2026

FIELD MANUAL

ALAMEDA COUNTY EMERGENCY MEDICAL SERVICES

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Summary of High-Quality CPR Components for BLS Providers			
Component	**Adults and Adolescents**	**Children (Age 1 Year to Puberty)**	**Infants (Age Less Than 1 Year, Excluding Newborns)**
Scene safety	Make sure the environment is safe for rescuers and victim		
Recognition of cardiac arrest	Check for responsiveness No breathing or only gasping (ie, no normal breathing) No definite pulse felt within 10 seconds (Breathing and pulse check can be performed simultaneously in less than 10 seconds)		
Activation of emergency response system	If you are alone with no mobile phone, leave the victim to activate the emergency response system and get the AED before beginning CPR Otherwise, send someone and begin CPR immediately; use the AED as soon as it is available	**Witnessed collapse** Follow steps for adults and adolescents on the left **Unwitnessed collapse** Give 2 minutes of CPR Leave the victim to activate the emergency response system and get the AED Return to the child or infant and resume CPR; use the AED as soon as it is available	
Compression-ventilation ratio *without advanced airway*	**1 or 2 rescuers** 30:2	**1 rescuer** 30:2 **2 or more rescuers** 15:2	
Compression-ventilation ratio *with advanced airway*	Continuous compressions at a rate of 100-120/min Give 1 breath every 6 seconds (10 breaths/min)		
Compression rate	100-120/min		
Compression depth	At least 2 inches (5 cm)*	At least one third AP diameter of chest About 2 inches (5 cm)	At least one third AP diameter of chest About 1½ inches (4 cm)
Hand placement	2 hands on the lower half of the breastbone (sternum)	2 hands or 1 hand (optional for very small child) on the lower half of the breastbone (sternum)	**1 rescuer** 2 fingers in the center of the chest, just below the nipple line **2 or more rescuers** 2 thumb–encircling hands in the center of the chest, just below the nipple line
Chest recoil	Allow full recoil of chest after each compression; do not lean on the chest after each compression		
Minimizing interruptions	Limit interruptions in chest compressions to less than 10 seconds		
Defibrillation	Attach and use AED/ Defibrillator as soon as available	Minimize interruptions in chest compressions before and after shock	Resume CPR beginning with compressions immediately after each shock

*Compression depth should be no more than 2.4 inches (6 cm).
Abbreviations: AED, automated external defibrillator; AP, anteroposterior; CPR, cardiopulmonary resuscitation.

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SEE THE EMS MOBILE FIELD APP FOR A KEYWORD SEARCH OF THIS BOOK

AMBULANCE REROUTING CRITERIA

(Abbreviated version - see Ambulance Rerouting policy in the Administration Manual for the complete policy)

REASONS FOR REROUTING OF AMBULANCES – Conditions that may necessitate REROUTING are:

- ► **CT Failure** - When the CT scanner is inoperative, patients demonstrating neurological signs/symptoms of stroke, or acute head injury will be diverted
- ► **Trauma Center Overload** - When it has been determined that the hospital is unable to meet the criteria for a Level II Trauma Center in Alameda County (O.R. is full)
- ► **STEMI Diversion** - STEMI/Cardiac Arrest Receiving Centers may divert due to diagnostic or treatment equipment failure or scheduled maintenance for patients experiencing acute MI or post cardiac arrest
- ► **Stroke Center Diversion** - Certified Stroke Centers may divert due to diagnostic or treatment equipment failure or scheduled maintenance for patients exhibiting signs of acute stroke symptoms/stroke alert
- ► **Physical Plant Casualty (Internal Disaster) - An unforeseeable physical or logistical situation/ circumstance** - (e.g., fire, bomb threat, power outage, etc.) that curtails routine patient care and renders continued routine ambulance delivery unsafe. A receiving hospital or trauma center may divert any patient, including critical trauma patients (CTP) as deemed necessary by the facility during this type of incident. The hospital must come off Physical Plant diversion immediately upon resolution of the issue

Reasons for Rerouting	Maximum time allowed	Condition	Types of patients rerouted	Appropriate facility for rerouted patients
Computerized Tomography (CT)	Until resolved	CT inoperative	► Acute head injury ► Acute Stroke by CPSS	► Nearest Trauma Center ► Closest Stroke Center
Trauma Center Overload	Until resolved	Trauma resources depleted	Critical Trauma Patients	Designated Trauma Center
STEMI (equip. failure)	Until resolved	Diagnostic, Equipment failure or Scheduled Maintenance	STEMI/ post cardiac arrest	Closest STEMI/Cardiac Arrest Center
Stroke Center (equip. failure)	Until resolved	Diagnostic, Equipment failure or Scheduled Maintenance	Stroke patients	Closest Stroke Center
Physical Plant Casualty	Until resolved	Physical plant breakdown (bomb threat, fire, etc.)	All	Closest appropriate facility

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EMERGENCY MEDICAL SERVICES - STAFF DIRECTORY

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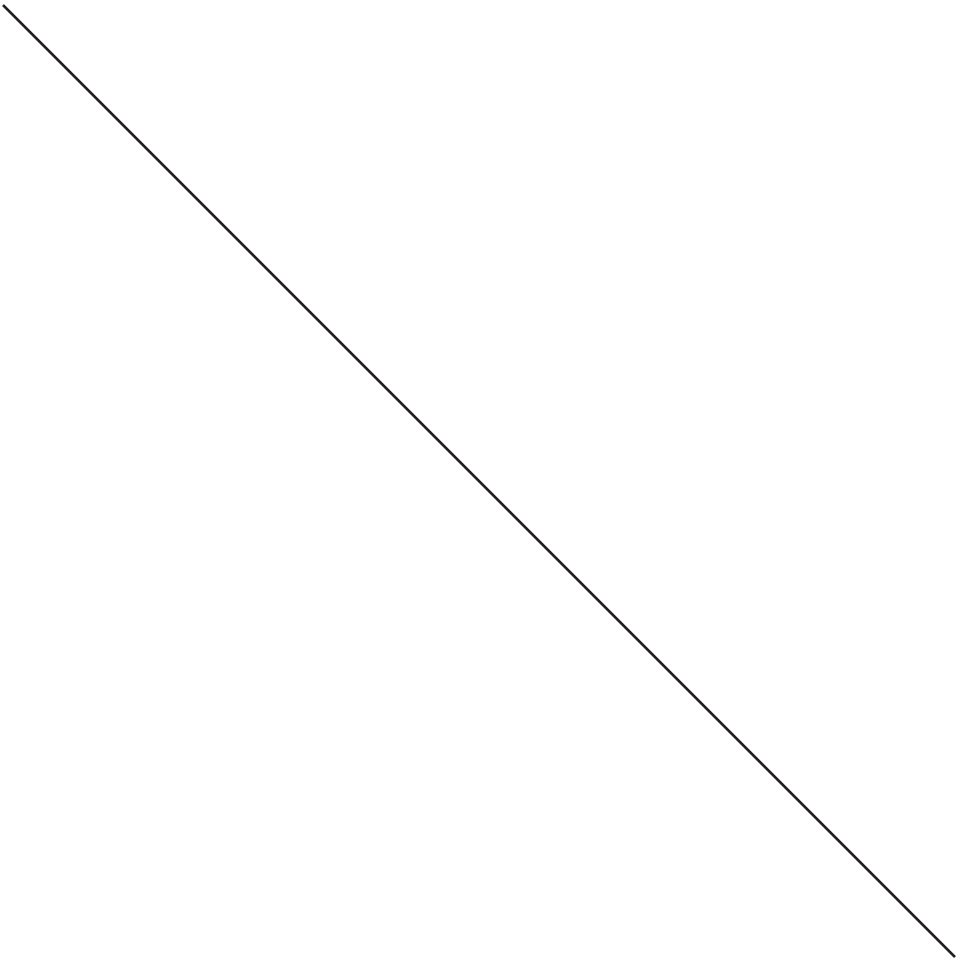


GENERAL POLICIES TOC

AN OVERVIEW OF PATIENT CARE POLICIES

1. **Treatment algorithms should be used as a guideline and are not intended as a substitute for sound medical judgment. Unusual patient presentations make it impossible to develop a protocol for every possible patient situation**
2. Patient care protocols are to be utilized by field personnel and Base Hospital Physicians. All procedures and/or medications must be within the scope of practice for field personnel and authorized in Alameda County policies
3. Where scope of practice allows, cardiovascular protocols are consistent with current American Heart Association, Emergency Cardiovascular Care guidelines
4. Medications/Procedures contained in **non-shaded boxes** may be performed without base contact, or may be called in to the base hospital for consultation with the Base Hospital Physician
5. Medications/Procedures contained in **shaded boxes require a Base Physician order**
6. **Base contact - Paramedics should contact the Base Physician for consultation:**
   - 6.1 At any point in a policy or treatment algorithm where base hospital contact is required and/or any time consultation would be in the patient's best medical interest
   - 6.2 For complicated patient presentations or in situations where a deviation from the standard protocol seems indicated
   - 6.3 For any patient attended by a physician at the scene. (See "Medical Personnel on the Scene - **page 110**)
   - 6.4 For out-of-protocol medication administration. Unusual circumstances may indicate special applications of medications carried by paramedics that are not covered in the treatment algorithms (e.g. glucagon for beta-blocker overdose)
   - 6.5 An EMT may make base contact for consultation with a physician for destination decisions, unusual patient presentations, and/or procedures within the EMT scope of practice. **An EMT may not make base contact or accept orders for the patient on behalf of a paramedic**
7. If direct communication with the Base Physician cannot be made or maintained, consider immediate transport and attempt base contact en route, if applicable
8. If a difference between policies exists, the policy with the most recent date prevails

- **Routine Medical Care**
- Level of distress - Is patient a trauma victim? If yes, see trauma protocol
- Provide emotional support to the victim and the family
- Contact appropriate law enforcement agencies

1. **UNIVERSAL CARE PRINCIPALS:** In any situation where EMS personnel knows or reasonably suspects a person suffering from any wound or other physical injury inflicted upon the person where the injury is the result of **assaultive or abusive conduct**:

   1.1 Immediately notify the appropriate law enforcement agency

   1.2 Reasonable effort will be made to transport the patient to a receiving hospital for evaluation. Immediately inform hospital staff of your findings.

   1.3 Document all pertinent observations on the electronic health record.

   1.4 Immediately (or as soon as practical) contact the appropriate agency by telephone and give a verbal report

   1.5 A written report for child/elder abuse must be filed within 36 hours

   ➔TO REPORT CHILD ABUSE:

   ► Immediate verbal report to: Alameda County Children and Family Services at: **510-259-1800** - 24 hour number, follow the appropriate prompts. Make sure to note the name and title of the individual that you gave your report to.

   ► Complete the written report found at: **http://tinyurl.com/SCAreportform** and fax to 510-780-8620 within 36 hours of the incident

   ► ALL responding agencies at a scene must complete their own report - no single agency can report in behalf of another agency.

   ➔TO REPORT ELDER OR DEPENDENT ADULT ABUSE:

   ► By staff at a licensed health care facility contact: Ombudsman - **800-231-4024**

   ► At home, or by a visitor or another resident at a licensed health care facility contact: Alameda County Adult Protective Services - 866-225-5277 - 24 hour number *After 5 pm M-F and weekends, an operator answers this line and can page a social worker (if needed.) If the patient was assaulted or has suffered serious neglect contact local law enforcement.*

   ► A written report can be completed online by going to: **https://reporttoaps.org/** and then clicking on "Alameda County Intake Form" and completing the displayed form

2. **SEXUAL ASSAULT:** This involves any form of non-consensual conduct/contact with another person, or the inability of the victim to give consent due to age, cognitive disability, or voluntary/involuntary incapacitation by substances. Substances are involved in the majority of sexual assaults, keep a high index of suspicion on these patients. When EMS responds to a victim of sexual assault:

   2.1 Use best judgement when assigning the primary-care provider noting the gender could be triggering to the victim

   2.2 Explain in advance each treatment/procedure and offer the patient simple choices (e.g. to sit up or recline on the gurney) empowering them to feel in control.

   2.3 Mirror the patient's language (e.g., do not say "rape" or "sexual assault" if the patient has not used those words)

2.4 Keep the assessment brief and injury-focused:

- ► Do not interview the patient about the assault
- ► In the absence of hemorrhage, there is rarely a need to visualize genitalia
- ► Assess the patient for strangulation injuries, as this is common with sexual assault

2.5 Preserve the physical evidence:

- ► Transport the patient "as found." Discourage showering, removing/changing clothes, brushing teeth, using mouthwash, smoking, eating or drinking. Do not allow the patient to wash or clean their hands.
- ► If clothes have been removed, place clothing in a paper bag. Do not use plastic bags; they collect moisture, which degrades important organic material. If it is necessary to cut off the patient's clothes, cut around soiled, torn, or damaged areas by 6 inches.
- ► Do not clean, irrigate, or apply ointment to wounds. If necessary, apply dry sterile gauze to wounds.
- ► If the patient needs to urinate, or vomit, preserve in a clean container (e.g. urinal, emesis basin). This evidence especially important with drug-facilitated sexual assaults.
- ► Chain of custody must be maintained for each item to be valuable in the forensic process. This is best accomplished by having the patient keep all evidence collected at scene in their possession or law enforcement maintaining possession..

2.6 Transport the patient to a facility capable of performing the sexual assault forensic exam regardless of the hospital's diversion status. This exam can be performed up to 21 days post assault.

- ► **Adult patients:** Wilma Chan Highland Hospital or Washington Hospital
- ► **Pediatric patients:** Children's Hospital (≤13 y.o.)

3. **SUSPECTED HUMAN TRAFFICKING:** Human trafficking involves labor or services, by means of force, fraud or coercion for the purposes of subjection into commercial sex acts or other involuntary servitude. If the person is under 18 years of age, no force, fraud or coercion is required.

3.1 Warning signs of human trafficking include:

- ► Individuals, who are isolated/segregated from contact with responders, are physically or emotionally bullied by others, or who don't have control of their own ID/documents.
- ► Manifest signs of physical neglect – malnourished, unreasonable workplace injuries
- ► Live or work in locations with unsuitable living conditions or unreasonable safety working environments.
- ► Incidents where responders are approached and asked for protection/asylum from other individuals at a scene

3.2 Reporting requirements:

- ► EMS personnel should send an EMS Event Report to Alameda County EMS at **ems.acgov.org/Events+Reports** for any suspected human trafficking cases. The information provided will be relayed directly to the Northern California Regional Intelligence Center for Human Trafficking.
- ► For suspected human trafficking offer the patient the 24/7 Human Trafficking Resource Center hotline number **888-373-7888** if it does not compromise patient safety.

4. **DOMESTIC VIOLENCE and (DV) LETHALITY SCREEN**

4.1 **DEFINITION:** Domestic violence is the willful intimidation, physical assault, battery, sexual assault, and/or other abusive behavior as part of a systematic pattern of power and control perpetrated by one intimate partner against another.

4.1.1 Notify Law Enforcement and Receiving Facility staff (as needed)

4.1.2 Perform Domestic Violence Lethality Screen in Section 4.2

4.2 Determine level of distress – is patient injured or complaining of any medical complaints?

- ► Assess and treat as appropriate
- ► If patient c/o or presents with medical complaints, assess for signs & symptoms of possible strangulation
- ► Attempt private audience with patient (maintaining regard for safety)
- ► If patient is NOT transported - and if safe, appropriate and feasible - perform a DV Lethality Screen (see questions below in Section 4.3)
  - ➔ If patient screens HIGH RISK, refer patient to the Family Violence Law Center (FVLC) by calling the **FVLC 24/7 hotline # 800-947-8301**
  - ➔ Briefly describe the DV circumstances to the FVLC advocate without providing any patient identifying information
  - ➔ If patient consents to speaking with FVLC advocate, hand patient the phone
  - ➔ If patient does not consent to speaking with FVLC advocate, give patient discreet FVLC resource information and advise that he/she can call 24/7
  - ➔ Repeat basic safety planning tips that the FVLC advocate provides
- ► If patient is transported, be sure to inform receiving facility of lethality risk (determined by tool) and DV advocacy steps taken

4.3 **Questions used in the Domestic Violence Lethality Screen for First Responders**

➔ A "yes" response to any of Questions 1–3 automatically triggers the protocol referral

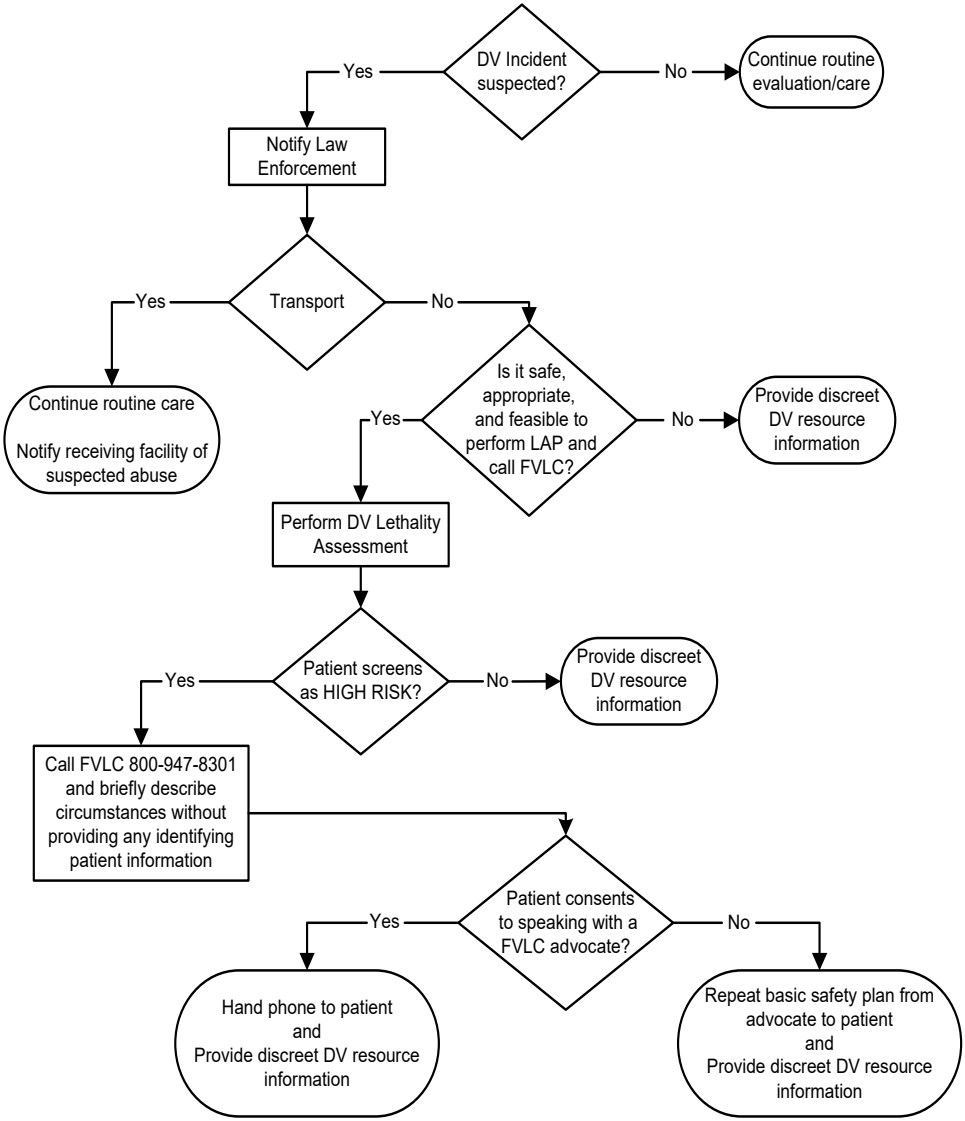
1. Has he/she ever used a weapon against you or threatened you with a weapon?
2. Has he/she threatened to kill you or your children?
3. Do you think he/she might try to kill you?

➔ Negative responses to Questions 1–3, but positive responses to at least four of Questions 4–11, trigger the protocol referral

4. Does he/she have a gun or can he/she get one easily?
5. Has he/she ever tried to choke you?
6. Is he/she violently or constantly jealous or does he/she control most of your daily activities?
7. Have you left him/her or separated after living together or being married?
8. Is he/she unemployed?
9. Has he/she tried to kill himself?
10. Do you have a child that he/she knows is not his/hers?
11. Does he/she follow or spy on you or leave threatening messages?

If patient consents, any first responder may trigger the protocol referral to FVLC if not already triggered above, as a result of the victim's response to the question below, or whenever the first responder believes the victim is in a potentially lethal situation

➔ Is there anything else that worries you about your safety? (If "yes") What worries you?


DV Incident suspected?
Yes
No
Continue routine evaluation/care
Notify Law Enforcement
Transport
Yes
No
Continue routine care
Notify receiving facility of suspected abuse
Is it safe, appropriate, and feasible to perform LAP and call FVLC?
Yes
No
Provide discreet DV resource information
Perform DV Lethality Assessment
Patient screens as HIGH RISK?
Yes
No
Provide discreet DV resource information
Call FVLC 800-947-8301 and briefly describe circumstances without providing any identifying patient information
Patient consents to speaking with a FVLC advocate?
Yes
No
Hand phone to patient and Provide discreet DV resource information
Repeat basic safety plan from advocate to patient and Provide discreet DV resource information

BURN PATIENT CARE

Routine Medical Care
- Rescuer safety
- Assume airway/respiratory involvement
- Stop the burning process - ***DO NOT USE COLD PACKS***
- Assess for associated trauma

A. BASIC MANAGEMENT

1. **Rule out airway damage**
   - 1.1 Assess for thermal airway injury and smoke inhalation
   - 1.2 High flow oxygen is critical
   - 1.3 Be prepared for intubation
2. **Assess and expose**
   - 2.1 Assess ABCs
   - 2.2 Perform a mini neurological exam - level of consciousness
   - 2.3 Expose and examine the patient for other areas of burn
   - 2.4 Remove jewelry, but do not remove stuck clothing
3. **Start IVs**
   - 3.1 Two large bore IVs (for major burns)
4. **Give IV fluids**
   - 4.1 Any patient regardless of age with suspected 2nd and 3rd degree burns over 20% TBSA, should be given IV with Normal Saline at the below rate. Boluses are discouraged except in cases of shock.
     - ➔ **Adult:** 500 cc/hour (80 drops per minute) or (1-2 drops every second)
     - ➔ **Pediatric:**
       - ≤ 5 years old: 125 cc/hour (20 drops per minute) or (1 drop every 3 seconds)
       - 6-12 years old: 250 cc/hour (40 drops per minute) or (1 drop every 1-2 seconds)
       - ≥ 13 years old: 500 cc/hour (80 drops per minute) or (1-2 drops every second)
5. **Document severity and treat the pain**
   - 5.1 Estimate the severity of the burns using the “Rule of 9s” and “Rule of 1s.” The Rule of 1s uses the patient’s palm, including fingers, representing approximately 1% of total body surface area, to estimate burn size
   - 5.2 **Treat pain.** Pain management should be considered mandatory for moderate to severe burns. See Pain Management Policies – Adult (**page 47**) and Pediatric (**page 76**)
6. **Protect against hypothermia and infection - dress burns**
   - 6.1 Keep patient warm to prevent hypothermia (use sheets or blankets)
   - 6.2 Burns involving less than10% total body surface area (TBSA):
     - ➔ Pour cool running water on the affected area for 20 minutes, if possible
       - Use available tap water (e.g., garden hose) for cooling, sterile water is not required. Do not delay transport to complete the full 20 minutes; cooling does not have to continue in transit.
     - ➔ Apply a dry sterile dressing
   - 6.3 Burns involving greater than or equal to 10% TBSA:
     - ➔ Apply a dry sterile dressing

7. **Elevate burned body parts - 30˚**
8. **Address psychological needs**
   - 8.1 Be honest and compassionate
   - 8.2 Consider anxiolytics – **Contact Base Physician for midazolam**
9. **Maintain body temperature and observe for hypothermia**

B. ELECTRICAL BURNS

1. Turn off the power source if patient is still attached
2. See first responder defibrillation protocol if patient is unconscious and pulseless

C. TAR BURNS

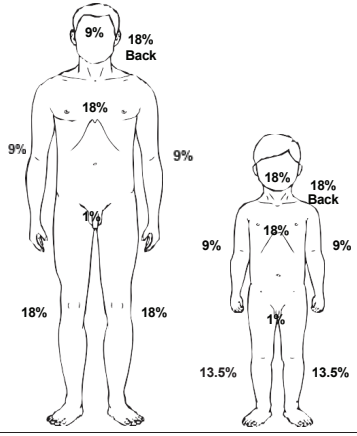
1. Do not attempt to remove the tar
2. Cool with water
3. **Maintain body temperature and observe for hypothermia**

D. CHEMICAL BURNS

1. Remove clothing
2. **Liquid chemicals:**

   ➔Flush **immediately** with copious amounts of tepid water for 15 - 20 minutes
3. **Dry chemicals:**

   ➔Brush off as much as possible, then flush with copious amount of tepid water for 10 - 15 minutes
4. Identify chemical
5. Assess for associated respiratory burns

Rule of 9s	Rule of 1s
	Patient's palm and fingers are 1% TBSA 

BURN PATIENT CRITERIA

1. **INTRODUCTION** -The intent of this policy is to transport patients with critical burns, who have a manageable airway, directly to a facility that is staffed and equipped to care for the medical needs of the patient, bypassing other receiving facilities. Minor to moderate burn patients will be transported to the closest, most appropriate receiving hospital.
2. **BURN PATIENT CRITERIA** (from the American Burn Association – Burn Unit Referral Criteria)
   - 2.1 Partial thickness burns greater than 10% total body surface area
   - 2.2 Moderate to severe burns that involve the face, hands, feet, genitalia, perineum, or major joints
   - 2.3 Full thickness burns in any age group
   - 2.4 Electrical burns, including lightning injury
   - 2.5 Chemical burns
   - 2.6 Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality
   - 2.7 Inhalation injury
3. **DESTINATION**
   - 3.1 **Adult and Pediatric patients** who meet burn patient criteria 2.1-2.7 may be transported directly to an out-of-county burn center (see table below).
   - 3.2 Exceptions:
     - 3.2.1 **Potentially unmanageable airway** - (e.g. - soot in the mouth and/or nose, inhalation injury, etc.) transport to the closest trauma center.
     - 3.2.2 **Unmanageable Airway** - The patient requires intubation, and the paramedic is unable to intubate, and an adequate airway cannot be maintained with B.V.M. device, transport to closest basic E.D.
     - 3.2.3 **Patient meets Critical Trauma Patient Criteria** – "Mental Status & Vital Signs" - transport to the closest most appropriate designated trauma center
4. **OUT-OF-COUNTY TRANSPORT**
   - 4.1 Transporting medic ***must*** first contact out-of-county hospital to confirm bed availability. This can be done through the appropriate dispatch center or via phone or radio from the field
   - 4.2 Contact the Base Physician if medical consultation is needed
   - 4.3 Consider EMS Aircraft transport for land transport times greater than 45 minutes
   - 4.4 Give a brief report to the receiving facility including ETA

Out-of-County Burn Centers:

FACILITY	ADULT	PEDIATRIC	TRAUMA	HELIPAD	LOCATION	PHONE #
Santa Clara Valley Medical Center	YES	YES	YES	YES	751 S. Bascom Ave., San Jose	(408) 885-6666
UC Davis Medical Center	YES	YES	YES	YES	2315 Stockton Blvd., Sacramento	(916) 734-3636
St. Francis Memorial Hospital	YES	NO	NO	NO	900 Hyde Street, San Francisco	(415) 353-6255

CARDIOPULMONARY RESUSCITATION (CPR)

Summary of High-Quality CPR Components for BLS Providers			
Component	**Adults and Adolescents**	**Children (Age 1 Year to Puberty)**	**Infants (Age Less Than 1 Year, Excluding Newborns)**
Scene safety	Make sure the environment is safe for rescuers and victim		
Recognition of cardiac arrest	Check for responsiveness No breathing or only gasping (ie, no normal breathing) No definite pulse felt within 10 seconds (Breathing and pulse check can be performed simultaneously in less than 10 seconds)		
Activation of emergency response system	If you are alone with no mobile phone, leave the victim to activate the emergency response system and get the AED before beginning CPR Otherwise, send someone and begin CPR immediately; use the AED as soon as it is available	**Witnessed collapse** Follow steps for adults and adolescents on the left **Unwitnessed collapse** Give 2 minutes of CPR Leave the victim to activate the emergency response system and get the AED Return to the child or infant and resume CPR; use the AED as soon as it is available	
Compression-ventilation ratio *without advanced airway*	**1 or 2 rescuers** 30:2	**1 rescuer** 30:2 **2 or more rescuers** 15:2	
Compression-ventilation ratio *with advanced airway*	Continuous compressions at a rate of 100-120/min Give 1 breath every 6 seconds (10 breaths/min)		
Compression rate	100-120/min		
Compression depth	At least 2 inches (5 cm)*	At least one third AP diameter of chest About 2 inches (5 cm)	At least one third AP diameter of chest About 1½ inches (4 cm)
Hand placement	2 hands on the lower half of the breastbone (sternum)	2 hands or 1 hand (optional for very small child) on the lower half of the breastbone (sternum)	**1 rescuer** 2 fingers in the center of the chest, just below the nipple line **2 or more rescuers** 2 thumb–encircling hands in the center of the chest, just below the nipple line
Chest recoil	Allow full recoil of chest after each compression; do not lean on the chest after each compression		
Minimizing interruptions	Limit interruptions in chest compressions to less than 10 seconds		
Defibrillation	Attach and use AED/ Defibrillator as soon as available	Minimize interruptions in chest compressions before and after shock	Resume CPR beginning with compressions immediately after each shock

*Compression depth should be no more than 2.4 inches (6 cm).
Abbreviations: AED, automated external defibrillator; AP, anteroposterior; CPR, cardiopulmonary resuscitation.

ADDITIONAL INFORMATION:

1. Minimize interruptions in chest compressions
2. Use a mechanical compression device whenever possible
   - 2.1 Refer to manufacturer's instructions for specific information regarding mechanical CPR device
   - 2.2 Upon ROSC, you must discontinue mechanical CPR device
3. If advanced airway placement will interrupt chest compressions, providers may consider deferring insertion of the airway until the patient fails to respond to initial CPR and defibrillation attempts or demonstrates ROSC. (2015 AHA Guidelines)
4. Emphasis is on high quality, uninterrupted CPR - "push hard and fast" – allow for complete recoil
5. Two minutes CPR between drug doses
6. Once an advanced airway is established, give continuous chest compression without pauses for breaths. Avoid hyperventilation
7. Check rhythm q 2 minutes
8. Defibrillation: Device specific. While both monophasic and biphasic wave form defibrillators are acceptable, biphasic is preferred. Energy level is dependent upon the manufacturer
9. **Newborn:** Unresponsive, not breathing but has a pulse: 40-60 ventilations/minute. Compression/ventilation ratio: 3:1 (90 compressions : 30 ventilations per minute)
10. Unresolved or persistent arrest, look for and treat:
11. ***If patient regains ROSC, refer to Return of Spontaneous Circulation - ROSC (see page 52)***

- ➔ **H**ypovolemia
- ➔ **H**ypoxia
- ➔ **H**ydrogen Ion (acidosis)
- ➔ **H**ypo-/**H**yperkalemia
- ➔ **H**ypothermia
- ➔ **H**ypoglycemia (pediatric only)
- ➔ **T**ension pneumothorax
- ➔ **T**amponade, cardiac
- ➔ **T**oxins
- ➔ **T**hrombosis, pulmonary
- ➔ **T**hrombosis, coronary

MECHANICAL CPR DEVICES:

12. **PURPOSE:** Effective and uninterrupted compressions are important for survival; AHA/ERC Guidelines for CPR (Cardio-Pulmonary Resuscitation) 2005 emphasize the significance of compressions to provide critical blood flow to vital organs and in the end to increase the chances of a successful survival. Mechanical CPR allows for consistent, quality CPR that enables caregivers to focus on other aspects of resuscitation while maximizing effectiveness of therapeutic interventions
13. **Indications:**
    - ► Use mechanical CPR devices wherever manual CPR is indicated
    - ► IMPORTANT NOTE: If ROSC is obtained, mechanical CPR device must be discontinued

AutoPulse Contraindications

- ➔ ≤ 17 years of age
- ➔ Patients with traumatic injury (wounds resulting from sudden physical injury or violence)

LUCAS Contraindications

- ➔ If it is not possible to position LUCAS safely or correctly on the patient's chest
- ➔ Too small patient: if the LUCAS device alerts with 3 fast signals when lowering the Suction Cup, and you cannot enter the PAUSE mode or ACTIVE mode
- ➔ Too large patient: If you cannot lock the Upper Part of LUCAS to the Back Plate without compressing the patient's chest

PIT CREW ROLES:

The roles and responsibilities detailed below are guidelines. There may be fewer personnel on hand for these roles. It is important that there is always a Pit Crew Leader (similar to an Incident Commander on a scene of any MCI). This concept is known as 'The Pit Crew' concept and is the standard of care for resuscitations in Alameda County. The roles are as follows:

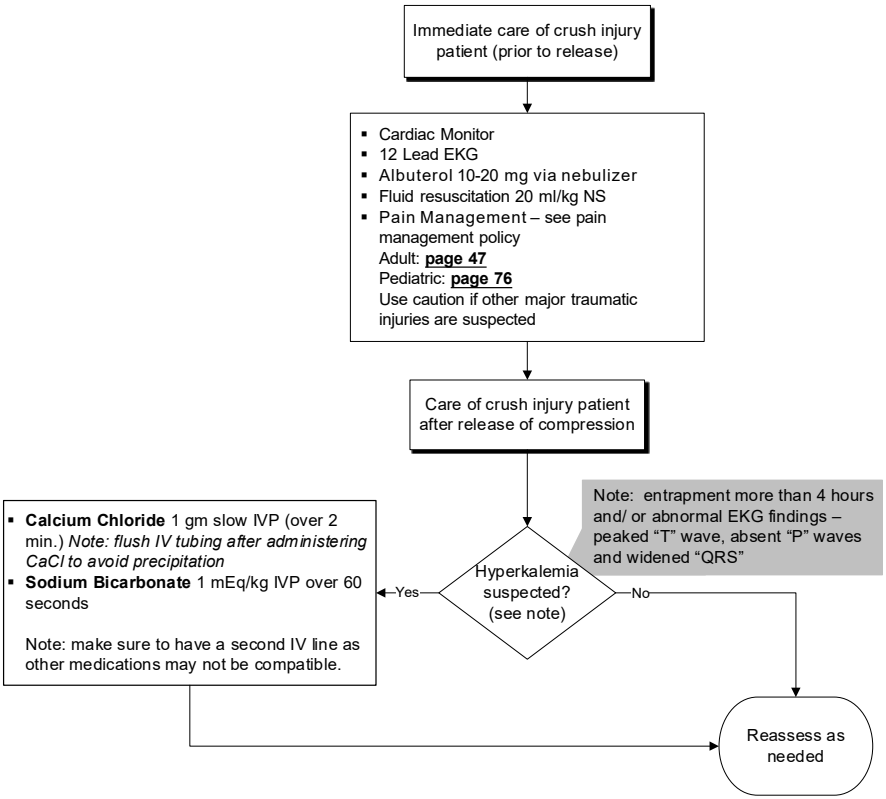
Position and Responsibilities
Pit Crew Leader: • Overall team leader • Assigns roles • Monitors time intervals (2 min. CPR, drug intervals, etc.) • Assures quality of CPR • Assures use of proper equipment and adjuncts (e.g., $EtCO_2$) • Serves as scribe (field notes) • Supervises and assigns crowd control • Supervises DNR/POLST issues • Performs NO patient care • Responsible for overall conduct of resuscitation
Airway Leader: • Performs appropriate airway techniques, procedures • Supervises airway decisions • Uses confirmatory adjuncts • Completes EHR at hospital (if appropriate) (with med leader) • Communicates with law/family as needed • Defibrillates if medication leader not available • Inserts advanced airway (see **page 118**) * (***NOTE:*** Do not interrupt chest compressions to place an advanced airway)
Medication Leader: • Defibrillates • Initiates IV or IO • Administers (or supervises) medications • Tracks and notifies team of all monitor changes • Completes EHR (with airway leader) • Communicates with family/law as needed • Terminates resuscitative efforts (with team leader) • Sets up mechanical CPR device* (see **page 12**) • Monitors mechanical CPR device* (see **page 12**)
CPR Chief: • Supervises and performs CPR (with team leader) • Assists with equipment/medication setup • Performs communications
Team Assistant: • Assists with CPR • Assists with communications • Assists with setup
Team Leader/Airway Assistant (optional) • Serves at assistant to team leader • Assists airway leader
* Indicates vital task to be completed

CRUSH INJURY SYNDROME

- **Routine Medical Care**
- Trauma Patient Care (see **page 26**)
- **Note:** Hypovolemia and hyperkalemia may occur, particularly with extended entrapment (usually > 4 hours). Once compression is released cellular toxins and potassium may be released into the body. Administering sodium bicarbonate alkalinizes the urine, controls hyperkalemia and acidosis

➔Crush Injury syndrome

Definition: Crush injury syndrome is the name given to the systemic manifestations of muscle crush injury and cell death. Crush injury syndrome should be suspected in patients with certain patterns of injury. Most patients in whom the syndrome develops have an extensive area of involvement such as a lower extremity and/or pelvis. It requires more involvement than just one hand or foot. The syndrome may develop after one hour in a severe crush situation, but usually requires 4 – 6 hours of compression for the processes that cause crush injury syndrome to occur.



EXTREMITY INJURY

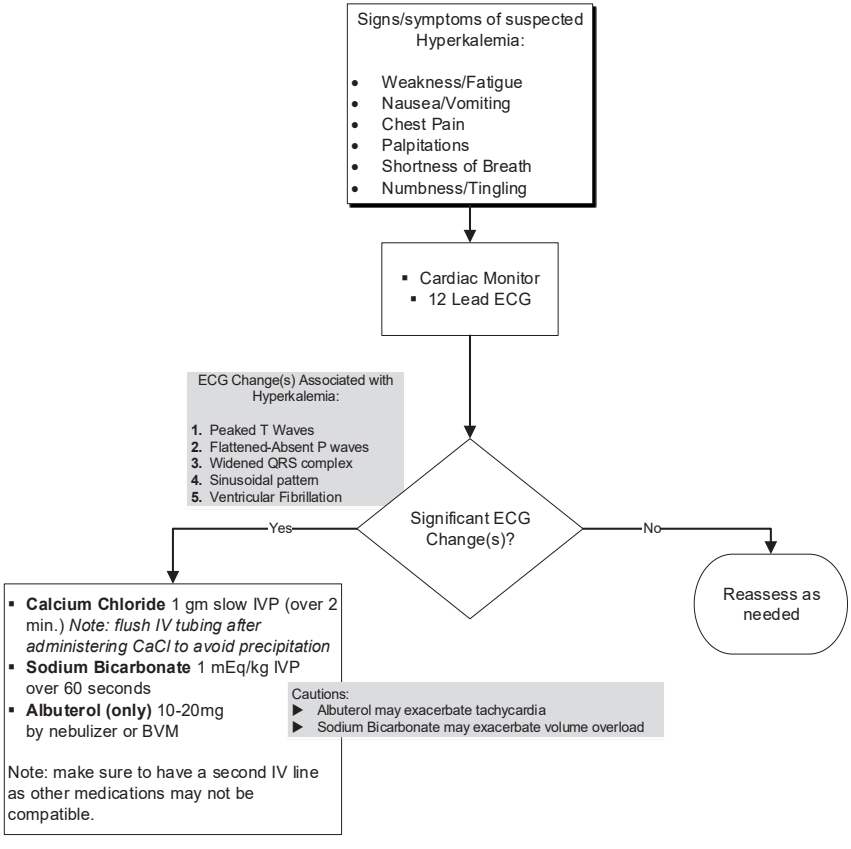
1. **ASSESMENT:**
   - 1.1. Routine Medical Care
   - 1.2. Document mechanism of injury
   - 1.3. Document past medical history including history of previous injuries
   - 1.4. Check for deformity, open wounds, swelling, shortening, and/or rotation
   - 1.5. Document range of motion, pulses, sensation, and color of the extremity
   - 1.6. Assess severity of pain (1-10 scale)
   - 1.7. Assess for other associated injuries
2. **GENERAL CARE:** (all patients)
   - 2.1. Control any external bleeding with direct pressure
   - 2.2. Elevate and apply cold packs
   - 2.3. Splint injured extremity. Hand injuries should be positioned in the "safe position"
   - 2.4. Cover open wounds with sterile dressings
   - 2.5. Provide Pain control – see "Pain Management" **page 47** (Adult) or **page 76** (Pediatric)
   - 2.6. Remove rings or other possibly constricting items


Safe Position

3. **FRACTURE/DISLOCATION:**
   - 3.1. If the extremity is pulseless, attempt to place it in normal anatomic position by gentle in-line traction
   - 3.2. If repositioning does not restore circulation, do not manipulate further, transport immediately.
   - 3.3. Start IV NS in uninjured extremity
4. **AMPUTATION:**
   - 4.1. Place amputated part in moist, sterile dressing, place in sealed plastic bag, and place on top of ice or cold packs (do not place part directly in ice - prevent frostbite)
   - 4.2. Start IV of NS in uninjured extremity
   - 4.3. If hypotensive (SBP < 90 or signs of poor perfusion), give fluid challenge (500 mL NS, reassess and repeat if indicated)
5. **HIGH-PRESSURE INJECTION INJURY:**
   - 5.1. Compressed air injuries, although they may initially look innocuous require immediate transport, especially if paint, paint thinner or grease is involved. These wounds must be debrided in the operating room as soon as possible to prevent further damage and/or amputation
6. **SNAKE BITE:**
   - 6.1. Gently wash the area with cool, wet cloth
   - 6.2. Avoid constricting bands
   - 6.3. Do not elevate

HYPERKALEMIA

Definition: Hyperkalemia is common in patients with severe renal failure (particularly those on dialysis) and should be suspected when these patients have weakness/fatigue, nausea/vomiting, chest pain, palpitations, shortness of breath, or numbness/tingling. Hyperkalemia can lead to ECG changes that can ultimately result in life-threatening dysrhythmias. Treatment in the prehospital setting is based on the severity of the ECG, is temporizing until definitive treatment is achieved in the hospital, and aims to stabilize patients with the potential to arrest or become unstable



HYPERTHERMIA / HEAT ILLNESS

- **Routine Medical Care**
- Protect patient from environment.
- If the patient is in extremis, begin treatment prior to secondary survey.
- Consider: the environment, patient age, and pre-existing conditions

1. **SIGNS AND SYMPTOMS OF A HEAT EMERGENCY**
   - ➔ Weakness or exhaustion
   - ➔ Dizziness
   - ➔ Headache
   - ➔ Sweating may or may not be present
   - ➔ Fainting or feeling faint
   - ➔ Rapid heart rate
   - ➔ Muscle cramps
   - ➔ Altered mental status (coma, seizures, delirium)
2. **PREEXISTING CONDITIONS THAT CAN CONTRIBUTE TO A HEAT EMERGENCY:**
   - ► **Psychiatric disorder** (both because of the medications taken and perhaps the patient's poor judgement)
   - ► **Heart disease**
   - ► **Diabetes**
   - ► **Alcohol**
   - ► **Fever**
   - ► **Fatigue**
   - ► **Obesity**
   - ► **Dehydration** (either decreased fluid intake or sweating)
   - ► **Medications**
3. **TREATMENT:**
   - 3.1 **If the patient is conscious:**
     - 3.1.1 Remove patient from hot environment
     - 3.1.2 Loosen or remove clothing
     - 3.1.3 Place in supine position with legs elevated
     - 3.1.4 Administer O_2
     - 3.1.5 Fan the patient
     - 3.1.6 Water may be given if patient is alert, has a gag reflex, and is not nauseated
   - 3.2 **If altered mental status is present:** (see above)
     - 3.2.1 Place on left side and monitor airway
     - 3.2.2 Wet the skin and fan aggressively
     - 3.2.3 Apply cold packs to the axillae, groin and neck (if available)
     - 3.2.4 Administer IV fluid challenge (250-500 mL NS)
     - 3.2.5 Transport immediately

HYPOTHERMIA

- **Routine Medical Care**
- Protect the patient from the environment
- If patient is in extremis, begin treatment prior to secondary survey
- Check skin temperature

1. **INTRODUCTION:** Hypothermia is a reduced core temperature where the cold challenge overwhelms heat production and heat retention factors. The rate of onset can be:
   - 1.1 **Acute** (minutes to hours) e.g. immersion in cold water
   - 1.2 **Sub-acute** (hours)
   - 1.3 **Chronic** (often over several days) Homeless, drug users, alcoholics, and compromised individuals are at high risk. Elderly persons and those taking certain medicines are also at risk. Injured and seriously ill individuals can become hypothermic quickly

   ➔ **Note:** a hypothermic critical trauma patient has a very high mortality and morbidity rate!
2. **SIGNS AND SYMPTOMS OF HYPOTHERMIA:**
   - 2.1 Altered mental status including: confusion, mood changes, and speech difficulties. The patient's judgment may be affecting causing him/her to exhibit inappropriate behaviors such as removing clothing
   - 2.2 Decreased motor function, poor coordination
   - 2.3 Diminished sense of cold sensation
   - 2.4 Pupils that respond slowly or sluggishly
3. **TREATMENT:**
   - 3.1 **General:**
     - 3.1.1 Remove the patient from the cold environment and prevent further heat loss
     - 3.1.2 Remove wet clothing, begin rewarming - cover with blankets, turn up the heat in the ambulance
     - 3.1.3 Do not let the patient walk or exert him/herself
     - 3.1.4 Administer O_2 - titrate to 94-99% SpO_2 (warmed and humidified is preferred)
     - 3.1.5 Closely monitor cardiac rhythm
     - 3.1.6 Check blood glucose levels. Administer glucose as needed (see ALOC **page 35** – adult or **page 68** - pediatric)
     - 3.1.7 Transport immediately
   - 3.2 **BLS:**
     - 3.2.1 CPR should be initiated if there is any doubt about pulselessness
     - 3.2.2 Severely hypothermic patients may appear dead. If you find an unresponsive, hypothermic patient, take time (30-45 seconds) to try and find a pulse before beginning CPR. Chest compressions should be avoided if any signs of life are present
     - 3.2.3 If VT or VF is present, defibrillation should be attempted. If one shock is unsuccessful, subsequent shocks should be deferred

3.3 **ALS:**

3.3.1 Give fluid challenge with heated N.S. if possible

3.3.2 Do not delay urgent procedures (IV lines and intubation) but perform them "gently." The severely cold heart is sensitive to a variety of stimuli, and fatal dysrhythmias can be caused by forceful treatment efforts

3.3.3 Defer ACLS medications until rewarming occurs (> 30° C / 86° F)

INFECTION CONTROL AND SCREENING CRITERIA

1. **INTRODUCTION:** The following guidelines are general recommendations to help to protect healthcare personnel by reducing the risk of further disease transmission when they are caring for patients with a potentially infectious disease.

2. PRE-INCIDENT

2.1 Ensure familiarity with organizational policies and procedures related to infection control including, but not limited to proper particulate respirator fit testing.

2.2 Ensure availability and familiarity with appropriate PPE and proper donning/doffing procedures for all types of PPE.

2.3 Ensure availability of appropriate cleaning supplies and their usage along with organizational policies and procedures surrounding their usage.

3. DURING INCIDENT:

3.1 Upon dispatch to an incident, utilize provided information to make an initial determination about the potential risk associated with the call. (i.e. a respiratory distress incident has a potentially higher risk associated vs an acute injury).

3.2 Follow standard universal precautions for all incidents.

3.3 If dispatch or initial information gathered at the scene indicates a potentially increased risk for disease transmission, minimize personnel having contact with the patient.

3.4 Apply a procedure or surgical mask to the patient to contain droplets if possible.

3.5 Use caution when performing aerosol generating procedures or high-risk procedures (e.g., mechanical ventilation, ETI, nebulized medications, and/or suctioning).

3.5.1 If you are performing an aerosol generating or other high-risk procedure on a patient with a suspected infectious disease, you are required to wear a N95, P-100, or equivalent respirator during the procedure(s)

3.5.2 It is recommended that a BVM with a HEPA filter be utilized for ventilation.

3.6 Optimize environmental the vehicle's ventilation to increase the volume of air exchange during transport

3.7 Minimize personnel and/or additional riders during transport.

3.8 Notify the receiving facility early as possible

4. POST INCIDENT

4.1 Follow standard operating procedures for routine cleaning of the emergency vehicle and reusable patient care equipment

4.2 Document all assessment findings and treatments appropriately.

OB/GYN EMERGENCIES

- **Routine Medical Care**
- Level of distress:
- Estimate blood loss (if any)
- Is the patient in shock? If yes, Go to the Shock: Hypovolemia/Cardiogenic protocol **page 58**
- Consider immediate transport or prepare for delivery
- Determine stage (trimester) of pregnancy
- Any patient that is ≥ 20 weeks pregnant who has sign(s)/symptom(s) that may be pregnancy related (e.g. ABD
- pain), should be preferentially triaged to a receiving facility with a Labor and Delivery department.

1. **VAGINAL BLEEDING** (Abnormal bleeding between menses, during pregnancy, postpartum or post operative)
   1.1 If postpartum, gently massage the fundus to decrease bleeding
   1.2 Monitor vital signs frequently
2. **SPONTANEOUS ABORTION**
   2.1 If fetus is > 20 weeks or 500 grams, see neonatal resuscitation protocol (**page 75**). If non-viable, save and transport any tissue or fetal remains
   2.2 Have patient place a sanitary napkin or bulky dressing material over vaginal opening - **Do not pack the vagina *with anything***
3. **SEVERE PRE-ECLAMPSIA / ECLAMPSIA**
   3.1 Inclusion Criteria:
   3.1.2 More than 20- weeks' gestation, presenting with hypertension and evidence of end organ dysfunction including renal insufficiency, liver involvement, neurological, or hematological involvement
   3.2 May occur up to 6 weeks postpartum but is rare after 48 hours post-delivery
   3.3. Often the presenting symptom of postpartum pre-eclampsia is headache or SOB
   3.4. Severe Features of pre-eclampsia include:
   3.4.1. Severe hypertension (SBP greater than 160, DBP greater than 110)
   3.4.2. Headache
   3.4.3. Confusion/altered mental status
   3.4.4. Vision changes including blurred vision, spots/floaters, loss of vision (these symptoms are often a precursor to seizure)
   3.4.5. Right upper quadrant or epigastric pain
   3.5. Shortness of breath/pulmonary edema
   3.6. Ecchymosis suggestive of low platelets (bruising, petechiae)
   3.7. Vaginal bleeding suggestive of placental abruption
   3.8. Focal neurologic deficits suggesting hemorrhagic or thromboembolic stroke
   3.9. Observe for seizures, hypertension or coma, if seizing, go to the appropriate seizure protocol
4. **BREECH DELIVERY**
   4.1 Allow delivery to proceed passively until the baby's waist appears. Gently rotate the baby to a face down position and continue with the delivery
   4.2 If the head does not readily deliver insert a gloved hand into the vagina to relieve pressure on the cord and create an air passage for the infant. Transport. Monitor vital signs and infant condition frequently
5. **PROLAPSED CORD**
   5.1 Place the mother supine position with head lower than hips
   5.2 Insert a gloved hand into the vagina and gently push the presenting part (e.g.: the neonate's head or shoulder off the cord. **DO NOT TUG ON THE UMBILICAL CORD.** Avoid unnecessary handling of the cord.

5.3 Place fingers on each side of the neonate's nose and mouth, split fingers into a "V" to create an opening. **Do not** attempt to re-position the cord. **Do not** remove your hand. Cover the exposed cord with saline soaked gauze

6. **LIMB PRESENTATION**

6.1 Defined as the presentation of a single limb - arm or leg

6.2 It is unlikely that the baby will deliver and immediate transport should be initiated

6.3 Place the mother supine position with head lower than hips

7. **SHOULDER DYSTOCIA**

7.1 Hyperflex mother's hips by firmly pressing knees to hips (McRoberts Maneuver).
7.2 Second provider applies suprapubic (not fundal) pressure with fist directed downwards to dislodge anterior shoulder
7.3 Third provider providers gentle downward traction on fetal head. Do NOT pull fetal head.

7.3.1 If unsuccessful, initiate immediate transport and communicate issue of concern over ring down "shoulder dystocia".

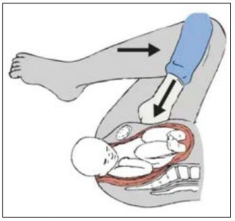


Figure 3. The McRoberts Maneuver: Hyperflexion of Hips & SUPRAPUBIC Pressure
(Adapted from: teachmeobgyn.com)

SCOPE OF PRACTICE - LOCAL OPTIONAL

1. **Approved for use in Alameda County** – all items require additional training

   1.1 **BLS PERSONNEL:**

   - 1.1.1 Aspirin
   - 1.1.2 Blood Glucose Testing
   - 1.1.3 Epinephrine
   - 1.1.4 Narcan

2. **Local Optional Scope of Practice** – requires authorization from State EMS Authority and additional training

   2.1 **ALS PERSONNEL:**

   - 2.1.1 Buprenorphine (optional)
   - 2.1.2 Hydroxocobalamin (optional)
   - 2.1.3 Ketamine (Ketalar)
   - 2.1.4 Ketorolac (Toradol)
   - 2.1.5 Olanzapine (Zyprexa)
   - 2.1.6 Sodium Thiosulfate
   - 2.1.7 Tranexamic Acid

3. Field personnel will not perform any skill that is not a part of his/her scope of practice or has not been authorized by the Alameda County Health Officer and/or EMS Medical Director
4. During an inter-facility transfer or during a mutual aid response into another jurisdiction, a paramedic may utilize the scope of practice for which he/she is trained and accredited
5. Paramedics will not draw blood unless approved in advance by the EMS Medical Director
6. Field personnel are prohibited from carrying any medical equipment or medications that have not been authorized for prehospital use by the Alameda County EMS Medical Director

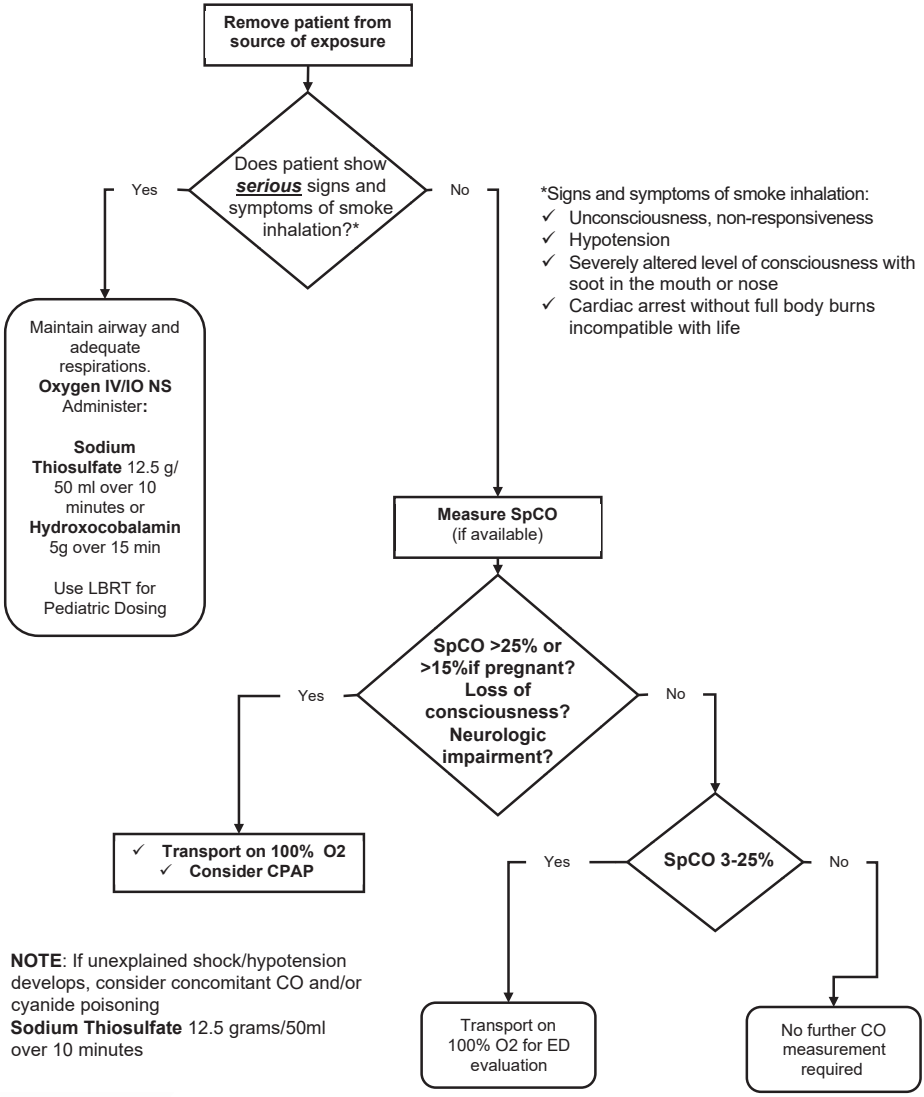
SMOKE INHALATION / CO MONITORING

- **Routine Medical Care**
- **Symptoms of Carbon Monoxide (CO) poisoning:**
  - ➔Initial symptoms are similar to the flu with no fever and can include dizziness, severe headaches, nausea, sleepiness, fatigue/weakness and disorientation/confusion
- **Note:** Carbon Monoxide is a colorless, odorless and tasteless poisonous gas that can be fatal when inhaled. CO inhibits the blood's capacity to carry oxygen. CO can be produced when burning any fuel. CO is a by- product of incomplete combustion. Suspect CO in the presence of any fire. **SpCO = carboxyhemoglobin**

1. Pulse oximetry values may be unreliable in smoke inhalation (SI) patients
2. Cyanide and/or the combination of cyanide and carbon monoxide may be responsible for the majority of SI deaths
3. SI should be particularly suspected in patients rescued from closed-space structure fires
4. Sodium thiosulfate should not be given prophylactically
5. Remove patient from the source of exposure
   - 5.1. Completely remove patient's clothing prior to transport
   - 5.2. Perform Spinal Motion Restriction (SMR) if indicated by mechanism
   - 5.3. Evaluate patient for facial burns, hoarseness, black sputum, and soot in the nose or mouth
   - 5.4. Monitor SpCO (if available)
   - 5.5. Assess and treat for traumatic and/or thermal injuries - see "Trauma Patient Care" (see **page 28**) and/or "Burn Patient Care" (see **page 7**).
6. Administer 100% oxygen via NRB
   - 6.1. Control airway early. Use BVM with airway adjuncts
   - 6.2. Perform endotracheal intubation / SGA placement if indicated
   - 6.2.1. Endotracheal intubation is preferred
   - 6.3. If bronchospasm present, go to "Respiratory Distress" (see **page 51**).
7. Provide cardiopulmonary support (go to appropriate "Cardiac Arrest" policy, if indicated)
8. Start IVs. Consider IV fluids if hypotensive or meeting "Burn Patient Criteria" (see "Burn Patient Care" see **page 7**).
9. **ONLY** if the patient exhibits serious signs and symptoms of SI with concern for **Cyanide Poisoning** (especially burning of nitrogen-containing polymers) – see "Cyanide Poisoning" (see **page 153**).
   - 9.1. Administer sodium thiosulfate or hydroxocobalamin (Cyanokit)
     - 9.1.1. Sodium thiosulfate IV slowly over 10 minutes

       Adult: 12.5 g/50 ml | **Pediatric:** use an LBRT to determine pediatric medication dosages, to for patients with any of the following signs of cyanide poisoning:
       - ➔Unconsciousness, non-responsiveness
       - ➔Hypotension
       - ➔Severely altered level of consciousness with soot in the mouth or nose
       - ➔Cardiac arrest without full body burns incompatible with life
     - 9.1.2. Hydroxocobalamin - Optional (Additional Training Required) Adults: 5g over 15 minutes
10. Treatment of cyanide poisoning must include immediate attention to airway patency, adequacy of oxygenation and hydration, cardiovascular support, and management of any seizure activity
11. If seizures are present, go to Seizure policy (see **page 55**).
12. If cardiac arrhythmia present, go to appropriate arrhythmia policy – Bradycardia (see **page 37**), Cardiac Arrest (see **page 38**), or Tachycardia (see **page 62**)
13. Ensure rapid transport

SMOKE INHALATION / CO MONITORING



NOTE: If unexplained shock/hypotension develops, consider concomitant CO and/or cyanide poisoning
Sodium Thiosulfate 12.5 grams/50ml over 10 minutes

TRANSPORT GUIDELINES

Note: In addition, see "Trauma Patient Criteria" page 27, "Burn Patient Criteria" page 9, and the "Alameda County Approved Receiving Hospitals" matrix located on inside of the back cover for specific transport instructions.

1. **GENERAL TRANSPORT GUIDELINES:** All patients who wish to be transported by ambulance to the hospital should be transported
   - 1.1 **Patient Destination:**
     - 1.1.1 Patients should be transported to the closest hospital appropriate for their medical needs within a reasonable transport time or as specified in the patient care protocols
     - 1.1.2 In general, patients should be transported to the hospital choice of the patient and/or family, if allowed by the protocols, and if there is no compelling reason to take them somewhere else
     - 1.1.3 Paramedics should contact the Base Physician for any questions regarding transport destinations. If the Base Hospital is contacted for medical direction, the ultimate responsibility for determining patient destination will rest with the Base Hospital Physician
2. **TRANSPORT DECISIONS:** Transport decision should be based on paramedic judgment. Paramedics should take the following into consideration before transport:
   - 2.1 Patient condition or ability of field personnel to provide field stabilization and/or emergency intervention. ***TRANSPORT OF ACUTE PATIENTS:*** Any patient with an acute, unstable appearance and/or severe symptoms may be transported Code 3 (lights and siren). **Code 3 transport (lights and siren) has significant, inherent risks for the public and the patient. If Code 3 transport of an acute patient does NOT *significantly decrease transport time to the hospital, the acute patient should be transported Code 2 (no lights and siren).* The hospital must be notified of the patient's Code 3 acuity even if transported Code 2**
   - 2.2 Scene assessment and/or potential extrication difficulties
   - 2.3 ETA to the destination facility including traffic delays
   - 2.4 Instructions within specific algorithms to "initiate early transport"
   - 2.5 Hospital diversion status - See "Ambulance Rerouting" **page v**
   - 2.6 Recommendation from a physician familiar with the patient's current condition, or the patient's regular source of hospitalization/healthcare. For physician on-scene - see **page 110**
   - 2.7 Hospitals with specialized services (e.g.: trauma center, burn center, STEMI Center (SRC), etc.)
3. **TRANSFER OF CARE:** Any paramedic level personnel may transfer care of a BLS patient to any EMT as long as the care required by the patient is within the scope of practice of an EMT, and the patient has no injury or illness that requires or is likely to require monitoring or treatment by an ALS provider
4. **RECEIVING HOSPITAL NOTIFICATION:** Transport units should contact the receiving hospital prior to arrival with the patient's chief complaint, a summary of treatment given and the ETA.
5. **OUT OF COUNTY TRANSPORTS**:
   - 5.1 Patients may be transported to hospitals outside Alameda County if the out-of-county hospital is the closest most appropriate hospital for the medical needs of the patient. Base contact is not required but should be attempted if there are any questions regarding the transport
   - 5.2 Contact the receiving facility by radio or landline. If unable, contact the appropriate dispatch agency to relay information to the receiving facility. This will provide information on bed availability. Do not transport patient to out-of-county hospital without obtaining prior authorization

TRAUMA PATIENT CARE

- **Routine Medical Care**
- **Critical Interventions** - See below
- **Transport Decision** - Determine need for rapid intervention/transport
- **Transport**
- **If traumatic arrest is suspected do not use ACLS medications**

CRITICAL/TIME SENSITIVE INTERVENTIONS:

► Control major external hemorrhage (see **page 127**)

► Control the Airway - Consider **endotracheal intubation or supraglottic airway device if indicated** (See below for patients with closed head trauma)

► Keep patient warm

► Determine patient severity (see "Trauma Patient Criteria" - see **page 27**):

Meets Physiologic and/or Anatomic Factors	Meets Mechanism of Injury Criteria
➔ Transport to the Trauma Center In accordance with Transport Guidelines (page 22). ➔ ADULT - Establish one (1) large bore IV/IO with Normal Saline (NS) or Saline Lock (SL). Establish 2nd IV if appropriate. ➔ PEDIATRIC- Establish one (1) appropriate large bore IV/IO with Normal Saline (NS) or Saline Lock (SL).	➔ Transport to the Trauma Center code 2. ➔ ADULT/PEDIATRIC - Establish one (1) large bore IV/IO with Normal Saline (NS) or Saline Lock (SL).
Do NOT delay transport to establish IV/IO access See "Trauma Patient Criteria" (**page 27**) for additional judgment decisions on code 2 transports	

► Consider spinal motion restriction (SMR) for blunt trauma (see **page 139**)

► Administer **Oxygen** - Titrate SpO_2 to 94-99%

► **IV fluid resuscitation:**

➔ SBP < 90 mmHg, NS IV/IO 250 – 500ml bolus

➔ > 90 mmHg, IV/IO TKO or Saline Lock

➔ Reassess BP q 5 minutes

► Consider **TXA** for patients with signs of shock or uncontrolled bleeding (see **page 145**)

► **Care of the patient with a closed head injury** (GCS < 8):

➔ **Advanced airway (ETT or SGA)**

➔ End-tidal CO_2 should be between 30-35 mmHg

➔ Track respirations or ventilate to a rate of approx 12 times/minute with 100% O_2 ***(AVOID HYPERVENTILATION)***

➔ **IV/IO** NS in 500 mL increments to ***maintain mean arterial pressure (MAP) of at least 80 mmHg***. Reassess BP q 5 minutes

IMPORTANT CONSIDERATIONS

► Contact the Base Hospital, if appropriate

► Contact the Trauma Center, as soon as possible

► Consider pain management when appropriate

► Splint fractures and dress wounds ONLY if time permits

FORMULA FOR ESTIMATING MAP

$$\text{MAP} = \text{diastolic} + \frac{(\text{systolic} - \text{diastolic})}{3}$$

TRAUMA PATIENT CRITERIA

1. **INTRODUCTION:** The goal of the Alameda County trauma system is to transport confirmed patients meeting the various criteria below to a designated trauma center in a timely manner, bypassing non-trauma centers

2. **RED CRITERIA TRAUMA PATIENTS (High Risk for Serious Injury):**

   2.1 A patient is identified as at high risk for serious injury when any of the following injury patterns or mental status/vitals signs listed below are present. These patients should be transported to a designated Trauma Center rapidly.

Injury Patterns	Mental Status & Vitals Signs
• Penetrating injuries to head, neck, torso,and proximal extremities • Skull deformity, suspected skull fracture • Suspected spinal injury with new motor or sensory loss • Chest wall instability, deformity, or suspected flail chest • Suspected pelvic fracture • Suspected fracture of two or more proximal long bones • Crushed, degloved, mangled, or pulseless extremity • Amputation proximal to wrist or ankle • Active bleeding requiring a tourniquet or wound packing with continuous pressure	**All Patients** • Total Glasgow Coma Scale ≤ 13 ***or***; Motor GCS < 6 (Unable to follow commands) • RR < 10 or > 29 breaths/min • Respiratory distress or need for respiratory support • Room-air pulse oximetry < 90% **Age 0–9 years** • SBP < 70mm Hg + (2 x age in years) **Age 10–64 years** • SBP < 90 mmHg or • HR > SBP **Age ≥ 65 years** • SBP < 110 mmHg or • HR > SBP

3. **YELLOW CRITERIA TRAUMA PATIENTS (Moderate Risk for Serious Injury):**

   3.1 In addition to above criteria, the following mechanisms of injury and EMS provider judgment of risk factors can be utilized to preferentially triage a patient to a trauma center. In general, these patients are transported code 2, however, differing field circumstances and/or patient condition may require a code 3 transport

Mechanism of Injury	EMS Judgment
• High-Risk Auto Crash – Partial or complete ejection – Significant intrusion (including roof) • >12 inches occupant site OR • >18 inches any site OR • Need for extrication for entrapped patient – Death in passenger compartment – Child (age 0–9 years) unrestrained or in unsecured child safety seat – Vehicle telemetry data consistent with severe injury • Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.) • Pedestrian/bicycle rider thrown, run over, or with significant impact • Fall from height > 10 feet (all ages)	**Consider risk factors, including:** • Low-level falls in young children (age ≤ 5 years) or older adult (age ≥ 65 years) with significant head impact • Anticoagulant use • Suspicion of child abuse • Special, high-resource healthcare needs • Pregnancy > 20 weeks • Burns in conjunction with trauma • Children should be triaged preferentially to pediatric capable centers • EMS Provider judgment - If concerned, take to a trauma center

4. **TRANSPORT:** Patients that meet Red or Yellow trauma criteria in the prior sections will be transported to **the closest, most appropriate, designated Trauma Center**
   - 4.1 **Adult trauma patients are defined as being 15 years of age or older**
   - 4.2 **Pediatric trauma patients are defined as being 14 years of age or younger**
5. **Exceptions:** The patient is identified as meeting Red or Yellow trauma criteria, but presents with one of the following:

PATIENT PRESENTATION	ACTION
UNMANAGEABLE AIRWAY: ***The patient requires advanced airway management, and the paramedic is unable to manage the patient's airway through basic or advanced interventions.***	**Closest Basic E.D.**
ADULT TRAUMATIC ARREST:	Proceed to **Adult Cardiac Arrest - Traumatic** protocol or **Determination of Death in the Field** protocol
PEDIATRIC TRAUMATIC ARREST	Proceed to **Pediatric - Cardiac Arrest - Traumatic** protocol or **Determination of Death in the Field** protocol ➔ ETA to the Pediatric Trauma Center ≤ 20 minutes: Pediatric Trauma Center ➔ ETA to the Pediatric Trauma Center ≥ 20 minutes: Closest Adult Trauma Center

6. **PATIENT TURNOVER REPORTING FORMAT:** EMS Clinicians should use the following **DMIST** format when turning over patient care to the Trauma Center medical team:
   - ➔ **D**emographics
   - ➔ **M**echanism
   - ➔ **I**njuries
   - ➔ **S**igns - Vital signs
   - ➔ **T**reatments

7. **BASE HOSPITAL CONTACT:** Varying field circumstances make rigid application of any set of rules impractical. These criteria should serve as guidelines. Clinical circumstances may dictate that transport be undertaken immediately with Base Hospital contact made during transport

7.1 **Contact the Base Hospital Physician if:**

- ► The patient meets the criteria listed in the "Yellow Criteria" but the provider is requesting transport to a basic ED
- ► The patient requires medical treatment not covered in the **Trauma Patient Care** protocol
- ► The patient would benefit from consultation with the Base Hospital Physician

8. **OUT-OF-COUNTY TRANSPORT**

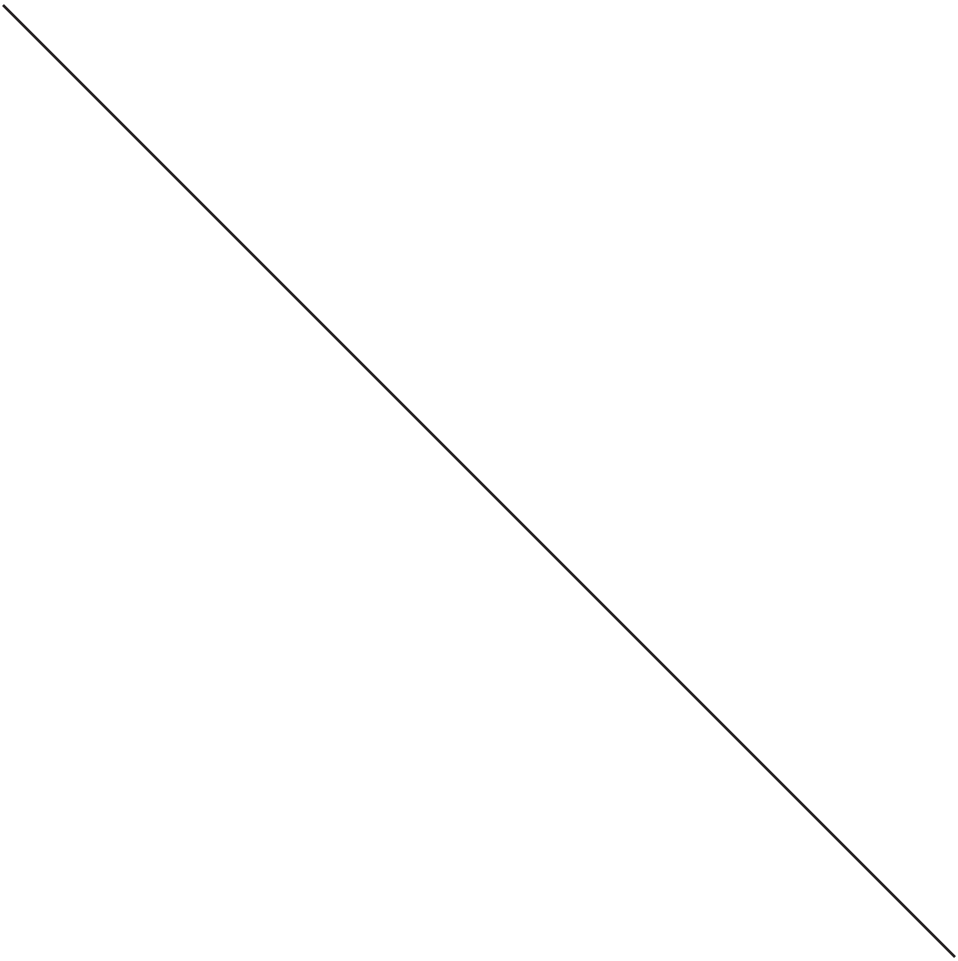
8.1 Patients who meet Trauma Patient Criteria may be transported directly to an out of county Trauma Center if it is the closest, most appropriate destination for the patient

8.2 Prior to transporting to an out-of-county Trauma Center, the transporting provider must:

- ► Contact the out-of-county Trauma Center by land line to determine if they can accept the patient
- ► Give a brief report including E.T.A. (See Reporting Format Protocol)
- ► Contact the Alameda County Base Hospital if medical consultation is required (see #5 above)

8.3 **Out-of-County Trauma Centers:**

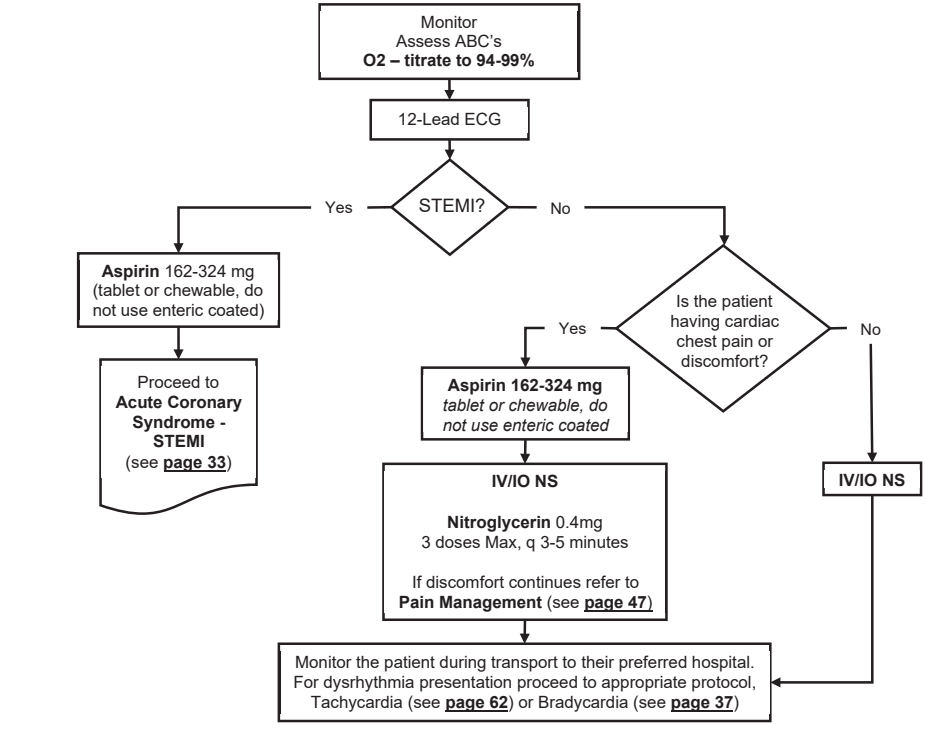
TRAUMA CENTER	PEDIATRIC CAPABLE	LOCATION	PHONE #
STANFORD UNIVERSITY MEDICAL CENTER	X	PALO ALTO	(650) 723-7337
SAN FRANCISCO GENERAL HOSPITAL		SAN FRANCISCO	(415) 206-8111
SANTA CLARA VALLEY MEDICAL CENTER	X	SAN JOSE	(408) 885-6912
JOHN MUIR MEDICAL CENTER		WALNUT CREEK	(925) 947-4444
SAN JOAQUIN GENERAL		FRENCH CAMP	(209) 982-1975



ADULT POLICIES TOC

ACUTE CORONARY SYNDROME (ACS)

- **Routine Medical Care**
- **Indications:** anxiety, chest discomfort, diaphoresis, discomfort or tightness radiating to the jaw, fatigue, shoulder or arms, dizziness, dyspnea, epigastric discomfort, general weakness, nausea or vomiting, palpitations, return of spontaneous circulation (ROSC), syncope, or near syncope
- Perform a 12-Lead ECG, as soon as possible. See ECG - 12 Lead **page 126**. Keep the 12-lead ECG continuously attached to the patient throughout care, as the monitor will perform serial ECGs if cardiac changes are detected, following the initial 12-lead recorded by that device.



Aspirin Considerations:

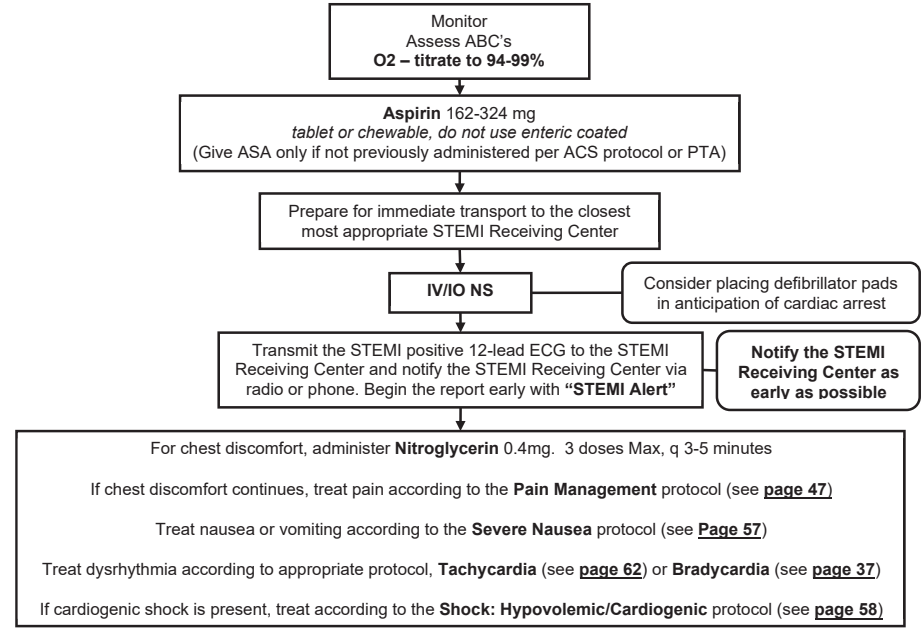
- **Contraindications:**
  - Allergy to Aspirin
- **Notes:** Ensure the patient is alert enough to chew the tablets safely. If the patient took Aspirin immediately prior to EMS arrival, verify the patient took between 162-324mg; if not, administer additional aspirin. It is ok to administer aspirin to patients who take blood thinners or anticoagulants regularly.

Nitroglycerin Considerations:

- **Contraindications:**
  - Allergy to Nitroglycerin ■ Systolic Blood Pressure (SBP) <90mmHg ■ >30mmHg drop in SBP after one dose
  - Erectile dysfunction (ED) medication within the last 24 hours (Viagra/Levitra) or 36 hours (Cialis)

ACUTE CORONARY SYNDROME - STEMI

- **Routine Medical Care**
- **Indications:** A 12-lead ECG reflecting ST segment elevation in two or more contiguous leads indicates an ST elevation myocardial infarction (STEMI). This may be identified by the paramedic or the ECG monitor. When the monitor detects an acute STEMI, the 12-lead ECG interpretation language will be displayed as follows:
  - ➔ Stryker/Lifepak: *** **MEETS ST ELEVATION MI CRITERIA** ***
  - ➔ Zoll: *** **STEMI** ***
- **Do not delay transport** to obtain additional 12-lead ECGs after the initial STEMI-positive interpretation Regardless of which ECG monitor first identified the STEMI, prepare the patient for immediate transport
- **Do not delay transport** to obtain a right-sided 12-lead ECG after a STEMI has been identified
- **Do not delay transport** to obtain the initial or second IV on scene. Establish all IVs en route.
- If the monitor interpretation identifies STEMI as outlined above, do not override the monitor's interpretation
- Limit on scene time to <15 minutes and initiate rapid transport for 'STEMI Alerts' to a designated STEMI Center



For chest discomfort, administer **Nitroglycerin** 0.4mg. 3 doses Max, q 3-5 minutes

If chest discomfort continues, treat pain according to the **Pain Management** protocol (see **page 47**)

Treat nausea or vomiting according to the **Severe Nausea** protocol (see **Page 57**)

Treat dysrhythmia according to appropriate protocol, **Tachycardia** (see **page 62**) or **Bradycardia** (see **page 37**)

If cardiogenic shock is present, treat according to the **Shock: Hypovolemic/Cardiogenic** protocol (see **page 58**)

Aspirin Considerations:

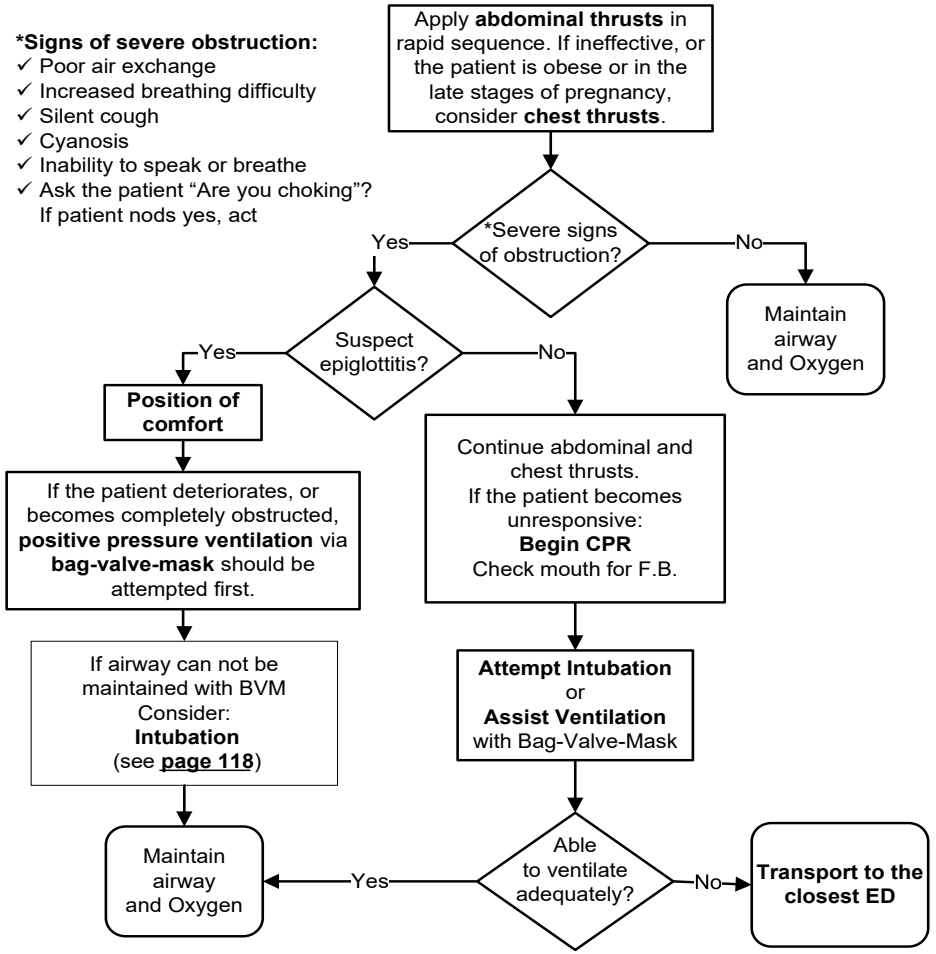
- **Contraindications:**
  - Allergy to Aspirin
- **Notes:** Ensure the patient is alert enough to chew the tablets safely. If the patient took Aspirin immediately prior to EMS arrival, verify the patient took between 162-324mg; if not, administer additional aspirin. It is ok to administer aspirin to patients who take blood thinners or anticoagulants regularly.

Nitroglycerin Considerations:

- **Contraindications:**
  - Allergy to Nitroglycerin ■ Systolic Blood Pressure (SBP) <90mmHg ■ >30mmHg drop in SBP after one dose
  - Erectile dysfunction (ED) medication within the last 24 hours (Viagra/Levitra) or 36 hours (Cialis)

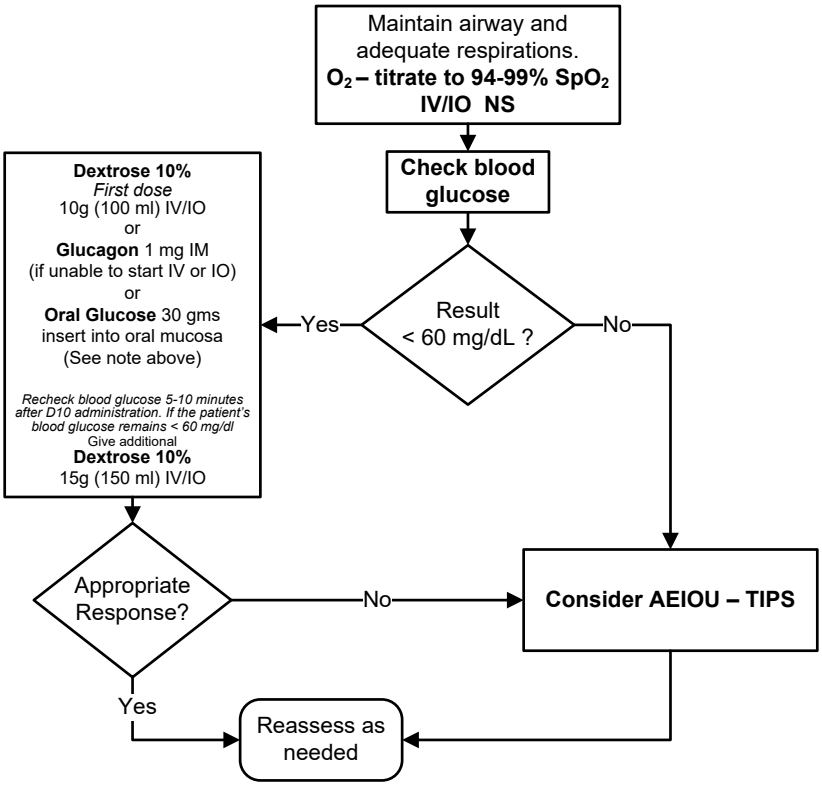
AIRWAY OBSTRUCTION

- **Routine Medical Care**
- If obstruction due to laryngeal trauma, see **page 26** "Trauma Patient Care"
- Obstruction due to epiglottitis:
  - ➔Do not attempt to visualize the throat or insert anything into the mouth
    - ➔Minimize outside stimulation. Keep the patient calm. Position of comfort.
- Do not use a tongue/jaw lift or perform blind finger sweeps
- **Rapid Transport**



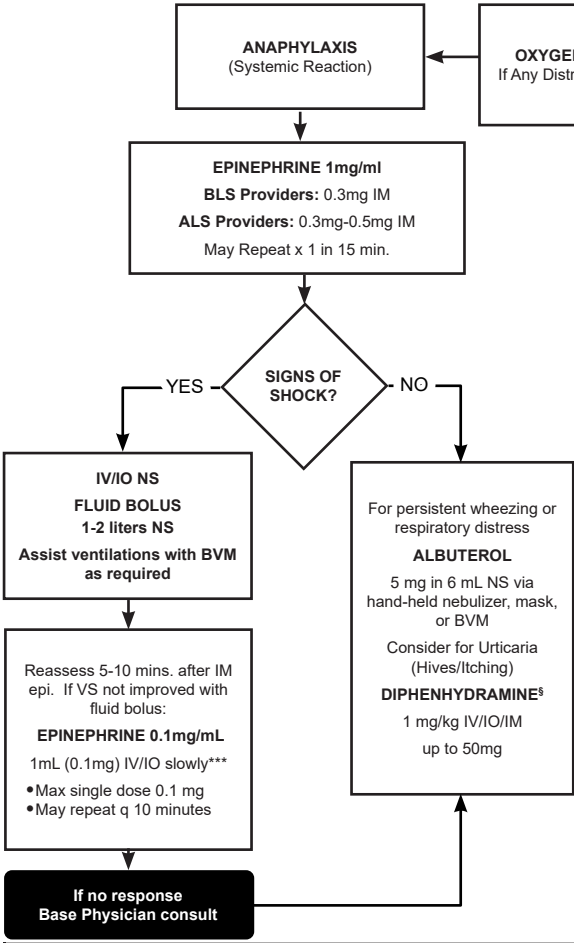
ALTERED LEVEL OF CONSCIOUSNESS

- **Routine Medical Care**
- Obtain a complete patient history including current medications
- Identify and document neurological deficits
- Naloxone **should not** be given as treatment for altered level of consciousness in the absence of respiratory depression (respiratory depression = rate of less than 8 breaths per minute) (see **page 50**)
- **Note:** Glucose paste may be administered if the patient: **1)** is able to hold head upright; **2)** has a gag reflex; and, **3)** can self-administer the medication
- Dextrose should not be given with suspected Acute Stroke unless blood sugar reading is < 60 mg/dL
- Perform 12-Lead ECG, as appropriate, and transport to a STEMI Receiving Center if STEMI is identified. (See **page 126** - ECG 12-Lead) for STEMI Receiving Center information
- SMR for trauma or suspicion of trauma (see **page 139**)
- **Contact the Base Physician if:**
  - ➔ the Blood Glucose reading is > 60 mg/dL but hypoglycemia is suspected



ANAPHYLAXIS / ALLERGIC REACTION

- **Epinephrine IM** is the cornerstone of treatment of anaphylaxis and should be given as early as possible. It is best absorbed from an injection in the lateral thigh
- If the patient is in severe distress, **administer Epinephrine IM** and consider immediate transport
- **SIGNS OF ANAPHYLAXIS (Systemic Reaction)** – wheezing, repetitive cough, tightness in chest, stridor, difficulty swallowing or tightness in throat, change in voice, dizziness or feeling faint, abdominal complaints (pain, repeated vomiting, diarrhea or incontinence), anxiety, lethargy
- **SIGNS OF ANAPHYLACTIC SHOCK** – pallor, hypotension, cool, clammy mottled skin, altered sensorium
- **Facial/oral swelling (Angioedema)** can accompany anaphylaxis, but is not always present



NOTES

* If patient develops signs of anaphylaxis, go to other arm of this algorithm

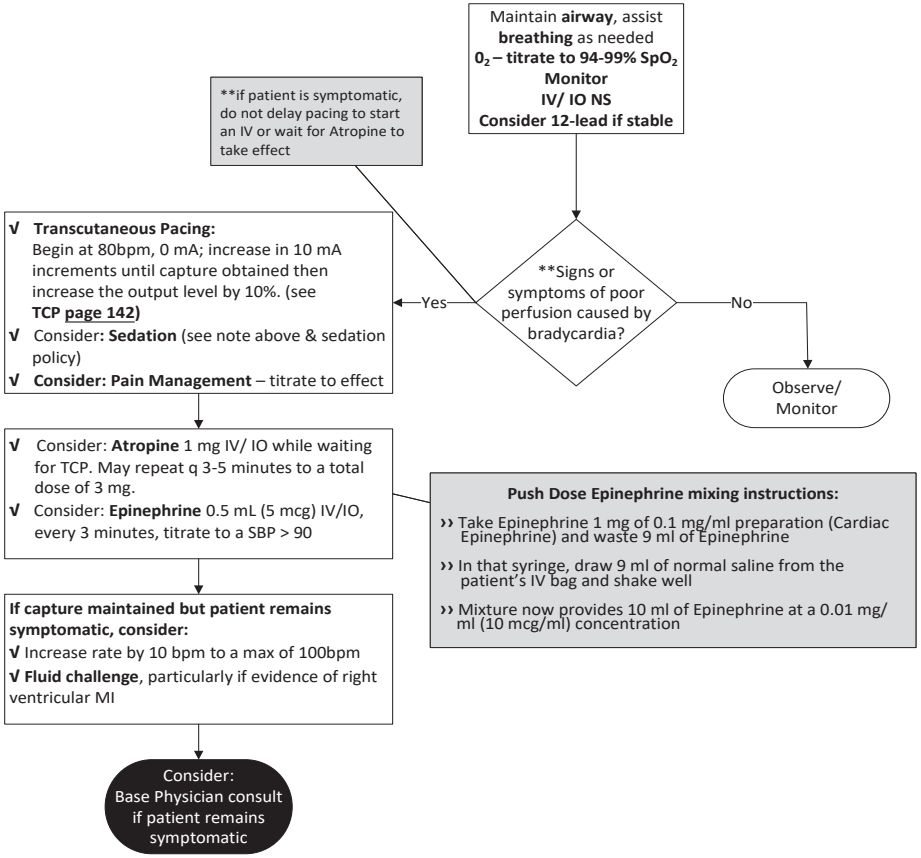
** In elderly, small, or in patients with mild symptoms or history of CAD, consider lower dose (0.3mg IM).

*** IV/IO epinephrine should only be used if symptoms are unresponsive to IM epinephrine and patient has signs of profound shock

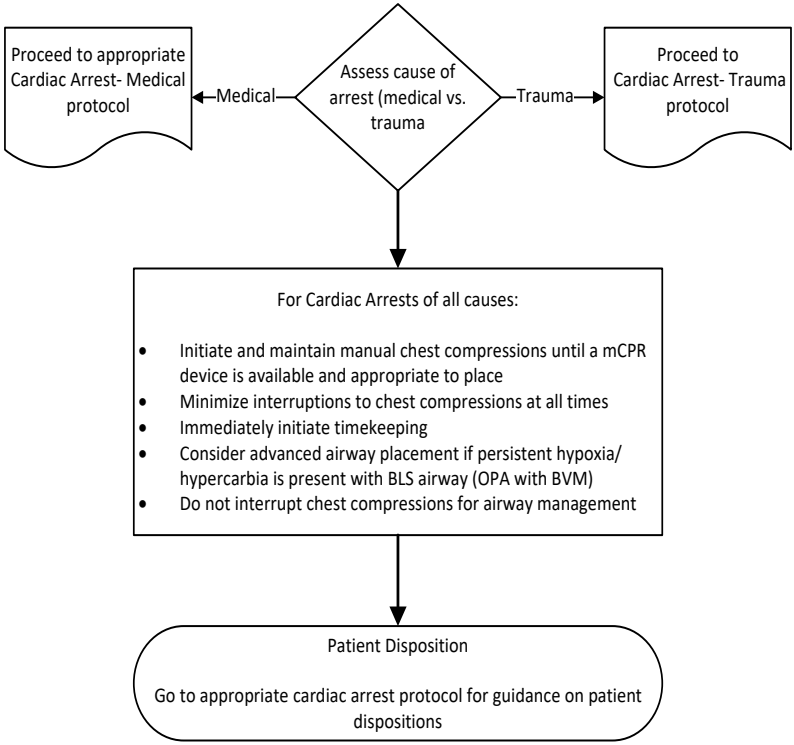
§ Diphenhydramine may lessen discomfort from rash/itching but *is not an essential treatment of anaphylaxis*. Consider reduced dosage if patient has taken diphenhydramine in the past 1-2 hrs.

BRADYCARDIA

- **Routine Medical Care**
- **Bradycardia:** < 50 beats/minute, 2nd degree block, 3rd degree block
- **Serious signs and symptoms:**
  - → Acute altered mental status
  - → On-going chest pain
  - → Hypotension
  - → Other signs of shock
- **Note:**
  - → If utilizing Transcutaneous Pacing (TCP), verify mechanical capture and patient tolerance (see **page 142**)
  - → Use sedation with caution in the hypotensive patient (see **page 136**)
  - → If patient symptomatic and pacing not available, consider rapid transport
  - → Consider Hyperkalemia



CARDIAC ARREST - GENERAL GUIDELINES

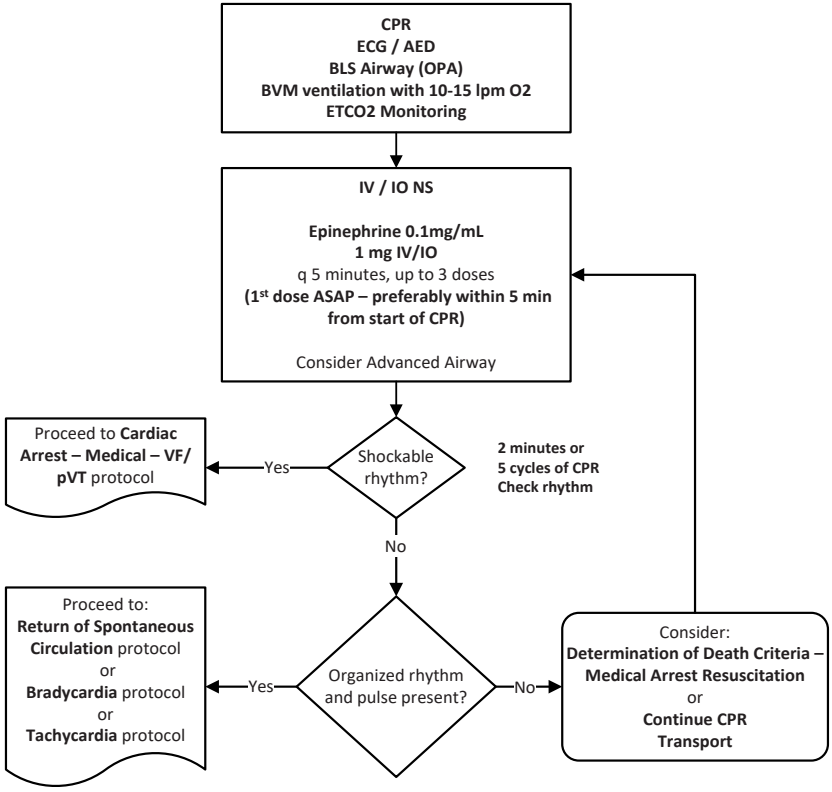


Special Considerations:

- BLS and ALS prehospital personnel are not required to initiate resuscitative measures in circumstances of obvious death, signed DNR/POLST form, or upon meeting **Family Discretion Criteria** as outlined in **Determination of Death in the Field** protocol
- Consider strangulation/hanging as causes of arrest and treat as a Medical Cardiac Arrest with SMR if suspected spinal cord injury

CARDIAC ARREST - MEDICAL - ASYSTOLE / PEA

- **Routine Medical Care**
- Consider and treat other possible causes – See CPR **page 10**
- If patient presents with signs of obvious death or a valid DNR is presented - See **Determination of Death in the Field** Procedure



Important Considerations:

- **Do not interrupt CPR to administer medications or perform airway management**
- Use of a mechanical CPR device is required whenever it is available and appropriate
- Consider and treat reversible causes as appropriate:
  - Hypovolemia • Hypoxia • Hydrogen ion (acidosis) • Hypo-/hyperkalemia • Hypothermia
  - Tension pneumothorax • Tamponade, cardiac • Toxins • Thrombosis, pulmonary / coronary
- If renal failure or hyperkalemia suspected, you may consider administering the following:

  Calcium Chloride 1 gm slow IVP (over 2 min.) *Note: flush IV tubing after administering CaCl to avoid precipitation*

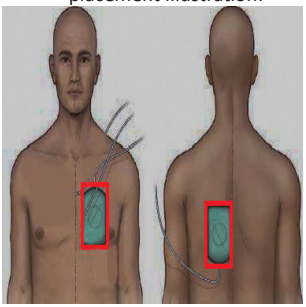
  Sodium Bicarbonate 1 mEq/kg IVP *Note: make sure to have a second IV line as other medications may not be compatible*

CARDIAC ARREST - MEDICAL - VF/PVT

- **Routine Medical Care**
- **Note: Use of a mechanical CPR device is required whenever available and appropriate**

***Manual chest compressions**
Place defibrillator pads in the anterior / posterior configuration
Apply mechanical CPR (mCPR) device if available

Anterior/Posterior pad placement illustration:



Shockable rhythm?

No → Proceed to **Cardiac Arrest – Medical – Asystole/PEA** protocol or **Return of Spontaneous Circulation** protocol

Yes

****Defibrillate (see note)**
- Resume CPR immediately
- BLS Airway (OPA)
- BVM ventilation at rate of 10-12 with 10-15 lpm O2
- ETCO2 Monitoring
- IV/IO NS
- 2 minutes or 5 cycles of CPR
- Check Rhythm

Shockable rhythm?

No → Proceed to **Cardiac Arrest – Medical – Asystole/PEA** protocol or **Return of Spontaneous Circulation** protocol

Yes

- **CPR** while defibrillator charging
- ****Defibrillate (see note)**
- **Resume CPR**
- *****Epinephrine 0.1mg/mL** 1 mg IV/IO
- 2 minutes or 5 cycles of CPR
- Check Rhythm

Shockable Rhythm?

No

Yes

- **CPR** while defibrillator charging
- ****Defibrillate (see note)**
- **Resume CPR**
- **Amiodarone** 300 mg IV/IO
- Consider Advanced Airway

- Initiate transport to the closest STEMI center
- Proceed to **Cardiac Arrest – Medical – VF/pVT** protocol

VF/Pulseless VT notes:

***Chest compressions:**
CPR/mCPR must be minimally interrupted (<10 secs) and should not be paused for airway placement. mCPR does not need to be paused for defibrillation(s). Manual chest compressors must be rotated at every rhythm check.

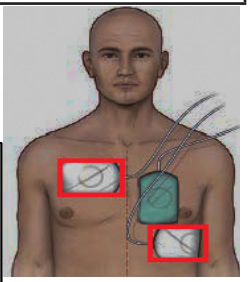
****Defibrillation:**
Refer to manufacturer's documentation for energy dose recommendations

*****Epinephrine**
May be repeated q 5mins to a max of 3 doses

CARDIAC ARREST - MEDICAL - REFRACTORY VF/PVT

- **Routine Medical Care**
- Note: Use of a mechanical CPR device is required whenever available and appropriate
- **Indications: VF/Pulseless VT is considered refractory if 3 defibrillations have been delivered and additional defibrillation(s) are required at any point in a resuscitation.**

If patient meets the above indications, prepare a second defibrillator and place the second defibrillator's pads in the anterior/lateral position as pictured



Shockable rhythm? — No

Yes

- ✓ **CPR** while defibrillators are charging
- ✓ **Double-sequential Defibrillation (see note)**
- ✓ **Resume CPR**
- ✓ **Prepare for patient transport to STEMI Center**
- ✓ Notify receiving STEMI center of pt inbound with refractory VF/VT as early as possible
- ✓ ***Epinephrine 0.1mg/mL** 1mg IV/IO
- ✓ 2 minutes or 5 cycles of CPR
- ✓ Check Rhythm

Double-sequential defibrillation steps:

1. Charge both defibrillators to recommended energy level

2. Deliver shock using defibrillator placed in A/P position first

3. Deliver shock with A/L placed defibrillator **1 second** after the first defibrillation

DO NOT DELIVER SHOCKS SIMULTANEOUSLY

Shockable rhythm? — No → Go to Policy:
- ✓ **Asystole/PEA page 39**
- ✓ **Return of Spontaneous Circulation page 52**

Yes

- ✓ **CPR** while defibrillators are charging
- ✓ **Double-sequential Defibrillation (see note)**
- ✓ **Resume CPR**
- ✓ **Amiodarone** 150mg IV/IO 3-5 minutes after 1st dose
- ✓ 2 minutes or 5 cycles of CPR
- ✓ Check Rhythm

Shockable rhythm? — No

Yes

- ✓ **CPR** while defibrillators are charging
- ✓ **Double-sequential Defibrillation (see note)**
- ✓ **Resume CPR**
- ✓ ***Epinephrine 0.1mg/mL** 1mg IV/IO
- ✓ 2 minutes or 5 cycles of CPR
- ✓ Check Rhythm

Continue **Double-sequential Defibrillation (see note)** as appropriate every 2 minutes or 5 cycles of CPR or move to appropriate protocol

VF/Pulseless VT notes:

***Chest compressions:**
CPR/mCPR must be minimally interrupted (<10 secs) and should not be paused for airway placement. mCPR does not need to be paused for defibrillation(s). Manual chest compressors must be rotated at every rhythm check.

****Defibrillation:**
Refer to manufacturer's documentation for energy dose recommendations

*****Epinephrine**
May be repeated q 5mins to a max of 3 doses

CARDIAC ARREST – TRAUMATIC

- **Do not** initiate resuscitation in the setting of obvious death, mass casualty incidents, or when the Determination of Death Criteria – Traumatic Arrest is met. See Determination of Death in the Field **page 92**

Does the patient present with any one of the following obvious death criteria?
Total decapitation, total incineration, total destruction of the heart or brain, decomposition, or traumatic arrest from an MCI

Yes → **Do not initiate resuscitation**

No ↓

Does the patient present with all of the following?
1. Apnea
2. No palpable carotid or femoral pulse for 10 seconds
3. PEA less than (<) 40 bpm or Asystole
4. Estimated time from at patient side to receiving center exceeds 20 minutes **only when** PEA is greater than or equal to (≥) 40 bpm

Yes → **Do not initiate resuscitation**

No ↓

Initiate resuscitation and prepare for transport

- Initiate CPR (2 minutes or 5 cycles check rhythm)
- BLS Airway (OPA and BVM) and ventilation
- Control major bleeding (tourniquet/wound packing)
- ECG/AED, SpO2 and ETCO2 monitoring
- If shockable rhythm identified, defibrillate & proceed to Cardiac Arrest-Medical-VF/pVT **page 40**
- SMR as indicated by MOI (see #1 in Special Considerations)
- Transport to Trauma Center (see #3 in Special Considerations)

During transport:
- Continue CPR (2 minutes or 5 cycles check rhythm)
- Bilateral Pleural Decompression **page 126**, if tension pneumothorax is suspected
- IV access x 2 (large bore) – IO access if unable to obtain IV access
- Administer Epinephrine **ONLY** if the cause of arrest is strangulation/hanging or submersion
- IV/IO bolus of 1 liter NS
- Consider advanced airway management if persistent hypoxia/hypercarbia
  - Supraglottic airway devices are preferred. Choose the airway with the fastest chance for success as traumatic arrest patients have a decreased tolerance for hypoxia

ROSC → Consider TXA for suspected hemorrhagic shock **page 145**

Continue to destination and transfer patient care

Special Considerations:
1. Provide spinal motion restriction (SMR) if indicated by mechanism of signs of blunt head/neck trauma
2. Treat strangulation/hanging causes of arrest as a Medical Cardiac Arrest with SMR
3. Strangulation or drowning **without** suspected head or spinal injury can be transported to the nearest hospital
4. Trauma is not a contraindication for mechanical CPR devices if it does not delay transport
5. Do not seek base guidance for transport; these patients are time-sensitive when death criteria are not met

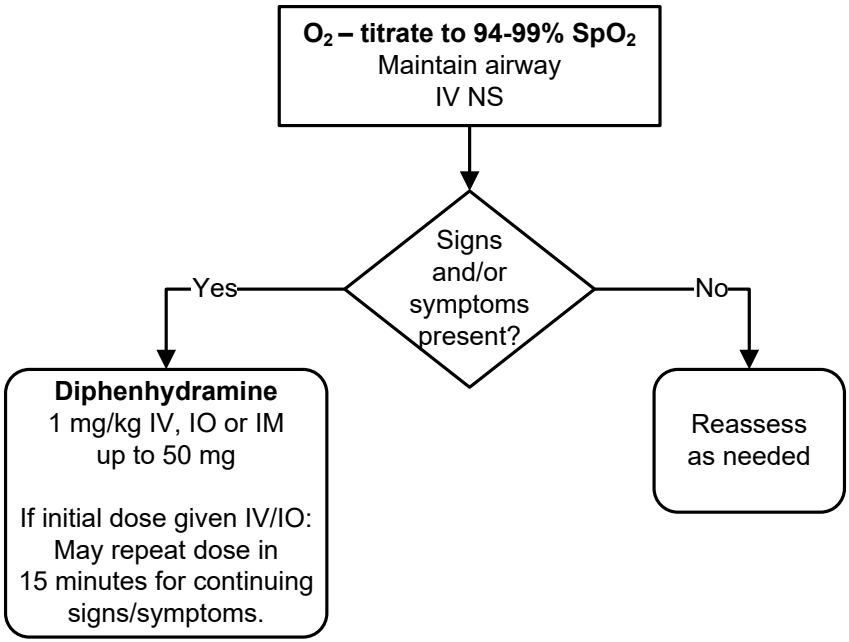
DYSTONIC REACTION

- **Routine Medical Care**
- History includes ingestion of phenothiazines:

➔ Chlorpromazine (Thorazine, Largactil)
➔ Levomepromazine (Nozinan)
➔ Promazine (Compazine)
➔ Piperidines (Haloperidol, Risperidone)
➔ Trifluprom azine (Vesprin)
➔ Promethazine (Phenergan)

- **Signs and Symptoms (often mistaken for a seizure disorder or tetany):**

➔ Agitated/frightened appearance
➔ Jaw muscle spasm
➔ Small pupils
➔ Oculogyric crisis (circular movement of the eyeballs)
➔ Hypotension
➔ Torticollis (twisting of the neck)
➔ Facial grimaces
➔ Spasms of the back muscles, causing the head and legs to bend backward and the trunk to arch up
➔ Protruding tongue



MEDICATIONS - AUTHORIZED | STANDARD INITIAL DOSE

Acetaminophen	1000 mg ***IV*** infused over 15-20 min
Adenosine	1st dose: 6 mg; 2nd dose: 12 mg (rapid ***IV/IO*** push)
Albuterol	5 mg in 6 ml normal saline
Amiodarone	**Wide complex Tachycardia:** 150 mg ***IV/IO*** over 10 mins **VF/VT:** 1st dose: 300 mg ***IV/IO***; 2nd dose: 150 mg ***IV/IO*** Follow each dose with 20mL NS flush. (two doses only)
Aspirin	162 mg chewable or 324 mg (5gr.) tablet – not enteric coated)
Atropine Sulfate	**Bradycardia:** 1 mg ***IV/IO*** - (max total 3 mg)
Buprenophrine	16mg Sublingual (SL)
Calcium Chloride 10%	1 gm over 2 minutes ***IV/IO***
Charcoal	1 gm/kg (Max 50 gms) ***PO***
Dextrose 10%	10 gms ***IV/IO***
Diphenhydramine (Benadryl)	**Allergic Reaction:** 1 mg/kg ***IV/IO/IM*** up to 50 mg
Epinephrine 1mg/mL	**Anaphylaxis:** 0.3 mg-0.5 mg ***IM*** **Bronchospasm:** 0.01 mg/kg ***IM*** (max dose 0.5mg)
Epinephrine 0.1mg/mL	**Anaphylactic shock:** 1mL (0.1mg) ***IV/IO*** slowly **Cardiac arrest:** 10mL (1 mg) ***IV/IO*** **Cardiogenic/Distributive Shock:** Diluted to 0.01mg/ml (10mcg/ml), 0.5ml (5mcg) ***slow IV/IO***
Fentanyl	**Pain Management**: 25-100 mcg ***IV/IO/IM/IN*** (max single dose 100 mcg)
Glucagon	1 mg ***IM***
Oral Glucose	30 gms ***PO***
Ipratropium (Atrovent)	500 mcg (2.5 ml unit dose) ***Via nebulizer***
Lidocaine 2%	40 mg ***IO*** (2 mL) slowly (1 ml over 30 seconds)
Ketamine (Ketalar)	0.3 mg/kg ***IV/IO/IM/IN -*** IV/IO dose to be mixed in 100ml NS/D5W and infused over 10 min
Ketorolac (Toradol)	15 mg ***IM/IV/IO***
Midazolam (Versed)	**Sedation:** ***IV/IO (slowly)*** 1-2 mg, ***IM/IN:*** 2-5 mg **Seizure:** ***IM/IN:*** 10 mg, ***IV/IO:*** 5 mg
Naloxone (Narcan)	Initial dose: Titrated up to 2 mg ***IV/IM/IN*** BLS Providers may only use IN Route. Max. initial dose is 2mg.

MEDICATIONS - AUTHORIZED | STANDARD INITIAL DOSE

Nitroglycerin Spray	0.4 mg metered spray or tablet
Normal Saline	250 - 500 ml ***IV/IO*** fluid bolus
Olanzapine (Zyprexa)	10 mg **PO** orally dissolving tablet
Ondansetron (Zofran)	4 mg ***IV*** †Slowly over 30 seconds or 4 mg ***IM/PO (oral dissolving tablets)*** (†rapid IV administration <30 seconds can cause syncope)
Oxygen (titrate to 94%-99% SpO2)	2 - 6 L/nasal cannula | 15 L/non-rebreather mask
Sodium Bicarbonate	1 mEq/kg ***IV/IO***
Sodium Thiosulfate	12.5 grams ***IV/IO*** over 10 minutes
Tranexamic Acid- TXA	1 gram in 100ml NS or D5W ***IV/IO*** over 10 minutes
Hydroxocobalamin	Smoke Inhalation/Cyanide Poisoning: 5g ***IV/IO*** over 15 minutes

Atropine Sulfate	**Nerve agent exposure:** ➔Patient: 2 mg ***IV/IM*** (for use only by Paramedics or specially-trained EMTs) ➔Autoinjector antidote kit: 2 mg in 0.7mL 1 - 3 kits depending on exposure (given with Pralidoxime chloride) ► ***Additional atropine may be needed until a positive response is achieved***
Pralidoxime Chloride (2-PAM)	**Nerve agent exposure:** ➔Patient: 1 - 2 grams ***IV/IM*** (for use only by Paramedics or specially-trained EMTs) ➔Autoinjector antidote kit: 600 mg in 2 ml's 1 - 3 kits depending on exposure (given with atropine)

OPIOID WITHDRAWAL

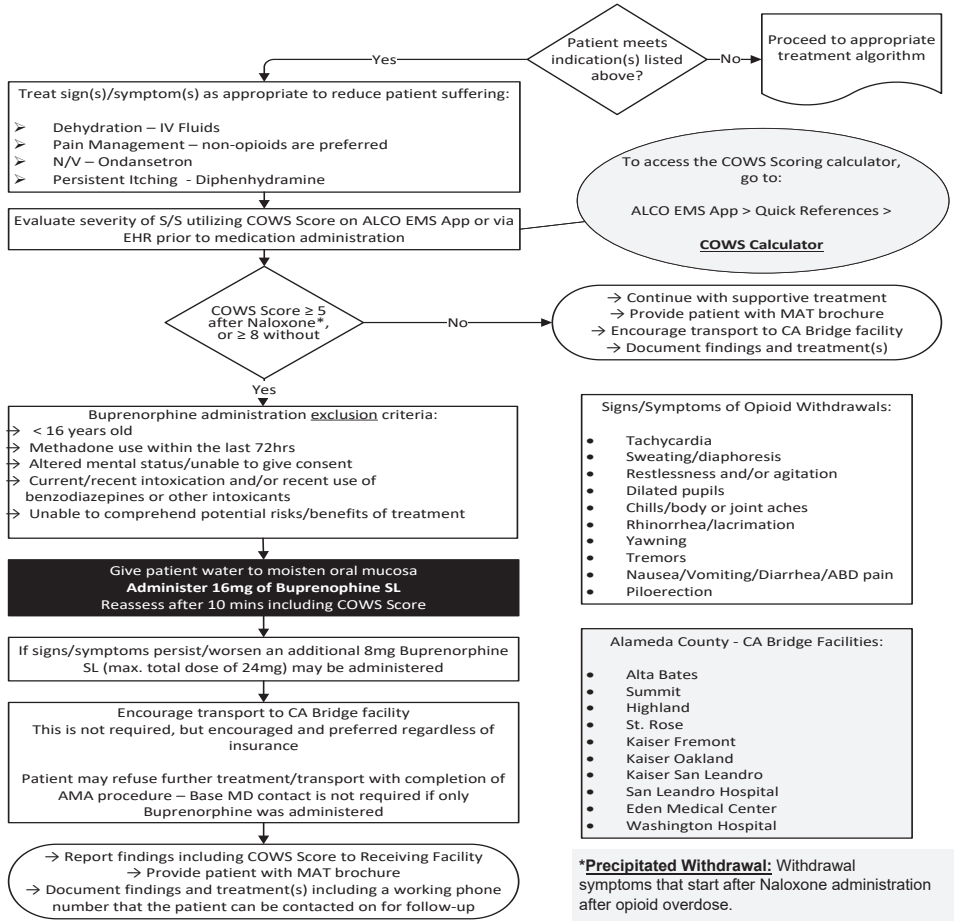
- **Routine Medical Care**
- **Indications:**

➔ **Post Naloxone Administration with signs/symptoms of opiate withdrawals**

➔ **Patient stated complaint of opioid withdrawals or seeking assistance for Opioid Use Disorder (OUD)**

➔ **Patient presenting with signs/symptoms consistent with any positive score on the Clinical Opiate Withdrawal Scale (COWS)**

- **Goals:**
  - ➔ Reduce patient suffering and;
  - ➔ Patient entry into a CA Bridge Program (www.cabridge.org) for treating Opioid Use Disorder



Signs/Symptoms of Opioid Withdrawals:

- Tachycardia
- Sweating/diaphoresis
- Restlessness and/or agitation
- Dilated pupils
- Chills/body or joint aches
- Rhinorrhea/lacrimation
- Yawning
- Tremors
- Nausea/Vomiting/Diarrhea/ABD pain
- Piloerection

Alameda County - CA Bridge Facilities:

- Alta Bates
- Summit
- Highland
- St. Rose
- Kaiser Fremont
- Kaiser Oakland
- Kaiser San Leandro
- San Leandro Hospital
- Eden Medical Center
- Washington Hospital

***Precipitated Withdrawal:** Withdrawal symptoms that start after Naloxone administration after opioid overdose.

PAIN MANAGEMENT

- **Routine Medical Care**
- Pain management should be initiated as early as possible and before transport in the stable patient. Consider pain management prior to the manipulation of suspected fractures
- Document the level of pain prior to and after any interventions

BLS Interventions:
Positioning, Cold Pack(s), Splinting, and/or Coaching

↓

Minor-Moderate Pain:

Ketorolac - 15 mg IM/IV/IO x 1 - (No repeat dose)
and/or
Acetaminophen – 1gm IV slowly over 10 min – (No repeat dose)

Ketorolac is the preferred first-line medication for minor-moderate pain and for patients with suspected kidney stones or chronic pain conditions.

↓

Moderate-Severe Pain:

Fentanyl
IV/IO: 1 mcg/kg (50-100 mcg) Slow push. Repeat q 5min PRN to a max. cumulative dosage of 200 mcg

IM/IN: 1 mcg/kg (50-100 mcg) Repeat q 10min PRN to a max. cumulative dosage of 200 mcg

Base contact required if contraindications are present or >200 mcg is needed

OR

Ketamine
IV/IO: 0.3 mg/kg in 100ml of NS/D5W Slow IV Infusion over 10 minutes. (max. dose is 30 mg, no repeat)

IM/IN 0.3 mg/kg (max. dose is 30 mg, no repeat)

Ketorolac Considerations:

- **Contraindications**:
  - Patients who meet Trauma Criteria, NSAID Allergy (e.g. Ibuprofen, Naproxen, Aspirin), Pregnancy, History of: GI Bleed, Ulcers, Renal disease, or Current anticoagulant use
- **Note:**
  - Standard doses of Fentanyl OR Ketamine may be administered if Ketorolac is ineffective

Acetaminophen Considerations:

Contraindications:

Allergy to Acetaminophen (Tylenol), ingested >4gms acetaminophen in past 24 hours

Fentanyl & Ketamine Considerations:

- **DO NOT CO-ADMINISTER FENTANYL AND KETAMINE**
- **Patient Monitoring**
  - Continuous monitoring of the patient's LOC and respiratory status via direct observation/ ETCO2/SpO2, etc is required.
- **Contraindications:**
  - Decreased respiratory rate, Altered mental status/LOC, or Suspected Traumatic Brain Injury
- **Notes:**
  - Consider lower doses of Fentanyl for older adults
  - Have Naloxone readily available when administering Fentanyl
  - Ketorolac may be administered if Fentanyl or Ketamine is ineffective

POISONING | INGESTION | OVERDOSE

- **Routine Medical Care**
- **Protect Yourself** - See "Hazardous Materials Incidents - EMS Response" **page 155**
- **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.
- For treatment options for specific exposures, contacting Poison Control **(1-800-222-1222)** in conjunction with consulting Base Physician for assistance with identification and management of unknown toxins/medications
- Remove the patient from the hazardous environment (including removing pill bottles, pill packs, toxic substances) ➔ Remove contaminated clothing. Decontaminate to remove continued absorption, ingestion, inhalation or injection. See "Decontamination Incident" **page 154**. Brush off powders, wash off liquids with copious amounts water
- Evaluate intention of ingestion, consider law enforcement, see "Psychiatric Evaluation - 5150 Transports" **page 134**

Monitor
Assess ABC's
O2 – titrate to 94-99%

Alert and ventilating adequately with a gag reflex?

Yes

If ingestion **within one hour,** of non-acid, non-caustic, non-petroleum substance consider:
Charcoal 1g/kg PO**, max dose of 50g**

Patient must have a gag reflex and be able to self-administer

No

Assist respirations with bag-valve-mask

If narcotic/opioid overdose is suspected see Respiratory Depression or Apnea (Suspected Narcotic OD) **page 50**

If altered mental status, check the blood glucose level and treat per Altered Level of Consciousness protocol on **page 35**

Consider an advanced airway

Determine which ingestion is suspected

IV/IO

Tricyclic Anti-depressant OD	**Organophosphate Ingestion**	**Calcium Channel Blocker OD**	**Dystonic Reaction**	**Beta Blocker OD**
Wide QRS > 0.10 seconds, hypotension SBP < 90 mmHg unresponsive to fluids, and/or seizures: **Sodium Bicarbonate 1mEq/kg IV/IO** over 60 seconds If symptoms persist administer a single dose of **50 mEq IV/IO**	Salivation, lacrimation, urination, diarrhea, gastric upset, emesis, and/or miosis: **Atropine 2mg IV/IO,** repeat every 5 minutes until asymptomatic Consider Nerve Agent Autoinjector Administration see **page 160**	Hypotension SBP < 90 mmHg: Administer **IV fluids** see Shock **page 58** **Calcium Chloride 1g IV/IO** over 2 minutes, max dose of 1g **Contraindications: Digoxin** **Zofran 4mg IV/IM/PO** prior to Glucagon. May repeat x1 q 15minutes **Glucagon 1mg IM**, may repeat x1	Involuntary muscle contractions, abnormal postures or twisting movements secondary to suspected ingestion of phenothiazine medications: **Diphenhydramine 50mg IV/IM**	Hypotension SBP < 90 mmHg: **Zofran 4mg IV/IM/PO** prior to Glucagon. May repeat x1 q 15minutes **Glucagon 1mg IM**, repeat x1 if hypotension persists

PULMONARY EDEMA / CHF

- **Routine Medical Care**
- **Consider ASA**, 162 – 324 mg po, for acute coronary syndrome patients
- Perform 12-Lead ECG, and transport to a STEMI Receiving Center if STEMI is identified. (See **page 126** - ECG 12-Lead) for STEMI Receiving Center information
- **Rapid transport** if on scene stabilization is unlikely

O_2 – titrate to 94-99% SpO_2
IV NS

***Note #1:**
Consult the base physician
if the B/P drops below 90/ systolic **at any point**, before continuing NTG, or for any questions regarding dosage

***B/P > 90 systolic?**

Yes

CPAP page 124

NTG 0.4 mg
q 5 minutes
for continuing symptoms

If the patient's B/P is >150/systolic, double **^NTG** to 0.8 mg q 5 minutes.
Maximum total dose: 8.0 mg

Reassess as needed

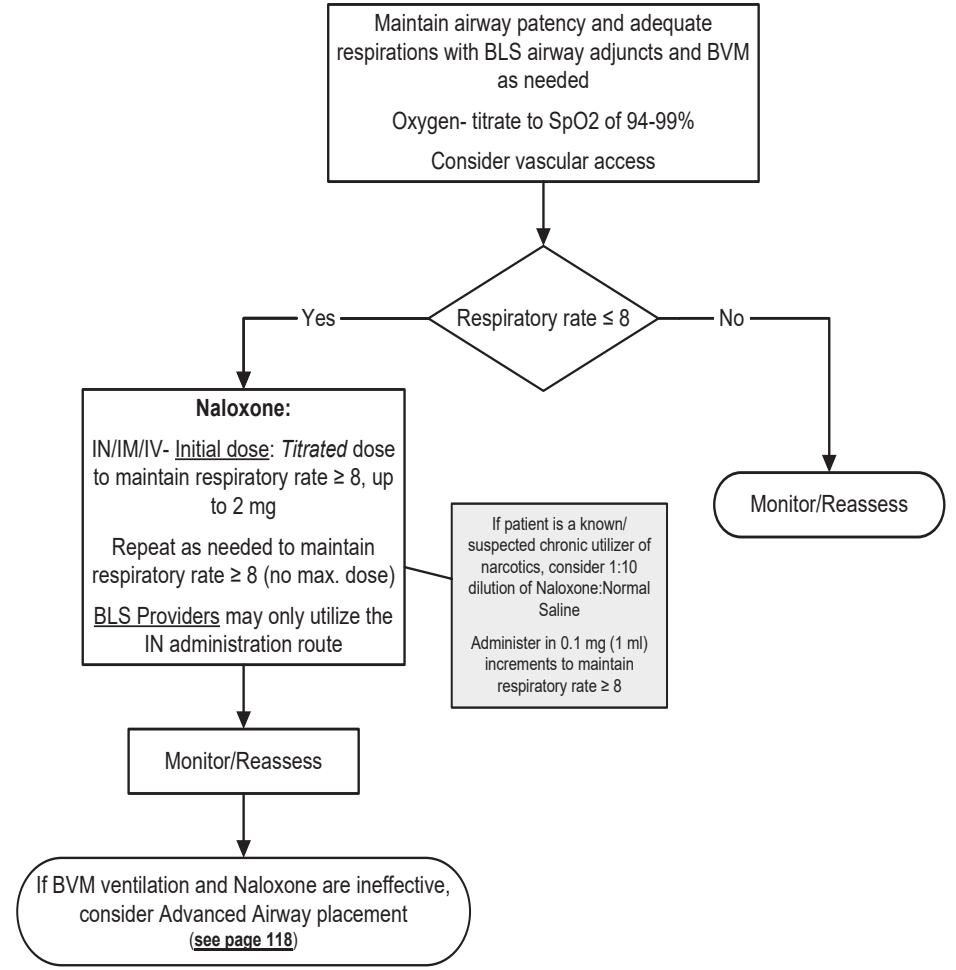
No

Go to:
Cardiogenic Shock
page 58

^ Note #2:
- ✓ Repeat vital signs between doses.
- ✓ Only increase **NTG** dose to 0.8 mg while the B/P is ≥ 150/systolic.
- ✓ If B/P drops below 150/systolic resume 0.4 mg dose.

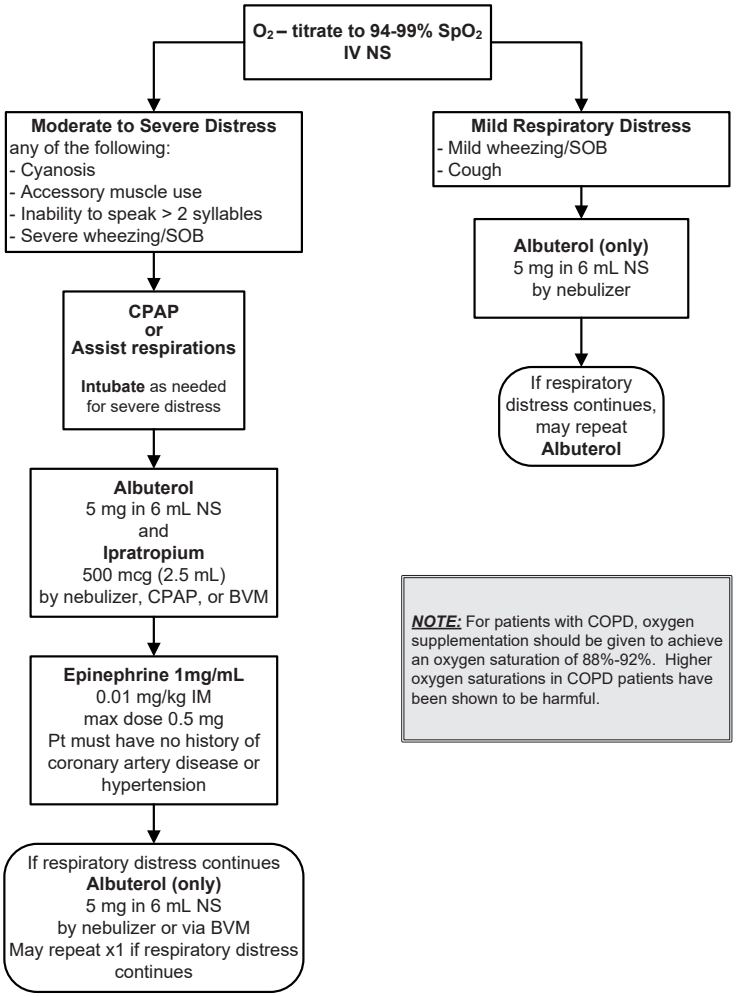
RESPIRATORY DEPRESSION OR APNEA (SUSPECTED NARCOTIC OD)

- **Routine Medical Care**
- **Naloxone can cause acute withdrawal symptoms (agitation,vomiting, etc.) in patients who are chronic utilizers of narcotics**
- Naloxone can cause cardiovascular side effects (chest pain, pulmonary edema) or seizures in a small number of patients (1-2%)
- Older patients are at higher risk for cardiovascular complications
- Patients who are maintaining adequate respirations with decreased level of consciousness do not generally require Naloxone for management



RESPIRATORY DISTRESS

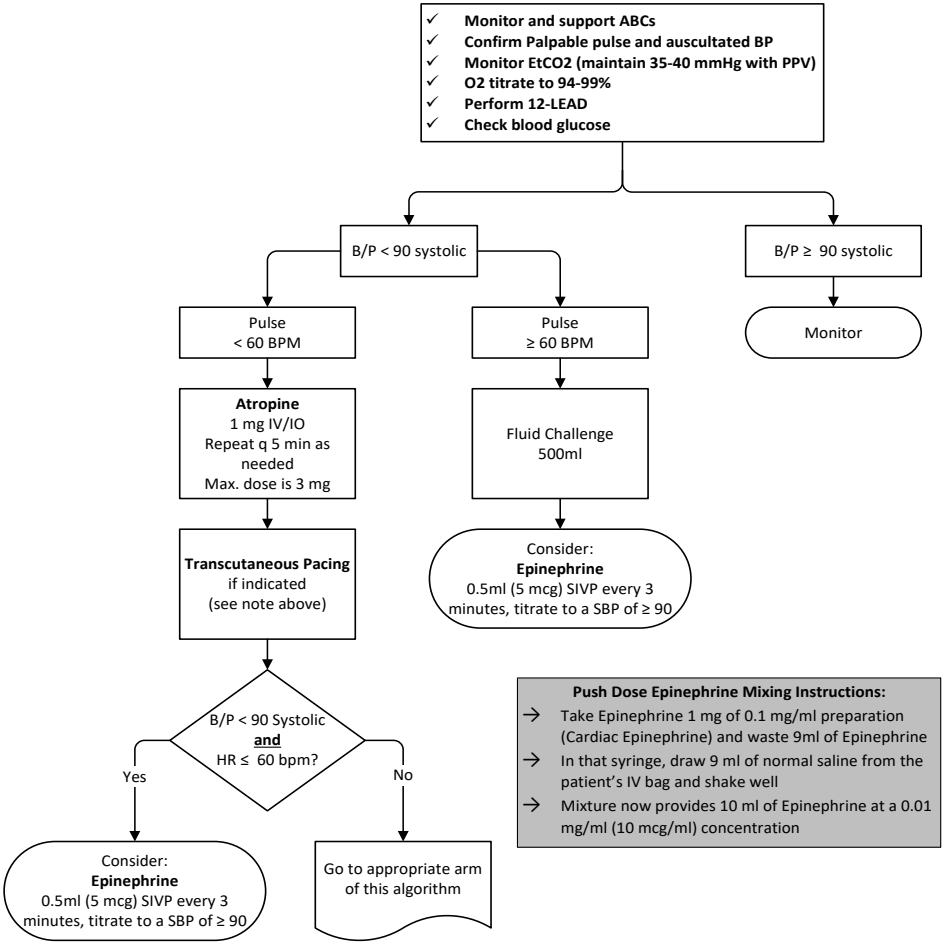
- **Routine Medical Care**
  - → Asthma
  - → Bronchospasm
  - → COPD
  - → Pulmonary edema (see **page 49**)
- Limit physical exertion, reduce patient anxiety



NOTE: For patients with COPD, oxygen supplementation should be given to achieve an oxygen saturation of 88%-92%. Higher oxygen saturations in COPD patients have been shown to be harmful.

RETURN OF SPONTANEOUS CIRCULATION - ROSC

- **Routine Medical Care**
- Monitor for reoccurrence of arrest rhythm
- Transport patients with ROSC at any time to STEMI Center (except critical trauma patients)
- *If appropriate, transport pediatric patients to Children's Hospital*
- **Note: Transcutaneous Pacing (page 142):** Begin at 80 bpm, 0 mA; increase in increments of 10 mA until capture obtained then increase the output level by 10% If capture maintained but patient remains symptomatic consider increasing the rate by 10 bpm, to a maximum of 100 bpm



ROUTINE MEDICAL CARE - ADULT

1. **DEFINITIONS:**

Baseline vital signs:
- ➔ Pulse rate
- ➔ Blood pressure
- ➔ Respiratory rate
- ➔ Pulse Oximetry
- ➔ Consider temperature

SAMPLE History:
S = Signs & symptoms
A = Allergies
M = Medications
P = Pertinent past history
L = Last oral intake
E = Events leading to the injury/illness
Adapted from Emergency Care and Transportation of the Sick and Injured, 8th Edition

2. **SCENE SIZE-UP:**

- ➔ Substance isolation
- ➔ Scene safety
- ➔ Determine mechanism of injury | nature of illness
- ➔ Determine number of patients
- ➔ Request additional assistance

3. **INITIAL ASSESSMENT:**

- ➔ Form general impression of the patient
- ➔ Assess mental status
- ➔ Assess the airway
- ➔ Assess breathing
- ➔ Assess circulation
- ➔ Identify priority patients

4. **TRAUMA PATIENTS:** Focused History and Physical Exam - Reconsider mechanism of injury

Significant Mechanism of Injury:
- ➔ Rapid trauma assessment
- ➔ Baseline vital
- ➔ SAMPLE History
- ➔ Transport
- ➔ Detailed physical exam

No Significant Mechanism of Injury:
- ➔ Focused assessment based on chief complaint
- ➔ Baseline vital signs
- ➔ SAMPLE History
- ➔ Transport
- ➔ Detailed physical exam

5. **MEDICAL PATIENTS** - Focused History and Physical Exam - Evaluate responsiveness

Responsive:
- ➔ History of illness
- ➔ SAMPLE history
- ➔ Focused physical exam based on
- ➔ Chief complaint
- ➔ Baseline vital signs
- ➔ Re-evaluate transport decision
- ➔ Detailed physical exam

Unresponsive:
- ➔ Rapid medical assessment
- ➔ Baseline vital signs
- ➔ SAMPLE history
- ➔ Re-evaluate transport decision
- ➔ Detailed physical exam

6. **ONGOING ASSESSMENT**

➔ Repeat initial vitals signs	➔ Reassess vital signs
➔ Repeat focused assessment	➔ Reassess interventions

ROUTINE MEDICAL CARE - ADULT

7. **TREAT AS APPROPRIATE, WITHIN SCOPE OF PRACTICE** (See specific treatment protocols)

7.1 **Airway:**

- ► Open airway – suction, as needed
- ► Head tilt / Chin lift or jaw thrust without head extension if C-spine injury suspected
- ► Oropharyngeal | Nasopharyngeal airway

7.2 **Breathing:**

7.2.1 Oxygen Administration:

- ► Administer O_2 – titrate to 94-99% SpO_2 appropriate to patient condition
- ► If there is a history of COPD, observe for respiratory depression and support respirations as needed. Do not withhold oxygen from a patient in distress because of a history of COPD
- ► The patient presents with signs and symptoms of pulmonary edema or severe respiratory distress, O_2 should be initiated at 15L/minute by non-rebreather mask

7.2.2 Assist ventilation. 7.2.3

CPAP (see **page 124**)

7.2.4 ETI or SGA (see Advanced Airway Management see **page 118**)

7.3 **Circulation:**

- ► Initiate CPR, as needed.(see **page 10**)

7.4 **Fluid Administration:**

- ► Start an intravenous/intraosseous line as needed
- ► When IV access is needed, most of the time a saline lock is sufficient. Consider an IV line with Normal Saline when the patient may need to receive volume or when frequent IV meds are being given (e.g. - cardiac arrest)
- ► When starting an IV/IO/saline lock, use chlorhexidine as a skin prep. Label insertion site with “PREHOSPITAL IV – DATE AND TIME"

8. **PATIENT POSITION**

8.1 **Conscious, no trauma, good gag reflex:** Position of comfort

8.2 **Depressed Level of Consciousness, no trauma, decreased gag reflex:** Left lateral position

8.3 **Trauma:** Spinal Motion Restriction (SMR), as needed. (see Spinal Motion Restriction (SMR) Procedure **page 139**). Make sure the patient can be rolled to the side in the event of vomiting

8.4 **Pregnancy:** Do not lay the patient flat if more than 20 weeks pregnant. Transport either in semi-fowlers position or left lateral decubitus position. If patient requires SMR, secure to a backboard first then tilt the board 20 – 30 degrees to the left

8.5 **Respiratory distress:** Fowler’s position or position of comfort

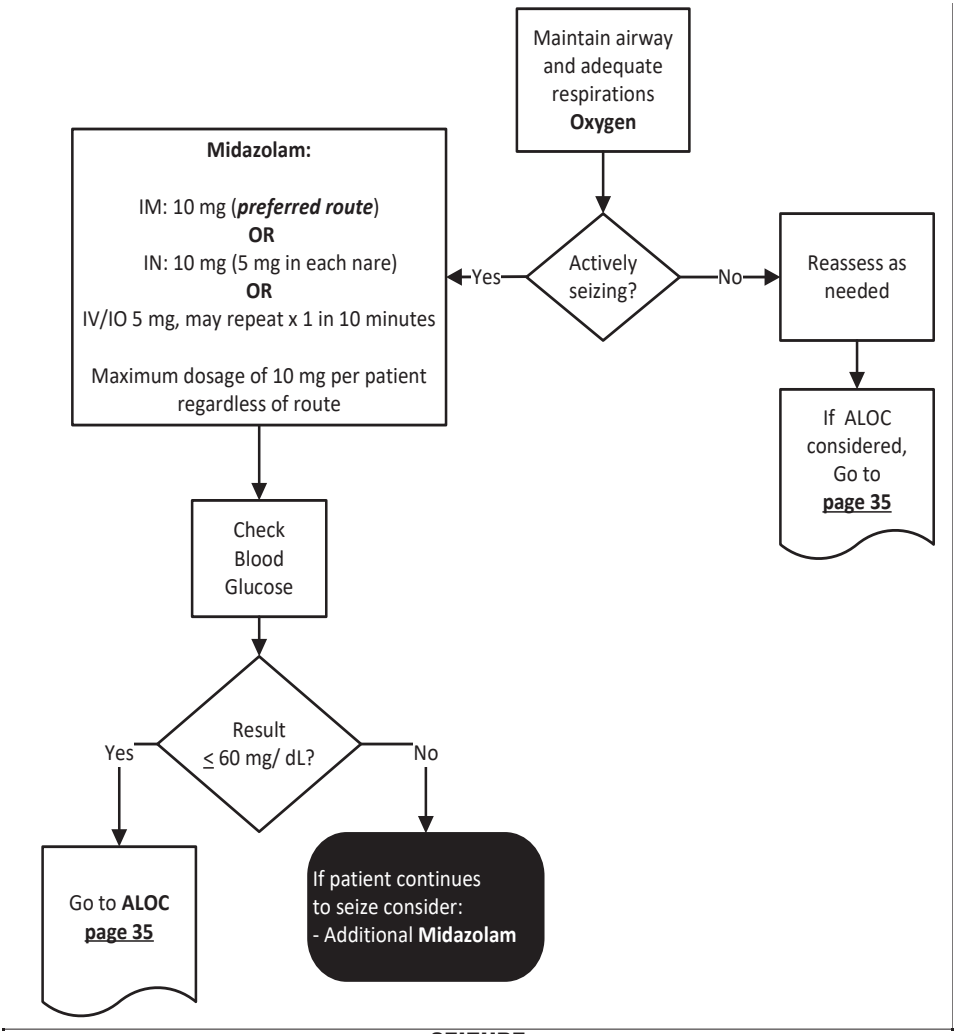
9. **PATIENT MEDICATIONS**

9.1 Field personnel must either bring all medication bottles with the patient to the hospital (preferred), or make a list of the medications, including the drug name, dose and frequency.

9.2 Field personnel may assist patients with the administration of physician prescribed devices, including but not limited to, patient operated medication pumps, sublingual nitroglycerin, and self-administered emergency medications, including epinephrine devices

SEIZURE

- **Routine Medical Care**
- Midazolam should not be given unless the patient is actively seizing - 3 or more seizures in ≤ 5 minutes or any seizure lasting > 5 minutes.
- Protect the patient from further injury by padding or moving objects as necessary; do not forcibly restrain the patient

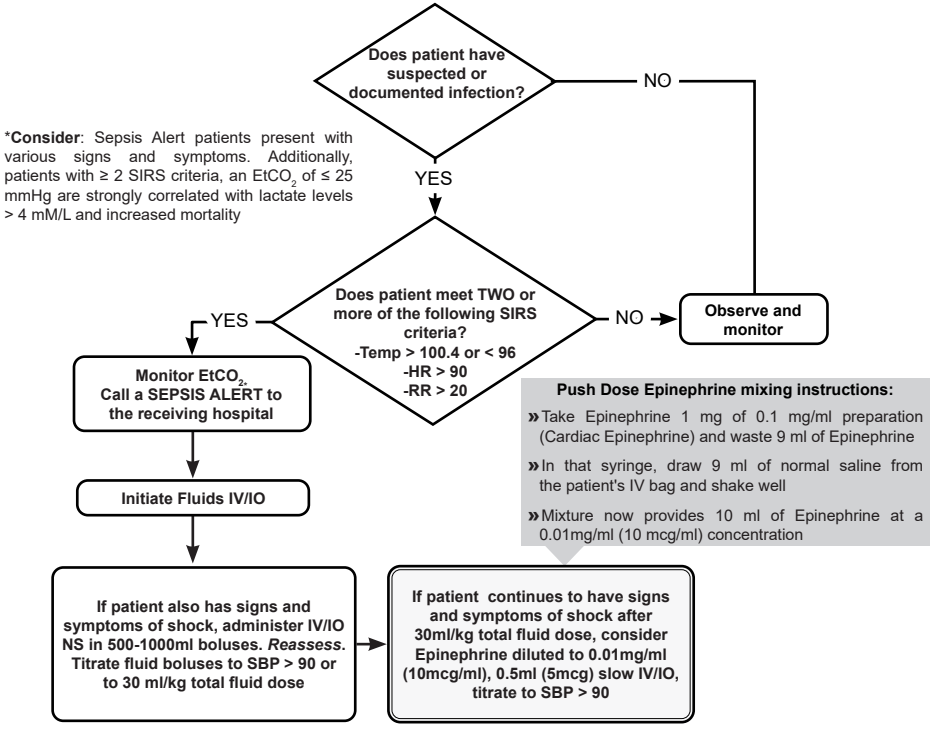


SEPSIS

Sepsis is the body's overwhelming and life-threatening response to infection. In Sepsis, when an infection occurs at any potential site in the body, the immune system's inflammatory response can be overwhelmed leading to SIRS (Systemic Inflammatory Response Syndrome) which causes tissue damage that can lead to organ dysfunction, failure and death. The symptoms of SIRS can include fever, tachypnea, tachycardia or hypotension.

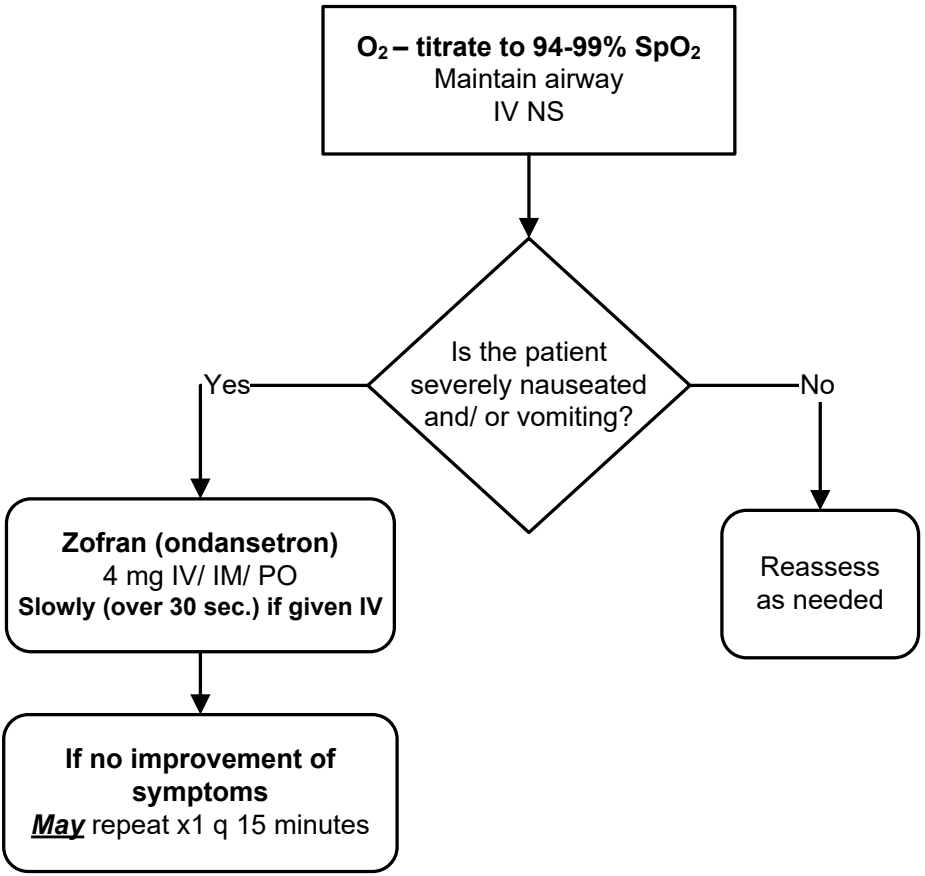
1. **Risk Factors**
   - ► **Age (Elderly, Newborn)**
   - ► **Diabetes**
   - ► **Compromised immune system including:**
     - Cancer
     - Renal Disease
     - Alcoholism / IV Drug Abuse
     - Malnutrition
     - Hypothermia
     - Recent surgery or invasive procedure

2. Although sepsis patients can be any age, the Prehospital Sepsis Screening Tool triages for sepsis patients aged 15 years and older. For these patients, notify the receiving hospital of a SEPSIS ALERT as early as possible via radio or phone.



SEVERE NAUSEA

- **Routine Medical Care**
- **Indications:** Intractable vomiting or severe nausea
- **Contraindications:** Hypersensitivity to 5-HT3 receptor antagonists (i.e. – dolasetron (Anzemet), granisetron (Kytril)
- **Relative Contraindications:** *Zofran administration during first trimester of pregnancy is not recommended*
- **Note #1:** Consider other treatable causes
- **Note #2: Administering Zofran rapidly can cause syncope**
- **Note #3:** If patient has s/s of anaphylaxis/allergic reaction, follow Anaphylaxis/Allergic Reaction policy

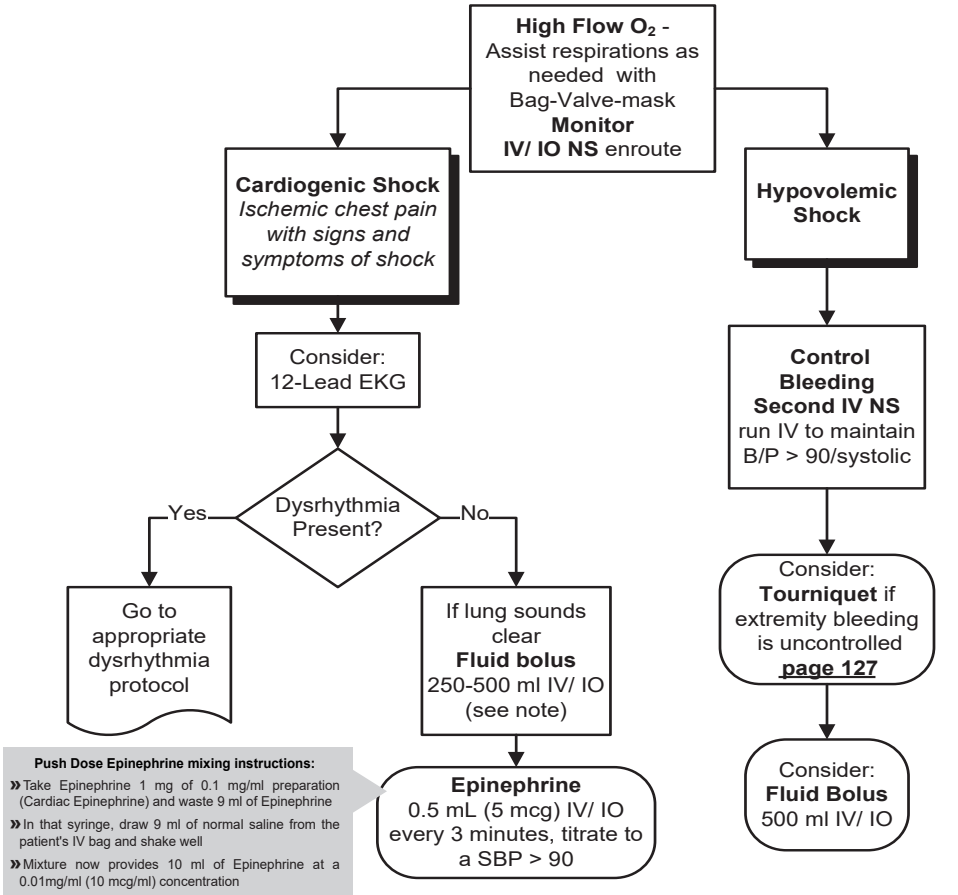


SHOCK: HYPOVOLEMIC/CARDIOGENIC

- **Routine Medical Care**
- **Shock** - 2 or more of the following:

➔ Pulse > 120/minute ➔ Altered Mental Status
➔ BP < 90/systolic ➔ Pale, cool and/or diaphoretic skin signs

- Initiate early transport and treat en route, if appropriate.
- **NOTE:** A fluid bolus of up to 500 ml Normal Saline may be given to an adult patient in cardiogenic shock with clear lung sounds.
- If **anaphylaxis suspected**, see **page 36**
- If **trauma suspected**, see **page 26**
- If **sepsis suspected,** see **page 56**

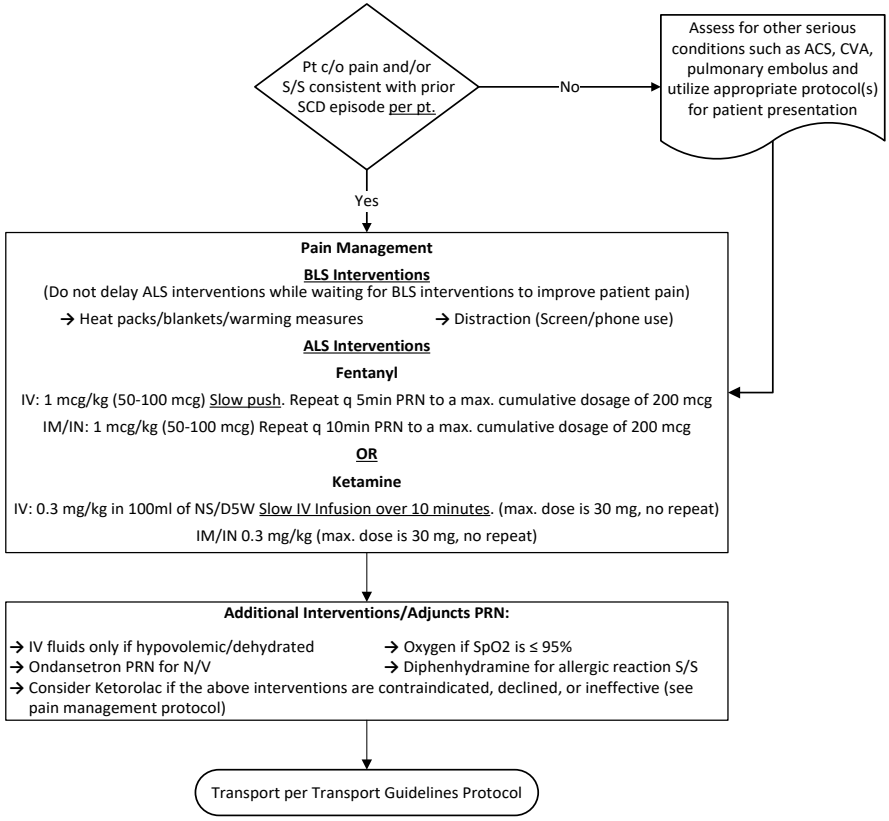


Push Dose Epinephrine mixing instructions:

- Take Epinephrine 1 mg of 0.1 mg/ml preparation (Cardiac Epinephrine) and waste 9 ml of Epinephrine
- In that syringe, draw 9 ml of normal saline from the patient's IV bag and shake well
- Mixture now provides 10 ml of Epinephrine at a 0.01mg/ml (10 mcg/ml) concentration

SICKLE CELL PAIN EMERGENCY

- Early and aggressive pain management is key to stopping the progression of ischemic processes associated with Sickle Cell emergencies.
- Patients with Sickle Cell Disease (SCD) are at higher risk for other serious conditions including ACS, CVA, pulmonary embolism, and sepsis. A high index of suspicion should be maintained for other serious etiologies to symptoms especially in the setting of patient reporting abnormal pain or S/S patterns.

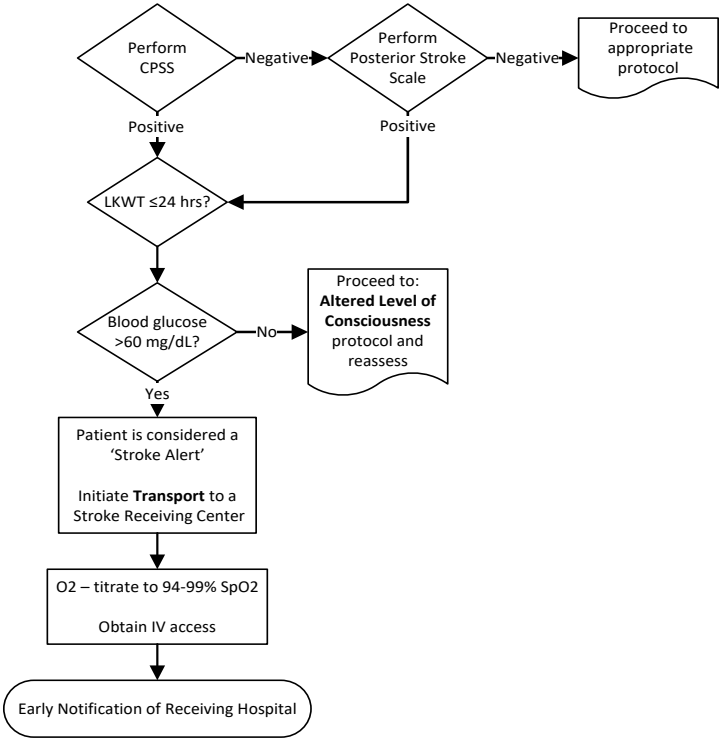


Special Considerations:

- Absence of tachycardia/hypertension does not rule out sickle cell emergencies. Prompt and aggressive analgesia is always recommended for patients reporting pain
- Triggers for sickle cell emergencies can be infection, temperature changes, dehydration, stress/lack of sleep
- Priapism can be a presentation of sickle cell emergencies and should be treated with aggressive pain control
- Pregnancy is not a contraindication to opioid use in patients with sickle cell pain emergencies

STROKE / CVA

- **Routine Medical Care**
- Rapidly identify signs of a stroke using the Cincinnati Prehospital Stroke Scale (CPSS) and Posterior Stroke Scale (PSS)
- For detailed information on obtaining a CPSS / PSS - See the Procedures Section - **Stroke Assessment Scales**
- Last Known Well Time (LKWT) must be obtained from a reliable patient or bystander. See note
- Limit on scene time to <15 minutes and initiate rapid transport for 'Stroke Alerts' to a designated Stroke Receiving Center

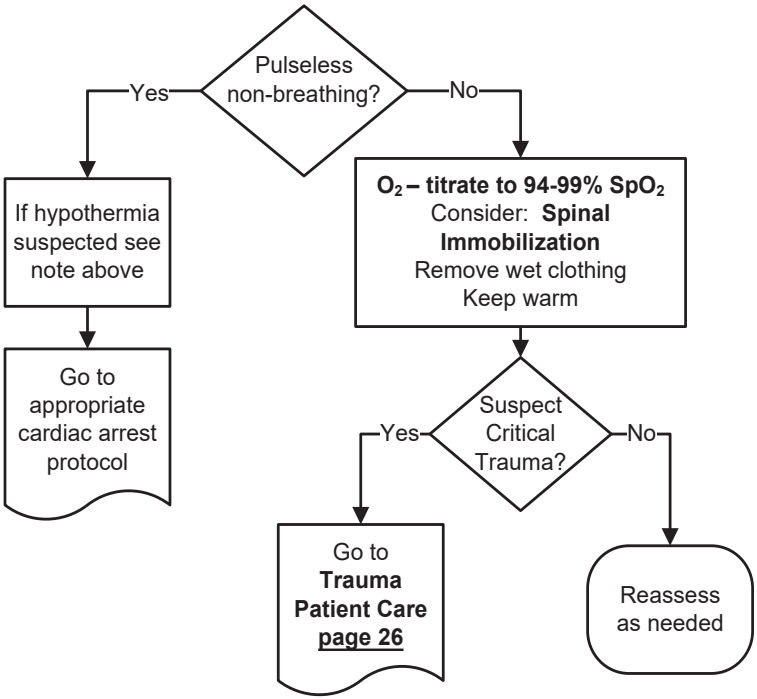


Special Considerations:

- The LKWT information must be provided by a reliable party or reported by a reliable patient. If the reliable party cannot accompany the patient to the receiving facility, a phone number for that party must be obtained
- The patient may be transported to their designated Stroke Receiving Center of choice, as long as this does not add more than 10 minutes to the transport time
- Determine if the patient has recently taken blood thinner medications and report this finding to the receiving facility
- For patients whose onset of S/S is between 6-24 hrs, consider **not** utilizing red lights and siren during transport

SUBMERSION

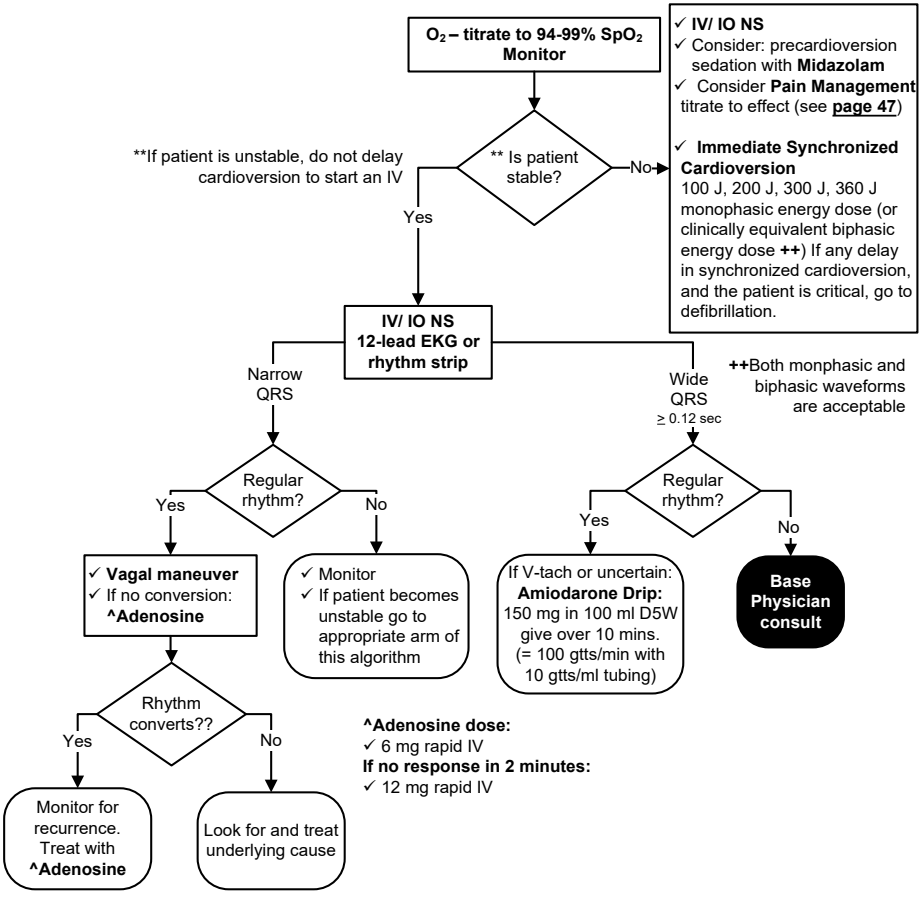
- **Routine Medical Care**
- Consider spinal precautions prior to extrication if possibility of neck trauma
- Rapid extrication from water
- If **hypothermia** suspected and the patient is in Ventricular Fibrillation, rapid transport to the closest receiving hospital is essential for rewarming. Patients who are hypothermic rarely respond to treatment. (see Hypothermia **page 17**)
- **Consider CPAP** - see CPAP procedure (**page 124**) for indications



TACHYCARDIA

- **Routine Medical Care**
- Serious Signs and Symptoms:
  - ➔Chest Pain ➔ Acute MI ➔ BP < 90/systolic ➔ Shortness of Breath
  - ➔Shock ➔ CHF ➔ Decreased LOC ➔ Pulmonary Congestion
- **Synchronized Cardioversion:**
- Stop if rhythm converts to Sinus Rhythm
- Immediate cardioversion is seldom needed for heart rate < 150 beats/min
- Precardioversion sedation in the awake patient whenever possible, however, use with caution in the hypotensive patient.

See Sedation **page 136**



VENTRICULAR ASSIST DEVICES -VAD

OVERVIEW:

1. The VAD assists the native ventricle pumping action and provides the cardiac output needed to survive.
2. These devices are either pulsatile or continuous flow (non-pulsatile/pulseless). They are further divided into:

   ➔ Left Ventricular Assist Devices (LVAD), The more common continuous flow pump located in the patient's thorax attached to the patients' left ventricle and aorta

   ➔ Right Ventricular Assist Devices (RVAD),

   ➔ Biventricular Assist Devices (BiVAD).

ASSESSMENT:

3. Assess for presence of a DNR, POLST or Advance Directive.
4. First ASSESS THE PATIENT, not the device.

   ➔ The reason for the call may or may not be a problem with the VAD. VAD patients can and frequently do have other medical conditions.

   ➔ Patients with a continuous flow VAD may have no discernible pulse or blood pressure.

   - ► Because there may be no palpable pulse, utilize other parameters for patient assessment (level of consciousness, skin signs, capillary refill, etc.)
   - ► Pulse oximetry may be unreliable.

   ➔ Utilize the American Heart Association's C-A-B recommendations, with one addition:

   - ► C = Circulation / Connections and Function (device)
   - ► A = Airway
   - ► B = Breathing

   ➔ ETCO2 will read accurately and be useful in assessment.

5. Assess the device to see if it is working.

   ➔ Information regarding the type of device, the implantation hospital, and/or the VAD Coordinator contact telephone number may be available by a tag on the device, on the refrigerator, or on a medical alert bracelet.

   ➔ If a caregiver is present, utilize his/her knowledge. The patient and their caregiver are the experts on scene for all issues related to the VAD. Listen to their directions regarding VAD device management until you are able to contact the VAD Coordinator.

   ➔ The VAD Coordinator can help you decide the best course of action regarding assessment of the equipment. NOTE: Only the base hospital is legally allowed to give orders regarding patient care.

   ➔ If the patient has a continuous flow VAD (non-pulsatile / pulseless), auscultate the left upper quadrant of the patient's abdomen for the "hum" of the VAD, which can help direct the appropriate actions.

   - ► A pulsatile VAD will make an audible sound without auscultation.
   - ► Pulsatile VADs are usually older devices which pump blood via pulsatile mechanism, generating a peripheral pulse.

   ➔ Determine if the device has power.

   - ► If the device has power it does not necessarily mean that it is working, so the previous step is very important.
   - ► If the device has power, you will see a green light on the HeartMate II, the most commonly implanted device
   - ► On the HeartWare device, the display will clearly tell you the Liters per Minute (LPM) of blood flow.

   ➔ Check the VAD for secure connections and that the batteries are charged and functional.

6. Remain patient-centric. Check the VAD device as directed, but remain aware of how your patient is doing clinically. Deliver routine medical care as required.

➔ If the pump is pumping then the problem is usually with the patient, not the device.

➔ Do ABCs in conjunction with your VAD assessment.

TREATMENT/TRANSPORT:

7. If the patient's condition is related to their VAD, and it is safe and reasonable, it is preferred to transport the patient to their Bay Area VAD centers (Kaiser Santa Clara, Stanford, UCSF, and CPMC) unless the patient has any of the following conditions:

   7.1 MINOR medical or trauma patients with adequate perfusion: Follow appropriate protocol and transport to ANY basic ED or hospital of record.

   7.2 Suspected STROKE (STROKE ALERT) patient: Follow Acute Stroke policy and transport to closest Stroke Center.

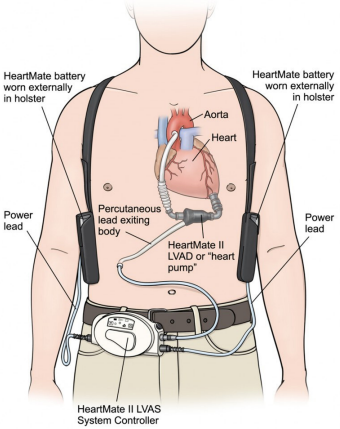
   7.3 Suspected STEMI (STEMI ALERT) patient: Follow CP Suspect Cardiac/STEMI policy and transport to closest STEMI Center.

   7.4 Trauma patient (activation): Follow Trauma Care Policy and transport to closest Adult Trauma Center.

   7.5 Cardiac Arrest or critical / unstable patients (poor perfusion): Follow Shock or appropriate resuscitation policy and transport to closest STEMI / Cardiac Arrest Center.

   7.6 “Ring down” the receiving hospital early to help the facility prepare for this highly specialized patient.

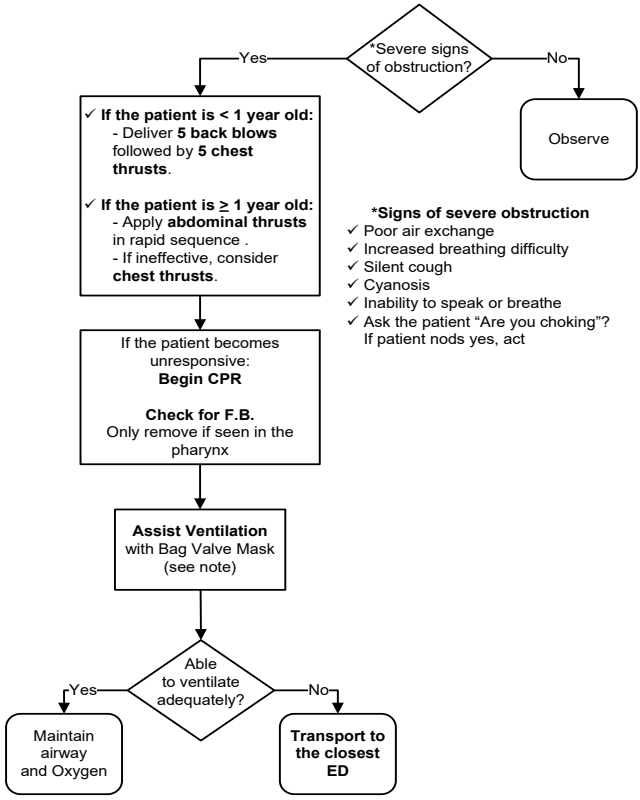
VAD CENTER	24-HOUR HOTLINE
Stanford Hospital and Clinics Lucille Packard Children’s Hospital at Stanford*	650-723-6661 (ask operator to page the VAD Coordinator-pager code #12502)
California Pacific Medical Center	415-600-1051
UC San Francisco	415-443-5823 (pager number)
Kaiser Santa Clara	408-851-3750
*Stanford Hospital and Clinics & Lucille Packard Children’s Hospital at Stanford share the same VAD Coordinators	



PEDIATRIC POLICIES TOC

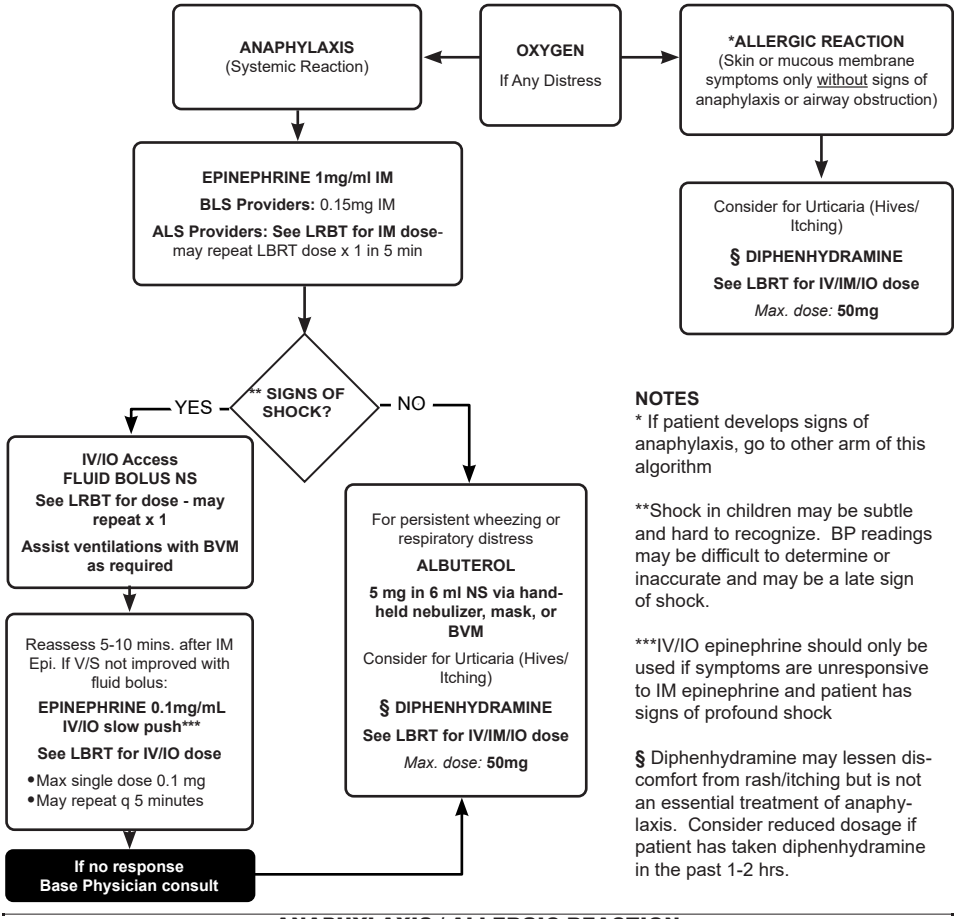
AIRWAY OBSTRUCTION

- **Pediatric Routine Medical Care**
- If airway obstruction is caused by laryngeal trauma, see **page 26** "Trauma Patient Care"
- Do not use a tongue/jaw lift or perform blind finger sweeps
- Obstruction due to suspected epiglottitis:
  - ➔Do not attempt to visualize the throat or insert anything into the mouth
    - ➔Minimize outside stimulation. Keep the patient calm. Position of comfort.
- **Rapid Transport**
- **Note:** Manage the patient's airway with proper airway positioning, simple airway adjuncts, suctioning, and BVM ventilation as necessary. Consider Advanced Airway Management (**page 118**) if BVM ventilation is not adequate.



ANAPHYLAXIS / ALLERGIC REACTION

- **Epinephrine IM** is the cornerstone of treatment of anaphylaxis and should be given as early as possible. It is best absorbed from an injection in the lateral thigh
- If the patient is in severe distress, **administer Epinephrine IM** and consider immediate transport
- **SIGNS OF ANAPHYLAXIS (Systemic Reaction)** – wheezing, repetitive cough, tightness in chest, stridor, difficulty swallowing or tightness in throat, change in voice, dizziness or feeling faint, abdominal complaints (pain, repeated vomiting, diarrhea or incontinence), anxiety, lethargy
- **SIGNS OF ANAPHYLACTIC SHOCK** – pallor, hypotension, cool, clammy mottled skin, altered sensorium
- **FACIAL/ORAL SWELLING (Angioedema)** can accompany anaphylaxis, but is not always present
- **Use a length-based resuscitation tape (LBRT) to determine pediatric medication dosages and fluid bolus**



NOTES

* If patient develops signs of anaphylaxis, go to other arm of this algorithm

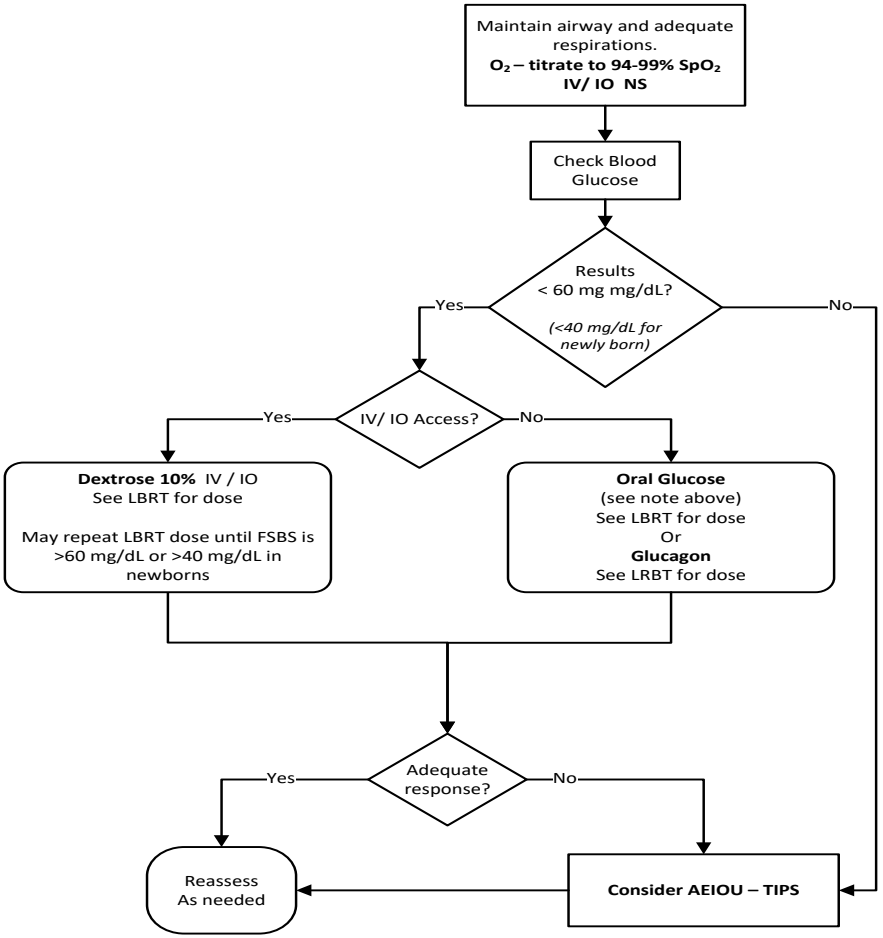
**Shock in children may be subtle and hard to recognize. BP readings may be difficult to determine or inaccurate and may be a late sign of shock.

***IV/IO epinephrine should only be used if symptoms are unresponsive to IM epinephrine and patient has signs of profound shock

§ Diphenhydramine may lessen discomfort from rash/itching but is not an essential treatment of anaphylaxis. Consider reduced dosage if patient has taken diphenhydramine in the past 1-2 hrs.

ALTERED LEVEL OF CONSCIOUSNESS

- **Pediatric Routine Medical Care**
- Naloxone **should not** be given as treatment for altered level of consciousness in the absence of respiratory depression (respiratory depression = rate of less than 12 breaths per minute) (see **page 79**)
- **Consult with the Base Physician** if the Blood Glucose reading is ≥ 60 mg% but hypoglycemia is suspected
- **Use an LBRT to determine pediatric drug doses** (Shown underlined on the algorithm)
- **Note: Oral Glucose** may be administered if the patient: **1)** is able to hold head upright; **2)** has a gag reflex; and, **3)** can self-administer the medication
- **Note:** A newborn in this protocol is considered such for the first 30 minutes after being born.



BRIEF RESOLVED UNEXPLAINED EVENT - BRUE

•Pediatric Routine Medical Care

1. **DEFINITION:**

1.1 An Brief Resolved Unexplained Event (BRUE) was formally known as a Apparent Life Threatening Event- ALTE

1.2 A BRUE is an episode that is frightening to the observer (may think the infant has died) and involves some combination of:

- ► **Apnea** (central or obstructive)
- ► **Color change** (cyanosis, pallor, erythema, plethora)
- ► **Marked change in muscle tone** (limpness)
- ► **Choking** or **gagging**

1.3 Usually occurs in infants < 12 months old, however, any child less than 2 years old who exhibits the symptoms in 1.2 may be considered a BRUE

1.4 Most have a normal physical exam when assessed by responding field personnel

1.5 50–60% have no known etiology

1.6 40–50% have an identifiable etiology

(e.g. Child abuse, SIDS, swallowing dysfunction, infection, bronchiolitis, seizures, CNS anomalies, tumors, cardiac disease, chronic respiratory disease, upper airway obstruction, metabolic disorders, or anemia)

2. **MANAGEMENT**

2.1 Assume the history given is accurate

2.2 Determine the **severity**, **nature** and **duration** of the episode

- ► was the patient awake or asleep at the time of the episode
- ► details of the resuscitation required

2.3 Obtain a **medical history**

- ► known chronic diseases
- ► evidence of seizure activity
- ► current or recent infections
- ► gastroesophageal reflux
- ► inappropriate mixture of formula
- ► recent trauma
- ► medication history (current and recent)

2.4 Do a **comprehensive physical exam** that includes the general appearance of the child, skin color, extent of interaction with environment, and evidence of trauma

2.5 Perform **glucose analysis** if hypoglycemia suspected

(see ALOC **page 68** if B.S. < 60mg/ dL)

2.6 Treat any identifiable causes

2.7 Transport

2.8 **Note:** **Contact the Base Physician** for consultation if the parent/guardian is refusing medical care and/or transport, prior to completing a Refusal of Care form

BRADYCARDIA

- **Pediatric Routine Medical Care**
- **Consider and treat other possible causes:**
  - → Hypoxia (**most common**)
  - → Hypothermia
  - → Head Injury
  - → Heart Block
  - → Toxins/ drugs
  - → Beta Blockers or calcium channel blockers
- **Use an LBRT to determine pediatric medication dosages** - (Shown underlined on the algorithm)
- **Note:** TCP reserved for children with symptomatic bradycardia refractory to BLS and ALS interventions. Use pediatric electrodes if child weighs < 15 kg

Signs/Symptoms of Symptomatic bradycardia:

- Acute ALOC
- Weak pulses
- Hypotension
- Central Cyanosis

Maintain patent **airway**, assist **breathing** as needed
O_2 – titrate to 94-99% SpO_2
Monitor

Signs/ symptoms of symptomatic bradycardia?

No → **Consider obtaining 12-lead ECG**
Ongoing assessment and transport

Yes → HR = <60?

Yes → **Start CPR**
Maintain continuous CPR until patient condition improves or interventions below are effective

No →

Ensure that airway and breathing are being effectively managed

Obtain IV/IO access

Epinephrine 0.1mg/mL IV/IO
See LBRT for dose
Repeat Epinephrine q 3-5 min

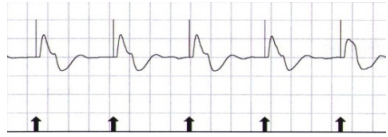
If increased vagal tone or primary AV block:
Atropine 0.1mg/mL IV/IO
See LBRT for dose
May repeat q 3-5 minutes

Consider **TCP**

Continue CPR during TCP until electrical and mechanical capture is obtained

Consider **Sedation** procedure and **Pain Management** protocol

If asystole/PEA develops, proceed to:
Cardiac Arrest – Medical – Asystole/PEA



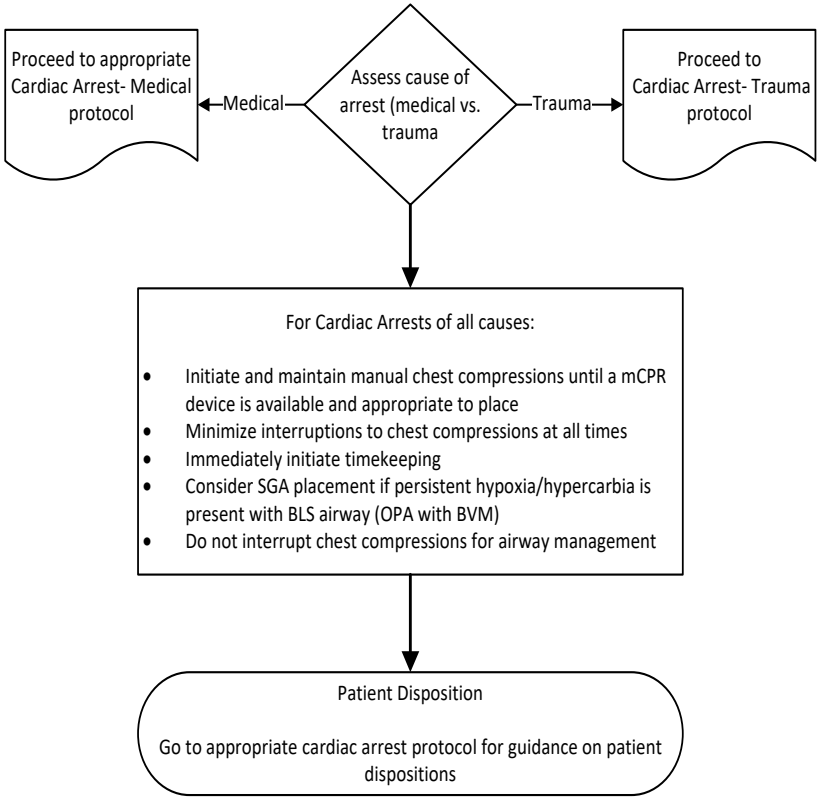
Example of ECG with electrical capture

Abbreviated TCP Steps

1. Apply pacer pads in A/P configuration
2. Set pacer rate to 100 bpm
3. Increase pacer current to secure electrical capture
4. Check for mechanical capture by palpation of femoral pulse
5. Increase pacer current by 5-10mA

See **TCP Procedure** for additional information

CARDIAC ARREST - GENERAL GUIDELINES

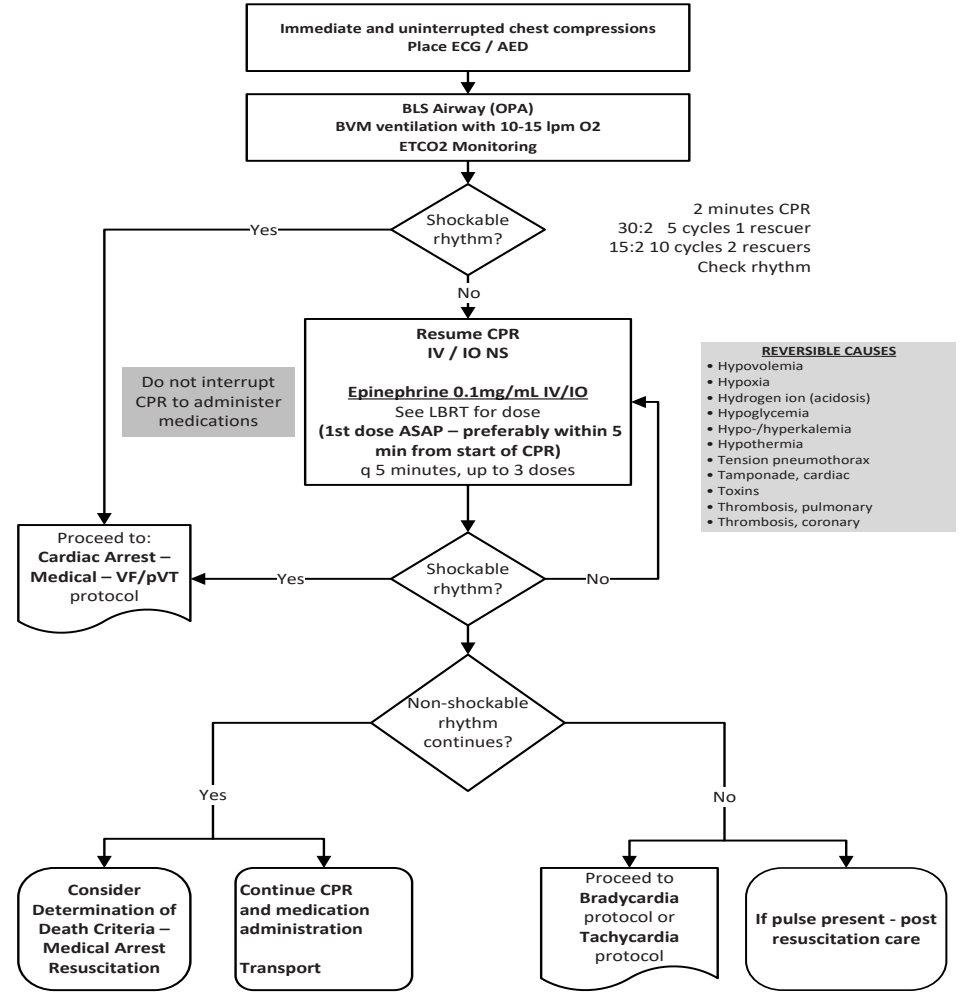


Special Considerations:

- BLS and ALS prehospital personnel are not required to initiate resuscitative measures in circumstances of obvious death, signed DNR/POLST form, or upon meeting **Family Discretion Criteria** as outlined in **Determination of Death in the Field** protocol.
- Consider strangulation/hanging as causes of arrest and treat as a Medical Cardiac Arrest with SMR if suspected spinal cord injury.

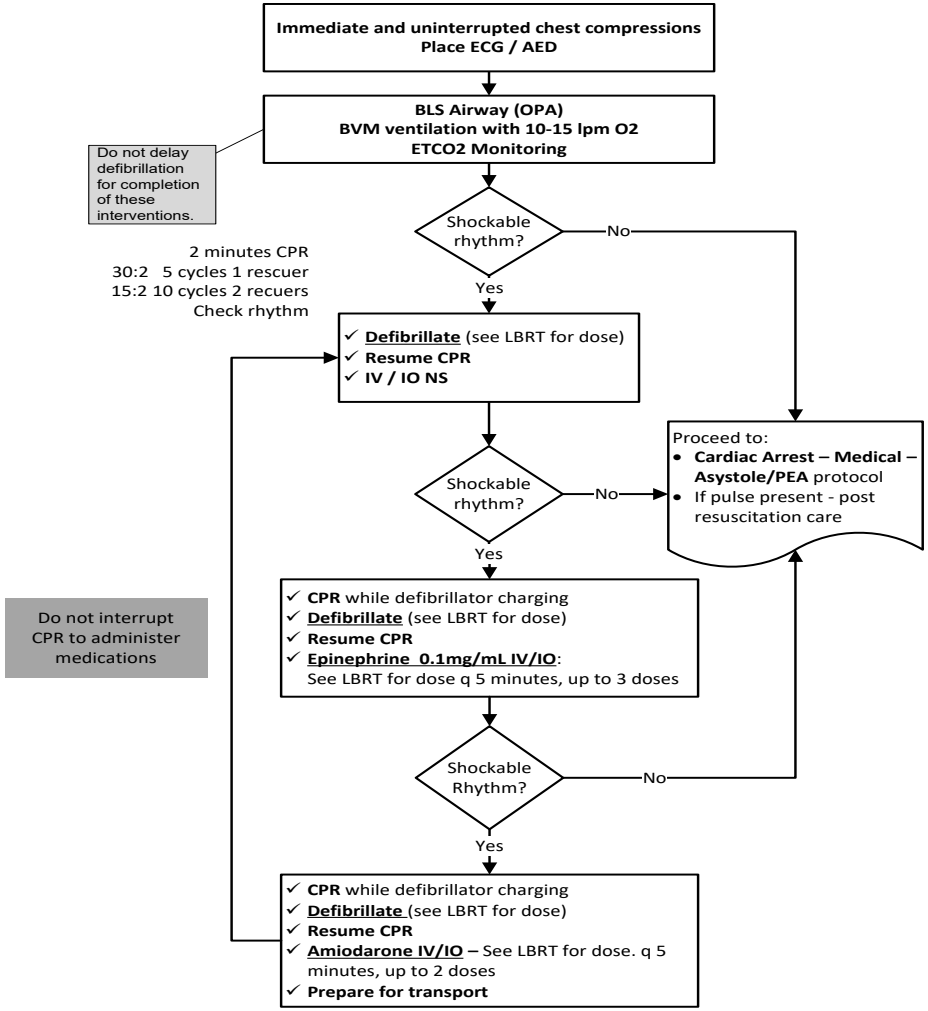
CARDIAC ARREST - MEDICAL - ASYSTOLE/PEA

- **Pediatric Routine Medical Care**
- In PEA, identify other causes and treat (See CPR **page 10**)
- **Use an LBRT to determine pediatric medication dosages** - (Shown underlined on the algorithm)
- **Note:** Manage the patient's airway with proper airway positioning, simple airway adjuncts, suctioning, and BVM ventilation as necessary. Consider Advanced Airway Management (page 118) if BVM ventilation is not adequate.



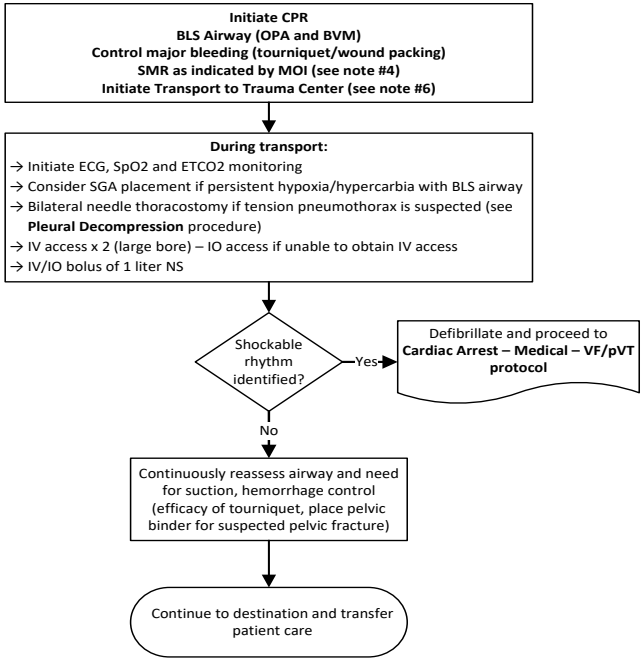
CARDIAC ARREST - MEDICAL - VF/PVT

- **Pediatric Routine Medical Care**
- **Use an LBRT to determine pediatric medication dosages** - (Shown underlined on the algorithm)
- **Note:** Manage the patient's airway with proper airway positioning, simple airway adjuncts, suctioning, and BVM ventilation as necessary. Consider Advanced Airway Management (**page 118**) if BVM ventilation is not adequate



CARDIAC ARREST - TRAUMATIC

- Do not resuscitate in the setting of obvious death as outlined in **Determination of Death in the Field** protocol, mass casualty incidents, or if staging, extrication (without resuscitation) and/or transport exceeds 20 minutes.



Special Considerations:

1. Prioritize rapid transport

2. Consider strangulation/hanging as causes of arrest and treat as a Medical Cardiac Arrest with SMR if suspected spinal cord injury and proceed to appropriate medical cardiac arrest protocol

3. ALS procedures in the field do not significantly improve outcomes for traumatic arrest patients

4. Provide spinal motion restriction if indicated by mechanism or signs of blunt head/neck trauma. A backboard may be helpful to support chest compressions and transport

5. Epinephrine administration:
   - -Do **not** administer if arrest was caused by hypovolemia from exsanguination
   - -Do administer for arrests caused by hanging, strangulation, submersion/drowning, or blunt cardiac trauma (commotio cordis – likely minimal signs of external chest trauma but VF/VT rhythm)

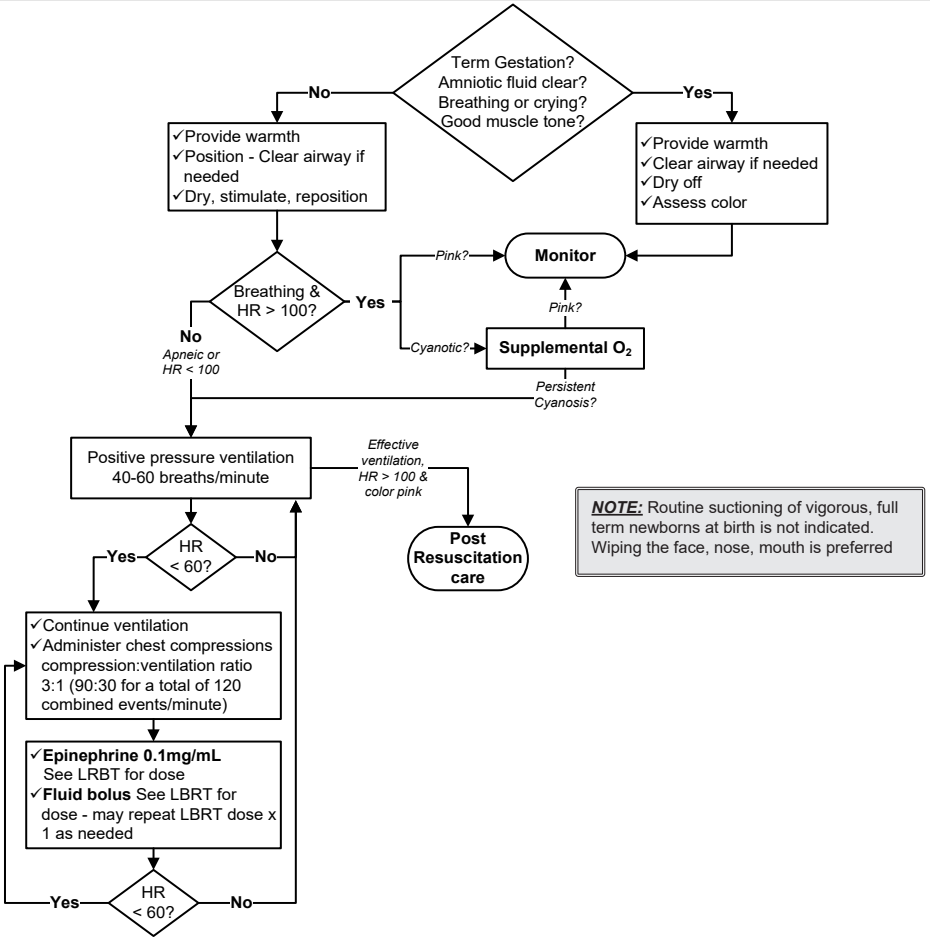
6. Destination choice:
   Patient to Trauma Center:
   - -Penetrating or Blunt trauma with significant hypovolemia from exsanguination
   - -Submersion or Mechanical Asphyxiation (drowning, hanging, strangulation) **with** suspected head or spinal injury

   Patient to closest hospital:
   - -Submersion or Mechanical Asphyxiation (drowning, hanging, strangulation) **without** suspected head or spinal injury

7. Trauma is not a contraindication for the use of mechanical CPR device as long as it does not delay transport

NEONATAL RESUSCITATION

- **Pediatric Routine Medical Care**
- Resuscitation should be initiated on **all** premature infants who meet the following criteria:
  Weight: > 500 gms or 1 pound and **Gestational Age:** ≥ 20-24 weeks
- If naloxone considered for persistent respiratory depression, HR and color must first be restored
- Avoid naloxone for neonates whose mothers are suspected of long-term exposure to opioids
- **Use an LBRT to determine pediatric medication dosages** - (Shown underlined on the algorithm)
- **Note:** Manage the patient's airway with proper airway positioning, simple airway adjuncts, suctioning, and BVM ventilation as necessary. Consider Advanced Airway Management (**page 118**) if BVM ventilation is not adequate.



NOTE: Routine suctioning of vigorous, full term newborns at birth is not indicated. Wiping the face, nose, mouth is preferred

PAIN MANAGEMENT

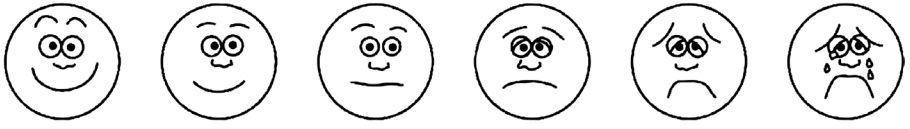
- **Pediatric Routine Medical Care.** If oxygen is administered, titrate to 94-99% SpO2
- Pain management should be initiated as early as possible and before transport in the stable patient. Consider pain management prior to the manipulation of suspected fractures
- **The preferred route of administration is intranasal (IN)**

ASSESSMENT:

Document level of pain (as a fraction - e.g.: 2/10 or 6/10) prior to and after any interventions are performed:

- ► < 3 years old – Behavioral tool or FACES Scale:
- ► 3–7 years old – FACES scale or visual analog scale
- ► 8–14 years old – visual analog scale

	0	1	2
Face	No particular expression or smile	Occasional grimace or Frown, withdrawn, disinterested	Frequent to constant frown Clenched jaw, quivering chin
Legs	Normal or relaxed position	Uneasy, restless, tense	Kicking, or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, tense, shifting Back and forth	Arched, rigid or jerking
Cry	No cry (awake or asleep)	Moans or whimpers; occasional complaint	Cries steadily, screams, sobs, frequent complaints
Consolability	Content, relaxed	Reassured by "talking to, hugging; distractible	Difficult to console or comfort



From Wong D.L., Hockenberry-Eaton M., Wilson D., Winkelstein M.L., Schwartz P.: Wong's Essentials of Pediatric Nursing, ed. 6, St. Louis, 2001, p. 1301. Copyrighted by Mosby, Inc. Reprinted by permission.

Instructions:

Explain to the person that each face is for a person who feels happy because he has no pain (hurt) or sad because he has some or a lot of pain. Ask the person to choose the face that best describes how he/she is feeling

➔ **Face 0** is very happy because he doesn't hurt at all

➔ **Face 2** hurts just a little bit

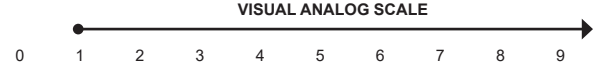
➔ **Face 4** hurts a little more

➔ **Face 6** hurts even more

➔ **Face 8** hurts a whole lot

➔ **Face 10** hurts as much as you can imagine, although you don't have to be crying to feel this bad

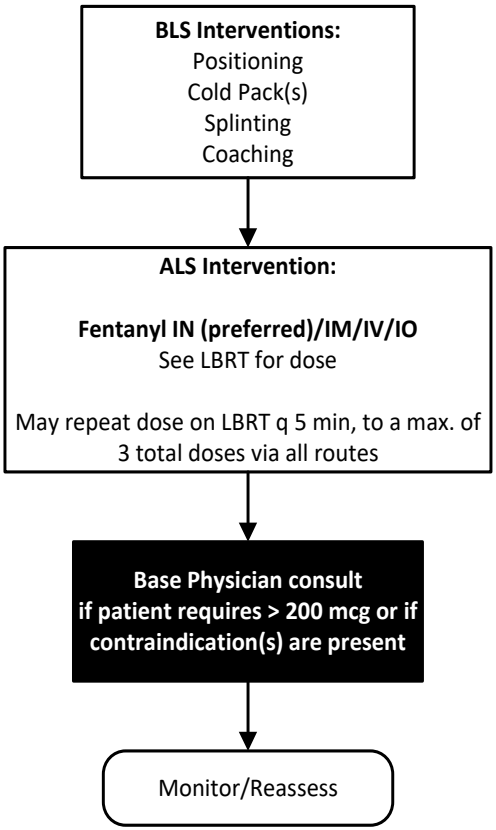
VISUAL ANALOG SCALE



0 No Pain 1 2 3 4 5 6 7 8 9 10 Worst Pain Ever

PAIN MANAGEMENT

- **Pediatric Routine Medical Care.** If oxygen is administered, titrate to 94-99% SpO2
- Pain management should be initiated as early as possible and before transport in the stable patient. Consider pain management prior to the manipulation of suspected fractures
- **The preferred route of administration is intranasal (IN)**
- **Use an LBRT to determine pediatric medication dosages** - (Shown underlined on the algorithm)



Fentanyl Considerations:

Contraindications:

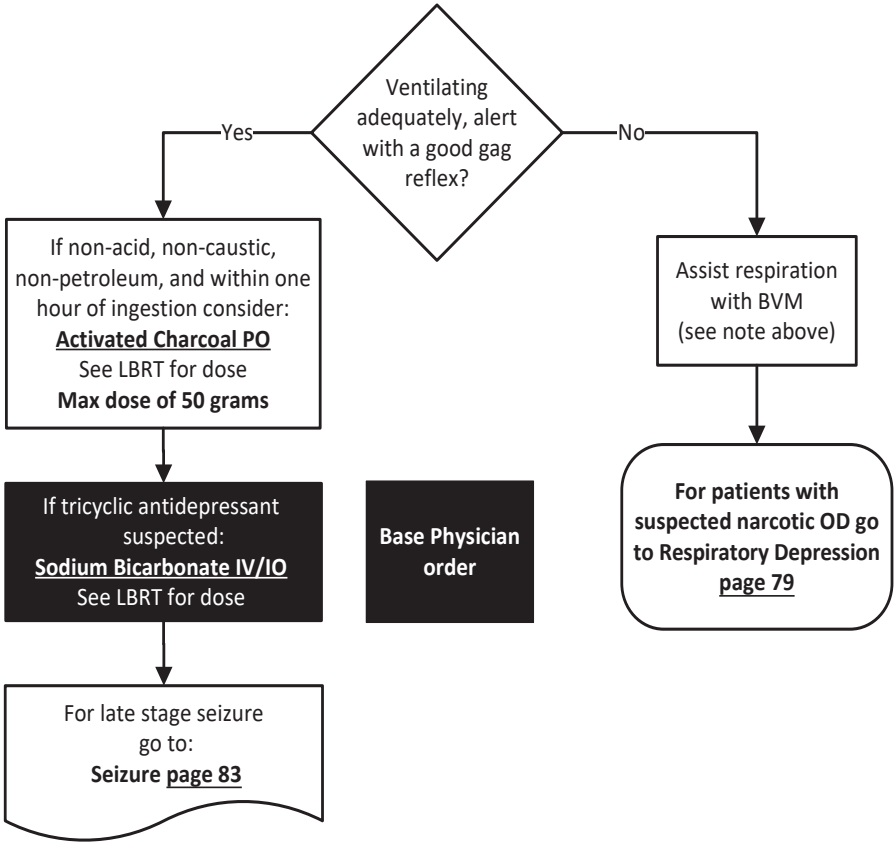
- Age-adjusted hypotension
- Decreased respiratory rate
- Altered mental status
- Suspected Traumatic Brain Injury

Notes:

- Capnography monitoring is recommended
- Burn patients may require higher doses
- Have Naloxone readily available

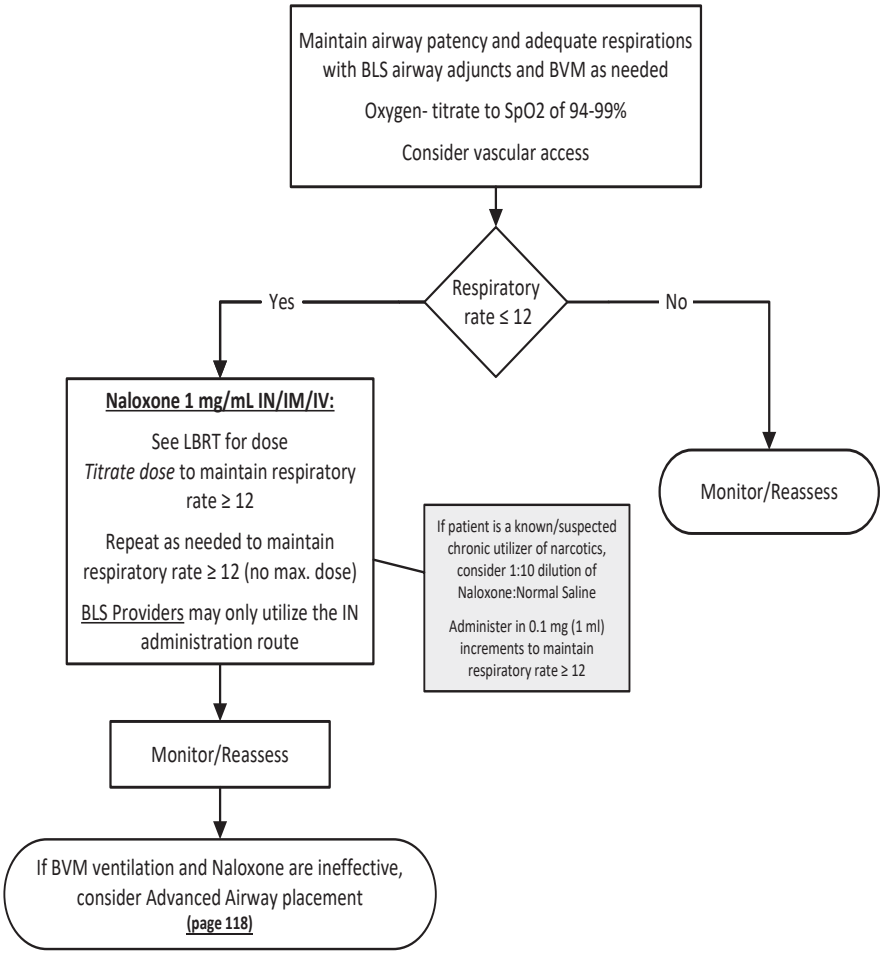
POISONING | INGESTION | OVERDOSE

- **Pediatric Routine Medical Care**
- **Protect Yourself!** - See **page 155** "Hazardous Materials Incidents - EMS Response"
- **Identify substance** – **contact the Base Physician** regarding other treatment options. Bring any containers, labels or a sample (if safe) into the hospital with the patient
- Determine type, amount, and time of the exposure
- **Base Physician consult** for treatment options if suspecting: organophosphate poisoning, or calcium channel or beta blocker OD. Consider contacting Poison Control for other substances **800-222-1222**
- Remove contaminated clothing. Brush powders off, wash off liquids with large amount of water
- Withhold charcoal if rapidly decreasing level of consciousness a possibility (e.g., tricyclic OD)
- **Use an LBRT to determine pediatric medication dosages** - (Shown underlined on the algorithm)
- **Note:** Manage the patient's airway with proper airway positioning, simple airway adjuncts, suctioning, and BVM ventilation as necessary. Consider Advanced Airway Management (**page 118**) if BVM ventilation is not adequate.



RESPIRATORY DEPRESSION OR APNEA (SUSPECTED NARCOTIC OD)

- **Routine Medical Care**
- **Naloxone can cause acute withdrawal symptoms (agitation,vomiting, etc.) in patients who are chronic utilizers of narcotics**
- Naloxone can cause cardiovascular side effects (chest pain, pulmonary edema) or seizures in a small number of patients (1-2%)
- Patients who are maintaining adequate respirations with decreased level of consciousness do not generally require Naloxone for management
- **Use an LBRT to determine pediatric medication dosages** - (Shown underlined on the algorithm)

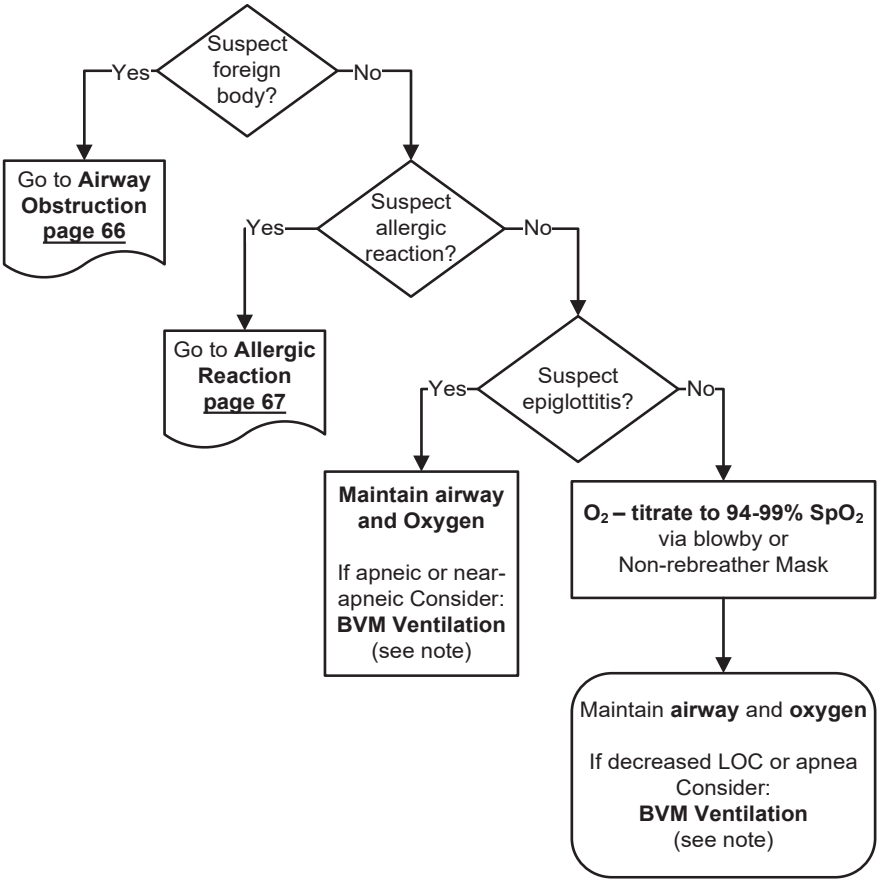


RESPIRATORY DISTRESS (STRIDOR) – UPPER AIRWAY

- **Pediatric Routine Medical Care**
- **CROUP/EPIGLOTTITIS:**

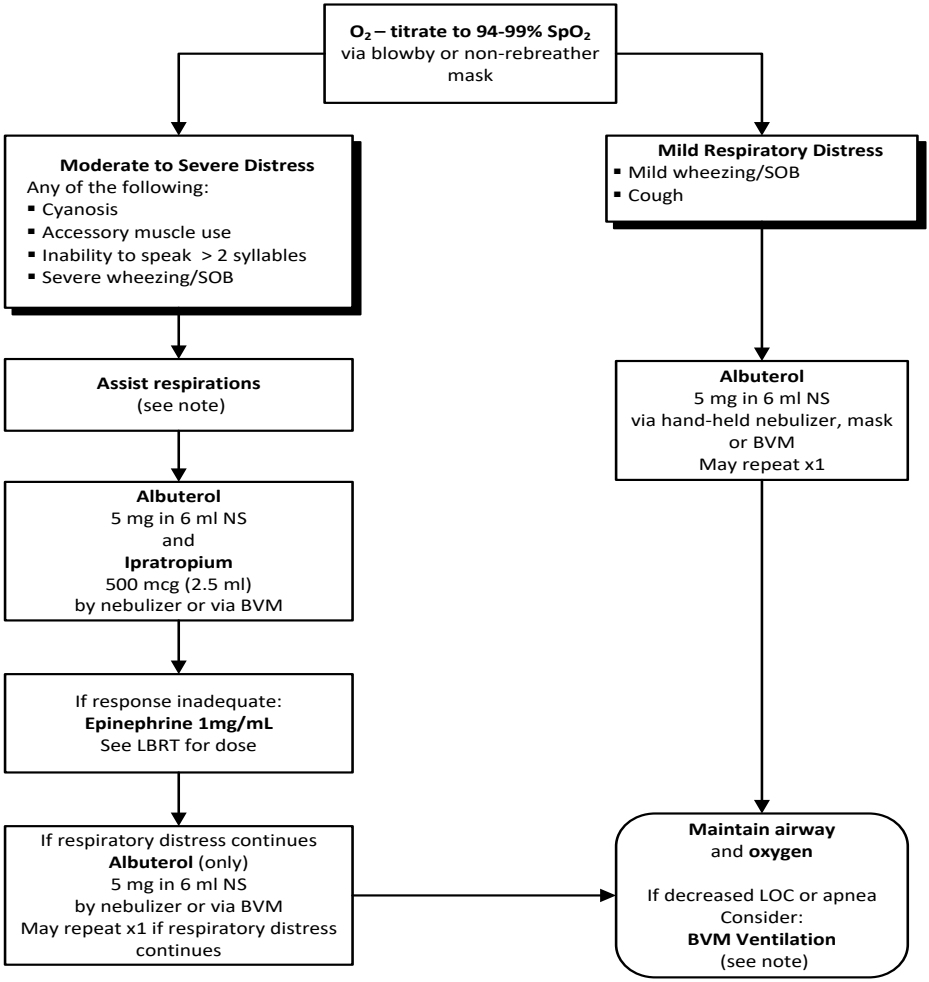
➔If the patient deteriorates, or becomes completely obstructed, positive pressure ventilation via bag-valve-mask should be attempted
➔**Do not** attempt to visualize the throat or insert anything into the mouth if epiglottitis suspected
➔Allow a parent to hold the child or the O_2 mask if the presence of the parent calms the child
➔Minimize outside stimulation. Keep the patient calm
➔Position of comfort

- **Use an LBRT to determine pediatric medication dosages** - (Shown underlined on the algorithm)
- **Note:** Manage the patient's airway with proper airway positioning, simple airway adjuncts, suctioning, and BVM ventilation as necessary. Consider Advanced Airway Management **(page 118)** if BVM ventilation is not adequate.



RESPIRATORY DISTRESS (WHEEZING) – LOWER AIRWAY

- **Pediatric Routine Medical Care**
- Position of comfort
- **Use an LBRT to determine pediatric medication doses** - (Shown underlined on the algorithm)
- **Note:** Manage the patient's airway with proper airway positioning, simple airway adjuncts, suctioning, and BVM ventilation as necessary. Consider Advanced Airway Management **(page 118)** if BVM ventilation is not adequate



ROUTINE MEDICAL CARE - PEDIATRIC

The defined age of a pediatric patient is **14 years old or less**, and unless specified otherwise, pediatric protocols should be used to treat these patients. Note: An infant is considered to be < 1 year old. A child is considered to be ≥ 1 year old. Specified ages for transport or treatment other than 14 years old include:

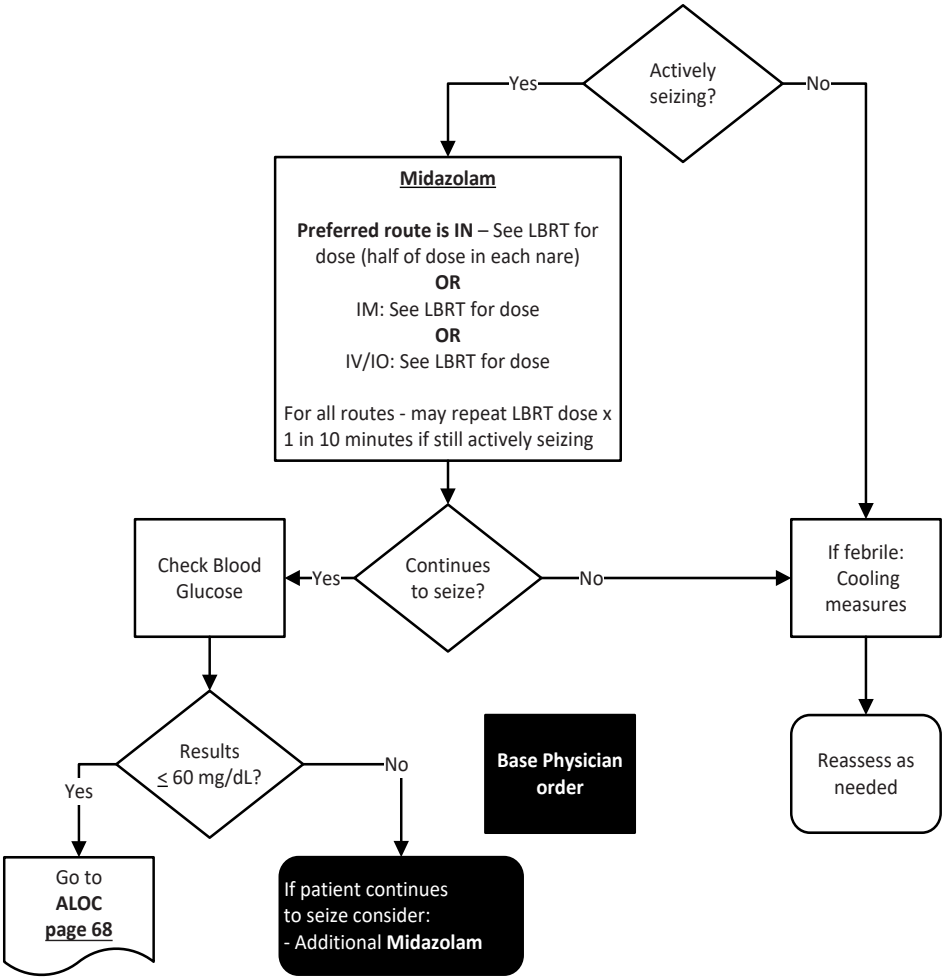
TRANSPORT	TREATMENT
5150 Psych Evaluation (page 134):	**Advanced Airway Management (page 118):**
➔Children (≤ 11 y.o.) – Children's Hospital	➔ <40kg- authorized airway is OPA/NPA, BVM, or SGA
➔ Adolescents (≥ 12 y.o. & ≤ 17 y.o.) – ALCO Youth CSU	**CPAP (page 124):**
Trauma Destination (page 30):	➔< 8 y.o. – Absolute Contraindication
➔≤ 14 y.o. – Children's Hospital	**IO Access (page 130):**
➔ ≥ 15 y.o. – Closest Adult Trauma Center	
Sexual Assault (page 3):	**Refusal of Care (page 120):**
➔Children (≤ 13 y.o.) – Children's Hospital	➔≤ 17 y.o. may not refuse transport or treatment unless legally emancipated
➔All Others (≥ 14 y.o.) – Highland or Washington	

An approved Alameda County-specific, pediatric **LBRT** shall be used to determine appropriate medication dosages, fluid volumes, defibrillation settings and equipment sizes. The tape is designed to estimate a child's weight based on length (head to heel). When the child's height exceeds the length of the tape, refer to the adult dose.

PRIMARY SURVEY	SPECIAL CONSIDERATIONS
Establish level of responsiveness	► AVPU: **A**lert, **V**erbal, **P**ainful, **U**nresponsive
Evaluate airway and protective airway reflexes	► Identify signs of airway obstruction and respiratory distress, including: ➔ cyanosis ➔ intercostal retractions ➔ choking ➔ stridor ➔ absent breath sounds ➔ grunting ➔ drooling ➔ apnea or bradypnea ➔ nasal flaring ➔ tachypnea
Secure airway	► Open airway using jaw-thrust and chin-lift (and/or head tilt if no suspected spinal trauma). Suction as needed. Consider placement of an oral or nasal airway adjunct if the child is unconscious ► If cervical spine trauma is suspected, see **page 137**
Consider Spinal Motion Restriction (SMR)	► Use chest rise as an indicator of ventilation ► Use pulse oximetry
Assess need for ventilatory assistance	► CPR as needed (see CPR **page 10**) ► Assess perfusion using the following indicators: ➔ heart rate ➔ mental status ➔ skin signs ➔ quality of pulse ➔ capillary refill ➔ blood pressure
Evaluate and support circulation. Stop Hemorrhage	► Perform a head-to-toe assessment, including temperature ► Obtain a patient history ► Do environmental assessment, consider possibility of intentional injury
Continue with secondary survey	► Perform a head-to-toe assessment, including temperature ► Obtain a patient history ► Do environmental assessment, consider possibility of intentional injury
Determine appropriate treatment protocols	► Provide family psychosocial support ► An approved Alameda County-specific, pediatric **LBRT** shall be used to determine appropriate medication dosages, fluid volumes, defibrillation settings and equipment sizes. ► When starting an IV/IO/saline lock, use chlorhexidine as a skin prep ► Label insertion site with "PREHOSPITAL IV – DATE and TIME" ► Pediatric patients are subject to rapid changes in body temperature. Steps should be taken to prevent loss of or increase in body temperature ► Compared to the adult patient, a small amount of fluid, lost from or administered to, a pediatric patient can result in shock or pulmonary edema ► Scene time for treatment of pediatric patients should be kept at a minimum. Most treatment should be done en route

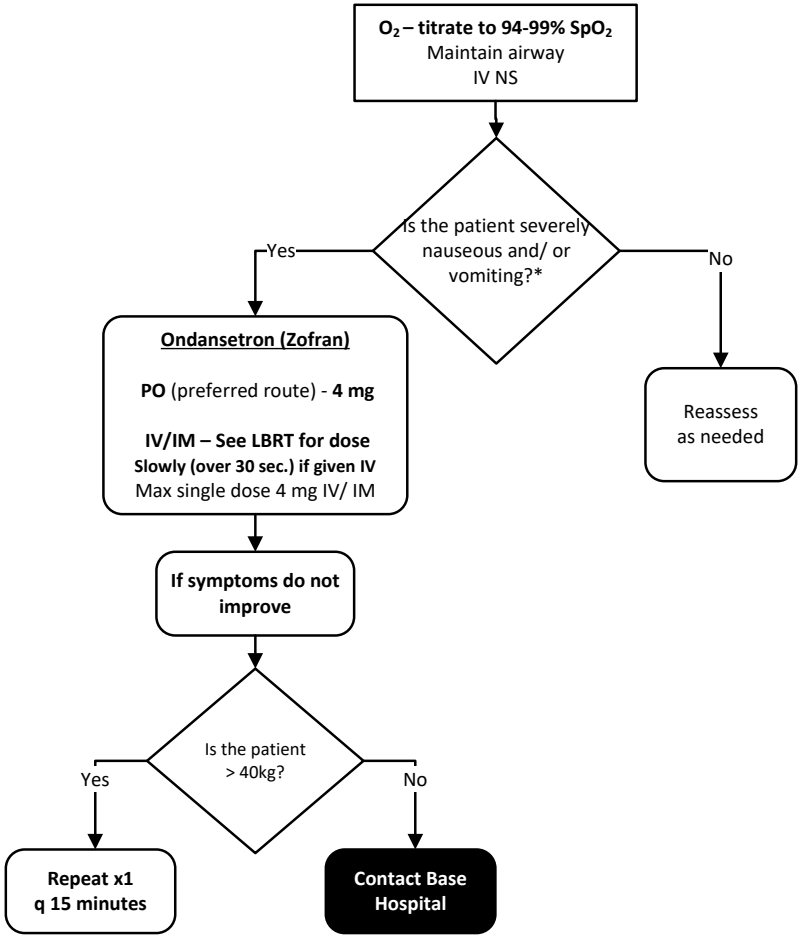
SEIZURE

- **Pediatric Routine Medical Care**
- Midazolam should not be given unless the patient is actively seizing - 3 or more seizures in ≤ 5 minutes or any seizure lasting > 5 minutes
- **Cooling Measures:** Loosen clothing and/or remove outer clothing/blankets
- **Use an LBRT to determine pediatric medication dosages** - (Shown underlined on the algorithm)



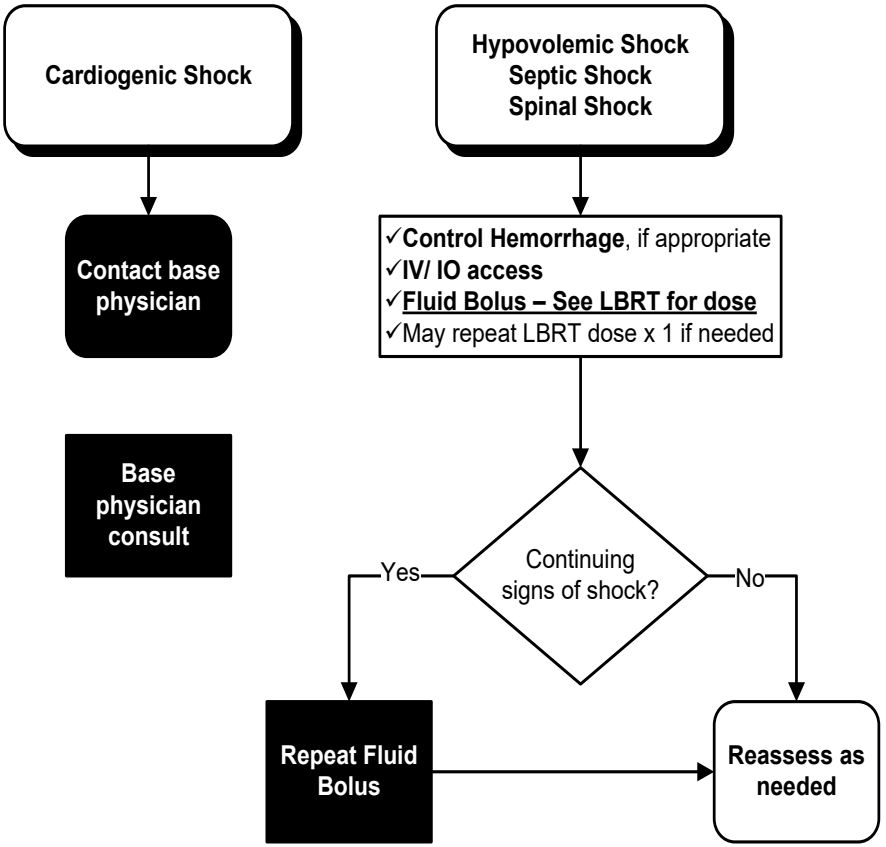
SEVERE NAUSEA

- **Routine Medical Care**
- **Indications:** Intractable vomiting or severe nausea in patients aged 4 years and older
- **Contraindications:** Hypersensitivity to 5-HT3 receptor antagonists (i.e. – dolasetron (Anzemet), granisetron (Kytril)
- **Use an LBRT to determine pediatric medication dosages** - (Shown underlined on the algorithm)
- **Note #1:** Consider other treatable causes
- **Note #2: Administering Zofran rapidly can cause syncope**
- **Note #3:** If patient has s/s of anaphylaxis/allergic reaction, follow Anaphylaxis/Allergic Reaction policy



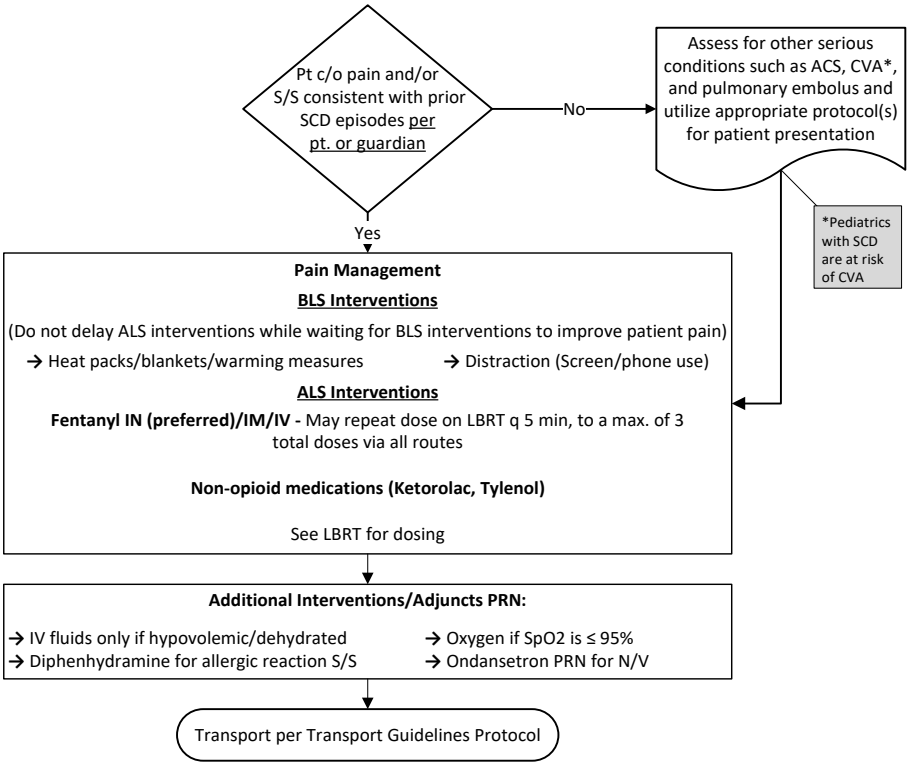
SHOCK AND HYPOTENSION

- **Pediatric Routine Medical Care**
- **IMPORTANT SIGNS OF SHOCK:**
  - ➔ Cool, clammy, mottled skin
  - ➔ Pallor - due to decreased skin perfusion
  - ➔ Altered level of consciousness - due to decreased perfusion to the brain
  - ➔ BP < 70 systolic
- **Initiate early transport and treat en route, if appropriate**
  - ➔ Go to Trauma Patient Care (**page 26**) if trauma suspected
  - ➔ Go to Allergic Reaction (**page 67**) if anaphylaxis suspected
- **Use an LBRT to determine pediatric medication dosages** - (Shown underlined on the algorithm)
- **NOTE:** Shock in children may be subtle and hard to recognize. Determining BP may be difficult and readings may be inaccurate



SICKLE CELL PAIN EMERGENCY

- **Pediatric Routine Medical Care**
- Early and aggressive pain management is key to stopping the progression of ischemic processes associated with Sickle Cell emergencies
- Patients with Sickle Cell Disease (SCD) are at higher risk for other serious conditions including ACS, CVA, pulmonary embolism, and sepsis. A high index of suspicion should be maintained for other serious etiologies to symptoms especially in the setting of patient reporting abnormal pain or S/S patterns

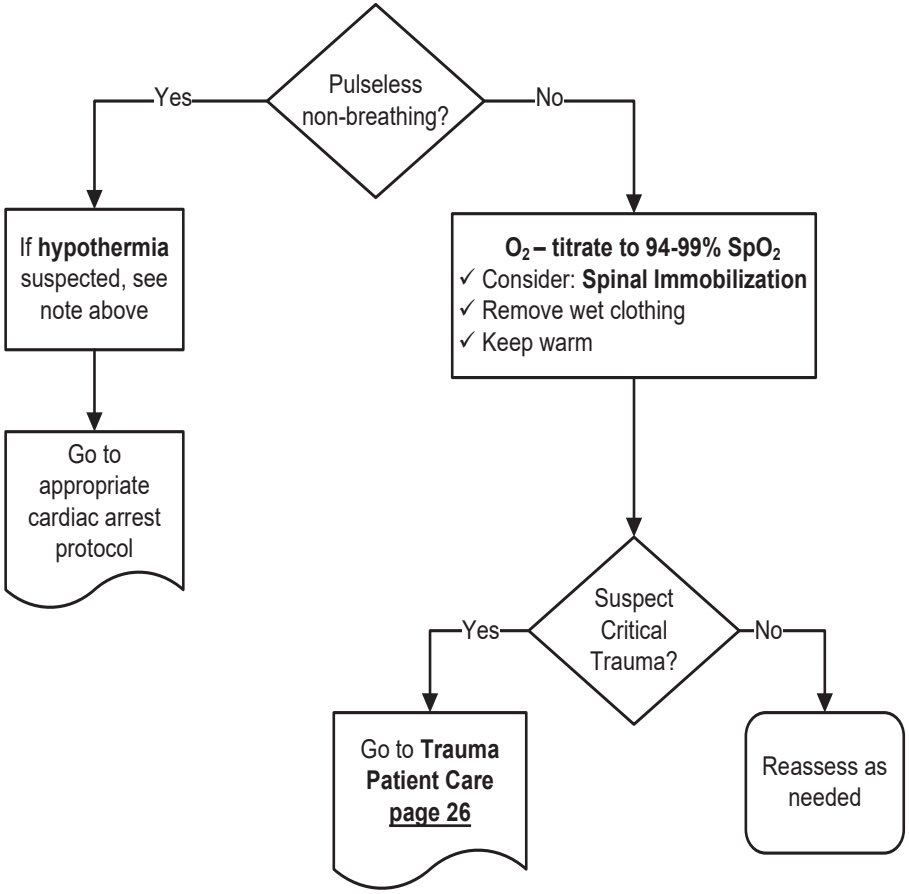


Special Considerations:

- Absence of tachycardia/hypertension does not rule out sickle cell emergencies. Prompt and aggressive analgesia is always recommended for patients reporting pain
- Triggers for sickle cell emergencies can be infection, temperature changes, dehydration, stress/lack of sleep
- Priapism can be a presentation of sickle cell emergencies and should be treated with aggressive pain control
- Pregnancy is not a contraindication to opioid use in patients with sickle cell pain emergencies

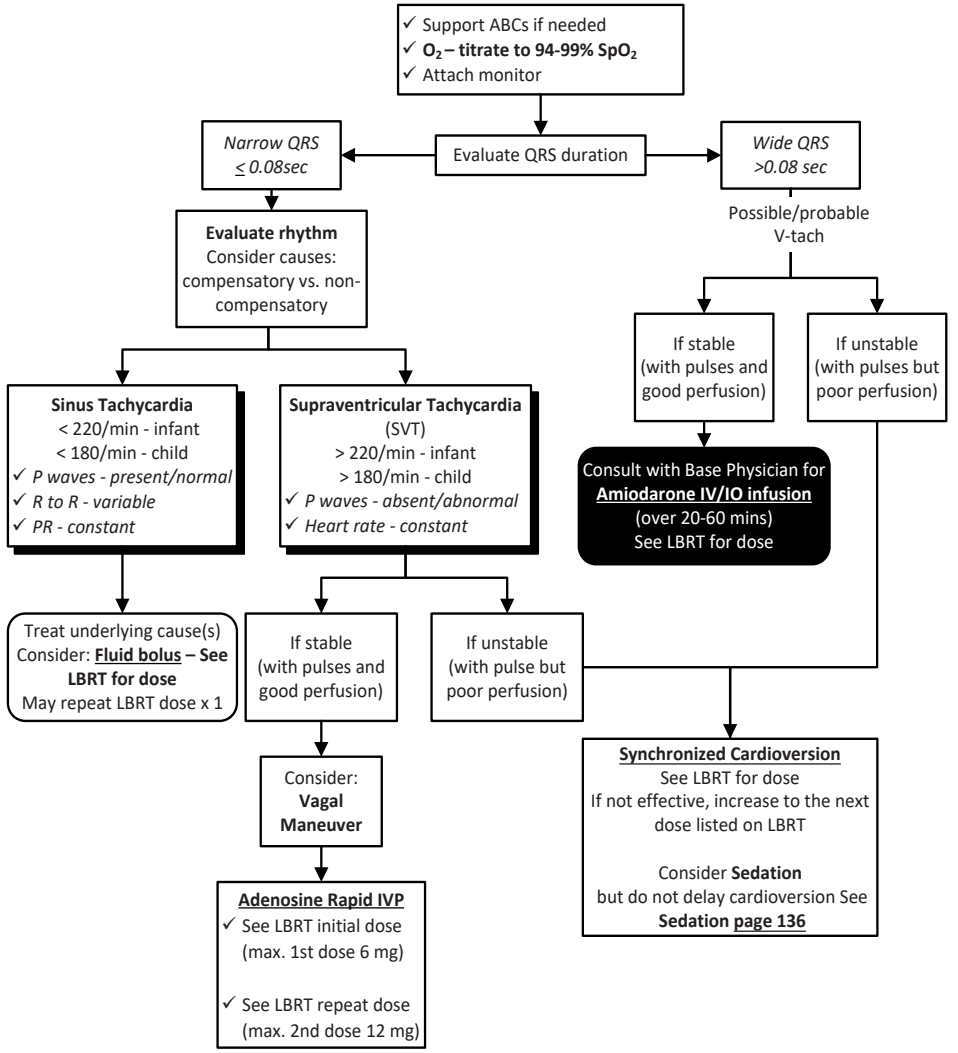
SUBMERSION

- **Pediatric Routine Medical Care**
- Contact the Base Physician if patient is also showing signs of pulmonary edema before moving to the appropriate policy
- Consider CPAP (see CPAP **page 124** for indications)
- Consider spinal precautions prior to extrication if possibility of neck trauma. Otherwise place the patient on his/her side to protect the airway and prevent aspiration; be prepared to suction
- Rapid extrication from water
- Initiate rapid transport to the closest most appropriate receiving hospital
- **Note:** If hypothermia is suspected and the patient is in ventricular fibrillation, rewarming is essential. Remove wet clothing, wrap in warm blankets and place in warm ambulance



TACHYCARDIA

- **Pediatric Routine Medical Care**
- **Use an LBRT to determine pediatric medication dosages** - (Shown underlined on the algorithm)



OPERATIONAL POLICIES TOC

ALS RESPONDER

1. **ALS PERSONNEL** - In Alameda County, an "ALS responder" is defined as: An individual who is licensed as a paramedic in the state of California and accredited to practice in Alameda County.

2. **MEDICAL MANAGEMENT**

   2.1 An ALS responder is responsible for the care of the patient after accepting responsibility from the first responder personnel until the care of the patient is turned over to the staff at the receiving hospital (if transported), or until the patient leaves the scene

   2.2 Consider a second ***accredited*** paramedic to accompany the transporting paramedic for critical patients (e.g. - arrest, complicated airway, ROSC, severe trauma, STEMI, etc.)

   2.3 Initiate "START" triage if appropriate. (See **page 157** "Multi-Casualty Incident - EMS Response (MCI)")

   2.4 If it is determined that helicopter transport of the patient might be necessary, activate the air ambulance and secure an appropriate landing zone. (see **page 96** "EMS Aircraft")

   2.5 A verbal **and** Electronic Health Record (EHR) must be completed for **every** patient, describing the care rendered and given to the staff at the receiving hospital.

      2.5.1 First Responder and transport personnel providing patient care are responsible for accurately documenting all available and relevant patient information on the electronic health record

      2.5.2 Exception:

      ➔Multi-Casualty Incident – EMS Response (MCI) **page 157**

      ➔Consent and Refusal Guidelines **page 120**

   2.6 The EHR should include a chief complaint, a general assessment, a physical assessment and emergency care rendered by the ALS responder.

3. **PATIENT CARE**

   3.1 The following should be performed for each patient during an emergency response:

      3.1.1 A physical assessment and initiation of emergency first aid, basic life support, and/or advanced life support, as necessary

      3.1.2 A EHR must be completed for **every** patient (exception: Multi-Casualty Incident and Refusal of Service)

   3.2 ALS responders are held to the following standards during patient care:

      3.2.1 CPR & Basic Life Support for Healthcare Providers course (AHA or approved equivalent) that includes in-person skills testing of the following:

      ➔ Single and multiple responder CPR for adult, child, and infant;

      ➔ AED utilization;

      ➔ Relief of foreign-body airway obstruction (choking) and ventilation techniques for adult, child, and infant

      3.2.2 Advanced Cardiac Life Support

      3.2.3 PEPP (Pediatric Education for Prehospital Personnel), **or** Pediatric Advanced Life Support (PALS), **or** Emergency Pediatric Care (EPC), **or** an approved equivalent

      3.2.4 "START" or "JumpSTART" Triage for MCI.

      3.2.5 OSHA and CAL-OSHA for infection control

      3.2.6 International Trauma Life Support (ITLS), PreHospital Trauma Life Support (PHTLS), Assessment and Treatment of Trauma (ATT) **or** an approved equivalent

      3.2.7 Alameda County EMS policies for patient care not covered by, or in addition to the above

BLS/FIRST RESPONDER

1. **FIRST RESPONDER PERSONNEL** - In Alameda County, First Responder personnel are:
   - 1.1 Public Safety personnel (life guard, firefighter or peace officer) trained in "**First Aid and CPR Standards for Public Safety Personnel**", according to the standards defined in Title 22, Chapter 1.5
   - 1.2 Individuals who are **certified as an EMT** by a California local EMS agency, the California State Fire Marshall's Office, or another certifying authority
   - 1.3 California Licensed, Alameda County Accredited Paramedics
2. **MEDICAL MANAGEMENT**
   - 2.1 The First Responder is responsible for the care of the patient, once contact with the patient has occurred and continues that responsibility until care of the patient is turned over to the arriving ambulance personnel
   - 2.2 If it is determined that the incident does not involve illness or injury, the First Responder shall cancel the ambulance response (see **page 114** "Responding Units - Canceling/Upgrading/Downgrading ")
   - 2.3 If it is determined that helicopter transport of the patient might be necessary, activate the air ambulance and secure an appropriate landing zone (see **page 96** "EMS Aircraft")
   - 2.4 A verbal report **must** be given to the arriving ambulance personnel before the care of the patient may be turned over. The First Responder form should include a chief complaint, physical assessment and emergency care rendered by the First Responder
   - 2.5 The First Responder must remain on scene until an approved ambulance provider arrives and patient care is transferred. The First Responder may return to service once patient care is transferred, or remain on scene and assist as necessary
   - 2.6 Initiate "START" or "JumpSTART" triage as necessary (see **page 157** "Multi-Casualty Incident - EMS Response")
3. **PATIENT CARE**
   - 3.1 The following should be performed for each patient during an emergency response:
     - 3.1.1 A physical assessment and initiation of emergency first aid or basic life support as necessary (see **page 53** "Routine Medical Care").
     - 3.1.2 A First Responder form must be completed for **every** patient (exception: see **page 157** “Multi-Casualty Incident - EMS Response” and **page 120** “Refusal of Service”).
   - 3.2 BLS/First Responders are held to the following standards during patient care:
     - 3.2.1 CPR & BLS for Healthcare Provider Course (AHA or approved equivalent) that includes in-person skills testing of the following:
       - ➔ Single and multiple responder CPR for adult, child, and infant;
       - ➔ AED utilization;
       - ➔ Relief of foreign-body airway obstruction (choking) and ventilation techniques for adult, child, and infant
     - 3.2.2 Approved training program curriculum for emergency first aid.
     - 3.2.3 "START" or "JumpSTART" Triage for MCI.
     - 3.2.4 Alameda County Policy “Multi-Casualty Incident - EMS Response” **page 157** for medical management at a MCI.
     - 3.2.5 OSHA and CAL-OSHA for infection control.
     - 3.2.6 Alameda County EMS policies for protocols not covered by, or in addition to the above

DETERMINATION OF DEATH IN THE FIELD

1. INTRODUCTION

1.1 BLS and ALS prehospital personnel are not required to initiate resuscitative measures in any of the following circumstances:

► Signs of obvious death are present:

➔ Total decapitation

➔ Total incineration

➔ Total separation or destruction of the heart or brain

➔ Decomposition of body tissues

➔ In cases of traumatic arrest, if the staging and extrication time (without resuscitation) exceeds 20 minutes

ALS clinicians only: *For the signs below, an ECG reading of asystole in two or more leads must be observed for one minute in conjunction with these signs*

➔ Dependent pooling of blood resulting in skin discoloration indicating lividity

➔ Rigidity throughout the entire body, including the limbs, indicating rigor mortis

- *Isolated tightness in the jaw is not sufficient for determining rigor mortis*

► During multi-casualty incidents (MCIs); follow MCI triage principles

► Presence of a signed Do Not Resuscitate (DNR) order, or Physician Order for Life- Sustaining Treatment (POLST), an approved medical medallion inscribed with the words, “Do Not Resuscitate-EMS", or family discretion criteria

➔ Family discretion criteria:

- In the absence of a valid DNR/POLST directive, if an identifiable immediate family member or spouse requests no resuscitation, with the unanimous agreement of others present, resuscitation efforts may be withheld or ceased if already initiated

➔ Copies or original forms of the signed DNR/POLST directives are acceptable

- All forms require the patient's signature (or signature of appropriate surrogate) and the signature of the patient's physician to be valid

➔ For additional DNR/POLST special considerations see Section 4 of this policy

1.2 If any doubt exists, begin CPR immediately, and continue resuscitation efforts until it is determined the patient has signs of obvious death, meets determination of death criteria as outlined in this policy, a valid DNR/POLST is presented, or family discretion criteria

1.3 Contacting base should be reserved for cases of determining death in situations not addressed by this policy

2. Determination of Death Criteria – Medical Arrest Resuscitation

2.1 In the absence of obvious death, an MCI, a valid DNR/POLST, or family discretion criteria, adult and pediatric medical arrest resuscitation efforts may be terminated by ALS prehospital personnel after resuscitation efforts have continued for at least 20 minutes, and all of the following are present:

➔ Apnea

➔ No palpable carotid or femoral pulse for 10 seconds

➔ ECG reading of Asystole or PEA < 40 bpm

➔ ETC02 < 20 mmHg; advanced airway preferred

➔ ROSC never achieved (ROSC defined as consecutive 5 minutes of palpable pulses at any point)

➔ Patient has received ≤ 2 defibrillations

➔ Hypothermia is not suspected as the cause of arrest

2.2 If any of the Determination of Death Criteria for Medical Arrest Resuscitation are not met, continue resuscitation and contact base hospital

3. Procedure After Determination of Death in the Field

3.1 Reference the Death in the Field – Grief Support guidelines

3.2 Request the coroner and local public safety agency and remain with the deceased until either agency arrives

3.3 The public safety agency with local jurisdiction is responsible for the deceased. The deceased's body may not be moved or disturbed until a disposition is determined by the Alameda County Coroner's Bureau

3.4 Complete an EHR and attach a one-minute ECG rhythm strip of the final cardiac rhythm in two leads

4. DNR/POLST Special Considerations

4.1 If the patient is in cardiac arrest, the DNR/POLST directive should be honored, and resuscitation withheld

➔ While family can reverse a DNR/POLST encouragement should be given to honor patient wishes

4.2 Correct identification of the patient is essential. After a good faith effort to identify the patient, the presumption should be that the identity is correct if proper documentation is present, and the circumstances are consistent. When available, a reliable witness may be used to identify the patient

4.3 If the patient is transported, a copy of the DNR/POLST directive should stay with the patient

➔ If the patient arrests while in transit, do not start resuscitation. Continue transporting to the original destination

4.4 A copy of the DNR directive should be attached to the EHR. If a copy is unavailable, document the type of DNR directive, date the order was issued, and the name of the physician

4.5 If the patient's physician issued the DNR order verbally while on scene, document the name of the physician and have the physician sign the EHR

4.6 There are other valid forms of directives including Advanced Health Care Directive (AHCD), the California Natural Death Act, and living wills

➔ The AHCD contains a "Health Care Instructions" section with the patient's resuscitation preferences

4.7 When a patient is not in cardiac arrest, has a DNR/POLST, and requests treatment, up to and including resuscitation, the request should be honored

DEATH IN THE FIELD - GRIEF SUPPORT

1. **PHILOSOPHY**

1.1 The intent of this policy is to provide grief support to the families of deceased individuals who are not transported from the field. Grief Support will be available to assist families in dealing with the death of a family member.

1.2 Field personnel should identify the need for grief support **as soon as possible**, especially for an unexpected death or if considering discontinuation of CPR in the field.

1.3 Field personnel should follow their agency/department procedure for initiating grief support

2. **RESPONSIBILITIES**

2.1 Assist the family in dealing with the death, or anticipated death, of the patient.

2.2 If resuscitation is in progress determine if the family wants the patient transported to the hospital.

2.3 Once death has been determined:

- ► remain on scene with the family to provide support and assist with decisions
- ► contact all appropriate agencies (e.g. Police, Coroner) if not already done
- ► remove all medical equipment used during the resuscitation if cleared by the Coroner's bureau (see "Determination of Death in the Field" **page 92**).
- ► assist with the notification of clergy, if requested
- ► provide information regarding the disposition of the remains

3. **GRIEF SUPPORT GUIDELINES:**

Breaking the News. . .

- Physically join the family.
- Introduce yourself.
- Go over with the family what has been done, what interventions have been tried.
- *"The paramedics (we) found your [husband, wife, daughter, etc.] not breathing. We began CPR. I am very sorry to tell you but your [husband, wife, daughter, etc.] has died."*
- Give the family time to react don't leave.

Grief Support Skills

- Ask the family if there is someone they would like you to call. Find a neighbor.
- Things to say:
  - ► *"Mrs. Smith, tell me what happened today"*
  - ► *"I am sorry Joe has died."*
  - ► *"This is a difficult time, it is OK to cry"*
  - ► *"You may not remember all I have said right now and that's OK."*
  - ► *"I will be available later to talk to you"*
  - ► *"I don't know but I will find out"*
- Remember: You cannot fix grief. Just give it an honest and safe place to exist.
- Give the family the grief support brochure.

Tell the family what happens next

- The coroner must be notified (Paramedics and/or police to do this)
- Ask if the family has selected a mortuary.
- Get the private doctors name and as much patient history as possible (including medications that indicate specific medical conditions)

Coroner's Case

- Cause of death must be investigated.
- Investigator can explain more.
- Police must stay if a coroner's case. (may choose to stay until mortuary arrives if not a coroner's case)
- Mortuary will pick up at coroner's office.
- Explain scene preservation nothing may be moved or disturbed.

Mortuary Case

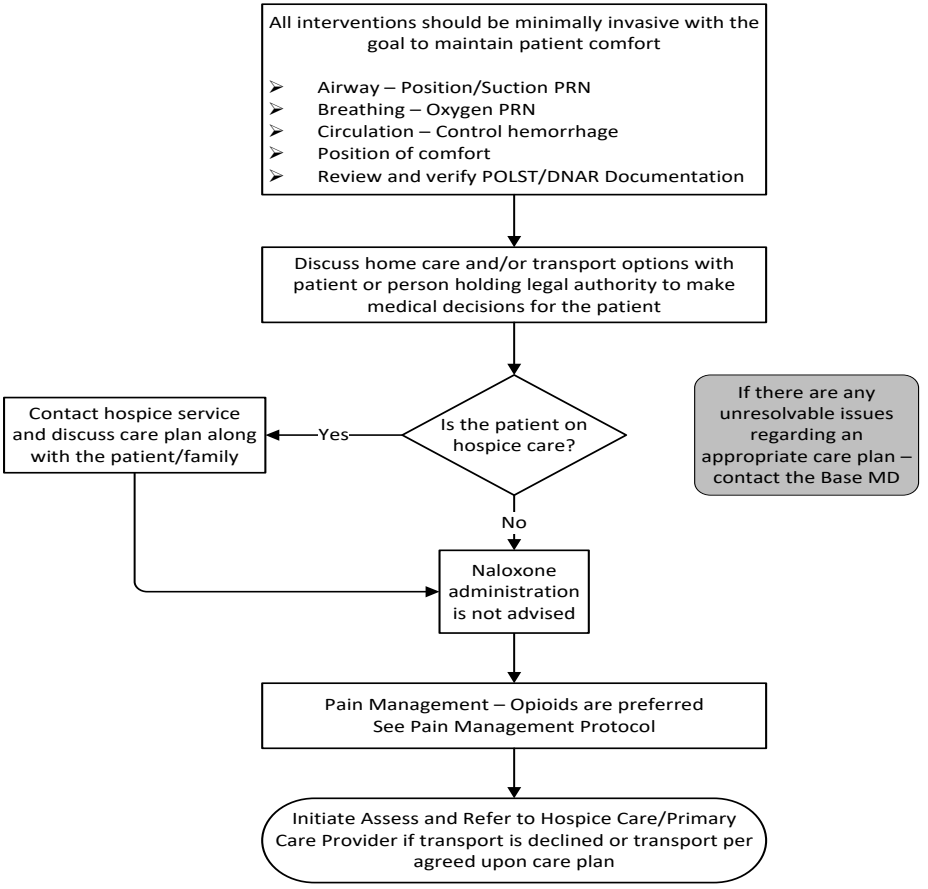
- Family should choose and call a mortuary.
- Ask family/friends/church for suggestion.
- Mortuary will come to the scene.
- Remove and dispose of all medical equipment.
- Body may be left with family if they are OK and not a coroner's case. Ask how they feel.

Knowing when to Leave

- Tell them it is time for you to go *"is there anything else I can do?"*
- Go through the grief support brochure, point out referral numbers. Give them your card or how they can reach you.
- Offer your condolences shake hands or touch if appropriate.
- Leave

END OF LIFE CARE

- **Routine Medical Care**
- **Indications:**
  - ➔ Patient has a life limiting or terminal illness, prefers comfort-focused treatment, and has one of the following:
    - POLST form specifying DNAR and comfort-focused treatment **and/or:**
    - Patient is enrolled in hospice care
- **Goals:**
  - ➔ Reduce patient symptom distress and;
  - ➔ Maintain patient dignity by aligning care with stated end-of-life preferences



EMS AIRCRAFT TRANSPORT

NOTE: EMS Aircraft utilized in Alameda County for prehospital emergency care will meet the qualifications specified in Title 22, Chapter 8.

1. **INITIATING EMS AIRCRAFT RESPONSE**
   - 1.1 The decision to request an EMS Aircraft is based on medical and scene management considerations
   - 1.2 Prior to arrival at the scene - An EMS Aircraft may be activated by any responding agency if there may be a potential need for air transport based on the incident type or location of the victim(s)
   - 1.3 All responding agencies shall be notified when an EMS Aircraft has been requested
   - 1.4 When on-scene, the decision to activate an EMS Aircraft shall be made by the IC (Incident Commander or his/her designee). upon:
     - ► the advice of on-scene medical personnel and/or
     - ► the suitability of the scene for helicopter operations
2. CONSIDERATIONS FOR REQUESTING EMS AIRCRAFT: (one or more of the following conditions exists)
   - 2.1 Long response times to scene (>20 minutes)
   - 2.2 Inaccessibility to the scene by ground personnel or equipment
   - 2.3 Extended extrication
   - 2.4 Extended transport to an appropriate facility > 20 minutes (e.g. remote area, peak traffic, closest most appropriate facility closed)
   - 2.5 Patients meeting Critical Trauma Patient Criteria (see **page 26**) with extended transport time to an approved Trauma Center
   - 2.6 Patients requiring advanced skills not in the Alameda County Paramedic scope of practice. (e.g. RSI, Surgically places thoracostomy tubes)
   - 2.7 Patient conditions where a decrease in transport time to an appropriate medical facility may be a significant factor
   - 2.8 Patients in cardiac arrest from drowning or penetrating trauma with a short down time. In general, **all other patients with cardiac arrest should not be transported in an air ambulance or rescue aircraft**
   - 2.9 A multi-casualty incident exists with a need for increased resources
3. **EMS AIRCRAFT DISPATCH**
   - 3.1 All EMS Aircraft activations shall be made through ALCO-CMED. ALCO should be given the following information if available:
     - ► Number of Patients and acuity of each
     - ► Type and extent of injuries
     - ► Location of Landing Site (use Thomas Brothers Map coordinates or Longitude and Latitude, if possible)
     - ► Nearest landmarks (e.g., highways, railroad tracks, water towers)
     - ► Weather conditions, especially high winds, fog or visibility problems.
4. **COMMUNICATION**
   - 4.1 ALCO-CMED shall request activation of the EMS Aircraft that has the shortest total response time to the scene/rendezvous site
   - 4.2 The responding EMS Aircraft may contact ALCO on VHF TAC 4 (154.070) while en route to the scene to confirm radio frequency and ground contact/incident identifier
     - ► The preferred frequency for helicopter to ground unit communications is: CALCORD (156.075)
     - ► Alternate frequencies are VHF TAC 4 (154.070) and VHF TAC 5 (154.235), but should be

coordinated through ALCO-CMED

► Fire White (154.280) is not authorized for cross patch to an ambulance or helicopter

4.3 The responding EMS Aircraft will advise ALCO of ETA in minutes and clock hours. ALCO shall advise the requesting agencies of the EMS Aircraft's ETA

4.4 ALCO shall keep responding/on scene ground personnel updated as to aircraft status (cancellation, delays, inability to respond, etc.)

4.5 If multiple aircraft are responding to the scene or in the area of the incident, ALCO shall attempt to notify each aircraft of multiple aircraft response

4.6 The EMS Aircraft shall contact the receiving hospital prior to arrival. A patient care report and an ETA should be given

5. **UTILIZATION OF RESCUE AIRCRAFT**

5.1 A number of public agencies, including East Bay Regional Park District, California Highway Patrol, Coast Guard and various military units, operate aircraft which are classified as ALS Rescue Aircraft, BLS Rescue Aircraft or Auxiliary Aircraft

5.2 The decision to transport in a rescue aircraft should be made by on-scene medical personnel and is based on patient condition and availability of other resources

5.3 Considerations for utilizing rescue aircraft:

► the patient is in an area that is inaccessible to ground transport vehicle,

► the ETA of a ground ambulance and/or Air Ambulance exceeds the loading and lift-off time by the rescue aircraft

► an air ambulance is unavailable

► the patient clearly does not require the level of service provided by an air ambulance

► a rescue requiring the use of a hoist device is indicated

5.4 When an EMT-P accompanies a patient in a BLS rescue aircraft, the EMT-P must:

► have available all appropriate medical equipment needed to care for the patient;

► receive orientation to the aircraft and to medical air transport procedures according to Title 22, Chapter 8, Section 100302

6. **SAFETY/LANDING** - Safety rules at the scene include:

6.1 Landing Zone considerations (L-Z):

► 75' x 75' during daylight, 100' x 100' during night hours,

► clear of cross wires, debris, or other obstacles, relatively flat

► Consult CHP/Law Enforcement when landing on roadways

6.2 Ground personnel should coordinate with public safety agency for road closures, if necessary

6.3 The fire department should determine the landing zone and assure scene safety during landing

6.4 Before clearing EMS aircraft to land the IC must ensure that the helicopter will not block the transport of patients out of the scene by ground. If ground transport will be blocked then the IC must make sure that ground units with critical patients have departed before clearing aircraft to land

6.5 The pilot in command shall have the final authority as to the safe operation of the air transport. If, in the pilot's judgment, patient transport by an EMS aircraft would be unsafe, regardless of the patient's condition, the patient should be transported by ground ambulance

6.6 Ground personnel shall not approach the aircraft unless directed to do so and accompanied by the aircraft crew

6.7 Regardless of how the request was initiated, only the IC shall authorize the landing of a helicopter at

the scene. Coordination between medical personnel and the IC is essential

7. CANCELING EMS AIRCRAFT RESPONSE

7.1 Ground transport should be utilized if:

- ► the overall prehospital time will not be decreased by the use of air transport and/or
- ► the patient does not meet criteria identified in Section 3 for Requesting EMS Aircraft.

7.2 Regardless of how an EMS Aircraft activation was initiated, only the IC shall cancel the response. The IC will cancel the EMS Aircraft response if so advised by on-scene medical personnel (see 9.1 below) . Coordination among all medical personnel and the IC is essential

7.3 The IC should only cancel an EMS Aircraft response if on scene and aware of the patient's condition

7.4 EMS Aircraft response can be canceled by:

- ► notifying ALCO, who will then notify all responding agencies
- ► the IC if in contact with the responding Aircraft

7.5 The IC shall be immediately advised of the decision to transport by ground

7.6 If the EMS Aircraft arrive on scene prior to the ground ambulance, the responding ground ambulance shall not be canceled until:

- ► the EMS Aircraft has left the scene with the patient aboard; and,
- ► it is determined by the IC or his/her designee that there are no additional patients to be transported

8. TRANSPORT

8.1 The transporting ALS provider shall have authority and responsibility to determine mode of patient transport (air vs. ground) and patient destination. The transporting ALS provider must consult with first responder personnel and EMS Aircraft crew, if applicable, prior to making this decision

8.2 Alameda County transport policies shall be followed for all patients requiring air transport. Patients shall be transported to the closest hospital most appropriate for the medical needs of the patient with an approved Helipad or EMS Landing Site

8.3 Trauma Centers with approved helipads or emergency landing sites are:

- ► Eden Hospital (Castro Valley)
- ► Children's Hospital (Oakland)
- ► John Muir Hospital (Walnut Creek)
- ► Highland General Hospital (Coast Guard Island)
- ► Regional Medical Center (San Jose)
- ► Valley Medical Center (San Jose)
- ► Stanford University Hospital (Palo Alto)

8.4 Alameda County Receiving Hospitals with approved helipads or emergency landing sites are:

- ► Eden Hospital
- ► Washington Hospital
- ► Valley Care Medical Center
- ► Children's Hospital

9. PATIENT CARE RESPONSIBILITIES

9.1 Transfer of care shall occur:

- ► upon arrival/landing of the responding personnel at the scene when patient contact is made
- ► after a verbal patient care report is given to the transporting agency in accordance with **page 143**, "Transfer of Care"

9.2 The EMS Aircraft crew may release the patient to an ALS ground transport unit if ground transport is

determined appropriate

9.3 The EMS Aircraft or ALS ground ambulance crew may release a patient to BLS rescue aircraft if the patient does not require ALS care but air transport is determined to be appropriate.

10. **DOCUMENTATION** - Appropriate documentation must be completed on all patients transported by the EMS Aircraft crew and faxed immediately to ALCO EMS at (510) 618 – 2099

11. **REQUEST FOR MILITARY AIRCRAFT**

11.1 Military assistance may be used when non-disaster inland search and rescue operations may exceed local and state capabilities. Examples: water rescue, rescue in inclement weather. hoist rescue

11.2 One hour response time minimum time should be expected. An ETA can only be given after the request is made and an assessment of available resources has been completed

11.3 If hoist rescue requested do not place the patient on a stretcher or stokes basket, although the patient may be placed on a backboard. The hoist equipment requires specialized equipment

11.4 The incident commander determines the need for military aircraft and contact ALCO with the following information:

- ► Incident location and longitude and latitude if known
- ► Incident description including the number of injured, types of injuries and topography
- ► If a hoist is requested, an estimate of the distance the patient will need to lifted from the ground to the aircraft
- ► Altitude of incident if known
- ► Air to ground contact frequencies

11.5 **Notification Procedure - ALCO:**

- ► **For maritime rescue:** call Coast Guard Dispatch directly at (415) 556-2105 or (415) 556-2103
- ► **For land (non-maritime) rescue or assistance call:**
  - ➔ State OES Law Division at (800) 852-7550 for approval
  - ➔ Coast Guard dispatch (415) 556-2103 to give the Coast Guard helicopter flight crew an advanced notification. Since the Coast Guard's primary responsibility is maritime search and rescue, they can notify ALCO of their availability

11.6 If additional information is needed, ALCO will direct the questions to the requesting IC's dispatch center for direct contact.

EMS EVENT REPORTING

1. EMS EVENT REPORTING CRITERIA:

1.1 Events shall be reported to the Alameda County EMS Agency within twenty-four (24) hours from time of discovery if the event resulted in harm, had the potential to result in harm, or was deemed to be a potential threat to public health and safety within any of the following areas:

- 1.1.1 Deviations from Alameda County EMS Administrative Policies or the Field Manual
- 1.1.2 Medication, or clinical treatment errors
- 1.1.3 Deviation from authorized list of supplies or equipment
- 1.1.4 Equipment failures
- 1.1.5 Unintentional patient harm or injury during care
- 1.1.6 Communication failures, e.g., radios, phones, technological challenges
- 1.1.7 Base hospital communication and/or guidance
- 1.1.8 Specialty systems of care destination errors, e.g., Stroke, STEMI, Cardiac Arrest, Trauma, Sexual Assault, Psychiatric receiving
- 1.1.9 Collision of any EMS vehicle that resulted in injury

1.2 Any EMS clinician act or omission pursuant to Division 2.5, Chapter 7, Section 1798.200, of the Health and Safety Code, including but not limited to the following:

- 1.2.1 Diversion of controlled substances
- 1.2.2 Substance-related impairment while on duty
- 1.2.3 Gross negligence
- 1.2.4 Mistreatment or physical/sexual abuse of a patient

1.3 Events where exceptional EMS care was provided are strongly encouraged to be submitted for commendation and recognition

- 1.3.1 A nomination for the Alameda County EMS Award can be submitted in addition to the EMS Event Report

2. EMS EVENT REPORTING - HOW-TO:

► All EMS Event Reports must by submitted digitally. To submit a EMS Event Report:

► Scan the QR code on this page with any mobile device

► Go to **https://tinyurl.com/alcoems-eventreport**

Link to EMS Event Reporting Form

EQUIPMENT AND SUPPLY REQUIREMENTS AND INSPECTION

1. **EQUIPMENT AND SUPPLIES:** The provider agency is responsible for providing a full inventory of equipment and supplies to its units
2. All ALS and BLS patient care response vehicles (transporting and non-transporting) shall have at a minimum, all equipment and supplies specified in Alameda County EMS Agency's "Minimum Equipment and Supply Specifications Policy. This policy does not supersede the California Vehicle Code or California Code of Regulations, Title 13 requirements for ambulance equipment. In addition, each patient care response vehicle shall have:
   - 2.1 Adequate space in the patient care compartment to accommodate one stretcher, a patient(s) and two providers. There must be sufficient space to allow for patient care activities during transport
   - 2.2 County approved communications equipment capable of contact with receiving hospitals, base hospitals, and other provider agencies during an MCI or mutual aid situation
   - 2.3 Personal protective equipment in accordance with Cal/OSHA standards and/or California EMSA Guideline #216
3. Each ALS provider (transport and non-transport) shall have an approved controlled substance/medication restock procedure on file with the EMS Agency
4. **INSPECTION:** Alameda County EMS Agency personnel may inspect any BLS, CCT and/or ALS mobile unit at any time for compliance with the identified standards for equipment and personnel.
   - ► Deficiencies may result in the unit's removal from service until the deficiencies are remedied
   - ► The Alameda County EMS Agency will notify the service provider agency's designated management representative immediately of the infraction
5. **EQUIPMENT AND SUPPLIES LIST:** See the EMS Agency's website for the latest copy of the Equipment and Supplies List at: https://ems.acgov.org or by scanning the QR code below

Link to Equipment and Supplies List

EQUIPMENT AND SUPPLY SPECIFICATIONS – ALS/BLS

MINIMUM SUPPLY SPECIFICATIONS	BLS	ALS Non-Transport	ALS Transport
AIRWAY EQUIPMENT			
►Airways:			
• Oropharyngeal (Sizes 0 - 6)……	1 each	1 each	2 each
• Nasopharyngeal (soft rubber)			
» 14 Fr., 18 Fr., 22 Fr., 26Fr. ……	1 each	1 each	1 each
» 30 Fr……	1	1	1
» 32 Fr. ……	1	1	2
» 34 Fr. ……	1	1	1
► Atomizer for intranasal medication administration	2	1	3
► County approved Continuous Positive Airway Pressure (CPAP) Device		1	1
▼ Intubation Equipment:			
• County approved video laryngoscopy device……..		1 (optional)	1 (optional)
• Laryngoscope (handle)……		1	1
• Batteries (extra)……		1 set	1 set
• Adult Blades (Curved McIntosh)			
» # 4……		1	1
» # 3……		1	1
• Pediatric Blades (Curved McIntosh)			
» # 2……		1	1
» # 1……		1	1
• Adult Blades (Straight Miller)			
» # 4……		1	1
» # 3……		1	1
• Pediatric Blades (Straight Miller)			
» # 2……		1	1
» # 1……		1	1
• Magill Forceps			
» Adult……		1	1
» Pediatric……		1	1
• Adult Endotracheal Intubation (ET) Tubes (cuffed with adaptor)			
» Size 6.0……		1	2
» Size 6.5……		1	2
» Size 7.0……		1	2
• i-gel® Supraglottic Airway			
» Size 1.0……		1 (optional)	1 (optional)
» Size 1.5……		1	1
» Size 2.0……		1	1
» Size 2.5……		1	1
» Size 3.0……		1	1
» Size 4.0……		1	1
» Size 5.0……		1	1
• Tracheal tube introducer (bougie)……..		1	2
• ET Tube Holder			
» Adult……		2	3
• Disposable Waveform Capnography……	2 (optional)	2	5
▼ Nebulizer			
• Patient activated……..		1	2
• Hand-held for inhalation……..		1	2
• In-Line nebulizer equipment with 22 & 24 mm “T-piece”……		1	2

EQUIPMENT AND SUPPLY SPECIFICATIONS – ALS/BLS

MINIMUM SUPPLY SPECIFICATIONS	BLS	ALS Non-Transport	ALS Transport
► **Oxygen equipment and supplies:**			
• O_2 Tank (portable)	1	1	1
• Non-rebreather masks (transparent)			
» Adult	2	1	2
» Pediatric/Infant	1	1	1
» Nasal cannula for O_2 administration	2	1	2
» Portable Pulse-Oximetry	1	1	1
» Adult end-tital CO_2 sampling nasal cannula		1	1
» Pediatric end-tital CO_2 sampling nasal cannula		1	1
► **County-approved pleural decompression kit**		1	2
▼ **BVM with O_2 reservoir and facemask**			
• Adult	1	1	1
• Pediatric	1	1	1
• Infant	1	1	1
▼ **Suction and equipment supplies**			
• Rigid Suction Catheter	1	1	2
• Suction apparatus (portable)	1	1	1
• Suction catheters, pediatric:			
» 6 Fr	1	1	1
» 10 Fr	1	1	1
» 18 Fr	1	1	1
• Suction Canisters	1	1	1
DRESSING MATERIALS			
► **County Approved Chest Seals**		2	2
► **Adhesive bandages** (Assorted)	1 container	1 container	1 container
► **Cold Pack**	2	2	2
▼ **Dressing Materials**			
• 4” x 4” gauze	12	6	12
• 10 x 30” or larger universal dressings	2	2	3
• ABD pad (9 x 5”)	2	2	2
• Roller bandages			
» 2”	2	1	2
» 3”	2	1	2
» 4”	2	2	2
• QuickClot® Combat Gauze ™		1 (Optional)	1 (Optional)
► **Elastic Bandage 3”** (ACE Style Bandage)	1	1	1
► **Scissors** (heavy duty)	1	1	1
▼ **Splints** – cardboard splint with a soft or cushioned surface, flexible, form-fitting splint (e.g., SAM or vacuum splint):			
• Adult Arm	1	1	2
• Adult Leg	1	1	2
• Traction Splint		1	1
▼ **Tape**			
• 1”	1 roll	1 roll	1 roll
• 2”	1 roll	1 roll	1 roll
► **Triangular Bandage**	1	1	2
► **County Approved Tourniquet (for hemorrhage control)**	1	1	1

EQUIPMENT AND SUPPLY SPECIFICATIONS – ALS/BLS

MINIMUM SUPPLY SPECIFICATIONS	BLS	ALS Non-Transport	ALS Transport
EQUIPMENT AND SUPPLIES			
▼ **Automated External Defibrillator (AED) equipment**			
• Automated External Defibrillator – pediatric ready	1		
• "Hands-off" defib pads			
» Adult	1 set		
» Pediatric	1 set		
► **Blanket Disposable**	1	1	1
▼ Blood pressure cuff (portable):			
• Adult	1	1	1
• Large Adult		1	1
• Pediatric	1	1	1
• Infant		1	1
► **Bulb Syringe** (optional if supplied in Delivery Kit)	1	1	1
► **Burn Sheets (sterile)**	1	1	1
► **CO Monitor**		1 (Optional)	1 (Optional)
▼ Delivery Kit Sterile, prepackaged to include: • a minimum of two (2) umbilical cord clamps • scissors (may be packaged separately) • aspirating bulb syringe • gloves drapes • antiseptic solution	1	1	1
► **EMS Field Manual** (may be print or digital copy)	1	1	1
► **Gloves, disposable**	1 box	1 box	2 boxes
► **Glucometer**	1	1	1
▼ **Irrigation Equipment:**			
• Sterile Saline or Sterile Water for irrigation	2	1 (Optional)	2
• Tubing for irrigation			1
► **EMS Approved Length Based Resuscitation Tape – (LBRT)**		1	1
► **Lubricant, water soluble**	2 packs	2 packs	2 packs
► **County Approved Mechanical CPR Device**		1 (Optional)	1 (Optional)
▼ **Monitor/defibrillator equipment:**			
• Defibrillator Must have strip recorder, synchronized cardioversion and transcutaneous pacing capability, and be portable and operational. Both monophasic and biphasic waveform defibrillators are acceptable; however, biphasic is preferred. Energy level dependent upon manufacturer.		1	1
• Batteries, extra (if available)		1 set	1 set
• "Hands-off" defib pads			
» Adult		1 set	1 set
» Pediatric		1 set	1 set
• EKG electrodes		3 packs	6 packs
• 12-lead EKG capability		1	1
► **Pen Light**	1	1	1
► **Point of Wounding (POW) Kit** (Items location in this kit may be counted towards minimums of other items in this table)	1	1	1

EQUIPMENT AND SUPPLY SPECIFICATIONS – ALS/BLS

MINIMUM SUPPLY SPECIFICATIONS	BLS	ALS Non-Transport	ALS Transport
► **Radio unit(s)** (Must be able to function with all facets of the current EBRCS radio system)	1	1	1
► **Thermometer – patient safe**	1	1 (Optional)	1
► **Triage Tags**	20	20	20
► **Triage Tape**	1 roll ea. - red, yellow, green, black		
► **Scoop Stretcher or equivalent**	1 (optional for IFT)		1
► **Flexible multi-positional patient carrying device**	1 (Optional)	1 (Optional)	1 (Optional)
► **Stethoscope**	1	1	1
► **Stretcher**	1		1
IMMOBILIZATION EQUIPMENT			
► **Cervical collars – Stiff:** Sizes to fit all patients over one year old	1 each	1 each	2 each size
► **Head immobilizer:** that provides lateral and built-in occipital support……	1	1	2
▼ **Spine boards** (rigid)			
• Long board (72” x 14”)……	1	1	1
With removable 5-strap adjustable immobilization device	1 (Optional for IFT)		
• Pediatric Velcro straps and head harness……		1	1
► **Vacuum Mattress**	1 (Optional)	1	1
► **Athletic helmet face mask removal tool (optional)**	1	1	1
IV EQUIPMENT/SYRINGES/NEEDLES			
▼ **Armboards**			
• Short……			1
• Pediatric……		1	1
▼ **Catheters**			
• 16 gauge……		1 (optional)	2
• 18 gauge……		2	2
• 20 gauge……		2	2
• 22 gauge……		2	2
• 24 gauge……		2	2
► **Chlorhexidine**……		6	12
▼ **Handheld Battery Powered Intraosseous Equipment**			
• EZ-IO® Driver……		1	1
• 15 mm Needle Set (pink hub, 3kg-39kg)……		1 (Optional)	2 (Optional)
• 25 mm Needle Set (blue hub, >3kg)……		1	2
• 45 mm Needle Set (yellow hub, >40kg with excessive tissue)		1	2
• Vascular access pack……		1	2
▼ **Needles**			
• 22 g x 1.5”……		1	4
• 23 g x 1”……		1	2
• 18g x 1 1/2” 5 micron filter needle (optional)……		1	2
► **Pressure Infusion Bags**		1	1
► **Saline Lock**		2	2
▼ **Syringes - Luer-Lock type**			

EQUIPMENT AND SUPPLY SPECIFICATIONS – ALS/BLS

MINIMUM SUPPLY SPECIFICATIONS	BLS	ALS Non-Transport	ALS Transport
• 1 mL • 3 mL • 10 mL • 30 mL	1	1 1 2 2	2 2 2 2
► **T-connector**		1	2
► **Tourniquet (for IV start)**		1	1
► **Tubing –** Adjustable flow 3-way or 2-way administration set		1	2
MEDICATIONS AND SOLUTIONS – preloads preferred			
► **Acetaminophen 1000 mg (optional)**		1	2
► **Adenosine 6 mg / 2 mL NS**		1	2
► **Adenosine 12 mg / 4 mL NS**		1	2
► **Albuterol 2.5 mg in 3 mL NS**		2	4
► **Amiodarone 150 mg in 3 mL or 150 mg in 100ml premixed bag**		2	3
► **Aspirin 81 mg chewable tablet or 325 mg/5 gr. tablet**	1 bottle	1 bottle	1 bottle
► **Atropine Sulfate 1 mg / 10 mL**		3	3
► **Autoinjector antidote kit (optional)** (atropine 2mg in 0.7mL's & pralidoxime chloride 600mg in 2 mL's)	3 per person	3 per person	3 per person
► **Calcium Chloride 1 gm / 10**		1	1
► **Charcoal, 25 grams**		1 bottle	2 bottles
► **Dextrose 10% in 250mL bags**		1	2
► **Diphenhydramine 50 mg / 1 mL**		1	2
► **Epinephrine 1mg / mL 1 mg / 1 mL**		2	2
► **Epinephrine 0.1mg/mL 1 mg / 10 mL**		3	3
► **Epinephrine Auto-Injectors** Adult 0.3mg, Pediatric 0.15mg ► **Epinephrine 1mg / mL 1 mg / 1 mL**	1 of each Auto-injector or 1 vial		
► **Fentanyl 100 mcg / 2 mL**		2	2
► **Glucagon 1 mg Kit**		1	1
► **Glucose (Oral) - 31 grams**	2	2	2
► **Hydroxocobalamin 5g / 250ml**		Optional	
► **Ipratropium (Atrovent) 500 mcg (2.5 mL)**		1	2
► **Ketamine (Ketalar) 500 mg / 10 ml (50 mg / ml) OR 10 mg / ml concentration (optional)**		Min. 30 mg	Min. 30 mg
► **Ketorolac (Toradol) 15mg / 1ml**		1	1
► **Lidocaine 2% 40 mg / 2 mL**		1	1
► **Midazolam 10 mg / 2 mL**		2	2
► **Naloxone 2 mg / 2 mL**	2	2	2
► **Nitroglycerine**		1 bottle	1 bottle
► **Olanzapine (Zyprexa) 10mg oral dissolving tablets**		2	2
► **Ondansetron (Zofran) 4mg / 2 mL for IV/IM injection**		1	2
► **Ondansetron (Zofran) 4mg oral dissolving tablets**		2	4

EQUIPMENT AND SUPPLY SPECIFICATIONS – ALS/BLS

MINIMUM SUPPLY SPECIFICATIONS	BLS	ALS Non-Transport	ALS Transport
► **Saline, sterile (for injection) 10 mL**		2	2
► **Sodium bicarbonate 50 mEq / 50 mL**		1	2
► **Sodium Thiosulfate 12.5 gms with 10 gtt/mL vented tubing**	1 (Supervisor or Battalion Chief)		
► **Tranexamic Acid 1 gram in 100ml NS or D5W**		1	1
▼ **Bags for infusion** • D_5W or Normal Saline 100mL • Normal Saline (NS) – May use 500mL or 1000 mL bags		 1 1,000mL	 2 2,000mL

INTERFACILITY TRANSFERS

Note: This policy pertains to emergency transfers to a higher level of care that come through the 9-1-1 system. See "Scheduled Interfacility Transfers Using Paramedic Personnel" (policy #4605 Administration Policy Manual) for more information.

1. All patient care rendered by prehospital care personnel must be within the defined scope of practice according to Title 22 and Alameda County EMS protocols
2. A paramedic may only take orders from a base hospital physician. (See 5.2 below) There are no provisions for an EMT to take orders from a physician
3. **EMT-Bs** may only transfer a patient without an emergency medical condition; or, with an emergency medical condition that has been stabilized and has no potential (within reasonable probability) to deteriorate en route
4. **Paramedics** (in addition to 3) may only transport a patient who has not been stabilized to a facility that provides a higher level of care. The transferring physician must determine if the care that may be required during transport is within the scope of practice of a paramedic. If not, appropriate hospital staff and/or equipment should be sent with the patient
5. Base Contact by Paramedics
   - 5.1 **Base Contact is required prior to transport** if the transferring physician orders any ALS treatment and/or the patient has not been stabilized
   - 5.2 Paramedics may follow transferring physician's written orders ONLY when 1) the transferring physician speaks to the Base Physician, and they mutually agree on the course of treatment; 2) the proposed treatment plan is within the paramedic's scope of practice
   - 5.3 **Base Physician contact shall be made:**
     - ► When there is a request to transfer a patient to a higher level of care facility that is not the "closest, most appropriate" higher level of care facility.
   - 5.4 **Base Contact is not required** if the patient is stable and no ALS treatment has been ordered by the transferring physician. If the patient's condition changes during transport see the appropriate patient care policy and treat accordingly
6. Base Contact may be made anytime a paramedic has a question regarding patient condition, destination and/or the appropriateness of the transfer
7. An Alameda County Unusual Occurrence (U.O.) form should be completed for any problem-oriented interfacility transfers. The U.O. form should be sent to the EMS office for review. [See Administration Manual UNUSUAL OCCURRENCES (#2300)]
8. Refer to "Interfacility Transfer Guidelines" [see Administration Manual INTERFACILITY TRANSFER GUIDELINES (# 5600)] for transfer approval process

IV LINES & DEVICES, VENTILATORS & OTHER PATIENT CARE EQUIPMENT

1. **PURPOSE:** To define the scope of practice of the EMT and paramedic with respect to the management of patients during emergency or routine transport from the field or during an interfacility transfer
2. **Certified EMT or a supervised EMT student may:**
   - ► Assist patients with the administration of physician prescribed devices, including but not limited to, patient operated medication pumps, sublingual nitroglycerin, and self-administered emergency medications, including epinephrine devices
   - ► Monitor intravenous lines delivering glucose solutions or isotonic balanced salt solutions including Ringer's lactate for volume replacement;
   - ► May monitor, maintain, and adjust if necessary in order to maintain, a preset rate of flow and turn off the flow of intravenous fluid;
   - ► May transfer a patient, who is deemed appropriate for transfer by the transferring physician, and who has nasogastric (NG) tubes, gastrostomy tubes, heparin locks, foley catheters, tracheostomy tubes and/or indwelling vascular access lines, excluding arterial lines
   - ► May Monitor preexisting vascular access devices and intravenous lines delivering fluids with additional medications pre-approved by the Director of the EMS Authority
3. **Licensed Paramedics, in addition to the above may:**
   - ► Monitor and administer medications through pre-existing vascular access
   - ► Monitor and adjust IV solutions containing potassium equal to, or less than, 20 mEq/L
   - ► Transport and monitor a patient that has fluid and/or medication running through a central line, central venous access device, or heparin lock as long as the medications are within the paramedic scope of practice. Medications not included in the paramedic scope of practice may not be administered during transport. (12/21/05)
4. **Infusion Devices** - An **EMT** or **Paramedic** may transport a patient with an infusion device under the following conditions:
   - ► The transport is authorized, **in writing**, by the patient's physician or is approved by the Base Hospital physician
   - ► For BLS transport - the patient must be stable, non-critical and the purpose of the transport must be of a routine nature, such as a pre-scheduled appointment to a medical facility for examination or treatment (e.g. dialysis, chemotherapy, doctor's office visit)
   - ► Paramedics should transport the patient if the reason for the transport is a change in condition or a new medical complaint
   - ► The patient or trained family member must be present to monitor and regulate the device during the transfer, without any assistance from the EMT or paramedic
   - ► If any doubt exists as to the ability of the patient or family member to manage the device or the device is not functioning properly, the patient should be assessed by ALS personnel and if appropriate, **consultation with the Base Physician should be obtained**
5. **Ventilators:**
   - ► If during a response to a 911 or scheduled interfacility transport, an EMT – I discovers a patient on a ventilator that requires transport, a CCT – Paramedic or CCT – RN response shall be initiated
   - ► Paramedics may disconnect the patient from the ventilator and assist ventilation using a bag-valve device. If it is in the best interest of the patient to remain on a ventilator during transport and a delay in transport will not compromise patient care or comfort, a CCT – Paramedic or CCT – RN response shall be initiated. If any doubt exists regarding the condition of the patient, the Base Physician should be consulted
6. **Thoracostomy tubes:** Only **CCT - Paramedics** may monitor thoracostomy tubes

MEDICAL PERSONNEL ON THE SCENE

1. **MEDICAL PERSONNEL ON THE SCENE** (non-physician) - If a bystander at the scene of an emergency identifies him/herself as a medical person, other than a physician, the First Responder or paramedic should:

   1.1 Inform the individual that they may assist the emergency response team and/or offer suggestions, but may not assume medical management for the patient

   1.2 Maintain overall scene management

2. **PHYSICIAN ON THE SCENE** - If a bystander at an emergency scene identifies him/herself as a physician:

   2.1 BLS responder will work in conjunction with the physician until the arrival of ALS.

   2.2 Paramedics should:

   ► give the physician a "Note to Physicians on Involvement with EMTs and Paramedics" card. (available at the EMS Office or on the EMS website.) The document below is a representation of the actual card)

   ► determine the alternative the physician has chosen (1, 2, or 3 on the card below)

STATE OF CALIFORNIA

cma CALIFORNIA MEDICAL ASSOCIATION

NOTE TO PHYSICIANS ON INVOLVEMENT WITH EMTs AND PARAMEDICS

A life support team (EMT or Paramedic) operates under standard policies and procedures developed by the local EMS agency and approved by their Medical Director under Authority of Division 2.5 of the California Health and Safety Code. The drugs they carry and procedures they can do are restricted by law and local policy.

If you want to assist, this can only be done through one of the alternatives listed on the back of this card. These alternatives have been endorsed by CMA, State EMS Authority, CCLHO and BMQA.

Assistance rendered in the endorsed fashion, without compensation, is covered by the protection of the Good Samaritan Code@ (see Business and Professional Code, Sections 2144, 2395-2298 and Health and Safety Code, Section 1799.104).

(over)

ENDORSED ALTERNATIVES FOR PHYSICIAN INVOLVEMENT

After identifying yourself by name as a physician licensed in the Sate of California, and, if requested, showing proof of identity, you may choose one of the following:

1. Offer your assistance with another pair of eyes, hands or suggestions, but let the life support team remain under base hospital control; or,
2. Request to talk to the base station physician and directly offer your medical advice and assistance; or,
3. Take total responsibility for the care given by the life support team and physically accompany the patient until the patient arrives at a hospital and responsibility is assumed by the receiving physician. In addition, you must sign for all instructions given in accordance with local policy and procedures. (Whenever possible, remain in contact with the base station physician)

(REV. 1/12) 88 49638 Provided by the EMS Authority

► **ALTERNATIVE #1** - If the physician on scene chooses alternative #1, the physician should assist the paramedic team or offer suggestions but allow the paramedics to provide medical treatment according to County protocol

► **ALTERNATIVE #2 or ALTERNATIVE #3** - If the physician on scene chooses alternative #2 or #3 the paramedics should ask to see the physician's medical license, unless the physician is known to the paramedics. **Contact the Base Physician** and have the physician on scene speak directly with the Base Physician

3. **BASE HOSPITAL PHYSICIAN RESPONSIBILITY** - After speaking to the physician on scene, the Base Physician should evaluate the situation and decide which of the available alternatives is in the best interests of the patient. These alternatives include:

   3.1 retain medical control and request the physician on scene to assist the paramedics and/or offer suggestions only (alternative #1); or,

   3.2 retain medical control but consider suggestions offered by the physician on scene (alternative #2); or,

   3.3 delegate medical control to the physician on scene (alternative #3)

MEDICAL PERSONNEL ON THE SCENE

4. **PARAMEDIC RESPONSIBILITY**

   4.1 Alternative #1 or #2:

   ► Maintain medical control of the patient and provide medical treatment according to County Protocol

   4.2 Alternative #3:

   ► ALS equipment and supplies should be made available to the physician. Offer assistance as needed

   ► The physician must go with the patient in the ambulance to the receiving hospital

   ► Document ***all*** care rendered to the patient on the EHR and ensure that the physician signs for all instructions and medical care given

   ► If appropriate, maintain communication with the Base Hospital or recontact if any problems arise

5. **An EMS Unusual Occurrence Form shall be completed**:

   5.1 On any Physician or Medical Personnel on-scene calls if there was a problem associated with care rendered

   5.2 For physician on-scene call if Alternative #3 was chosen (paramedics only)

ON VIEWING AN ACCIDENT - NON-CONTRACT AMBULANCE

1. **INTRODUCTION:** Ambulance response to the scene of a motor vehicle accident shall only be dispatched through County Dispatch (ALCO-CMED 925-422-7595). If a non-contract ambulance company is called to respond to an accident, the dispatcher should immediately call County Dispatch to initiate the appropriate public safety and ambulance response.

2. **Ambulance First on Scene**

   2.1 If an ambulance unit witnesses an accident, the accident should be reported to their dispatch for initiation of appropriate public safety and/or emergency ALS ambulance personnel

   2.2 If there are no first responders on scene and the crew is not en route to a medical emergency or transporting a patient code 3, they should stop to ascertain if there are injuries. If there are injuries, they are to render appropriate care within their scope of practice

   2.3 If an emergency ALS ambulance has already been dispatched, the ambulance should not transport unless the delay might jeopardize the patient. The decision to transport should be made based upon the patient's condition and the estimated time of arrival (ETA) of the emergency ALS ambulance

   2.4 If an emergency ALS ambulance has not been dispatched but the patient's condition is such that immediate transport is not required, the crew should request County Dispatch to dispatch an emergency ALS ambulance

3. **Public Safety on Scene (police, CHP, fire) but no Ambulance Personnel**

   3.1 Stop to ascertain if assistance is required. The crew should notify the officer on-scene that they have not been dispatched to this call

   3.2 If an emergency ALS ambulance is not on the scene, medical authority rests with the most medically qualified responder. The decision to wait for an emergency ALS ambulance or to authorize transport by the ambulance is the responsibility of the most medically qualified responder, who should consider the condition of the patient, whether an ambulance has been requested through County Dispatch and the ETA of the emergency ALS ambulance

   3.3 If the emergency ALS ambulance arrives on scene, medical authority rests with the personnel of the emergency ALS ambulance. This individual(s) should determine if assistance from the on viewing ambulance is required

4. **Responsibility of an Ambulance Transporting from Scene**

   4.1 If the ambulance transports a patient(s) from an accident scene in accordance with this policy, and no other patients remain at the scene, County Dispatch should be immediately informed so that any additional responding units may be cancelled

   4.2 The transporting ambulance should notify the receiving hospital emergency department by radio, cellular phone, or through their dispatch of their imminent arrival (see **page 135**)

   4.3 A patient care report on the patient's condition and treatment should be left at the emergency department. A copy of the report and an unusual occurrence form explaining the circumstances of the transport shall be submitted to the county within ten (10) days

PARAMEDIC FIELD SUPERVISORS - UTILIZATION OF ALS SKILLS

1. **PURPOSE:** To allow Paramedic Field Supervisors to utilize ALS skills, within their scope of practice, while functioning in the role of Field Supervisor

2. Paramedic Field Supervisors must carry all of the ALS equipment authorized in Alameda County as per policy

3. Paramedic Field Supervisors must be able to perform all ALS procedures authorized in Alameda County as per policy

4. Each ALS provider agency planning to use Paramedic Field Supervisors in the role of care- giver must develop policies and procedures to assure that appropriate equipment and supplies are stocked and checked

5. In all instances, if a Paramedic Field Supervisor initiates any ALS procedure or administers any medications, prior to the arrival of an ALS unit, he/she must assist with documentation on the EHR and sign the EHR as a team member

6. The paramedic Field Supervisor may transfer the care of the patient to the arriving ALS unit after giving a report

7. The paramedic Field Supervisor will not be required to accompany the patient to the hospital unless requested to by the arriving ALS unit

RESPONDING UNITS - CANCELING / UPGRADING / DOWNGRADING

1. **GENERAL PRINCIPLES:** In general, it is better to respond with more personnel and equipment than is needed and cancel excess assigned resources, than fail to dispatch appropriate personnel and equipment. First Responder and transport units should be dispatched in accordance with MPDS-based guidelines as approved by County EMS when there is a report of people who are ill or injured

2. **CANCELING RESPONDING UNITS:** Medical personnel first on the scene of an incident:

   2.1 **shall cancel a responding ambulance unit** upon determination that, in the best judgment ofthe first responder, the incident does not involve an injury or illness. The ambulance should not be canceled if the patient is requesting care and transport, even if there is no apparent illness or injury

   2.2 **shall cancel the ambulance response** if the patient meets the "Determination of Death" criteria or the patient has a valid Alameda County or California Medical Association (CMA) "Do Not Attempt Resuscitation" form (see "Determination of Death in the Field" **page 92**)

   2.3 **Ambulance personnel arriving first on the scene** of a medical emergency shall cancel the First Responder/Law enforcement response only if assistance is not needed *and* a potential public safety risk does not exist at the emergency scene

3. **UPGRADING RESPONDING UNITS:** Medical personnel first on the scene of an incident should upgrade a responding unit to a "non-divertible" response status:

   3.1 If it is determined by first on-scene medical personnel that the patient's illness/injury meets any of the time-sensitive conditions requiring expedited transport criteria below:

      3.1.1 Patients found to be experiencing a STEMI by 12-lead ECG

      3.1.2 Patients shown to have findings of an active CVA within the current time treatment window

      3.1.3 Patients who meet "Trauma Patient Criteria" as defined on page 25 of this book

      3.1.4 Patients who have significant compromise to their airway, breathing, circulation and/or vital signs

   3.2 If a life-threatening scene safety issue(s) exists

4. **DOWNGRADING RESPONDING UNITS:** Medical personnel first on the scene of an incident:

   4.1 **shall reduce the responding resource(s) from Code 3 to Code 2** upon determination that, in the best judgment of the first medical personnel on-scene, the illness or injury is not immediately life threatening or that the difference in Code 3 and Code 2 response time would not likely have an impact on patient outcome.

RESTRAINTS

1. Patient restraints are to be utilized only when necessary and in those situations where the patient is exhibiting behavior deemed to present danger to him/herself or to the field personnel. When restraints are used:

    1.1 The minimum restraint necessary, to accomplish necessary patient care and safe transportation, should be utilized

    1.2 Circulation to the extremities (distal to the restraints) will be evaluated q 5 minutes

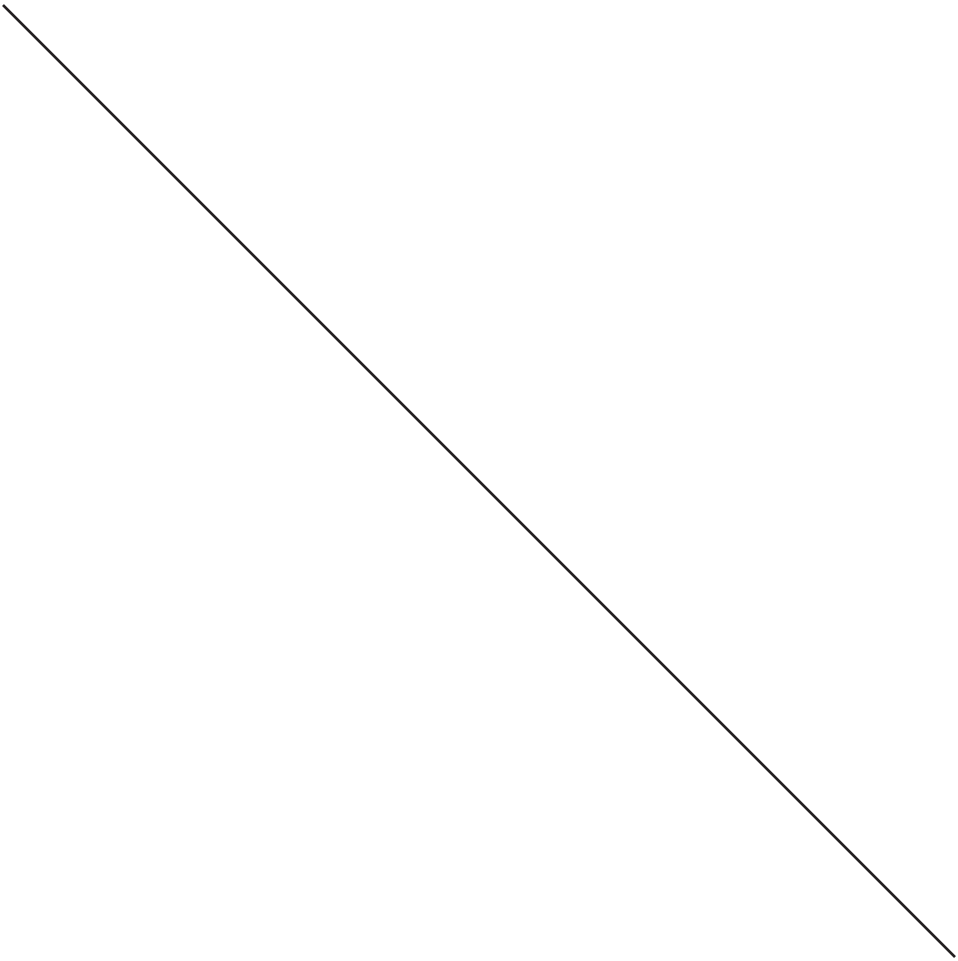
    1.3 Leather or soft restraints, designed specifically for patient restraint, are the only authorized method of restraining patients.

    1.4 The restraints must not be placed in such a way as to preclude evaluation of the patient's medical status (e.g. airway, breathing, circulation) necessary patient care activities, or in any way jeopardize the patient medically

2. If the patient is under arrest and handcuffs are applied by law enforcement officers:

    2.1 The patient will not be cuffed to the stretcher and a law enforcement officer shall accompany the patient in the ambulance, if the handcuffs are to remain applied

    2.2 A law enforcement officer may elect to follow the ambulance in a patrol car to the receiving facility if the patient has been restrained on the gurney using leather or soft restraints



PROCEDURE POLICIES TOC

ADVANCED AIRWAY MANAGEMENT

1. **INTRODUCTION:** The approved airway management procedure consists of endotracheal intubation (ETI) or insertion of a supraglottic airway (SGA) device.

   *****Nasotracheal intubation is NOT an approved skill in Alameda County*****

   1.1 Manage the patient's airway with proper airway positioning, simple airway adjuncts, suctioning, and BVM ventilation as necessary with all patients.

   1.2 For patients **≥ 40kg,** personnel are authorized to perform the skill of endotracheal intubation or placement of an SGA.

   1.3 For patients **< 40kg**, BVM ventilation is the preferred method of ventilatory management. If BVM ventilation is unsuccessful or impossible, a SGA device may be placed.

   1.4 **If advanced airway placement will interrupt chest compressions, providers may consider deferring insertion of the airway until the patient fails to responds to initial CPR and defibrillation or demonstrates ROSC (2015 AHA Guidelines)**

   1.5 Personnel must confirm tube placement (ETI or SGA) with capnography / capnometry, auscultation and physical assessment (auscultation, observation of chest rise, visualization of the tube passing through the cords, etc.). See Section #4.

2. **INDICATIONS:**

   2.1 Non-traumatic cardiac and/or respiratory arrest.

   2.2 Traumatic cardiac and/or respiratory arrest or severe ventilatory compromise where the airway cannot be adequately maintained by BLS techniques.

3. **APPROVED ADVANCED AIRWAY MANAGEMENT PROCEDURE:**

   3.1 **Endotracheal intubation**

      3.1.1 **Definition:** An intubation attempt is defined as the insertion of the laryngoscope blade into the patient's mouth.

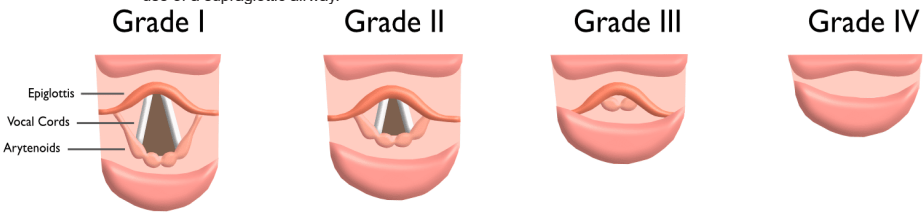
      3.1.2 All ETI attempts should be performed with two providers.

      3.1.3 All ETI attempts must utilize a gum elastic bougie device when direct laryngoscopy (DL) or non-channeled video laryngoscopy (VL) is utilized. Channeled VL does not require bougie utilization.

      3.1.4 The maximum ETT size that can be utilized for ETI is 7.0mm.

      3.1.5 Make no more than 2 total intubation attempts per patient. Each attempt should not last longer than 30 seconds. Ventilate with 100% oxygen for one minute prior to each attempt.

      3.1.6 If patient has a Cormack-Lehane* grade of 3 or 4 (epiglottis is not or is barely visible), consider primary use of a supraglottic airway.



3.2 **Supraglottic Airway Device (i-gel®)**

3.2.1 **Definition:** A supraglottic airway attempt is defined as the insertion of the supraglottic airway device into the patient's mouth.

3.2.2 For patients **≥ 40kg,** a supraglottic airway (i-gel®) device may be placed as a primary airway (if Cormack-Lehane grade is 3 or 4) or after unsuccessful attempt(s) at endotracheal intubation.

3.2.3 For patients **< 40kg**, BVM ventilation is the preferred method of ventilatory management. If BVM ventilation is unsuccessful or impossible, an SGA device may be placed

3.2.4 The i-gel® SGA device comes in seven sizes determined by the patient's weight:

Size	5	4	3	2.5	2.0	1.5	1.0
Weight (kg)	>90kg	50-90kg	30-60kg	25-35kg	10-25kg	5-12kg	2-5kg

3.2.5 The patient should be in the sniffing position. The chin should be gently pressed down/inferior before proceeding to insert the i-gel device.

3.2.6 Introduce the leading soft tip into the mouth of the patient in a direction toward the hard palate.

3.2.7 Glide the i-gel device downwards and backwards along the hard palate with a continuous, but gentle push until definitive resistance is felt.

3.2.8 Do not apply excessive force during insertion.

3.2.9 If unexpected resistance is met during insertion, apply jaw-thrust and slightly rotate the device.

4. **CONFIRM TUBE PLACEMENT:** To be used on an endotracheal tube or the i-gel® device in the order listed below

4.1 **Visualize** the ETT passing through the vocal cords and look for chest rise with ventilation.

4.2 **Auscultate** both lung fields for breath sounds. Listen over left upper quadrant of the abdomen for air in the stomach

4.3 **Waveform capnography/capnometry must be continuously monitored.**

4.4 **Document. All devices used to confirm ETT/SGA placement should be electronically uploaded into and documented on the patient's EHR.**

4.4.1 Describe waveform (e.g. box, shark fin, straight line, bumpy line, etc.)

4.4.2 Capnometry number in mmHg (e.g.15 mmHg) should be, at a minimum, documented at the initiation of monitoring, after every patient movement, and at transfer of patient care.

4.5 If there is any doubt as to proper placement of the endotracheal tube, visualize the pharynx and vocal cords with laryngoscope and use capnographic waveform to make a decision. If still in doubt, suction the patient, deflate the cuff, remove the endotracheal tube and replace with a supraglottic airway. (Be prepared - removal of an ET tube may induce vomiting). Ventilate between attempts with 100% oxygen

5. If the patient regains consciousness while intubated, do not extubate. Use restraints as necessary to prevent uncontrolled extubation. Consider Sedation (see Sedation **page 136**)

6. **If the patient has a suspected spinal injury:**
   - ► Open the airway using a jaw-thrust without head extension
   - ► If airway cannot be maintained with jaw thrust use a head-tilt/chin-lift maneuver
   - ► Manually stabilize the head & neck rather than using an immobilization device during CPR

CONSENT AND REFUSAL GUIDELINES

1. **PATIENT DEFINITION:**

1.1 A 'patient' is an individual meeting anyone one of the following criteria:

- ► Requests evaluation for potential illness or injury
- ► Medical assistance has been requested for the individual by another person
- ► Has obvious evidence of illness or injury
- ► Has experienced an acute event that could reasonably lead to illness or injury
- ► Is in a circumstance or situation that could reasonably lead to illness or injury
- ► A person who is deceased
- ► A person who demonstrates impaired psychiatric function or suicidal intent
- ► An assessment was performed (V/S, history, diagnostic, physical exam)

2. DOCUMENTATION OF NON-PATIENT / PATIENT CONTACTS

2.1 If a person does not meet the definition of a patient in Section 1, detailed patient information is not required to be entered into the EHR.

2.2 If a person meets the definition of a patient in Section 1, they shall be offered a treatment and/or transport after a complete assessment which shall include a full set of vital signs. Patients/Designated Decision Makers (DDM) with mental capacity have the right to refuse any or all treatment(s) and/or transport as long as EMS personnel have explained the care and the patient/DDM demonstrates capacity as defined below.

3. **PATIENTS WHO MAY LEGALLY GIVE CONSENT OR REFUSE MEDICAL TREATMENT ARE AS FOLLOWS:**

3.1 Is an adult (18 years old or older) with mental capacity

3.2 A minor who is:

3.2.1 Legally emancipated

3.2.2 Lawfully married

3.2.3 On Active Duty with the Armed Forces

3.2.4 >12 years old seeking prevention or treatment of pregnancy or sexual assault

3.2.5 >12 years old seeking treatment of rape, contagious diseases, alcohol, or drug abuse

3.3 A patient who has a Designated Decisions Maker (DDM)

3.3.1 A Designated Decision Maker (DDM) is defined as: An individual to whom the patient or a court has given legal authority to make medical decisions concerning the patient's healthcare (a parent or Durable Power of Attorney DPOA)

4. **ASSESS AND RELEASE (AAR) FROM EMS CARE DEFINITION:**

4.1 A patient who, after assessment by EMS personnel, does not desire treatment and/or transport to an emergency department

5. **ASSESS AND RELEASE (AAR) FROM EMS CARE CRITERIA:**

5.1 **EMS clinician and the patient or DDM agree that the illness/injury does not require immediate treatment/ transport via emergency/911 services**

5.2 In order to release care, a patient, parent, or guardian must have legal and mental decision-making capacity by meeting all of the following criteria:

5.2.1 Understands the nature of the medical condition, and the risks and consequences of not seeking treatment now

5.2.2 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/ transport

5.2.3 Exhibits no evidence of:

- ► Altered level of consciousness
- ► Alcohol or drug ingestion that impairs decision-making capacity

5.3 EMS personnel should advise the patient/DDM of alternative care and transport options, which may include directing them to other services:

5.3.1 Private transport to a clinic, physician's office, or an Emergency Department

5.3.2 Telephone consultation with a physician

6. **ASSESS AND RELEASE (AAR) FROM EMS CARE DOCUMENTATION ESSENTIALS:**

6.1 What the patient is refusing (i.e. medical care, transport)

6.2 Why the patient is refusing care and their plan for follow up care

6.3 The apparent capacity of the patient to refuse care

6.4 The presence or absence of impairment (i.e. drugs, alcohol, or significant head trauma)

6.5 Risk and consequence of refusing care as explained to the patient or legal representative

6.6 Statement that the patient understands the risks and consequences of refusing care

6.7 The patient understanding that they may re-access 911 if needed

6.8 Signature of patient or legal representative refusing care

6.9 Documentation that interpreter was used, when appropriate

6.10 Under "Reason for Refusal or Release" choose "Patient/Guardian states intent to transport by other means" or "Released following protocol guidelines" as disposition category in EHR

7. **AGAINST MEDICAL ADVICE (AMA) DEFINITION:**

7.1 A patient who after assessment by ALS personnel is recommended to accept treatment and/or transport, but refuses

8. **AGAINST MEDICAL ADVICE (AMA) CRITERIA:**

8.1 EMS clinician advises the patient or DDM to receive treatment and transport. The patient or DDM refuse medical care against the advice of the EMS clinician

8.2 In order to refuse care, a patient, parent, guardian, or DDM must have legal and mental decision-making capacity by meeting ALL of the following criteria:

8.2.1 Understands the nature of the medical condition, and the risks and consequences of refusing care

8.2.2 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/ transport

8.2.3 Exhibits no evidence of:

- ► Altered level of consciousness;
- ► Alcohol or drug ingestion that impairs decision-making capacity;
- ► Danger to self or others

9. **AGAINST MEDICAL ADVICE (AMA) DOCUMENTATION ESSENTIALS:**

9.1 What the patient is refusing (i.e. medical care, transport)

9.2 Why the patient is refusing care and their plan for follow up care

9.3 The apparent capacity of the patient to refuse care

9.4 The presence or absence of impairment (i.e. drugs or alcohol)

9.5 Risk and consequence of refusing care as explained to the patient or legal representative

9.6 Statement that the patient understands the risks and consequences of refusing care

9.7 The patient understanding that they may re-access 911 if needed

9.8 Signature of patient or legal representative refusing care

9.9 Documentation that interpreter was used, when appropriate

9.10 Under "Reason for Refusal or Release" choose AMA as disposition category in EHR

CONSENT AND REFUSAL GUIDELINES

10. **BASE CONTACT:** Can be made to help convince the patient to receive treatment and/or transport when the refusal would cause potential harm or death to the patient

11. **PEDIATRIC CONSIDERATIONS:** Parents or guardians who refuse treatment and/or transport for pediatric patients whom the clinician feels should receive treatment and/or transport deserve specials consideration

    11.1 Base contact should be made, as well as considering law enforcement involvement to encourage treatment and/or transport.

    11.2 Consider potential abuse or neglect of the child in the parent or guardian's refusal.

12. **SPECIAL CONSIDERATIONS:**

    12.1 Consider early involvement of law enforcement if there is any threat to self, others or grave disability.

    12.2 If the patient cannot legally refuse care or is mentally incapable of refusing care, document on the PCR that the patient required immediate treatment and/or transport, and lacked the mental capacity to understand the risks/consequences of the refusal (implied consent)

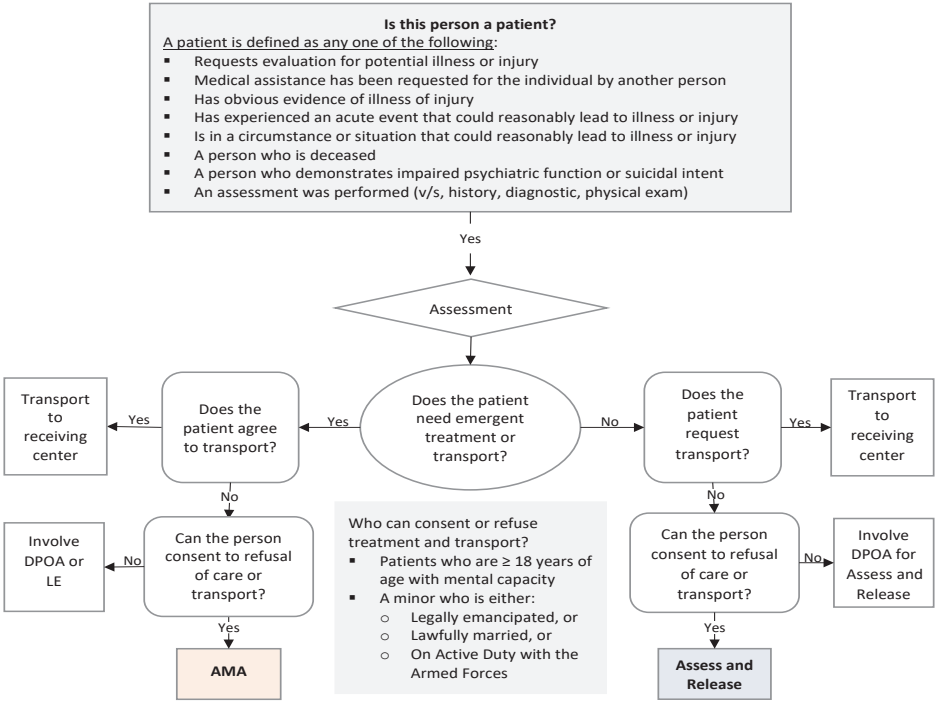
    12.3 At no time are field personnel to put themselves in danger by attempting to transport or treat a patient who refuses. At all times, good judgment should be used, appropriate assistance obtained, and supporting documentation completed

    12.4 An individual under arrest or incarcerated, or on a 5150 is legally capable of consenting or refusing medical care but cannot refuse transport.

    12.5 If you cannot complete the refusal of service log due to scene safety issues or upon the insistence of another agency, complete an EMS Event form and send it to the EMS Agency

CONSENT AND REFUSAL GUIDELINES

13. **CONSENT AND REFUSAL GUIDELINES WORKFLOW:**



Against Medical Advice Definition (AMA):
A patient who, after assessment and recommendation from Advanced Life Support EMS clinicians for treatment and/or transport, the patient who has decision-making capacity or the legal representative, declines treatment and/or transport.

Against Medical Advice Criteria:
EMS clinician advises the patient or designated decision maker (DDM) to receive treatment and transport. The patient or DDM refuse medical care against the advice of the EMS clinician.

Assess and Release (AAR) From EMS Care Definition: A patient or who, after assessment by EMS clinicians, does not desire treatment and/or transport to an emergency department and does not meet protocol criteria for an emergency medical condition for treatment and/or transport to an emergency department.

Assess and Release from EMS Care Criteria:
EMS clinician and the patient or designated decision maker (DDM) agree that the illness/injury does not require immediate treatment /transport via emergency /911 services and the patient and/or DDM does not want to be transported.

Base Contact Considerations:

Pediatric Consideration
- See Consent and Refusal Guidelines Section 11.0

Special Consideration
- See Consent and Refusal Guidelines Section 12.1 -12.5

CONTINUOUS POSITIVE AIRWAY PRESSURE - CPAP

1. **PURPOSE:** To improve ventilation and oxygenation, and avoid intubation. *CPAP is required for all ALS providers.*
2. **INDICATIONS:** Patients age 8 or older in severe respiratory distress and:
   - ► **CHF with pulmonary edema**
   - ► **Near-drowning**
   - ► **Other causes of severe respiratory distress**
3. **CONTRAINDICATIONS** - Bag-valve-mask ventilation or endotracheal intubation should be considered for any patient who exhibits one or more of the following contraindications

   3.1 **Absolute Contraindications** (DO NOT USE):
   - ► Age < 8
   - ► Respiratory or cardiac arrest
   - ► Agonal respirations
   - ► Severely depressed level of consciousness
   - ► Systolic blood pressure < 90
   - ► Signs and symptoms of pneumothorax
   - ► Inability to maintain airway patency
   - ► Major trauma, especially head injury with increased ICP or significant chest trauma
   - ► Facial anomalies or trauma (e.g., burns, fractures)
   - ► Vomiting

   3.2 **Relative Contraindications** (USE CAUTIOUSLY):
   - ► History of Pulmonary Fibrosis
   - ► Decreased LOC
   - ► Claustrophobia or unable to tolerate mask (after first 1-2 minutes trial)
4. **COMPLICATIONS:**
   - ► Hypotension
   - ► Pneumothorax
   - ► Corneal Drying
5. **GOALS OF CPAP:**
   - ► Elimination of dyspnea
   - ► Decreased respiratory rate
   - ► Decreased heart rate
   - ► Increased $Sp0_2$
   - ► Stabilized blood pressure

Bag-valve-mask ventilation or endotracheal intubation should be considered if the patient fails to show improvement based on the above goals.

For all CPAP patients:

6. **FAILURE TO IMPROVE:** Should the patient fail to show improvement with CPAP (as evidenced by the following) remove the CPAP device and assist ventilations with BVM, as needed
   - 6.1 Sustained or increased heart rate,
   - 6.2 Sustained or increased respiratory rate,
   - 6.3 Sustained or increased blood pressure,
   - 6.4 Sustained or decreasing pulse oximetry readings, and/or
   - 6.5 Decrease in level of consciousness
7. **DOCUMENTATION:**
   - 7.1 The use of CPAP must be documented on the EHR
   - 7.2 Vital signs (BP, HR, RR, $Sp0_2$) must be documented every 5 minutes.
   - 7.3 Narrative documentation should include a description of the patient's response to CPAP. Refer to "Goals of CPAP" for descriptive terms that may be useful
   - 7.4 Additional narrative documentation should include if the patient does not respond to CPAP and endotracheal intubation is required

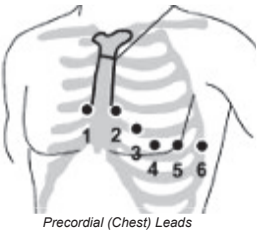
ECG – 12 Lead

1. **INDICATIONS:** Patients should receive a 12-lead electrocardiogram (ECG) when they present with one or more of the following acute coronary syndrome (ACS) signs or symptoms:

   ►Anxiety
   ►Chest discomfort
   ►Diaphoresis
   ►Discomfort or tightness radiating to the jaw, shoulder or arms
   ►Dizziness
   ►Dyspnea
   ►Epigastric discomfort
   ►Fatigue
   ►General weakness
   ►Nausea or vomiting
   ►Palpitations
   ►Return of spontaneous circulation (ROSC) following a cardiac arrest
   ►Syncope, near syncope

2. **PROCEDURE:** Place limb lead electrodes on the wrists and ankles, rather than the torso, whenever possible. When applying the limb leads avoid positioning the electrodes over bony areas. Attach the six precordial (chest) leads directly to the chest wall as described:

   ►V1 4th intercostal space to the right of the sternum
   ►V2 4th intercostal space to the left of the sternum
   ►V3 Directly between leads V2 & V4
   ►V4 5th intercostal space at the midclavicular line
   ►V5 Level with V4 at the left anterior axillary line
   ►V6 Level with V5 at the left midaxillary line

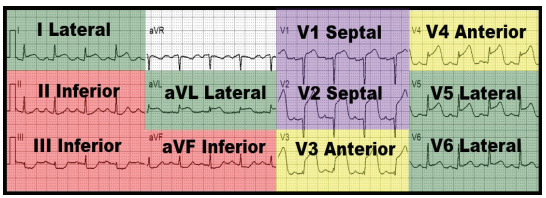


Precordial (Chest) Leads *Limb Leads*

3. **INTERPRETATION:** ST segment elevation in two or more contiguous leads meets the criteria for a ST elevation myocardial infarction (STEMI). This may be identified by the paramedic or the ECG monitor. When the monitor detects an acute STEMI, the 12-lead ECG interpretation language will be displayed as follows:

   ►Stryker/Lifepak Monitor: ***** MEETS ST ELEVATION MI CRITERIA *****
   ►Zoll Monitor: ***** STEMI *****

4. **ECG TRANSMISSION:** The first positive STEMI 12-lead should be immediately transmitted to the STEMI Receiving Center, followed by an early pre-arrival notification. Attach all 12-lead ECG tracings to the electronic health record (EHR).



Contiguous leads in a 12-lead ECG represent the same heart region, as indicated above by the assigned color association.

5. **SPECIAL CONSIDERATIONS:**

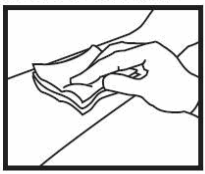
   ►STEMIs can evolve during prehospital care. The 12-lead ECG should not be detached after a 12-lead is negative for STEMI. The monitor will perform serial ECGs if it detects cardiac changes, following the initial 12-lead recorded by that device.
   ►For patients with breast tissue, do not place precordial (chest) leads directly over the breast, as the tissue may reduce electrical signal detection, potentially leading to ECG misinterpretation. Ensure electrodes are positioned directly on the chest wall for accurate readings.
   ►**Do not perform a Right-Sided 12-lead** after a STEMI has been identified, as the patient's treatment plan will remain unchanged regardless of the findings.

HEMORRHAGE CONTROL

1. **INTRODUCTION:** Controlling severe bleeding from an extremity injury can be challenging (especially in the lower limbs). Use of a County-approved tourniquet can assist in the care of patients with uncontrollable bleeding in the extremities safely and effectively when the appropriate precautions are taken. Approved for both ALS and BLS.
2. **INDICATIONS:**
   - ► Amputation
   - ► Failure to stop bleeding with pressure dressing(s)
   - ► Injury does not allow control of bleeding with pressure dressing(s)
   - ► Impaled foreign body with ongoing extremity bleeding
   - ► Under difficult or dangerous situation for responding caregivers
   - ► Mass casualty event
   - ► Significant extremity hemorrhage in the face of any or all of:
     - Need for airway management
     - Need for breathing support
     - Circulatory shock
     - Need for other emergent interventions or assessment
     - Significant bleeding from multiple locations
3. **TOURNIQUET:** Place County-approved tourniquet according to manufacturer's instructions
4. **WOUND PACKING:** Significant uncontrolled bleeding from extremity and junctional (shoulder or groin) wounds may be packed with standard or hemostatic gauze. Wounds to the chest, abdomen, or pelvis should not be packed.
5. **HEMOSTATIC AGENT:** After tourniquet placement, and to aid in severe arterial bleeding; or to control severe bleeding where tourniquets are not indicated (trunk, head, neck, etc), use of a hemostatic gauze is indicated. **Use of hemostatic gauze is optional.**
6. **PROCEDURE:** Any standard gauze or County-approved hemostatic gauze may be utilized

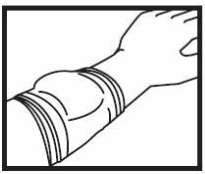
DIRECTIONS FOR USE

1. Open package and remove **Combat Gauze.** Keep the empty package.



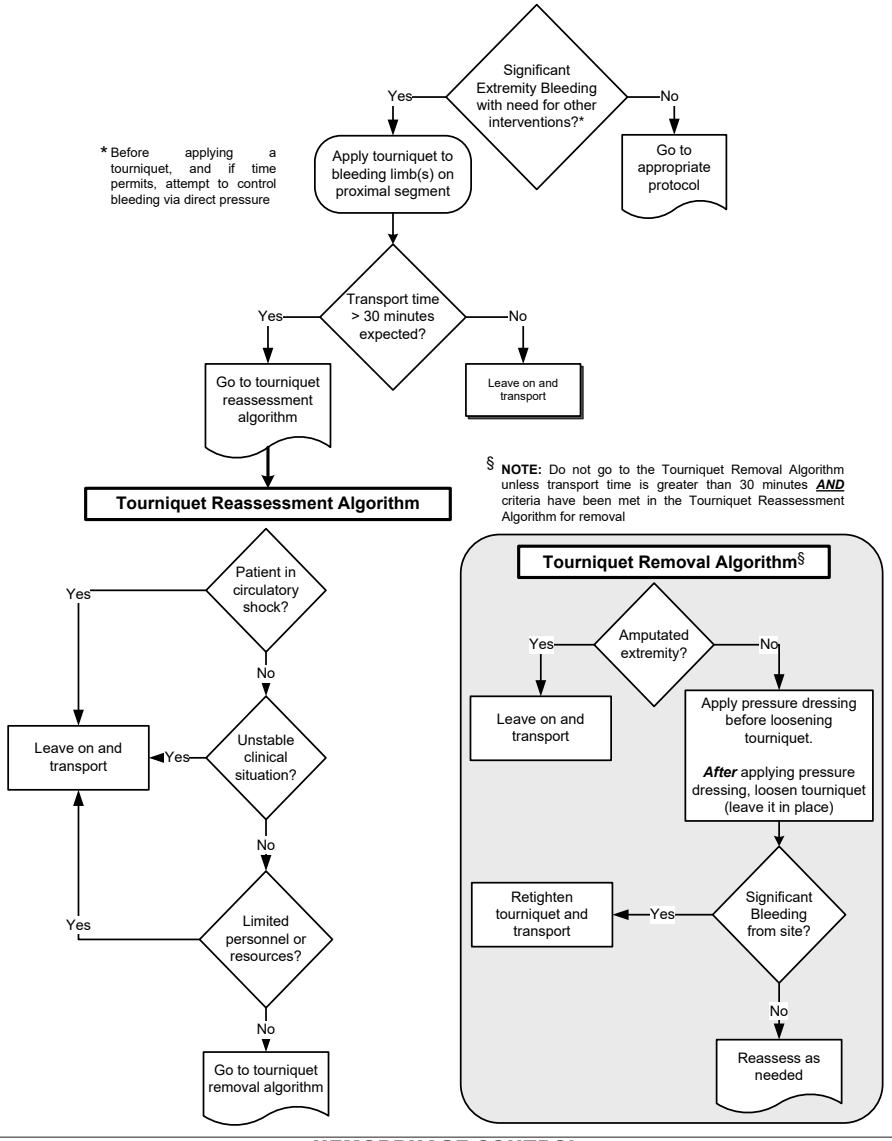
2. Pack **Combat Gauze** into wound and use it to apply pressure directly over bleeding source. (More than one **Combat Gauze** may be required).

3. Continue to apply pressure for 3 minutes or until bleeding stops.



4. Wrap and tie bandage to maintain pressure. Seek medical care immediately. Show PRODUCT REMOVAL directions on package to medical personnel.

HEMORRHAGE CONTROL



INTRANASAL (IN) MEDICATION ADMINISTRATION

1. **INDICATIONS:**
   - ► **Fentanyl for pain management**
   - ► **Naloxone for suspected opiate overdose**
     on patients who are apneic or near-apneic with a pulse
     -or-
   - ► **Midazolam for seizures or sedation**

2. **PROCEDURE:**

   2.1 Assess ABC's (Airway, Breathing, Circulation)

   2.2 For pulseless patient, go to appropriate cardiac arrest protocol

   2.3 Establish airway and begin bag-valve-mask ventilation with 100% O_2 if appropriate

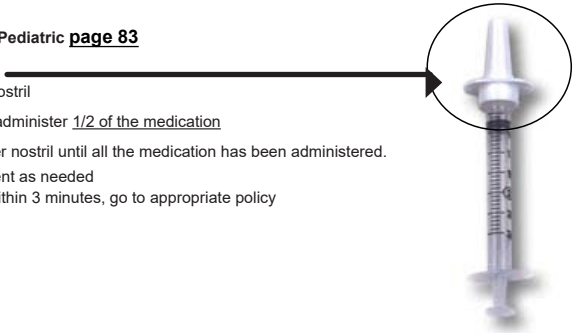
   2.4 Load syringe with the appropriate dose.. See specific treatment algorithms:
   - ► **Pain Management – Adult** **page 47** | **Pediatric** **page 76**
   - ► **Respiratory Depression or Apnea – Adult** **page 50** | **Pediatric** **page 79**
   - ► **Sedation –** **page 136**
   - ► **Seizure – Adult** **page 55** | **Pediatric** **page 83**

   2.5 Attach MAD nasal atomizer

   2.6 Place atomizer 1.5 cm into the nostril

   2.7 Briskly compress the syringe to administer 1/2 of the medication

   2.8 Remove and repeat into the other nostril until all the medication has been administered.
   - ► Continue ventilating the patient as needed
   - ► If no appropriate response within 3 minutes, go to appropriate policy



INTRAOSSEOUS ACCESS PROCEDURE

1. **PURPOSE:** To obtain rapid circulatory access to provide necessary intravenous fluids or medications
2. **INDICATIONS:**
   - ► Consider for use in any unconscious or seriously ill or injured patient in whom IV access cannot be established in a very timely fashion
   - ► Any medications or fluids that can be given in a peripheral vein can be given intraosseous
3. **CONTRAINDICATIONS:**
   - ► Fracture in target bone
   - ► Previous, significant orthopedic procedure at the site, prosthetic limb or joint
   - ► IO catheter use in past 48 hours of the target bone
   - ► Infection at the area of insertion
   - ► Excessive tissue (severe obesity) and/or absence of adequate anatomical landmarks
4. **APPROVED IO ACCESS SITES (see addtional references below):**

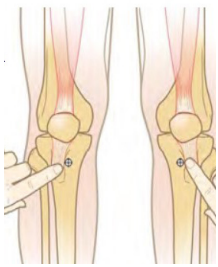
   4.1 Proximal Tibial Tuberosity

   4.2 Proximal Humerus

   4.3 Distal Femur (≤10 y/o)
5. **NEEDLE SIZING REFERENCE**
   - ► 15 mm Needle Set (pink hub, 3kg-39kg)
   - ► 25 mm Needle Set (blue hub, >3kg)
   - ► 45 mm Needle Set (yellow hub, >40kg with excessive tissue)
6. **IO ACCESS SITE PAIN MANAGEMENT**

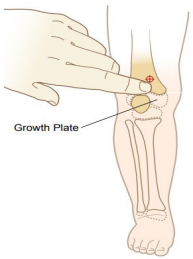
   6.1 If the patient is responsive to pain, consider Pain Management Adult **page 47**, Pediatric **page 76**. Also, consider use of 2% Lidocaine for anesthetic effect. Prime EZ-Connect extension set with lidocaine *Note that the priming volume of the EZ-Connect is approximately 1.0mL*
   - ► ADULT - 40mg (2 mL) 2% Lidocaine *slowly over 120 seconds*. Let Lidocaine dwell for 60 seconds. Flush with 5 to 10ml NS. Slowly administer an additional 20mg of lidocaine IO over 60 seconds. Repeat PRN
   - ► PEDIATRIC - 0.5mg/kg (not to exceed 40mg) 2% Lidocaine *slowly over 120 seconds*. Let Lidocaine dwell for 60 seconds. Flush with 2 to 5ml NS. Slowly administer subsequent lidocaine (half the initial dose) IO over 60 seconds. Repeat PRN

Proximal Tibia



Proximal Humerus

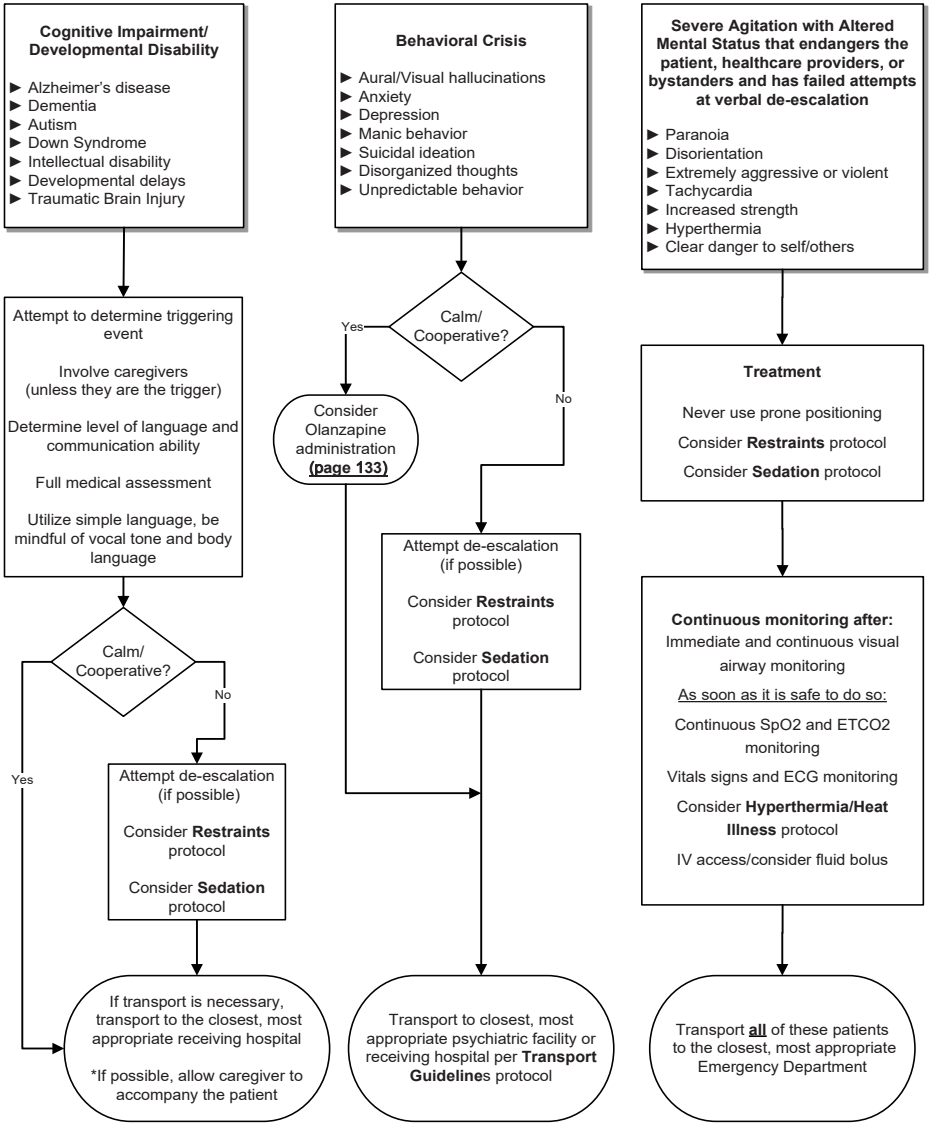
Distal Femur (≤10 y/o)



PLEURAL DECOMPRESSION

1. **INDICATIONS:** When clinical findings reveal a tension pneumothorax (severe respiratory distress, diminished breath sounds on the affected side, tracheal deviation) with rapidly deteriorating vital signs
2. **EQUIPMENT:**
   - 2.1 County-approved decompression needle/kit
3. **PROCEDURE:**
   - 3.1 Preferred Site:
     - ► 2nd or 3rd intercostal space, mid-clavicular line
   - 3.2 Prep site with chlorhexidine
   - 3.3 Firmly but carefully insert the needle at a 90 degree angle just over the superior aspect (superior border) of the rib, through the skin and pleura until air escapes or a distinct "give" is felt. The undersurface of the rib should be avoided to limit injury to the neurovascular bundle. Air should be freely aspirated (if not, you are not in the pleural space)
   - 3.4 Remove the needle
   - 3.5 Attach a one-way valve (if necessary).
   - 3.6 Recheck breath sounds and continuously monitor cardio-respiratory status.
4. **COMPLICATIONS:**
   - 4.1 Lung laceration
   - 4.2 Pneumothorax
   - 4.3 Hemorrhage secondary to damage to the intercostal artery or vein

PSYCHIATRIC AND BEHAVIORAL EMERGENCIES



PSYCHIATRIC AND BEHAVIORAL EMERGENCIES - OLANZAPINE

1. INTRODUCTION: Olanzapine (Zyprexa) 10 mg sublingual is an atypical antipsychotic with minimal side effects. The major side effect would be minimal sedation that can be worsened by alcohol or other sedatives. Orally disintegrating Olanzapine sublingual allows for rapid absorption, with effects occurring within 10-15 minutes of administration.

2. INDICATIONS:

2.1 Olanzapine is indicated for the cooperative, anxious adult patient with a primarily behavioral health presentation and a history of psychiatric disorder. These patients will commonly be hearing voices or having paranoid thoughts after not taking their usual psychiatric medications.

2.2 In accordance with Restraint Policy (**page 115**), restraints may be utilized after patient self-administers Olanzapine.

3. CONTRAINDICATIONS:

➔Age less than 18 or over 65

➔Clinical intoxication with other substances

➔Pregnant patients

4. POSSIBLE ADVERSE EFFECTS:

- ►Dystonic Reaction
- ►Anticholinergic Effects
- ►CNS Depression

5. ADMINISTRATION: Olanzapine (Zyprexa) 10mg, should be handed to the patient for sublingual self-administration. No water is needed for the orally disintegrating tablet.

PSYCHIATRIC EVALUATION - 5150 TRANSPORTS

1. **GENERAL INFORMATION:** Any patient who has been, or will be (e.g. - self-committal) placed on a 5150 hold for psychiatric evaluation shall be assessed and transported according to this policy. For minors (age below 18) the hold is called a 5585 hold and is similar to 5150 hold

2. **MEDICAL CLEARANCE CRITERIA:**

2.1 **Age 65 and Above:** Patients with or without acute medical issues, should be transported to the closest most appropriate receiving hospital for evaluation

2.2 **Age 12 to 64:**

2.2.1 Transport patients to a closest most appropriate receiving hospital* if there is a suspected acute medical or traumatic condition requiring emergent or urgent attention in an Emergency Department. Patients with these conditions include:

- ➔ Patients "in extremis" (those with a potential life-threatening illness or injury)
- ➔ Patients who are unconscious, unresponsive, have chest or abdominal pain, significant bleeding, or suspected shock
- ➔ Patients who shows signs of potential significant toxicity from illicit drugs or alcohol, which may include the following findings:
  - ► depressed mental status
  - ► inability to ambulate
  - ► diaphoresis, agitation
- ➔ Patients with combative behavior who require field sedation with Midazolam or whose combativeness prevents assessment (vital signs or examination)
- ➔ Patients with abnormal vital signs or findings:
  - ► Systolic blood pressure over 190 mmHg or diastolic blood pressure over 110 mm/Hg
  - ► Pulse rate sustained over 120
  - ► Blood glucose under 60 mg/dL or over 250 mg/dL
- ➔ Patients with a suspected overdose of medication

2.2.2 Adult patients on 5150 who do not meet medical clearance criteria (see 2.1 and 2.2) should be transported to John George Pavilion, San Leandro. These include:

- ➔ Patients with history of use of drugs or alcohol who do not show signs of significant toxicity
- ➔ Patients with abnormalities in vital signs, but without other significant physical findings or history suggesting an acute medical problem (systolic BP up to 190, diastolic BP up to 110 and pulse up to 120)
- ➔ Patients with minor abrasions or contusions (not needing laceration repair or other complex care or evaluation)
- ➔ Patients who otherwise appear healthy but have communication barriers due to language or developmental disability, or are unwilling to answer questions

2.3 **Adolescents Age 12 to 17**

2.3.1 Criteria for transport to the closest most appropriate receiving hospital for medical clearance listed above (2.2.1) for adults also apply to adolescent patients on 5585 (5150) holds

2.3.2 Additionally, adolescent patients with the following findings should also be transported to receiving hospitals:

- ➔ Patients who have been outside of adult supervision/control for more than 24 hours
- ➔ Patients with recent vomiting over a prolonged period or who report no food or fluid intake for 16 hours or more
- ➔ Patients with known severe chronic medical conditions

2.3.3 Adolescent patients who do not meet medical clearance criteria (see 2.2) should be transported to ALCO Youth CSU, San Leandro. Notify ALCO Youth CSU en route (510) 483-3030

2.4 **Children Age 11 and Under**

- ➔ All children age 11 and under on a 5585 (5150) hold should be transported to Children's Hospital Oakland unless there is a need to divert to another hospital because of medical instability

NOTE: Additional considerations for most appropriate facility are listed in the Transport Guidelines and Abuse/Assault Policies

REPORTING FORMAT

1. **INTRODUCTION:** Patient reports to a Base Hospital, Trauma Center or Receiving Hospital should be brief and to the point. Only pertinent information should be presented initially, however the Base Physician may need to request additional information in order to make sound treatment or triage decisions. Occasionally pause briefly to confirm reception and allow for questions or orders

2. **MEDICAL PATIENTS:**

   2.1 **Receiving Hospital Report**
   - ► ETA
   - ► General patient information - For emergent patients, include medical record number (if available without compromising patient safety and care)
   - ► Physical assessment
     - ✓Vital signs / Glasgow Coma Scale
     - ✓Pertinent positives and pertinent negatives, as needed
     - ✓For STEMI patients see "ECG 12-Lead" policy (**page 126**) for reporting information
   - ► Interventions made and patient response, if applicable
   - ► Problems encountered, if applicable (e.g. unable to intubate)

   2.2 **Base Contact**
   - ► General patient information
   - ► Chief complaint and general assessment
   - ► Patient destination and ETA
   - ► Physical assessment
     - ✓Vital signs / Glasgow Coma Scale
     - ✓Pertinent positives and pertinent negatives to support the general assessment.
   - ► Treatment rendered prior to contact and patient response, if applicable
   - ► Specific requests for medications/procedures

3. **TRAUMA PATIENTS:**

   3.1 **Receiving Hospital Report**
   - ► ETA
   - ► General patient information
   - ► Triage criteria met, including mechanism of injury
   - ► Physical assessment
     - ✓Vital signs/Glasgow Coma Scale
     - ✓Pertinent positives and pertinent negatives, as needed
   - ► Interventions made and patient response, if applicable
   - ► Problems encountered, if applicable (e.g. unable to intubate)

   3.2 **Trauma Destination (60 seconds)**
   - ► ETA to the closest appropriate ED vs. TC
   - ► General patient information
   - ► Triage criteria met
   - ► Mechanism of injury
   - ► Physical assessment
     - ✓Vital signs, if available / Glasgow Coma Scale
     - ✓Pertinent positives and pertinent negatives

SEDATION

1. **GENERAL INDICATIONS:**

   1.1 To reduce combative behavior that endangers patient or caregivers

   1.2 As an adjunct to pain relief for ALS procedures such as cardioversion and/or cardiac pacing

   1.3 **Use CAUTION with:**
   - ► **Concomitant use of an opiate and midazolam can cause significant respiratory depression, hypotension and decreased level of consciousness. Administer concomitantly only when absolutely indicated. Administer lower doses of one or both agents**
   - ► **Elderly patients are especially sensitive to the effects of midazolam. They should receive a lower dose and especially close monitoring**
   - ► **A very small proportion of patients may have a paradoxical effect (i.e. - increased agitation)**

2. **CONTRAINDICATIONS:**

   2.1 **Absolute:**
   - ► Sensitivity to Midazolam
   - ► Systolic BP < 90 mmHg (adult) - ***except for patients who need TCP or cardioversion***

   2.2 **Relative:**
   - ► Nausea/vomiting
   - ► Depressed mentation
   - ► Suspected drug/alcohol intoxication
   - ► Multiple systems trauma
   - ► Head injury
   - ► Concomitant narcotic administration - (this is a RELATIVE contraindication and is not intended to prevent the use of necessary narcotic analgesia, when indicated)

   (These MAY be the most likely cause for the condition that requires proposed sedation. The best judgment of the paramedic is necessary to evaluate the need for sedation)

3. **PROCEDURE:**
   3.1 Give supplemental oxygen (titrate to 94-99% SpO_2)
   3.2 Institute continuous cardiac monitoring
   3.3 Continuously monitor the patient using the Airway Checklist, including $ETCO_2$
   3.4 Establish IV access if possible
   3.5 Be prepared to provide airway/ventilation management
   3.6 Ensure that receiving hospital personnel are aware that patient has been sedated

INDICATIONS:	MEDICATION – DOSE/ROUTE:
SEDATION INDICATIONS ✓To reduce combative behavior that endangers patient or caregivers ✓Anticipated: • Cardioversion in the conscious patient • Cardiac pacing in the conscious patient	**MIDAZOLAM:** **Adult:** ✓**IV/IO (slowly):** 1-2 mg increments- titrated to desired degree of sedation. May repeat, q 5 min, to a total max dose of 10 mg ✓**IM/IN:** 2-5 mg increments- titrated to desired degree of sedation. May repeat q 5 min, to a total max dose of 10 mg **Pediatric** (> 5kg or <40kg) ✓**IN / IM:** See LBRT for dosage - May repeat LBRT dosage x 1 - 15 minutes after the initial dose if needed

SPINAL INJURY ASSESSMENT

- ► Alameda County EMS is supporting efforts to decrease unnecessary immobilizations in the field and reduce the risks and complications associated with this procedure
- ► If the immobilization process is initiated prior to assessment, *STOP* and perform spine injury assessment to determine best course of action
- ► Studies show that immobilizing trauma victims may cause more harm than good to the patient. Penetrating trauma victims benefit most from rapid assessment and transport to a trauma center without spinal motion restriction (SMR)

1. **INTRODUCTION:**

   1.1 Omit SMR if all assessment criteria are safely assessed *and* normal

   1.2 Consider SMR for a patient who is suspected of having a traumatic unstable spinal column injury. Have high index of suspicion for pediatrics and patients with degenerative skeletal/connective tissue disorders (i.e. osteoporosis, elderly, previous spinal fractures, etc)

   1.3 Victims of penetrating trauma (stabbings, gunshot wounds) to the head, neck, and/or torso SHOULD NOT receive SMR unless there is one or more of the following:

   - ► Obvious neurologic deficit to the extremities
   - ► Significant secondary blunt mechanism of injury (e.g.- fell down stairs after getting shot)
   - ► Priapism
   - ► Neurogenic shock
   - ► Anatomic deformity to the spine secondary to injury

2. **Pediatric Patients and Car Seats:**

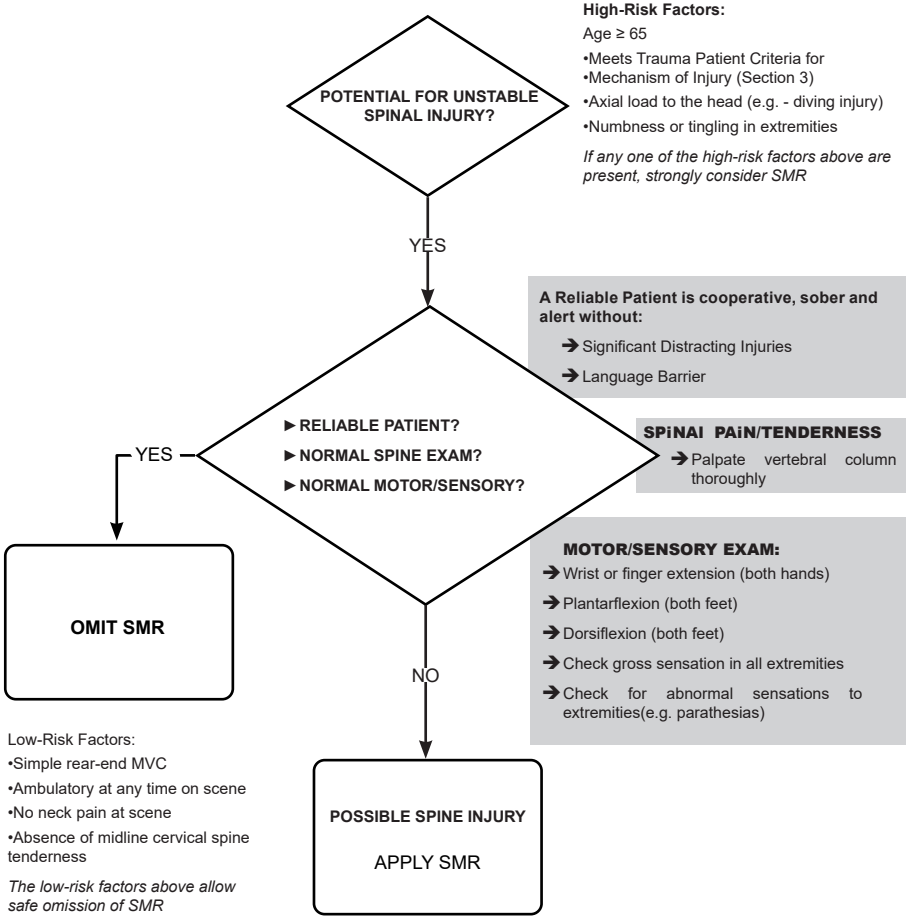
   2.1 **Infants restrained in a rear-facing car seat** may be immobilized and extricated in the car seat. The child may remain in the car seat if the immobilization is secure and his/her condition allows (no signs of respiratory distress or shock)

   2.2 **Children restrained in a car seat** (with a high back) may be immobilized and extricated in the car seat; however, once removed from the vehicle, the child should be placed in SMR

   2.3 **Children restrained in a booster seat** (without a back) need to be extricated and immobilized following standard SMR procedures

3. **Helmet removal:** Safe and proper removal of the helmet should be done by two people following steps outlined in an approved trauma curriculum

SPINAL INJURY ASSESSMENT



SPINAL MOTION RESTRICTION (SMR)

1. **INTRODUCTION**: The term spinal motion restriction (SMR) better describes the procedure used to care for patients with possible unstable spinal injuries. SMR includes:
   - ►Reduction of gross movement by patient
   - ►Prevention of duplicating the damaging mechanism to spine
   - ►Regular reassessment of motor/sensory function
2. **PURPOSE:** To decrease the risk of negative effects caused by traditional spinal immobilization while still providing appropriate care to patients with possible spinal injury by implementing alternative methods to achieve SMR
3. **INDICATIONS:** Any patient identified by Alameda County's Spinal Injury Assessment to warrant spinal motion restriction. The spinal injury assessment should be performed prior to application of SMR.
4. **PROCEDURE:** If patient experiences negative effects of SMR methods used, alternative measures should be implemented.
   - 4.1 Methods/tools to achieve SMR that are allowable: (less invasive to more invasive) lateral, semi-fowler's or fowler's position with cervical collar only, soft collars, pillows, vacuum splint or mattress, children's car seats, KED, backboards with adequate padding, head immobilizers and straps
   - 4.2 Provide manual stabilization restricting gross motion. Alert and cooperative patients may be allowed to self-limit motion if appropriate with or without cervical collar
   - 4.3 Apply cervical collar
   - 4.4 If needed, extricate patient limiting flexion, extension, rotation and distraction of spine
   - 4.5 Considerations for patient movement when decision to SMR has been made:
     - ►Keeping with the goals of restricting gross movement of spine and preventing increased pain and discomfort, self-extrication by patient is allowable
     - ►Pull sheets, other flexible devices, scoops and scoop-like devices can be employed if necessary. Hard backboards should only have limited utilization
   - 4.6 Apply adequate padding or vacuum mattress to prevent tissue ischemia and increase comfort
   - 4.7 Place patient in position best suited to protect airway
   - 4.8 Regularly reassess motor/sensory function (include finger abduction, wrist/finger extension, plantar/dorsal flexion and sharp/dull exam if possible)
   - 4.9 Consider the use of SpO_2 and $EtCO_2$ to monitor respiratory function
5. **SPECIAL CONSIDERATIONS**
   - 5.1 **Patients with acute or chronic difficulty breathing:** SMR has been found to limit respiratory function an average of 17% with the greatest effect experienced by geriatric and pediatric subjects restricted to a hard backboard.
     - ►Use SMR with caution with patients presenting with dyspnea and position appropriately
   - 5.2 **Pediatric patients:**
     - 5.2.1 Consider use of padded pediatric motion restricting board
     - 5.2.2 Avoid methods that provoke increased spinal movement
     - 5.2.3 If choosing to apply SMR to patient in car seat, ensure that proper assessment of patient posterior is performed
   - 5.3 **Combative patients:** Avoid methods that provoke increased spinal movement and/or combativeness

STOMA AND TRACHEOSTOMY

1. **INTRODUCTION:**

1.1 Temporary or permanent placement of a tracheostomy tube is often necessary to maintain an open airway. Patients with tracheostomy tubes or stomas should not be intubated orally. Suctioning of surgical airways is often required to attempt to clear and maintain an open airway. Administration of inhaled medications will need to be given via the stomas or tracheostomy tubes

1.2 **Tracheostomy tube replacement:** A dislodged tracheostomy tube should not be replaced unless the paramedic has the skill and training to do so. Training should be consistent with the material contained in "Pediatric Education for Prehospital Personnel – 2000" pages 300-302. (See #4 below for stoma intubation technique.)

2. **SUCTIONING:**

2.1 **Equipment:**

2.1.1 Appropriate sized suction catheter (Pediatrics use 8-10F)

2.1.2 Suction unit with adjustable suction capacity

2.1.3 Bag-valve-mask with oxygen supply

2.1.4 5 mL syringe filled with sterile saline

2.2 **Contraindication:** Use of demand valve

2.3 **Procedure:**

2.3.1 Adjust suction to 120 - 150 mmHg for adults; decrease suction to 80 - 100 mmHg for pediatrics

2.3.2 Apply sterile gloves

2.3.3 Flush suction catheter with saline to lubricate tip and establish patency of suction catheter

2.3.4 Remove the T tube if a tracheostomy patient is on humidified oxygen

2.3.5 Ventilate the patient with 100% oxygen several times

2.3.6 Insert the suction catheter into the stoma or tracheostomy opening with the suction off (the thumb hole open). The short length of the tracheostomy tube facilitates suctioning. The catheter may be directed through the right or left bronchus by having the patient turn his/her head to the opposite side

2.3.7 Apply suction by occluding the thumb hole while slowly withdrawing the catheter in a twisting motion. Suction of a tracheostomy tube should take no longer than 10 seconds for the adult patient and 3-4 seconds for the pediatric patient

2.3.8 If mucus plugs or thick secretions are present, the instillation of 3 - 5 mL of sterile saline may be helpful

2.3.9 Pre-oxygenate with 100% O_2

2.3.10 Check breath sounds

2.3.11 Suctioning can stimulate a cough reflex. Allow the patient to cough. Be prepared to suction or catch secretions from the tracheal opening. Recheck breath sounds

3. **ALBUTEROL MEDICATION ADMINISTRATION:**

3.1 **Equipment**

3.1.1 Albuterol

3.1.2 Sterile Normal Saline

3.1.3 Hand Held Nebulizer

3.1.4 Oxygen tubing and supply

3.1.5 Additional reservoir tubing (optional)

3.2 **Procedure:**

3.2.1 Assure clear airway. Suction if necessary

3.2.2 Assemble hand held nebulizer as for patient with intact upper respiratory track

3.2.3 Attach trach collar to reservoir tubing

3.2.4 Connect oxygen delivery tubing to oxygen source at sufficient flow rate to produce misting

3.2.5 Fit trach collar over stoma or tracheostomy tube

3.2.6 Instruct patient to breathe slowly and deeply

3.2.7 Optional: Mouthpiece may be replaced by additional reservoir tubing.

4. **STOMA INTUBATION:**

4.1 **Equipment:**

4.1.1 appropriate sized cuffed and uncuffed ET tubes

4.1.2 bag-valve-mask

4.1.3 appropriate sized suction catheters

4.1.4 oxygen supply

4.1.5 suction equipment with adjustable suction capacity

4.2 **Contraindication:** Use of demand valve

4.3 **Procedure:**

4.3.1 Select the largest endotracheal tube that will fit through the stoma without force. Check the cuff, unless an uncuffed tube is being used on a pediatric patient

4.3.2 Pre-oxygenate with 100% oxygen using a bag valve mask device with the face mask fitted over the stoma. Do not use demand valve

4.3.3 Wear sterile gloves. Do not use a stylet. It is not necessary to lubricate the tube

4.3.4 Suction, if necessary

4.3.5 Pass the endotracheal tube and inflate the cuff. The pharynx has been bypassed, so the tube will protrude from the neck several inches

4.3.6 Hold the tube in place, watch for chest rise with ventilation

4.3.7 Secure the tube and ventilate with 100% O_2

4.3.8 Auscultate the lung fields. Check the neck for subcutaneous emphysema, indicating false passage

4.3.9 Allow no longer than 30 seconds for the procedure

TRANSCUTANEOUS PACING - TCP

1. **INDICATIONS:** This procedure should be used on patients experiencing symptomatic bradycardia (see **Adult Bradycardia** or **Pediatric Bradycardia** protocols. This includes patients with "failed" pacemakers. Note: Bradycardia in children is usually due to respiratory causes

   Consider alternate causes of the dysrhythmia and treat appropriately prior to initiation of TCP:
   - ► Hypoxia
   - ► Trauma
   - ► Drug overdose
   - ► Electrolyte imbalance (not treatable in the field setting)
   - ► Hypothermia

Example of ECG with electrical capture

2. **CONTRAINDICATIONS:**

   2.1 Asystole

   2.2 Bradyasystolic arrest

   2.3 Hypothermia

3. **PROCEDURE:**

   3.1 Consider sedation with midazolam (See **Sedation** procedure) and/or appropriate **Pain Management** protocol for all conscious patients undergoing pacing. Hypotension is not an absolute contraindication in this setting. If unable to start IV, consider administering IM or IN

   3.2 Place pads on the patient in anterior/posterior (A/P) position. If unable to place posterior pad, the pads can be placed in the anterior/lateral (A/L) position. Do not place pads over pre-existing implanted devices such as pacemakers or AICDs

   3.3 Set pacing rate to:

   3.3.1 Adults (≥15 y/o): 60-80 bpm (goal of >30 bpm above patient's initial rate)

   3.3.2 Pediatrics (≤14 y/o) set pacing rate at 100 bpm

   3.4 Start pacer current output at 0 milliamps (mA). Increase milliamps until electrical captured is obtained on the ECG (Max 120mA)

   3.5 Confirm mechanical pacer capture by palpation of a femoral pulse. A pulse should be associated with at least every paced QRS complex. (Note: assessment of carotid pulse is not recommended as pacing can cause muscle contractions that are difficult to distinguish from pulse)

   3.6 If electrical/mechanical capture cannot be achieved at 120mA, change vector of pads and repeat above steps.

   3.7 Pediatric patients: Continue CPR until able to achieve electrical/mechanical capture

   3.8 Once both electrical and mechanical capture obtained, increase the pacer current by 5-10mA

   3.9 Once electrical and mechanical capture is obtained, the pacing rate may be increased slowly to relieve patient's symptoms (acute ALOC, hypotension, weak pulses, or central cyanosis) from bradycardia

4. **SPECIAL CONSIDERATIONS:**

   4.1 TCP should not be delayed for IV access, 12-lead ECG, or while waiting for atropine to take effect in an unstable patient

   4.2 CPR is safe during TCP and should be performed in pediatric population

   4.3 Electrical capture can occur without mechanical capture. Electrical capture can be assessed on the monitor with identification of QRS complexes after every pacer spike. Mechanical capture is evaluated with palpation of a femoral pulse with every QRS complex

   4.4 TCP is safe to perform in pregnant patients

TRANSFER OF CARE

AUTHORITY: Division 2.5 of the California Health and Safety Code, Section 1798.6

"**Authority for patient health care management** in an emergency shall be vested in that licensed or certified health care professional, which may include any paramedic or other prehospital emergency personnel at the scene of the emergency, **who is most medically qualified specific to the provision of rendering emergency medical care**. If no licensed or certified health care professional is available, the authority shall be vested in the most appropriate medically qualified representative of public safety agencies who may have responded to the scene of an emergency."

"Notwithstanding ... **authority for the management of the scene** of an emergency shall be vested in the appropriate public safety agency having primary investigative authority. The scene of an emergency shall be managed in a manner designed to minimize the risk of death or health impairment to the patient and to other persons who may be exposed to the risks as a result of the emergency condition, and priority shall be placed upon the interests of those persons exposed to the more serious and immediate risks to life and health. Public safety officials shall consult emergency medical services personnel or other authoritative health care professionals at the scene in the determination of relevant risks."

1. Medical personnel will not enter an unsafe emergency/crime scene, or continue to render care until released by the incident commander. Public safety personnel shall secure the scene to make entry reasonably safe
2. Components of the transfer of care at the scene of an emergency include:
   - 2.1 Evaluation of the scene
   - 2.2 Medical aspects of extrication and all movement of the patient(s)
   - 2.3 Assessment
   - 2.4 Treatment rendered
   - 2.5 Destination
3. If a disagreement occurs between medical personnel at the scene on any aspects of the transfer of care:
   - 3.1 If time permits, **contact the Base Physician** to determine the appropriate treatment/destination. Otherwise, the more conservative patient-based decision will prevail (e.g. if field personnel disagree on transport vs. non-transport, the patient will be transported)
   - 3.2 If necessary, involved personnel will immediately notify the EMS on-call representative through ALCO-CMED. The EMS on-call representative will notify the EMS Medical Director
   - 3.3 If appropriate, the EMS Medical Director will organize a meeting with the involved personnel to resolve the issues within two (2) business days

TRIAGE TO WAITING ROOM

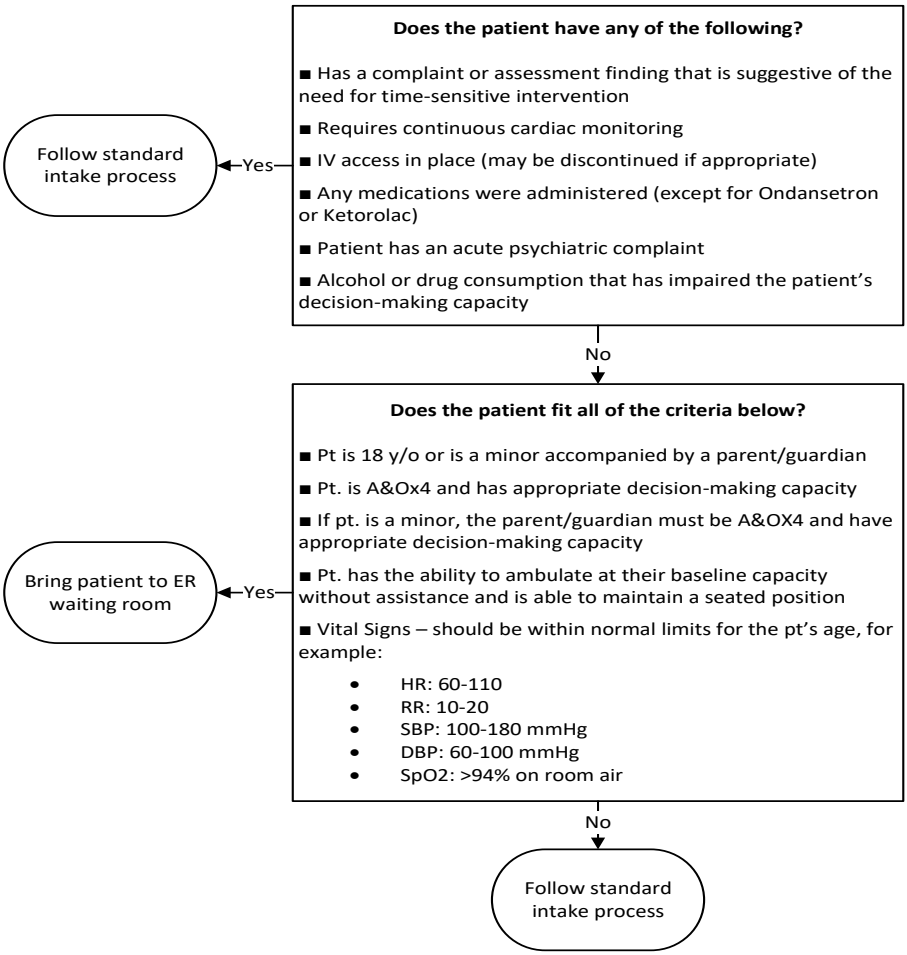
1. PURPOSE: To provide guidelines for field providers to identify which patients are appropriate to bring directly to ER waiting rooms.

2.NOTES:

➔ All decisions on where the patient is brought to must be patient centered;

➔ Work with ER staff to ensure that they are informed of the patient's eligibility for placement in the waiting room;

➔ Document pt's final disposition (ER Bed, waiting room, etc.)



TXA - TRANEXAMIC ACID

1. **DESCRIPTION** - Tranexamic Acid (TXA) is a Lysine analogue that works to inhibit the formation of plasmin, which is a molecule responsible for clot degradation. It has had multiple medical applications in the past including pre-operative use, menorrhagia, hemophilia and hereditary angioedema. It has recently been shown in multiple studies to reduce mortality in trauma patients meeting specific physiologic criteria or who have obvious signs of massive hemorrhage.
2.

INCLUSION CRITERIA	EXCLUSION CRITERIA
Within three hours of onset of injury or illness, prehospital administration of TXA should be considered for all patients with blunt or penetrating trauma or other massive uncontrolled bleeding (Vaginal hemorrhage, etc.) that have signs and symptoms of hemorrhagic shock and meet any one of the following inclusion criteria:	► Any patient <15 years of age ► Any patient more than three hours post-injury ► Isolated penetrating cranial injury ► Traumatic brain injury with brain matter exposed ► Suspected cervical cord injury with motor deficits

- ► SBP < 90 mmHg
- ► Significant hemorrhage with a HR > 120
- ► Bleeding not controlled by direct pressure or tourniquet
- ► Major amputation of any extremity above the wrists or ankles

3. **ADMINISTRATION**

3.1 Administer TXA 1 gram in 100ml NS or D_5W IV/IO over 10 minutes

Do NOT administer IV push. This will cause hypotension.

3.2 Place an approved wristband on the patient.

3.3 Ensure that RN/MD at receiving facility is notified that TXA was administered.

3.4 Follow IV fluid resuscitation guidelines on **page 26**, “Trauma Patient Care”

STROKE ASSESSMENT SCALES (CPSS AND PSS)

1. PURPOSE: To be used in conjunction with the **STROKE / CVA** Protocol for the assessment of suspected stroke / CVA

Cincinnati Prehospital Stroke Scale (CPSS)			
Sign/Symptom	**Testing Procedure**	**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

Posterior Stroke Scale (PSS)			
Sign/Symptom	**Testing Procedure**	**Normal**	**Abnormal**
Visual Fields	Face the patient, ask them to look straight at your nose, move your fingers in each of the four visual quadrants (upper right/left, lower right/left), and ask the patient to state the side they see the fingers moving	Vision intact in all of the four quadrants	Missing vision in any of the four quadrants
Finger-to-Nose	Patient holds arms at their shoulder to 90 degrees with elbows flexed to 90 degrees, place your index finger at various locations in front of the patient at a distance that requires patient to extend their elbow to reach your finger, ask patient to use their index finger on one hand to touch their index finger to your finger, then touch their index finger to their own nose, then to your finger. Repeat several times moving their target finger each time. Patient repeats the process using the opposite hand's index finger	No weakness, wobbling, or shaking in either arm while attempting to make contact with your finger	Weakness, wobbling, or shaking in either arm while attempting to make contact with your finger ***When both arms are equally shaking or weak, this is not considered an abnormal finding***

MCI/ DISASTER/ WMD TOC

ACTIVE SHOOTER RESPONSE

1. **INTRODUCTION**

   1.1 **ACTIVE SHOOTER RESPONSE**- The EMS response to Active Shooter Incidents needs to be coordinated with on scene law enforcement.

   1.2 EMS providers need to be ready to enter a secured scene quickly and aggressively

   1.3 EMS providers should be "forward leaning" and have trauma focused medical gear and triage tools available

   1.4 Working closely with law enforcement is critical in getting life saving medical assets to the injured as soon as the threat has been mitigated or neutralized. The UNIFIED COMMAND model is best for these types of incidents

   1.5 Make sure law enforcement command knows that an EMS team is ready, staged and awaiting direction. Most SWAT teams have an imbedded tactical medic that would be the logical liaison to EMS assets on scene

   1.6 Concepts applied are based on the Tactical Combat Casualty Care (TCCC) and the International School of Tactical Medicine (ISTM)

2. Consider the following items during an EMS response to an Active Shooter Incident:

   ► Communication must be maintained throughout the incident with respective dispatch centers and on scene medical, fire and law enforcement

   ► Law enforcement is in charge of the event. While in a warm zone environment, EMS should follow the direction of law enforcement

   ► Law enforcement may provide a protective envelope (force protection model) around EMS providers and escort them into "warm zone" areas to treat or evacuate victims. (No active threat in the area)

   ► Make sure to have emergency egress routes and casualty collection points (CCP), as well as evacuation rally points identified

   ► If EMS team is brought in to extricate patient, only minimal equipment should be carried. Roll up evacuation stretchers should be considered

   ► EMS teams need to be prepared to split up if law enforcement requires it

   ► EMS providers should use individual medical packs with life saving bleeding and airway tools so they can work "independently" on trauma victims

   ► Spinal motion restriction is not indicated for patients suffering only from penetrating trauma

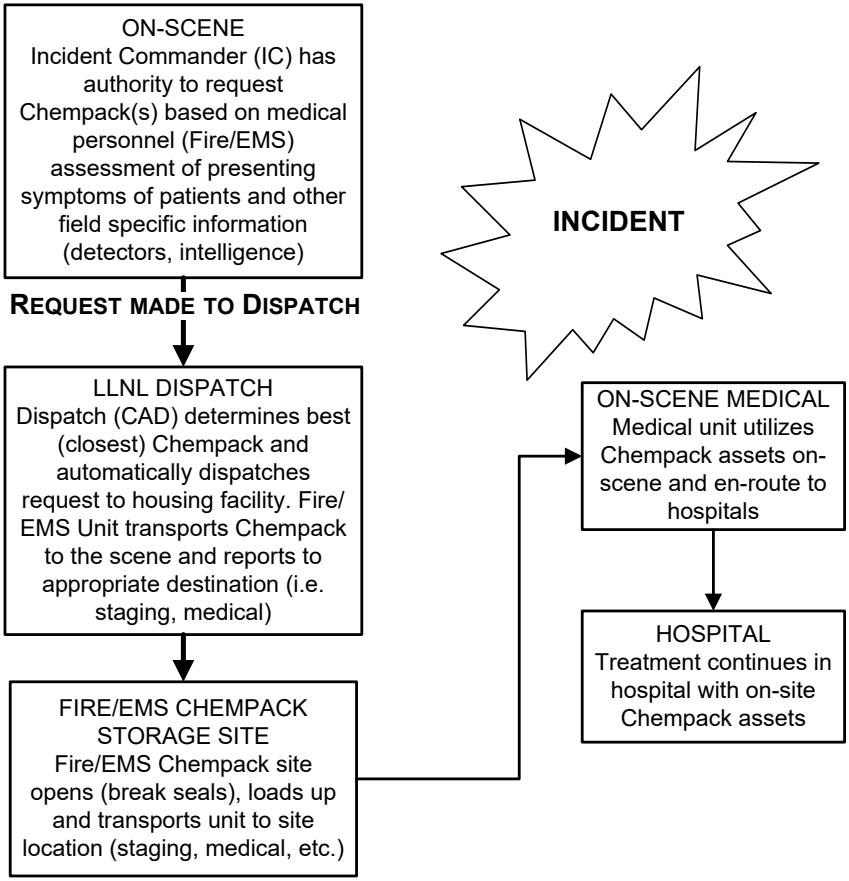
   ► Once the threat is eliminated, law enforcement may be available to help evacuate the injured

DISEASE/ AGENT Incubation	SYMPTOMS	SIGNS	TRANSMISSION & PRECAUTIONS	TREATMENT (Adult dosage) Note: these are for reference only, and are not in ALCO EMS protocol	PROPHYLAXIS
ANTHRAX 2-6 days Range: 1 day to 8 weeks (Bacillus anthracis) bacteria	**Inhalation:** Flu-like symptoms, nausea, vomiting, abdominal pain , fever, respiratory distress **Cutaneous:** initial itching papule; fever	**Inhalation:** fever, followed by ✓abrupt onset of respiratory failure, confusion widened mediastinum on chest X-ray (adenopathy), bloody pleural effusions, atypical pneumonia **Cutaneous:** initial itching papule, 1-3 cm painless ulcer, then necrotic center; lymphadenopathy	Aerosol inhalation No person-to-person transmission Standard precautions	Mechanical ventilation Antibiotic therapy (inhalation) Ciprofloxacin 400 mg IV q 8-12 hr **OR** Doxycycline 200 mg IV initial, then 100 mg IV q 8-12 hr **PLUS** Rifampin 10 mg/kg/d po (up to 600 mg day) **OR** Clindamycin 1200-2400 mg/day IM or IV	Ciprofloxacin 500 mg or Doxycycline 100 mg po q 12 hr ~ 8 weeks Amoxicillin in pregnancy and children (if susceptible) Vaccine if available
BOTULISM 12-72 hours Range: 2 hrs – 8 days toxin caused by the bacterium (Clostridium botulinum)	Difficulty swallowing or speaking (symmetrical cranial neuropathies) Symmetric descending weakness Respiratory dysfunction No sensory dysfunction No fever	Dilated or un-reactive pupils Drooping eyelids (ptosis) Double vision (diplopia) Slurred speech (dysarthria) Descending flaccid paralysis Intact mental state	Aerosol inhalation Food ingestion No person-to-person transmission Standard precautions	Mechanical ventilation Parenteral nutrition Trivalent botulinum antitoxin available from State Health Departments and CDC	Experimental vaccine has been used in laboratory workers
PLAGUE 1-3 days by inhalation (Yersinia pestis) bacteria	Sudden onset of fever, chills, headache, myalgia **Pneumonic:** cough, chest pain, dyspnea, fever **Bubonic:** painful lymph nodes	**Pneumonic:** Hemoptysis; ✓radiographic pneumonia -- ✓patchy, cavities, confluent consolidation, hemoptysis, cyanosis **Bubonic:** typically painful, enlarged lymph nodes in groin, axilla, and neck	Person-to-person transmission in pneumonic forms Droplet precautions until patient treated for at least three days	Streptomycin 30 mg/kg/ day in two divided doses x 14 days Gentamicin 3-5 mg/ kg/day IV/IM in q 8 hr dosage Tetracycline 2-4 g per day Ciprofloxacin 400 mg IV q 12 hr	Asymptomatic contacts or potentially exposed patients Doxycycline 100 mg po q 12 h Ciprofloxacin 500 mg po q 12 h Tetracycline 250 mg po q 6 hr Vaccine: not available
RICIN If inhaled, S/Sx within 4-8 hour Protein toxin produced from castor beans (Ricinus communis)	Fever, SOB, nausea, chest tightness	Sweating, pulmonary edema, cyanosis, hypotension, pulmonary and circulatory collapse	No person to person transmission Airborne precautions Standard precautions	Supportive care GI decontamination if ingested	Vaccine under development

DISEASE/ AGENT Incubation	SYMPTOMS	SIGNS	TRANSMISSION & PRECAUTIONS	TREATMENT (Adult dosage) Note: these are for reference only, and are not in ALCO EMS protocol	PROPHYLAXIS
TULAREMIA 2-5 days Range: 1-21 days "pneumonic" (Francisella tularensis) bacteria	Fever, cough, chest tightness, pleuritic pain Hemoptysis rare	Community-acquired, atypical pneumonia Radiographic: bilateral patchy pneumonia with hilar adenopathy (pleural effusions like TB) Diffuse, varied skin rash May be rapidly fatal	Inhalation of agents No person-to-person transmission but laboratory personnel at risk Standard precautions	Streptomycin 30 mg/kg/ day IM divided bid for 14 days Gentamicin 3-5 mg/kg/ day IV in three equal divided doses x 10-14 days Ciprofloxacin possibly effective 400 mg IV q 12 hr (change to po after clinical improvement) x 10-14 day	Ciprofloxacin 500 mg po q 12 hr Doxycycline 100 mg po q 12 hr Tetracycline 250 mg po q 6 hr Experimental live vaccine
SMALLPOX 12-14 days Range:7-17 days (Variola virus)	High fever and myalgia; itching; abdominal pain; delirium Rash on face, extremities, hands, feet; confused with chickenpox which has less uniform rash	Maculopapular then vesicular rash -- first on extremities (face, arms, palms, soles, oral mucosa) Rash with hard, firm pustules ("intradermal blisters") Rash is synchronous on various segments of the body	Person-to-person transmission Airborne precautions Negative pressure Clothing and surface decontamination	Supportive care Vaccinate care givers Experimental: cidofovir (useful in animal studies)	Vaccination (vaccine available from CDC)

CHEMICAL	PROPERTIES	IMMEDIATE ACTIONS	SYMPTOMS	TREATMENT Note: these are for reference only, and are not in ALCO EMS protocol
NERVE AGENTS •VX •Sarin •Tabun	Can be liquid or gas Enters the body through: ► Skin and eyes ► Inhalation ► Ingested	► If you are exposed, the effects will appear fairly rapidly ► People around you may begin fainting, vomiting or have difficulty breathing ► Birds and insects may die quickly and fall from the sky ► IMMEDIATELY leave the area ► Avoid puddles of liquid ► If the attack was outside, you should get into a building or car ► If the attack was inside, get to the outside ► If you were directly exposed, remove clothing (place in plastic bags, if possible) ► Removing contaminated clothing is more important than modesty ► Do not remove contaminated clothing over your head; cut or tear it off to avoid contact with the eyes, nose, and mouth ► Thoroughly flush all areas where agent contacted your skin, using nearest water available ► Hazmat/fire crews are trained for immediate response and medical treatment is available at most hospitals	► Pupils shrink to pinpoints and victim begins sweating and twitching ► Runny nose, watery eyes, drooling, increased respiratory secretions, excessive sweating, difficult breathing, dimness of vision, nausea, vomiting	► Remove clothing, flush eyes/skin with plenty of water ► Get medical attention immediately; there are antidotes for specific chemical agents ► Atropine is an effective antidote
SULFUR MUSTARDS	Generally thick liquid, yellow or brown in color, with a slight garlic or mustard odor. Enters the body through: ► Skin and eyes ► Inhalation ► Ingested		► Blistering agent, burning exposed eyes and skin; and lungs, mouth and throat if it is breathed in (inhaled). Not usually noticed until 1-6 hours after exposure	► Remove clothing and flush eyes/skin with plenty of water ► Get medical attention immediately, there are antidotes for specific chemical agents
HYDROGEN CYANIDE	Extremely flammable, colorless gas or liquid Enters the body through: ► Skin and eyes ► Inhalation ► Ingested		► Burning and redness of the skin and eyes ► Inhalation causes confusion, drowsiness, shortness of breath, leading to collapse	Get fresh air immediately Flush skin/eyes with plenty of water Get medical attention immediately; there are antidotes for specific chemical agents
CHLORINE	Greenish-yellow gas with stinging odor. Heavier than air, so it will settle in low spots Enters the body through: ► Skin and eyes ► Inhalation ► Ingested		Very harmful to the eyes and skin and can cause tearing, blurred vision, difficulty breathing, and burns	Get fresh air immediately Flush skin/eyes with plenty of water Seek medical attention immediately; there are antidotes for specific chemical agents

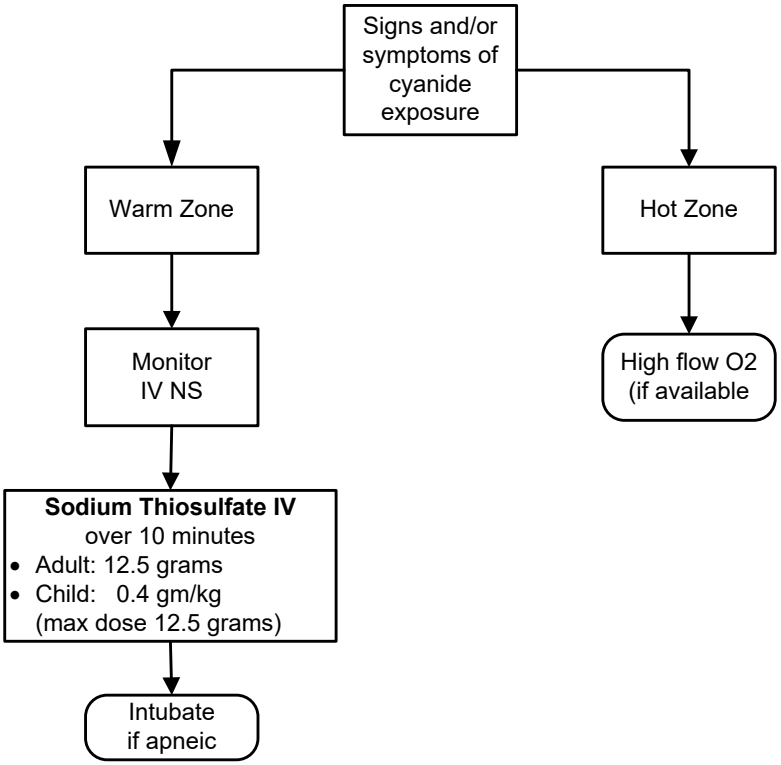
CHEMPACK DEPLOYMENT



CYANIDE POISONING

- This policy is to be used in conjunction with Smoke Inhalation **page 23** and HazMat **page 155**
- Medications are only given if the patient is showing signs and symptoms of cyanide poisoning. THEY ARE NOT TO BE GIVEN PROPHYLACTICALLY

Symptoms: ► Exposure to a vapor or liquid that may smell like "bitter almonds" ► Upper airway and/or eye irritation ► Flushing ► Headache	► Anxiety ► Agitation ► Vertigo ► Weakness ► Nausea ► Muscular trembling
Signs: ► Transient hyperpnea, followed by seizures, apnea and cardiac collapse ► Tremor	► Normal pupils ► Diaphoresis ► Cyanosis



DECONTAMINATION INCIDENT

► This policy is for instances where a patient presents to EMS personnel without forewarning of a possible hazardous materials incident

► All patients exposed or contaminated by suspected hazardous materials should be decontaminated prior to transportation to the emergency department

e.g. - Industrial Response Team, Fire Hazardous Materials Response

1. Paramedics will advise the base hospital of the following:
   - 1.1 Nature of the emergency (i.e.,describe the incident)
   - 1.2 Total number of suspected patients exposed or contaminated
   - 1.3 Number of patients exposed and exhibiting symptoms
   - 1.4 Chemical identification, if known
   - 1.5 Patient status
   - 1.6 Treatment prior to transport
   - 1.7 Describe decontamination provided on scene
   - 1.8 ALS, BLS
2. Base will acknowledge report and advise on further treatment as necessary. If, while enroute to the hospital, the crew inadvertently discovers a potentially contaminated individual, the following instructions will be followed:
   - 2.1 Crew should ensure that receiving hospital has clear understanding of the potential for a hazardous materials incident
   - 2.2 Stage the ambulance away from the receiving hospital ED until notified where the decontamination area will be located
   - 2.3 Keep the patient and ambulance personnel in or near the ambulance until the decontamination area is ready to receive the patient(s)
   - 2.4 Ambulance personnel should remain in or near their vehicle until the decontamination team is ready to decontaminate EMS personnel, if necessary
   - 3.5 If facilities are available, remove clothes and place them in a sealed plastic bag
   - 3.6 Save contaminated clothing to allow for testing for radiation exposure
   - 3.7 Take a shower to wash off dust and dirt, or to reduce radiation exposure, if the explosive device is radioactive
   - 3.8 If radiation was released, local news will advise people where to report for:
     - ► Radiation monitoring
     - ► Blood tests
     - ► Other tests
   - 3.9 Test to determine if in fact exposed and what steps to take to protect health.
4. **Risk of Cancer**
   - 4.1 Short time or small doses of radioactive dust does not mean a person will get cancer
   - 4.2 The additional risk will likely be very small
   - 4.3 Potassium Iodide (KI) will not be protective except in the unlikely event that the dirty bomb contained radioactive iodine isotopes
   - 4.4 The iodine isotopes would have to be in large quantities
   - 4.5 Radioactive iodine isotopes are not particularly attractive for use in an RDD
   - 4.6 KI only protects the thyroid from radioactive iodine
   - 4.7 KI offers no protection to other parts of the body or against other radioactive isotopes

HAZARDOUS MATERIALS INCIDENTS - EMS RESPONSE

The information contained in this policy is based on guidelines contained in EMSA #231 - Hazardous Materials Medical Management Protocol

1. **INTRODUCTION:** Individuals who respond to and function within the **Exclusion Zone** (Hot Zone) or **Contamination Reduction Zone** (Warm Zone) must be members of specially trained HazMat teams, trained in the use of self contained breathing apparatus, selection of appropriate chemical protective suits and how to function in them. Other rescuers should be trained in accordance with **Federal OSHA** standards identified in OSHA 29 CFR 1910.120 and **California OSHA** as defined in the California Code of Regulations, Title 8, Section 5192

2. **EMS interface with HazMat teams**

   2.1 The Incident Command System (ICS) shall be used for on scene management

   2.2 The Medical Branch Supervisor shall make contact with the Incident Commander, face-to-face or by radio, who will direct the Medical Branch Supervisor to the Hazardous Materials Group Supervisor

   2.3 Pertinent information will be relayed to the Medical Branch Supervisor including, patient information (number requiring transport and injuries) and the type of exposure (chemical name and information about the chemical [**SPELL CHEMICAL NAME**])

   2.4 The Medical Branch Supervisor shall make Base contact in order to obtain recommendations regarding decontamination and patient treatment

   2.5 Once cleared by the Site Access Leader, EMS personnel may proceed to the end of the "Contamination Reduction Corridor" to receive patients. Any secondary treatment by EMS personnel should be done in the "Support Area"

3. **Definitions**

   3.1 **Exclusion Zone** (Hot Zone) - Area that encompasses all known or suspected hazardous materials

   3.2 **Contamination Reduction Zone** (Warm Zone) - Area between the "Exclusion Zone" and the "Support Area". "Safe Refuge Area" and "Contamination Reduction Corridor" are set up within this area

   3.3 **Contamination Reduction Corridor** - An area within the "Contamination Reduction Zone" where the actual decontamination takes place. EMS personnel, once cleared, receive patients at the end of the "Contamination Reduction Corridor" and move them to the "Support Area" for secondary treatment

   3.4 **Support Zone** (Cold Zone) - Clean area outside "Contamination Reduction Zone" where equipment and rescue personnel are staged to receive and treat decontaminated patients. Secondary exposure to hazardous materials is not expected in this area and special clothing is not required

HAZARDOUS MATERIALS INCIDENTS - EMS RESPONSE

4. **Patient Management**

   4.1 Follow the Multi-casualty Incident (MCI) Plan – **page 157**, if appropriate

   4.2 For nerve gas/cyanide exposure:

   ► **Patient exposure**:

   Cyanide Poisoning – **page 153**

   Nerve Agent Treatment - **page 162**, (HazMat trained paramedics only)

   ► **Rescuer exposure**: Nerve Agent Autoinjector Administration – **page 160**

   4.3 Paramedics should **contact the Base Physician** *early* in the incident regarding treatment for other specific exposures

   4.4 EMTs and paramedics may only render care within their scope of practice

5. **Scene Management Responsibilities Specific to HazMat Incidents**

   5.1 Police Responsibilities

   5.1.1 Evacuations ahead of hazard area. Evacuation plans developed under unified command

   5.1.2 Traffic control in and around effected area(s)

   5.1.3 Incidents on State/Federal Highways joint command is with CHP

   5.2 Fire Department Responsibilities

   5.2.1 Incident Stabilization

   5.2.2 Rescue and medical treatment (all paramedics may provide treatment in Cold Zone)

   5.2.3 Assistance to responsible party or agency with development of appropriate cleanup/disposal plan. May include the assistance of other agencies, (i.e. environmental health, etc.)

MULTI-CASUALTY INCIDENT - EMS RESPONSE

1. **INTRODUCTION:** A Multi-Casualty Incident (MCI) is any incident where the number of injured persons exceeds the day-to-day operating capabilities; requiring additional resources and/or the distribution of patients to multiple hospitals. This may be different for each incident based on time of day, location, resources available, etc.
2. **NOTIFICATIONS:** Incident Commanders shall make notifications through ACRECC. Organizations should have internal notification procedures
3. **MCI RESOURCE ORDERING, INITIATION AND TERMINATION:**
   - 3.1 The first arriving unit should initiate an MCI through ACRECC
   - 3.2 Inform ACRECC of the Incident Type (Medical, Trauma, MVC, Haz-Mat etc.)
   - 3.3 Responders should order MCI Resource Response (MCI Response) as soon as possible in order to get resources responding. This resource ordering can occur before an exact patient count is obtained.
   - 3.4 Patient count approximations should be used as guidelines for initiating a specific MCI LEVEL and are not intended as a substitute for sound scene judgment
   - 3.5 As soon as there is an approximate number of patients determined, the MCI Level should be declared
   - 3.6 Immediately cancel assigned resource(s) when no longer required
   - 3.7 Terminate the MCI through ACRECC when the MCI has been mitigated
4. **RESOURCE ORDERING PRIORITY LIST**
   - 4.1 ALCO 911 Ambulances
   - 4.2 ALCO BLS Permitted Ambulances

MCI RESOURCE ORDERING

MCI RESPONSE	MCI RESOURCE RESPONSE PACKAGE	MCI NOTIFICATIONS
MCI Response 1	➔ 5 Closest 911 Ambulances ➔ 1 EMS Supervisor ➔ EMS TAC channel assigned *Note: Immediately cancel assigned resource(s) when no longer required*	➔ Jurisdictional Fire Battalion Chief ➔ County EOA Provider Operations Supervisor ➔ LEMSA Duty Officer
MCI Response 2	➔ 5 Closest Ambulances ➔ 1 EMS Supervisor ➔ 1 DMSU *Note: Immediately cancel assigned resource(s) when no longer required*	➔ All County Fire Duty Chiefs
Resources in MCI Response 2 are in addition to resources assigned in MCI Response 1		
MCI Response 3	➔ 5 Closest Ambulances ➔ 1 EMS Supervisor ➔ Consider Air Assets *Note: Immediately cancel assigned resource(s) when no longer required*	
Resources in MCI Response 3 are in addition to resources assigned in MCI Response 2		
Additional Levels	For Each Additional level: ➔ 5 Closest Ambulances ➔ 1 EMS Supervisor	

MCI LEVELS	
MCI Level	**Approximate Patient Count**
I	**5-14 Patients**
II	**15-50 Patients**
III	**> 50 Patients**

4.3 Mutual Aid from contiguous county(ies)

5. **MANAGEMENT OF MCI INCIDENTS AND PATIENT DISTRIBUTION**

5.1 Once an MCI alert is determined by prehospital personnel, ACRECC will be notified and will "Initiate an MCI" under the Reddinet MCI module. ACRECC will immediately send an "ED Capacity poll and general notification" to the hospitals in Alameda County

5.2 For MCI Levels II & III, ACRECC will notify the EMS Duty Officer of the incident

5.3 Emergency responders shall perform triage using one of the following triage methods:

- ► The Simple Triage and Rapid Treatment (START) algorithm for adults and JumpSTART for pediatrics
- ► The Sort, Assess, Lifesaving Interventions, Treatment / Transport (SALT) algorithm for patients in all age groups

5.3.1 Acuity based Triage colors for both Triage Tape and Triage Tags are universally accepted as Black (expectant / deceased), Red (immediate / life threatening,), Yellow (delayed / serious not life threatening), and Green (minor / walking wounded). Only Black, Red, Yellow, and green are acceptable triage colors

5.3.2 The use of colored "Triage Tape" upon initial contact with victims at the crisis site is preferred over Triage Tags to identify initial acuity. Triage tags should be used at the external Casualty Collection Point (CCP) outside the crisis site or applied to patients during transport. Acuity-guided transport of all patients shall occur in a coordinated and expedient manner

5.4 Hospital Poll: For MCI incidents involving 15+ patients, ACRECC will send a "bed capacity" poll to all hospitals in Alameda County to confirm bed availability

5.5 For the duration of the MCI, the Transportation Unit Leader under ICS will determine transportation methods and destinations

5.6 Whenever possible, patients should be transported to the most appropriate hospital without overloading one particular facility. Every effort will be made to transport trauma patients to a designated trauma hospital. In a Level II or III MCI, transport to a designated trauma center may not always be possible

5.7 First Round Destination Procedure may be implemented without prior authorization. All Alameda County receiving hospitals should prepare to receive patients, especially those in close proximity to the incident

First Round Destination Procedure	
Non-Trauma patients** to each Alameda County receiving hospital (for a total of 6): ✓Two (2) "Immediate" ✓Four (4) "Delayed" and/or "Minor" *** e.g.: Medical incident, HazMat*	**Trauma patients** to each Alameda County Trauma Center (for a total of 7): ✓Three "Immediate" ✓Four (4) "Delayed" and/or "Minor"

5.8 ACRECC in conjunction with the incident command structure will track patient numbers, acuity and destinations in ReddiNet in as close to real-time as possible. ReddiNet will serve as the primary mechanism notifying receiving facilities of the number and acuity of incoming patients. Receiving hospitals will enter patient names and other relevant information into ReddiNet. This will facilitate patient accountability and reunification. On scene EMS Supervisors may also have the ability to enter information into ReddiNet

5.9 Verbal notification to hospitals: In a Level I MCI, transporting units should contact the receiving hospital enroute to give an abbreviated report on the patient(s) status and ETA. In a Level II or III MCI, if ReddiNet is unavailable or non-functional, a medical communications coordinator should be designated to notify receiving facilities of the number and acuity of incoming patients.

5.10 Incident Log - The Transportation Unit Leader should maintain an incident log

5.11 The on-scene Incident Commander or designee (ie. Medical Group Supervisor or Transportation Unit Leader) should contact ACRECC during and at the conclusion of the MCI to provide and reconcile patient tracking information to ensure accountability

6. **RESOURCE MANAGEMENT** - The Incident Commander has the overall responsibility for developing objectives and requesting the necessary resources required to mitigate the incident. There will be no self-dispatching. Clear communications between all involved agencies is imperative

6.1 The following items are MCI Management points to consider

- ► The three “T’s” ensure that Triage, Treatment and Transport have been addressed
- ► Request resources through the Incident Commander in the early stages of the incident. Ensure adequate personnel and equipment
- ► Establish staging areas. Transport Units and/or other units that do not immediately have an assignment should report to the designated staging area and wait for instructions
- ► Use a one-way traffic pattern. Transport units should be staged to assure good access and egress from Loading Area
- ► All incoming units drop off required EMS equipment at a designated location
- ► County Disaster Trailers shall be requested through ACRECC

6.2 Use ICS identification vests. At a minimum the IC, Medical Group Supervisor, Triage and Treatment, and Transportation Unit Leader should be clearly identified with vests

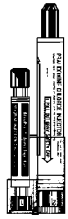
NERVE AGENT AUTOINJECTOR ADMINISTRATION

1. **INTRODUCTION:** Nerve agent auto-injectors are to be used when EMS personnel are exposed to nerve agents (Sarin, Soman, Tabun, VX) and have signs and symptoms of nerve agent exposure, or when ALS/ specially trained BLS personnel treat victims in an MCI situation in the hot zone

2. **EQUIPMENT:**

   2.1 Mark I autoinjector antidote kit containing:
   - ► **Atropine** autoinjector (2 mg in 0.7 mL)
   - ► **Pralidoxime chloride** autoinjector - **2-PAM** (600 mg in 2 mL)

   2.2 Additional atropine (2 mg) autoinjectors



MARK I antidote kit

3. **PROCEDURE:** If you experience any or all of the nerve agent poisoning symptoms, you must IMMEDIATELY self-administer the nerve agent antidote (see "Nerve Agent Treatment" - **page 162** for signs and symptoms)

   3.1 **Injection Site Selection:**
   - ► The injection site for administration is normally in the **outer thigh muscle** (Figure 1). It is important that the injections be given into a large muscle area
   - ► If the individual is thinly-built, then the injections should be administered into the **upper outer quadrant of the buttocks** (Figure 2)

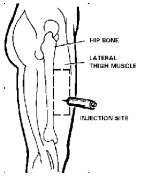


Figure 1 - Thigh injection site

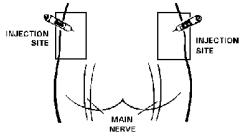


Figure 2 - Buttocks injection site

   3.2 **Arming The Autoinjector:**
   - ► Immediately put on your protective mask
   - ► Remove the antidote kit
   - ► With your non-dominant hand, hold the autoinjectors by the plastic clip so that the larger autoinjector is on top and both are positioned in front of you at eye level
   - ► With your dominant hand grasp the **atropine** autoinjector (the smaller of the two) with the thumb and first two fingers. DO NOT cover or hold the needle end with your hand, thumb, or fingers-you might accidentally inject your self. An accidental injection into the hand WILL NOT deliver an effective dose of the antidote, especially if the needle goes through the hand
   - ► Pull the injector out of the clip with a smooth motion. **The autoinjector is now armed**

   3.3 **Administering the antidote to yourself:**
   - ► Hold the autoinjector with your thumb and two fingers (pencil writing position). Be careful not to inject yourself in the hand!
   - ► Position the green (needle) end of the injector against the injection site (thigh or buttock). DO NOT inject into areas close to the hip, knee, or thigh bone
   - ► Apply firm, even pressure (not jabbing motion) to the injector until it pushes the needle into your thigh (or buttocks). Using a jabbing motion may result in an improper injection or injury to the thigh or buttocks
   - ► Hold the injector firmly in place for at least 10 seconds. Firm pressure automatically triggers the coiled spring mechanism. This plunges the needle through the clothing into the muscle and at the same time injects the antidote into the muscle tissue
   - ► Carefully remove the autoinjector from your injection site
   - ► Next, pull the **2 PAM** injector (the larger of the two) out of the clip
   - ► Inject yourself in the same manner as the steps above, holding the black (needle) end against your outer thigh (or buttocks)
   - ► Massage the injection sites, if time permits

NERVE AGENT AUTOINJECTOR ADMINISTRATION

- ► After administering the first set of injections, wait 5 to 10 minutes
- ► After administering one set of injections, you should initiate decontamination procedures, as necessary, and put on any additional protective clothing
- ► Atropine only may be repeated every 10 - 15 minutes as needed. (Note: multiple doses of atropine may be needed.)

3.4 **Administering the antidote to another in the Hot Zone:**

- ► Squat, DO NOT kneel, when masking the casualty or administering the nerve agent antidotes to the casualty. Kneeling may force the chemical agent into or through your protective clothing
- ► Mask the casualty
- ► Position the casualty on his or her side (swimmer's position)
- ► Position yourself near the casualty's thigh
- ► The procedure for site selection and medication administration is the same as 3.1 – 3.3
- ► Atropine only should be repeated as needed- multiple doses may be needed

4. **DOSAGE SCHEME FOR MARK I ADMINISTRATION** - via autoinjector

Additional atropine may be needed until a positive response is achieved (decrease in bronchospasm and/or respiratory secretions)

ADULT

Signs & Symptoms	Onset	# of autoinjectors to use:
Vapor: small exposure ✓Pinpoint pupils ✓Runny nose ✓Mild SOB	Seconds	MARK I autoinjector antidote kit – **1 dose initially** (containing atropine and 2-PAM) May repeat x1 in 10 minutes
Liquid: small exposure ✓Sweating ✓Twitching ✓Vomiting ✓Feeling weak	Minutes to Hours	MARK I autoinjector antidote kit – **1 dose initially** (containing atropine and 2-PAM) May repeat x1 in 10 minutes
Both: large exposure ✓Convulsions ✓Apnea ✓Copious secretions	Seconds to Hours	MARK I autoinjector antidote kit – **3 doses initially** (containing atropine and 2-PAM) May repeat x1 in 10 minutes

PEDIATRIC

Age (approx.)	**Weight** (approx.)	**Autoinjectors (#)** (each type)	**Atropine** dose range (mg/kg)	**2-PAM** dose range (mg/kg)
3-7	13-25 kg	1	0.08-0.13	24-46
8-14	26-50 kg	2	0.08-0.13	24-46
>14	> 51 kg	3	0.11 or less	35 or less

NOTE: *While not approved for pediatric use, autoinjectors should be used as initial treatment in children with severe, life-threatening nerve agent toxicity where IV treatment is not possible or available, or a more precise IM dosing would be logistically impossible.*

NERVE AGENT TREATMENT

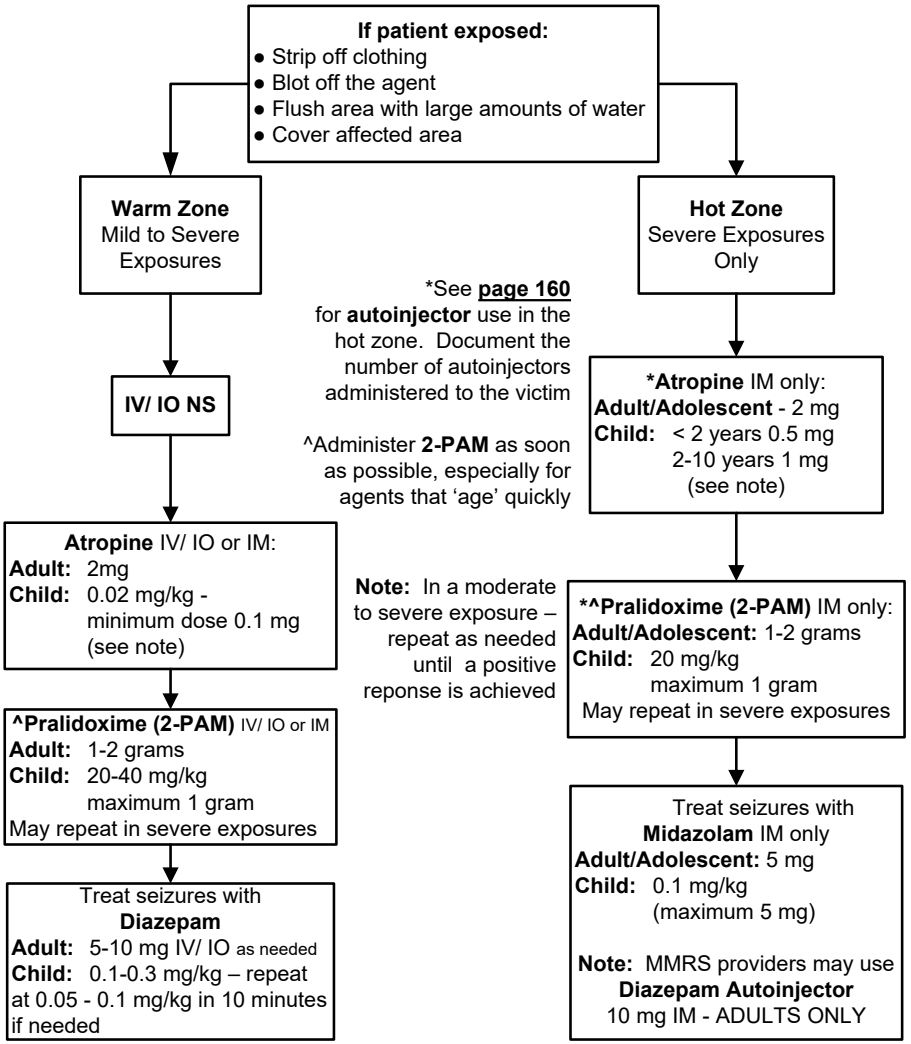
- ► **ALS and specially trained BLS personnel may administer nerve agent antidote medications to patients**. (See **page 160** for auto-injector procedure)
- ► Nerve agent antidote medications are only given if the patient is showing signs and symptoms of nerve agent poisoning. THEY ARE NOT TO BE GIVEN PROPHYLACTICALLY
- ► This policy is to be used in conjunction with **page 155** (HazMat)
- ► Note: A decrease in bronchospasm and respiratory secretions are the best indicators of a positive response to atropine and 2-PAM therapy

Signs and Symptoms of Nerve Agent Exposure
(from mild to severe)

Exposure	Signs & Symptoms
	► Unexplained runny nose ► Tightness in the chest ► Difficulty breathing ► Bronchospasm ► Pinpoint pupils resulting in blurred vision ► Drooling ► Excessive sweating ► Nausea and/or vomiting ► Abdominal cramps ► Involuntary urination and/or defecation ► Jerking, twitching and staggering ► Headache ► Drowsiness ► Coma ► Convulsions ► Apnea

MNEMONIC FOR NERVE AGENT EXPOSURE			
Muscarinic Effects:		**Nicotinic Effects:**	
D	iarrhea	**M**	ydriasis
U	rination	**T**	achycardia
M	iosis	**W**	eakness
B	radycaria, bronchorrhea	**H**	ypertension
E	mesis	**F**	asciculations
L	acrimation		
S	alivation		

NERVE AGENT TREATMENT

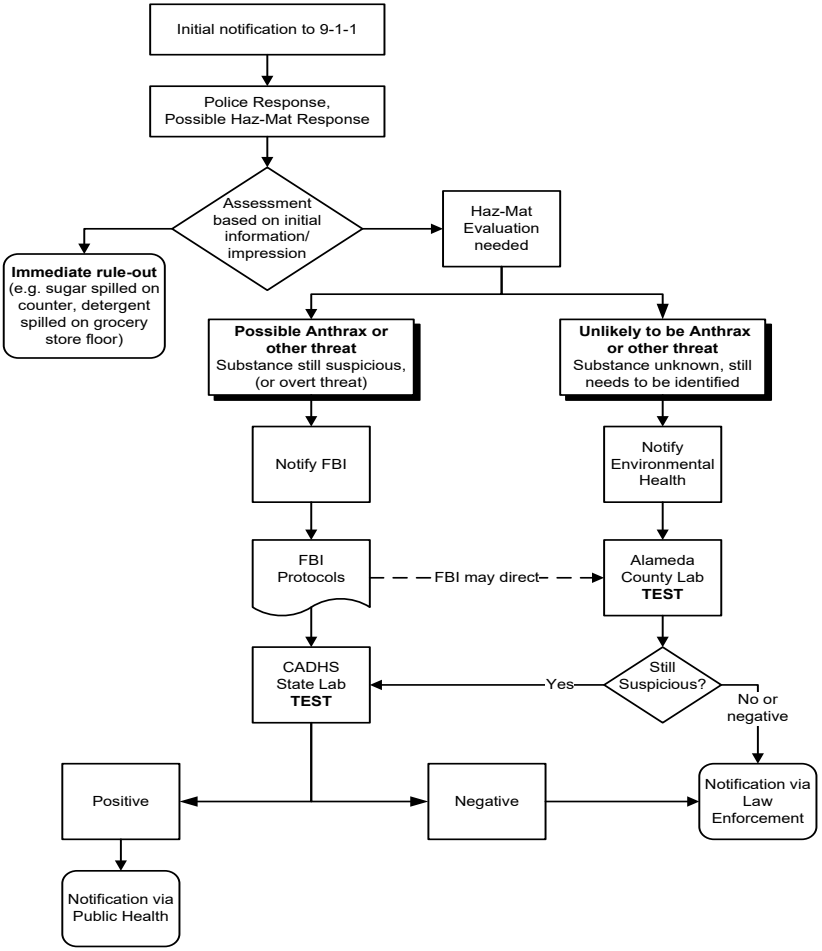


RADIOLOGICAL DISPERSION DEVICE (RDD), AKA "DIRTY BOMB"

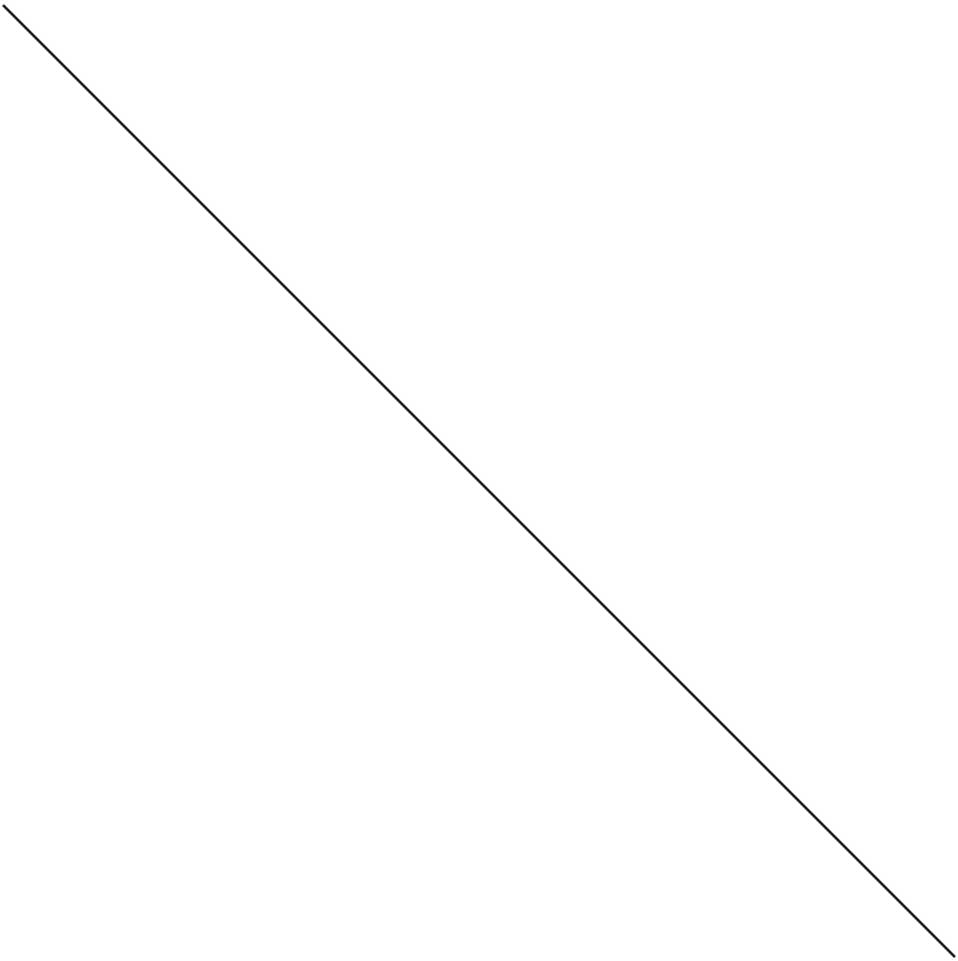
Adapted from: Nuclear Regulatory Commission http://www.nrc.gov

1. **Background:**
   - 1.1 Principal type of "dirty bomb" combines a conventional explosive such as Dynamite/Explosives with radioactive material
   - 1.2 A conventional explosive itself would have more immediate lethality than dirty bombs
   - 1.3 Most probably, not enough radiation would be present in a dirty bomb to:
     - ► Kill people
     - ► Cause severe illness
   - 1.4 Most radioactive material employed in hospitals is sufficiently benign
   - 1.5 About 100,000 patients a day are released with this material in their bodies
   - 1.6 Certain other radioactive materials could contaminate up to several city blocks
   - 1.7 It could create fear and possibly panic and requiring potentially costly cleanup
   - 1.8 A second type of RDD might involve a powerful radioactive source hidden in a public place
   - 1.9 Hiding places may include such places as :
     - ► Trash receptacles
     - ► Latrines
     - ► Delivery vehicles
     - ► Vending machines
     - ► Parked vehicles
   - 1.10 A dirty bomb is in no way similar to a nuclear weapon
   - 1.11 The presumed purpose of its use would be as a Weapon of Mass Disruption
   - 1.12 Not as a Weapon of Mass Destruction
2. **Impact of a Dirty Bomb:**
   - 2.1 The extent of local contamination would depend on a number of factors
   - 2.2 Factors includes:
     - ► The size of the explosive
     - ► The amount and type of radioactive material used
     - ► The weather conditions
   - 2.3 Prompt detection of the kind of radioactive material employed would greatly assist local authorities
   - 2.4 It would assist in advising the community on protective measures, such as:
     - ► Quickly leaving the immediate area or
     - ► Going inside until being further advised
   - 2.5 Subsequent decontamination of the affected area could involve considerable:
     - ► Time
     - ► Expense
3. **What Should You Do Following an Explosion**
   - 3.1 Move away from the immediate area--at least several blocks from the explosion
   - 3.2 Head inside and establish shelter-in-place
   - 3.3 This to reduce exposure to radioactive dust
   - 3.4 Turn to radio/TV channels for advisories from:
     - ► Emergency response
     - ► Health authorities

SUSPICIOUS POWDER PROCESS



See applicable Table of Contents to locate protocols or utilize the EMS Mobile App for keyword searches



ALAMEDA COUNTY APPROVED RECEIVING HOSPITALS

(510) area code unless otherwise specified

(Rev. 07/2024)

Hospital	Main Number	ED Number	5150 Medical Eval. Adults / Adolescents	5150 Psych Eval.	Helipad	CA Bridge	L&D	STEMI	Stroke	Sexual Assault	Trauma
Alameda	522-3700	814-4095	x						x		
ALCO Youth CSU	-----	483-3030		Adolescents Age 12-17							
Alta Bates	204-4444	204-2500	x			x	x				
Children's	428-3000	428-3240	Age ≤ 11	Age ≤ 11	x	x				Age ≤ 13	Age ≤ 14
Eden	537-1234	727-3015	x		x	x	x		x		Age ≥ 15
Highland (ACMC)	437-4800	437-4559 (base MD) 535-6000	x			x	x	x	x	Age ≥ 14	Age ≥ 15
John George	346-1300	346-1421		Age ≥ 18							
Kaiser - Antioch	(925) 813-6500	(925) 813-6099	x				x		x		
Kaiser - Fremont	248-3000	248-7208	x			x		x	x		
Kaiser - Oakland	752-1000	752-7667	x			x	x	x	x		
Kaiser – San Leandro	454-1000	454-4348	x				x		x		
Kaiser – Walnut Creek	(925) 295-4000	(925) 939-1788					x	x	x		
San Leandro	357-6500	667-4545	x			x					
San Ramon	(925) 275-9200	(925) 275-8280					x	x	x		
St. Rose	264-4000	264-4026	x				x	x			
Summit	655-4000	869-8700	x					x	x		
Valley Care	(925) 847-3000	(925) 416-6525	x		x		x	x	x		
Washington	797-1111	818-8531	x			x	x	x	x	Age ≥ 14	Age ≥ 15

OUT-OF-COUNTY RESOURCES

Hospital	ED Number	Base Number	Helipad	L & D	STEMI	Stroke	Trauma	Burn
John Muir Medical Center	(925) 939-5804 or 5805 (ALS/Trauma)	(925) 941-3379 (BLS ringdowns)	x	x	x	x	x	
Regional Medical Center	(408) 729-2854		x			x		
San Francisco General	(628) 206-8111	(628) 647-4747		x	x	x	x	
San Joaquin General	(209) 468-6301	(209) 982-1975	x	x		x	x	
Santa Clara Valley (VMC)	(408) 885-3228	(408) 885-6937	x	x	x	x	(Adult & Ped)	(408) 885-6666
Stanford	(650) 723-7337		x	x	x	x	x	
St. Francis Memorial	(415) 353-6300 ext. 5					x		(415) 353-6255
UC Davis Medical Center			x	x	x	x	x	(916) 734-3636

Base Physician Contact Template

Highland Hospital Base Physician – 510-535-6000

Situation	▪ Identify yourself/unit number ▪ State purpose of call: (e.g. AMA consult, destination decision, etc.) ▪ Provide basic patient demographics (e.g. age/gender) ▪ Reason for patient contact/EMS activation
Background	▪ Provide history of present illness/injury ▪ Medical history
Assessment	▪ Vital signs ▪ Physical findings ▪ Treatment provided
Recommendation/Request	▪ State your recommendation/request ▪ Confirm Base Physician's recommendation/orders

Hospital Notification Template

Basic Notifications

1. Unit Number 2. Transport code 3. Age & Gender 4. Chief Complaint 5. V/S stable or detailed V/S if abnormal	6. Pertinent negatives/positives 7. Treatment(s) 8. Repeat ETA 9. Check for questions

Specialty care patient notifications

For each category below, include info from the basic notification template plus the appropriate category below

Trauma

1. Mechanism of Injury 2. Injuries	3. GCS – each category of E/V/M + total 4. Detailed Vital Signs

Cardiac Arrest / ROSC

1. Airway – non-patent, patent, airway placed/not-placed 2. Breathing – absent/spontaneous 3. Circulation – pulses present/absent	4. Total estimated down time 5. Summary of treatment(s) given

Stroke Alert

1. Last seen normal time 2. Stroke Assessment/Scale findings	3. Blood glucose

Sepsis

1. Temperature 2. Suspected source of infection (if known)	3. Detailed Vital Signs

STEMI

1. Estimated onset of S/S 2. Was 12-lead ECG Transmitted	3. Detailed Vital Signs

Pediatric Patients

1. Patient's weight-based color code	2. Status of parent/guardian

Note: Detailed Vital Signs should include: RR, HR, B/P, SpO2, GCS (number of each category E/V/M)