PURPOSE
To establish criteria for downgrading from an advanced life support (ALS) level of care to a basic life support (BLS) level of care in the pre-hospital setting.

APPLICATION
The intent of this policy is to permit first response agencies to downgrade the level of care a patient will receive during transport so that the maximum number of ALS transport ambulances and/or ALS first response apparatus are able to remain in service, and available, to respond to other medical aid requests. If / when an ALS transport ambulance arrives on scene before a first response agency apparatus, and the ALS transport paramedic determines that additional ALS assistance is not required AND the patient’s condition meets the criteria below, the patient should be transported by that ambulance. Excluding patients that have met Assess and Refer criteria related to behavioral health emergencies who have been referred out of the 911 system, it is not appropriate for an ALS transporting unit to wait at the scene for a BLS transporting unit when the paramedic is able to provide a BLS level of care.

AUTHORITY
California Health and Safety Code - Division 2.5: Emergency Medical Services [1797.204.]
California Health and Safety Code - Division 2.5: Emergency Medical Services [1797.206.]
California Code of Regulations, Title 22, Chapter 4, Article 8, and Section 100170

ALS to BLS DOWNGRADE ELIGIBILITY – PRIMARY / SECONDARY IMPRESSION
If at any point during the ALS assessment or in the presence of an ALS scene provider the patient exhibits any of the following conditions, the patient is no longer considered eligible for ALS to BLS transition and care must be provided by an ALS provider.
1. Acute altered mental status (excluding patients whose mentation is GCS 14 or lower as their baseline)
2. Acute cardiac dysrhythmias
3. Any patient requiring specialty care services (Trauma, Stroke, STEMI)
4. Airway obstruction
5. Hypoglycemia that persists after oral glucose administration
6. Influenza-like illness which falls outside of the vital sign eligibility criteria listed below
7. Overdose, poisoning, or ingestion
8. Pregnancy / OB delivery-related complications
9. Seizures (active and/or presenting as postictal)
10. Suspected cardiac chest pain
11. Water-related submersion incidents

ALS to BLS DOWNGRADE ELIGIBILITY – VITAL SIGN ELIGIBILITY
If at any point during the ALS assessment, or in the presence of an ALS scene provider, the trend of the patient’s vital signs falls OUTSIDE of the parameters listed below, the patient cannot be downgraded to a BLS level of care. Trending vital signs require A MINIMUM OF TWO SETS during the patient encounter.
1. Blood glucose (BGL) is less than 60 mg/dl OR
   a. Glucometer reads “LO” OR
   b. The patient presents with symptomatic hypoglycemia, a BGL less than 80 mg/dl, AND a persistent, acute, altered mental status (excluding patients whose mentation is GCS 14 or lower as their baseline)
2. Blood glucose (BGL) is greater than 250 mg/dl OR
   a. Glucometer reads “HI” OR
   b. The patient presents with signs / symptoms of diabetic ketoacidosis (DKA): polydipsia, polyuria, generalized weakness, fatigue, nausea / vomiting, Kussmaul respirations, fruity odor on their breath, dry / flushed skin, etc.
3. Pulse oximetry (SpO2) of 93% saturation or below
4. Pulse rate is less than 60 beats per minute
5. Pulse rate is greater than 120 beats per minute
6. Respiratory rate of 10 breaths a minute or below
7. Respiratory rate of 24 breaths a minute or more
8. Sustained systolic blood pressure greater than 180 mmHg
9. Sustained systolic blood pressure less than 90 mmHg
10. Sustained diastolic blood pressure greater than 100 mmHg
11. Temperature is less than 93.2°F
12. Temperature is greater than 101°F

**ALS to BLS DOWNGRADE ELIGIBILITY – PEDIATRIC PATIENTS**
If at any point during the ALS assessment of a pediatric patient, or in the presence of an ALS scene provider, the patient’s vital signs fall OUTSIDE of the parameters listed below, the patient cannot be downgraded to a BLS level of care.

1. Acute altered mental status (altered for the patient)
2. Acute cardiac dysrhythmias
3. Apparent life-threatening event / brief resolved unexplained event (ALTE / BRUE) in the pediatric population
4. Evidence of poor perfusion and/or cyanosis
5. Severe respiratory distress
6. Status epilepticus
7. HYPOTENSION:
   a. In neonates (1 day to 28 days) = SBP less than 60 mmHg
   b. In infants (1 to 12 months) = SBP less than 70 mmHg
   c. In pediatrics (1 to 10 years) = SBP less than \(70 + (\text{age} \times 2)\)
   d. In adolescents (11 to 14 years) = SBP less than 90 mmHg

**GENERAL CONSIDERATIONS PRIOR TO DOWNGRADE**
- Patients who require immediate medical attention will be transported to the closest most appropriate hospital.
- Patients who have received ALS interventions, or those who would likely benefit from ALS intervention(s), cannot be downgraded to a BLS level of care.
- Patients, parents, or guardians must be alert, oriented, and acting appropriately for their age and do not present with any significant impairment due to drugs, alcohol, organic causes, or mental illness.

**DOCUMENTATION REQUIREMENTS WHEN DOWNGRADING FROM ALS to BLS**
In addition to the minimum NEMSIS requirements, the following must be documented in the ePCR:
- After selecting Patient Treated and Care Transferred to Another EMS Unit as the disposition, “BLS” must be selected as the Transporting Ambulance Level of Care in the “Ground Transport” panel
- Physical exam findings (must include a full head-to-toe exam within the Assessment Panel)
- Treatments provided, if any
- All pertinent findings and observations

**CONTINUOUS QUALITY IMPROVEMENT**
All patient dispositions where the level of care was downgraded from ALS to BLS will undergo a minimum of 50% CQI by the ALS service provider who initiated the downgrade.
PURPOSE
To establish standards for the identification of patients whose condition does not require transport by 9-1-1 emergency ambulance to an emergency department. All 9-1-1 calls for EMS will receive an appropriate response, timely assessment, and appropriate patient care. If it is determined that the patient is stable and does not require emergency department services, EMS field personnel will assess all patients and provide an appropriate recommendation to a non-acute care facility.

AUTHORITY
California Health and Safety Code - Division 2.5: Emergency Medical Services [1797. - 1799.207.]

GENERAL CONSIDERATIONS
- Patients who require immediate medical attention will be transported to the closest most appropriate hospital.
- Patients who refuse referral to a non-acute care facility will be transported to the closest most appropriate hospital.
- Patients who accept a referral to a non-acute care facility are not required to sign Refusal of Treatment / Transport documentation on the electronic Patient Care Record (ePCR).

PARAMEDIC ASSESS AND REFER DECISION MAKING PRINCIPLES
- Does the patient, guardian, or parent have decision making capacity?
- Are EMS field personnel concerned with the patient’s current medical condition?
- How likely is the patient to successfully navigate the provided referral?

ASSESS AND REFER CRITERIA
The patient, guardian, or parent must meet all the following criteria:
- Is an adult (18 years of age or over), or is legally emancipated if under 18 years of age?
- Has a Glasgow Coma Scale (GCS) of 15 or GCS is at patient’s baseline?
- Exhibits no clinical evidence of:
  - Altered level of consciousness
  - Alcohol or drug ingestion that impairs decision making capacity
  - Abnormal or labored breathing or shortness of breath
  - Chest pain or discomfort of any kind
  - Hypoxia as indicated by low oxygen saturation of less than 94%
  - Significant tachycardia
  - Serious hemorrhage
- Exhibits evidence of decision-making capacity sufficient to understand the nature of the medical condition as well as the risks and potential consequences of not seeking additional medical care from the provided recommendation.
- The patient would benefit from the provided recommendation.
- The patient is likely to successfully navigate the provided recommendation.

If the patient presents with clinical evidence of a viral illness, in addition to the criteria above, they must also:
- Be older than two (2), but younger than sixty-five (65), years of age.
- Not have an underlying medical history.

For the COVID+ or PUI patient, assess for a referral to stay home, self-isolate, and seek follow-up treatment with a physician.
ASSESS AND REFER RECOMMENDATIONS TO THE PATIENT
If the patient’s condition meets all criteria listed above, EMS field personnel will provide the following recommendation: “Our assessment indicates no evidence of any medical condition that requires immediate care in an emergency department. You should seek care with your regular healthcare provider or visit a local urgent care or clinic. If your symptoms persist or progress, you should seek medical help immediately or re-contact 9-1-1.”

DOCUMENTATION REQUIREMENTS
In addition to the minimum NEMSIS requirements, the following must be documented in the ePCR:
- Utilize “REMSA Assess and Refer” disposition in the ePCR.
- Physical exam.
- Treatment provided.
- Patient, parent, or guardian is alert, oriented, and acting appropriately for their age.
- Indications that there were no signs of significant impairment due to drugs, alcohol, organic causes, or mental illness.
- Any other observations that indicate that the patient, guardian, or parent had unimpaired decision-making capacity.
- Recommendation / referrals shall be documented utilizing the following four (4) step process:
  1. That a recommendation / referral was offered.
  2. What the recommendation / referral was that EMS field personnel provided.
  3. The patient’s understanding of the recommendation / referral.
  4. The patient’s plan based on the recommendation / referral of the EMS field personnel.
- The person(s), if any, who remained to look after the patient (the patient’s "support system").
- The name of the interpreter utilized, if applicable.
- EMS field personnel will leave a referral card containing relevant community referral information with the patient.

CONTINUOUS QUALITY IMPROVEMENT
All assess and refer cases will undergo 100% CQI by the service providers.
PURPOSE
To introduce the County of Riverside Emergency Medical Services (EMS) Agency (REMSA) treatment protocols, and the REMSA Approved Policies and Procedures Manual. These policies must be observed within the full context of the REMSA Policy Manual, which establishes the REMSA approved Public Safety Personnel, Emergency Medical Technician, Advanced Emergency Medical Technician, and paramedic scope of practice as specified in Title 22 of the California Code of Regulations.

AUTHORITY
California Health and Safety Code - Division 2.5: Emergency Medical Services [1797. - 1799.207.]

APPLICATION
The REMSA treatment protocols must be adhered to by each part of the EMS System including the following personnel:
- Public Safety Personnel (PSP)
- Emergency Medical Technician (EMT)
- Advanced Emergency Medical Technician (AEMT)
- Paramedic (EMT-P)
- Mobile Intensive Care Nurse (MICN)
- Base Hospital Physician (BHP)

PSPs are non-EMT firefighters, peace officers and/or lifeguards functioning in the Riverside County EMS System. PSPs who have completed either Cal Fire’s PSP First Aid and CPR Training Course, or a REMSA Approved PSP First Aid and CPR course, must follow the REMSA treatment protocols as they were trained at the PSP level and may not operate beyond the REMSA approved PSP scope of practice.

All REMSA treatment protocols were developed to be consistent with pre-hospital provider primary impressions, as approved by the California EMS Authority. The foundations for these treatment protocols are the EMT and EMT-P scope of practice, medical research, and community standards in medical practice.

Patients with the same disease may have differing symptoms and presentations, and conversely, patients with similar signs and symptoms may have very different diagnoses. As such, the treatment protocols contained in this series of the REMSA policy manual were created to provide treatment guidance of “classic” presentations based on the most common patient complaints, based on evidence-based practice.

These protocols were not developed with the intent that all therapies will be performed on scene, or that at any therapy contained in a specific treatment protocol will be performed simply because of a provided complaint. EMTs, EMT-Ps, MICNs and BHPs must utilize their medical knowledge, expertise, and critical thinking to determine appropriate treatment(s), if any, for each patient. Additionally, transport of patients with treatment(s) en route is left to the discretion of the provider and the base hospital.

REMSA treatment protocols, as approved, allow EMTs and EMT-Ps the latitude to provide treatments and perform procedures based on a thorough assessment of the patient’s complaint as well as their clinical presentation. It is incumbent upon the individual provider to know and understand their scope of practice based on their level of certification.
PRINTING, RETENTION AND DISPLAY
All REMSA Treatment protocols are intended for color printing and hard copy retention in a binder using top loading sheet protectors. These protocols are also intended for electronic display in Adobe Portable Document Format (PDF) or through the REMSA authorized web application (found here: https://remsaapp.rivcoready.org/). Distribution is provided by means of the EMS Agency’s official website(s).

Introduction to the Treatment Protocols
Each REMSA treatment protocol included in this series constitutes medical control by the REMSA Medical Director, as specified in Section 1798 of the California Health and Safety Code, so long as it bears the following:

• A “Last Reviewed” date, indicating the most recent date that the protocol was reviewed in its entirety AND
• A “Last Revised” date, indicating the most recent date that a change was made to the protocol. These changes may include but not be limited to grammar, syntax, spelling formatting and/or content.

These protocols must be observed within the full context of the REMSA Policy Manual, which establishes the REMSA approved PSP, EMT, AEMT, or EMT-P scope of practice as specified in Title 22 of the California Code of Regulations.

Format of the Treatment Protocols
All REMSA treatment protocols follow a consistent format, where BLS patient management medications and procedures are contained in the first column (left) and ALS patient management medications and procedures are contained in the second column (right).

In general, most patients will be transported to the closest, most appropriate receiving center without issue. For all other patients, and if the section is present at the end of the individual treatment protocol, refer to “Patient Disposition” for specific instructions or suggestions regarding treatment and transport considerations.

Understanding the Treatment Protocols
• Medical Direction
Medical direction is provided through standing orders written into the REMSA treatment protocols, and through base hospital orders given during online / verbal base hospital contact. At no time may any REMSA authorized personnel operate beyond, or direct another to operate beyond, their REMSA approved scope of practice as established by the REMSA Policy Manual.

• Standing orders
REMSA treatment protocols include standing orders for medications, procedures, and dosages and/or dosing formulas, which apply to both adult and pediatric patients. Medications, concentrations, dosages, volumes, energy settings and advanced airway sizes for pediatric patients can be found in the REMSA Pediatric Medication Dosing Resource, located here: http://remsa.us/policy/PMDRCOMPLETE.pdf. Adult medication dosing and energy settings are embedded in each associated treatment protocol.

Standing orders are to be utilized as clinically indicated. Not every standing order in a treatment protocol must be carried out on every patient treated under that treatment protocol. A thorough assessment of the patient’s complaint, their clinical presentation, and sound judgment are required.

• Base hospital orders and contact
Base hospital contact is required when any clinically indicated medication or procedure is not included in the applicable standing orders, when directed by protocol, or when the EMT, AEMT, or EMT-P encounters any atypical presentation, circumstance, or is uncertain of any of the following:

1. The differential diagnosis and field impression
2. What therapeutic interventions are indicated
3. What patient disposition is indicated
Base hospital contact will be performed by the highest level of REMSA authorized provider at scene: EMT, AEMT, or paramedic. Orders issued by the base hospital may not exceed the scope of practice of the person making contact. BHOs are not provided to PSPs.

BHOs are given during base hospital contact: radio or phone voice communications with the MICN or BHP of a REMSA authorized base hospital. The MICN or BHP may also assume the base hospital role at any time while receiving notification.

**Using the Treatment protocols**

Pre-hospital Providers: After completing a thorough assessment of the patient’s complaint, condition and clinical presentation, the primary care provider at the scene will determine his / her primary impression. REMSA treatment protocols are categorized according to body systems, mechanisms of injury and natures of illness, with each impression corresponding to a specific treatment protocol in that category:

- 4100 – Key Policies
- 4200 – General Medical
- 4300 – Trauma
- 4400 – Cardiovascular / Pulmonary
- 4500 – Neurological
- 4600 – Toxicological
- 4700 – Environmental
- 4800 – Pregnancy and Childbirth

The primary care provider will determine the treatment protocol that most closely aligns with the patient’s complaint, condition and clinical presentation and begin providing care as outlined in the BLS Patient Management column. After all BLS treatments have been rendered, and if the patient’s condition warrants, continuation of treatment(s) as outlined in the ALS Patient Management column should be rendered. If a patient presents with multiple complaints and appropriate medications and/or procedures are contained in multiple treatment protocols, treatment of the most life-threatening conditions must occur first, before providing any other treatments.

EX:

*A patient complains of chest discomfort with associated nausea and vomiting. This patient should be treated utilizing BLS and ALS Patient Management strategies as outlined in REMSA Policy #4401 (Suspected Acute Coronary Syndrome) before administering Ondansetron / Zofran, as outlined in Policy #4203 (Nausea and/or Vomiting).*

Not all treatments, as outlined in each column, need to be provided to each patient. Additionally, treatments, as outlined in each column, do not need to be provided or performed in the order in which they are presented. A thorough assessment of the patient’s complaint, their clinical presentation, and the providers sound judgment are required to determine clinical necessity and appropriateness as well as the order in which they are rendered.

**Should the patient require immediate intervention(s) due to life threatening conditions, ALS Patient Management should be provided before BLS Patient Management is provided.**

MICNs / BHPs: The MICN or BHP may provide orders for further assessment, clarification, monitoring, procedures, medications, patient disposition and destination. MICNs and/or BHPs may not order medications, routes or procedures that are outside the EMT, AEMT, or EMT-P scope of practice. **FURTHERMORE, PREHOSPITAL PERSONNEL ARE NOT PERMITTED TO FOLLOW ORDERS THAT ARE GIVEN OUTSIDE OF THEIR SCOPE OF PRACTICE.**
**PURPOSE:** To identify all medications, concentrations, and dosing formulas for medications determined to be “alternative” or that are permitted for use in the event of a mass exposure to nerve agents, organophosphates, or carbamates (“CDC Medications”). In the event that a medication cannot be purchased in a concentration already approved by REMSA (see Policy #3303 (Drug and Equipment List)), a medication waiver must be submitted and approved by the REMSA Medical Director prior to purchase and deployment.

<table>
<thead>
<tr>
<th>Alternative Medications</th>
<th>CDC Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medication &amp; Concentration</strong></td>
<td><strong>Formula</strong></td>
</tr>
<tr>
<td>Albuterol MDI</td>
<td>Adults: 2 metered doses (2 puffs)</td>
</tr>
<tr>
<td>90 mcg / 1 puff</td>
<td>Pediatrics:</td>
</tr>
<tr>
<td></td>
<td>• Weight = 14 kg (=31 lbs) or less: NOT PERMITTED.</td>
</tr>
<tr>
<td></td>
<td>• Weight = 15 kg (=33 lbs) or more: 2 metered doses (2 puffs).</td>
</tr>
<tr>
<td>Atropine Autoinjector</td>
<td>Adults: 2 mg (1 injection) IM. MAY REPEAT PRN.</td>
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<tr>
<td>2 mg / 0.7 mL</td>
<td>Pediatrics: NOT PERMITTED.</td>
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<tr>
<td>Atropine Autoinjector</td>
<td>Adults: 2 mg (2 injections) IM. MAY REPEAT PRN.</td>
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<tr>
<td>1 mg / 0.7 mL</td>
<td>Pediatrics:</td>
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<td></td>
<td>• Weight = 14 kg (=31 lbs) or less: NOT PERMITTED.</td>
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<tr>
<td></td>
<td>• Weight = 15 kg (=33 lbs) or more: 1 mg IM. MAY REPEAT PRN.</td>
</tr>
<tr>
<td>Medication &amp; Concentration</td>
<td>Formula</td>
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<tr>
<td><strong>Atropine Autoinjector</strong> 0.5 mg / 0.7 mL</td>
<td>Adults: 2 mg (4 injections) IM. MAY REPEAT PRN. Pediatrics: 0.5 mg IM x2. MAY REPEAT PRN.</td>
</tr>
<tr>
<td><strong>Diazepam – IV</strong> 10 mg / 2 mL</td>
<td>Adults: 2.5 mg (0.5 mL) IV Pediatrics: 0.05 mg / kg IV</td>
</tr>
<tr>
<td><strong>Diazepam - IM</strong> 10 mg / 2 mL</td>
<td>Adults: 5 mg (1 mL) IM Pediatrics: 0.1 mg / kg IM • Patients weighing 14 kg or less (=31 lbs): Preferred injection site is the lateral thigh. MAX VOLUME PER INJECTION IS 3 mL. • Patients weighing 15 kg or more (=33 lbs): Preferred injection site is the deltoid. MAX VOLUME PER INJECTION IS 1 mL.</td>
</tr>
<tr>
<td><strong>Diazepam - IV Related to CPAP Mask</strong> 10 mg / 2 mL</td>
<td>Adults: 1 mg / 0.2 mL IV. Pediatrics: NOT PERMITTED.</td>
</tr>
<tr>
<td><strong>Diazepam Autoinjector</strong> 10 mg / 2 mL</td>
<td>Adults: 10 mg (1 injection) IM. MAY REPEAT TWICE AT 15 MINUTE INTERVALS. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER. Pediatrics: NOT PERMITTED.</td>
</tr>
<tr>
<td><strong>DuoDote (NAAK) Autoinjector</strong> Atropine 2.1 mg / 0.7 mL &amp; Pralidoxime 600 mg / 2 mL</td>
<td>Adults: 1 injection (both syringes) IM. MAY REPEAT TWICE. Pediatrics: NOT PERMITTED.</td>
</tr>
<tr>
<td>Medication &amp; Concentration</td>
<td>Formula</td>
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</tr>
<tr>
<td>Ketamine - IVPB&lt;br&gt;100 mg / 1 mL OR&lt;br&gt;10 mg / 1 mL</td>
<td>Adults: 0.3 mg / kg. Infuse in 50-100 mL Normal Saline, administer over 5 minutes. <strong>MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). MAX SINGLE DOSE IS 30 MG.</strong>&lt;br&gt;Pediatrics: <strong>NOT PERMITTED.</strong></td>
</tr>
<tr>
<td>Ketamine - IN&lt;br&gt;100 mg / 1 mL OR&lt;br&gt;10 mg / 1 mL</td>
<td>Adults: 0.5 mg / kg IN. <strong>MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). MAX SINGLE DOSE IS 30 MG.</strong>&lt;br&gt;Pediatrics: <strong>NOT PERMITTED.</strong></td>
</tr>
<tr>
<td>Lorazepam – IV/IN&lt;br&gt;4 mg / 1 mL</td>
<td>Adults: 2.4 mg / 0.6 mL IV/IN.&lt;br&gt;Pediatrics: 0.05 mg / kg IV/IN.</td>
</tr>
<tr>
<td>Lorazepam - IM&lt;br&gt;4 mg / 1 mL</td>
<td>Adults: 5.2 mg / 1.3 mL IM.&lt;br&gt;Pediatrics: 0.1 mg / kg IM.&lt;br&gt;• Patients weighing 14 kg or less (=31 lbs): Preferred injection site is the lateral thigh.&lt;br&gt;• Patients weighing 15 kg or more (=33 lbs): Preferred injection site is the deltoid.</td>
</tr>
<tr>
<td>Lorazepam Related to CPAP Mask&lt;br&gt;4 mg / 1 mL</td>
<td>Adults: 1.2 mg (0.3 mL) slow IV/IO push or IM/IN.&lt;br&gt;Pediatrics: <strong>NOT PERMITTED.</strong></td>
</tr>
<tr>
<td>Medication &amp; Concentration</td>
<td>Formula</td>
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</table>
| **Lorazepam – IV/IN** 2 mg / 1 mL | Adults: 2.6 mg (1.3 mL) IV.  
Pediatrics: 0.05 mg / kg IV. |
| **Lorazepam - IM** 2 mg / 1 mL | Adults: 5 mg (2.5 mL) IM.  
Pediatrics: 0.1 mg / kg IM.  
- Patients weighing 14 kg or less (=31 lbs): Preferred injection site is the lateral thigh. **MAX VOLUME PER INJECTION IS 3 mL AT THIS SITE.**  
- Patients weighing 15 kg or more (=33 lbs): Preferred injection site is the deltoid. **MAX VOLUME PER INJECTION IS 1 mL AT THIS SITE.** |
| **Lorazepam Related to CPAP Mask** 2 mg / 1 mL | Adults: 1 mg (0.5 mL) slow IV/IO push or IM/IN.  
Pediatrics: **NOT PERMITTED.** |
| **Magnesium Sulfate** 4 g / 100 mL (IV Bag) | Adults: 2 gm (50 mL) IV/IO.  
Pediatrics: 0.05 gm / kg IV/IO. |
| **Mark I (NAAK) Autoinjector** Atropine 2 mg / 0.7 mL & Pralidoxime 600 mg / 2 mL | Adults: 1 injection (both syringes) IM. **MAY REPEAT TWICE.**  
Pediatrics: **NOT PERMITTED.** |
| **Morphine Sulfate – IV/IM** 10 mg / 1 mL | Adults: 5 mg (0.5 mL) IV/IM.  
Pediatrics: 0.1 mg / kg IV/IM.  
- Patients weighing 14 kg or less (=31 lbs): Preferred injection site is the lateral thigh.  
- Patients weighing 15 kg or more (=33 lbs): Preferred injection site is the deltoid. |
| **Morphine Sulfate – IV** 10 mg / 10 mL | Adults: 5 mg (5 mL) IV.  
Pediatrics: 0.1 mg / kg IV. |
<table>
<thead>
<tr>
<th>Medication &amp; Concentration</th>
<th>Formula</th>
</tr>
</thead>
</table>
| Morphine Sulfate - IM      | Adults: 2.5 mg (2.5 mL) IM x2.  
Pediatrics: 0.1 mg / kg IM.  
• Patients weighing 14 kg or less (≈31 lbs): Preferred injection site is the lateral thigh. **MAX VOLUME PER INJECTION IS 3 mL AT THIS SITE.**  
• Patients weighing 15 kg or more (≈33 lbs): Preferred injection site is the deltoid. **MAX VOLUME PER INJECTION IS 1 mL AT THIS SITE.** |
| 10 mg / 10 mL              |         |
| Naloxone – IV/IM           | Adults: 0.5 mg (1.25 mL) IV/IM. **MAY REPEAT PRN.**  
Pediatrics: 0.1 mg / kg IV/IM. **MAX SINGLE DOSE IS 0.5 MG. MAY REPEAT PRN.** |
| 4 mg / 10 mL OR 0.4 mg / 1 mL |         |
| Naloxone - IN             | Adults: 0.4 mg (1 mL) IN. **MAY REPEAT PRN.**  
Pediatrics: 0.2 mg (0.5 mL) IN x2. **MAY REPEAT PRN.** |
| 4 mg / 10 mL OR 0.4 mg / 1 mL |         |
| Ondansetron – IM/IV        | Adults: 4 mg (2 mL) IM/IV. **MAY REPEAT TWICE TO MAX 12 MG.**  
Pediatrics: 0.1 mg / kg IV/IM.  
• Patients weighing 14 kg or less (≈31 lbs): Preferred injection site is the lateral thigh. **MAX VOLUME PER INJECTION IS 3 mL AT THIS SITE.**  
• Patients weighing 15 kg or more (≈33 lbs): Preferred injection site is the deltoid. **MAX VOLUME PER INJECTION IS 1 mL AT THIS SITE.** |
<p>| 40 mg / 20 mL              |         |</p>
<table>
<thead>
<tr>
<th>Medication &amp; Concentration</th>
<th>Formula</th>
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<tbody>
<tr>
<td><strong>Pralidoxime - IM</strong>&lt;br&gt;1000 mg / 5 mL (in 20 mL vial)</td>
<td>Adults: 600 mg (3 mL) IM. <strong>MAY REPEAT TWICE.</strong> Preferred injection site is the lateral thigh. <strong>MAX VOLUME PER INJECTION IS 3 mL AT THIS SITE.</strong>&lt;br&gt;Pediatrics: 20 mg / kg IM. <strong>MAY REPEAT TWICE.</strong>&lt;br&gt;• Patients weighing 14 kg or less (=31 lbs): Preferred injection site is the lateral thigh. <strong>MAX VOLUME PER INJECTION IS 3 mL AT THIS SITE.</strong>&lt;br&gt;• Patients weighing 15 kg or more (=33 lbs): Preferred injection site is the deltoid. <strong>MAX VOLUME PER INJECTION IS 1 mL AT THIS SITE.</strong></td>
</tr>
<tr>
<td><strong>Pralidoxime - IVPB</strong>&lt;br&gt;1000 mg / 20 mL</td>
<td>Adults: 600 mg (12 mL) IVPB.&lt;br&gt;Pediatrics: 20 mg / kg IVPB.</td>
</tr>
<tr>
<td>Grey</td>
<td>Pink</td>
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<tr>
<td>4-5 kg</td>
<td>5-7 kg</td>
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<tr>
<td>50 kg</td>
<td>52 kg</td>
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<tr>
<td>110 lbs</td>
<td>115 lbs</td>
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<tr>
<td>77 kg</td>
<td>79 kg</td>
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<tr>
<td>170 lbs</td>
<td>175 lbs</td>
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<tr>
<td>BLOOD GLUCOSE (BG) MONITORING</td>
<td>INDICATION(S)</td>
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<tr>
<td>• Symptomatic hypoglycemia</td>
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<tr>
<td>• Neurological dysfunction</td>
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<tr>
<td>• History of diabetes</td>
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<td>• Vague or general symptoms</td>
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<tr>
<td>or complaints</td>
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<tr>
<td>• Need to reassess unusual</td>
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<tr>
<td>and/or unexpected measurement(s)</td>
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<tr>
<td>• Need to reassess following</td>
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<tr>
<td>treatment of hypoglycemia</td>
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<tr>
<td>• EMT, AEMT or EMT-P judgment</td>
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<td>• At the request of a base hospital (BHO)</td>
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<td>SKILL</td>
<td>INDICATION(S)</td>
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<td>Patients that present with the following signs and/or symptoms:</td>
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<tr>
<td>ECG APPLICATION AND MONITORING</td>
<td>• ACS (Chest pain, discomfort, pressure or tightness radiating to the jaw, shoulders, or arms)</td>
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<tr>
<td></td>
<td>• Known history of ACS</td>
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<tr>
<td></td>
<td>• Palpitations</td>
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<tr>
<td></td>
<td>• Unexplained diaphoresis</td>
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<td></td>
<td>• Dyspnea</td>
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<td></td>
<td>• Syncope, near syncope, or dizziness</td>
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<td></td>
<td>• Altered mental status</td>
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<td></td>
<td>• Epigastric pain</td>
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<td></td>
<td>• General weakness</td>
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<td></td>
<td>• Congenital heart problems</td>
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<tr>
<td>SKILL</td>
<td>INDICATION(S)</td>
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</table>
| ECG APPLICATION AND MONITORING - 12-LEAD | Patients that present with the following signs and/or symptoms:  
  - ACS (Chest pain, discomfort, pressure or tightness radiating to the jaw, shoulders, or arms)  
  - Known history of ACS  
  - New onset cardiac dysrhythmias (including adult cardiac arrest, if return of spontaneous circulation occurs)  
  - Palpitations  
  - Unexplained diaphoresis  
  - Dyspnea  
  - Syncope, near syncope, or dizziness  
  - Altered mental status  
  - Epigastric pain  
  - General weakness  
  - Congenital heart problems  
  - Any patient the EMT-P feels would benefit from a 12-lead ECG assessment |     |     |     |       |                  | 12-lead ECGs should be transmitted to a STEMI Receiving Center when:  
  - A STEMI is suspected  
  - A STEMI is ECG-monitor identified or  
  - The patient’s cardiac rhythm is atypical or difficult to interpret  
  Serial 12-lead ECGs should be performed on patients when acute MI is suspected |
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<thead>
<tr>
<th>SKILL</th>
<th>INDICATION(S)</th>
<th>PSP</th>
<th>EMT</th>
<th>AEMT</th>
<th>EMT-P</th>
<th>CONTRAINDICATIONS</th>
<th>EXPECTATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDWELLING DEVICE ACCESS (SHUNTS / GRAFTS / PORT-A-CATHS, ET AL.)</td>
<td>• When fluid resuscitation or medications need to be provided and peripheral IV access and IO access is unobtainable</td>
<td>NOT PERMITTED IN RIVERSIDE COUNTY</td>
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<tr>
<td>INTRAMUSCULAR INJECTION</td>
<td>• When unable to establish peripheral IV access for medication administration</td>
<td>MAY ONLY ASSIST WITH THE USE OF PATIENT’S RXd EPI-PEN</td>
<td>MAY ONLY ASSIST WITH THE USE OF PATIENT’S RXd EPI-PEN</td>
<td></td>
<td></td>
<td>When any of the following are found at the intended injection site:</td>
<td>• The preferred site in patients greater than or equal to 3 years of age is the deltoid (maximum of 1 ml volume)</td>
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<td></td>
<td>• When the desired route for administration of a medication is IM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• When the desired route for administration of a medication is IM</td>
<td>• The preferred site in patients less than or equal to 3 years of age is the vastus lateralis (maximum of 3 ml volume)</td>
</tr>
<tr>
<td>INTRANASAL NALOXONE (IN) ADMINISTRATION BY PUBLIC SAFETY PERSONNEL</td>
<td>• Respiratory depression / arrest with suspected narcotic overdose</td>
<td>REQUIRES REMSA APPROVAL</td>
<td></td>
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<td>• Significant nasal trauma</td>
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<td></td>
<td>• Significant amount of blood or dried mucous discharge present in the nare(s)</td>
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<td></td>
<td></td>
<td>• PSPs working for agencies that are REMSA authorized to administer intranasal naloxone may provide 4 mg IN following procedures outlined in policy #3309 and in REMSA approved training</td>
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<tr>
<td>INTRANASAL MEDICATION ADMINISTRATION</td>
<td>• When unable to establish peripheral IV access for medication administration</td>
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<td></td>
<td></td>
<td></td>
<td>• Significant nasal trauma</td>
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<td></td>
<td>• When the desired route for administration of a medication is IN</td>
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<td></td>
<td></td>
<td></td>
<td>• Significant amount of blood or dried mucous discharge present in the nare(s)</td>
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<td>Volumes over 1 ml per nostril are likely too large and may result in runoff out of the nostril. Attempt to administer less, if possible</td>
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<tr>
<td>INTRAOSSEOUS</td>
<td>• When unable to establish peripheral IV access for medication administration</td>
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<td></td>
<td>IO access is considered the primary vascular access route in patients eight (8) years of age and younger</td>
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<td>(IO) ACCESS</td>
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<td>AEMTs may use:</td>
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<td></td>
<td>• the EZ-IO Power Driver at the distal and proximal tibia in pediatrics only</td>
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<td></td>
<td>• the Waismed Bone Injection Gun (B.I.G.) at the proximal tibia in pediatrics only</td>
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<td>EMT-Ps may use:</td>
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<td></td>
<td>• the EZ-IO Power Driver at the distal and proximal tibia in adults &amp; pediatrics and the proximal humerus (humeral head) in adults</td>
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<td></td>
<td></td>
<td></td>
<td>• the Waismed Bone Injection Gun (B.I.G.) at the proximal tibia in adults &amp; pediatrics</td>
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<td>Any clinically indicated insertion site may be used by EMT-Ps in any patient following discussion with the base hospital physician (BHPO) concerning the risks and benefits, the operator’s training and experience, and limitations of the available device</td>
</tr>
<tr>
<td>SKILL</td>
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<tr>
<td>BLS Patient Management</td>
<td>ALS Patient Management</td>
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<tr>
<td>INTRAOSSEOUS (IO) ACCESS: LIDOCAINE ADMINISTRATION FOR PAIN DURING IO INFUSION IN THE CONSCIOUS PATIENT</td>
<td>• Standing order: Pain during IO infusion in the conscious patient</td>
<td>Adults: 50 mg (2.5 mL) slow IO push over 1 minute. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). Pediatrics: 0.5 mg / kg slow IO push over 1 minute. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
<td>None</td>
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<tr>
<td>INTRAVENOUS ACCESS - EXTERNAL JUGULAR</td>
<td>• When unable to establish peripheral IV access, or IO access, when medication administration or fluid resuscitation is required</td>
<td>Patients who: • Are eight (8) years of age or younger • Cannot tolerate lying supine • Are actively vomiting • Have a neck mass or evidence of infection at or near the intended insertion site • Have a VP shunt on the side of the intended insertion Have obscured landmarks</td>
<td></td>
<td>Avoid using large bore catheters</td>
<td></td>
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<tr>
<td>INTRAVENOUS ACCESS - PERIPHERAL</td>
<td>• Administration of medication(s), the need for fluid replenishment and/or anticipation of administration of either</td>
<td>When the administration of medication(s) or the need for fluid replenishment is not indicated but is anticipated, placement of a saline lock ONLY is appropriate. Administration of IV fluids should always be clinically indicated and given as a bolus, not at a TKO rate.</td>
<td>None; however, care should be taken in patients with coagulopathy and in the presence of local infection, burns, or compromised skin at the intended site of insertion</td>
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<tr>
<td><strong>PAIN MANAGEMENT</strong></td>
<td>• When a patient complains of pain greater than 5 / 10 on the pain scale and would benefit from the administration of analgesics</td>
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<td><strong>Fentanyl:</strong></td>
<td>• REPETITION OF ANY ANALGESIC AFTER ALL MAX DOSES HAVE BEEN ADMINISTERED REQUIRES A BASE HOSPITAL ORDER (BHO)</td>
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<td><strong>NOTE: the administration of Fentanyl to its max dose followed by the administration of Ketamine – or vice versa – is a standing order.</strong></td>
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<td><strong>Ketamine:</strong></td>
<td>• Vitals signs (ECG, SpO₂ and waveform / digital capnography) must be monitored throughout BLS and ALS interventions for pain management</td>
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<td></td>
<td>• Sensitivity to opioids</td>
<td>• The max single dose for Ketamine is 30 mg regardless of the route.</td>
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<td></td>
<td></td>
<td></td>
<td>• Hypotension / systolic BP less than 90 mmHg</td>
<td><strong>ADMINISTRATION OF KETAMINE TO PEDIATRIC PATIENTS IS NOT PERMITTED.</strong></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>• Sensitivity to Ketamine</td>
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<td></td>
<td>• Pain / discomfort of suspected cardiac origin</td>
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<td></td>
<td><strong>REPETITION OF ANY ANALGESIC AFTER ALL MAX DOSES HAVE BEEN ADMINISTERED REQUIRES A BASE HOSPITAL ORDER (BHO)</strong></td>
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<td></td>
<td><strong>VITALS SIGNS (ECG, SpO₂ AND WAVEFORM / DIGITAL CAPNOGRAPHY) MUST BE MONITORED THROUGHOUT BLS AND ALS INTERVENTIONS FOR PAIN MANAGEMENT</strong></td>
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<td><strong>THE MAX SINGLE DOSE FOR KETAMINE IS 30 MG REGARDLESS OF THE ROUTE.</strong></td>
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<td></td>
<td><strong>THE MAX SINGLE DOSE FOR KETAMINE IS 30 MG REGARDLESS OF THE ROUTE.</strong></td>
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<td></td>
<td></td>
<td><strong>ADMINISTRATION OF KETAMINE TO PEDIATRIC PATIENTS IS NOT PERMITTED.</strong></td>
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<tr>
<td><strong>SUPPLEMENTAL OXYGEN THERAPY</strong></td>
<td>• Pulse oximetry reading of less than 94% in the presence of shortness of breath</td>
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<td></td>
<td><strong>Pulse oximetry reading of greater than 94%</strong></td>
<td><strong>TITRATE TO MAINTAIN, OR INCREASE, SpO₂ TO A MINIMUM OF 94%. A RANGE OF 88-92% IS ACCEPTABLE FOR PATIENTS WITH A HISTORY OF COPD.</strong></td>
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<td></td>
<td><strong>No complaint of shortness of breath</strong></td>
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<tr>
<td><strong>VENOUS BLOOD SAMPLING</strong></td>
<td>• Obtaining IV access for the purpose of taking a venous blood sample at the request of law enforcement</td>
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<td>NOT PERMITTED IN RIVERSIDE COUNTY</td>
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<td></td>
<td><strong>AIRWAY MANAGEMENT SKILLS</strong></td>
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<td></td>
<td>AIRWAY ADJUNCT – NASOPHARYNGEAL (NPA)</td>
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<td></td>
<td></td>
<td></td>
<td>• Inadequate / ineffective positive pressure ventilations</td>
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<td></td>
<td>• Inadequate / ineffective positive pressure ventilations</td>
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<td></td>
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<td></td>
<td>• Conscious patients who cannot tolerate an OPA</td>
<td>Nasopharyngeal airways (NPAs) are the preferred BLS adjunct</td>
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<td></td>
<td>• Nasopharyngeal airways (NPAs) are the preferred BLS adjunct</td>
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<td></td>
<td>AIRWAY ADJUNCT – OROPHARYNGEAL (OPA)</td>
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<td></td>
<td></td>
<td></td>
<td>• Inadequate / ineffective positive pressure ventilations</td>
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<td></td>
<td>• Inadequate / ineffective positive pressure ventilations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Patients with an intact gag reflex</td>
<td>Nasopharyngeal airways (NPAs) are the preferred BLS adjunct</td>
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<td></td>
<td>• Nasopharyngeal airways (NPAs) are the preferred BLS adjunct</td>
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<td></td>
<td>AIRWAY SUCTIONING</td>
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<td>• Mucus, blood or foreign body obstruction in the airway</td>
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<td></td>
<td>• Mucus, blood or foreign body obstruction in the airway</td>
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<td></td>
<td>• Low SpO₂ with audible gurgling sounds</td>
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<td></td>
<td>• Low SpO₂ with audible gurgling sounds</td>
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<td></td>
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<td></td>
<td>• Cyanosis associated with airway compromise</td>
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<td></td>
<td>• Cyanosis associated with airway compromise</td>
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<td></td>
<td></td>
<td></td>
<td>• Difficulty in ventilating patient due to high airway pressures</td>
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<td></td>
<td>• Difficulty in ventilating patient due to high airway pressures</td>
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<td></td>
<td>• Request by the conscious patient: The patient may be familiar with their own airway status and need for suctioning</td>
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<tr>
<td></td>
<td>• Request by the conscious patient: The patient may be familiar with their own airway status and need for suctioning</td>
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<td></td>
<td></td>
<td>• Significant increase in stridor or changes in breathing sounds associated with audible gurgling sounds</td>
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<tr>
<td></td>
<td>• Significant increase in stridor or changes in breathing sounds associated with audible gurgling sounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• None</td>
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<td>• 3 mL of normal saline may be introduced during suctioning to loosen thickened secretions. MAY REPEAT PRN.</td>
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<tr>
<td>BAG VALVE MASK (BVM) / POSITIVE PRESSURE VENTILATIONS</td>
<td>• Inadequate / ineffective respirations</td>
<td>REQUIRES REMSA APPROVAL</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>• All ALS provider agencies MUST use waveform / digital capnography when providing rescue ventilations via BVM</td>
<td>• Nasopharyngeal airways (NPAs) are the preferred BLS airway when providing rescue ventilations via BVM</td>
</tr>
<tr>
<td>CAPNOGRAPHY - COLOMERICRTICS</td>
<td>• For use immediately after orotracheal intubation to confirm correct placement of the ETT, prior to use of waveform / digital capnography</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>• A colormetric device may be used in conjunction with waveform / digital capnography but it does not take the place of waveform / digital capnography use</td>
<td>• In the event of waveform / digital capnography failure, the use of a colormetric device is mandatory</td>
</tr>
<tr>
<td>CAPNOGRAPHY - WAVEFORM / DIGITAL</td>
<td>• To identify ETT dislodgement</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Waveform / digital capnography utilization, interpretation and documentation is mandatory:</td>
<td>• Immediately following orotracheal intubation</td>
</tr>
<tr>
<td></td>
<td>• To assist in monitoring the effectiveness of ventilations and perfusion in any patient</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>• After every patient movement</td>
<td>• Prior to transfer of care to hospital staff</td>
</tr>
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<td></td>
<td>• To monitor the quality of chest compressions in cardiac arrest patients</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>• With any change in patient condition</td>
<td>• When providing positive pressure ventilations via BVM when EMT-Ps are present</td>
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<td></td>
<td>• To confirm ROSC</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
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<td></td>
<td>• To monitor the status of asthmatic, CHF, COPD and/or PE patients</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
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<td>SKILL</td>
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<td><strong>CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)</strong></td>
<td>An awake, alert patient who can maintain their own airway and complains of severe respiratory distress suggestive of:</td>
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<td>• CHF exacerbation</td>
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<td></td>
<td>• COPD exacerbation</td>
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<td></td>
<td>• Asthma Exacerbation</td>
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<td></td>
<td>• Non-fatal drowning</td>
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<td></td>
<td><strong>CPAP APPLICATION AND USE IN PEDIATRICS IS NOT PERMITTED</strong></td>
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<td><strong>MAY ONLY ASSIST WITH APPLICATION IN THE PRESENCE OF AN EMT-P</strong></td>
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<td><strong>MAY ONLY ASSIST WITH APPLICATION IN THE PRESENCE OF AN EMT-P</strong></td>
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<td><strong>CRICO - THYROIDOTOMY, NEEDLE</strong></td>
<td>• When airway management is required for a patient in severe respiratory distress in whom less invasive techniques (e.g., BLS airway management and OTI) have failed or are not likely to be successful</td>
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<td><strong>NOT PERMITTED IN RIVERSIDE COUNTY</strong></td>
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<td><strong>CRICO - THYROIDOTOMY, SURGICAL</strong></td>
<td>• When airway management is required for a patient in severe respiratory distress in whom less invasive techniques (e.g., BLS airway management and OTI) have failed or are not likely to be successful</td>
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<td><strong>NOT PERMITTED IN RIVERSIDE COUNTY</strong></td>
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<td><strong>DIRECT LARYNGOSCOPY WITH MAGILL FORCEPS</strong></td>
<td>• When the need to visualize the airway exists due to inadequate ventilations and/or signs of hypoxia in the presence of a suspected, or confirmed, foreign body airway obstruction (FBAO)</td>
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<td><strong>None</strong></td>
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<td>Suction and oxygenate as clinically indicated</td>
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<td>BLS Patient Management</td>
<td>ALS Patient Management</td>
<td>• To assist with visualization of the airway due to inadequate ventilations and/or signs of hypoxia in the presence of a suspected, or confirmed, foreign body airway obstruction (FBAO)</td>
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<td></td>
<td>• To assist with visualization of the trachea during orotracheal intubation</td>
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<td>NOT PERMITTED IN RIVERSIDE COUNTY</td>
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<td></td>
<td></td>
<td>• Presence of facial trauma</td>
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<td>NASOGASTRIC TUBE PLACEMENT</td>
<td></td>
<td>• To facilitate passive gastric decompression</td>
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<td>• Pediatric patients (appearing, or known to be, 14 years of age or less)</td>
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<td>• The patient’s airway is NOT being managed with an ETT or i-gel supraglottic airway device.</td>
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<td>• Adult patients weighing less than 36 kg / 79.2 lbs. <strong>AND</strong> whose length (measured from crown to heel) falls within the range of any commercially available, standardized length-based pediatric resuscitation tape.</td>
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<td>• After successful <strong>OTI</strong>, insertion of an appropriately sized OG tube is <strong>highly recommended</strong>.</td>
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<td>• After successful placement of the <strong>i-gel</strong>, insertion of an appropriately sized OG tube is <strong>mandatory</strong>.</td>
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<td>Determine appropriately sized OG tube based on:</td>
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<td>1. The available tube size, post-OTI <strong>OR</strong></td>
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<td>2. The size of the i-gel supraglottic airway device being inserted</td>
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<td><strong>Use the appropriate measuring technique to ensure proper placement.</strong></td>
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<td>DETERMINE APPROPRIATELY SIZED OG TUBE</td>
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<td><strong>Confirm proper placement then secure to the airway device or the patient’s face.</strong></td>
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<td>OROGASTRIC TUBE PLACEMENT</td>
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<td>• To facilitate passive gastric decompression after orotracheal intubation (OTI) or the insertion of an i-gel supraglottic airway device.</td>
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<td><strong>After successful OTI, insertion of an appropriately sized OG tube is highly recommended.</strong></td>
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<td><strong>After successful placement of the i-gel, insertion of an appropriately sized OG tube is mandatory.</strong></td>
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<td><strong>Determine appropriately sized OG tube based on:</strong></td>
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<td><strong>1. The available tube size, post-OTI <strong>OR</strong></strong></td>
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<td><strong>2. The size of the i-gel supraglottic airway device being inserted</strong></td>
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<td><strong>Use the appropriate measuring technique to ensure proper placement.</strong></td>
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<td><strong>Confirm proper placement then secure to the airway device or the patient’s face.</strong></td>
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<td>SKILL</td>
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<td>INTUBATION - NASAL</td>
<td>• When BLS airway management is inadequate and/or ineffective and orotracheal intubation is contraindicated or not possible</td>
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<td>NOT PERMITTED IN RIVERSIDE COUNTY</td>
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<td>INTUBATION – OROTRACHEAL (OTI), ADULT</td>
<td>• When BLS airway management is inadequate and/or ineffective</td>
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<td>Passing the laryngoscope past the teeth with the intent of placing an ETT is considered an intubation attempt. After two (2) failed attempts, return to BLS airway management</td>
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<td>• When BLS airway management is adequate and/or effective</td>
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<td>Utilize a colormetric device immediately after OTI to confirm correct placement of the ETT THEN utilize waveform / digital capnography to:</td>
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<td>• Patients weighing less than 36 kg / 79.2 lbs. AND whose length (measured from crown to heel) falls within the range of any commercially available, standardized length-based pediatric resuscitation tape.</td>
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<td>• Identify ETT dislodgement</td>
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<td>• Assist in monitoring the effectiveness of ventilations and perfusion in the intubated patient</td>
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<td>• Monitor the quality of chest compressions in cardiac arrest patients</td>
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<td>• Confirm ROSC</td>
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<td>Remove the ETT immediately if esophageal placement is suspected.</td>
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<td>In the event of waveform / digital capnography failure, the use of a colormetric device is mandatory.</td>
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<td>The appropriate depth of an ETT is ½ - 1 inch beyond the vocal cords, usually between the 22 - 23 cm marking at the teeth.</td>
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<td>The target range for ETCO₂ levels is between 30 – 45 mmHg if ROSC is present. The target range for ETCO₂ levels is between 15 mmHg – 45 mmHg during CPR.</td>
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<td>After successful OTI, insertion of an appropriately sized OG tube is highly recommended.</td>
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<td>SKILL</td>
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<td>INTUBATION – OROTRACHEAL (OTI), ADULT WITH INTRODUCER / BOUGIE</td>
<td>• When ETT placement / orotracheal intubation assistance is needed due to a difficult airway</td>
<td>BLS Patient Management</td>
<td>ALS Patient Management</td>
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<td>The introducer is correctly placed when: • It can be seen going through the vocal cords • Ratcheting of the tip can be felt on the tracheal rings as it is introduced and/or • When resistance is met after it has been advanced (the tip is at the carina). If no resistance is encountered and the entire length of the introducer is inserted, the device is in the esophagus</td>
</tr>
<tr>
<td>INTUBATION – OROTRACHEAL, PEDIATRIC / NEONATE</td>
<td>• When BLS airway management is inadequate and/or ineffective in the pediatric and/or neonate patient</td>
<td>NOT PERMITTED IN RIVERSIDE COUNTY</td>
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<td>INTUBATION – OROTRACHEAL, RAPID SEQUENCE (RSI)</td>
<td>• When BLS airway management is inadequate and/or ineffective and rapid airway management is necessary through the use of induction, and paralytic, medications</td>
<td>NOT PERMITTED IN RIVERSIDE COUNTY</td>
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<td>INTUBATION – STOMAL</td>
<td>• When BLS airway management is inadequate and/or ineffective and an ETT is used to control a patient’s airway through a pre-existing tracheal stoma</td>
<td>NOT PERMITTED IN RIVERSIDE COUNTY</td>
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| i-gel / SUPRAGLOTTIC AIRWAY DEVICE | When airway management is required for a patient that is apneic in whom:  
• Less invasive techniques (BLS airway management) have failed AND  
• OTI has failed  
Patients must meet ALL of the following criteria:  
1. Apnea or inadequate respirations (usually less than eight (8) breaths per minute)  
2. Unresponsive to verbal and/or tactile stimuli  
3. Absence of a gag reflex  
4. Airway management is unsuccessful using BLS maneuvers (BVM with oral / nasal adjuncts)  
5. Airway management is unsuccessful after oral endotracheal intubation (OTI)  
6. An appropriately sized airway is available | | | | | Introduction of the i-gel is contraindicated if ANY of the criteria below exist:  
• The patient appears, or is known to be, 14 years of age or younger (pediatric)  
• The patient is an adult but weighs less than 36 kg / 79.2 lbs. AND their length (measured from crown to heel) falls within the range of any commercially available, standardized length-based pediatric resuscitation tape.  
• The patient is conscious and has an intact gag reflex  
• Known ingestion of caustic substances  
• Unresolved upper foreign body airway obstruction (FBAO)  
• Severe facial or esophageal trauma, bleeding or swelling of the airway or an unstable jaw fracture  
• The patient has a known esophageal disease or diseases (e.g., cancer, varices, surgery, etc.)  
• The patient’s airway can be maintained using less invasive methods (i.e., BVM with oral / nasal adjuncts) | Determine appropriately sized i-gel device based on the patient’s estimated weight  
Apply appropriate, clinically required technique to manually position the head and mandible of the unconscious patient to open the upper airway  
Insert the i-gel supraglottic airway device into the patient’s mouth, directing it towards the hard palate. The cuff outlet should be facing the patient’s chin.  
Advance the i-gel supraglottic airway device with gentle but continuous pressure until definitive resistance is felt. The integral bite block should rest at the incisors.  
After successful placement of the i-gel, insertion of an appropriately sized OG tube is mandatory. |
| PULSE OXIMETRY (SpO₂) | When the patient has:  
• A chief complaint of respiratory, cardiovascular and neurological complications  
• Abnormal vital signs  
• Any sign or symptom that indicates that they would benefit from SpO₂ monitoring | | | | None | Oxygen administration should be titrated to maintain, or increase, SpO₂ to a minimum of 94%.  
A range of 88-92% is acceptable for patients with a history of COPD |
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<th>SKILL</th>
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<tr>
<td>BLS Patient Management</td>
<td>ALS Patient Management</td>
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<td>AUTOMATED EXTERNAL DEFIBRILLATOR (AED)</td>
<td>• Cardiac arrest</td>
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<td>CARDIAC CARE SKILLS</td>
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<td><strong>REQUIRES REMSA APPROVAL</strong></td>
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<td>The presence of:</td>
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<td>• Palpable pulses</td>
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<td>• Spontaneous respirations</td>
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<td>• A DNR</td>
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<td>• A POLST</td>
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<td>AED patches should not be placed over implanted medical devices, jewelry or transdermal medication patches</td>
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<td><strong>SETTINGS:</strong></td>
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<td>• Adults: Use manufacturer recommended joule settings</td>
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<td>• Peds: Initial = 2 J / kg. Subsequent = 4 J / kg.</td>
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<td>• Anterior-posterior placement of defibrillation pads is recommended to minimize pain and maximize current conduction.</td>
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<td>• Patients who are being monitored and have a perfusing rhythm that develops into VF or VT (i.e. - witnessed arrest) should be treated with stacked defibrillation attempts, at escalating energy dosages, per the manufacturer’s recommended energy dose.</td>
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<td>• Chest compressions should be applied between stacked defibrillation attempts</td>
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<td>• Stacked defibrillation attempts should not exceed three (3) attempts.</td>
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<td>MANUAL DEFIBRILLATION</td>
<td>• Ventricular fibrillation (VF) or pulseless ventricular tachycardia (VT) in the cardiac arrest patient</td>
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<td>MECHANICAL CPR DEVICE</td>
<td>• Patients in cardiac arrest</td>
<td><strong>APPLICATION AND USE REQUIRES PROVIDER AGENCY TRAINING</strong></td>
<td></td>
<td></td>
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<td></td>
<td>• Patients not in cardiac arrest</td>
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<tr>
<td>SKILL</td>
<td>INDICATION(S)</td>
<td>PSP</td>
<td>EMT</td>
<td>AEMT</td>
<td>EMT-P</td>
<td>CONTRAINDICATIONS</td>
<td>EXPECTATIONS</td>
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<td></td>
<td>BLS Patient Management</td>
<td>ALS Patient Management</td>
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<tr>
<td>SYNCHRONIZED CARDIOVERSION</td>
<td>Patients experiencing symptomatic supraventricular tachycardia (SVT) or VT with pulses who are exhibiting the following signs and symptoms of systemic poor perfusion:</td>
<td></td>
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<tr>
<td></td>
<td>• Hypotension</td>
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<tr>
<td></td>
<td>• Altered mental status</td>
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<td></td>
<td>• Chest pain</td>
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<td>• Dyspnea / tachypnea</td>
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<td>• Diaphoresis</td>
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<td></td>
<td>• Have a heart rate greater than 150 in adults</td>
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<td></td>
<td>• Have a heart rate greater than 180 in children</td>
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<td>• Have a heart rate greater than 220 in infants</td>
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<tr>
<td>SYNCHRONIZED CARDIOVERSION OF PEDIATRIC PATIENTS REQUIRES A BASE HOSPITAL ORDER (BHO)</td>
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<td></td>
<td>Patients not experiencing symptomatic SVT or VT with pulses</td>
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<td></td>
<td>• Adults: Initial 100j Second 150j Subsequent 200j</td>
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<td>• Peds: Initial = 1 j / kg. Subsequent = 2 j / kg.</td>
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<td></td>
<td>• Anterior-posterior placement of defibrillation pads is recommended to minimize pain and maximize current conduction.</td>
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<td></td>
<td>• An ECG strip of Lead II should always be printed prior to, during and after performing any electrical therapy. Wide complex rhythms may appear to be cardiac dysrhythmias when, in fact, they are paced rhythms (some monitors do not show pacer spikes).</td>
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<td>• Perform a 12-lead ECG prior to cardioversion only if such a delay does not cause harm to the patient.</td>
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<td>• Strongly consider Versed for amnesic effects while preparing cardioversion equipment. Use IN/IM administration if IV access is poor.</td>
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<td></td>
<td>• Do not delay cardioversion in an unstable patient presenting with signs and symptoms of poor perfusion.</td>
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<td>SKILL</td>
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<tr>
<td>BLS Patient Management</td>
<td>ALS Patient Management</td>
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<td>Begin at 20 mA and 70 bpm. Titrate in 5 mA increments to find the minimum current required to maintain electrical and mechanical capture. Increase in 10 bpm increments, up to 100 bpm maximum, to gain adequate cardiac output and tissue perfusion.</td>
<td>• Anterior-posterior placement of pacer pads is recommended to minimize pain and maximize current conduction. • An ECG strip of Lead II should always be printed prior to performing any electrical therapy. Wide complex rhythms may appear to be cardiac dysrrhythmias when, in fact, they are paced rhythms (some monitors do not show pacer spikes). • Perform a 12-lead ECG prior to TCP only if such a delay does not cause harm to the patient. • Use IN/IM administration for Versed administration if warranted and if IV access is poor. • Do not delay TCP in patients with poor peripheral vasculature or in patients experiencing high-degree blocks (2nd degree Type II or 3rd degree)</td>
</tr>
</tbody>
</table>

**TRANSCUTANEOUS CARDIAC PACING (TCP)**

Patients experiencing symptomatic bradycardia who are exhibiting the following signs and symptoms of systemic poor perfusion:

- Hypotension
- Altered mental status
- Chest pain
- Dyspnea / tachypnea
- Diaphoresis
- Pale / cool skin

**AND**

- Have a heart rate less than 60

**TRANSCUTANEOUS CARDIAC PACING OF PEDIATRIC PATIENTS REQUIRES A BASE HOSPITAL ORDER (BHO)**

- Children less than or equal to 12 years old (bradydysrhythmias in children are usually respiratory related)
- Asystolic arrest, unless approved by a base hospital (BHO)
<table>
<thead>
<tr>
<th>SKILL</th>
<th>INDICATION(S)</th>
<th>PSP</th>
<th>EMT</th>
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<th>EMT-P</th>
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<tbody>
<tr>
<td>BLS Patient Management</td>
<td>ALS Patient Management</td>
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<tr>
<td>VAGAL MANEUVERS</td>
<td>Patients experiencing symptomatic supraventricular tachycardia (SVT) who are exhibiting the following signs and symptoms of systemic poor perfusion:</td>
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<td></td>
<td>• Hypotension</td>
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**AND**

| Relative: |
| • Hypertension |
| • Suspected acute MI |
| • Suspected head/brain injury |

<p>| • An ECG strip of Lead II should always be printed prior to, during and immediately after to a vagal maneuver in order to capture any potential rhythm change(s) |
| • Perform a 12-lead ECG prior to the patient attempting a vagal maneuver only if such a delay does not cause harm to the patient. |
| • Do not delay cardioversion in an unstable patient presenting with signs and symptoms of poor perfusion. |</p>
<table>
<thead>
<tr>
<th>SKILL</th>
<th>INDICATION(S)</th>
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<th>CONTRAINDICATIONS</th>
<th>EXPECTATIONS</th>
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</thead>
<tbody>
<tr>
<td>CERVICAL SPINE IMMobilization</td>
<td>Establish, maintain, and ensure cervical spine stabilization when NSAID criteria is met:</td>
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<td>* Victims of any penetrating trauma to the head, neck, and/or torso should not have a rigid cervical spine immobilization device applied unless one of the following are present: *&lt;br&gt;- Acute neurological deficit  *- Priapism  *- Anatomic deformity to the spine secondary to injury</td>
<td><em><strong>The long backboard (LBB) is an extrication tool and should only be used to facilitate patient transfer to the stretcher. It is not intended, or appropriate, to use a LBB to achieve or maintain spinal stabilization. Judicious application of the LBB for purposes other than extrication require that the benefits outweigh the risks of application. If the LBB is used, patients should be removed as soon as safe and practical</strong></em>&lt;br&gt;&lt;br&gt;Acceptable hemostatic dressings for use in California include the following:&lt;br&gt;- QuikClot® Combat Gauze™.&lt;br&gt;- HemCon® ChitoFlex® PRO Dressing.&lt;br&gt;- Celox™ Gauze</td>
</tr>
</tbody>
</table>
| HEMOSTATIC AGENTS          | Life-threatening hemorrhage when a tourniquet cannot be used OR When bleeding remains uncontrolled after application of a tourniquet |     |     |      |       | Mentor

<p>| JOINT REDUCTION             | When manual manipulation of a dislocated joint is required to return it to its proper anatomical alignment. |     |     |      |       | NOT PERMITTED IN RIVERSIDE COUNTY                                                                 |</p>
<table>
<thead>
<tr>
<th>SKILL</th>
<th>INDICATION(S)</th>
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<th>EMT-P</th>
<th>CONTRAINDICATIONS</th>
<th>EXPECTATIONS</th>
</tr>
</thead>
</table>
| Needle Decompression / Thoracostomy | Signs and symptoms of tension pneumothorax:  
- Air hunger  
- Chest pain  
- Elevated hemithorax without respiratory movement  
- Hypotension  
- Neck vein distension  
- Respiratory distress  
- Tachycardia  
- Unilateral absence of breath sounds  
- Cyanosis (late sign)  
- Tracheal deviation away from the side of the injury (late sign)  

For unilateral decompression:  
- Signs and symptoms of tension pneumothorax with compromised cardiac output AND rapidly progressing respiratory distress unrelieved by less invasive means  

For bilateral decompression  
- Cardiac arrest with known/suspected torso trauma  
- Cardiac arrest with a presentation suggesting spontaneous pneumothorax | Red | Red | Green | Green | When unable to positively identify the appropriate anatomical landmarks  
When none of the listed indications are present | Anterior approach:  
- Second (2nd) intercostal space at the midclavicular line immediately above the third (3rd) rib (2 ICS @ MCL)  
- Third (3rd) intercostal space at the midclavicular line immediately above the fourth (4th) rib (3 ICS @ MCL)  

Anterolateral approach:  
- Fourth (4th) intercostal space at the anterior axillary line immediately above the fifth (5th) rib (4 ICS @ AAL)  
- Fifth (5th) intercostal space at the anterior axillary line immediately above the sixth (6th) rib (5 ICS @ AAL)  

Lateral approach:  
- Fourth (4th) intercostal space at the midaxillary line immediately above the fifth (5th) rib (4 ICS @ MAL)  
- Fifth (5th) intercostal space at the midaxillary line immediately above the sixth (6th) rib (5 ICS @ MAL) |
<table>
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<tr>
<th>SKILL</th>
<th>INDICATION(S)</th>
<th>PSP</th>
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<th>AEMT</th>
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<th>CONTRAINDICATIONS</th>
<th>EXPECTATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOURNIQUET APPLICATION</td>
<td>• Life-threatening hemorrhage when bleeding is uncontrolled after direct pressure has been applied</td>
<td>BLS Patient Management</td>
<td>ALS Patient Management</td>
<td></td>
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<td></td>
<td>• Tourniquets must be approved for use by the Co-TCCC and the SWAT-T</td>
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<td></td>
<td>• Do not delay tourniquet application to extricate / load patient, establish IVs, or other treatments</td>
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<td>• If the patient’s condition allows, use of a tourniquet prior to TXA administration is recommended</td>
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<td>• Pain management should be considered unless clinically contraindicated</td>
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<tr>
<td>Drug</td>
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<tr>
<td>ADENOSINE</td>
<td>2</td>
<td>IPRATROPIUM BROMIDE (ATROVENT)</td>
<td>19</td>
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<tr>
<td>ALBUTEROL</td>
<td>3</td>
<td>KETAMINE (KETALAR)</td>
<td>20</td>
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<tr>
<td>AMIODARONE</td>
<td>4</td>
<td>LIDOCAINE</td>
<td>21</td>
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<tr>
<td>ASPIRIN</td>
<td>5</td>
<td>MAGNESIUM SULFATE</td>
<td>22</td>
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<tr>
<td>ATROPINE</td>
<td>6</td>
<td>MIDAZOLAM (VERSED)</td>
<td>24</td>
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<td>CALCIUM CHLORIDE</td>
<td>8</td>
<td>NALOXONE (NARCAN)</td>
<td>26</td>
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<tr>
<td>DEXTROSE</td>
<td>9</td>
<td>NITROGLYCERIN</td>
<td>27</td>
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<tr>
<td>DIPHENHYDRAMINE (BENADRYL)</td>
<td>10</td>
<td>NORMAL SALINE</td>
<td>28</td>
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<tr>
<td>EPINEPHRINE</td>
<td>12</td>
<td>ONDANSETRON (ZOFRAN)</td>
<td>29</td>
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<tr>
<td>FENTANYL</td>
<td>15</td>
<td>SODIUM BICARBONATE</td>
<td>30</td>
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<tr>
<td>GLUCAGON</td>
<td>17</td>
<td>TRANEXAMIC ACID (TXA)</td>
<td>31</td>
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<tr>
<td>GLUCOSE (ORAL)</td>
<td>18</td>
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</table>
**ADENOSINE (ADENOCARD)**

**CLASS:**
- Endogenous nucleoside (occurs naturally in all cells of the body)

**ACTION:**
- Slows electrical conduction through AV node, and inhibits re-entry pathway, converting SVT to NSR
- ONSET = within 15 seconds
- DURATION= 1-2 minutes

<table>
<thead>
<tr>
<th>INDICATION</th>
<th>DOSAGE/ROUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptomatic supraventricular tachycardia (SVT)</td>
<td>Adults: Adenosine 12 mg (4 mL) rapid IV/IO push.</td>
</tr>
<tr>
<td>with Pulses (4403)</td>
<td>Follow immediately with 20 mL normal saline rapid IV/IO push. MAY REPEAT ONCE.</td>
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<tr>
<td></td>
<td>ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
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<tr>
<td></td>
<td>Pediatrics: Adenosine 0.2 mg / kg rapid IV/IO push.</td>
</tr>
<tr>
<td></td>
<td>Follow immediately with 20 mL normal saline rapid IV/IO push. MAY REPEAT ONCE.</td>
</tr>
<tr>
<td></td>
<td>ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
</tbody>
</table>

**CONTRAINDICATIONS:**
- 2nd and 3rd degree AV heart blocks
- Sick sinus syndrome (without pacemaker)

**USE WITH CAUTION:**
- Patients with a history of COPD, asthma, or bronchospasm; Adenosine has been found to stimulate vagal nerve fibers in the lungs, causing an acute onset of difficulty breathing, asthma attacks and/or bronchospasm.

**SIDE EFFECTS:**
- SOB / Dyspnea
- Chest pressure / palpitations; may be acute in some patients for brief period
- Mild hypotension due to decreased peripheral vascular resistance
- Dizziness / lightheadedness / headache
- Nausea
- Transient arrhythmias; (bradycardia, AV blocks, ventricular ectopy). These are generally not treated and are quickly self-limiting

**SPECIAL INFORMATION:**
1. Effective in treating Wolff-Parkinson-White syndrome in adults and pediatrics.
2. Rapid IV/IO push of Adenosine is necessary because it is metabolized very quickly. Use a large bore IV in a proximal large vein, if able, to assist administration of the rapid IV push.
3. Obtain ECG documentation before, during, and after giving Adenosine.
4. Transient arrhythmias (PVC’s, PAC’s, sinus bradycardia, AV block, sinus tach and possibly asystole) may be witnessed after administration
5. Discontinue administration if 2nd or 3rd degree block develops.
6. Adenosine will only convert SVT; it will not convert A-Fib or A-Flutter.
7. Caffeine and Theophylline act as antagonists; maximum doses may be required.
ALBUTEROL

CLASS:
• Sympathomimetic

ACTION:
• Activates the beta-2 adrenergic receptors to relax bronchial smooth muscles.
• Bronchodilation, relieves bronchospasms, and reduces airway resistance.
• ONSET = 5 minutes
• PEAK = 1 hour
• DURATION = 3-4 hours

<table>
<thead>
<tr>
<th>INDICATIONS</th>
<th>DOSAGE/ROUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suspected hyperkalemia associated with crush injuries (4302)</td>
<td>INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO)</td>
</tr>
<tr>
<td>Suspected hyperkalemia associated with heat illness / hyperthermia (4702)</td>
<td>Adults and pediatrics: 2.5 mg / 3 mL (one pouch), nebulized.</td>
</tr>
<tr>
<td>Bronchospasm (4406)</td>
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<tr>
<td>Bronchospasm associated with suspected toxic inhalation (4603)</td>
<td>Adults and pediatrics: 2.5 mg / 3 mL (one pouch), nebulized. MAY REPEAT PRN.</td>
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<tr>
<td>Bronchospasm associated with allergy and/or anaphylaxis (4704)</td>
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</tbody>
</table>

CONTRAINDICATIONS:
• None

SIDE EFFECTS:
• Tachycardia / palpitations
• Dizziness, headache
• Tremors, nervousness

SPECIAL INFORMATION:
1. One (1) DuoNeb treatment may be given standing order; repeat administration of Albuterol is a standing order. **REPEAT ADMINISTRATION OF IPRATROPIUM IS A BASE HOSPITAL ORDER (BHO).**
2. Albuterol becomes unstable in moderate to high temperatures. If it appears discolored (it is normally clear) or is precipitated, discard it immediately.
3. Causes minimal cardiac stimulation (tachycardia); monitor ECG & heart rate.
4. Use with caution in pregnancy.
5. Check lung sounds, SpO₂, capnography wave forms and respiratory rate before and after administration of Albuterol to determine effectiveness.
### AMIODARONE

**CLASS:**
- Anti-dysrhythmic

**ACTION:**
- Reduces the maximum rate of depolarization via sodium channel blocking (class I action).
- Raises the threshold for VF by inhibiting sympathetic stimulation via alpha- and beta-blocking properties (class II action).
- Increases the duration of the action potential by blocking potassium channels (class III action).
- Slows AV conduction by blocking calcium channels (class IV action).
- Prolongs the action potential duration and the refractory period of the myocardial electrical conduction system thereby facilitating the termination of sustained VT or VF.
- **ONSET = 1-3 minutes**
- **DURATION = 15-140 days**

**INDICATIONS**

<table>
<thead>
<tr>
<th>INDICATIONS</th>
<th>DOSAGE/ROUTE</th>
</tr>
</thead>
</table>
| Symptomatic Tachycardia with Pulses (4403) | INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO)  
**Adults:** Amiodarone 150 mg (3 mL) IVPB. Infuse in 50-100 mL normal saline, administer over 10 minutes.  
**Pediatrics:** Amiodarone 5 mg / kg IVPB. MAX SINGLE DOSE TO INFUSE IS 150 MG. Infuse in 50-100 mL normal saline, administer over 10 minutes. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app. |
| Cardiac arrest with VF or VT (4405) | **Adults:** 300 mg (6 mL) IV/IO. MAY REPEAT ONCE AT 150 MG (3 ML) 5 MINUTES AFTER FIRST (1ST) DOSE, TO A MAX OF 450 MG. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).  
**INITIAL AND REPEAT PEDIATRIC ADMINISTRATION REQUIRES A BASE HOSPITAL ORDER (BHO).**  
**Pediatrics:** 5 mg / kg IV/IO. MAX SINGLE DOSE IS 150 MG. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app. |

**CONTRAINDICATIONS:**
- Previous history of liver disease
- Hypersensitivity to iodine
- Cardiogenic shock
- Sinus bradycardia
- 2nd / 3rd degree AV blocks

**SIDE EFFECTS:**
- Hypotension
- Bradycardia
- May increase the effects of anti-coagulants as well as Digoxin and Dilantin

**SPECIAL INFORMATION:**
1. Large bore catheter is recommended in case of hypotension following administration.
2. Fluid resuscitation should be anticipated during the post resuscitation phase.
ASPIRIN

CLASS:
- Salicylate

ACTIONS:
- Inhibits the normal tendency for platelets to accumulate inside injured or occluded cardiac arteries thereby promoting better blood flow through vessels to better perfuse the heart.
- ONSET = 15-30 minutes
- DURATION = days (antiplatelet effects)

<table>
<thead>
<tr>
<th>INDICATIONS</th>
<th>DOSAGE/ROUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Coronary Syndrome (ACS) (4401)</td>
<td>Adults: 324 mg (four 81 mg chewable tablets) PO. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). ADMINISTRATION OF ASPIRIN TO PEDIATRIC PATIENTS IS NOT PERMITTED.</td>
</tr>
</tbody>
</table>

CONTRAINDICATIONS:
- Administer with caution to pts with Hx of bleeding ulcers / GI bleeds (upper and/or lower)
- Patients with VADs

SIDE EFFECTS:
- GI upset (indigestion, nausea/vomiting, epigastric pain, heartburn)
- Occult bleeding

SPECIAL INFORMATION:
1. Aspirin decomposes at high temperatures or with high humidity / moisture. Pills may crumble or have a "vinegar" smell that may be detected when it has deteriorated. If either of these are noted, discard immediately
**ATROPINE SULFATE**

**CLASS:**
- Anticholinergic

**ACTION:**
- Competes with acetylcholine for receptor sites blocking the PNS response at SA & AV nodes.
- Increases heart rate by increasing electrical conduction through the heart.
- Inhibits secretions by decreasing PNS effect on bronchial, salivary, sweat and GI glands.
- **ONSET** = 2-4 minutes
- **DURATION** = 2-6 hours

<table>
<thead>
<tr>
<th>INDICATIONS</th>
<th>DOSAGE/ROUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptomatic bradycardia with pulses (4404)</td>
<td><strong>Adults:</strong> 1 mg (10 mL) IV/IO. <strong>MAY REPEAT EVERY 3-5 MINUTES TO A MAX OF 3 MG (30 mL).</strong></td>
</tr>
<tr>
<td><strong>INITIAL AND REPEAT PEDIATRIC ADMINISTRATION REQUIRES A BASE HOSPITAL ORDER (BHO).</strong></td>
<td><strong>Pediatrics:</strong> 0.02 mg / kg IV/IO. <strong>MAX SINGLE DOSE IS 0.5 MG.</strong> For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
<tr>
<td>Cardiac Arrest (4405)</td>
<td><strong>Adults:</strong> 1 mg (10 mL) IV/IO. <strong>ADMINISTRATION OF ATROPINE TO PEDIATRIC PATIENTS IN CARDIAC ARREST IS NOT PERMITTED.</strong></td>
</tr>
<tr>
<td><strong>INITIAL AND REPEAT ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</strong></td>
<td><strong>Pediatrics:</strong> 0.02 mg / kg IV/IO push. <strong>MAX SINGLE DOSE IS 1 MG.</strong> For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
<tr>
<td>Nerve agent, organophosphate and carbamate poisoning (4604)</td>
<td><strong>Adults:</strong> 1 mg (10 mL of prefilled syringe) IV/IO push. <strong>MAY REPEAT PRN.</strong> <strong>OR</strong></td>
</tr>
<tr>
<td><strong>OR</strong></td>
<td><strong>0.05 mg / kg IM x2. MAX SINGLE DOSE IS 1 MG. MAY REPEAT PRN.</strong> For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
</tbody>
</table>

**CONTRAINDICATIONS:**
- None

**SIDE EFFECTS:**
- Tachycardia / palpitations
- Dry mouth / nausea / vomiting
- Pupil dilation / blurred vision
- Flushed / hot / dry skin
SPECIAL INFORMATION:
1. In true OPP poisonings, multiple doses of Atropine will be needed
2. Assessing the effectiveness of Atropine administration:
   ➢ Unstable Bradycardia--check ECG for increase in HR, palpate pulse and obtain a BP
   ➢ OPP--watch for decreased secretions
**CALCIUM CHLORIDE (CaCl₂)**

**CLASS:**
- Electrolyte

**ACTION:**
- Necessary for the proper function of the nervous, muscular, skeletal, digestive and endocrine systems
- Positive inotropic activity increases the strength of myocardial contractions
- Increases ventricular automaticity
- ONSET = 2-10 mins
- DURATION = 30-60 mins

<table>
<thead>
<tr>
<th>INDICATIONS</th>
<th>DOSAGE/ROUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suspected hyperkalemia associated with crush injuries (4302)</td>
<td>INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO). Adults: 1 gm (10 mL) IVPB. Infuse in 50-100 mL normal saline, administer over 10 minutes. Pediatrics: 20 mg / kg IVPB. Infuse in 50-100 mL normal saline, administer over 10 minutes. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
<tr>
<td>Suspected beta blocker or calcium channel blocker overdose (4601)</td>
<td></td>
</tr>
<tr>
<td>Cardiac dysrhythmias associated with toxic exposure, inhalation, or ingestion (4603)</td>
<td></td>
</tr>
<tr>
<td>Suspected hyperkalemia associated with heat illness / hyperthermia (4702)</td>
<td></td>
</tr>
<tr>
<td>Cardiac arrest with suspected hypocalcemia, hyperkalemia, hypermagnesemia, or calcium channel blocker overdose (4405)</td>
<td>INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO). Adults: 1 gm (10 mL) IV/IO. Pediatrics: 20 mg / kg IV/IO. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
<tr>
<td>Cardiac arrest in a known / suspected dialysis patient (4405)</td>
<td>Adults: 1 gm (10 mL) IV/IO. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). INITIAL AND REPEAT PEDIATRIC ADMINISTRATION REQUIRES A BASE HOSPITAL ORDER (BHO). Pediatrics: 20 mg / kg IV/IO. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
</tbody>
</table>

**CONTRAINDICATIONS:**
- Digitalis toxicity
- Hypercalcemia
- VF
- Impaired kidney function (suspension contains aluminum which may cause aluminum toxemia)

**SIDE EFFECTS:**
- Hypotension
- Cardiac arrest
- Syncope
- Tingling sensation in the extremities
- Metallic taste in the mouth
- Facial flushing
DEXTROSE

CLASS:
• Carbohydrate

ACTION:
• Increases blood glucose by introducing free sugar directly into the blood stream
• ONSET approximately 1 minute
• DURATION is dependent on the degree of hypoglycemia

INDICATIONS | DOSAGE/ROUTE
Symptomatic hypoglycemia with blood glucose less than 80 mg/dL in adults or 70 mg/dL in pediatrics and neonates (4201)

Adults: 25 gm (D10%) IV/IO bolus or drip. MAY REPEAT PRN.

Pediatrics and neonates: 5 mL / kg (D10%) IV/IO bolus or drip. MAY REPEAT PRN. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

Neonatal resuscitation (4801)

INITIAL AND REPEAT ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO)

D10% IV/IO bolus or drip.

CONTRAINDICATIONS:
• Hyperglycemia

SIDE EFFECTS:
• Local venous irritation / infection
• Hyperglycemia

SPECIAL INFORMATION:
1. Tissue necrosis may occur with infiltration; to ensure patency, aspirate before and halfway through administration.
2. Repeat blood sugar if patient is signing AMA
3. Assess the effectiveness of D50W administration:
   ➢ Altered LOC- reassess LOC and skins; recheck BGL if there is no improvement in symptoms
DIPHENHYDRAMINE (BENADRYL)

**CLASS:**
- Antihistamine

**ACTION:**
- Binds to histamine receptor sites, suppressing histamine induced allergic symptoms. Does not prevent histamine release.
- **ONSET** = 15-30 minutes
- **DURATION** = 6-12 hours

<table>
<thead>
<tr>
<th>INDICATIONS</th>
<th>DOSAGE/ROUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nausea and/or Vomiting (4203)</td>
<td>INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
</tr>
<tr>
<td></td>
<td>Adults: 25-50 mg (0.5 – 1 mL) IM or slow IV/IO push.</td>
</tr>
<tr>
<td></td>
<td>Pediatrics: 1 mg / kg slow IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
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<tr>
<td></td>
<td><strong>OR</strong></td>
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<tr>
<td></td>
<td>2 mg / kg IM. MAX SINGLE DOSE IS 50 MG. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
<tr>
<td>Overdose / Adverse Reaction: suspected dystonic reaction (4601)</td>
<td>Adults: 50 mg (1 mL) IM or slow IV/IO push.</td>
</tr>
<tr>
<td>Allergy and/or Anaphylaxis (4704)</td>
<td>ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
</tr>
<tr>
<td></td>
<td>Pediatrics: 1 mg / kg slow IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
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<tr>
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<td><strong>OR</strong></td>
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<tr>
<td></td>
<td>2 mg / kg IM. MAX SINGLE DOSE IS 50 MG. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
</tr>
</tbody>
</table>

**CONTRAINDICATIONS:**
- None

**SIDE EFFECTS:**
- Drowsiness / sedation (excitement in children)
- Palpitations / tachycardia
- Hypotension
- Dry mouth / thickened bronchial secretions
- Seizures

**SPECIAL INFORMATION:**
1. Cumulative depressant effects occur in the presence of alcohol and or other sedatives.
2. Use with caution when administering to children with history of asthma who weigh less than 20 lbs (9 kg) due to thickened bronchial secretions.
3. Common drugs which may cause extrapyramidal reactions: Haldol, Compazine, Thorazine, Stelazine, Prolixin
4. Extrapyramidal reaction may be seen up to 7-10 days after ingestion of medication
5. Assessing effectiveness of Benadryl administration:
   - Anaphylaxis and allergic reaction - observe for a decrease in erythema and itching.
   - Extrapyramidal reactions - observe for a decrease in facial and neck spasm
**EPINEPHRINE**

**CLASS:**
- Sympathomimetic (both alpha and beta effects)

**ACTION**
- On the bronchi: bronchodilation (beta-2).
- On the peripheral vasculature: vasoconstriction (alpha).
- On the heart:
  - increased heart rate (beta-1) / chronotropic
  - increased contractility / inotropic
  - increased AV conduction / dromotropic
  - increased automaticity / dromotropic
- **ONSET = IV/IO: 1-2 minutes, IM: 5-10 minutes**
- **DURATION = 5-10 minutes**

<table>
<thead>
<tr>
<th>INDICATIONS</th>
<th>DOSAGE/ROUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shock UNRELATED TO TRAUMA (4202)</td>
<td><strong>Adults and pediatrics:</strong> 0.01 mg (1 mL, 0.01 mg / mL concentration, Push Dose Epinephrine) IV/IO. MAY REPEAT PRN EVERY 1-5 MINUTES TO MAINTAIN A SYSTOLIC BP GREATER THAN:</td>
</tr>
<tr>
<td>Shock following ROSC (4405)</td>
<td>90 mmHg - adults</td>
</tr>
<tr>
<td>Shock associated with allergy and/or anaphylaxis (4704)</td>
<td>70 mmHg - pediatrics</td>
</tr>
<tr>
<td>Shock associated with snakebite (4705)</td>
<td><strong>Adults:</strong> 1 mg (10 mL, 0.1 mg / mL concentration) IV/IO. MAY REPEAT EVERY 5 MINUTES TO A MAX OF 5 MG (50 mL). ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
</tr>
<tr>
<td>Cardiac Arrest (4405)</td>
<td><strong>Pediatrics:</strong> 0.01 mg / kg (0.1 mg / mL concentration) IV/IO. MAY REPEAT EVERY 5 MINUTES TO A MAX OF FIVE (5) ADMINISTRATIONS. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
</tbody>
</table>
Shock following ROSC WHEN PATIENT’S SYSTOLIC BP IS LESS THAN 90 MMHG (4405)

**Adults:** 0.4 mg (0.4 mL, 1 mg / mL concentration) IVPB, infused in 100 mL normal saline

**OR**

0.2 mg (0.2 mL, 1 mg / mL concentration) IVPB, infused in 50 mL normal saline.

**RATE WILL BE CONTROLLED VIA DIAL-A-FLOW.**

**INCREASE DOZING EVERY 2-3 MINUTES, TO MAX 10 MCG/MIN, TO ACHIEVE OR MAINTAIN SYSTOLIC BP OF 90 MMHG OR GREATER**

- Begin infusion at 1 mcg/min (15 ml/hr) then increase to
- 2 mcg/min (30 ml/hr) then increase to
- 4 mcg/min (60 ml/hr) then increase to
- 10 mcg/min (150 ml/hr)

**IF MAX DOSING HAS BEEN REACHED AND A SYSTOLIC BP OF 90 MMHG HAS NOT BEEN ACHIEVED, BEGIN ADMINISTERING 0.01 MG (1 mL) 1:100,000 (PUSH DOSE EPINEPHRINE) PRN EVERY 1-5 MINUTES IN ADDITION TO THE DRIP UNTIL A SYSTOLIC BP OF 90 MMHG OR GREATER IS ATTAINED**

**ADMINISTRATION OF EPINEPHRINE BY IVPB DRIP TO PEDIATRIC PATIENTS IS NOT PERMITTED**

Respiratory distress (4406)

**Adults:** 0.3 mg (0.3 mL, 1 mg / mL concentration) IM.

**Pediatrics:** 0.01 mg / kg (1 mg / mL concentration) IM. **MAX SINGLE DOSE IS 0.3 MG.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

Suspected Anaphylaxis (4704)

**Adults:** 0.3 mg (0.3 mL, 1 mg / mL concentration) IM. **ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

**Pediatrics:** 0.01 mg / kg (1 mg / mL concentration) IM. **MAX SINGLE DOSE IS 0.3 MG.** **ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
### Neonatal Resuscitation (4801)

**INITIAL AND REPEAT ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO)**

0.1 mg / mL concentration IV/IO. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

### Shock associated with postpartum hemorrhage (4803)

**0.01 mg (1 mL, 0.01 mg / mL concentration, Push Dose Epinephrine) IV/IO. MAY REPEAT PRN EVERY 1-5 MINUTES TO MAINTAIN A SYSTOLIC BP GREATER THAN 90 MMHG.**

<table>
<thead>
<tr>
<th>CONTRAINDICATIONS</th>
<th>CONTRAINDICATIONS (DRIP)</th>
<th>SIDE EFFECTS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• (Relative) tachycardia</td>
<td>• Administration via IO route</td>
<td>• Anxiety / restlessness</td>
</tr>
<tr>
<td></td>
<td>• Patients 14 years of age or younger</td>
<td>• Palpitations / tachyarrhythmias</td>
</tr>
<tr>
<td></td>
<td>• Shock due to trauma</td>
<td>• Ventricular irritability</td>
</tr>
<tr>
<td></td>
<td>• Unable to obtain a systolic BP</td>
<td>• Hypertension</td>
</tr>
<tr>
<td></td>
<td>• Unable to use a Dial-a-Flow</td>
<td>• Angina</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Headache</td>
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<tr>
<td></td>
<td></td>
<td>• Nausea</td>
</tr>
</tbody>
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<thead>
<tr>
<th>CONTRAINDICATIONS (PUSH DOSE EPI)</th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Shock due to trauma</td>
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</table>

#### SPECIAL INFORMATION:

1. Continuously monitor ECG during any Epinephrine administration
2. Alkalosis or acidosis may decrease the effectiveness of Epinephrine. Flush tubing between Sodium Bicarbonate and Epinephrine administrations.
3. Assessing the effectiveness of epinephrine administration:
   - Arrhythmias - monitor ECG, pulses, and BP.
   - Allergies / anaphylaxis - monitor ECG, pulses, BP, respiratory rate, lung sounds and O₂ saturation
   - Respiratory distress—monitor lung sounds, respiratory rate, SpO₂, capnography, ECG and pulse
**Fentanyl**

**Class:**
- Opioid (Synthetic)

**Action:**
- Binds with stereospecific receptors at many sites within the CNS.
- Increases pain thresholds and alters pain reception.
- **Onset:** IV/IO: within seconds, IM/IN: 7-8 minutes
- **Duration:** IV/IO: 30-60 minutes, IM/IN: 1-2 hours

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</table>
| Pain associated with: | Adults: 50 mcg (1 mL) slow IV/IO push or IM/IN. Patient’s systolic BP must be greater than or equal to 90 mmHg at the time of administration. **MAY REPEAT ONCE, IN 5-10 MINUTES, DEPENDENT ON PAIN SEVERITY, TO A MAX OF 100 MCG. ADDITIONAL ADMINISTRATIONS AFTER 100 MCG REQUIRE A BASE HOSPITAL ORDER (BHO).**
- Acute abdominal / flank pain, sickle cell crisis or cancer pain (4204)
- Acute traumatic injury or injuries (4302)
- Suspected ACS with persistent chest discomfort unresponsive to Nitroglycerin (4401)
- Burns (4701)
- Frostbite (4703)
- Snakebite (4705)
| Pediatrics: 1 mcg / kg slow IV/IO push or IM/IN. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

Discomfort associated with transcutaneous cardiac pacing: TCP (4404)

**Adults:** 50 mcg (1 mL) slow IV/IO push or IM/IN. Patient’s systolic BP must be greater than or equal to 90 mmHg at the time of administration. **MAY REPEAT ONCE, IN 5-10 MINUTES, DEPENDENT ON PAIN SEVERITY, TO A MAX OF 100 MCG. ADDITIONAL ADMINISTRATIONS AFTER 100 MCG REQUIRE A BASE HOSPITAL ORDER (BHO).**

**Initial and Repeat Pediatric Administration Requires a Base Hospital Order (BHO).**

**Pain following ROSC (4405)**

**Initial and Repeat Administrations Require a Base Hospital Order (BHO)**

**Adults:** slow IV/IO push or IM/IN with dosing dependent on pain. Patient’s systolic BP must be greater than or equal to 90 mmHg at the time of administration.

**Administration of Fentanyl to Pediatric Patients for Post-ROSC Pain is NOT Permitted.**
CONTRAINDICATIONS:

- Sensitivity to Fentanyl or other opioids
- Systolic BP less than 90 mmHg

Use with Caution:

- in patients with a known history of opioid abuse. Ketamine is the preferred pain management medication for this population.
- in the elderly and in patients with known hepatic insufficiency. Slow / poor metabolism may result in unintended, exacerbated analgesia and an increase in untoward effects

SIDE EFFECTS:

- Respiratory depression / arrest
- Decreased LOC
- Transient hypotension
- Palpitations / Arrhythmias
- Nausea / Vomiting
- Pinpoint pupils

SPECIAL INFORMATION:

1. The administration of Fentanyl to its max dose followed by the administration of Ketamine – or vice versa – is a standing order. REPETITION OF ANY ANALGESIC AFTER ALL MAX DOSES HAVE BEEN ADMINISTERED REQUIRES A BASE HOSPITAL ORDER (BHO)
2. Vitals signs (ECG, SpO₂ and waveform / digital capnography) must be monitored throughout BLS and ALS interventions for pain management
GLUCAGON

CLASS:
• Pancreatic hormone

ACTION:
• Increases blood glucose by converting glycogen stored in the liver to free glucose.
• ONSET = 20 minutes
• DURATION = 60-90 minutes

INDICATIONS | DOSAGE/ROUTE
--- | ---
Symptomatic hypoglycemia with blood glucose less than 80 mg/dL in adults or 70 mg/dL in pediatrics and neonates WHEN UNABLE TO ADMINISTER IV/IO DEXTROSE (4201) | Adults: 1 mg (1 mL) IM. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).
Pediatrics and neonates:
Weight = 21 kg (=46 lbs) or less: 0.5 mg (0.5 mL) IM.
Weight = 22 kg (=48 lbs) or more: 1 mg (1 mL) IM.
ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

Suspected esophageal food impaction (4406) | INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).
Adults: 1 mg (1 mL) IV/IO/IM.
Pediatrics:
Weight = 21 kg (=46 lbs) or less: 0.5 mg (0.5 mL) IV/IM.
Weight = 22 kg (=48 lbs) or more: 1 mg (1 mL) IV/IM.

Suspected beta blocker or calcium channel blocker overdose (4601) | INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).
Adults: 1 mg (1 mL) IV/IO/IM.
Pediatrics: 50 mcg / kg, IV/IO/IM. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

CONTRAINDICATIONS:
• Hyperglycemia

SIDE EFFECTS:
• Nausea / Vomiting
• Tachycardia
• Hyperglycemia

SPECIAL INFORMATION:
1. Glucagon will not work appropriately if a patient's glycogen stores in the liver are depleted (severe hypoglycemia, malnutrition, adrenal insufficiency).
2. To assess the effectiveness of glucagon administration:
   ➢ Reassess the patient's level of consciousness, skin, and BG level
GLUCOSE (ORAL)

**CLASS:**
- Carbohydrate

**ACTION:**
- Increases blood glucose by introducing free sugar directly into the blood stream.
- ONSET approximately 5 minutes
- DURATION is dependent on the degree of hypoglycemia

**INDICATIONS** | **DOSAGE/ROUTE**
--- | ---
**BLS care providers:**
Symptomatic hypoglycemia with blood glucose less than 80 mg/dL in adults or 70 mg/dL in pediatrics (4201) | **MAY ONLY BE ADMINISTERED TO ALERT, COOPERATIVE PATIENTS WITH AN INTACT GAG REFLEX.**

**ALS care providers:**
Symptomatic hypoglycemia with blood glucose less than 80 mg/dL in adults or 70 mg/dL in pediatrics WHEN UNABLE TO ADMINISTER DEXTROSE OR GLUCAGON (4201) | Adults: 15 gm (1 tube) PO. **MAY REPEAT PRN.**

**Pediatrics:**
- **ADMINISTRATION OF GLUCOSE (ORAL) TO PATIENTS HEAVIER THAN 10 KG (≈22 LBS) IS NOT PERMITTED.**
- Weight is between 10–29 kg (≈22-64 lbs): as tolerated, PO. **MAY REPEAT PRN.**
- Weight = 30 kg or greater (≈66 lbs+): 15 gm (1 tube) PO. **MAY REPEAT PRN.**

**CONTRAINDICATIONS:**
- Hyperglycemia
- Lack of gag reflex / inability to swallow

**SIDE EFFECTS:**
- Hyperglycemia
IPRATROPIUM BROMIDE (ATROVENT)

CLASS:
• Anticholinergic

ACTION:
• Antagonizes the action of acetylcholine, preventing the interaction of acetylcholine with muscarinic receptors in bronchial smooth muscle causing bronchodilation
• Bronchodilation, site specific (in lung - not systemic)
• ONSET = 15-30 minutes
• PEAK = 1-2 hours
• DURATION = 4-5 hours

<table>
<thead>
<tr>
<th>INDICATION</th>
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<tbody>
<tr>
<td>Bronchospasm (4406)</td>
<td>Adults and pediatrics: 0.5 mg / 2.5 mL (one pouch), mixed with one (1) pouch of Albuterol, then nebulized. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
</tr>
</tbody>
</table>

CONTRAINDICATIONS:
• Hypersensitivity to Atropine
• Allergies to peanuts / soybeans

SIDE EFFECTS:
• Blurred vision / eye irritation (with direct contact of mist)
• GI distress
• Headache
• Nausea
• Nervous / dizziness
• Palpitations

SPECIAL INFORMATION:
1. One (1) DuoNeb treatment may be given standing order; repeat administration of Albuterol is a standing order. REPEAT ADMINISTRATION OF IPRATROPIUM IS A BASE HOSPITAL ORDER (BHO).
2. Ipratropium becomes unstable in moderate to high temperatures. If it appears discolored (it is normally clear) or is precipitated, discard it immediately.
3. Causes minimal cardiac stimulation (tachycardia); monitor ECG & heart rate.
4. Check lung sounds, SpO₂, capnography wave forms and respiratory rate before and after administration of Ipratropium to determine effectiveness.
**KETAMINE (KETALAR)**

**CLASS:**
- Anesthetic / dissociative

**ACTION:**
- Noncompetitively antagonizes NMDA receptors, blocking glutamate, producing a cataleptic-like state.
- **ONSET = IVPB:** within 30 seconds, IN: 5-10 minutes
- **DURATION = IVPB:** approximately 10 minutes, IN: 30-60 minutes

<table>
<thead>
<tr>
<th>INDICATIONS</th>
<th>DOSAGE/ROUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain associated with:</td>
<td>Adults: 0.3 mg / kg IVPB. Infuse in 50-100 mL Normal Saline, administer over 5 minutes. <strong>MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</strong></td>
</tr>
</tbody>
</table>
- Acute abdominal / flank pain, sickle cell crisis or cancer pain (4204)
- Acute traumatic injury or injuries (4302)
- Burns (4701)
- Frostbite (4703)
- Snakebite (4705)
- **OR** 0.5 mg / kg IN. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

**CONTRAINDICATIONS:**
- Patients less than 15 years of age
- Sensitivity to Ketamine
- Pain or discomfort of suspected cardiac origin (ACS)

**SIDE EFFECTS:**
- Nausea and/or vomiting

**SPECIAL INFORMATION:**
1. **PEDIATRIC ADMINISTRATION IS NOT PERMITTED.**
2. Ketamine use in some patients has been known to cause dream-like states, delusions, hallucinations and/or confusion, acute onset excitement / anxiety / aggression, etc. If your patient presents with any of these behaviors, monitor them closely and, if necessary, discontinue administration. The response to Ketamine is transient and usually resolves within minutes of the infusion being stopped.
3. The administration of Ketamine to its max dose followed by the administration of Fentanyl — or vice versa — is a standing order. **REPETITION OF ANY ANALGESIC AFTER ALL MAX DOSES HAVE BEEN ADMINISTERED REQUIRES A BASE HOSPITAL ORDER (BHO).**
4. Vitals signs (ECG, SpO₂ and waveform / digital capnography) must be monitored throughout BLS and ALS interventions for pain management.
5. The max single dose for Ketamine is 30 mg regardless of the route.
LIDOCAINE (2% XYLOCAINE)

CLASS:
• Amide Derivative

ACTION:
• Decreases ventricular excitability by suppressing automaticity in the His-Purkinje system
• ONSET = 1-2 minutes
• DURATION = 10-20 minutes

<table>
<thead>
<tr>
<th>INDICATIONS</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Pain during IO infusion in the conscious patient</td>
<td>Adults: 50 mg (2.5 mL) slow IO push over 1 minute. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
</tr>
<tr>
<td>Symptomatic tachycardia with pulses (4403)</td>
<td>Pediatrics: 0.5 mg / kg slow IO push over 1 minute. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
<tr>
<td>Cardiac arrest with VF or VT WHEN AMIODARONE IS UNAVAILABLE (4405)</td>
<td>INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO). Adults: 1 mg / kg slow IV/IO push followed by the second dose (0.5 mg / kg) 8-10 minutes later, to a max of 3 mg / kg. Pediatrics: 1 mg / kg slow IV/IO push followed by the second dose (1 mg / kg) 8-10 minutes later. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
</tbody>
</table>

CONTRAINDICATIONS:
• 2nd & 3rd degree heart blocks
• Idioventricular rhythms

SIDE EFFECTS: (TOXICITY)
EARLY SIGNS
➢ Combative
➢ Anxiety
➢ Nausea
➢ Numbness
➢ Euphoria
➢ Twitching
LATE SIGNS
➢ Decreased BP
➢ Prolonged PRI
➢ Widening QRS
➢ VF
➢ Seizures
➢ Coma

SPECIAL INFORMATION:
1. Do not push faster than 50 mg / minute in an awake patient.
2. Toxicity and delayed effects are more likely in the elderly and patients with CHF / liver disease due to a reduced ability to metabolize Lidocaine. Repeat doses in this patient population should be given at 10-minute intervals.
3. Use with caution in AV blocks (suppressing automaticity may cause further block).
4. Assess effectiveness of Lidocaine:
   ➢ conversion from ventricular rhythms
   ➢ improvement in cardiac output, improved BP, skins, cap refill and LOC
   ➢ reduced or eliminated cardiac discomfort / palpitations
**MAGNESIUM SULFATE**

**CLASS:**
- Electrolyte / anti-convulsant

**ACTION:**
- Reduces striated muscle contractions and blocks peripheral neuromuscular transmission by reducing acetylcholine release at the myoneural junction
- Central nervous system depressant
- Onset = immediate
- Peak = 30 mins
- Duration = 3-4 hours

<table>
<thead>
<tr>
<th>INDICATIONS</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Cardiac arrest with VF or VT WHEN ASSOCIATED WITH TORSADES DE POINTES / POLYMORPHIC VT (4405)</td>
<td>INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO). Adults: 2 gm (4 mL) slow IV/IO push. Pediatrics: 50 mg / kg slow IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
<tr>
<td>Asthma exacerbation unresponsive to Albuterol and Ipratropium breathing treatments (4406)</td>
<td>INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO). Adults: 2 gm (4 mL) slow IV/IO push. Pediatrics: 50 mg / kg IVPB. Infuse in 50-100 mL normal saline, administer over 10 minutes. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
<tr>
<td>Cardiac dysrhythmias associated with toxic exposure, inhalation, or ingestion (4603)</td>
<td>5 gm (10 mL) IVPB. Infuse in 50-100 mL normal saline, administer over 10 minutes. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). <strong>OR</strong> 2.5 gm (5 mL) IM x2. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
</tr>
<tr>
<td>Suspected pre-eclampsia or eclampsia (4802)</td>
<td></td>
</tr>
</tbody>
</table>
CONTRAINDICATIONS:  
- Heart block  
- Recent myocardial infarction

SIDE EFFECTS:  
- Constipation  
- Flushing  
- General Muscle Weakness  
- Headache  
- Lethargy  
- Nausea/Vomiting  
- Palpitations

SPECIAL INFORMATION:  
1. Magnesium IVPB may be given prophylactically for suspected eclampsia  
2. With IVPB administration, the onset of anticonvulsant action is immediate and lasts about 30 minutes  
3. With IM administration, the onset of action occurs in about one (1) hour and persists for three to four (3-4) hours.
### MIDAZOLAM (VERSED)

**CLASS:**
- Benzodiazepine

**ACTION:**
- CNS depressant
- Produces retrograde amnesia then sedation
- Stops and prevents seizures
- ONSET = IV / IO / IN: 2-5 minutes, IM: 15 minutes
- DURATION = 1-4 hours

<table>
<thead>
<tr>
<th>INDICATIONS</th>
<th>DOSAGE/ROUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amnesic effect in the conscious VAD patient prior to synchronized cardioversion (4402)</td>
<td>CONSIDER: 2.5 mg (0.5 mL) slow IV/IO push. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). <strong>OR</strong> 5 mg (1 mL) IM/IN. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
</tr>
<tr>
<td>Amnesic effect prior to synchronized cardioversion (4403)</td>
<td>Adults: 2.5 mg (0.5 mL) slow IV/IO push. MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). <strong>OR</strong> 5 mg (1 mL) IM/IN. MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
</tr>
<tr>
<td>Amnesic effect prior to Transcutaneous Cardiac Pacing (TCP) (4404)</td>
<td>INITIAL AND REPEAT PEDIATRIC ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). Pediatrics: 0.1 mg / kg slow IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app. <strong>OR</strong> 0.2 mg / kg IM/IN. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
<tr>
<td>Anxiety following ROSC (4405)</td>
<td>INITIAL AND REPEAT ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO)</td>
</tr>
<tr>
<td>Shivering associated with heat illness / hyperthermia (4703)</td>
<td>Adults: 1 mg (0.2 mL) slow IV/IO push or IM/IN. ADMINISTRATION OF MIDAZOLAM TO PEDIATRIC PATIENTS FOR POST-ROSC ANXIETY OR HEAT ILLNESS-RELATED SHIVERING IS NOT PERMITTED.</td>
</tr>
<tr>
<td>Condition</td>
<td>Adults</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Anxiety related to the use of CPAP (4406)</td>
<td>1 mg (0.2 mL) slow IV/IO push or IM/IN. Patient’s systolic BP must be greater than or equal to 90 mmHg at the time of administration. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
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<tr>
<td>Continuous or recurrent tonic-clonic seizures unrelated to eclampsia (4501)</td>
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<td></td>
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<tr>
<td>Eclampsia unresponsive to Magnesium Sulfate administration (4802)</td>
<td>2.5 mg (0.5 mL) slow IV/IO push</td>
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</tbody>
</table>

### CONTRAINdications:
- Anxiety related to CPAP: systolic blood pressure of 90 mmHg or less
- Respiratory depression / apnea
- Drowsiness / confusion
- Hypotension

### SPECIAL INFORMATION:
1. Carefully monitor adequacy of respiratory status and SpO₂ during administration
2. Versed induced respiratory depression may be potentiated when combined with the use of ETOH, other sedative hypnotics and other CNS depressants.
3. When used for cardioversion, amnesia is the desired effect, not sedation. The dosage administered may produce lethargy even though it is not the intended effect.
NALOXONE (NARCAN)

CLASS:
- Opioid Antagonist

ACTION:
- Reverses respiratory depression, sedation, and hypotensive effects of opioid overdose by occupying opiate receptor sites
- ONSET = IV / IN: 1-2 minutes, IM: 2-5 minutes
- DURATION = IV / IN: 30-60 minutes, IM: longer

<table>
<thead>
<tr>
<th>INDICATION</th>
<th>DOSAGE/ROUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REMSA Authorized Public Safety Personnel AND first response agency BLS providers in the absence of ALS providers – LOSOP Approval Required</strong> Respiratory depression / respiratory arrest with suspected narcotic overdose (4601)</td>
<td>MAY REPEAT ONCE. Use REMSA approved intranasal administration device with REMSA approved pre-loaded dose</td>
</tr>
<tr>
<td><strong>Agency LOSOP Approval Required for BLS Providers</strong> Respiratory depression / respiratory arrest with suspected narcotic overdose (4601)</td>
<td>Adults: 0.5 mg (0.5 mL) IV/IO/IM/IN. MAY REPEAT PRN. TITRATE TO IMPROVEMENT OF RESPIRATORY DEPRESSION, NOT RESOLUTION OF AMS</td>
</tr>
<tr>
<td>Neonatal resuscitation (4801)</td>
<td>Pediatrics: 0.1 mg / kg IV/IO/IM/IN. MAX SINGLE DOSE IS 0.5 MG. MAY REPEAT PRN. TITRATE TO IMPROVEMENT OF RESPIRATORY DEPRESSION, NOT RESOLUTION OF AMS. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
<tr>
<td></td>
<td>INITIAL AND REPEAT ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
</tr>
<tr>
<td></td>
<td>IV/IO/IM/IN. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
</tbody>
</table>

CONTRAINDICATIONS:
- None

SIDE EFFECTS:
- Acute withdrawal symptoms, may be severe
- Nausea / vomiting
- Tachycardia / hypertension

SPECIAL INFORMATION:
1. The duration of Narcan is generally less than any opioid. Watch for relapse as long as opioid is still in the patient’s system and be prepared to continue administrations
2. Assessing effectiveness of Narcan:
   - increase in LOC, respiratory status, SpO₂ and pupil response
   - Effective against:

```
Codeine     Darvon     Demerol     Dilaudid
Fentanyl    Heroin     Lomotil     Methadone
Morphine    Nubain     Oxycontin   Paragoric
Percodan    Stadol     Talwin      Vicodin
```
NITROGLYCERIN (NTG, NITRO)

CLASS:
• Nitrate

ACTION:
• Relaxes systemic venous & arterial vessels causing vasodilatation thereby:
  ➢ Decreases preload & afterload
  ➢ Decreases myocardial workload.
  ➢ Decreases myocardial O₂ consumption.
• Dilates coronary arteries
• ONSET = 2 minutes
• DURATION = 30-60 minutes

<table>
<thead>
<tr>
<th>INDICATIONS</th>
<th>DOSAGE/ROUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suspected ACS (4401)</td>
<td>0.4 mg (1 tablet or 1 metered spray) SL when the patient’s systolic BP is greater than 90 mmHg. MAY REPEAT TWICE AT 3-5 MINUTE INTERVALS. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
</tr>
<tr>
<td>Dyspnea with suspected CHF (4406)</td>
<td><strong>AND</strong> 1 gm (1 inch) transdermal paste when the patient’s systolic BP is greater than 90 mmHg. If systolic BP falls below 90 mmHg, wipe away paste. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). Administration following the patient’s use of a PDE5 inhibitor (ex: Cialis / tadalafil, Levitra / vardenafil, Stendra / avanafil or Viagra / sildenafil) requires a base hospital physician order (BHPO). ADMINISTRATION OF NITROGLYCERIN TO PEDIATRIC PATIENTS IS NOT PERMITTED.</td>
</tr>
</tbody>
</table>

CONTRAINDICATIONS:
• Suspected intracranial bleed
• Patient who has taken a sexual performance enhancing medication (Viagra® / Cialis® / Levitra® / Stendra®) within the last 48 hours
• Patients with VADs

SIDE EFFECTS:
• Facial flushing
• Orthostatic hypotension (can be profound)
• Reflex tachycardia
• Dizziness / syncope
• Temporary pulsating headache
NORMAL SALINE (0.9% SODIUM CHLORIDE SOLUTION, NS)

**CLASS:**
- Electrolyte / Isotonic crystalloid

**ACTION:**
- Electrolyte solution which is osmotically equivalent to blood.
- Increases the circulating volume of the vascular system (2/3 of infused volume leaves vascular space within 1 hour)

**INDICATIONS**

<table>
<thead>
<tr>
<th>INDICATION</th>
<th>DOSAGE/ROUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loosen thickened secretions during suctioning</td>
<td>3 mL. <strong>MAY REPEAT PRN.</strong></td>
</tr>
<tr>
<td>(4104)</td>
<td></td>
</tr>
<tr>
<td>Shock unrelated to Trauma</td>
<td></td>
</tr>
<tr>
<td>(4202 / 4403 / 4405 / 4701 / 4702 / 4802)</td>
<td></td>
</tr>
<tr>
<td>Shock due to Trauma</td>
<td>Adults: 250 mL IV/IO bolus. <strong>MAY REPEAT AS CLINICALLY INDICATED TO A MAX ADMINISTRATION OF 2 L.</strong></td>
</tr>
<tr>
<td>Suspected hyperkalemia associated with crush</td>
<td>Pediatrics: 20 mL / kg IV/IO bolus. Use a volume control administration set for accurate dosing. <strong>MAY REPEAT AS CLINICALLY INDICATED.</strong> For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
<tr>
<td>injuries (4302)</td>
<td></td>
</tr>
<tr>
<td>Hyperthermia or heat illness symptoms related</td>
<td></td>
</tr>
<tr>
<td>to severe agitation / aggression / distress</td>
<td></td>
</tr>
<tr>
<td>(4602)</td>
<td></td>
</tr>
<tr>
<td>Significant burns (4701)</td>
<td></td>
</tr>
<tr>
<td>Heat illness / hyperthermia (4702)</td>
<td></td>
</tr>
<tr>
<td>Hypothermia (4703)</td>
<td></td>
</tr>
<tr>
<td>Hemodynamically unstable VAD patient (4402)</td>
<td>**CONSIDER: 250 mL IV/IO bolus. <strong>MAY REPEAT AS CLINICALLY INDICATED TO A MAX ADMINISTRATION OF 2 L.</strong></td>
</tr>
</tbody>
</table>

**CONTRAINDICATIONS:**
- Fluid challenges in patients with rales

**SIDE EFFECTS:**
- None

**SPECIAL INFORMATION:**
1. When the administration of medication(s) or the need for fluid replenishment is not indicated but is anticipated, placement of a saline lock ONLY is appropriate. Administration of IV fluids should always be clinically indicated and given as a bolus, not at a TKO rate.
2. In the absence of 10 mL Normal Saline prefilled syringes and 10 mL Normal Saline vials, or when 50 mL or 100 mL Normal Saline IV bags are unavailable for use as multi-dose medication reservoirs, two (2) 5 mL Normal Saline prefilled syringes will be drawn into an empty 10 mL syringe which may then be used for medication administration. Single 5 mL Normal Saline prefilled syringes are not permitted for use when medication administration is required.
   a. **Direct dilution of Epinephrine to concentrations of 0.1 mg / 1 mL and/or 0.01 mg / 1 mL from a 5 mL NS prefilled syringe is not permitted.**
ONDANSETRON (ZOFRAN)

CLASS:
• Serotonin 5-HT3 receptor antagonist / anti-emetic

ACTION:
• Reduces activity of the vagus nerve, deactivating the vomiting center in the medulla oblongata.
• Blocks serotonin receptors in the chemoreceptor trigger zone.
• ONSET = IV: 2-3 minutes, IM: 10-15 minutes, PO: 20 -30 minutes
• DURATION = 1.5 – 2 hours

<table>
<thead>
<tr>
<th>INDICATIONS</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Nausea and/or vomiting (4203)</td>
<td>Adults: 4 mg PO (1 ODT). MAY REPEAT TWICE TO MAX 12 MG. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). <strong>OR</strong> 4 mg (2 mL) IV solution slow IV/IO push or IM. MAY REPEAT TWICE TO MAX 12 MG. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
</tr>
</tbody>
</table>

Pediatrics: ADMINISTRATION OF ONDANSETRON ODT TO PATIENTS WEIGHING LESS THAN 10 KG (=22 LBS) IS NOT PERMITTED.

Weight = 10 kg or greater: 4 mg PO (1 ODT). MAY REPEAT TWICE TO MAX 12 MG. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). **OR** 0.1 mg / kg IV solution slow IV/IO push or IM. MAX SINGLE DOSE IS 4 MG. MAY REPEAT TWICE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

USE WITH CAUTION:
• in patients with a history of congenital long QT syndrome
• in patients with a history of hepatic injury or impairment

SIDE EFFECTS:
• Headache
• Dizziness

SPECIAL INFORMATION:
1. Use with caution in patients with a history of congenital long QT syndrome; studies have shown that these patients are at higher risk for spontaneous episodes of Torsades de Pointes at very high doses (16 mg at a time or higher)
2. Zofran is heavily metabolized in the liver, use with caution in patients with a significant history or hepatic impairment.
**SODIUM BICARBONATE (BICARB, NaHCO₃)**

**CLASS:**
- Electrolyte

**ACTION:**
- Reduces acidosis or causes alkalosis by direct release of bicarbonate ions into the blood stream
- ONSET = 2-10 minutes
- DURATION = 30-60 minutes

<table>
<thead>
<tr>
<th>INDICATIONS</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Suspected hyperkalemia associated with crush injuries (4302)</td>
<td>INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
</tr>
<tr>
<td>Altered mental status and/or dysrhythmia with suspected cyclic antidepressant overdose (4601)</td>
<td>Adults: 50 mEq (50 mL) IV/IO push.</td>
</tr>
<tr>
<td>Suspected hyperkalemia associated with heat illness / hyperthermia (4602 / 4702)</td>
<td>Pediatrics: 1 mEq / kg IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
<tr>
<td>Cardiac arrest with suspected metabolic acidosis, hyperkalemia, or tricyclic antidepressant overdose (4405)</td>
<td>Adults: 50 mEq (50 mL) IV/IO push. MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
</tr>
<tr>
<td>Neonatal resuscitation (4801)</td>
<td>INITIAL AND REPEAT ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</td>
</tr>
<tr>
<td></td>
<td>IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
</tbody>
</table>

**CONTRAINDICATIONS:**
- Metabolic / respiratory alkalosis
- Hypocalcemia

**SIDE EFFECTS:**
- Electrolyte / Ph imbalances

**SPECIAL INFORMATION:**
1. Alkalosis or acidosis may decrease the effectiveness of Epinephrine. Flush tubing between Sodium Bicarbonate and Epinephrine administrations.
**TRANEXAMIC ACID (TXA)**

**CLASS:**
- Antifibrinolytic agent / amino acid derivative (synthetic)

**ACTION:**
- Competitively inhibits the activation of plasminogen to plasmin, resulting in inhibition of fibrinolysis
- **ONSET** = approximately 10 minutes
- **DURATION** approximately 2-4 hours

<table>
<thead>
<tr>
<th>INDICATIONS</th>
<th>DOSAGE/ROUTE</th>
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</thead>
<tbody>
<tr>
<td>Traumatic injuries within three (3) hours with signs and symptoms of hemorrhagic shock with: Systolic BP less than 90 mmHg <strong>OR</strong> Significant hemorrhage with heart rate greater than or equal to 120</td>
<td>Adults: 1 gm (10 mL) IVPB. Infuse in 50-100 mL normal saline, administer over 10 minutes. <strong>ADMINISTRATION OF TRANEXAMIC ACID (TXA) TO PEDIATRIC PATIENTS IS NOT PERMITTED.</strong></td>
</tr>
<tr>
<td>Uncontrolled bleeding despite tourniquet application (4301 / 4302)</td>
<td></td>
</tr>
</tbody>
</table>

**CONTRAINDICATIONS:**
- Shock that is **unrelated** to trauma (post-partum hemorrhage, GI bleeding, etc.)
- Traumatic injuries that occurred **more than** three (3) hours prior
- Signs and symptoms of hemorrhagic shock but systolic BP is greater than 90 mmHg
- Significant hemorrhage but heart rate is less than or equal to 120
- Bleeding that is controlled after the application of a tourniquet
- Patients less than 15 years of age

**SIDE EFFECTS:**
- Nausea / vomiting / diarrhea
- Dizziness / light-headedness
- Mild itching or rash

**SPECIAL INFORMATION:**
1. If the patient's condition allows, application of a tourniquet prior to TXA administration is recommended
2. TXA is a synthetic hemostatic agent that contains no blood products. It is safe to use in patients that are practicing Jehovah's Witnesses

**ADMINISTRATION:**

- Adults: 1 gm (10 mL) IVPB. Infuse in 50-100 mL normal saline, administer over 10 minutes.
- **ADMINISTRATION OF TRANEXAMIC ACID (TXA) TO PEDIATRIC PATIENTS IS NOT PERMITTED.**
On-Scene Physician Wishing to Assume Responsibility

When an on-scene physician wishes to assume responsibility for prehospital emergency care, they must do the following:

1. State that they are a physician and that they wish to assume responsibility for prehospital emergency patient care
2. Present a valid photo ID and California medical license

When an on-scene physician wishes to assume responsibility for prehospital emergency care, the prehospital provider must do the following:

1. Inform the on-scene physician that:
   a. She / he must directly request that the base hospital physician (BHP) relinquish the responsibility to give medical direction
   b. If the base hospital physician (BHP) agrees, the on-scene physician may direct medical care
   c. The on-scene physician must accompany the patient during ambulance transport

2. Contact a single REMSA authorized base hospital (BH):
   a. Provide the on-scene physician’s name and license number
   b. The on-scene physician must request directly, on a recorded line, that the base hospital physician (BHP) relinquish the responsibility to give medical direction
   c. Confirm with the base hospital physician (BHP) that they have relinquished the responsibility to give medical direction

3. If the base hospital physician (BHP) has relinquished the responsibility to give medical direction:
   a. Assist the on-scene physician as directed, within REMSA authorized scope of practice
   b. Maintain base hospital (BH) contact and transport to an appropriate receiving facility
   c. The on-scene physician must sign the completed ePCR
Refusal of Treatment and/or Transport

Discourage any refusal of treatment and/or medical transport

A patient, parent, parental designee, or guardian initiating refusal of treatment and/or transport must be:

1. A legal adult with the capacity to understand the risks and benefits of their decisions
2. Alert and oriented to person, place, time, and event
3. Fully informed of, understand, and acknowledge:
   a. The EMS provider’s level of training
   b. The EMS provider’s findings
   c. Any need for treatment, transport, and/or further evaluation by an emergency physician
   d. The possible consequences of refusal, including death when applicable
   e. Their own ability to recall 911, and that the EMS provider will return
   f. Any other options to access medical care

Contact a single REMSA authorized base hospital (BH) for:

1. Any refusal involving a non-emancipated minor
   a. Refusal must be made by the parent, parental designee, or guardian
2. Any refusal involving a patient in custody
   a. Refusal of treatment and/or medical transport must be made by the patient, parent, parental designee, or guardian, as described above
   b. In no case will EMS personnel interfere with a law enforcement officer that refuses to accommodate base hospital direction
3. Any refusal of clinically indicated advanced life support (ALS) treatment
4. Any refusal of transport following initiation of ALS treatment
5. Any situation where base hospital contact or discussion would benefit patient care or outcome

Contact a single REMSA authorized trauma base hospital or base hospital, as appropriate, for:

1. Any refusal of assessment, care and/or transportation of the Critical Trauma Patient (CTP) or possible STEMI patient
   a. CTP Criteria is included in the REMSA Policy for Trauma Triage Criteria and Destination
   b. The possible STEMI patient is described in the REMSA Performance Standard for 12-Lead Electrocardiogram

Having met the requirements above:

1. Allow the patient, parent, parental designee, or guardian to initiate refusal
2. The legal-adult patient, parent, parental designee, or guardian must sign appropriate releases
   a. A law enforcement officer may not sign for the patient in custody
3. Fully document refusal on patient care report and attachments
### BLS Patient Management

- **Do Not Attempt Resuscitation**
  Do not attempt or continue resuscitation when one or more of the following are present:

  1. Mass casualty incident patient who remains apneic despite manual airway maneuvers
  2. Apneic and pulseless with rigor mortis and/or postmortem lividity
  3. Decapitation
  4. Generalized decomposition or incineration
  5. Separation of brain, heart, or lungs from body
  6. Apneic and pulseless with total abdominal evisceration
  7. Complete transection of torso
  8. A valid, signed, and dated advance directive (DNR/POLST/DNR medallion/Final Attestation Form) indicating that resuscitation is not desired.

- **Following Prehospital Determination of Death**
  When the decision not to attempt / to discontinue resuscitation has been made at scene:

  1. Leave the body as found / as last positioned during resuscitation
  2. Leave the scene without further disturbance / invasive medical devices left in place
  3. Comfort and care for survivors
  4. Notify local law enforcement (LE) of prehospital determination of death
  5. Contact the County of Riverside Coroner’s Office, give report, and answer all applicable questions
  6. Arrange for the Coroner’s Office to receive a copy of the completed ePCR/PCR
  7. May remove invasive medical devices at the direction of the Coroner’s Office
  8. Remain at scene until released by LE

### ALS Patient Management

- **Do Not Attempt Resuscitation**
  In addition to the criteria listed in BLS Patient Management, do not attempt, or continue resuscitation, when one or more of the following are present:

  1. Blunt traumatic arrest with persistent asystole, agonal rhythm, or PEA at a rate less than 40
  2. Penetrating traumatic arrest with persistent asystole, agonal rhythm, or PEA at a rate of less than 40, and absence of signs of life.

- **Discontinue Resuscitation**
  Discontinue resuscitation when return of spontaneous circulation (ROSC) is not achieved in a medical cardiac arrest after a minimum of twenty (20) minutes of high performance (HP) CPR and the checklist below has been completed:

  - IV or IO Access has been established;
  - Airway has been successfully managed with clinically indicated airway device;
  - Rhythm-appropriate medications and defibrillations have been administered according to applicable protocol with no ROSC;
  - Persistent (greater than 20 min) asystole or agonal rhythm is present and reversible causes are identified and treated as clinically indicated with no positive neurologic response or ROSC;
  - Patient’s rhythm is not refractory VF or VT;
  - Failure to establish spontaneous circulation (palpable pulse) at any point in the arrest

**DISCONTINUING RESUSCITATION OF A PEDIATRIC PATIENT REQUIRES A BASE HOSPITAL PHYSICIAN ORDER (BHPO).**
9. Include these details on the ePCR/PCR:
   a) Location of the body
   b) All recorded times
   c) History, medications, time of death, circumstances, and description of any advance directive / DNR / POLST / DNR medallion
   d) Identification of the local law enforcement officer at scene
   e) Identification of the coroner’s investigator who received report and coroner’s case number
   f) Disposition of the body, if determined while you are still at scene

- **When the decision not to attempt / to discontinue resuscitation has been made during transport**

  1. Stop in a safe location without crossing county lines
  2. Comfort and care for any survivors present
  3. Contact the County of Riverside Coroner’s Office, give report, and answer all applicable questions
  4. Follow the Coroner’s directions for:
     a) Disposition
     b) Notification of local law enforcement
  5. Complete ePCR/PCR as described above

Contact a single base hospital (BH) and/or the Coroner’s Office as needed for guidance in unusual circumstances
PURPOSE
To establish policy for the safe and rapid transfer of patient care responsibilities between Emergency Medical Services (EMS) personnel and emergency department (ED) medical personnel

CONSIDERATIONS
Delays in the transfer of patient care and offloading of patients delivered to designated receiving hospitals by EMS ambulance adversely affects patient care, safety, and the availability of ambulances for emergency responses throughout Riverside County. It is incumbent upon receiving hospitals and ambulance providers to minimize the time required to transfer patient care and return ambulances to service to ensure optimal patient care, safety, and EMS system integrity.

AUTHORITY
California Health and Safety Code - Division 2.5: Emergency Medical Services [1797. - 1799.207.]

Direction of EMS Personnel
EMS personnel shall continue to provide patient care prior to the transfer of patient care to the designated receiving hospital ED medical personnel. All patient care shall be documented according to REMSA policies. Medical Control and management of the EMS system, including EMS personnel, remain the responsibility of the REMSA Medical Director and all care provided to the patient must be pursuant to REMSA treatment protocols and policies.

Patient Care Responsibility
The ultimate responsibility for patient care belongs to the designated receiving hospital once the patient arrives on hospital grounds. Designated receiving hospitals should implement processes for ED medical personnel to immediately triage and provide the appropriate emergency medical care for ill or injured patients upon arrival at the ED by ambulance.

Transfer of Patient Care
Patients under care of EMS personnel

Upon arrival of a patient at the hospital by ambulance, the ED medical personnel should make every attempt to medically triage the patient and offload the patient to a hospital bed or other suitable sitting or reclining device at the earliest possible time not to exceed thirty (30) minutes. During triage by ED medical personnel, EMS personnel will provide a verbal patient report containing any pertinent information necessary for the ongoing care of the patient. Transfer of patient care is completed once the ED medical staff has received a verbal patient report. If the transfer of care and patient offloading from the ambulance gurney exceeds the thirty (30) minute standard, it will be documented and tracked as APOD.

The transporting EMS personnel are not responsible to continue monitoring the patient or provide care within the hospital setting after transfer of patient care to ED medical personnel has occurred. EMS personnel are responsible for immediately returning to response ready status once patient care has been transferred to ED medical personnel and the patient has been offloaded from the ambulance gurney.
**APOD Mitigation Procedures**

Designated receiving hospitals have a responsibility to ensure policies and processes are in place that facilitates the rapid and appropriate transfer of patient care from EMS personnel to the ED medical personnel within 30 minutes of arrival at the ED.

ED medical personnel should consider the following to prevent APOD:

- Immediately acknowledge the arrival of each patient transported by EMS; and
- Receive a verbal patient report from EMS personnel; and
- Receive patients transported by ambulance within thirty (30) minutes of arrival in the ED; and
- Transfer the patient to the hospital gurney, bed, chair, wheelchair or waiting room as appropriate for the patient’s condition within thirty (30) minutes of arrival at the hospital ED.

If an APOD does occur, the hospital should make every attempt to:

- Provide a safe area in the ED within direct sight of ED medical personnel where the ambulance crew can temporarily wait while the hospital’s patient remains on the ambulance gurney.
- Inform the attending EMT or EMT-P of the anticipated time for the offload of the patient.
- Provide information to the supervisor of the EMS personnel regarding the steps that are being taken by the hospital to resolve the APOD.

Hospitals will provide written details to REMSA, and EMS providers, of policies and procedures that have been implemented to mitigate APODs and assure effective communication with the affected partners:

- Processes for the immediate notification of the following hospital staff through their internal escalation process of the occurrence of APOD, including but not limited to:
  - ED/Attending Physician
  - ED Nurse Manager/Director or Designee (i.e., charge nurse);
  - House supervisor;
  - Administrator on call

- Processes to alert the following affected partners via ReddiNet when a condition exists that affects the timely offload of ambulance patients:
  - Local receiving hospitals/base hospitals
  - Fire Department and ambulance dispatch centers

- Processes for ED medical personnel to immediately respond to. and provide care for, the patient if the attending EMS personnel alert the ED medical personnel of a decline in the condition of a patient being temporarily held on the ambulance gurney.

EMS personnel are directed to do the following to prevent an APOD:

- Provide the receiving hospital ED with the earliest possible notification via two-way radio that a patient is being transported to their facility.
- Utilizing the appropriate safety precautions, walk-in ambulatory patients or use a wheelchair rather than an ambulance gurney if appropriate for the patient’s condition.
- Provide a verbal patient report to the ED medical personnel within thirty (30) minutes of arrival to the ED.
- Contact the EMS supervisor for direction if the ED medical personnel do not offload the patient within the thirty (30) minute local ambulance patient offload time standard.
- Complete the REMSA required authorized patient care documentation.
- Work cooperatively with the receiving hospital staff to transition patient care within the timeframes established in this policy.
Content and Formatting of the Verbal Report
The verbal patient report may be provided by face-to-face or two-way radio communication utilizing the SBAR format. The verbal patient report will include the following elements:

**Situation**
- Patient age, sex, weight
- Patient condition (Critical, Emergent, Lower Acuity)
- Patient chief complaint

**Background**
- Mechanism of injury or history of present illness
- Assessment findings
  - Responsiveness/Glasgow Coma Scale (GCS)
  - Airway
  - Breathing
  - Circulation
  - Disability
- Vital Signs
- Past medical history, medications, and allergies

**Assessment**
- Primary impression

**Recommendations**
- Treatment/interventions provided
- Patient response to treatment/interventions
- Base Hospital orders received (If it is a medical direction call)

Clinical Practices for EMS Personnel to Reduce APOD
The EMS personnel shall utilize sound clinical judgment and follow the appropriate REMSA policies and treatment protocols including:
- Initiate care as clinically indicated with the appropriate basic life support (BLS) and advanced life support (ALS) interventions.
- Initiate vascular access only as clinically indicated. IV therapy should only be initiated pursuant to REMSA treatment protocols for patients that require the following:
  a. administration of IV medication(s), or
  b. administration of IV fluid bolus or fluid resuscitation.
- In the judgement of the attending paramedic the patient’s condition could worsen and either (a) or (b) noted above may become necessary prior to arrival at the receiving hospital ED.
- Discontinue ECG monitoring before removing the patient from the ambulance if there are no clinical indications for cardiac monitoring.

APOD Unusual Events
The proliferation of APODs that lead to the lack of sufficient ambulances to respond to emergencies are considered APOD Unusual Events. These events threaten public health and safety by preventing EMS responses to emergency medical incidents. To mitigate the effects of these APOD Unusual Events the following are hereby established:
- Criteria for an APOD Unusual Event:
  - APOD exceeding thirty (30) minutes is occurring, and
  - The ambulance provider identifies and documents low EMS system ambulance availability.

APOD Unusual Event Procedures
- EMS personnel are authorized to inform ED medical personnel that they are transitioning patient care and immediately offloading a patient on APOD to a hospital bed or other suitable hospital sitting or reclining device as appropriate for patient condition provided the patient meets the following criteria:
- Vital signs are stable
- Patient is alert and oriented
- No ALS interventions have taken place
- The patient is not on a Welfare and Institutions Code (WIC) 5150 hold

- EMS personnel shall make every attempt to notify ED medical personnel that they must immediately return to service

- EMS personnel may use the written EMS report for transfer of care if ED medical personnel are unavailable to take a verbal report (post ePCR to hospital dashboard)

- In the event of a major emergency that requires immediate availability of ambulances, the Riverside County Medical Health Operational Area Coordinator may give direction to EMS personnel to immediately transfer patient care to ED medical personnel and return to service to support the EMS system resource needs.

**HOSPITAL BEST PRACTICES FOR AVOIDING APOD**

Hospitals should consider implementing polices to reduce patient offload times. The following strategies have been shown to reduce APOD and should be considered:

- **ED Intake strategies**
  - Bedside Registration
  - Orders from triage
  - Direct to bed policies
  - Mid-level provider or physician at triage
  - Greeter/patient liaison

- **ED throughput strategies**
  - Effective ordering of lab and imaging
  - Innovating staffing utilization
  - Code alert for ED overcrowding

- **ED output strategies**
  - Accelerated inpatient intake practices
  - Discharge accelerator
  - Use of Clinical Decision Unit (CDU)
  - Discharge instructions upon arrival

- **Hospital Inpatient bed availability strategies**
  - Standardized discharge process
  - Rapid Admission Unit (RAU)
  - Bed turnover process
  - Universal telemetry
  - Standardized ICU step down bed management

Other strategies to reduce APOD:
- Bedside registration or assigning a bed prior to arrival of patient
- Streamlining the triage process
- Bed assignment on patient arrival
- Zero allowance for APOD time by EMS agency and hospital
- Once a bed for an admitted patient is identified, floor/unit has thirty (30) minutes to retrieve patient, if not, department head is called
- Standardize discharge program including earlier patient rounds and discharge
- Consider holding areas for patients and those who are awaiting tests or delayed procedures
- Assign patient to specific hospital medical staff prior to placement in a bed may create patient ownership
- Redesign hospital documentation to improve ease of entry and flow
- Facilitate bedside lab tests (blood, urine, etc.)
PURPOSE
To establish criteria that recognizes and accommodates a patient’s designated end of life choices and directives, in order to limit prehospital treatment by EMS field personnel in the prehospital setting, long-term care facilities, during transport between facilities and/or in the patient’s home.

CONSIDERATIONS
The underlying principle in End of Life Care is to abide by the patient’s wishes. In some circumstances, conflict may arise between the expressed wishes of the patient and the wishes of the family. EMS personnel should seek clarification from applicable REMSA policies, written documentation, the base hospital (BH) and/or the patient’s legally recognized decision maker as needed. The patient can rescind any Advance Directive or End of Life Care Act option at any time.

AUTHORITY
California Health and Safety Code - Division 2.5: Emergency Medical Services [1797. - 1799.207.]

End of Life Care Documentation
Forms related to patient’s end of life instructions that EMS field personnel may encounter include:
• Statewide EMSA / California Medical Association (CMA) Prehospital Do Not Resuscitate (DNR) form.
• POLST form.
• DNR medallion, bracelet, or necklace.
• A DNR order in a patient’s chart dated and signed by the physician.
• End of Life Options Act Directive and/or Final Attestation for An Aid-In-Dying Drug to End My Life in a Humane and Dignified Manner form.

Validation Criteria
1. EMS Prehospital DNR
   a. The EMS Prehospital DNR form should include the following to be considered valid:
      i. Patient’s name.
      ii. Signature of the patient or a legally recognized decision maker if the patient is unable to make or communicate informed healthcare decisions.
      iii. Signature of patients’ physician, affirming that the patient/legal representative has given informed consent to the DNR instruction.
      iv. All signatures must be dated.
      v. Correct identification of the patient is crucial. If the patient is unable to be identified after a good faith attempt to identify the patient, a reliable witness may be used to identify the patient.
      vi. In licensed healthcare facilities a DNR order written by a physician shall be honored.
         1. The staff must have the patient’s chart with the DNR order immediately available for EMS field personnel upon their arrival.
         2. The order may contain the words Do Not Resuscitate, No CPR, or No Code and contain the patient’s name and the date and signature of the physician.

2. DNR Medallion, Bracelet or Necklace
   a. The DNR medallion/bracelet/necklace is made of metal with a permanently imprinted medical insignia. For the medallion or bracelet/necklace to be valid the following applies:
      i. Patient must be physically wearing the DNR medallion/ bracelet/necklace.
ii. Medallion/bracelet/necklace must be engraved with the words “Do Not Resuscitate EMS” or “California POLST EMS”, along with a toll-free emergency information telephone number and a patient identification number.

3. **Physician Order for Life Saving Treatment (POLST)**
   a. The POLST does not replace the Advanced Directive and should be reviewed along with other documents if available. The POLST:
      i. Must be signed and dated by a physician, nurse practitioner or physician assistant acting under the supervision of a physician and within the scope of practice authorized by law.
      ii. Must be signed by the patient or decision maker.
      iii. Is not valid without signatures. Verbal or telephone orders are acceptable with follow-up signature by the physician in accordance with facility/community policy. There should be a box checked indicating who the authorized healthcare provider discussed the POLST orders with. By signing the form, the healthcare provider acknowledges that these orders are consistent with the patient’s medical condition and preferences.

4. **End of Life Care Options Act**
   a. A terminally ill and competent patient may elect to obtain medications to hasten their imminent death at a time and place of their choosing. They must satisfy extensive and stringent requirements as required by California law to obtain an Aid-In-Dying Drug and complete a “Final Attestation for An Aid-In-Dying Drug to End My Life in a Humane and Dignified Manner” within 48 hours prior self-administration.
   b. There are no standardized “Final Attestation for an Aid-In-Dying Drug to End My Life in a Humane and Dignified Manner” forms but the law has required specific information that must be in the final attestation. If available, EMS field personnel should make a good faith effort to review and verify that the final attestation contains the following information:
      i. The document is identified as a “Final Attestation for An Aid-In-Dying Drug to End My Life in a Humane and Dignified Manner”.
      ii. Patient’s name, signature and dated.
      iii. EMS field personnel should review and verify that the “Final Attestation for An Aid-In-Dying Drug to End My Life in a Humane and Dignified Manner” is present.
      iv. Correctly identifies the patient’s name and is signed and dated by the patient.
      v. The Final Attestation for An Aid-In-Dying Drug must be completed within 48 hours prior to taking the medications.
      vi. Obtain a copy of the final attestation and attach it to the electronic patient care record (ePCR) whenever possible.
      vii. There is no mandate for the patient to maintain the final attestation in close proximity of the patient.
      viii. If a copy of the final attestation is available, EMS field personnel should confirm the patient is the person named in the final attestation. This will normally require either the presence of a form of identification or a witness who can reliably identify the patient.

**End of Life Care Guidelines**

In addition to the validation criteria, the following guidelines are provided for EMS field personnel when responding to a patient with Standardized Patient-Designated Directives.

- The POLST may be used for both adults and pediatric patients.
- EMS personnel shall contact a base hospital for direction if a DNR or POLST cannot be validated or for conflicting requests by family members. While EMS personnel are contacting the base hospital for direction, BLS treatment must be initiated and continued. If contact cannot be made, resuscitative efforts shall continue.
- The End-of-Life Care Options Act Final Attestation form is legal and binding, no surrogate decision making is permitted. In the event of suspicious circumstances surrounding the “Final Attestation for An Aid-In-Dying Drug to End My Life in a Humane and Dignified Manner” EMS Personnel should make base hospital contact.
- If a family member requests resuscitative measures despite a valid DNR or POLST, continue BLS resuscitative measures until base hospital contact is made. EMS Personnel should reaffirm the patient’s wishes with the family members to aid in clarifying the situation.
- EMS field personnel shall attach a copy of the approved DNR form or POLST form to the patient care report, along with any other appropriate written documentation. The DNR form should accompany the patient to the hospital so that it may be incorporated into the medical record at the receiving facility.
  - When DNR orders are noted in medical records in licensed facilities, that fact should be recorded by the EMS provider, along with the date of the order and the physician’s name. It should be noted on the ePCR that a written DNR order was present including the name of the physician, date signed and other appropriate information.
- If a patient dies at home and the patient is not under the care of Hospice, law enforcement must be notified. In all cases, the coroner must be notified.

**Supportive Measures**
- Unless a patient is actively dying, medical treatment for other conditions should not be withheld.
- Involve law enforcement and the Coroner to assist with disposition of deceased patients.
- Consider supportive organizations for the family that may be at the scene: Chaplaincy services, advocacy groups and other family support can aid in the grieving process.
## Symptomatic Hypoglycemia

### Treatment Protocol

**Establish, maintain, and ensure:**
- A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
- B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
- C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

### Oxygen
- As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD
- Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements
- Attach ECG leads to the patient when a paramedic is present

### BLS Patient Management

### ALS Patient Management

- Interpret and continuously monitor ECG, vital signs and SpO₂
- For symptomatic hypoglycemia with blood glucose less than 80 mg/dL in adults or 70 mg/dL in pediatrics and neonates
  - **Adults:** Dextrose 25 gm (D10%) IV/IO bolus or drip. **MAY REPEAT PRN.**
  - **Pediatrics and neonates:** Dextrose 5 mL / kg (D10%) IV/IO bolus or drip. **MAY REPEAT PRN.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

### For symptomatic hypoglycemia with blood glucose less than 80 mg/dL in adults or 70 mg/dL in pediatrics and neonates WHEN UNABLE TO ADMINISTER DEXTROSE
- **Adults:** Glucagon 1 mg (1 mL) IM. **ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**
- **Pediatrics and neonates:**
  - Weight = 21 kg (=46 lbs) or less: Glucagon 0.5 mg IM. **ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**
  - Weight = 22 kg (=48 lbs) or more: Glucagon 1 mg IM. **ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

### For symptomatic hypoglycemia with blood glucose less than 80 mg/dL in adults or 70 mg/dL in pediatrics WHEN UNABLE TO ADMINISTER DEXTROSE OR GLUCAGON
- **Adults:** Glucose (oral) 15 gm (1 tube) PO. **MAY REPEAT PRN.**
- **Pediatrics:**
  - **ADMINISTRATION OF GLUCOSE (ORAL) TO PATIENTS WEIGHING LESS THAN 10 KG (=22 LBS) IS NOT PERMITTED.**
    - Weight is between 10 – 29 kg: Glucose (oral) as tolerated, PO. **MAY REPEAT PRN.**
    - Weight = 30 kg or greater: Glucose (oral) 15 gm (1 tube) PO. **MAY REPEAT PRN.**

### Patient Disposition
- CONTACT A SINGLE BASE HOSPITAL FOR ANY PATIENT THAT REFUSES TRANSPORT FOLLOWING THE INITIATION OF AN ALS TREATMENT
**Establish, maintain, and ensure:**
A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

**Oxygen**
As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

**Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements**

**Preserve the patient’s body heat by covering them with warm blankets**

**Attach ECG leads to the patient when a paramedic is present. May assist with placement of the 12-lead cables.**

**Position the patient supine to meet physiologic requirements: Avoid Trendelenburg or elevating legs for shock. If the patient is pregnant, transport her in left lateral position**

**Preserve the patient’s body heat by covering them with warm blankets**

*Consider the causes of shock and act as indicated by REMSA policies, protocols, and standards*

**For shock unrelated to trauma**
**Adults:** Normal saline 250 mL IV/IO bolus. MAY REPEAT AS CLINICALLY INDICATED TO A MAX ADMINISTRATION OF 2 L.

**Pediatrics:** Normal saline 20 mL / kg IV/IO bolus. Use a volume control administration set for accurate dosing. MAY REPEAT AS CLINICALLY INDICATED. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

**Adults and pediatrics:** Push Dose Epinephrine 0.01 mg (1 mL, 0.01 mg / mL concentration) IV/IO. MAY REPEAT PRN EVERY 1-5 MINUTES TO MAINTAIN A SYSTOLIC BP GREATER THAN:
- 90 mmHg – adults
- 70 mmHg – pediatrics

**ADMINISTRATION OF TRANEXAMIC ACID (TXA) FOR SHOCK UNRELATED TO TRAUMA IS NOT PERMITTED**
**BLS Patient Management**

- **Establish, maintain, and ensure:**
  A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

- **Oxygen**
  As clinically indicated. Titrate to maintain, or increase, SpO2 to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

- Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements

- Attach ECG leads to the patient when a paramedic is present

**ALS Patient Management**

- **Establish, maintain, and ensure peripheral IV and/or IO access for emergency stabilization, and/or as clinically indicated, in adult and pediatric patients**

  Consider the need for additional sites as clinically indicated

- **Interpret and continuously monitor ECG, vital signs and SpO2**

- **For nausea and/or vomiting**
  **Adults:**
  Ondansetron 4 mg PO (1 ODT). **MAY REPEAT TWICE TO MAX 12 MG. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **OR**
  Ondansetron 4 mg (2 mL) IV solution slow IV/IO push or IM. **MAY REPEAT TWICE TO MAX 12 MG. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **Pediatrics:**
  **ADMINISTRATION OF ONDANSETRON ODT TO PATIENTS WEIGHING LESS THAN 10 KG (≈22 LBS) IS NOT PERMITTED.**

  Weight = 10 kg or greater: Ondansetron 4 mg PO (1 ODT). **MAY REPEAT TWICE TO MAX 12 MG. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **OR**
  Ondansetron 0.1 mg / kg IV solution slow IV/IO push or IM. **MAX SINGLE DOSE IS 4 MG. MAY REPEAT TWICE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).

**Adults**: Diphenhydramine 25-50 mg (0.5 – 1 mL) IM or slow IV/IO push.

**Pediatrics**: Diphenhydramine 1 mg / kg slow IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

**OR**

Diphenhydramine 2 mg / kg IM. **MAX SINGLE DOSE IS 50 MG.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
### BLS Patient Management

- **Establish, maintain, and ensure:**
  - A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  - Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  - Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

- **Oxygen**
  
  As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

- Position the patient as clinically indicated for safety, comfort (when airway management processes allow), and to meet physiologic requirements.

  Attempt to calm and reduce anxiety. Utilize ice PRN. Immobilize and splint affected area(s) as clinically indicated.

- Assess the patient’s pain scale using the age-appropriate pain scale

- Attach ECG leads to the patient when a paramedic is present

- **VITALS SIGNS MUST BE MONITORED THROUGHOUT BLS AND ALS INTERVENTIONS FOR PAIN MANAGEMENT**

### ALS Patient Management

**Special consideration must be given to the type of pain, the patient’s overall condition, allergies, medical history, and drug contraindications when deciding if pain management is appropriate and which pain medication should be administered. NOT ALL PATIENTS REQUIRE MEDICATION-BASED INTERVENTIONS FOR PAIN MANAGEMENT**

- Interpret and continuously monitor ECG, vital signs, SpO₂ and waveform / digital capnography

- **Acute abdominal / flank pain, sickle cell crisis or cancer pain**
  
  **Adults:** Fentanyl 50 mcg (1 mL) slow IV/IO push or IM/IN. Patient’s systolic BP must be greater than or equal to 90 mmHg at the time of administration. **MAY REPEAT ONCE, IN 5-10 MINUTES, DEPENDENT ON PAIN SEVERITY, TO A MAX OF 100 MCG. ADDITIONAL ADMINISTRATIONS AFTER 100 MCG REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **Pediatrics:** Fentanyl 1 mcg / kg slow IV/IO push or IM/IN. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

  **Adults:** Ketamine 0.3 mg / kg IVPB. Infuse in 50-100 mL Normal Saline, administer over 5 minutes. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **OR**

  Ketamine 0.5 mg / kg IN. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **THE MAX SINGLE DOSE FOR EITHER ROUTE IS 30 MG.**

  **ADMINISTRATION OF KETAMINE TO PEDIATRIC PATIENTS IS NOT PERMITTED.**
## BLS Patient Management

- **Establish, maintain, and ensure cervical spine stabilization**, as clinically indicated, when NSAID criteria is met
  - Neuro deficits
  - Spinal Tenderness
  - Altered Mental Status
  - Intoxication
  - Distracting Injury

  ***The long backboard (LBB) is an extrication tool and should only be used to facilitate patient transfer to the stretcher. It is not intended, or appropriate, to use a LBB to achieve or maintain spinal stabilization. Judicious application of the LBB for purposes other than extrication require that the benefits outweigh the risks of application. If the LBB is used, patients should be removed as soon as soon as is safe and practical***

- **Establish, maintain, and ensure**
  - A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  - Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  - Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

- **Oxygen**
  As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

## ALS Patient Management

- **Interpret and continuously monitor** ECG, vital signs and SpO₂

- **Establish, maintain, and ensure** bilateral, large bore IV and/or IO access for shock due to trauma

  Establish IV/IO access during transport of the non-entrapped, transport ready critical trauma patient

  Consider the need for additional sites as clinically indicated

- **For shock due to trauma**
  - Adults: Normal saline 250 mL IV/IO bolus. **MAY REPEAT AS CLINICALLY INDICATED TO A MAX ADMINISTRATION OF 2 L.**
  - Pediatrics: Normal saline 20 mL / kg IV/IO bolus. Use a volume control administration set for accurate dosing. **MAY REPEAT AS CLINICALLY INDICATED.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- **For traumatic injuries within three (3) hours with signs and symptoms of hemorrhagic shock with systolic BP less than 90 mmHg**
  **OR**
  - Significant hemorrhage with heart rate greater than or equal to 120
  **OR**

  Uncontrolled bleeding despite tourniquet application
  - **Adults**: Tranexamic Acid (TXA) 1 gm (10 mL) IVPB. Infuse in 50-100 mL normal saline, administer over 10 minutes.
    - **ADMINISTRATION OF TRANEXAMIC ACID (TXA) TO PEDIATRIC PATIENTS IS NOT PERMITTED.**
- Position the patient supine to meet physiologic requirements: Avoid Trendelenburg or elevating legs for shock. If the patient is pregnant, transport her in left lateral position
- Preserve the patient’s body heat by covering them with warm blankets
- Attach ECG leads to the patient when a paramedic is present
- For traumatic arrest
  Follow REMSA Treatment Protocol #4405 (Cardiac Arrest)

- If the patient presents with
  Signs and symptoms of tension pneumothorax:
  - Air hunger
  - Chest pain
  - Compromised cardiac output (hypotension, hypoxemia, tachycardia, etc.)
  - Elevated hemithorax without respiratory movement
  - Neck vein distension
  - Respiratory distress
  - Unilateral absence of breath sounds
  - Cyanosis (late sign)
  - Tracheal deviation away from the side of the injury (late sign)

  AND

  rapidly progressing respiratory distress unrelieved by less invasive means

  THEN

  Perform unilateral chest decompression

- If the patient is in cardiac arrest with known/suspected torso trauma or with a presentation suggesting spontaneous pneumothorax

  THEN

  Perform bilateral chest decompression

Patient Disposition

- Ground ambulance is the primary means of transport for destinations 30 minutes or less by code 3.
  a. Adult patients identified as critical trauma patients will be transported to the closest Trauma Center.
  b. Pediatric patients identified as critical trauma patients should be transported to a pediatric trauma center.
  c. If the pediatric trauma center is greater than 30 minutes away by ground, go to the closest trauma center.
  d. If the closest trauma center is greater than 30 minutes by ground code 3, consider HEMS transport.
  e. If patient destination is questionable, contact the trauma base hospital for destination.
  f. Refer to REMSA policy #6103 (Ambulance Diversion) when trauma centers are on diversion

- Do not delay contacting a trauma base hospital for critical trauma patients
- Do not delay transport with nonessential treatment of non-entrapped, transport ready, critical trauma patients
Critical Trauma Patients / Traumatic Arrest Patients

- Adult blunt traumatic arrest:
  - If the patient meets Do Not Attempt Resuscitation / Discontinue Resuscitation criteria: DO NOT TRANSPORT.
  - If the patient is pulseless and apneic with asystole / agonal rhythm / PEA at a rate less than 40: DO NOT TRANSPORT.
    - Otherwise, transport to the closest trauma center.

- Adult penetrating traumatic arrest:
  - If the patient meets Do Not Attempt Resuscitation / Discontinue Resuscitation criteria: DO NOT TRANSPORT.
  - If the patient is pulseless and apneic with asystole / agonal rhythm / PEA at a rate less than 40: DO NOT RESUSCITATE OR TRANSPORT.
    - If the patient has signs of life and transport time is reasonable, then consider transport to the closest trauma center.

- Pediatric traumatic arrest:
  - A base hospital physician order (BHPO) is required to discontinue resuscitation.
  - Otherwise, transport to the closest pediatric trauma center

- Burn patients:
  - Critical trauma patients with burns will be transported to the closest trauma center.
  - Patients not meeting critical trauma patient criteria (minor and/or moderate burns) can be cared for at any prehospital receiving center.
<table>
<thead>
<tr>
<th>BLS Patient Management</th>
<th>ALS Patient Management</th>
</tr>
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</table>
| • Establish, maintain, and ensure cervical spine stabilization, as clinically indicated, when NSAID criteria is met  
  o Neuro deficits  
  o Spinal Tenderness  
  o Altered Mental Status  
  o Intoxication  
  o Distracting Injury  
  
  ***The long backboard (LBB) is an extrication tool and should only be used to facilitate patient transfer to the stretcher. It is not intended, or appropriate, to use a LBB to achieve or maintain spinal stabilization. Judicious application of the LBB for purposes other than extrication require that the benefits outweigh the risks of application. If the LBB is used, patients should be removed as soon as soon as is safe and practical***  
• Establish, maintain, and ensure  
  A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated  
  B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present  
  C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated  
• Oxygen  
  As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD  
• Position the patient supine to meet physiologic requirements: Avoid Trendelenburg or elevating legs for shock. If the patient is pregnant, transport her in left lateral position  
• Interpret and continuously monitor ECG, vital signs and SpO₂  
• Establish, maintain, and ensure bilateral, large bore IV and/or IO access for emergency stabilization and/or as clinically indicated  
  
  Establish IV/IO access during transport of the non-entrapped, transport ready critical trauma patient  
  
  Consider the need for additional sites as clinically indicated  
• If the patient presents with  
  Signs and symptoms of tension pneumothorax:  
  o Air hunger  
  o Chest pain  
  o Compromised cardiac output (hypotension, hypoxemia, tachycardia, etc.)  
  o Elevated hemithorax without respiratory movement  
  o Neck vein distension  
  o Respiratory distress  
  o Unilateral absence of breath sounds  
  o Cyanosis (late sign)  
  o Tracheal deviation away from the side of the injury (late sign)  
  
  AND  
  rapidly progressing respiratory distress unrelieved by less invasive means  
  
  THEN  
  Perform unilateral chest decompression
• Preserve the patient’s body heat by covering them with warm blankets

• Attach ECG leads to the patient when a paramedic is present

• **For suspected traumatic brain injury**
  Increase ventilatory rate for unequal / fixed and dilated pupils and extensor posturing / no motor response:
  **Adult**: 20 breaths per minute  
  **Child**: 25 breaths per minute  
  **Infant**: 30 breaths per minute

• **For impaled object(s)**
  Support and stabilize object(s) in place. Remove only if the object interferes with airway patency or with chest compressions

• **For flail chest**
  Assist ventilations as clinically indicated. Do not stabilize the flail segment by sandbagging, splinting, and/or swathing

• **For eye injury / injuries**
  Irrigate with saline as clinically indicated. Apply protective rigid shields bilaterally. Position the patient as clinically indicated to meet physiologic requirements

• **For avulsed tooth / teeth**
  Handle the tooth / teeth by the crown. Do not touch any part of the tooth that normally exists below the gum line. In the alert and cooperative patient, attempt to replace the tooth in its socket. If unable, wrap in a milk or normal saline soaked gauze sponge and transport with the patient

• **For wound care**
  Control bleeding using direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

  Dress and bandage abrasions, lacerations, avulsions, punctures and/or penetrations as clinically indicated

  Dress an open pneumothorax with an occlusive dressing. Briefly remove (“burp”) to release pressure when signs of a tension pneumothorax appear

• **If the patient is in cardiac arrest with known/suspected torso trauma or with a presentation suggesting spontaneous pneumothorax**
  
  **THEN**

  Perform bilateral chest decompression

• **For pain associated with acute traumatic injury or injuries**
  **Adults**: Fentanyl 50 mcg (1 mL) slow IV/IO push or IM/IN. Patient’s systolic BP must be greater than or equal to 90 mmHg at the time of administration. MAY REPEAT ONCE, IN 5-10 MINUTES, DEPENDENT ON PAIN SEVERITY, TO A MAX OF 100 MCG.

  **Pediatrics**: Fentanyl 1 mcg / kg slow IV/IO push or IM/IN. MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

  **Adults**: Ketamine 0.3 mg / kg IVPB. Infuse in 50-100 mL Normal Saline, administer over 5 minutes. MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

  **Ketamine 0.5 mg / kg IN. MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **THE MAX SINGLE DOSE FOR EITHER ROUTE IS 30 MG.**

  **ADMINISTRATION OF KETAMINE TO PEDIATRIC PATIENTS IS NOT PERMITTED.**

• **For suspected hyperkalemia associated with crush injuries**
  **Adults**: Normal Saline 250 mL IV/IO bolus. MAY REPEAT AS CLINICALLY INDICATED TO A MAX ADMINISTRATION OF 2 L.

  **Pediatrics**: Normal Saline 20 mL / kg IV/IO bolus. Use a volume control administration set for accurate dosing. MAY REPEAT AS CLINICALLY INDICATED. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
Dress evisceration(s) with saline soaked dressing(s). Do not intentionally replace evisceration.

Dress injured genitalia with saline soaked dressing(s), applying direct pressure to control bleeding.

- **For fracture(s) or dislocation(s)**
  Assess distal neurovascular functions using PMS (pulse, motor, sensation) before and after manipulation, manual stabilization and/or splinting.

  Manually stabilize and/or splint fractures and dislocations as found and as clinically indicated. Rinse exposed bone with saline and dress with saline soaked gauze sponge(s) or non-adherent dressing(s). Do not intentionally allow exposed bone to retract and do not intentionally reduce dislocation.

  Using gentle traction, return grossly angulated extremity fractures to the anatomic position as clinically indicated.

  Stabilize and/or splint mid-shaft femur fractures using a traction splint as clinically indicated.

  **CONTACT A SINGLE BASE HOSPITAL FOR ANY FRACTURE OR DISLOCATION WITH NEUROLOGICAL AND/OR VASCULAR COMPROMISE**

- **For amputation(s)**
  Rinse amputated body part(s) with normal saline then wrap with saline soaked dressing(s). Place in a bag. Keep part(s) cool but don’t place directly on ice.

- **For pain management**
  Apply disposable cold pack(s) as clinically indicated for pain associated with a traumatic injury or injuries.

- **For traumatic arrest**
  Follow REMSA Treatment Protocol #4405 (Cardiac Arrest).

- **ADULTS AND PEDIATRICS: INITIAL AND REPEAT ADMINISTRATIONS OF ALBUTEROL, CALCIUM CHLORIDE, AND SODIUM BICARBONATE FOR SUSPECTED HYPERKALEMIA ASSOCIATED WITH CRUSH INJURIES REQUIRES A BASE HOSPITAL ORDER (BHO)**
  Adults and pediatrics: Albuterol 2.5 mg / 3 mL (one pouch), nebulized.

  Adults: Calcium Chloride 1 gm (10 mL) IVPB.

  Pediatrics: Calcium Chloride 20 mg / kg IVPB. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

  Adults and pediatrics: Infuse in 50-100 mL normal saline, administer over 10 minutes.

  Adults: Sodium bicarbonate 50 mEq (50 mL) IV/IO push.

  Pediatrics: Sodium bicarbonate 1 mEq / kg IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- **For traumatic injuries within three (3) hours with signs and symptoms of hemorrhagic shock with systolic BP less than 90 mmHg**

  ****OR**

  Significant hemorrhage with heart rate greater than or equal to 120

  ****OR**

  Uncontrolled bleeding despite tourniquet application
  Adults: Tranexamic Acid (TXA) 1 gm (10 mL) IVPB. Infuse in 50-100 mL normal saline, administer over 10 minutes.

  **ADMINISTRATION OF TRANEXAMIC ACID (TXA) TO PEDIATRIC PATIENTS IS NOT PERMITTED.**

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**Patient Disposition**

- Attempt to limit scene time to ten (10) minutes or less when Trauma Triage Criteria has been met. Do not delay transport with nonessential treatment of non-entrapped, transport ready, critical trauma patients.

- **CONTACT A SINGLE TRAUMA BASE HOSPITAL FOR: ANY CRITICAL TRAUMA PATIENT OR MASS CASUALTY / MASS PATIENT INCIDENT (MCI / MPI),**

- **CONTACT A SINGLE BASE HOSPITAL FOR: ANY PATIENT THAT HAS BEEN SEXUALLY ASSAULTED OR INCIDENTS WHEN LAW ENFORCEMENT REQUESTS AN “OK TO BOOK” EXAM**
4401 — Suspected Acute Coronary Syndrome (ACS) 1 of 2

<table>
<thead>
<tr>
<th>BLS Patient Management</th>
<th>ALS Patient Management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Establish, maintain, and ensure:</strong></td>
<td><strong>STEMI Triage and Destination</strong></td>
</tr>
<tr>
<td>A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated</td>
<td><strong>Suspect a STEMI if any one (1) of the following is true:</strong></td>
</tr>
<tr>
<td>B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present</td>
<td>o The 12-lead ECG shows 1 mm or greater ST-segment elevation in two (2) or more contiguous leads, with reciprocal depression</td>
</tr>
<tr>
<td>C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated</td>
<td>o Paramedic interpretation of the 12-lead ECG is STEMI</td>
</tr>
<tr>
<td><strong>Oxygen</strong></td>
<td>o The ECG monitor reads: <em><strong>Acute MI</strong></em> or <em><strong>Acute MI Suspected</strong></em> or the equivalent</td>
</tr>
<tr>
<td>As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD</td>
<td>Immediately transmit the 12-lead ECG and make early notification to the closest STEMI Receiving Center prior to transport, or as soon as a STEMI is identified. Perform serial 12-lead ECGs when an acute MI is suspected or confirmed</td>
</tr>
<tr>
<td><strong>Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements</strong></td>
<td><strong>Establish, maintain, and ensure peripheral IV and/or IO access. Consider bilateral large bore IV access when a STEMI is suspected or confirmed</strong></td>
</tr>
<tr>
<td><strong>When the patient’s systolic BP is greater than 90 mmHg, assist them with administration of their physician prescribed Nitroglycerin, to a max of 1.2 mg. Monitor the patient for signs of hypotension. Record the patient’s self-administration in the ePCR as, “Self-administered”</strong></td>
<td><strong>For suspected ACS</strong></td>
</tr>
<tr>
<td><strong>Assist the patient with administration of Aspirin to a max dose of 324 mg (four 81 mg chewable tablets). Monitor the patient. Record the patient’s self-administration in the ePCR as, “Self-Administered”</strong></td>
<td>Adults: Aspirin 324 mg (four 81 mg chewable tablets)</td>
</tr>
<tr>
<td><strong>Attach ECG leads to the patient when a paramedic is present. May assist with placement of the 12-lead cables</strong></td>
<td><strong>ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</strong></td>
</tr>
</tbody>
</table>

**ADMINISTRATION OF ASPIRIN TO PEDIATRIC PATIENTS IS NOT PERMITTED.**

Adults: Nitroglycerin 0.4 mg (1 tablet or 1 metered spray) SL when the patient’s systolic BP is greater than 90 mmHg. **MAY REPEAT TWICE AT 3-5 MINUTE INTERVALS. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

**AND**

Nitroglycerin 1 gm (1 inch) transdermal paste when the patient’s systolic BP is greater than 90 mmHg. If systolic BP falls below 90 mmHg, wipe away paste. **ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**
Administration following the patient’s use of a PDE5 inhibitor (ex: Cialis / tadalafil, Levitra / vardenafil, Stendra / avanafil or Viagra / sildenafil) requires a base hospital physician order (BHPO).

ADMINISTRATION OF NITROGLYCERIN TO PEDIATRIC PATIENTS IS NOT PERMITTED.

- For suspected ACS with persistent chest discomfort unresponsive to Nitroglycerin
  Adults: Fentanyl 50 mcg (1 mL) slow IV/IO push or IM/IN. Patient’s systolic BP must be greater than or equal to 90 mmHg at the time of administration. **MAY REPEAT ONCE, IN 5-10 MINUTES, DEPENDENT ON PAIN SEVERITY, TO A MAX OF 100 MCG. ADDITIONAL ADMINISTRATIONS AFTER 100 MCG REQUIRE A BASE HOSPITAL ORDER (BHO).**
PURPOSE:
To describe the medical orders that EMS personnel must follow during care of the mechanical circulatory support device patient. These medical orders are performed under medical direction by the Riverside County EMS Agency (REMSA) Medical Director through this written / standing order. These medical orders may also be provided, modified, and/or supervised by the mobile intensive care nurse (MICN) and/or base hospital physician (BHP) through on-line (remote verbal order) or on-scene procedure authorization. The REMSA Medical Director is responsible and accountable for medical control of the EMS system. Each MICN and BHO is responsible and accountable for medical direction given to EMS personnel.

### Mechanical Circulatory Support Devices: Comparison

<table>
<thead>
<tr>
<th>Ventricular Assist Device (VAD)</th>
<th>Total Artificial Heart (TAH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usually pulseless</td>
<td>Pulsatile</td>
</tr>
<tr>
<td>ECG shows native heart rhythm</td>
<td>ECG is meaningless because there is no heart</td>
</tr>
<tr>
<td><strong>Do NOT</strong> administer NTG</td>
<td>NTG may be administered for systolic blood pressure greater than 140 mmHg</td>
</tr>
<tr>
<td>May perform chest compressions for a cardiac rhythm of</td>
<td>Do <strong>NOT</strong> perform chest compressions</td>
</tr>
<tr>
<td>VF, VT, or asystole</td>
<td>Do <strong>NOT</strong> cardiovert, externally pace, or defibrillate</td>
</tr>
<tr>
<td>May cardiovert, externally pace, or defibrillate</td>
<td>The TAH’s Freedom Driver is audible without a stethoscope, making a “galloping” type of sound</td>
</tr>
<tr>
<td>Must auscultate the left upper quadrant of the patient’s abdomen for the “hum” of the VAD</td>
<td>Will not have an ICD</td>
</tr>
<tr>
<td>Will usually have an ICD</td>
<td>Blood pressure is obtainable utilizing a normal sphygmomanometer</td>
</tr>
<tr>
<td>May be able to obtain a Mean Arterial Pressure (MAP) using a Doppler device only. Normal sphygmomanometer will not work. MAP should be from 70 – 85 mmHg</td>
<td></td>
</tr>
</tbody>
</table>

### BLS Patient Management
- **Establish, maintain, and ensure:**
  A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPA) as clinically indicated
  B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

### ALS Patient Management
- **Establish, maintain, and ensure peripheral IV and/or IO access for emergency stabilization, and/or as clinically indicated**
  Consider the need for additional sites as clinically indicated
- **Do not administer Aspirin or Nitroglycerin to VAD patients**
- **Oxygen**
  As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD.

- Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements.

- **CONTACT A SINGLE BASE HOSPITAL AS SOON AS POSSIBLE TO GIVE THEM TIME TO CONTACT THE VAD / MCS COORDINATOR**
  The VAD/MCS Coordinator will assist the base hospital with troubleshooting the equipment.

  Give report and describe any advanced directives (DNR/POLST/DNR medallion)

  Advise the base hospital of the implanting hospital. For patients from outside of the area, the default Coordinator will be Loma Linda University Medical Center (Main Campus).

- The VAD Coordinator(s) cannot provide online medical direction.

- Assist the patient’s family and/or caregiver with troubleshooting the VAD for disconnection, power or mechanical failure.

  Provide patient care as directed by applicable REMSA treatment protocols with the exception of chest compressions, defibrillation, external pacing or cardioversion in TAH patients.

  Do not assist VAD patients with Aspirin and/or Nitroglycerin administration.

- **CONSIDER:** Normal saline 250 mL IV/IO bolus. MAY REPEAT AS CLINICALLY INDICATED TO A MAX ADMINISTRATION OF 2 L. Volume replacement is the first-line therapy in the pre-load dependent VAD patient.

- **CONSIDER:**
  For amnesic effect in the conscious VAD patient prior to synchronized cardioversion
  Midazolam 2.5 mg (0.5 mL) slow IV/IO push.
  ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

  ****OR****
  Midazolam 5 mg (1 mL) IM/IN. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

- **CONSIDER:**
  Early and aggressive synchronized cardioversion for the symptomatic VAD patient who is experiencing a preload-disruptive malignant dysrhythmia (i.e., VT with pulses)
  - Initial shock – 100j
  - Second shock – 150j
  - Subsequent shocks – 200j

- Perform chest compressions on VAD patients only, only in the following circumstances:
  - If the patient is unconscious, apneic, and showing VT, VF, or asystole on the ECG monitor
  - If the patient is apneic with cyanosis and the cardiac monitor shows a perfusing rhythm but capillary refill is greater than 3 seconds

- Defibrillate at the manufacturer’s recommended joule setting for pulseless VT and VF.

### Patient Disposition

- The base hospital will determine treatment, and destination, while considering the VAD coordinator’s recommendations.
### BLS Patient Management

- **Establish, maintain, and ensure:**
  - A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  - B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  - C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

- **Oxygen**
  - As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

- Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements

- Attach ECG leads to the patient when a paramedic is present. May assist with placement of the 12-lead cables

### ALS Patient Management

- **Establish, maintain, and ensure peripheral IV and/or IO access for emergency stabilization, and/or as clinically indicated, in adult and pediatric patients**
  - Consider the need for additional sites as clinically indicated

- **Interpret and continuously monitor ECG and vital signs**
  - Perform, interpret, and transmit 12-lead ECG(s), as clinically indicated, when:
    - A STEMI is suspected
    - A STEMI is ECG-monitor identified or
    - The patient’s cardiac rhythm is atypical or difficult to interpret

- **For symptomatic supraventricular tachycardia (SVT) Valsalva Maneuver. MAY REPEAT PRN.**
  - Adults: Adenosine 12 mg (4 mL) rapid IV/IO push. Follow immediately with 20 mL normal saline rapid IV/IO push. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**
  - Pediatrics: Adenosine 0.2 mg / kg rapid IV/IO push. Follow immediately with 20 mL normal saline rapid IV/IO push. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- **For symptomatic tachycardia with pulses**
  - **INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO)**
  - Adults: Amiodarone 150 mg (3 mL) IVPB. Infuse in 50-100 mL normal saline, administer over 10 minutes.
**Pediatrics**: Amiodarone 5 mg / kg IVPB. **MAX SINGLE DOSE TO INFUSE IS 150 MG.** Infuse in 50-100 mL normal saline, administer over 10 minutes. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

**INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).**

**Adults**: Lidocaine 1 mg / kg slow IV/IO push followed by the second dose (0.5 mg / kg) 8-10 minutes later, to a max of 3 mg / kg.

**Pediatrics**: Lidocaine 1 mg / kg slow IV/IO push followed by the second dose (1 mg / kg) 8-10 minutes later. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- **For shock due to symptomatic tachycardia**
  - **Adults**: Normal saline 250 mL IV/IO bolus. **MAY REPEAT AS CLINICALLY INDICATED TO A MAX ADMINISTRATION OF 2 L.**
  - **Pediatrics**: Normal saline 20 mL / kg IV/IO bolus. Use a volume control administration set for accurate dosing. **MAY REPEAT AS CLINICALLY INDICATED.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- **For amnesic effect prior to synchronized cardioversion**
  - **Adults**: Midazolam 2.5 mg (0.5 mL) slow IV/IO push. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**
    - **OR**
      - Midazolam 5 mg (1 mL) IM/IN. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

**INITIAL AND REPEAT PEDIATRIC ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

**Pediatrics**: Midazolam 0.1 mg / kg slow IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- **OR**
  - Midazolam 0.2 mg / kg IM/IN. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
- **Synchronized cardioversion for symptomatic SVT or VT with pulses**
  - Initial shock – 100j
  - Second shock – 150j
  - Subsequent shocks – 200j
  - **Adults:** MAY REPEAT PRN AT 200j

SYNCHRONIZED CARDIOVERSION OF PEDIATRIC PATIENTS REQUIRES A BASE HOSPITAL ORDER (BHO). For assistance with accurate joule settings, refer to the REMSA PMDR or REMSA app.
### BLS Patient Management

- **Establish, maintain, and ensure:**
  
  **A.** A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  
  **B.** Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  
  **C.** Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

- **Oxygen**
  
  As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

- Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements

- Attach ECG leads to the patient when a paramedic is present. May assist with placement of the 12-lead cables

### ALS Patient Management

- **Establish, maintain, and ensure peripheral IV and/or IO access for emergency stabilization, and/or as clinically indicated, in adult and pediatric patients**

- Consider the need for additional sites as clinically indicated

- **Interpret and continuously monitor ECG and vital signs**

  Perform, interpret, and transmit 12-lead ECG(s), as clinically indicated, when:
  
  - A STEMI is suspected
  
  - A STEMI is ECG-monitor identified or
  
  - The patient’s cardiac rhythm is atypical or difficult to interpret

- **For symptomatic bradycardia with pulses**

  **Adults:** Atropine 1 mg (10 mL) IV/IO. **MAY REPEAT EVERY 3-5 MINUTES TO A MAX OF 3 MG (30 mL).**

  **INITIAL AND REPEAT PEDIATRIC ADMINISTRATION REQUIRES A BASE HOSPITAL ORDER (BHO).**

  **Pediatrics:** Atropine 0.02 mg / kg IV/IO. **MAX SINGLE DOSE IS 0.5 MG.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- **For amnesic effect prior to Transcutaneous Cardiac Pacing (TCP)**

  **Adults:** Midazolam 2.5 mg (0.5 mL) slow IV/IO push. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  ****OR**

  Midazolam 5 mg (1 mL) IM/IN. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **INITIAL AND REPEAT PEDIATRIC ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **Pediatrics:** Midazolam 0.1 mg / kg slow IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
**OR**

Midazolam 0.2 mg / kg IM/IN. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- **Transcutaneous Pacing (TCP)**
  Begin at 20 mA and 70 bpm. Titrate in 5 mA increments to find the minimum current required to maintain electrical and mechanical capture. Increase in 10 bpm increments, up to 100 bpm maximum, to gain adequate cardiac output and tissue perfusion.

  **TRANSCUTANEOUS CARDIAC PACING OF PEDIATRIC PATIENTS REQUIRES A BASE HOSPITAL ORDER (BHO).**

- **For discomfort associated with TCP**
  **Adults:** Fentanyl 50 mcg (1 mL) slow IV/IO push or IM/IN. Patient’s systolic BP must be greater than or equal to 90 mmHg at the time of administration. **MAY REPEAT ONCE, IN 5-10 MINUTES, DEPENDENT ON PAIN SEVERITY, TO A MAX OF 100 MCG. ADDITIONAL ADMINISTRATIONS AFTER 100 MCG REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **INITIAL AND REPEAT PEDIATRIC ADMINISTRATION REQUIRES A BASE HOSPITAL ORDER (BHO).**
  **Pediatrics:** Fentanyl 1 mcg / kg slow IV/IO push or IM/IN. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

**Patient Disposition**

- **CONTACT A SINGLE BASE HOSPITAL FOR ALL PEDIATRIC PATIENTS EXPERIENCING SYMPTOMATIC BRADYCARDIA**
# 4405 Cardiac Arrest Treatment Protocol

<table>
<thead>
<tr>
<th>BLS Patient Management</th>
<th>ALS Patient Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish, maintain, and ensure:</td>
<td>Ensure HP CPR is being performed according to current REMSA training and standards</td>
</tr>
<tr>
<td>A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated</td>
<td>Attach, interpret, and continuously monitor EtCO₂. If EtCO₂ is less than 10 mmHg, attempt to improve CPR quality</td>
</tr>
<tr>
<td>B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present</td>
<td>Analyze ECG rhythm as soon as possible</td>
</tr>
<tr>
<td>C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated</td>
<td>Defibrillate when indicated. In cases of monitored shockable rhythms, stack defibrillations as clinically indicated</td>
</tr>
<tr>
<td>Oxygen</td>
<td>When BLS airway management is inadequate and/or ineffective: Orotracheal Intubation (OTI)</td>
</tr>
<tr>
<td>Utilize high flow. Optimize ventilation and oxygenation to maintain SpO₂ of 94% or greater but do not hyperventilate</td>
<td>PATIENTS MUST WEIGH MORE THAN 36 KG (~79 lbs) AND THEIR LENGTH (MEASURED FROM CROWN TO HEEL) MUST EXCEED THAT OF ANY COMMERCIALLY AVAILABLE, STANDARDIZED LENGTH-BASED PEDIATRIC RESUSCITATION TAPE.</td>
</tr>
<tr>
<td>Attach ECG electrodes / defibrillation pads to the patient. If / when return of spontaneous circulation (ROSC) is achieved, may assist with placement of the 12-lead cables</td>
<td>Establish, maintain, and ensure a patent airway using orotracheal intubation, as clinically indicated.</td>
</tr>
<tr>
<td>Perform CPR according to current REMSA training and standards</td>
<td>Attach, interpret, and continuously monitor EtCO₂. Utilize a colormetric device immediately after orotracheal intubation to confirm correct placement of the ETT THEN utilize waveform / digital capnography to:</td>
</tr>
<tr>
<td>➢ Ensure High Performance (HP) CPR by utilizing assigned roles and tasks during resuscitation (i.e., Pit Crew CPR)</td>
<td>• Identify ETT dislodgement</td>
</tr>
<tr>
<td>➢ Emphasize correct hand placement, compression depth (hard) and rate (fast) with complete chest recoil</td>
<td>• Assist in monitoring the effectiveness of ventilations and perfusion in any patient</td>
</tr>
<tr>
<td>➢ Minimize interruption of chest compressions</td>
<td>• Monitor the quality of chest compressions in cardiac arrest patients</td>
</tr>
<tr>
<td>➢ Avoid hyperventilation</td>
<td>• Confirm ROSC</td>
</tr>
<tr>
<td>In cases of submersion incidents: do not delay hand ventilation to suction foamy secretions. Ventilate through the foam and suction once available</td>
<td></td>
</tr>
</tbody>
</table>
• **Analyze AED as soon as possible**
  Defibrillate when indicated
  Resume CPR immediately after each defibrillation
  Reanalyze AED every 2 minutes and defibrillate when indicated
  Use pediatric attenuator (pad-cable system or key) in pediatrics less than 8 years of age

• **Recognize ROSC when one of the following signs is observed**
  1. ECG rhythm and skin signs improve
  2. EtCO₂ abruptly increases to at least a normal value (between 35-40 mm Hg) or
  3. Blood pressure becomes measurable

Use direct laryngoscopy, Magill forceps and suction as clinically indicated. When suctioning, introduce 3 mL normal saline PRN to loosen thick secretions

• **When airway management is required for a patient that is apneic in whom less invasive techniques (BLS airway management) have failed AND OTI has failed:**
  i-gel
  **PATIENTS MUST WEIGH MORE THAN 36 KG (~79 lbs) AND THEIR LENGTH (MEASURED FROM CROWN TO HEEL) MUST EXCEED THAT OF ANY COMMERCIALY AVAILABLE, STANDARDIZED LENGTH-BASED PEDIATRIC RESUSCITATION TAPE.**

  **INSERTION OF THE I-GEL IN PATIENTS APPEARING, OR KNOWN TO BE, 14 YEARS OF AGE OR YOUNGER IS NOT PERMITTED.**

  Establish, maintain, and ensure a patent airway using an i-gel, as clinically indicated.

  **Attach, interpret, and continuously monitor EtCO₂.**

• **For passive gastric decompression after OTI or i-gel insertion:**
  **Orogastric (OG) tube**
  o After successful OTI, insertion of an appropriately sized OG tube is **highly recommended.**
  o After successful placement of the i-gel, insertion of an appropriately sized OG tube is **MANDATORY.**

• **For cardiac arrest**
  **Adults:** Epinephrine 1 mg (10 mL, 0.1 mg / mL concentration) IV/IO. **MAY REPEAT EVERY 5 MINUTES TO A MAX OF 5 MG (50 mL).** **ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **Pediatrics:** Epinephrine 0.01 mg / kg (0.1 mg / mL concentration) IV/IO. **MAY REPEAT EVERY 5 MINUTES TO A MAX OF FIVE (5) ADMINISTRATIONS.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

  **Adults:** **INITIAL AND REPEAT ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  Atropine 1 mg (10 mL) IV/IO.

  **ADMINISTRATION OF ATROPINE TO PEDIATRIC PATIENTS IN CARDIAC ARREST IS NOT PERMITTED.**
• For cardiac arrest with ventricular fibrillation (VF) or ventricular tachycardia (VT)
  Adults: Amiodarone 300 mg (6 mL) IV/IO. MAY REPEAT ONCE AT 150 MG (3 mL) 5 MINUTES AFTER FIRST (1st) DOSE, TO A MAX OF 450 MG. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

  INITIAL AND REPEAT PEDIATRIC ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).
  Pediatrics: Amiodarone 5 mg / kg IV/IO. MAX SINGLE DOSE IS 150 MG. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

• For cardiac arrest with ventricular fibrillation (VF) or ventricular tachycardia (VT) WHEN AMIODARONE IS UNAVAILABLE
  INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).
  Adults: Lidocaine 1 mg / kg slow IV/IO push followed by the second dose (0.5 mg / kg) 8-10 minutes later, to a max of 3 mg / kg.

  Pediatrics: Lidocaine 1 mg / kg slow IV/IO push followed by the second dose (1 mg / kg) 8-10 minutes later. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

• For cardiac arrest with ventricular fibrillation (VF) or ventricular tachycardia (VT) WHEN ASSOCIATED WITH TORSADES DE POINTES / POLYMORPHIC VT
  INITIAL AND REPEAT ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).
  Adults: Magnesium Sulfate 2 gm (4 mL) slow IV/IO push.

  Pediatrics: Magnesium Sulfate 50 mg / kg slow IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

• For cardiac arrest with suspected metabolic acidosis, hyperkalemia, or tricyclic antidepressant overdose
  Adults: Sodium Bicarbonate 50 mEq (50 mL) IV/IO push. MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).
INITIAL AND REPEAT PEDIATRIC ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).
Pediatrics: Sodium Bicarbonate 1 mEq / kg IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- For cardiac arrest with suspected hypocalcemia, hyperkalemia, hypermagnesemia, or calcium channel blocker overdose

INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).

Adults: Calcium Chloride 1 gm (10 mL) IV/IO.

Pediatrics: Calcium Chloride 20 mg / kg IV/IO. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- For cardiac arrest in a known / suspected dialysis patient

Adults: Calcium Chloride 1 gm (10 mL) IV/IO.

ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

INITIAL AND REPEAT PEDIATRIC ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).
Pediatrics: Calcium Chloride 20 mg / kg IV/IO. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- Upon ROSC:
Perform, interpret, and transmit 12-lead ECG(s), as clinically indicated, when:
  - A STEMI is suspected
  - A STEMI is ECG-monitor identified or
  - The patient’s cardiac rhythm is atypical or difficult to interpret

- For shock following ROSC

Adults: Normal saline 250 mL IV/IO bolus. MAY REPEAT AS CLINICALLY INDICATED TO A MAX ADMINISTRATION OF 2 L.

Pediatrics: Normal saline 20 mL / kg IV/IO bolus. Use a volume control administration set for accurate dosing. MAY REPEAT AS CLINICALLY INDICATED. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
Adults and pediatrics: Push Dose Epinephrine 0.01 mg (1 mL, 0.01 mg / mL concentration) IV/IO. MAY REPEAT PRN EVERY 1-5 MINUTES TO MAINTAIN A SYSTOLIC BP GREATER THAN:

90 mmHg – adults
70 mmHg – pediatrics

WHEN PATIENT’S SYSTOLIC BP IS LESS THAN 90 MMHG:

EPINEPHRINE DRIP
Adults: Epinephrine 0.4 mg (0.4 mL, 1:1,000) IVPB, infused in 100 mL normal saline

**OR**

Epinephrine 0.2 mg (0.2 mL, 1:1,000) IVPB, infused in 50 mL normal saline.

RATE WILL BE CONTROLLED VIA DIAL-A-FLOW. INCREASE DOsing EVERY 2-3 MINUTES, TO MAX 10 MCG/MIN, TO ACHIEVE OR MAINTAIN SYSTOLIC BP OF 90 MMHG OR GREATER.
- Begin infusion at 1 mcg/min (15 ml/hr) then increase to
- 2 mcg/min (30 ml/hr) then increase to
- 4 mcg/min (60 ml/hr) then increase to
- 10 mcg/min (150 ml/hr)

IF MAX DOSING HAS BEEN REACHED AND A SYSTOLIC BP OF 90 MMHG HAS NOT BEEN ACHIEVED, BEGIN ADMINISTERING PUSH DOSE EPINEPHRINE (0.01 MG / 1 mL) PRN EVERY 1-5 MINUTES IN ADDITION TO THE DRIP UNTIL A SYSTOLIC BP OF 90 MMHG OR GREATER IS ATTAINED

ADMINISTRATION OF EPINEPHRINE BY IVPB DRIP TO PEDIATRIC PATIENTS IS NOT PERMITTED

For anxiety following ROSC
INITIAL AND REPEAT ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

Adults: Midazolam 1 mg (0.2 mL) slow IV/IO push or IM/IN.

ADMINISTRATION OF MIDAZOLAM TO PEDIATRIC PATIENTS FOR POST-ROSC ANXIETY IS NOT PERMITTED.
For pain following ROSC

INITIAL AND REPEAT ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

Adults: Fentanyl slow IV/IO push or IM/IN with dosing dependent on pain. Patient’s systolic BP must be greater than or equal to 90 mmHg at the time of administration.

ADMINISTRATION OF FENTANYL TO PEDIATRIC PATIENTS FOR POST-ROSC PAIN IS NOT PERMITTED.

For MEDICAL cardiac arrest patients, consider discontinuing resuscitation if all of the following steps have been taken

1. A minimum of 20 minutes of HP CPR have been performed but ROSC has not been achieved
2. IV or IO access has been established
3. The patient’s airway has been successfully managed with a clinically indicated airway device
4. Rhythm-appropriate medications, and defibrillations, have been administered according to applicable protocol(s) with no ROSC
5. Persistent asystole or agonal rhythm is present (greater than 20 minutes). Reversible causes have been identified and treated, as clinically indicated, with no positive neurologic response or ROSC
6. The patient’s cardiac rhythm is not refractory VF or VT
7. Spontaneous circulation (palpable pulse) was not achieved at any point during resuscitation

DISCONTINUING RESUSCITATION OF A PEDIATRIC PATIENT REQUIRES A BASE HOSPITAL PHYSICIAN ORDER (BHPO).

Patient Disposition

• OHCA WITH ROSC PATIENTS OF UNKNOWN OR SUSPECTED CARDIAC ETIOLOGY SHALL BE TRANSPORTED TO THE CLOSEST STEMI CENTER (SRC)

• Consider transporting patients with an obvious, non-cardiac etiology to the closest receiving facility

• In cases where the closest SRC is greater than 30 minutes away and EMS aircraft transport is not available, consider transporting to the closest receiving facility
Respiratory Distress

Treatment Protocol

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| • Establish, maintain, and ensure:  
  A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated  
  B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present  
  C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated  |
| • Oxygen  
  As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD  |
| • Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements  |
| • If epiglottitis is suspected, do not visualize the throat. Position the patient upright / full fowlers position, leaning forward, to allow drainage of secretions. Minimize stimulation, movement and manipulation of the mouth, throat, and neck  |
| • For known or suspected submersion incidents in the presence of altered mental status or unresponsiveness  
  If laryngospasms are suspected, give five (5) initial breaths, and provide hand ventilations after the insertion of an airway adjunct. Ventilate through foamy secretions and suction as needed. If symptoms should resolve, encourage transport for continued evaluation  |
| • Establish, maintain, and ensure peripheral IV and/or IO access for emergency stabilization, and/or as clinically indicated, in adult and pediatric patients  |
|  
  Consider the need for additional sites as clinically indicated  |
|  
  Interpret and continuously monitor ECG, vital signs, SpO₂ and waveform / digital capnography  |
|  
  Perform, interpret, and transmit 12-lead ECG(s), as clinically indicated, when:  
  o A STEMI is suspected  
  o A STEMI is ECG-monitor identified or  
  o The patient’s cardiac rhythm is atypical or difficult to interpret  |
| • For bronchospasm  
  Adults and pediatrics: Albuterol 2.5 mg / 3 mL (one pouch), nebulized. MAY REPEAT PRN.  |
|  
  Adults and pediatrics: Ipratropium Bromide 0.5 mg / 2.5 mL (one pouch), mixed with one (1) pouch of Albuterol, then nebulized. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).  |
|  
  Adults: Epinephrine 0.3 mg (0.3 mL, 1 mg / mL concentration) IM.  |
|  
  Pediatrics: Epinephrine 0.01 mg / kg (1 mg / mL concentration) IM. MAX SINGLE DOSE IS 0.3 MG. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.  |
• For respiratory distress of suspected cardiac origin / CHF exacerbation
  When the patient’s systolic BP is greater than 90 mmHg, assist them with administration of their physician prescribed Nitroglycerin, to a max of 1.2 mg. Monitor the patient for signs of hypotension. Record the patient’s self-administration in the ePCR as, “Self-administered”

• For respiratory distress of suspected pulmonary origin
  Assist the patient with administration of their physician prescribed MDI or other appropriate medication. Record the patient’s self-administration in the ePCR as, “Self-administered”

• Attach ECG leads to the patient when a paramedic is present. May assist with placement of the 12-lead cables

• Prepare for, assist with, and/or apply CPAP as directed when a paramedic is present

• For asthma exacerbation unresponsive to Albuterol and Ipratropium breathing treatments
  INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).
  Adults: Magnesium Sulfate 2 gm / 4 mL slow IV/IO push.

  Pediatrics: Magnesium Sulfate 50 mg / kg slow IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

• For suspected esophageal food impaction
  INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).
  Adults: Glucagon 1 mg (1 mL) IV/IO/IM.

  Pediatrics:
  Weight = 21 kg (=46 lbs) or less: Glucagon 0.5 mg (0.5 mL) IV/IO/IM.
  Weight = 22 kg (=48 lbs) or more: Glucagon 1 mg (1 mL) IV/IO/IM.

• For dyspnea with suspected CHF
  Nitroglycerin 0.4 mg (1 tablet or 1 metered spray) SL when the patient’s systolic BP is greater than 90 mmHg. MAY REPEAT TWICE AT 3-5 MINUTE INTERVALS. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

  **AND**

  Nitroglycerin 1 gm (1 inch) transdermal paste when the patient’s systolic BP is greater than 90 mmHg. If systolic BP falls below 90 mmHg, wipe away paste. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

  Administration following the patient’s use of a PDE5 inhibitor (ex: Cialis / tadalafl, Levitra / vardenafil, Stendra / avanafil or Viagra / sildenafil) requires a base hospital physician order (BHPO).

  ADMINISTRATION OF NITROGLYCERIN TO PEDIATRIC PATIENTS IS NOT PERMITTED.
• For severe respiratory distress suggestive of:
  o CHF exacerbation
  o COPD exacerbation
  o Asthma exacerbation
  o Non-fatal drowning

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)
Begin at 5 cmH₂O and increase pressure in 2.5 – 5 cmH₂O increments, to max 15 cmH₂O. **TITRATE TO RELIEF OF DYSPNEA. INCREASING PRESSURE TO 20 cmH₂O REQUIRES A BASE HOSPITAL ORDER (BHO).**

**CPAP APPLICATION AND USE IN PEDIATRICS IS NOT PERMITTED.**

Evaluate the patient for
  o Normalizing of inspiratory-to-expiratory time ratio (i.e. - 1:2)
  o Increasing SpO₂
  o Tolerance of CPAP

Attach, interpret, and continuously monitor EtCO₂

Request additional resources as required to ensure that CPAP is continued throughout the prehospital interval

**THE PATIENT'S SYSTOLIC BP MUST BE GREATER THAN 90 MMHG AT ONSET, AND DURING, CPAP TREATMENT. IF THE PATIENT'S SYSTOLIC BP FALLS BELOW 90 MMHG, CONTACT A SINGLE BASE HOSPITAL FOR DIRECTION.**

• For anxiety related to the use of CPAP
  **Adults:** 1 mg (0.2 mL) slow IV/IO push or IM/IN. Patient’s systolic BP must be greater than or equal to 90 mmHg at the time of administration. **ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **ADMINISTRATION OF MIDAZOLAM TO PEDIATRIC PATIENTS FOR ANXIETY RELATED TO THE USE OF CPAP IS NOT PERMITTED.**
# 4501 Seizures

## Treatment Protocol

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<td>A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated</td>
<td>A. Establish, maintain, and ensure peripheral IV and/or IO access for emergency stabilization, and/or as clinically indicated, in adult and pediatric patients</td>
</tr>
<tr>
<td>B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present</td>
<td>Consider the need for additional sites as clinically indicated</td>
</tr>
<tr>
<td>C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated</td>
<td><strong>For continuous or recurrent tonic-clonic seizures unrelated to eclampsia</strong></td>
</tr>
<tr>
<td><strong>Oxygen</strong></td>
<td><strong>Adults:</strong></td>
</tr>
<tr>
<td>As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD</td>
<td>Midazolam 2.5 mg (0.5 mL) slow IV/IO push. <strong>MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</strong></td>
</tr>
<tr>
<td><strong>Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements</strong></td>
<td><strong>OR</strong> Midazolam 5 mg (1 mL) IM/IN. <strong>MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</strong></td>
</tr>
<tr>
<td><strong>Attach ECG leads to the patient when a paramedic is present</strong></td>
<td><strong>Pediatrics:</strong> Midazolam 0.1 mg / kg slow IV/IO push. <strong>MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</strong> For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
<tr>
<td><strong>Obtain and evaluate blood glucose</strong></td>
<td><strong>OR</strong> Midazolam 0.2 mg / kg IM/IN. <strong>MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).</strong> For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.</td>
</tr>
<tr>
<td><strong>Protect the patient from injury. Loosen restrictive clothing. Do not forcibly restrain. Preserve privacy</strong></td>
<td><strong>Patient Disposition</strong></td>
</tr>
</tbody>
</table>

**CONTACT A SINGLE BASE HOSPITAL FOR ANY REFUSAL INVOLVING A NON-EMANCIPATED MINOR. THE REFUSAL MUST BE MADE BY THE PARENT, PARENTAL DESIGNEE, OR GUARDIAN.**
### BLS Patient Management

- **Establish, maintain, and ensure:**
  - A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  - B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  - C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

  **Give nothing by mouth**

- **Oxygen**
  - As clinically indicated. Titrate to maintain, or increase, SpO2 to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

- Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements

- Protect the patient from injury. Loosen restrictive clothing. Avoid unnecessary movement. Preserve privacy

- Attach ECG leads to the patient when a paramedic is present

- Obtain and evaluate blood glucose

- **Determine**
  - o Last known well time (LKWT)
  - o The time the patient was discovered
  - o The time the symptoms began and
  - o If the patient uses of blood thinners

### ALS Patient Management

- **Establish, maintain, and ensure peripheral IV and/or IO access for emergency stabilization, and/or as clinically indicated**

  Consider the need for additional sites as clinically indicated

- **Interpret and continuously monitor ECG and vital signs**
Perform modified Los Angeles Prehospital Stroke Screen (mLAPSS) Exam:
- Evaluate the patient’s age, duration of symptoms, medical history implications AND
  - **Facial Symmetry:** Ask the patient to smile or show their teeth. Abnormal findings include one side of the face not moving or not moving as well as the other
  - **Arm Drift:** Ask the patient to close their eyes and hold their arms straight out to their front for a few seconds. Abnormal findings include one arm not moving or moving but drifting
  - **Grip Strength:** Ask the patient to reach out and squeeze both of your hands. Abnormal findings include unilateral weakness, bilateral weakness, or the inability to perform

<table>
<thead>
<tr>
<th>mLAPSS Criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age over 17 years?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. No prior history of seizure disorder</td>
<td></td>
<td></td>
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<tr>
<td>3. LKWT within 24 hours?</td>
<td></td>
<td></td>
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<tr>
<td>4. Patient was ambulatory at baseline prior to event?</td>
<td></td>
<td></td>
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<tr>
<td>5. Blood glucose between 60 and 400?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Exam (look for obvious asymmetry):</td>
<td>Normal, Bilaterally</td>
<td>Right</td>
</tr>
</tbody>
</table>
  - **Facial Smile/Grimace**       |     |    |
  - **Grip**                       |     |    |
  - **Arm Weakness**               |     |    |

mLAPSS is positive if criteria #1-5 are YES and unilateral weakness is present in any finding of #6.
*If mLAPSS is positive, initiate rapid transport and early stroke receiving center notification.*
*Transport patient to closest most appropriate stroke center.*

Patient Disposition
- Attempt to limit scene time to ten (10) minutes or less, do not delay transport with nonessential treatment
- Prior to transport, contact the closest most appropriate stroke center for early notification and Stroke Team activation
### BLS Patient Management

- **Establish, maintain, and ensure:**
  - **A.** A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  - **B.** Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  - **C.** Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

- **Oxygen**
  - As clinically indicated. Titrate to maintain, or increase, SpO2 to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

- **Obtain and evaluate blood glucose**

- **Attach ECG leads to the patient when a paramedic is present**

- **Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements**

- **If able, and applicable, contact Poison Control at 1-800-222-1222**

**REMSA Authorized Public Safety Personnel **AND first response agency BLS providers in the absence of ALS providers – LOSOP Approval Required**

- **For suspected dystonic reaction**
  - **Adults:** Diphenhydramine 50 mg (1 mL) IM or slow IV/IO push. **ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**
  
  **Pediatrics:** Diphenhydramine 1 mg / kg slow IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- **For respiratory depression / respiratory arrest with suspected narcotic overdose**
  - **Naloxone IN ONLY. MAY REPEAT ONCE.** Use REMSA approved administration device with REMSA approved pre-loaded dose.

### ALS Patient Management

- **Establish, maintain, and ensure peripheral IV and/or IO access for emergency stabilization, and/or as clinically indicated, in adult and pediatric patients**

  - **Consider the need for additional sites as clinically indicated**

- **Interpret and continuously monitor ECG, SpO2 and waveform / digital capnography**

- **For respiratory depression / respiratory arrest with suspected narcotic overdose**
  - **Adults:** Naloxone 0.5 mg (0.5 mL) IV/IO/IM/IN. **MAY REPEAT PRN. TITRATE TO IMPROVEMENT OF RESPIRATORY DEPRESSION, NOT RESOLUTION OF AMS.**

  **Pediatrics:** Naloxone 0.1 mg / kg IV/IO/IM/IN. **MAX SINGLE DOSE IS 0.5 MG. MAY REPEAT PRN. TITRATE TO IMPROVEMENT OF RESPIRATORY DEPRESSION, NOT RESOLUTION OF AMS.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- **For suspected dystonic reaction**
  - **Adults:** Diphenhydramine 50 mg (1 mL) IM or slow IV/IO push. **ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **Pediatrics:** Diphenhydramine 1 mg / kg slow IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

  **OR**

  Diphenhydramine 2 mg / kg IM. **MAX SINGLE DOSE IS 50 MG.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app. **ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**
**LOSOP required for BLS providers**

- For respiratory depression / respiratory arrest with suspected narcotic overdose
  
  **Adults:** Naloxone 0.5 mg (0.5 mL) **IN ONLY. MAY REPEAT PRN. TITRATE TO IMPROVEMENT OF RESPIRATORY DEPRESSION, NOT RESOLUTION OF AMS.**

  **Pediatrics:** 0.1 mg / kg **IN ONLY. MAX SINGLE DOSE IS 0.5 MG. MAY REPEAT PRN. TITRATE TO IMPROVEMENT OF RESPIRATORY DEPRESSION, NOT RESOLUTION OF AMS.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- For suspected beta blocker or calcium channel blocker overdose
  
  **INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **Adults:** Calcium Chloride 1 gm (10 mL) IVPB. Infuse in 50-100 mL normal saline, administer over 10 minutes.

  **Pediatrics:** Calcium Chloride 20 mg / kg IVPB. Infuse in 50-100 mL normal saline, administer over 10 minutes. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- For altered mental status and/or dysrhythmia with suspected cyclic antidepressant overdose
  
  **INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **Adults:** Sodium Bicarbonate 50 mEq (50 mL) IV/IO push.

  **Pediatrics:** Sodium Bicarbonate 1 mEq / kg IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
### BLS Patient Management

- **Establish, maintain, and ensure:**
  - A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  - B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  - C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

- **Oxygen**
  - As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

- Attach ECG leads to the patient when a paramedic is present

- Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements

- Apply four-point restraints and spit sock as clinically indicated. Never restrain a patient supine or prone. Transport in low to high Fowler’s position

- Prevent positional asphyxiation by avoiding prone positioning, hog-tie applications or limiting diaphragmatic excursion

- Perform cooling measures as clinically indicated

### ALS Patient Management

- Interpret and continuously monitor ECG, SpO₂ and waveform / digital capnography

- For patients requiring chemical restraint when physical restraints are ineffective and who pose an immediate danger to themselves or others, due to:
  - Severe agitation / aggression OR
  - Severe distress, who are at potential risk for sudden death

  *IM Versed is preferred in this circumstance.*

  **Adul**ts: Midazolam 5 mg (1 mL) IM/IN. MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

  **OR**

  Midazolam 2.5 mg (0.5 mL) slow IV/IO push. MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

  **Pediatrics**: Midazolam 0.2 mg / kg IM/IN. MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

  **OR**

  Midazolam 0.1 mg / kg slow IV/IO push. MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
• For hyperthermia or heat illness symptoms related to severe agitation / aggression / distress
  
  **Adults:** 250 mL IV/IO bolus. **MAY REPEAT AS CLINICALLY INDICATED TO A MAX ADMINISTRATION OF 2 L.**

  **Pediatrics:** 20 mL / kg IV/IO bolus. Use a volume control administration set for accurate dosing. **MAY REPEAT AS CLINICALLY INDICATED.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

• For suspected hyperkalemia associated with heat illness / hyperthermia
  
  **INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **Adults:** Sodium Bicarbonate 50 mEq (50 mL) IV/IO push.

  **Pediatrics:** Sodium Bicarbonate 1 mEq / kg IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
**Treatment Protocol**

**BLS Patient Management**

- If you are exposed to hazardous materials follow your agency’s procedure or, if none, begin self-decontamination and self-treatment. Don an escape hood when appropriate and if equipped. Escape to a safe location: 300 feet or more upwind, uphill, and upstream. Identify yourself as a patient.

- When you encounter possible hazardous materials, follow your agency’s procedure or, if none, then stage in a safe location: 300 feet or more upwind, uphill, and upstream. Maintain exit routes and deny entry. Ensure Hazardous Materials Response Team (HMRT) response. Mount a wind streamer to your vehicle’s antenna and monitor wind direction. Do not enter until the Incident Commander has deemed it reasonably ‘safe to enter.’

- When decontaminating the patient(s), follow your agency’s procedure or, if none and you are trained/equipped, remove and bag the patient’s clothing, jewelry, etc. Brush off dry chemicals and dilute excess liquid chemicals. Wash patient with mild soap and rinse off with large amounts of clean water. Flush contaminated eyes with saline for 15 minutes or until pain and irritation subside. Cover with warm dry clothing and/or blankets. Consult container label or any onsite MSDS for decontamination instructions. Remove label or copy page from MSDS, preserve in sealed plastic bag, and transport with the patient.

- Antidote:
  Consult container label or onsite MSDS for antidote instructions. Read and relate decontamination and antidote instructions to the base hospital.

  Do not spread contamination! Never transport a contaminated patient, container, or materials!

**ALS Patient Management**

- Establish, maintain, and ensure peripheral IV and/or IO access for emergency stabilization, and/or as clinically indicated, in adult and pediatric patients.

  Consider the need for additional sites as clinically indicated.

- Interpret and continuously monitor ECG, SpO2 and waveform / digital capnography.

- **For bronchospasm associated with suspected toxic inhalation**
  Adults and pediatrics: Albuterol 2.5 mg / 3 mL (one pouch), nebulized. MAY REPEAT PRN.

- **For suspected toxic exposure, inhalation, or ingestion**
  INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).
  Assist with the administration of physician prescribed, site supplied antidote.

- **For suspected toxic ingestion**
  INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).
  Milk or Potable Water PO

- **For cardiac dysrhythmias associated with toxic exposure, inhalation, or ingestion**
  INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).
  Adults: Calcium Chloride 1 gm (10 mL) IVPB. Infuse in 50-100 mL normal saline, administer over 10 minutes.
  Pediatrics: Calcium Chloride 20 mg / kg IVPB. Infuse in 50-100 mL normal saline, administer over 10 minutes. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
- **Establish, maintain, and ensure:**
  
  **A.** A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  
  **B.** Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  
  **C.** Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

- Do not induce vomiting

- **Oxygen**
  
  As clinically indicated. Titrate to maintain, or increase, SpO2 to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

- Attach ECG leads to the patient when a paramedic is present

- Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements

- If able, and applicable, contact Poison Control at 1-800-222-1222

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**INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).**

**Adults:** Magnesium Sulfate 2 gm (4 mL) slow IV / IO push.

**Pediatrics:** Magnesium Sulfate 50 mg / kg slow IV / IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
### BLS Patient Management

- If you are exposed to hazardous materials follow your agency’s procedure or, if none, begin self-decontamination and self-treatment. Don an escape hood when appropriate and if equipped. Escape to a safe location: 300 feet or more upwind, uphill, and upstream. Identify yourself as a patient.

- When you encounter possible hazardous materials, follow your agency’s procedure or, if none, then stage in a safe location: 300 feet or more upwind, uphill, and upstream. Maintain exit routes and deny entry. Ensure Hazardous Materials Response Team (HMRT) response. Mount a wind streamer to your vehicle’s antenna and monitor wind direction. Do not enter until the Incident Commander has deemed it reasonably ‘safe to enter.’

- When decontaminating the patient(s), follow your agency’s procedure or, if none and you are trained/equipped, remove, and bag the patient’s clothing, jewelry, etc. Brush off dry chemicals and dilute excess liquid chemicals. Wash patient with mild soap and rinse off with large amounts of clean water. Flush contaminated eyes with saline for 15 minutes or until pain and irritation subside. Cover with warm dry clothing and/or blankets. Consult container label or any onsite MSDS for decontamination instructions. Remove label or copy page from MSDS, preserve in sealed plastic bag, and transport with the patient.

- **Antidote:**
  Consult container label or onsite MSDS for antidote instructions. Read and relate decontamination and antidote instructions to the base hospital.
  
  Do not spread contamination! Never transport a contaminated patient, container, or materials!

### ALS Patient Management

- Establish, maintain, and ensure peripheral IV and/or IO access for emergency stabilization, and/or as clinically indicated, in adult and pediatric patients.

  Consider the need for additional sites as clinically indicated.

- Interpret and continuously monitor ECG, SpO2 and waveform / digital capnography.

- **For symptomatic nerve agent, organophosphate, or carbamate exposure**
  
  **Adults:** Atropine 1 mg (10 mL of prefilled syringe) IV/IO push. **MAY REPEAT PRN.**

  **OR**

  Atropine 1 mg (2.5 mL of MDV) IM x2. **MAY REPEAT PRN.**

  **Pediatrics:** Atropine 0.02 mg / kg IV/IO push. **MAX SINGLE DOSE IS 1 MG. MAY REPEAT PRN.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

  **OR**

  Atropine 0.05 mg / kg IM x2. **MAX SINGLE DOSE IS 1 MG. MAY REPEAT PRN.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
• **Establish, maintain, and ensure:**
  A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

• Do not induce vomiting

• **Oxygen**
  As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

• Attach ECG leads to the patient when a paramedic is present

• Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements

• **For self-administration in symptomatic nerve agent, organophosphate, or carbamate exposure, if equipped**
  NAAK (Nerve Agent Antidote Kit, DuoDote or Mark I) IM auto-injection(s). **MAY REPEAT TWICE.**
### BLS Patient Management

- If you are exposed to hazardous materials follow your agency’s procedure or, if none, begin self-decontamination and self-treatment. Don an escape hood when appropriate and if equipped. Escape to a safe location: 300 feet or more upwind, uphill, and upstream. Identify yourself as a patient.

- When you encounter possible hazardous materials, follow your agency’s procedure or, if none, then stage in a safe location: 300 feet or more upwind, uphill, and upstream. Maintain exit routes and deny entry. Ensure Hazardous Materials Response Team (HMRT) response. Mount a wind streamer to your vehicle’s antenna and monitor wind direction. Do not enter until the Incident Commander has deemed it reasonably ‘safe to enter.’

- When decontaminating the patient(s), follow your agency’s procedure or, if none and you are trained/equipped, remove, and bag the patient’s clothing, jewelry, etc. Brush off dry chemicals and dilute excess liquid chemicals. Wash patient with mild soap and rinse off with large amounts of clean water. Flush contaminated eyes with saline for 15 minutes or until pain and irritation subside. Cover with warm dry clothing and/or blankets. Consult container label or any onsite MSDS for decontamination instructions. Remove label or copy page from MSDS, preserve in sealed plastic bag, and transport with the patient.

- **Antidote:**
  Consult container label or onsite MSDS for antidote instructions. Read and relate decontamination and antidote instructions to the BASE HOSPITAL.

  Do not spread contamination! Never transport a contaminated patient, container, or materials!

### ALS Patient Management

- Establish, maintain, and ensure peripheral IV and/or IO access for emergency stabilization, and/or as clinically indicated, in adult and pediatric patients.

  Consider the need for additional sites as clinically indicated.

- Interpret and continuously monitor ECG, SpO2 and waveform / digital capnography.

- **For symptomatic nerve agent, organophosphate, or carbamate exposure**
  **INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS VIA IV OR IO REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **Adults:** Atropine 1 mg (2.5 mL of MDV) IM x2. **MAY REPEAT PRN.**

  **Pediatrics:** Atropine 0.05 mg / kg IM x2. **MAX SINGLE DOSE IS 1 MG. MAY REPEAT PRN.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- **For seizures associated with nerve agent, organophosphate, or carbamate exposure**
  **INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS VIA IV OR IO IN REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **Adults:** Midazolam 5 mg (1 mL) IM. **MAY REPEAT TWICE AT 15 MINUTE INTERVALS. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **Pediatrics:** Midazolam 0.2 mg / kg IM. **MAY REPEAT TWICE AT 15 MINUTE INTERVALS. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
**Establish, maintain, and ensure:**

A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated

B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present

C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

Do not induce vomiting

**Oxygen**

As clinically indicated. Titrate to maintain, or increase, \( \text{SpO}_2 \) to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

Attach ECG leads to the patient when a paramedic is present

Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements

**For self-administration** in symptomatic nerve agent, organophosphate, or carbamate exposure, if equipped

Nerve Agent Antidote Kit (NAAK) DuoDote or Mark I IM auto-injection(s). MAY REPEAT TWICE.

**For symptomatic nerve agent, organophosphate, or carbamate exposure WHEN A CDC CHEMPACK HAS BEEN DEPLOYED**

**Adults:** Nerve Agent Antidote Kit (NAAK) DuoDote or Mark I IM auto-injection(s). MAY REPEAT TWICE.

**Pediatrics:** AtroPen. MAY REPEAT PRN.

**For seizures associated with nerve agent, organophosphate, or carbamate exposure WHEN A CDC CHEMPACK HAS BEEN DEPLOYED**

**Adults:** Pralidoxime 600 mg (3 mL) IM. MAY REPEAT TWICE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

**Pediatrics:** Pralidoxime 20 mg / kg IM. MAY REPEAT TWICE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

**INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS**

**AND PEDIATRICS VIA IVPB REQUIRE A BASE HOSPITAL ORDER (BHO).**

Adults: Pralidoxime 600 mg (20 mL pre-mixed infusion) IVPB.

Pediatrics: Pralidoxime 20 mg / kg (20 mL pre-mixed infusion) IVPB.

**For seizures associated with nerve agent, organophosphate, or carbamate exposure WHEN A CDC CHEMPACK HAS BEEN DEPLOYED**

**Adults:** Diazepam 10 mg (1 auto-injector) IM. MAY REPEAT TWICE AT 15 MINUTE INTERVALS. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

**Pediatrics:** Diazepam 0.1 mg / kg IM. MAY REPEAT TWICE AT 15 MINUTE INTERVALS. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

**OR**

**ADMINISTRATION OF DIAZEPAM VIA AUTOINJECTOR TO PEDIATRIC PATIENTS IS NOT PERMITTED.**

**FOR SEIZURES ASSOCIATED WITH NERVE AGENT, ORGANOPHOSPHATE, OR CARBAMATE EXPOSURE WHEN A CDC CHEMPACK HAS BEEN DEPLOYED**

**Adults:** Diazepam 5 mg (1 mL) IM. MAY REPEAT TWICE AT 15 MINUTE INTERVALS. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

**Pediatrics:** Diazepam 0.1 mg / kg IM. MAY REPEAT TWICE AT 15 MINUTE INTERVALS. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).
**AtroPen 1 mg (1 mg / 0.7 mL)**

**Weight = 14 kg (=31 lbs) or less:** PEDIATRIC ADMINISTRATION IS NOT PERMITTED.

**Weight = 15 kg (=33 lbs) or more:** 1 mg IM. MAY REPEAT PRN.

**ADMINISTRATION OF 2 MG / 0.7 mL ATROPEN TO PEDIATRIC PATIENTS IS NOT PERMITTED.**
**BLS Patient Management**

- **Establish, maintain, and ensure**
  - A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  - B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  - C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

- **Oxygen**
  - As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

- Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements

- Preserve the patient’s body heat by covering them with warm blankets

- Attach ECG leads to the patient when a paramedic is present

- **RULE OF PALMS**
  - Surface of patient’s palm equals approximately 1% of body surface area (BSA)

- **ADULT RULE OF NINES**
  - 9% (head)
  - 9% (right arm)
  - 9% (left arm)
  - 36% (torso)
  - 1% (genitalia / perineum)
  - 18% (right leg)
  - 18% (left leg)

---

**ALS Patient Management**

- **Establish, maintain, and ensure** peripheral IV and/or IO access for emergency stabilization, and/or as clinically indicated, in adult and pediatric patients

  Consider the need for additional sites as clinically indicated

- **For significant burns**
  - **Adults**: Normal Saline 250 mL IV/IO bolus. **MAY REPEAT AS CLINICALLY INDICATED TO A MAX ADMINISTRATION OF 2 L.**

  - **Pediatrics**: Normal Saline 20 mL / kg IV/IO bolus. Use a volume control administration set for accurate dosing. **MAY REPEAT AS CLINICALLY INDICATED.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- **For pain associated with burns**
  - **Adults**: Fentanyl 50 mcg (1 mL) slow IV/IO push or IM/IN. Patient's systolic BP must be greater than or equal to 90 mmHg at the time of administration. **MAY REPEAT ONCE, IN 5-10 MINUTES, DEPENDENT ON PAIN SEVERITY, TO A MAX OF 100 MCG. ADDITIONAL ADMINISTRATIONS AFTER 100 MCG REQUIRE A BASE HOSPITAL ORDER (BHO).**

  - **Pediatrics**: Fentanyl 1 mcg / kg slow IV/IO push or IM/IN. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

  Adults: Ketamine IVPB: 0.3 mg / kg. Infuse in 50-100 mL normal saline, administer over 5 minutes. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **OR**

  Ketamine IN: 0.5 mg / kg. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**
• **INFANT RULE OF NINES**
  18% (head)
  9% (right arm)
  9% (left arm)
  36% (torso)
  14% (right leg)
  14% (left leg)

• Remove and bag patient's clothing, jewelry, etc., paying special attention to preventing binding and constriction

• **For thermal burns: less than 20% BSA**
  Cool with wet dressing(s). Follow with dry, clean, non-adherent dressing(s)

• **For thermal burns: greater than 20% BSA**
  Apply dry, clean, non-adherent dressing(s)

• **For chemical burns**
  Brush off dry chemicals and dilute excess liquid chemicals. Wash patient with mild soap and water. Rinse and flush with large amounts of water

  Consult container label or onsite SDS for decontamination instructions.

  Remove label or copy page from SDS, preserve in sealed plastic bag, and transport with patient

• **For electrical burns**
  Consider possibility of spinal trauma / need for spinal stabilization. Treat related injuries as clinically indicated

• **For eye burns**
  Flush contaminated eye(s) with saline for 15 minutes or more. Check for contact lenses. Patch eye(s) as clinically indicated

• **For tar burns**
  Cool burns with water. Do not remove tar. Apply petrolatum gauze dressing(s)

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**THE MAX SINGLE DOSE FOR EITHER ROUTE IS 30 MG.**

**ADMINISTRATION OF KETAMINE TO PEDIATRIC PATIENTS IS NOT PERMITTED.**

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**Patient Disposition**

• **PREHOSPITAL TRANSPORT TO A BURN CENTER REQUIRES A BASE HOSPITAL ORDER (BHO).** Patients with minor and/or moderate burns can be cared for at any prehospital receiving center.
• Burn patients with airway involvement shall be transported to the closest prehospital receiving center. Airway involvement has priority over burns

• Burn patients meeting critical trauma patient criteria shall be transported to a trauma center. Trauma has priority over burns

• **CONTACT A SINGLE BASE HOSPITAL FOR DESTINATION IN ALL:**
  - Second degree (2°) burns greater than 30% BSA
  - Third degree (3°) burns greater than 10% BSA
  - Second degree (2°) or third degree (3°) burns involving face, hands, feet, genitals / perineum, major joints, fractures, or circumferential burns
  - High voltage electrical burns
  - Burns in combination with significant pre-existing medical conditions
### BLS Patient Management

- **Establish, maintain, and ensure:**
  - A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  - B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  - C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

- **Oxygen**
  - As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

- **Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements**

- **Attach ECG leads to the patient when a paramedic is present**

- **Remove from heat**
  - Move to air conditioned / shaded environment and expose. Wet constantly with tepid water, fan, and encourage evaporative cooling but avoid causing shivering
  - Obtain a baseline temperature and note the method: tympanic, temporal, axillary, or touch
  - Apply cold packs to anterior neck, armpits, and groin. Re-assess temperature frequently. Discontinue cooling as clinically indicated to avoid causing shivering

### ALS Patient Management

- **For heat illness / hyperthermia**
  - **Adults:** Cooled Normal Saline 250 mL IV/IO bolus. **MAY REPEAT AS CLINICALLY INDICATED TO A MAX ADMINISTRATION OF 2 L.**
  - **Pediatrics:** Cooled Normal Saline 20 mL / kg IV/IO bolus. Use a volume control administration set for accurate dosing. **MAY REPEAT AS CLINICALLY INDICATED.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- **For suspected hyperkalemia associated with heat illness / hyperthermia**
  - **INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).**
  - **Albuterol 2.5 mg / 3 mL (one pouch), nebulized**
  - **INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).**
  - **Adults:** Calcium Chloride 1 gm (10 mL) IVPB. Infuse in 50-100 mL normal saline, administer over 10 minutes.
  - **Pediatrics:** Calcium Chloride 20 mg / kg IVPB. Infuse in 50-100 mL normal saline, administer over 10 minutes. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
  - **INITIAL AND REPEAT ADMINISTRATIONS FOR ADULTS AND PEDIATRICS REQUIRE A BASE HOSPITAL ORDER (BHO).**
  - **Adults:** Sodium Bicarbonate 50 mEq (50 mL) IV/IO push.
  - **Pediatrics:** Sodium Bicarbonate 1 mEq / kg IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
- For shivering associated with heat illness / hyperthermia
  INITIAL AND REPEAT ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).
  Adults: Midazolam 1 mg (0.2 mL) slow IV/IO push or IM/IN.

  ADMINISTRATION OF MIDAZOLAM TO PEDIATRIC PATIENTS FOR HEAT ILLNESS-RELATED SHIVERING IS NOT PERMITTED.
### BLS Patient Management

- **Establish, maintain, and ensure**
  
  A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  
  B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  
  C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

- **Oxygen**
  
  As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

- Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements

- Preserve the patient’s body heat by covering them with warm blankets

- Attach ECG leads to the patient when a paramedic is present

- **Remove from cold**
  
  Remove wet clothing and dry the patient, wrapping them with warm, dry blankets then move them to a heated environment. Individually wrap, cover, and protect areas of cold injured tissue; do not rub

  Obtain a baseline temperature and note the method: tympanic, temporal, axillary, or touch

  Rough handling may precipitate cardiac arrhythmia(s) in the severely hypothermic patient

### ALS Patient Management

- **For hypothermia**
  
  Adults: Warmed normal saline 250 mL IV/IO bolus. MAY REPEAT AS CLINICALLY INDICATED TO A MAX ADMINISTRATION OF 2 L.
  
  Pediatrics: Warmed Normal Saline 20 mL / kg IV/IO bolus. Use a volume control administration set for accurate dosing. MAY REPEAT AS CLINICALLY INDICATED. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- **For pain associated with frostbite**
  
  Adults: Fentanyl 50 mcg (1 mL) slow IV/IO push or IM/IN. Patient’s systolic BP must be greater than or equal to 90 mmHg at the time of administration. MAY REPEAT ONCE, IN 5-10 MINUTES, DEPENDENT ON PAIN SEVERITY, TO A MAX OF 100 MCG. ADDITIONAL ADMINISTRATIONS AFTER 100 MCG REQUIRE A BASE HOSPITAL ORDER (BHO).
  
  Pediatrics: Fentanyl 1 mcg / kg slow IV/IO push or IM/IN. MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

  Adults: Ketamine 0.3 mg / kg IVPB. Infuse in 50-100 mL Normal Saline, administer over 5 minutes. MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

  **OR**

  Ketamine 0.5 mg / kg IN. MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

  THE MAX SINGLE DOSE FOR EITHER ROUTE IS 30 MG.

  ADMINISTRATION OF KETAMINE TO PEDIATRIC PATIENTS IS NOT PERMITTED.
### BLS Patient Management

- **Establish, maintain, and ensure:**
  - A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  - B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  - C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

Remove patient from contact with the allergen

- **Oxygen**
  As clinically indicated. Titrate to maintain, or increase, SpO\textsubscript{2} to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

- Assist the patient with administration of their physician prescribed Epi-pen or other appropriate medication(s). Record the patient’s self-administration in the ePCR as, “Self-administered”

- Attach ECG leads to the patient when a paramedic is present

- Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements

- **For suspected anaphylaxis**
  - Adults: Epinephrine 0.3 mg (0.3 mL, 1 mg / mL concentration) IM, “EpiPen” / auto-injector. **AGENCIES MUST HAVE REMSA APPROVAL PRIOR TO CARRYING AND UTILIZING EPIPENS / EPINEPHRINE AUTO-INJECTORS.**

### ALS Patient Management

- **Establish, maintain, and ensure peripheral IV and/or IO access for emergency stabilization, and/or as clinically indicated, in adult and pediatric patients**

  Consider the need for additional sites as clinically indicated

- Interpret and continuously monitor ECG, SpO\textsubscript{2} and waveform / digital capnography

- **For suspected allergy and/or anaphylaxis**
  - **Adults:** Diphenhydramine 50 mg (1 mL) IM or slow IV/IO push. **ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

    Pediatrics: Diphenhydramine 1 mg / kg slow IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

  ****OR**

  Diphenhydramine 2 mg / kg IM. **MAX SINGLE DOSE IS 50 MG.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app. **ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

- **For bronchospasm associated with allergy and/or anaphylaxis**
  - Adults and pediatrics: Albuterol 2.5 mg / 3 mL (one pouch), nebulized. **MAY REPEAT PRN.**

- **For suspected anaphylaxis**
  - **Adults:** Epinephrine 0.3 mg (0.3 mL, 1 mg / mL concentration) IM. **ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  Pediatrics: Epinephrine 0.01 mg / kg (1 mg / mL concentration) IM. **MAX SINGLE DOSE IS 0.3 MG.** **ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
- For shock associated with allergy and/or anaphylaxis
  **Adults:** 250 mL IV/IO bolus. **MAY REPEAT AS CLINICALLY INDICATED TO A MAX ADMINISTRATION OF 2 L.**

  **Pediatrics:** 20 mL / kg IV/IO bolus. Use a volume control administration set for accurate dosing. **MAY REPEAT AS CLINICALLY INDICATED.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

  **Adults and pediatrics:** Push Dose Epinephrine 0.01 mg (1 mL, 0.01 mg / mL concentration) IV/IO. **MAY REPEAT PRN EVERY 1-5 MINUTES TO MAINTAIN A SYSTOLIC BP GREATER THAN:**

  - **90 mmHg** – adults
  - **70 mmHg** – pediatrics
### BLS Patient Management

- **Establish, maintain, and ensure:**
  - A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  - B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  - C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

- **Oxygen**
  As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

- Attach ECG leads to the patient when a paramedic is present

- Comfort, calm, and reassure the patient. Restrict activity. Relocate any jewelry to the unaffected extremity

- Mark the edge of discoloration surrounding the bite, recording the time. Re-mark the edge every 15 minutes

- Do not handle the snake, whether dead or alive

- Do not apply a constricting band, elastic bandage, cold pack, or immobilization device to the affected extremity

- Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements

### ALS Patient Management

- **Establish, maintain, and ensure peripheral IV and/or IO access for emergency stabilization, and/or as clinically indicated, in adult and pediatric patients**

- Consider the need for additional sites as clinically indicated

- **Do not initiate IV/IO access in the affected extremity**

- Interpret and continuously monitor ECG and vital signs

- **For shock associated with snakebite**
  - **Adults:** 250 mL IV/IO bolus. **MAY REPEAT AS CLINICALLY INDICATED TO A MAX ADMINISTRATION OF 2 L.**

  Pediatrics: 20 mL / kg IV/IO bolus. Use a volume control administration set for accurate dosing. **MAY REPEAT AS CLINICALLY INDICATED.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

  Adults and pediatric: Push Dose Epinephrine 0.01 mg (1 mL, 0.01 mg / mL concentration) IV/IO. **MAY REPEAT PRN EVERY 1-5 MINUTES TO MAINTAIN A SYSTOLIC BP GREATER THAN:**

  - 90 mmHg – adults
  - 70 mmHg – pediatrics

- **For pain associated with a snakebite**
  - **Adults:** Fentanyl 50 mcg (1 mL) slow IV/IO push or IM/IN. Patient’s systolic BP must be greater than or equal to 90 mmHg at the time of administration. **MAY REPEAT ONCE, IN 5-10 MINUTES, DEPENDENT ON PAIN SEVERITY, TO A MAX OF 100 MCG. ADDITIONAL ADMINISTRATIONS AFTER 100 MCG REQUIRE A BASE HOSPITAL ORDER (BHO).**

  Pediatrics: Fentanyl 1 mcg / kg slow IV/IO push or IM/IN. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.
**Adults:** Ketamine 0.3 mg / kg IVPB. Infuse in 50-100 mL Normal Saline, administer over 5 minutes. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

**OR**

Ketamine 0.5 mg / kg IN. **MAY REPEAT ONCE.** ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).

**THE MAX SINGLE DOSE FOR EITHER ROUTE IS 30 MG.**

**ADMINISTRATION OF KETAMINE TO PEDIATRIC PATIENTS IS NOT PERMITTED.**

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**Patient Disposition**

- Do no delay transport with nonessential treatment of the transport ready snakebite patient
- Transport the patient to the closest receiving center
### BLS Patient Management

<table>
<thead>
<tr>
<th>APGAR</th>
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<tr>
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<td>Strong</td>
</tr>
<tr>
<td><strong>Respirations</strong></td>
<td>Absent</td>
<td>Weak</td>
<td>Strong</td>
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</table>

- Dry, stimulate and swaddle in a dry receiving blanket and head cover then place with the mother as clinically indicated

- Assess using the APGAR scoring system. Based on APGAR scores, presentation, and clinical assessment
  - Suction secretions from mouth and nose
  - Monitor SpO2 while attached to the right upper extremity (a preductal location)
  - Provide blow-by oxygen
  - Assist ventilations with PPV and supplemental oxygen
  - Organize the resuscitation team and perform High Performance (HP) CPR according to current REMSA training and standards with a 3:1 compression ratio
    - Ensure High Performance (HP) CPR by utilizing assigned roles and tasks during resuscitation (i.e., Pit Crew CPR)
    - Emphasize correct hand placement, compression depth (hard) and rate (fast) with complete chest recoil
    - Minimize interruption of chest compressions
    - Avoid hyperventilation

### ALS Patient Management

- Establish, maintain, and ensure peripheral IV and/or IO access for emergency stabilization
  - Consider the need for additional sites as clinically indicated

- When required, ensure HP CPR is being performed according to current REMSA training and standards
  - Attach, interpret, and continuously monitor EtCO2. If EtCO2 is less than 10 mmHg, attempt to improve CPR quality

### For neonatal resuscitation

**INITIAL AND REPEAT ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**
- Dextrose 5 mL / kg (10% solution) IV/IO bolus or drip. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

**INITIAL AND REPEAT ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**
- Epinephrine 0.01 mg / kg (0.1 mg / mL concentration) IV/IO. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

**INITIAL AND REPEAT ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**
- Naloxone 0.1 mg / kg IV/IO/IM/IN. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

**INITIAL AND REPEAT ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**
- Sodium Bicarbonate 1 mEq / kg IV/IO push. For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

**DISCONTINUING RESUSCITATION OF A PEDIATRIC PATIENT REQUIRES A BASE HOSPITAL PHYSICIAN ORDER (BHPO).**
**Establish, maintain, and ensure:**
- A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
- Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
- Controlled bleeding using appropriate measures, as clinically indicated

**Oxygen**
- As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD
- Attach ECG leads to the patient when a paramedic is present
- Obtain and evaluate blood glucose
- Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements. If tolerated, place the patient in left lateral recumbent position
- Decrease stimuli and maintain a quiet, dark environment

**ALS Patient Management**
- Establish, maintain, and ensure peripheral IV and/or IO access for emergency stabilization, and/or as clinically indicated
- Consider the need for additional sites as clinically indicated
- Interpret and continuously monitor ECG and vital signs
- For suspected pre-eclampsia or eclampsia
  **Standing order: may be given prophylactically**
  Magnesium Sulfate 5 gm (10 mL) IVPB. Infuse in 50-100 mL Normal Saline, administer over 10 minutes. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).
  **OR**
  Magnesium Sulfate 2.5 gm (5 mL) IM x2. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).
- For eclampsia unresponsive to Magnesium Sulfate
  **INITIAL AND REPEAT ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**
  Midazolam 2.5 mg (0.5 mL) slow IV/IO push
  **OR**
  Midazolam 5 mg (1 mL) IM/IN.

**Patient Disposition**
- CONTACT A SINGLE BASE HOSPITAL FOR ALL PATIENTS EXPERIENCING PRE-ECLAMPSIA OR ECLAMPSIA
## BLS Patient Management

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- **Establish, maintain, and ensure:**
  - A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  - B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  - C. Controlled bleeding using appropriate measures, as clinically indicated

- **Oxygen**
  - As clinically indicated. Titrate to maintain, or increase, \( \text{SpO}_2 \) to a minimum of 94%. If the mother is experiencing complications, increase oxygen flow rate so that \( \text{SpO}_2 \) greater than or equal to 98%.

- **Attach ECG leads to the patient when a paramedic is present**

- **If delivery appears imminent, prepare for and/or perform an obstetrical delivery.** Public safety personnel may assist only, the team lead must be either an EMT, AEMT or EMT-P

## ALS Patient Management

- **Establish, maintain, and ensure peripheral IV and/or IO access for emergency stabilization**

- **Consider the need for additional sites as clinically indicated**

- **Interpret and continuously monitor ECG, \( \text{SpO}_2 \) and waveform / digital capnography**

- **For shock associated with postpartum hemorrhage**
  - **Adults:** 250 mL IV/IO bolus. **MAY REPEAT AS CLINICALLY INDICATED TO A MAX ADMINISTRATION OF 2 L.**

    Push Dose Epinephrine 0.01 mg (1 mL, 0.01 mg / mL concentration) IV/IO. **MAY REPEAT PRN EVERY 1-5 MINUTES TO MAINTAIN A SYSTOLIC BP GREATER THAN 90 MMHG.**

    **ADMINISTRATION OF TRANEXAMIC ACID (TXA) FOR POSTPARTUM HEMORRHAGING IS NOT PERMITTED.**
• **Manage complications as below**
  o Prolapsed cord: Position the mother as clinically indicated (i.e. – left lateral recumbent with legs / hips elevated or knees-to-chest). Remove pressure from the umbilical cord and protect it from damage by inserting a gloved hand into the vagina and gently pushing the presenting part off of the cord. Cover the exposed portion of the cord with a saline soaked dressing.
  o Breech presentation: Expedite transport to the closest facility with OB services as surgical delivery is clinically indicated. Position the mother as clinically indicated (i.e. – left lateral recumbent with legs / hips elevated or knees-to-chest).

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**Patient Disposition**

• **CONTACT A SINGLE BASE HOSPITAL IN ALL OBSTETRICAL DELIVERIES WITH ANY COMPLICATION OF CHILDBIRTH**
PURPOSE
To establish clear and concise trauma triage indicators that are consistent with the guidelines and recommendations of the American College of Surgeons and the Centers for Disease Control, while taking into account the distinct geographic hospital locations of all Riverside county trauma centers.

AUTHORITY
California Health and Safety Code - Division 2.5: Emergency Medical Services [1797. - 1799.207.]
California Code of Regulations, Title 22, Division 9, Chapter 7 Trauma Care Systems

Trauma Triage Indicators and Destination

Destination and Transport:
1. Ground ambulance is the primary means of transport for destinations thirty (30) minutes or less by code 3.
   a. Adult patients identified as critical trauma patients (CTPs) will be transported to the closest Level I or Level II trauma center.
   b. Pediatric patients identified as CTPs should be transported to a pediatric trauma center.
   c. If the pediatric trauma center is greater than thirty (30) minutes away by ground, go to the closest Level I or Level II trauma center.
   d. If the closest trauma center is greater than thirty (30) minutes by ground code 3, consider HEMS transport.
   e. If patient destination is questionable, contact the closest Level I or Level II Trauma Base Hospital for destination.
   f. In the event of trauma center diversion - refer to REMSA Policy #6103 (Ambulance Diversion).

2. The patient is identified as a CTP and presents with the following:
   a. An unmanageable airway: If the CTP’s airway and/or breathing is compromised and transporting personnel are unable to effectively manage them using BLS or ALS measures, the patient will be transported to the closest prehospital receiving center (PRC).
   b. Traumatic full arrest:
      i. Adult blunt traumatic arrest:
         1. If the patient meets the criteria outlined in REMSA policy #4108 (Do Not Attempt Resuscitation / Discontinue Resuscitation): DO NOT TRANSPORT.
            a. If the patient is pulseless and apneic with asystole / agonal rhythm / PEA at a rate less than 40: DO NOT TRANSPORT.
            b. Otherwise, transport to the closest Level I or Level II trauma center.
      ii. Adult penetrating traumatic arrest:
          1. If the patient meets the criteria outlined in REMSA policy #4108 (Do Not Attempt Resuscitation / Discontinue Resuscitation): DO NOT TRANSPORT.
             a. If the patient is pulseless and apneic with asystole / agonal rhythm / PEA at a rate less than 40: DO NOT RESUSCITATE OR TRANSPORT.
             b. If the patient has signs of life and transport time is reasonable, consider transport to the closest Level I or Level II trauma center.
      iii. Pediatric traumatic arrest:
          1. A Base Hospital Physician Order (BHPO) is required to discontinue resuscitation.
   c. Burn patients
      1. CTPs with burns will be transported to the closest Level I or Level II trauma center.
         a. Patients not meeting CTP criteria will be transported according to the REMSA policy #4701 (Burns).
Considerations
Under normal circumstances, scene time should be limited to ten (10) minutes.

With multiple CTPs, consult the closest Level I or Level II Trauma Base Hospital for destination determination. Refer to REMSA policy #3305 (*Multiple Patient / Casualty Incident (MPI/MCI) Management*).

The Level I or Level II trauma center must be advised of incoming CTPs as soon as possible in order to allow for timely trauma team activation.

Trauma triage criteria are on the following page:
Any patient who is experiencing, or presenting with, any of the criteria listed below will be considered a CTP and will be transported to the closest Level I or Level II trauma center.

**MECHANISM OF INJURY CRITERIA**
- Fall – adults, 15 feet or greater
- Fall – pediatric, greater than 10 feet or 3x the patient’s height
- Auto vs. pedestrian OR bicycle rider greater than 20mph
- Motorcycle crash greater than 20mph
- Ejection from vehicle
- Death in the same vehicle
- Passenger space intrusion, including roof, greater than 12” at any occupied site
- Passenger space intrusion, including roof, greater than 18” at any unoccupied site
- Child (Ages 0-9) unrestrained or in unsecured child safety seat

**ANATOMIC CRITERIA**
- Open or depressed skull fracture
- Penetration of the head / neck / torso extremities proximal to the elbow / knee
- Chest wall instability or deformity (e.g. – flail chest)
- Suspected pelvic fracture
- New onset paralysis
- Two (2) or more proximal long bone fractures
- Crushed / mangled / degloved pulseless extremity
- Trauma with burns
- Amputation proximal to the wrist or ankle

**PHYSIOLOGIC CRITERIA**
- GCS less than or equal to 13
- Respiratory rate less than 10 OR greater than 29 OR need for ventilatory support
- Active bleeding requiring a tourniquet or wound packing with continuous pressure

**For patients who meet any of the criteria listed below, a Level I or Level II Trauma Base Hospital must be consulted to determine the appropriate destination.**

**CO-MORBID FACTORS AND OTHER MECHANISMS**
- Geriatric patients (65 years or older)
- Pediatric patients (14 years and younger)
- Patients on anti-coagulants / anti-platelet therapy
- Pregnant patients greater than 20 weeks gestation
- MVC greater than 40mph
- Reported or confirmed loss of consciousness
- EMS provider judgment
- Suspicion of child abuse
### Riverside County Hospitals

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*Redlands Community Hospital is thrombectomy capable only

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**Legend**

BH - Base Hospital  | OB - Obstetrical Services  | NICU - Neonatal Intensive Care Unit  | PICU - Pediatric Intensive Care Unit  |

8101 – Resource List | 3 of 4
PURPOSE
To provide a quick reference to assist providers with ensuring the proper dosing of medications, as well as choosing appropriate airway sizes and energy settings for cardioversion and defibrillation, in the pediatric population. A pediatric patient is defined as a person appearing, or known to be, 14 years of age or less.

Recommended Equipment
- A commercially available, standardized Length Based Resuscitation Tape (LBRT) with colors and weights (kgs) that align with this resource.
- A laminated copy of this resource, color printed, front and back, at full size, and carried in each first response and transport vehicle.

Determining Age, Weight, and Height
The initial attempt to determine the patient’s age, weight, and height should be made by asking the patient’s parent / guardian directly or by reviewing recently written records (e.g., hospital discharge documentation or a pediatrician’s Visit Summary). Should there be no parent / guardian present to ask, the LBRT should be used. It is also acceptable to utilize the patient’s weight and/or age if they able to clearly verbalize it and the paramedic judges that it could be within an appropriate range. Estimates made by EMS should be the last resort.

Pediatric Medication Dosing Resource (PMDR)
Orders to administer medications or perform procedures are established in one of two ways: as standing orders through an applicable treatment protocol or as a base hospital order (BHO), through direct, verbal consultation with a Mobile Intensive Care Nurse (MICN) or Base Hospital Physician (BHP). The PMDR is to be used as a reference tool only.

The recommended process for its use is as follows:
1. Determine the patient’s weight, either actual or approximate, using information obtained by a parent / guardian, a LBRT, the patient, or best guess.
   a. Convert pounds to kilograms as needed (\( fx = \text{pounds} / 2.205 \) OR \( \text{pounds} * 0.454 \)).
   b. REMSA recommends the regular use of a LBRT as an additional resource to ensure that weights given (either actual or approximate) are within a close proximity to what is considered medically acceptable based on scientific standards.
2. Complete the medication dosing calculation using the assigned formula found in the applicable treatment protocol or as it is documented on the corresponding row within the PMDR (they will be the same but located in two places for redundancy).
3. Paramedics can then cross reference the calculated dose with the dose as it is documented on the PMDR to confirm that it falls within the established therapeutic range for that patient’s actual or approximate weight.
   a. Weight calculations in the PMDR have been determined using the 50th percentile for that specific weight range / LBRT color. Doses calculated may vary greatly between what was determined and what is documented there. This is to be expected and does not require base hospital contact for consultation.
4. Paramedics should use a 1 mL syringe, graduated in tenths and hundredths, for indicated volumes less than 1 mL.
   a. Volumes given in the hundredths of mLs are identified by a black underline as seen with Diphenhydramine (IV / IO), Epinephrine 1 mg / mL, Fentanyl, and Midazolam.
5. When present at the scene, it is a best practice – and a REMSA recommendation – that a second paramedic verify the medication dose and volume prior to administration.
6. As directed within the indicated treatment protocol, or after receiving a BHO, use of this resource to cross-reference energy settings and airway adjunct sizes is recommended.
7. Contact a single base hospital for orders in cases of atypical presentation, circumstance, or uncertainty. This includes pediatric patients or neonates weighing 3 kg or less, and/or adult patients weighing 36 kg (80 lbs) or less who are under 4 feet 10 inches tall.

8. In case of a nerve agent attack and/or deployment of a CDC CHEMPACK:
   a. Patient classification:
      i. Atypical pediatric patients weighing 3 kg or less should be classified as LBRT GRAY
      ii. Atypical adult patients weighing 36 kg (80 lbs) or less who are under 4 feet 10 inches tall should be classified using a LBRT
   b. Pralidoxime Chloride:
      i. For IM use, reconstitute Pralidoxime Chloride with only 5 mL sterile water to 1000 mg / 5 mL. **DO NOT GIVE THIS CONCENTRATION IV/IO!**
      ii. For IV use, reconstitute Pralidoxime Chloride with the full 20 mL sterile water to 1000 mg / 20 mL. When given IV/IO, Pralidoxime should be given as a bolus drip in 50 mL over 10 minutes.
      iii. Pralidoxime Chloride is distributed as 1000 mg powder in a 20 mL vial requiring reconstitution with sterile water; note the varying concentrations of Pralidoxime Chloride in the resource.

### Dilution at the Point of Care

Dilution of a single medication from one concentration to another does not require base hospital contact.

#### Dilution of Atropine from 30 mg / 30 mL to 1 mg / 10 mL:

1. Remove the cap and use an alcohol prep pad to cleanse the top of the multidose vial prior to insertion of a needle
2. **Perform one (1) of the steps below (either 1a OR 1b):**

| a. Using a blunt tip needle (or equivalent), withdraw 1 mL of Atropine into an empty 10 mL syringe | THEN | Draw 9 mL of Normal Saline (NS) into the same 10 mL syringe. Slowly invert it several times to ensure sufficient dilution of the Atropine into the NS. |
| b. Eject 1 mL of NS from a 10 mL prefilled syringe (“saline flush”), leaving 9 mL of NS | OR | Using a blunt tip needle (or equivalent), draw 1 mL of Atropine into the 10 mL prefilled syringe. Slowly invert it several times to ensure sufficient incorporation into the NS. |

   c. Upon completion of **either** step 1a **OR** 1b, a concentration of 1 mg / 10 mL will have been created. Ensure appropriate labeling prior to use.

#### Dilution of Dextrose 50% (25 g / 50 mL) to Dextrose 10% (5 g / 50 mL)

1. Expel 40 mL of D50% solution from the 50 mL prefilled syringe
2. Draw 40 mL Normal saline (NS) into the same syringe
3. A concentration of 5 g / 50 mL has been created. Ensure appropriate labeling prior to use.

#### Dilution of Dextrose 25% (2.5 g / 10 mL) to Dextrose 10% (1 g / 10 mL)

1. Expel 6 mL of D25% solution from the 10 mL prefilled syringe
2. Draw 6 mL Normal saline (NS) into the same syringe
3. A concentration of 1 g / 10 mL has been created. Ensure appropriate labeling prior to use.
Dilution of Epinephrine 1 mg / 1 mL from a single-dose vial to Epinephrine 0.1 mg / mL “Epi pre-load (1:10,000)”
NOTE: Epinephrine available in a single-dose vial may also be labeled as “Adrenalin.”

1. Remove the cap and use an alcohol prep pad to cleanse the top of the vial prior to insertion of a needle
2. Perform one (1) of the steps below (either 2a OR 2b):

   a. Using a blunt tip needle (or equivalent), withdraw the entire 1 mL of Adrenalin / Epinephrine into an empty 10 mL syringe
   
   THEN
   
   Draw 9 mL of Normal Saline (NS) into the same 10 mL syringe. Slowly invert it several times to ensure sufficient dilution into the NS.

   OR

   b. Eject 1 mL of NS from a 10 mL prefilled syringe (“saline flush”), leaving 9 mL of NS
   
   THEN
   
   Using a blunt tip needle (or equivalent), draw the entire 1 mL of Adrenaline / Epinephrine into the 10 mL prefilled syringe. Slowly invert it several times to ensure sufficient dilution into the NS.

   c. Upon completion of either step 2a OR 2b, a concentration of 0.1 mg / mL (1:10,000) will have been created. Ensure appropriate labeling prior to use.

Dilution of Epinephrine 1 mg / 1 mL from an ampule to Epinephrine 0.1 mg / mL “Epi pre-load (1:10,000)”

1. Hold the ampule at a 45-degree angle then tap the neck repeatedly to facilitate movement of all of the fluid into the body.
2. Firmly grasp the ampule with one hand while holding the tip of the ampule between the thumb and index finger in the other, using a piece of gauze as a physical barrier placed between your body and the ampule. Apply gentle but increasing pressure TOWARDS YOU until the neck snaps and the tip is no longer attached.

3. Perform one (1) of the steps below (either 3a OR 3b):

   a. Using a filter needle*, withdraw the entire 1 mL of Epinephrine into an empty 10 mL syringe
   
   THEN
   
   Draw 9 mL of Normal Saline (NS) into the same 10 mL syringe. Slowly invert it several times to ensure sufficient dilution into the NS.

   OR

   b. Eject 1 mL of NS from a 10 mL prefilled syringe (“saline flush”), leaving 9 mL of NS
   
   THEN
   
   Using a filter needle*, draw the entire 1 mL of Epinephrine into the 10 mL prefilled syringe. Slowly invert it several times to ensure sufficient dilution into the NS.

   *A filter needle is needed to filter out any glass shards / particles that may have infiltrated the medication upon breaking the glass neck of the ampule.

   c. Upon completion of either step 3a OR 3b, a concentration of 0.1 mg / mL (1:10,000) will have been created. Ensure appropriate labeling prior to use.
<table>
<thead>
<tr>
<th>Standard Medications</th>
<th>Grey 4-5 kg</th>
<th>Pink 5-7 kg</th>
<th>Red 8-9 kg</th>
<th>Purple 10-12 kg</th>
<th>Yellow 12-14 kg</th>
<th>White 15-16 kg</th>
<th>Blue 17-21 kg</th>
<th>Orange 23-29 kg</th>
<th>Green 32-37 kg</th>
<th>Coal 40-42 kg</th>
<th>Magenta 42-46 kg</th>
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<td>775 mcg</td>
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</table>

* Suspected Anaphylaxis - FURTHER REPETITION REQUIRES A BASE HOSPITAL ORDER (BHO)

* Respiratory Distress - INITIAL AND REPEAT DOSES REQUIRE A BASE HOSPITAL ORDER (BHO)

Cardiac Arrest - MAY REPEAT EVERY 5 MINUTES TO A MAX OF FIVE (5) DOSES

Shock unrelated to trauma - MAY REPEAT EVERY 1-5 MINUTES TO MAINTAIN A SYSTOLIC BP GREATER THAN 70 MMHG

**Symptomatic hypoglycemia with blood glucose less than 70 mg/dL WHEN UNABLE TO ADMINISTER IV/IO DEXTROSE**

**Pain Management** - MAY REPEAT ONCE. FURTHER REPETITION REQUIRES A BASE HOSPITAL ORDER (BHO)

**Discomfort assoc. w/ transcutaneous pacing (TCP)** - INITIAL AND REPEAT DOSES REQUIRE A BASE HOSPITAL ORDER (BHO)

**Symptomatic hypoglycemia with blood glucose less than 70 mg/dL WHEN UNABLE TO ADMINISTER IV/IO DEXTROSE**

**Suspected beta blocker or calcium channel blocker overdose** - INITIAL AND REPEAT DOSES REQUIRE A BASE HOSPITAL ORDER (BHO)

**Suspected esophageal food impaction** - INITIAL AND REPEAT DOSES REQUIRE A BASE HOSPITAL ORDER (BHO)

**Suspected Anaphylaxis** - FURTHER REPETITION REQUIRES A BASE HOSPITAL ORDER (BHO)

**Respiratory Distress** - INITIAL AND REPEAT DOSES REQUIRE A BASE HOSPITAL ORDER (BHO)

**Pain Management** - MAY REPEAT ONCE. FURTHER REPETITION REQUIRES A BASE HOSPITAL ORDER (BHO)

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**Pain Management** - MAY REPEAT ONCE. FURTHER REPETITION REQUIRES A BASE HOSPITAL ORDER (BHO)

**Discomfort assoc. w/ transcutaneous pacing (TCP)** - INITIAL AND REPEAT DOSES REQUIRE A BASE HOSPITAL ORDER (BHO)
<table>
<thead>
<tr>
<th>Standard Medications</th>
<th>Grey 4-5 kg</th>
<th>Pink 5-7 kg</th>
<th>Red 8-9 kg</th>
<th>Purple 10-12 kg</th>
<th>Yellow 12-14 kg</th>
<th>White 15-16 kg</th>
<th>Blue 17-21 kg</th>
<th>Orange 23-29 kg</th>
<th>Green 32-37 kg</th>
<th>Coal 40-42 kg</th>
<th>Magenta 42-46 kg</th>
<th>Maroon 46-49 kg</th>
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</thead>
<tbody>
<tr>
<td><strong>Bronchospasm</strong> - mixed with one (1) vial of Albuterol. <strong>FURTHER REPETITION REQUIRES A BASE HOSPITAL ORDER (BHO)</strong></td>
<td>NEB 0.5 mg ‡</td>
<td>NEB 0.5 mg ‡</td>
<td>NEB 0.5 mg ‡</td>
<td>NEB 0.5 mg ‡</td>
<td>NEB 0.5 mg ‡</td>
<td>NEB 0.5 mg ‡</td>
<td>NEB 0.5 mg ‡</td>
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<td>NEB 0.5 mg ‡</td>
<td>NEB 0.5 mg ‡</td>
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<tr>
<td><strong>Lidocaine 2%</strong></td>
<td>IV / IO 4.5 mg</td>
<td>IV / IO 6 mg</td>
<td>IV / IO 8.5 mg</td>
<td>IV / IO 11 mg</td>
<td>IV / IO 13 mg</td>
<td>IV / IO 15.5 mg</td>
<td>IV / IO 19 mg</td>
<td>IV / IO 26 mg</td>
<td>IV / IO 34.5 mg</td>
<td>IV / IO 41 mg</td>
<td>IV / IO 44 mg</td>
<td>IV / IO 47.5 mg</td>
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<tr>
<td>First &amp; Repeat Doses</td>
<td>0.23 mL</td>
<td>0.3 mL</td>
<td>0.43 mL</td>
<td>0.55 mL</td>
<td>0.65 mL</td>
<td>0.78 mL</td>
<td>0.95 mL</td>
<td>1.3 mL</td>
<td>1.73 mL</td>
<td>2.05 mL</td>
<td>2.2 mL</td>
<td>2.38 mL</td>
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<tr>
<td><strong>Lidocaine 2%</strong></td>
<td>IO 2.25 mg</td>
<td>IO 3 mg</td>
<td>IO 4.25 mg</td>
<td>IO 5.5 mg</td>
<td>IO 6.5 mg</td>
<td>IO 7.75 mg</td>
<td>IO 9.5 mg</td>
<td>IO 13 mg</td>
<td>IO 17.25 mg</td>
<td>IO 20.5 mg</td>
<td>IO 22 mg</td>
<td>IO 23.75 mg</td>
</tr>
<tr>
<td><strong>Magnesium Sulfate</strong></td>
<td>IVPB 225 mg</td>
<td>IVPB 300 mg</td>
<td>IVPB 425 mg</td>
<td>IVPB 550 mg</td>
<td>IVPB 650 mg</td>
<td>IVPB 775 mg</td>
<td>IVPB 950 mg</td>
<td>IVPB 1300 mg</td>
<td>IVPB 1725 mg</td>
<td>IVPB 2 gm ‡</td>
<td>IVPB 2 gm ‡</td>
<td>IVPB 4 mL</td>
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<td>50 mg / 10 mL</td>
<td>0.5 mL</td>
<td>0.6 mL</td>
<td>0.9 mL</td>
<td>1.1 mL</td>
<td>1.3 mL</td>
<td>1.6 mL</td>
<td>1.9 mL</td>
<td>2.6 mL</td>
<td>3.5 mL</td>
<td>4 mL</td>
<td>4 mL</td>
<td>4 mL</td>
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<tr>
<td><strong>Magnesium Sulfate</strong></td>
<td>IV / IO 225 mg</td>
<td>IV / IO 300 mg</td>
<td>IV / IO 425 mg</td>
<td>IV / IO 550 mg</td>
<td>IV / IO 650 mg</td>
<td>IV / IO 775 mg</td>
<td>IV / IO 950 mg</td>
<td>IV / IO 1300 mg</td>
<td>IV / IO 1725 mg</td>
<td>IV / IO 2 gm ‡</td>
<td>IV / IO 2 gm ‡</td>
<td>IV / IO 4 mL</td>
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<td>50 mg / kg</td>
<td>0.5 mL</td>
<td>0.6 mL</td>
<td>0.9 mL</td>
<td>1.1 mL</td>
<td>1.3 mL</td>
<td>1.6 mL</td>
<td>1.9 mL</td>
<td>2.6 mL</td>
<td>3.5 mL</td>
<td>4 mL</td>
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<td>4 mL</td>
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<tr>
<td><strong>Midazolam</strong></td>
<td>IV / IO 0.45 mg</td>
<td>IV / IO 0.6 mg</td>
<td>IV / IO 0.85 mg</td>
<td>IV / IO 1.1 mg</td>
<td>IV / IO 1.3 mg</td>
<td>IV / IO 1.55 mg</td>
<td>IV / IO 1.9 mg</td>
<td>IV / IO 2.5 mg ‡</td>
<td>IV / IO 2.5 mg ‡</td>
<td>IV / IO 2.5 mg ‡</td>
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<td>IV / IO 2.5 mg ‡</td>
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<td>0.1 mg / kg</td>
<td>0.09 mL</td>
<td>0.12 mL</td>
<td>0.17 mL</td>
<td>0.22 mL</td>
<td>0.26 mL</td>
<td>0.31 mL</td>
<td>0.38 mL</td>
<td>0.5 mL</td>
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<tr>
<td><strong>Midazolam</strong></td>
<td>IM / IN 0.9 mg</td>
<td>IM / IN 1.2 mg</td>
<td>IM / IN 1.7 mg</td>
<td>IM / IN 2.2 mg</td>
<td>IM / IN 2.6 mg</td>
<td>IM / IN 3.1 mg</td>
<td>IM / IN 3.8 mg</td>
<td>IM / IN 5 mg ‡</td>
<td>IM / IN 5 mg ‡</td>
<td>IM / IN 5 mg ‡</td>
<td>IM / IN 5 mg ‡</td>
<td>IM / IN 5 mg ‡</td>
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<td>0.2 mg / kg</td>
<td>0.18 mL</td>
<td>0.24 mL</td>
<td>0.34 mL</td>
<td>0.44 mL</td>
<td>0.52 mL</td>
<td>0.62 mL</td>
<td>0.76 mL</td>
<td>1 mL</td>
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*Symptomatic tachycardia with pulses OR Cardiac arrest with VF or VT WHEN AMIODARONE IS UNAVAILABLE

**Both Indications: Initial and Repeat Doses Require a Base Hospital Order (BHO)**

* Cardiac arrest with VF or VT WHEN ASSOC. W/ TORSADES DE POINTES / POLYMORPHIC VT - INITIAL AND REPEAT DOSES REQUIRE A BASE HOSPITAL ORDER (BHO)

* Continuous or recurrent tonic-clonic seizures - MAY REPEAT ONCE. FURTHER REPETITION REQUIRES A BASE HOSPITAL ORDER (BHO)

* Amnesic effect prior to synchronized cardioversion - INITIAL AND REPEAT DOSES REQUIRE A BASE HOSPITAL ORDER (BHO)

* Amnesic effect prior to Transcutaneous Cardiac Pacing (TCP) - INITIAL AND REPEAT DOSES REQUIRE A BASE HOSPITAL ORDER (BHO)

* Patients requiring chemical restraint when physical restraints are ineffective and who pose an immediate danger to themselves or others, due to severe agitation / aggression OR severe distress, who are at potential risk for sudden death - MAY REPEAT ONCE. FURTHER REPETITION REQUIRES A BASE HOSPITAL ORDER (BHO)
<table>
<thead>
<tr>
<th>Standard Medications</th>
<th>Grey 4-5 kg</th>
<th>Pink 5-7 kg</th>
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<th>Yellow 12-14 kg</th>
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<td><strong>0.45 mg / 0.1 mL</strong></td>
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<td><strong>Naloxone</strong></td>
<td>IM / IN</td>
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<td><strong>50 mEq / 50 mL</strong></td>
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<td>Red 8-9 kg</td>
<td>Purple 10-12 kg</td>
<td>Yellow 12-14 kg</td>
<td>White 15-16 kg</td>
<td>Blue 17-21 kg</td>
<td>Orange 23-29 kg</td>
<td>Green 32-37 kg</td>
<td>Coal 40-42 kg</td>
<td>Magenta 42-46 kg</td>
<td>Maroon 46-49 kg</td>
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<td><strong>Cardioversion</strong>*</td>
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<tr>
<td>Initial Shock</td>
<td>4.5 j</td>
<td>6 j</td>
<td>9 j</td>
<td>11 j</td>
<td>13 j</td>
<td>15.5 j</td>
<td>19 j</td>
<td>26 j</td>
<td>34.5 j</td>
<td>41 j</td>
<td>44 j</td>
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<tr>
<td>Subsequent Shocks</td>
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<td>12 j</td>
<td>17 j</td>
<td>22 j</td>
<td>26 j</td>
<td>31 j</td>
<td>38 j</td>
<td>52 j</td>
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<td><strong>Defibrillation</strong>*</td>
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<td>Initial Shock</td>
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<tr>
<td>Subsequent Shocks</td>
<td>18 j</td>
<td>24 j</td>
<td>34 j</td>
<td>44 j</td>
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<td><strong>Suction Catheter</strong></td>
<td>6–8 Fr.</td>
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<tr>
<td><strong>Nasopharyngeal Airway</strong></td>
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<td>16 Fr.</td>
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*Calculated joule settings at the point-of-care may not align with the joule settings referenced above. Additionally, available joule settings may differ between different cardiac monitor manufacturers. In cases where either or both of these are true, providers will utilize their calculated joule dose then round **UP** to the nearest available joule setting.