

SAN JOAQUIN COUNTY EMERGENCY MEDICAL SERVICES

Adult ALS Life Support Policies



**San Joaquin County
Emergency Medical Services Agency**



ALS Treatment Policies - Introduction

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

INTRODUCTION

- I. The Advanced Life Support (ALS) treatment Policies for adults and pediatrics approved by the Medical Director of the San Joaquin County EMS Agency directs the delivery of advanced life support (ALS) by licensed Paramedics accredited to practice in San Joaquin County. The ALS treatment Policies are the accredited paramedic's written orders authorizing the practice of ALS for specific patient conditions. All prehospital personnel are required to operate within their respective scope of practice. Accredited paramedics are expected to have a mastery of the ALS Treatment Policies, Basic Life Support (BLS) treatment Policies and all other San Joaquin County EMS Policies governing the delivery of emergency medical services in the field care setting.
- II. The ALS treatment Policies are to be used in concert with sound medical judgment. Unusual patient presentations make it impossible to develop a specific policy for every possible patient presentation. Paramedics should avail themselves of the opportunity to consult with a mobile intensive care nurse (MICN) or base hospital physician (BHP) when encountering unusual patient presentations or potential conflicts in treatment decisions.
- III. Base Hospital Physicians may order a deviation from any of the approved EMS Agency treatment Policies, as long as they remain within the paramedic scope of practice. These types or orders may not be relayed by the MICN. Each order from the BHP that deviates from Policy must be documented on a Base Hospital Report Form, the prehospital patient care report, and be submitted to the EMS Agency for review.
- IV. In those instances in which EMS Policy allows Paramedics to perform a procedure or provide medication only upon receipt of a Base Hospital Physician order, MICN's are allowed to relay orders from the Base Hospital Physician. The paramedic shall document the Physician's name on the patient care report.
- V. MICNs shall adhere to San Joaquin County EMS Agency Policies when offering advice, guidance, and direction to ALS and BLS field personnel.
- VI. In order to facilitate the best possible delivery of prehospital emergency medical care attending paramedics have the right to speak directly to a Base Hospital Physician during any call.

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- VII. All prehospital EMS personnel are held to the following patient care standards:
- A. San Joaquin County EMS Agency Policies and Procedures.
 - B. American Heart Association CPR, AED, and BLS airway obstruction and ventilation techniques.
 - C. State of California EMT-P Course Curriculum.
 - D. OES Region IV Multi-casualty Incident Plan, Field Operations Manual 1 and 2.
 - E. S.T.A.R.T. Triage.
 - F. OSHA and CAL-OSHA standards for infection control.

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Routine ALS Care

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

DEFINITIONS:

- A. **Standard Precautions:** Application of body substance isolation precautions including the use of appropriate personal protective equipment (PPE) shall apply to all patients receiving care, regardless of their diagnosis or presumed infectious status. Body substance isolation precautions apply to 1) blood; 2) all bodily fluids, secretions, and excretions except sweat, regardless of whether or not they contain visible blood; 3) non intact skin; and 4) mucous membranes. Standard precautions are designed to reduce the risk of transmission of microorganisms from both recognized and unrecognized sources of infection in the prehospital setting.

POLICY:

- I. Routine ALS Medical Care shall consist of the following:
- A. Standard precautions
 - B. Provision of appropriate BLS care in accordance with EMS Agency policy
 - C. ECG monitoring
 - D. IV access as indicated (may use saline lock when appropriate)
 - E. Obtain blood glucose level, as indicated
 - F. Transport
 - G. Follow ALS treatment policies as indicated

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ALS Advanced Airway Management

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

DEFINITIONS:

- A. **“Attempt”** means the introduction of a laryngoscope blade past the patient’s teeth with the intent to intubate.
- B. **“Difficulty Airway”** means an airway that has been predicted to be difficult based on preassessment of the patient or upon an attempt to visualize the cords and the patient has a Cormack-Lehane grade of three (3) or four (4).
- C. **“Successful Attempt”** means a verified placement and securing of the endotracheal tube into the patient’s trachea.
- D. **“Successful Attempt with Complications”** means a verified placement and securing of the endotracheal tube into the patient’s trachea with any of the following:
 - 1. Failure to perform and document meticulous BLS airway management skills prior to ALS intervention, as well as justification for ALS airway.
 - 2. Failure to maintain continuous pulse oximetry and ECG monitoring, for at least one (1) minute before the attempt and continuously thereafter.
 - 3. Deviations in vital signs associated with intubation suggestive of prolonged hypoxia, such as bradycardia or desaturation.
 - 4. Subsequent dislodgement of the endotracheal tube recognized by the receiving hospital.
 - 5. Subsequent diagnosis of mainstem intubation recognized by the receiving hospital.
 - 6. Subsequent diagnosis of severe airway complications likely associated with the prehospital intubation, such as pharyngeal, esophageal perforation, laryngeal trauma, such as vocal cord paralysis, or aspiration pneumonia.

POLICY:

- I. The approved airway management procedure for the unconscious adult patient consists of BLS airway management skills, endotracheal intubation, and if not successful, insertion of a King Airway.
- II. Paramedics placing advanced airways shall follow the procedures specified in EMS Policies No. 2545, 2552, 2553, 2555, and 2556.
- III. Endotracheal intubation in the pediatric patient should only be performed if unable to ventilate and oxygenate the patient using two-person Bag/Valve/Mask (BVM) ventilation.

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In cardiac arrest, oximetry will not be accurate, so intubation in this case should only occur if the patient cannot be ventilated by BVM.

- IV. Do not delay transport to establish an advanced airway in trauma patients except in the case of complete airway obstruction, as evidenced by a complete inability to ventilate the patient using an Oral Pharyngeal Airway (OPA) and BVM device.
- V. If unable to establish an airway due to complete airway obstruction not relieved using an OPA and BVM maneuvers, begin code three transport, and consider insertion of a King Airway, or needle cricothyrotomy (EMS Policy No. 2549) if the King Airway does not result in successful ventilation. Do not delay transport to wait for the arrival of an air ambulance.

VI. INDICATIONS FOR INTUBATION:





- A. Inability of the patient to protect their airway (coma, decreased level of consciousness with non-intact gag reflex).
- B. Inability to adequately ventilate or oxygenate the patient using an OPA and BVM device.
- C. Cardiac arrest, including traumatic arrest.
- D. Failing respirations (irregular and shallow), respiratory arrest.

VII. APPROVED ADVANCED AIRWAY PROCEDURE:

A. Endotracheal Intubation:

- 1. No more than two (2) attempts per patient with preoxygenation and continuous oximetry monitoring prior to each attempt.
- 2. An endotracheal tube inducer (ETTI) shall be used on all attempts.
- 3. Each attempt should last no longer than thirty (30) seconds. If during any attempt patient desaturates below 90%, immediately cease and reventilate to increase saturation.
- 4. A patient with a Cormack-Lehane grade of three (3) or four (4) (epiglottis is not or is barely visible) will be considered to have a difficult airway. The King Airway shall be utilized on the first attempts for difficult airways in adult patients.

Cormack and Lehan Classification (Grades) of Difficult Laryngoscopy	
Grade I	Most of glottis is seen
Grade II	Only posterior portion of glottis can be seen
Grade III	Only epiglottis may be seen (none of glottis seen)
Grade IV	Neither epiglottis nor glottis can be seen

Grade I	Grade II	Grade III	Grade IV
			

5. Ventilate with 100% oxygen for one (1) minute prior to attempting to intubate.
6. Monitor pulse oximetry continuously.
- B. Nasal Intubation: Nasal tracheal intubation may only be performed with a Base Hospital Physician order. The Base Hospital Physician's name shall be documented on the PCR.
- C. King Airway:
 1. After two (2) unsuccessful attempts at endotracheal intubation, consider placement of a King Airway.
 2. Only King Airway sizes three (3), four (4), and five (5) are authorized for use.
 3. The King Airway is not authorized for use in adults < 4 feet tall.

Authorized King Airway Sizes		
Size	Height in Feet	Color
3	4 – 5 Feet	Yellow
4	5 – 6 Feet	Red
5	> 6 Feet	Purple

4. Use a laryngoscope to facilitate placement.
5. Do not exceed manufacture's recommended pressures.
6. Remove and replace the King Airway if resistance is met. After two (2) unsuccessful attempts, place a BLS airway and transport code 3 to the closest receiving hospital.

VIII. CONFIRMATION OF TUBE PLACEMENT:

- A. Paramedics shall ensure that all intubations are confirmed by end tidal CO₂ device (colorimetric or capnography) and/or esophageal detection device (EDD).
- B. Paramedics shall immediately confirm tube placement by auscultating bilateral lung fields for breath sounds, observe for chest rise and fall with ventilations, and listen for air flow into the epigastric area after placement of an endotracheal tube or rescue device.
- C. Paramedics shall continually monitor capnography readings on all patients who have an endotracheal airway in place. Monitoring shall commence with transport and shall continue through to patient transfer at the emergency department.
- D. Paramedics shall attach a copy of the capnography strip and document the readings on the patient care record.
- E. Paramedics shall reconfirm ET Tube placement prior to transferring patient care.
- F. Paramedics shall visualize the pharynx and vocal cords with the laryngoscope, if there is any doubt as to proper placement of the endotracheal tube.

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ALS Patient Assessment – Primary Survey

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et al.

PROCEDURE:

The purpose of the primary survey is to identify and immediately correct life-threatening problems.

I. Scene Size Up:

- A. Recognize hazards, ensure safety of scene and secure a safe area for treatment.
- B. Apply universal body/substance isolation precautions.
- C. Recognize hazards to patient and protect patient from further injury.
- D. Identify the number of patients and initiate ICS/MCI operations if warranted:
 - 1. Ensure an ALS ambulance response and order additional resources.
 - 2. Consider/confirm air ambulance response.
 - 3. Initiate S.T.A.R.T. triage, if more than one patient.
- E. Observe position of patient(s).
- F. Determine mechanism of injury.
- G. Plan strategy to protect evidence at potential crime scene.

II. General Impressions:

- A. Check for life threatening conditions.
- B. Introduce self to patient.
- C. Determine chief complaint or mechanism of injury.

III. Airway:

- A. Ensure open airway
- B. Protect spine from unnecessary movement in patients at risk for spinal injury.
- C. Ensuring an adequate airway supersedes spinal immobilization.
- D. Look and listen for evidence of upper airway problems and potential obstructions:
 - 1. Vomit.
 - 2. Bleeding.
 - 3. Loose or missing teeth.

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- 4. Dentures.
- 5. Facial Trauma.
- E. Utilize any appropriate adjuncts as indicated to maintain airway.

IV. Breathing:

- A. Look, listen, and feel in order to assess ventilation and oxygenation.
- B. Expose chest, if necessary, and observe for chest wall movement.
- C. Determine approximate rate and depth and assess character and quality.
- D. Reassess mental status.
- E. Intervene for inadequate ventilation with:
 - 1. Pocket mask or BVM device.
 - 2. Supplemental oxygen.
- F. Assess for other life threatening respiratory problems and treat as needed.

V. Circulation:

- A. Check for pulse and begin CPR.
- B. Defibrillation as necessary.
- C. Control life-threatening hemorrhage with direct pressure.
- D. Palpate radial pulse.
 - 1. Determine absence or presence.
 - 2. Assess general quality (strong/weak).
 - 3. Identify rate (slow, normal, or fast).
 - 4. Assess regularity (regular/irregular).
- E. Obtain baseline blood pressure.
- F. Assess skin for signs of hypo-perfusion/SHOCK or hypoxia (capillary refill, cyanosis, etc.).
- G. Reassess mental status for signs of hypo-perfusion/SHOCK.
- H. Treat hypoperfusion if appropriate.
- I. Obtain ECG and continually monitor cardiac rhythm as appropriate.

VI. Level of consciousness:

- A. Determine need for spinal immobilization, EMS Policy No. 5506, BLS Spinal Immobilization.
 - 1. Determine Glasgow Coma Scale (GCS) Score (see page 3 for GCS chart).
 - 2. Determine glucose level as needed, EMS Policy N. 5751, ALS Altered Level of Consciousness (ALOC).

VII. Expose, Examine & Evaluate:

- A. In situations with suspected life-threatening mechanism of injury, complete a Rapid Trauma Assessment.
- B. Expose head, trunk and extremities.
- C. Head to Toe for DCAP-BTLS
 - 1. Deformity.
 - 2. Contusion/Crepitus.
 - 3. Abrasion.
 - 4. Puncture.
 - 5. Bruising/Bleeding.
 - 6. Tenderness.
 - 7. Laceration.
 - 8. Swelling.

Adult Glasgow Coma Scale:		
Eye Opening	Verbal Response	Best Motor Response
4 = Spontaneous	5 = Oriented	6 = Obeys commands
3 = To verbal stimuli	4 = Confused	5 = Localizes stimuli
2 = To painful stimuli	3 = Inappropriate words	4 = Withdrawal from pain
1 = No response	2 = Incomprehensible sounds	3 = Abnormal Flexion
	1 = No response	2 = Abnormal Extension
		1 = No response

Note: Always document and report GCS as a breakdown of scores (i.e. GCS = Eye 3, Verbal 3, Motor 4 for a total score of 10).

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ALS Patient Assessment - Secondary Survey

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et al.

PROCEDURE:

- I. The secondary survey is the systematic assessment and complaint focused, relevant physical examination of the patient. The secondary survey may be done concurrently with the patient history and should be performed after the Primary Survey and the initiation of Routine Medical Care. The purpose of the secondary survey is to identify problems which, though not immediately life or limb threatening, could increase patient morbidity and mortality. Exposure of the patient for examination may be reduced or modified as indicated due to environmental factors.

- II. History:
 - A. A patient's history should optimally be obtained from the patient directly. If language, culture, age, disability barriers or patient condition interferes with obtaining the history, consult with family members, significant others or scene bystanders. Check for advanced directives such as a DNR order, Medic-Alert bracelet and prescription bottles as appropriate. Be aware of the patient's environment and issues such as domestic violence, child or elder abuse or neglect and report concerns. The following information should be obtained during the history:
 1. Allergies;
 2. Medications;
 3. Past medical history relevant to the chief complaint.
 4. Have patient prioritize his or her chief complaint if complaining of multiple problems;
 5. Ascertain recent medical history such as hospital admissions, surgeries, etc;
 6. Mechanism of injury if appropriate;
 7. In addition obtain history relevant to specific patient complaints.

- III. Head and Face:
 - A. Observe and palpate skull (anterior and posterior) and face for DCAP-BTLS;
 - B. Check eyes for equality, responsiveness of pupils, movement and size of pupils, foreign bodies, discoloration, contact lenses or prosthetic eyes;
 - C. Check nose and ears for foreign bodies, fluid or blood;

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- D. Recheck mouth for potential airway obstructions (swelling, dentures, bleeding, loose or avulsed teeth, vomit, absent or present gag reflex) and odors, altered voice or speech patterns and evidence of dehydration.

IV. Neck:

- A. Observe and palpate for DCAP-BTLS, jugular vein distension, use of neck muscles for breathing, tracheal tugging, tracheal shift, stoma and medical information medallions.

V. Chest:

- A. Observe and palpate for DCAP-BTLS, scars, implanted devices such as pacemakers and indwelling IV/arterial catheters, medication patches, chest wall movement, asymmetry and accessory muscle use in breathing;
- B. Have patient take a deep breath if possible and observe and palpate for signs of discomfort, asymmetry and air leak from any wound.
- C. Assess lung sounds and heart tones as appropriate.

VI. Abdomen:

- A. Observe and palpate for DCAP-BTLS, scars and distention;
- B. Palpation should occur in all four quadrants taking special note of tenderness, masses and rigidity.

VII. Pelvis/Genital-Urinary:

- A. Generally, a patient's genital area should not be exposed and examined unless the assessment of this body region is required due to the patient's condition, such as trauma to the region, active labor or suspected/known bleeding. When possible have an EMT or paramedic of the same gender as the patient perform evaluations of the pelvis/genital area.
- B. Observe and palpate for DCAP-BTLS, asymmetry, sacral edema and as indicated for other abnormalities;
- C. Palpate and gently compress lateral pelvic rims and symphysis pubis for tenderness, crepitus or instability;
- D. Palpate for bilateral femoral masses, if warranted.

VIII. Shoulder and Upper Extremities:

- A. Observe and palpate for DCAP-BTLS, asymmetry, skin color, capillary refill, edema, medical information bracelet, and equality of distal pulses;
- B. Assess sensory and motor function as indicated.

IX. Lower Extremities:

- A. Observe and palpate for DCAP-BTLS, asymmetry, skin color, capillary refill, edema and equality of distal pulses;

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B. Assess sensory and motor function as indicated.

X. Back:

A. Observe and palpate for DCAP-BTLS, asymmetry and sacral edema.

XI. Precautions and Comments:

- A. Observation and palpation can be done while gathering a patient's history.
- B. A systematic approach will enable the rescuer to be rapid and thorough and not miss subtle findings that may become life-threatening.
- C. Minimize scene times, especially with trauma patients and pediatrics, by packaging/preparing the patient for immediate transport upon ambulance or air ambulance arrival (spinal immobilization, miller board, pediatric immobilization device, ensuring rapid ingress/egress for BLS personnel and equipment.)
- D. The Secondary Survey should ONLY be interrupted if the patient experiences airway, breathing or circulation deterioration requiring immediate intervention. Complete the examination before treating the other identified non-life threatening problems.
- E. Reassessment of vital signs and other observations are necessary, particularly in critical or rapidly changing patients. Vital signs should be taken approximately every 5 minutes. Changes and trends observed in the field are essential data to be documented and communicated to the transport personnel or receiving facility.
- F. As stated in the Primary Survey DCAP-BTLS is a mnemonic that stand for:
 - 1. Deformity;
 - 2. Contusion/Crepitus;
 - 3. Abrasion;
 - 4. Puncture;
 - 5. Bruising/Bleeding;
 - 6. Tenderness;
 - 7. Laceration;
 - 8. Swelling.

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ALS Adult Pain Management

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

DEFINITIONS:

- A. **Pain:** Pain is a significantly unpleasant sensation, occurring in varying degrees of severity, which results because of injury, disease, or emotional disorder.

POLICY:

- I. The use of morphine to manage moderate to severe pain is an advanced life support procedure that is indicated for patients who are complaining of moderate to severe pain in the presence of adequate vital signs and level of consciousness.
- II. Morphine may be used to treat stable patients when extrication, movement, or transport is required and is anticipated to cause considerable pain to the patient when there are no known contraindications to administering analgesia.
- III. Morphine is a potent analgesic and should be used with caution.
- IV. Procedure:
 - A. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.
 - B. Monitor patient closely.
 - C. Establish IV access (IV NS or NS lock as appropriate).
 - D. Obtain full set of vital signs.
 - E. Administer Morphine 2-4mg IV every five minutes as needed to relieve pain to a maximum dose of 20mg. If unable to secure IV access, administer Morphine 5-10mg IM, may repeat one dose in 30 minutes. Document pain scale before and after medication administration.
 - F. Monitor patient and vital signs carefully; ensure patent airway. Do not administer morphine sulfate for pain if systolic blood pressure is < 90 or respirations are < 12 without base hospital physician order.
- V. Base Physician Order Requirements:

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- A. Concomitant administration of midazolam requires a base hospital physician order.
- B. Contact the base hospital physician prior to administering any pain medication to the following types of patients:
 - 1. Any patient with hypotension, respiratory rate < 12, or altered mental status
 - 2. Women in labor

VI. Contraindications:

- A. Absolute: Allergy or sensitivity to the medication being administered.
- B. Relative:
 - 1. Nausea/Vomiting
 - 2. Altered level of consciousness
 - 3. Hypotension
 - 4. Suspected drug and/or alcohol intoxication
 - 5. Head injury
 - 6. Pregnancy
 - 7. Multiple systems trauma

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ALS Ventricular Fibrillation & Pulseless VTach

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

POLICY:

- I. Perform routine ALS/BLS medical care while confirming pulselessness and appropriate rhythm on the cardiac monitor.
- II. Treatment:
 - A. If unwitnessed arrest, perform and complete initial CPR sequence (5 cycles/2 minutes) while preparing equipment.
 - B. Defibrillate patient one time using manufacturer recommended dose of energy (usually 120-200 joules in biphasic defibrillators). If not stated, use 200 joules (biphasic); or 360 joules (monophasic); then resume CPR immediately
 - C. Establish an advanced airway.
 - D. Establish IV/IO of normal saline TKO.
 - E. Administer Epinephrine 1 mg (1:10,000) via IV/IO. Repeat every 3-5 minutes, and continue CPR.
 - F. Defibrillate 1 x @ 120 - 200 joules (biphasic); or 1 x @ 360 joules (monophasic); resume CPR.
 - G. Administer Lidocaine 1mg/kg IVP/IO (may repeat once in 3-5 minutes).
 - H. For return of spontaneous circulation, see EMS Policy No.5726, Return of Spontaneous Circulation.
 - I. If no return to spontaneous circulation continue CPR and follow appropriate rhythm specific treatment policy.
- III. Special Considerations:
 - A. Suspected hyperkalemia in renal dialysis patients – Consider IVP/IO administration of 500 mg of 10% Calcium Chloride and 1 mEq/kg of Sodium Bicarbonate, and consult Base Hospital Physician to discuss further management.

Note: CPR should be administered for complete sequences of 5 cycles/2 minutes, between each defibrillation. During 5 cycles/2 minutes, establish IV/IO and administer medications during CPR (before or after defibrillation) to minimize interruptions in chest compressions.

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ALS Wide Complex Tachycardia with a Pulse

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.

- II. Unconscious:
 - A. Establish an IV of normal saline TKO.
 - B. Consult with Base Hospital Physician.
 1. Synchronized cardioversion at 100 joules (monophasic energy dose or equivalent biphasic energy dose).
 2. If no response: repeat synchronized cardioversion at 200 joules (or biphasic equivalent).
 3. If no response: repeat synchronized cardioversion at 300 joules (or biphasic equivalent).
 4. If no response: repeat synchronized cardioversion at 360 joules (or biphasic equivalent).
 5. If rhythm does not convert with cardioversion administer Lidocaine 1 mg/kg IVP (may repeat x 1 in 3-5 minutes).
 - C. Consult with Base Hospital Physician for further interventions.

- III. Conscious (stable or unstable) (chest Pain, BP less than 90 mmHg systolic, decreased LOC, shortness of breath, signs of shock):
 - A. Place on 12 Lead ECG if chest pain is present.
 - B. Establish an IV of normal saline TKO.
 - C. In the presence of continuous chest pain, administer Lidocaine 1mg/kg IVP. May repeat every 5-10 minutes at ½ initial dose up to a total of 3 mg/kg.
 - D. Lidocaine Drip: 1gm in 250 ml Normal Saline. Utilizing a dial-a-flow and extension tubing, administer 2-4 mg/min to decrease or eliminate ventricular ectopy.

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ALS Narrow Complex Tachycardia; AFib/AFlutter

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.
- II. Unconscious:
 - A. Consult Base Hospital Physician.
 1. Synchronized cardioversion at 100 joules (monophasic energy dose or equivalent biphasic energy dose).
 2. If no response: repeat synchronized cardioversion at 200 joules (or biphasic equivalent).
 3. If no response: repeat synchronized cardioversion at 300 joules (or biphasic equivalent).
 4. If no response: repeat synchronized cardioversion at 360 joules (or biphasic equivalent).
- III. Conscious (stable or unstable) (chest Pain, BP less than 90 mmHg systolic, decreased LOC, shortness of breath, signs of shock):
 - A. Place on 12 Lead ECG only if chest pain is present.
 - B. Establish an IV of normal saline TKO.
 - C. Monitor and transport patient.
 - D. Consider reversible causes of tachycardia.
 - E. Consult with Base Hospital Physician for medication orders if transport time > 10 minutes or change in patient condition.

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ALS Narrow Complex Tachycardia; SVT

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.

- II. Unconscious
 - A. Consider reversible causes of tachycardia such as hypoxia and hypovolemia.
 - B. Establish an IV of normal saline TKO.
 - C. Consult Base Hospital Physician.
 1. Synchronized cardioversion at 100 joules monophasic energy dose (or equivalent biphasic energy dose).
 2. If no response: repeat synchronized cardioversion at 200 joules (or biphasic equivalent).
 3. If no response: repeat synchronized cardioversion at 300 joules (or biphasic equivalent).
 4. If no response: repeat synchronized cardioversion at 360 joules (or biphasic equivalent).

- III. Conscious (stable or unstable) (chest Pain, BP less than 90 mmHg systolic, decreased LOC, shortness of breath, signs of shock):
 - A. Consider reversible causes of tachycardia including hypoxia and hypovolemia and treat accordingly.
 - B. Perform Valsalva's maneuver.
 - C. Establish an IV of normal saline TKO.
 - D. Administer Adenosine 6mg rapid IVP immediately followed by 20 ml of normal saline.
 - E. If no response after 2 minutes: Administer Adenosine 12mg rapid IVP immediately followed by 20 ml of normal saline.
 - F. If no response after 2 minutes: Administer Adenosine 12mg rapid IVP immediately followed by 20 ml of normal saline.
 - G. Consider 12 Lead ECG if chest pain is present.
 - H. Consult with Base Hospital Physician.

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ALS Asystole

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

PROCEDURE:

- I. Confirm pulselessness and rhythm. If rhythm is unclear and possibly ventricular fibrillation, defibrillate as for ventricular fibrillation.
- II. Perform immediate, effective CPR.
- III. Treatment:
 - A. Continue CPR, maintain adequate airway.
 - B. Establish IV/IO of normal saline TKO.
 - C. Establish an advanced airway.
 - D. Consider reversible causes and treat as indicated:
 1. Hypovolemia – Start 2 large bore IV/IO lines and administer rapid 2 liter volume infusion of NS, then 250 ml boluses until systolic B/P is >90 mmHg .
 2. Hypoxia – Administer 100% oxygen
 3. Tension pneumothorax.
 4. IDDM and Dialysis (Acidosis) – Administer 1 mEq/kg of Sodium Bicarbonate IVP/IO
 5. Cardiac tamponade – Continue CPR
 6. Drug overdoses – Administer reversal agents as indicated. Contact Base Hospital Physician for orders if necessary.
 7. Hypothermia – Initiate rewarming activities.
 8. Renal Failure/Dialysis (Hyperkalemia) - Administer 500 mg of 10% Calcium Chloride and 1 mEq/kg of Sodium Bicarbonate IVP/IO.
 - E. If unable to establish IV/IO and unable to intubate, begin transport and continue CPR.
 - F. Administer Epinephrine 1 mg (1:10,000) IVP/IO. Repeat every 3-5 minutes.
 - G. Continue CPR for 5 cycles/2 minutes and recheck pulse/rhythm.
 1. If the patient remains pulseless and apneic following fifteen (15) minutes and 5 rounds of ALS resuscitative measures, ALS personnel shall contact the Base Hospital Physician and request permission to discontinue resuscitative measures.

Note: CPR should be administered in complete sequences of 5 cycles/2 minutes, between each shock. During 5 cycles/2 minutes, establish IV/IO and administer medications during CPR (before or after shock) to minimize interruptions in chest compressions.

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ALS Pulseless Electrical Activity (PEA)

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

PROCEDURE:

- I. Confirm pulselessness and rhythm.
- II. Perform immediate, effective CPR.
- III. Continue CPR, maintain patent airway with 100% oxygen via BVM. Establish an advanced airway.
- IV. Establish IV of normal saline. Administer rapid infusion until systolic BP is greater than 90 mmHg or 2 liters has been infused; then reduce infusion rate TKO.
- V. Consider reversible causes and treat as indicated:
 - A. Hypovolemia – Start 2 large bore IV/IO lines and administer rapid 2 liter volume infusion of normal saline. Continue infusions of normal saline in 250 ml bolus increments until systolic BP is greater than 90 mmHg .
 - B. Hypoxia – Continue to administer 100% oxygen and manage ventilations as needed.
 - C. Tension pneumothorax.
 - D. IDDM and Dialysis (Acidosis) – Administer 1 mEq/kg of Sodium Bicarbonate IVP/IO.
 - E. Cardiac tamponade – Continue CPR.
 - F. Drug overdoses – Administer reversal agents as indicated. Contact Base Hospital Physician for orders if necessary.
 - G. Hypothermia – Initiate rewarming interventions.
 - H. Renal Failure/Dialysis (Hyperkalemia) - Administer 500 mg of 10% Calcium Chloride and 1 mEq/kg of Sodium Bicarbonate IVP/IO.
- VI. Administer Epinephrine 1 mg (1:10,000) IVP/IO.
- VII. Continue CPR for 5 cycles/2 minutes and recheck pulse/rhythm.
- VIII. For heart rates less than 30, if the patient remains pulseless and apneic following fifteen (15) minutes and five (5) rounds of ALS resuscitative measures, ALS personnel shall contact the Base Hospital Physician and request permission to discontinue resuscitative measures.

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Note: CPR should be administered for complete sequences of 5 cycles/2 minutes, between each shock. During 5 cycles/2 minutes, establish IV/IO and administer medications during CPR (before or after shock) to minimize interruptions in chest compressions.

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ALS Bradycardia

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.

- II. Unstable Patients (systolic BP < 90mmHg, signs of shock, decreased level of consciousness, chest pain, and shortness of breath):
 - A. Establish IV of normal saline TKO.
 - B. Administer Atropine in increments of 0.5mg IVP every 5 minutes to 1.5 mg.
 1. If patient remains unstable, consult with Base Hospital Physician as described in II. C.
 2. Atropine may be administered every five (5) minutes to a maximum of 3mg as needed.
 - C. Consult Base Hospital Physician.
 1. Initiate transcutaneous pacing.
 2. Provide sedation with Midazolam 1-2 mg and/or Morphine Sulfate 1-2 mg slow IVP, and titrate to effect.
 3. If capture is maintained but patient remains symptomatic, consider fluid challenges of 250 ml NS. Recheck vital signs after every 250 ml or more frequently as needed.
 4. If inadequate response to Atropine and pacing, consider administering Dopamine 400 mg/250 cc premix. Using a dial-a-flow start at 10 mcg/kg/min and titrate to systolic BP of 90mmHg. (See page 2 for Dopamine dosage chart).
 - D. For Renal Failure/Dialysis (suspected Hyperkalemia) – Consult with Base Hospital Physician to obtain order for administration of 500 mg of 10% Calcium Chloride and 1 mEq/kg of Sodium Bicarbonate IVP.

- III. Stable Patients:
 - A. Monitor patient and transport.
 - B. Consult Base Hospital Physician as needed.

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DOPAMINE			
400 mg in 250 cc NS or D5W 60 drops/min = 60 ml/hr			
Weight (kg)	gtts/min to = 10 mcg/kg/min	Weight (kg)	gtts/min to = 10 mcg/kg/min
35-45	15 gtts/min	85-90	35 gtts/min
45-55	20 gtts/min	95-105	40 gtts/min
60-70	25 gtts/min	110 & up	45 gtts/min
75-80	30 gtts/min		

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ALS Chest Pain

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

POLICY:

I. Perform routine ALS/BLS medical care.

II. Treatment:

- A. Oxygen 12 - 15 lpm via non-rebreather mask.
- B. IV of normal saline TKO.
- C. Administer nitroglycerin 0.4 mg SL - if systolic blood pressure is above 90 mmHg. May repeat every 5 minutes if signs/symptoms persist and systolic BP remains above 90 mmHg.
- D. If patient is able to swallow, give Aspirin 325 po.
- E. Perform 12 Lead ECG – Initiate STEMI Alert* if indicated.
- F. Transport.

III. STEMI ALERT Process:

- A. Contact SRC ASAP to announce the STEMI alert, provide an ETA, and state that transmission of the 12 lead ECG will be sent when en route (if equipped to do so).
- B. Initiate rapid transport to a STEMI receiving center per EMS Policy No. 5201, Medical Patient Destination.
- C. Transmit ECG to SRC when en route to the SRC (if equipped to do so).
- D. Administer morphine sulfate 2 mg slow IVP if patient is still symptomatic after three (3) Nitroglycerin doses, or if Nitroglycerin is contraindicated.
 - 1. May repeat morphine sulfate 2-4 mg slow IVP every 3-5 minutes to a maximum of 15 mg total. Monitor BP and respirations between dosages. Do not repeat doses if systolic BP less than 90 mmHg.

NOTE: *All STEMI alerts shall be based on the cardiac monitor/defibrillator manufacture’s operating instructions regarding STEMI alerting messages. LP12 (** ACUTE MI SUSPECTED **); LP15 (** MEETS ST ELEVATION MI CRITERIA **); Zoll E Series (** ** ** ** ACUTE MI ** ** ** **)

IV. Special Considerations for all patients:

- A. If systolic blood pressure less than 90 mmHg, administer a 250 cc fluid bolus.

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- B. Nitroglycerin is contraindicated and should **NOT** be administered to patients of either gender who have taken Viagra, (sildenafil citrate) or Levitra (vardenafil HCL) within 24 hours or Cialis (tadalafil) within 36 hours.
- C. Aspirin should NOT be administered to patients with an aspirin allergy or active GI bleeding.

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ALS Cardiogenic Shock

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.
- II. Treatment:
 - A. Apply Oxygen at 10 to 15 LPM via a non-rebreather mask.
 - B. Obtain 12 Lead ECG and transport to an SRC if indicated.
 - C. Treat significant arrhythmias.
 - D. Establish IV of normal saline TKO.
 - E. Administer a NS fluid challenge of up to 1 liter while rechecking vital signs and lung sounds after every 250 mls. If patient's lungs are not clear, discontinue the fluid challenge and consult the base hospital physician.
 - F. If systolic blood pressure remains less than 90 mmHg following fluid challenges, or if the patient's lungs are not clear, consult Base Hospital Physician. Anticipate an order for an infusion of Dopamine, titrated at 10mcg/kg/min to a systolic blood pressure of 90 mmHg using a dial-a-flow with extension tubing.
 - G. Transport immediately.

DOPAMINE			
400 mg in 250 cc NS or D5W - 60 drops/min = 60 ml/hr			
Weigh	gtts/min to = 10 mcg/kg/min	Weight (kg)	gtts/min to = 10 mcg/kg/min
35-45	15 gtts/min	85-90	35 gtts/min
45-55	20 gtts/min	95-105	40 gtts/min
60-70	25 gtts/min	110 & up	45 gtts/min
75-80	30 gtts/min		

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ALS Ventricular Ectopy

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

DEFINITIONS:

- A. **Ventricular ectopy:** Couplets or multifocal PVCs > 6 BPM, or non-sustained runs of ventricular tachycardia.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.
- II. Treatment:
- A. Obtain 12 lead ECG and transport to a STEMI Receiving Center if indicated.
 - B. Establish IV of normal saline.
 - C. In the presence of continuous chest pain, administer Lidocaine 1mg/kg IVP. May repeat every 5-10 minutes at ½ initial dose up to a total of 3 mg/kg.
 - D. Lidocaine Drip: 1gm in 250 ml Normal Saline. Utilizing a dial-a-flow with extension tubing, administer 2-4 mg/min to decrease or eliminate ventricular ectopy.

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ALS Return of Spontaneous Circulation

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

POLICY:

- I. Perform routine ALS/BLS medical care while confirming palpable carotid pulse and blood pressure.
- II. Monitor for reoccurrence or cardiac instability.
- III. Treatment:
 - A. For adult patients begin therapeutic hypothermia as indicated in accordance with EMS Policy No 5727, ALS Therapeutic Hypothermia.
 - B. Establish IV of normal saline TKO.
 - C. B/P greater than 90 systolic:
 1. Monitor cardiac rhythm and vital signs.
 2. If patient was resuscitated from VF/VT or ventricular ectopy is present, administer Lidocaine 1mg/kg IVP. May repeat every 5-10 minutes at ½ initial dose up to a total of 3 mg/kg.
 3. Lidocaine Drip: Utilizing a dial-a-flow and extension tubing administer 1gm in 250 ml normal saline or D5W. Administer 2-4 mg/min to decrease or eliminate ventricular ectopy.
 - D. B/P less than 90 systolic
 1. Administer fluid challenge of 500ml IV.
 2. If heart rate is less than 60 BPM:
 - a. Administer Atropine 0.5mg IVP. Repeat every 5 minutes as needed to a maximum dose of 3 mg.
 - b. Initiate transcutaneous pacing if HR and B/P do not improve following administration of Atropine.
 3. Consider Dopamine infusion. Using a dial-a-flow and extension tubing start at 10mcg/kg/min and titrate to a systolic blood pressure of 90 mmHg.

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ALS Therapeutic Hypothermia

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

POLICY: Implementation of therapeutic hypothermia for comatose cardiac arrest patients with Return of Spontaneous Circulation (ROSC) is a procedure endorsed by the American Heart Association and outlined in the 2003 Advisory Statement by the ALS Task Force of the International Liaison Committee on Resuscitation (ILCOR). Mild hypothermia is thought to reduce cerebral oxygen demand post arrest, and reduce the damage caused by inflammatory responses that occur once cerebral perfusion is restored. Inducing mild hypothermia in comatose patients post out-of-hospital cardiac arrest has been shown to improve neurological function and decrease mortality

I. INDICATIONS:

- A. Patients 18 years of age and over:
 - 1. The sustained return of spontaneous circulation for a minimum of 5 minutes following cardiac arrest.
 - 2. Persistent coma following cardiac arrest (VF, pulseless VT, PEA, and Asystole): unresponsive, not following verbal commands, not presenting with any purposeful movements, GCS < 8. Brainstem reflexes and posturing movements may be present.
 - 3. Blood pressure \geq 90 mmHg systolic.
 - 4. SpO₂ > 85%.
 - 5. Blood glucose > 50 mg/dL.

II. CONTRAINDICATIONS:

- A. Traumatic cardiac arrest.
- B. GCS \geq 8, and/or rapidly improving GCS.
- C. Pregnancy.
- D. DNR.

III. Treatment:

- A. In conjunction with EMS Policy No. 5726, ALS Return of Spontaneous Circulation, the paramedic should begin cooling measures as follows:
 - 1. Expose patient and apply eight (8) cold packs:
 - a. 2 on head

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- b. 2 on the neck over the carotid arteries
- c. 1 in each axilla
- d. 1 on each femoral artery at groin
- 2. Institute other cooling measures (e.g. removal of the patient's clothes, turn on ambulance AC in the patient compartment and direct air flow over the patient).
- 3. Obtain a 12-lead ECG.
- 4. If patient begins to shiver contact the base hospital contact for administration of Midazolam or if patient becomes responsive, discontinue therapeutic hypothermia.
- 5. Advise the emergency department personnel upon arrival that you have initiated the cooling process.

B. Patient Transportation Considerations:

- 1. If the 12 lead ECG **indicates** a ST Elevated Myocardial Infarction (STEMI), the patient shall be transported to a STEMI receiving center.
- 2. If the 12 lead ECG **does not** indicate a STEMI, the patient shall be transported to a receiving hospital with therapeutic hypothermia capabilities.

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ALS Allergic Reaction/Anaphylaxis

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.

- II. Treatment:
 - A. Remove allergen if possible.
 - B. **Mild reaction** (urticaria only):
 1. Consider diphenhydramine 50mg IM
 - C. **Moderate to severe reaction** (Urticaria with one or more of the following: swelling of mucous membranes, dyspnea, wheezing, chest or throat tightness, abdominal cramps).
 1. Consider epinephrine 1:1000, 0.01mg/kg SQ. Maximum dose 0.5mg. (Use with caution in patients over the age of 35 years and in patients with known coronary artery disease or HTN.)
 2. If wheezing, initiate hand held nebulizer dose of Albuterol 5mg in 6 ml NS. May repeat as needed.
 3. Consider IV NS TKO or saline lock.
 4. Administer diphenhydramine 1mg/kg to maximum dose of 50mg IM or IVP.
 - D. **Anaphylaxis** (Urticaria and signs of shock with any or all of the following: swelling of mucous membranes, dyspnea, wheezing, chest or throat tightness, abdominal cramps).
 1. Administer epinephrine 1:1000, 0.01mg/kg SQ. Maximum dose 0.5mg. (Use with caution in patients over the age of 35 years and in patients with known coronary artery disease or HTN.)
 2. Establish large bore IV of NS and administer 250ml fluid boluses as indicated.
 3. If wheezing, initiate hand held nebulizer dose of Albuterol 5mg in 6 ml NS. May repeat as needed.
 4. Administer diphenhydramine 1mg/kg to maximum dose of 50mg IM or IVP.
 5. Consider intubation.
 6. If patient is unresponsive with no palpable pulses, administer epinephrine (1:10,000) 0.01mg/kg to max dose of 0.5mg IV.
 7. Consult base hospital physician for further orders.

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ALS Poisoning/Overdose

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

DEFINITIONS:

- A. **Poisoning/Overdose:** Ingestion and/or exposures to one or more toxic substances, including alcohol.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.
- II. Identify substance. Bring any containers, labels or a sample (if safe) into the hospital with the patient. Determine type, amount, and time of the exposure.
- III. Treatment:
- A. Establish IV of normal saline TKO or saline lock if indicated.
- B. Initiate early transport and receiving hospital notification.
- IV. Substance Specific Treatment:
- A. **Opiates:**
1. Manage airway and adequate ventilation.
 2. Administer Naloxone titrated to maintain adequate ventilation and airway control. Initial dose is 0.4mg - 2 mg IVP (maximum dose of 4mg). May administer Intranasally (IN), or SL if unable to start IV.
- B. **Cocaine/Amphetamines:**
1. Consider activated charcoal 1gm/kg PO, not to exceed 50gms given orally if within the first 60 minutes of ingestion.
 2. Monitor for seizures and/or dysrhythmias and treat accordingly.
 3. For immediate control of psychomotor agitation, consult Base Hospital Physician for sedative order.
- C. **Insecticides (organophosphates, carbonates):**
1. Skin exposure: decontaminate patient as soon as possible (remove clothes, wash skin).
 2. Avoid contamination of prehospital personnel.
 3. Assess for SLUDGE (salivation, lacrimation, urination,

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- diaphoresis/diarrhea, gastric hypermotility, and emesis/eye [small pupils and/or blurry vision]).
4. If indicated, administer Atropine 2.0 mg IVP slowly. If no tachycardia or pupil dilation, give second dose of 2.0mg IVP. Note: Atropine does not reverse muscle weakness that leads to respiratory failure.
 5. Atropine can be toxic and orders for repeated doses above 4 mg should be given by the Base Hospital Physician Only.
- C. **Cyclic Antidepressants:**
1. Anticipate rapid deterioration of condition.
 2. In the presence of life-threatening dysrhythmias:
 - a. Hyperventilate if assisting ventilation.
 - b. Administer Sodium Bicarbonate 1mEq/kg IVP.
 3. For seizures, see EMS Policy, No. 5753, Seizures.
 4. For signs of shock see EMS Policy No. 5720, Cardiogenic Shock.
- D. **Beta Blockers:**
1. Consider activated charcoal 1gm/kg PO, not to exceed 50gms given orally if within the first 60 minutes of ingestion.
 2. Obtain blood glucose level.
- E. **Calcium Channel Blockers:**
1. Consider activated charcoal 1gm/kg PO, not to exceed 50gms given orally if within the first 60 minutes of ingestion).
 2. If bradycardic and/or hypotensive, consult Base Hospital Physician for order to administer Calcium Chloride 500mg slow IVP over five (5) minutes. May repeat x 1 in ten (10) minutes.
- F. **Phenothiazine Reactions:**
1. Administer Diphenhydramine 1 mg/kg IVP/IO to a maximum of 50 mg. If unable to establish IV access, administer IM.
- G. **Other Non-Caustic Drugs:**
1. If patient is awake and alert consider activated charcoal orally—1gm/kg PO, not to exceed 50gms if within the first 60 minutes of ingestion.
 2. Consider contacting Poison Control Center.
- H. **Hydrocarbons (kerosene, gasoline, lighter fluid, turpentine, furniture polish, etc):**
1. Do not induce vomiting-transport immediately.
- I. **Caustic Substances (acids/alkalis):**
1. Do not induce vomiting.

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ALS Heat Illness

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

DEFINITIONS:

- A. **Heat Cramps:** Cramping of the most worked muscles following replacement of exertion induced fluid losses (sweating) with water; exhaustion, fatigue, flu-like symptoms, normal/slightly elevated body temperature, normal mental status with clear lung sounds.
- B. **Heat Stroke:** Triad of exposure to heat stress, altered mental status and elevated body temperature; often associated with absence of sweating, tachycardia and hypotension.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.
- II. Specific Heat Cramps/Heat Exhaustion Treatment:
 - A. Move patient to cool environment and initiate passive cooling measures.
 - B. If lungs clear, give fluid challenge of 250mls of NS. May repeat x 4.
 - C. Recheck vital signs and lungs after every 250 mls.
- III. Specific Heat Stroke Treatment:
 - A. Move to cool environment and begin cooling measures:
 - 1. Remove clothing and splash/sponge with water.
 - 2. Place cool packs on neck, axilla, and inguinal areas.
 - 3. Promote cooling by fanning.
 - 4. IV NS 10 cc/kg (maximum of 2 liters) while repeating vital signs and listening to lung sounds after every 250 mls.

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ALS Hypothermia

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.

- II. Treatment:
 - A. Early receiving hospital notification.
 - B. Ensure patent airway.
 - C. Move to sheltered area minimizing patient's physical exertion or movement. Remove patient's wet clothing and cover with warm, dry sheet or blankets.
 - D. Establish IV of normal saline. If lungs clear, consider fluid challenge of 10 ml/kg warm normal saline. Recheck vitals following each infusion of 250 mls of normal saline.
 - E. Severe hypothermia (stuporous or comatose, dilated pupils, hypotensive or pulseless, slowed to absent respirations):
 1. Prepare to support ventilations using appropriate airway adjuncts. If spontaneous respirations are present, intubate only if necessary to prevent aspiration or if ventilations are inadequate (4-6/min may be adequate).
 2. Ventilate using warm, humidified oxygen if available. Avoid hyperventilating the patient.
 3. Observe for organized rhythm and pulses for one minute. If organized rhythm present, move quickly but gently to warm environment (ambulance) and provide appropriate treatment for cardiac rhythm per EMS Agency policy.

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ALS Envenomation

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.

- II. Treatment:
 - A. Refer to EMS Policy No. 5535, Basic Life Support Envenomation.
 - B. Insect bite:
 - 1. Scrape away stinger (if appropriate).
 - 2. Observe for Allergic Reaction/Anaphylaxis and treat accordingly (EMS Policy No. 5731).
 - 3. Apply cold packs for pain management.
 - C. Snake bite:
 - 1. Immobilize extremity at or below heart level.
 - 2. Circle swelling and note time.
 - 3. Apply a light constricting band about 2" above and below the bite. The purpose of constricting bands is to restrict lymphatic flow, not blood, so they should not be too tight. Check pulses below the bands and readjust the bands as necessary when they tighten due to swelling.
 - 4. Consider pain management.
 - 5. Initiate early receiving hospital notification.
 - 6. Expedite transport.

- For snakebite, do **NOT**:

 - 1. Apply ice to site.
 - 2. Make incisions over bite.
 - 3. Apply a tourniquet.
 - 4. Delay transport to initiate IV.

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ALS Altered Level of Consciousness (ALOC)

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.
- II. Obtain a complete patient history including current medications.
- III. Identify and document neurological deficits.
- IV. Consider indications for spinal immobilization precautions, per EMS Agency Policy No. 5506, BLS Spinal Immobilization.
- V. Consider potential causes (hypoglycemia, stroke, neurological injury, syncope, overdose, and sepsis).
- VI. Treatment:
 - A. Establish IV/IO of normal saline and administer a 10ml/kg bolus if signs of shock are present (maximum infusion of 2 liters).
 - B. Check blood glucose.
 1. Glucose paste may be administered if the patient is a known diabetic, can hold head upright, can self administer medication, and has an intact gag reflex.
 2. If blood sugar is less than 60 mg/dl, administer Dextrose 50% 25 Gms IVP.
 - C. If narcotic overdose is suspected, administer Naloxone 0.4mg-2mg IV titrated to achieve effective respirations (maximum dose 4 mg).
 - D. If unable to obtain IV access, may administer Naloxone 2 mg IM or Intranasally (1mg in each nares using approved atomizer attached to syringe).
 - E. Treat rhythm disturbances as appropriate.
 - F. Transport immediately if progressive neurologic deficit is evident or unable to maintain effective airway.

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ALS Seizures

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.
- II. Protect from injury.
- III. Initiate cooling measures, if febrile patient.
- IV. Treatment:
 - A. If witnessed by prehospital personnel to be seizing for > 2 minutes or patient has two or more seizures without regaining consciousness;
 - B. Establish IV of normal saline TKO.
 1. Administer Midazolam 2 mg slow IVP or 4 mg Intranasally (2 mg in each nares using a mucosal atomizer device).
 - a. May be administered IM if unable to obtain vascular access, or IN device unavailable.
 - b. May be repeated if necessary every 5 minutes to a maximum dose of 10 mg.
 - C. Obtain blood glucose level.
 1. If glucose less than 60 mg/dl, administer Dextrose 50% 25Gms IV/IO.
 - D. If narcotic overdose suspected:
 1. Administer Naloxone IVP in 0.4 mg increments titrated to achieve effective respirations (maximum dose 4 mg) or administer IN 1 mg in each nares.
 2. If unable to establish an IV **and** narcotic overdose suspected, may administer Naloxone 2mg IM, SQ, or SL.
 - E. For pregnant patients, treat as indicated for seizures per this policy and refer to EMS Policy No. 5761, ALS Gynecological Emergencies.
- V. Continued Seizure Activity:
 - A. Be prepared to assist ventilations.
 - B. Make base contact if seizures continue after maximum dose of Midazolam.

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ALS Acute Stroke

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.
- II. Assess patient using the Cincinnati Prehospital Stroke Scale (CPSS) and document findings. The patient is considered a possible stroke if any of the tested signs/symptoms is abnormal.

Cincinnati Prehospital Stroke Scale (CPSS)			
Sign/Symptom	How tested	Normal	Abnormal
Facial Droop	Have the patient show their teeth or smile	Both sides of the face move equally	One side of the face does not move as well as the other
Arm Drift	The patient closes their eyes and extends both arms straight out for 10 seconds	Both arms move the same, or both do not move at all.	One arm either does not move, or one arm drifts downward compared to the other.
Speech	The patient repeats "The sky is blue in Cincinnati".	The patient says correct words with no slurring of words.	The patient slurs words, says the wrong words, or is unable to speak

Reference: Cincinnati Prehospital Stroke Scale (CPSS), Kothari, et al., Annals of Emergency Medicine, Volume 33, April 1999

- III. Initiate early notification and transport to the receiving hospital.
- IV. Treat patient according to EMS Policy No. 5751, ALS Altered Level of Consciousness (ALOC), including blood glucose level determination.
- V. Transport without delay if progressive neurologic deficit is evident or unable to maintain effective airway.

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ALS Gynecological Emergencies

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

DEFINITIONS:

- A. "Severe Pre-Eclampsia" means a third trimester pregnancy with hypertension (BP systolic greater than 160 mmHg, diastolic greater than 110 mmHg), mental status changes, visual disturbances and/or peripheral edema.
- B. "Eclampsia" means third trimester pregnancy with hypertension (BP systolic greater than 160 mmHg, diastolic greater than 110 mmHg), mental status changes, visual disturbances, peripheral edema, seizures and/or coma.
- C. "High Risk Obstetrical" means a pregnancy is one in which some condition puts the mother, the developing fetus, or both at higher-than-normal risk for complications during or after the pregnancy and birth.

INFORMATION NEEDED:

- A. Last menstrual period and possibility of pregnancy.
- B. Duration and amount of any bleeding.
- C. If pregnant – month of pregnancy, any anticipated problems e.g. pre-eclampsia, lack of prenatal care, expected multiple births).
- D. Presence of contractions, cramps, or discomfort.
- E. Pertinent past medical history.

OBJECTIVE FINDINGS:

- A. Estimated blood loss.
- B. Low blood pressure or high blood pressure.
- C. Spontaneous abortion – passage of products of conception, fetus less than 20 weeks gestation.
- D. Headaches, blurred vision.
- E. Severe abdominal cramps or sharp abdominal pain.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.

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II. Obtain appropriate gynecological medical history.

III. Without Shock:

A. Treatment:

1. Non-pregnant patient:

a. Establish IV of normal saline TKO.

b. If post-partum and placenta has delivered, perform fundal massage and put infant to breast (as appropriate).

2. Pregnant patient:

a. Place patient in left lateral position.

b. If any bleeding in third trimester, establish two (2) large bore IVs of normal saline TKO.

c. Consult base hospital.

IV. With Shock:

A. Treatment:

1. Non-pregnant patient:

a. Establish a large bore IV of normal saline. Administer a fluid challenge of 10 ml/kg. Recheck vital signs after each infusion of 250 mls normal saline.

b. Consider second large bore IV of normal saline.

c. If post-partum and placenta delivered, perform fundal massage and put infant to breast (as appropriate).

2. Pregnant Patient:

a. Position in left lateral position if concern for spinal injury is not present. If concern is present, keep in spinal precaution and manually attempt movement of uterus towards left side with gentle traction.

b. Establish a large bore IV of normal saline. Administer a fluid challenge of 10 ml/kg. Recheck vital signs after each infusion of 250 mls normal saline.

c. Consider second IV of normal saline.

V. Pre-Eclampsia/Eclampsia:

A. Treatment:

1. Position patient on left side.

2. Transport quickly in a quiet environment (no siren).

3. Establish IV of normal saline TKO, while enroute to hospital.

4. Treat seizures according to EMS Policy No. 5753, Seizures.

5. Consult Base Hospital Physician to obtain order for Magnesium Sulfate 2 gms slow IVP over 3 – 5 minutes.

VI. High Risk Obstetrical:

- A. High Risk Obstetrical patients are patients that are pregnant who have signs and symptoms of active labor or vaginal bleeding with one or both of the following conditions:
1. No history of prenatal care.
 2. Estimated gestational age from 20 to 33 weeks.

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ALS Childbirth

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

DEFINITIONS:

- A. **Imminent Delivery**: Regular contractions, bloody show, low back pain, feels like bearing down, crowning.
- B. **Breech Presentation**: Presentation of buttocks or both feet.
- C. **Limb Presentation**: Presentation of single extremity.

INFORMATION NEEDED:

- A. Estimated due date, month of pregnancy, any anticipated problems (e.g. pre-eclampsia, lack of prenatal care, expected multiple births).
- B. Onset of regular contractions, current frequency of contractions, rupture of membranes.
- C. Urge to bear down, number of previous pregnancies and live births.

OBJECTIVE FINDINGS:

- A. Observe perineal area for fluid, bleeding, crowning (during contraction), abnormal presentation (breech, extremity, cord).

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.
- II. Treatment:
 - A. Normal Delivery:
 1. Establish IV of normal saline TKO.
 2. Assist mother with delivery, using clean, preferably sterile technique.
 3. Check for cord around the neonate's neck, and gently slide overhead if possible. If the cord is tight, clamp and cut the cord to unwind the cord and deliver neonate as quickly as possible.
 4. Suction the neonate's mouth and nose with bulb syringe.
 5. Perform neonatal resuscitation if needed.
 6. Dry and wrap the neonate (especially the head). Keep the neonate warm and

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- place with mother (if possible).
7. Deliver placenta and place in a bio-hazard bag and transport to hospital.
 8. Perform fundal massage to help stop postpartum bleeding.
- B. Complicated Delivery:
1. Apply high flow oxygen.
 2. Establish IV of normal saline TKO.
 3. Begin rapid transport to a Neonate/High Risk Pregnancy receiving hospital and make early base hospital contact.
 4. Prepare for neonatal resuscitation.
 5. Breech Delivery:
 - a. Assist with and continue delivery if possible.
 - b. Provide airway for neonate with gloved hand if unable to continue delivery.
 - c. If unable to deliver, place mother in shock position.
 6. Prolapsed Cord:
 - a. Place mother in shock position, elevate hips with pillows, if possible place mother in knee chest position.
 - b. If cord is present, assess cord for palpable pulse.
 - c. If strong regular pulse is absent, gently insert gloved hand into vagina to relieve pressure on cord.
 - d. Cover exposed cord with saline soaked dressing.
 7. High Risk Delivery: Any newborn who meets one or more of the following conditions shall be transported to a designated Neonatal Intensive Care Center in accordance with EMS Policy No. 5201, Medical Patient Destination:
 - a. Significant anoxia either prior to or during transport.
 - b. Estimated gestational age less than 33 weeks.
 8. Neonatal patients who are in cardiac/respiratory arrest should be treated in accordance with EMS Policy No. 5201, Medical Patient Destination and be transported to the closest receiving hospital.

Notes:

- First priority in childbirth is assisting mother with delivery of child.
- The primary enemy of the newborn is hypothermia which can occur in minutes.
- Ensure the newborn has a clear airway. Suction with bulb syringe as needed.
- Keep baby at or below the level of the mother's heart until cord is clamped.
- Do not pull on the umbilical cord.

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ALS Bronchospasm

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

DEFINITIONS:

- A. **Bronchospasm**: Acute onset of respiratory difficulty, including toxic inhalation, asthma, COPD and other etiologies that may induce bronchospasm.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.
- II. Treatment:
- A. Mild to moderate bronchospasm:
1. Initiate nebulizer dose of Albuterol 2.5mg in 3 ml NS and Atrovent 0.5mg in 2.5 ml NS.
 2. Repeat Albuterol prn.
- B. Severe bronchospasm:
1. Assist ventilations with 100% oxygen and initiate an inline nebulizer treatment of Albuterol 2.5 mg in 3 ml NS and Atrovent 0.5mg in 2.5 ml NS
 2. Continue Albuterol 2.5 mg nebulizer/bag-valve-mask.
 3. Epinephrine 1:1000, 0.01 mg/kg SQ. Maximum dose 0.5 mg. (Use with caution in patients over 35 years of age and in patients with coronary artery disease).
 4. Consider CPAP (see EMS Policy No. 2554, Continuous Positive Airway Pressure).
 5. Ensure early receiving hospital notification

Note: Breath actuated nebulizer should only be utilized with patient's who have adequate spontaneous respirations. Patients that require ventilatory support should have nebulized medications administered via standard nebulizer equipment.

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ALS Acute Pulmonary Edema

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

DEFINITIONS:

- A. **Acute Pulmonary Edema:** Acute onset of respiratory difficulty with systolic blood pressure over 120. May have history of cardiac disease, rales, or occasional wheezes.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.
- II. Treatment:
- A. Oxygen 12 - 15 lpm via non-rebreather mask.
 - B. Initiate IV access.
 - C. Nitroglycerin 0.4 mg spray, repeat every 5 minutes if systolic blood pressure remains greater than 100mmHg.
 - D. If patient is in severe respiratory distress, consider CPAP (Policy No. 2554, Continuous Positive Airway Pressure).

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ALS Airway Obstruction

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

DEFINITION:

- A. **Severe obstruction**: Signs of severe obstruction include poor air exchange, increased breathing difficulty, silent cough, cyanosis, and/or inability to speak or breathe.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.
- II. Follow EMS Policy No. 5573, BLS Obstructed Airway – Adult.
- III. **If no signs of severe obstruction present**, maintain airway and apply oxygen.
- IV. **If patient has signs of severe obstruction and/or is unconscious:**
 - A. Continue abdominal and chest thrusts.
 - B. Assist ventilation with BVM.
 - C. Use direct laryngoscopy and Magill forceps to remove foreign body.
 - D. If unsuccessful, attempt endotracheal intubation.
 - E. If unsuccessful and unable to ventilate adequately with BVM, consider Needle Cricothyrotomy (Policy No. 2549).

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ALS Burn Care

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.
- II. Treatment:
 - A. Stop the burning process.
 - B. Follow EMS Policy No. 5586, Basic Life Support Burns.
 - C. Consider early advanced airway intervention if airway and/or facial burn is involved.
 - D. Superficial burns:
 1. Consider initiating IV of NS at TKO rate.
 2. For pain management, in absence of hypotension and no narcotic allergies, administer Morphine Sulfate per Adult Pain protocol.
 - E. Major burns (>20% total body surface area [BSA]):
 1. Initiate large bore IV access. Initiate fluid replacement using the Parkland Formula.
 2. For pain management, in absence of hypotension and no narcotic allergies, administer Morphine Sulfate per EMS Policy No. 5707, Adult Pain Management.
- III. Initiate early notification of receiving hospital and consult with base hospital as appropriate.

Parkland Formula: Amount of IV fluid infused during the first 24 hours = weight in kg X 4 ml X % BSA burned. Administer one-half of the calculated fluid during the first 8 hours. Note: The starting time is considered the time at which the burn occurred and not the time at which medical care is initiated. **To obtain an initial hourly infusion rate, use the following formula:**

$$(4\text{ml} \times \text{kg} \times \% \text{BSA}) / 8$$

Example: 120kg male with 20% BSA burn = $(4 \times 120 \times 20) / 8 = 1200$ ml/hr infusion rate

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ALS Trauma

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

PROCEDURE:

- I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.
- II. Do not delay transport.
- III. Transport to closest most appropriate hospital.
- IV. Treatment:
 - A. Traumatic Arrests: EMS personnel shall initiate treatment or resuscitative measures in accordance with applicable treatment policies.
 - B. Secure airway using the simplest, effective method, while maintaining spinal immobilization, if indicated.
 - C. Establish 1-2 large bore IV(s) of normal saline.
 1. If patient is hypotensive, administer normal saline wide open until systolic blood pressure greater than 90 mmHg or 2 liters has been infused, and then reduce infusion TKO.
 2. Continue to monitor blood pressure and if the systolic blood pressure remains less than 90 mmHg after initial bolus, give 250 ml boluses until BP greater than 90.
 3. Reassess the patient after each bolus.
 - D. For pain management, in absence of hypotension and no narcotic allergies, administer Morphine Sulfate per EMS Policy No. 5707, Adult Pain Management.
 - E. Head, Neck, and Facial Trauma Considerations:
 1. If brain injury is suspected, elevate the head of the patient, (as long as no signs of shock are present).
 2. Maintain patent airway. If intubation is indicated and time allows, premedicate brain injury patients with Lidocaine 1.5mg/kg IVP prior to intubation.
 - F. Chest Trauma Considerations:
 1. Impaled object – Immobilize and leave in place, unless it interferes with CPR.
 2. Flail chest – Stabilize chest, observe for tension pneumothorax.
 3. Open chest wound – Cover wound with loose dressing (do not seal). Continuously monitor patient for tension pneumothorax.

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4. Tension pneumothorax – Perform needle thoracostomy (or remove any occlusive dressing covering an open chest wound).
 5. Cardiac Tamponade – If systolic BP is less than 90 mmHg, treat as traumatic shock.
 6. Cardiac Contusion – Monitor for dysrhythmias and treat accordingly.
- G. Abdominal Trauma Considerations:
1. Impaled object – Immobilize and leave in place, unless it interferes with CPR.
 2. Evisceration of organs – Cover eviscerated organs with saline soaked gauze. Do not attempt to replace organs into the abdominal cavity.
 3. Genital injuries – Cover genitalia with saline soaked gauze. If necessary, apply direct pressure to control bleeding. Treat amputation as extremity amputation.
- H. Extremity Trauma Considerations: EMS Policy No. 5582, BLS Trauma Care.
- I. Amputation – Cover amputated part with dry sterile dressing and place in sealed plastic bag (or wrapped with plastic) on top of ice or cold pack.

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ALS NERVE AGENT EXPOSURE

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

DEFINITIONS:

- A. "CHEMPACK" means a voluntary component of the Federal Strategic National Stockpile Program (SNS) operated by the Centers for Disease Control and Prevention (CDC) for the benefit of the U.S. civilian population. The CHEMPACK program's mission is to provide state and local governments a sustainable nerve agent antidote cache that increases their capability to respond quickly to a nerve agent event such as a terrorist attack.
- B. "Nerve Agents" mean an extremely toxic organophosphate-type chemicals, including GA (tabun), GB (sarin), GD (soman), GF (cyclosarin), and VX, which attack the nervous system and interfere with chemicals that control nerves, muscles, and glands. They are odorless and invisible and can be inhaled, absorbed through the skin, or swallowed.
- C. "Nerve agent antidotes" means to counteract the effects of nerve agent by 1) decreasing symptoms and 2) regenerating an enzyme that is wiped out by nerve agents. Nerve agent antidotes are among the five (5) actions taken after exposure to nerve agent, as follows:
 - 1. Terminate the exposure (stop breathing and move quickly to good air; decontaminate victims and emergency medical staff within minutes of exposure; don personal protective equipment; ventilate pre-hospital and hospital treatment areas).
 - 2. Support ventilation.
 - 3. Provide atropine therapy.
 - 4. Provide oxime therapy.
 - 5. Provide antiseizure therapy.
 - 6. Document treatment on the triage tag.

PROCEDURE:

- I. As soon as the scene is identified as hazardous materials incident, secure, isolate, and deny entry, ensure appropriate resources are responding, and notify the base hospital.
- II. Decontamination should precede any treatment by EMS personnel.

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- III. All Providers will ensure personal safety by assuring adequate decontamination of victims is conducted and all response personnel will utilize appropriate personal protective (PPE). Medical procedures within the Exclusion Zone (Hot Zone/contaminated area) will only be performed by personnel who have specific training to allow them to function in that area. Under no circumstances should responding personnel at any level of expertise use Personal Protective Equipment or assist in patient decontamination without completing the required training.
- IV. EMTs and paramedics that have been trained and equipped may utilize the nerve agent protocol to self administer EMS CHEMPACK auto-injectors when they have been exposed to nerve agents and are symptomatic.
- V. Once the EMS CHEMPACK is deployed to an active incident, the Medical Group Supervisor may contact the Base Hospital and request that all paramedics on that incident operate under standing orders.

VI. TREATMENT:

- A. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.
- B. Position the patient on side (recovery position).
- C. Monitor Respiratory status closely. Use airway adjuncts, administer high flow O₂, suction, ventilate, and advanced airways as indicated.
- D. Establish IV, NS. Titrate to maintain Systolic BP of greater than 90 mm Hg.
- E. Nerve agent medications should never be given prophylactically.
- F. The auto-injectors included in EMS CHEMPACK Nerve Agent Antidote Kits will be used only by those paramedics that have been trained in their use. Paramedics may administer atropine IM/IV in situations where EMS CHEMPACK Nerve Agents Antidote Kits are not available.
- G. Administer antidotes as outlined below.
- H. Seizure: After Atropine administration: **Valium**: Adults - titrate 2.5 - 10 mg slow IV push to effect. If unable to obtain and IV administer IM 10 mg given deep IM (slowly). If recurrent or persistent seizure, repeat X 1 IV/IM to a maximum of 20 mg. Pediatric (less than 40kg, or 9 years old) 0.05-0.3 mg IV over 2-3 min q 15-30 min, titrated to effect; not to exceed 10 mg

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LEVELS OF EXPOSURE		
<u>MILD</u>		<u>MODERATE</u>
Rhinnorhea Chest tightness Dyspnea Bronchospasm		Salivation Lacrimation Urination Defecation GI symptoms Emesis Miosis
		<u>SEVERE</u>
		Jerking Twitching Staggering Headache Drowsiness Coma Seizures Apnea

Exposure:	Onset	TREATMENT	
		ATROPINE (2 Mg Auto-injector)	2-PAM (600 Mg Auto-injector)
"Exposed," but Asymptomatic:	N/A	<u>NONE</u> Monitor every 15 minutes	<u>NONE</u> Monitor every 15 minutes
<u>MILD (Vapor):</u>	Seconds	Adult: One (1) Auto-injector, (2 mg) IM. Peds: 0.02 mg/kg, min. dose 0.1 mg. <i>MR q 3-5 min. prn.</i>	Adult: One (1) Auto-injector, (600 mg) IM, one time only, prn. If S & SX continue 5 min. after administering Atropine, administer 2-Pam Cl. Peds: N/A, DO NOT Administer.
<u>MILD (Liquid):</u>	Minutes to Hours		
<u>MODERATE:</u>	Seconds to Hours	Adult: Two (2) Auto-injectors, (4mg) IM. Peds: 0.02 mg/kg, min. dose 0.1 mg. <i>MR q 3-5 min. prn.</i>	Adult: One (1) Auto-injector, (600 mg) IM. MR X1 in 5-10 min. prn. Peds: N/A, DO NOT Administer.
<u>SEVERE:</u>	Seconds to Hours	Three (3) Auto-injectors (6 mg) IM. Peds: <i>If Bp unobtainable</i> , consider administering MARK I Kit(s).	Adult: Three (3) Auto-injectors, (1.8 Gms) IM, MAX dose. <i>Do NOT repeat.</i> Peds: N/A, DO NOT Administer.

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