinephrine to 1 dose and withhold antiarrhythmic medications until temperature \( \geq 86 \, ^\circ F \) / \( \geq 30 \, ^\circ C \)
### SEPSIS

**Date:** 7/1/2021  
**Page:** 1 of 1

#### BLS
- O₂ saturation
- O₂ and/or ventilate PRN
- NPO, anticipate vomiting
- If febrile, remove excess clothing
- Obtain temperature

**Assess for hypotension**
- <1 month: SBP <60 mmHg
- 1 month – 1 year: SBP <70 mmHg
- 1 year – 10 years: SBP <70mm Hg + (2x age in years)
- ≥10 years: SBP <90 mmHg

#### ALS
- Monitor/EKG
- IV/IO SO
- Capnography SO PRN

**Sepsis**
Suspect and report if history **suggestive of infection** and two or more of the following are present, suspect sepsis and report to BH and upon transfer of care at receiving hospital

1. Temperature ≥100.4 °F (38.0 °C) or <96.8 °F (36.0 °C)
2. Altered mental status
3. Tachypnea
4. Weak peripheral pulses
5. Delayed capillary refill
6. Hypotension
7. EtCO₂ <25 mmHg

**Hypotensive for age after second fluid bolus**
- Push-dose epinephrine 1:100,000 (0.01 mg/mL) IV/IO per drug chart BHO, MR q3 min BHO, titrate until adequate perfusion

**Push-dose epinephrine mixing instructions**
1. Remove 1 mL normal saline (NS) from the 10 mL NS syringe
2. Add 1 mL of epinephrine 1:10,000 (0.1 mg/mL) to 9 mL NS syringe
The mixture now has 10 mL of epinephrine at 0.01 mg/mL (10 mcg/mL) concentration.