Emergency Medical Services Program
Policies – Procedures – Protocols

All Provider Protocols 5000.00

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GENERAL PROVISIONS

I. COMPLIANCE WITH STATE AND LOCAL REQUIREMENTS:

The public safety-first aid treatment protocols shall be utilized in direct compliance with the California Code of Regulations (CCR), Title 22, Division 9, Chapter 1.5 and as specified in County of Kern Policies and Procedures.

The Emergency Medical Technician treatment protocols shall be utilized in direct compliance with the California Code of Regulations (CCR), Title 22, Division 9, Chapter 2 and as specified in County of Kern Policies and Procedures.

The paramedic treatment protocols shall be utilized in direct compliance with the California Code of Regulations (CCR), Title 22, Division 9, Chapter 4 and as specified in County of Kern Policies and Procedures.

II. DOCUMENTATION REQUIREMENTS

All documentation will comply with the requirements set forth in the Patient Care Record Policy (1004.00).

III. PARAMEDIC SCOPE OF PRACTICE FOR INTERFACILITY PATIENT TRANSFERS

A paramedic may provide interfacility patient transfers upon patient physician or responsible party request. The paramedic is authorized to provide patient treatment within the paramedic scope of practice procedures and medications as listed in these protocols during interfacility patient transfer. These procedures and medications may be administered through written orders of the transferring physician, through communications with a Kern County designated paramedic Base Hospital, or through treatment protocol in the event Base Hospital communications cannot be established or maintained.

GENERAL PROVISIONS

In addition to the advanced life procedures and medications listed by protocol within paramedic scope of practice, the paramedic is authorized during interfacility patient transfers to provide the following:

1. Monitor and administer paramedic scope of practice medications through pre-existing vascular access including and limited to peripheral venous and central venous IV access where no special procedures out of paramedic scope of practice are required. During an interfacility transfer, a locally accredited paramedic may give medications within the local scope of practice at doses greater than the max dose as long as there is a written physician order, and the paramedic is comfortable with the orders. The written physician order must include the dosage drip rate and clearly allow for the medication to be discontinued if the patient begins to deteriorate.

2. Monitor arterial vascular access lines, not for use in the administration of vascular fluids or medications.

3. Monitor pre-existing thoracostomy tubes.

4. Monitor vascular infusion of IV solution containing Potassium Chloride with concentration equal to or less than 40 mEq, per liter of IV solution.

5. Monitor naso-gastric infusions.

PARAMEDIC SCOPE OF PRACTICE FOR PATIENT WITH PRE-EXISTING MEDICATION INFUSIONS OR MEDICAL PROCEDURES IN THE PRE-HOSPITAL PHASE OF CARE:

The paramedic may transport a patient with pre-existing medication infusions or medical procedures outside of the paramedic scope of practice when such medication of medical procedures is self-monitored and administered by the patient or patient family members authorized by the patient physician and the transport originates within the pre-hospital phase of care.

DESTINATION DECISION SUMMARY

Hospital destination decision shall be based on the closest most appropriate facility for their condition. Patients may be given a choice of facilities if there is more than one facility that would be appropriate for their condition. The following table provides the case specific information necessary for defining, "most appropriate hospital":

	BMH	AH-S	KM	Mercy	MSW	AH-B	AH-D	KVH	AH-T	RRH
Base Station	X	X	X	X	X	X	X			X
Burns			X							
Trauma – Red Tier*			X							
Trauma – Yellow tier*	X	X	X	X	X	X	X	X	X	X
Orthopedic	X		X	X	X	X	X			
Cardiac/ STEMI	X	X				X				
Neonatal	X		X		X	X				
Obstetrical	X		X		X	X				
Pediatric Emergent Medical***	X		X							
Pediatric Non-Emergent Medical***	X		X			X	X			X
Sexual Assault						X				
Co-occurring acute **behavioral Health** with acute medical need related to physical health and/or substance use. Closest most appropriate ER. (5150 hold writers will provide the hold to the receiving facility) see decision tree in special considerations.	X	X	X	X	X	X	X	X	X	X
Behavioral health only: Coordinate with law enforcement or Mobile evaluation team for transfer to appropriate care facility. **Medical only:** follow established medical transport guidelines.										
Stroke	X		X	X	X	X				
Stroke Satellite with Primary Stroke center consult and approval										X

DESTINATION DECISION SUMMARY

Prison inmate	Contracted facility as directed by prison staff unless unstable or meets specialty care center criteria (i.e. trauma patient)									
Medical extremis	Closest open hospital						X	X	X	X
Traumatic Arrest*			X				X	X	X	X
Traumatic unmanageable airway or inability to ventilate*	Closest open hospital									
Any other patient condition	X	X	X	X	X	X	X	X	X	X

* per Trauma Policy ** per Stroke Policy ***per Pediatric Designation Policy

Los Angeles County Destinations	**AVMC**	**Palmdale Regional**	**Henry Mayo**
Trauma- Red Tier*	X		X
Trauma- Yellow Tier*	X		X
Orthopedic	X	X	X
Cardiac/STEMI	X	X	X
Neonatal	X		X
Obstetrical	X		X
Pediatric Emergent Medical***	X		X
Pediatric Non-Emergent Medical***	X		X
Sexual Assault	X		
Psychiatric-Voluntary requesting transport	X	X	X
Stroke	X		X
Prison inmate			
Medical extremis	Closest open Facility		
Any other patient condition	X	X	X
Traumatic Arrest*	X		
Traumatic unmanageable airway or inability to ventilate*	Closest open Facility		
* Per Trauma Policy - ** Per Stroke Policy			

Special Considerations

1. **Conscious Patients**: Patients should be transported to the closest, most appropriate facility based upon their condition. Conscious, alert, and oriented patients should have a choice in destination, so long as the requested hospital is a Kern County EMS approved receiving center and the facility is appropriate for their condition. (See above table) In the event that a conscious patient is adamant and insists on being transported to a hospital contrary to a case specific hospital which is most appropriate, the attendant shall attempt to obtain a signed AMA and continue appropriate care and transport to the requested hospital. At no time will an ambulance crew advise a patient that they have no choice in their destination hospital with the exception of Med Alert or hospital rotation. If patients have received care recently, they should be encouraged to return to the same facility unless specialty care center criteria dictate otherwise. (i.e. post-op patients should ideally return to the same hospital where they had their operation)

    i. Determine System status (i.e. MED Alert)
    ii. Determine need for Case specific hospital (i.e. STEMI, Stroke, Pediatric, Trauma)
    iii. Are any of the hospitals closed to ambulance traffic?
    iv. Has patient recently received care at a specific hospital? (Patient should be encouraged to return to same).
    v. Determine overload score of remaining choices (Score of >5 makes lower scoring hospital better choice)
    vi. Offer conscious patient choice of appropriate hospitals (Patient cannot override steps 1 or 3)
    vii. If a patient is demanding to be transported to a hospital that is contrary to appropriate, case specific hospital, attempt to convince patient to agree to be transported to appropriate facility. If the patient is adamant, attempt to have patient sign an AMA for refusal to be transported to appropriate facility and transport per patient's request.

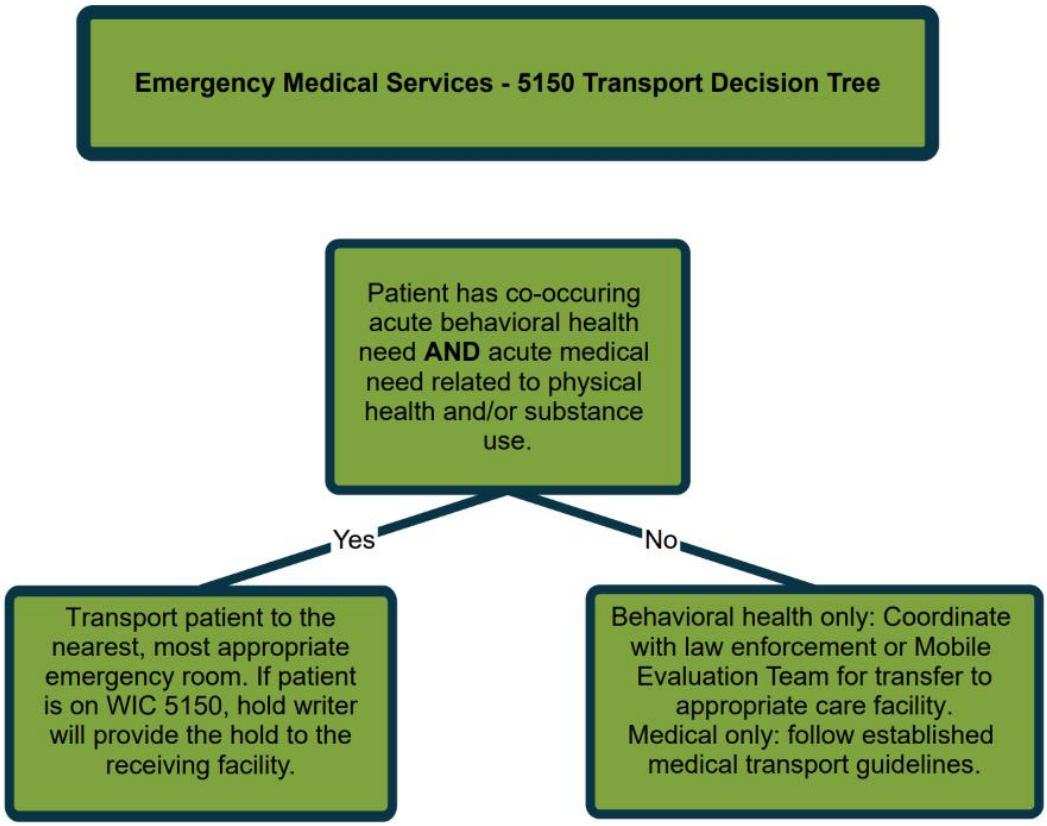
2. **Doctor/Physician Assistant/ Nurse Practitioner/ Nurse Choice**: When a patient is under the care of a MD/PA/NP/RN and a specific hospital destination is requested, the attendant shall honor the request so long as the hospital is a Kern County EMS approved receiving center and the hospital is appropriate based on the patient's condition. (See above table)

- If the patient meets specialty care center criteria which require transport to a destination other than the requested destination attendant shall contact the specialty care center base station to discuss destination.
- If an MD/PA/NP/RN requests ambulance transport to a specialty care center or tertiary care facility not included on the Kern County EMS Approved Receiving Center list (see above table), for example a patient with a Left Ventricular Assist Device (LVAD), the following must be considered and thoroughly documented on the patient care report:

    i. The specialty care required by the patient is not available at a Kern County EMS Approved Receiving Center
    ii. The clinician coordinating the care for the patient is requesting transport to the facility
    iii. The clinician confirms acceptance of the patient at the receiving facility
    iv. The patient/family/parent(s)/legal guardian/health care proxy/person with power of attorney agrees to requested destination
    v. The attending paramedic or EMT is comfortable that all the above criteria have been met and after assessing the patient, agrees that the patient condition should tolerate the transport
    vi. If transporting to a Kern County EMS non-approved receiving center, transporting crew shall request that dispatch notify EMS duty officer.
    vii. All above criteria

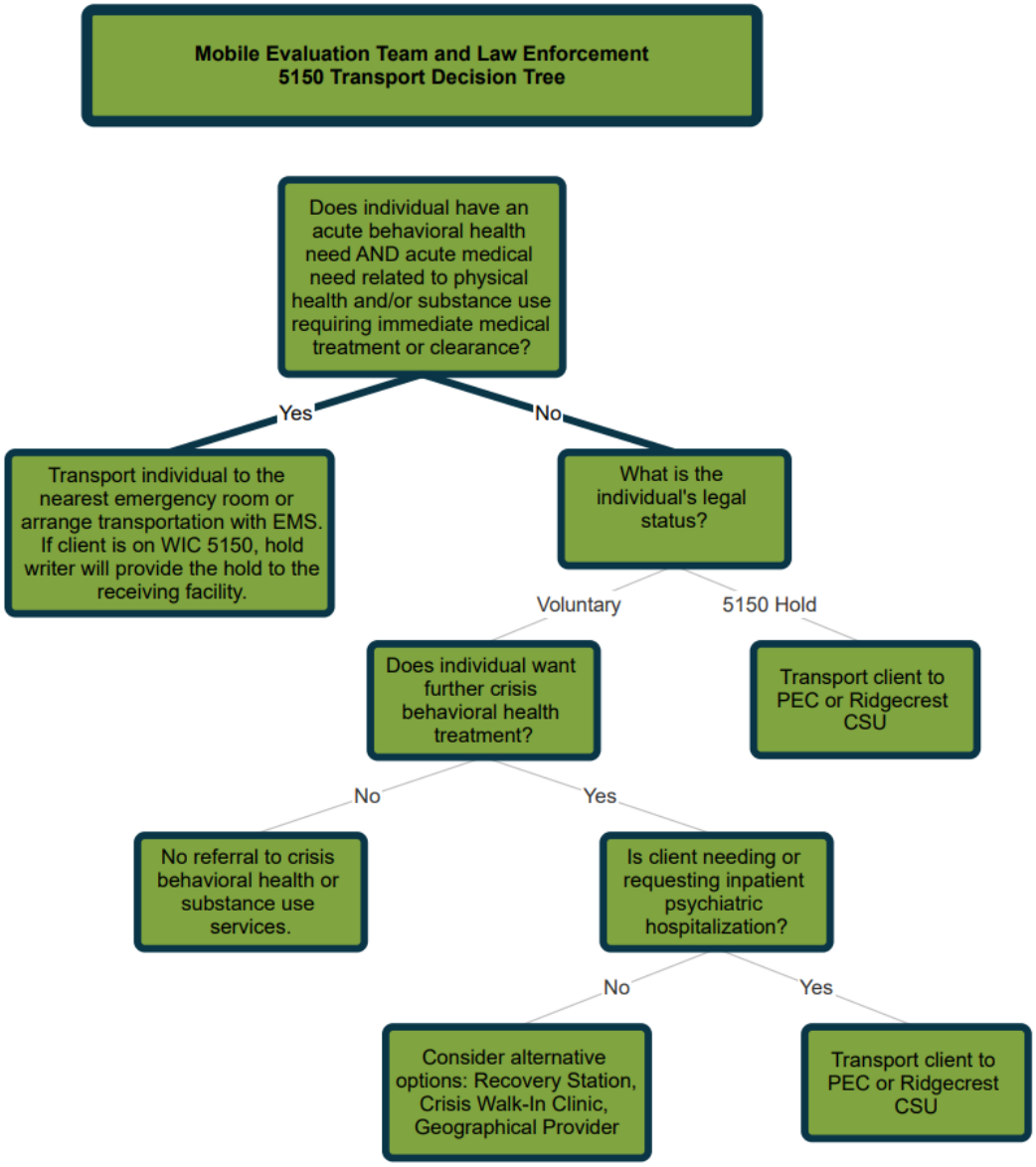
3. **Behavioral Health Patients**

*All Agencies in Kern County have the following Kern Behavioral Health and Recovery Services Transfer and Transport Training and Guidelines as listed below;



DESTINATION DECISION SUMMARY

The following is for the understanding of what has been given to Mobile Evaluation Teams and Law Enforcement as a collaborative effort of on-scene decision making regarding Behavioral Health and substance abuse patients.



4. **Unconscious/Minor Patients:** Determining the destination for unconscious, altered mental status, or minor patients shall include making family, parent(s), legal guardian, health care proxy, or person with power of attorney part of the decision-making process, whenever possible and should follow the same processes listed above.

5. **Transporting From a Clinical Setting:** When responding to a clinical facility and an MD/PA/NP/RN requests ambulance transport of a patient to a specialty care center or tertiary care facility not included on the Kern County EMS Approved Receiving Center list (See above table), the following must be considered:
   - The requesting MD/PA/NP/RN has pre-arranged acceptance of the patient at the requested destination hospital
   - The patient condition, as assessed by the physician/representative, is deemed to be safe for transport
   - The patient/family/parent(s)/legal guardian/health care proxy/person with power of attorney agrees to requested destination
   - The attending paramedic or EMT is comfortable that all the above criteria has been met and after assessing the patient, agrees that the patient's condition should tolerate the transport
   - The ambulance provider can maintain coverage of their respective EOA while the unit transports the patient to the requested destination
   - If transporting to a Kern County EMS non-approved receiving center, transporting crew shall request that dispatch notify EMS duty officer.
   - All the above criteria must be clearly documented on PCR

6. **Med-Alert/Multi-Casualty (MCI) Destination:** During a Med-Alert/MCI patients shall be transported to the facilities assigned by the transportation coordinator at scene. Yellow tier criteria patients should be distributed to other hospitals so as not to overwhelm the trauma center.

7. **Medical Extremis Criteria:** Extremis criteria shall include any one of the following:
   - Unmanageable airway or respiratory arrest
   - Uncontrolled hemorrhage with signs of hypovolemic shock
   - Cardiopulmonary arrest
   - Unconscious, unresponsive (BLS UNIT ONLY)

8. **Trauma Extremis Criteria:** Trauma extremis criteria shall include any of the following:
   - Traumatic arrest
   - Unmanageable airway or inability to ventilate

9. **Emergent Medical Pediatric Criteria**: Patients that are younger than fourteen (14) years with a medical complaint who do not meet trauma or medical extremis criteria, shall be transported to an Advanced Pediatric Receiving Center. The use of air ambulance transport shall be in accordance with *EMS Aircraft Dispatch-Response-Utilization Policies*. Emergent medical complaints are defined as:

   - Cardiac dysrhythmia
   - Evidence of poor perfusion
   - Severe respiratory distress
   - Cyanosis
   - Persistent altered mental status
   - Status Epilepticus
   - Brief Resolved Unexplained Event in less than one (1) year of age.

10. **Non-emergent Medical Pediatric Criteria:** Patients that are younger than fourteen (14) years with a medical complaint who do not meet trauma, medical extremis or emergent medical criteria shall be transported to any level Pediatric Receiving Center.

11. **Burn Destination Decision Criteria**: When dealing with a patient who has suffered a burn injury, the following will need to be considered for appropriate destination consideration:

    - Patients with Red Tier trauma triage criteria for injuries in addition to burns shall be transported to a Level I or II trauma center in accordance with *Trauma Policies and Procedures.*
    - Patients meeting Yellow Tier trauma triage criteria for injuries in addition to burns should consider consulting with a Level I or II trauma center for assistance with destination decisions in accordance with Trauma Policies and Procedures.
    - Patients who meet extremis criteria shall be transported in accordance with *Ambulance Destination Decision Policies and Procedures.*
    - With the exceptions stated above, patients should be transported directly to the closest most appropriate Burn Center by-passing other hospitals if:
      1. Partial thickness (2°) or full thickness (3°) burns that are more than ten percent (10%) total body surface area

2. Partial thickness (2°) or full thickness (3°) circumferential burns of any part
3. Partial thickness (2°) or full thickness (3°) burns to face, hands, feet, major joints, perineum, or genitals.
4. Electrical burns with voltage greater than 120 volts
5. Chemical burns greater than five percent (5%) total body surface area. For transport times to a Burn Center greater than sixty (60) minutes, pre-hospital personnel may consult with Burn Center for consideration of closest destination.

- Pre-hospital personnel may consider base contact with a Burn Center to assist in destination decision.

12. <u>Turn Over of Patient Care Authority:</u> A paramedic may transfer patient care authority to a BLS transport ambulance, when all the following circumstances exist:

- The BLS ambulance is available within a reasonable time. A reasonable time is defined as the time it would take the ALS crew to transport to hospital or 20 minutes, whichever is less.
- ALS care has not been initiated.
- It has been determined that ALS care is unneeded during transport.
- Patients must be stable with medical complaints that can be cared for at the BLS level.
- ALS assessment tools may be utilized (i.e. ECG 3- and 12 Lead cardiac monitor) to fully assess the patient and determine eligibility for turnover to BLS.
- Patient airway is maintained without assistance or adjuncts.
- The patient must be hemodynamically stable. Vital signs should be steady and commensurate with the patients' condition.
- The patient must be of their normal mental status and not impaired because of alcohol or substances.
- No mechanism of injury that would warrant a trauma activation.
- No cardiac, respiratory, or neurological complaints that may warrant ALS intervention.
- The EMT must be comfortable with the patients' condition and accept the transfer of care.
- Base contact shall be made and must concur with handoff.

<u>Critical Care Transport nurses may turn patients over to paramedics.</u> These patients must not have or require any medications or therapies that are outside of the paramedic's scope of practice.

13. <u>Non-Emergent Patients Meeting Waiting Room Criteria.</u>

1. Non-emergent patients who can go directly to an emergency department walk-in waiting room shall meet all the following criteria:
   - Patients 18 years of age or older
   - Minor accompanied by a responsible adult.
   - Patients can sit unassisted and have reasonable mobility.
   - Patients do not have peripheral IV access.
   - Patient is not on a 5150 hold or in custody.
   - Patient vital signs:

Adults:	Pulse:	50-120bpm
	Systolic Blood Pressure:	100-180 mm Hg
	Diastolic Blood Pressure:	Less than 120 mm Hg
	Respiratory Rate:	12-28

Pediatrics: Vital signs appropriate for age. (**Refer to Handtevy Mobile App**)

2. Every attempt shall be made to give report to appropriate hospital staff and obtain a signature. If hospital staff decline to sign ePCR to receive the patient, EMS personnel shall document the staff member's name in the narrative and document "refused to sign" in the signature box.

3. Patients who meet all of the criteria can be taken directly to the emergency department walk-in waiting room, by-passing the ambulance entrance used for emergent or critically ill patients. MICN approval is not required to place patients in the waiting room if escorted through the public entrance.

14. <u>EMS Equipment and Therapy Status:</u>

1. Cardiac Monitor - If the patient is not being treated under an ALS protocol and the monitor has shown a sinus rhythm or stable pre-existing rhythm (atrial fibrillation, bigeminy, asymptomatic bradycardia), the monitor may be removed from the patient when arriving at hospital. Base contact is not required if the cardiac monitor is discontinued. Patients being treated under an ALS protocol requiring cardiac monitoring shall remain on the cardiac monitor until the transfer of care is complete.

2. Oxygen Administration – Prehospital personnel should only administer oxygen when the treatment protocol requires oxygen, or when a patient's pulse oximetry reading is 93 or less. Oxygen should be discontinued on patients when it is not indicated according to protocol. For example, if an ambulance crew arrives on scene where oxygen is initiated by the first responder agency, they shall discontinue the oxygen if not indicated. Oxygen is overused and should only be used on patients as noted in the patient treatment protocols. Frequently, the use of oxygen (when not needed) prevents the patient from being delivered to the waiting room. Base contact is not required if oxygen is discontinued.

3. IVs and Saline Locks – IV access should only be considered in a patient when the treatment protocol requires an IV or there is a reasonable and imminent chance that the patient's condition may deteriorate enroute to the hospital. Similarly, a saline lock should only be initiated in patients who require vascular access based upon the specific treatment protocol. Frequently, the IV or saline lock prevents the patient from being delivered to the waiting room.

When arriving at a hospital, EMS personnel shall not delay the off-load of a patient from the ambulance and patients shall not be held in ambulances at any time. EMS personnel shall obtain transfer of care signature immediately after patient is transferred off the ambulance gurney.

DETERMINATION OF DEATH

Patient assessment findings must include

Obvious death criteria

DO NOT PROCEED WITH RESUSCITATION

-or-

Pulseless for a minimum of 60 seconds with a patent airway and confirmed apneic with no pupillary response

and at least one of the following without special considerations

has been confirmed pulseless and apneic for at least 10 minutes
-or-
has a DNR/POLST
-or-
blunt trauma in cardiac arrest prior to arrival

DO NOT PROCEED WITH RESUSCITATION

If the patient **does not** meet the above criteria
The provider shall initiate resuscitation by the appropriate policy/protocol.

Special Considerations

A. Resuscitative efforts are of no benefit to patients whose physical condition precludes any possibility of successful resuscitation.

B. Drowning, hypothermia, and barbiturate ingestion all prolong brain life and therefore treatment and transport should be considered on these patients.

C. Prehospital care personnel have the discretion to initiate resuscitation in those cases where resuscitation may not be warranted by patient conditions, but necessary for crew safety or considered the best course of action in any given situation and ***requires supportive thorough documentation in EPCR.***

D. **Obvious Death Criteria:** A patient may be determined obviously dead by Prehospital Care Personnel if, **in addition** to the absence of respiration, cardiac activity, and fixed pupils, **one or more** of the following physical or circumstantial conditions exists:

1. Decapitation
2. Massive crush injury to the head, neck, or trunk
3. Penetrating **OR** blunt injury, causing evisceration of the heart, lung, or brain
4. Decomposition
5. Incineration
6. Rigor Mortis
7. Post-Mortem Lividity

E. <u>When not to initiate CPR:</u>

a. Primary assessment reveals a pulseless, non-breathing patient who has signs of prolonged lifelessness in accordance with obvious death criteria or confirmed pulseless for 10 minutes. This does not apply to drowning, hypothermia and barbiturate overdoses.

b. Blunt trauma patient, who on the arrival of EMS personnel, is found to be apneic, pulseless and with fixed pupils.

- When the mechanism of injury does not correlate with the clinical condition, suggesting a medical cause of cardiac arrest, standard resuscitative measures should be followed.

2. Penetrating trauma patient:
   - BLS EMS personnel shall initiate resuscitation until arrival of ALS personnel, **unless patient meets obvious death criteria**.
   - ALS EMS personnel, if patient is found to be pulseless, apneic, and there are no other signs of life, including spontaneous movement, electrocardiographic activity, or pupillary response **should not initiate resuscitation and may cease resuscitation efforts, if initiated by BLS**.
   - If penetrating trauma **and** does not meet determination of death, initiate immediate transport. (DO NOT RESUSCITATE ON SCENE)

3. A patient with an approved "Do-Not-Resuscitate" (DNR) document in accordance with the programs policy.

F. **Termination of CPR by <u>EMT Personnel</u>**:

may be considered under the following circumstances for adult patients:

- Arrest was not witnessed by EMS provider or first responder; AND
- No return of spontaneous circulation (ROSC) after 30 minutes of CPR and automated external defibrillator (AED) analysis; AND
- No AED shocks were delivered

G. **Termination of CPR by <u>Paramedic Personnel</u>**:

Paramedic personnel may discontinue resuscitative efforts as outlined below:

a. Any case in which information becomes available that would have prevented the initiation of CPR had that information been available before CPR was initiated, CPR should be terminated.
b. Personnel may consider further resuscitative efforts in the following situations:
   - Persistent PEA with End Tidal Carbon Dioxide >20 or trending upwards.
   - Persistent shockable rhythm
   - Paramedic judgement in consultation with a base physician

c. Termination of resuscitation and determination of death should be considered for witnessed traumatic cardiopulmonary arrest patients with a fifteen (15) minute or greater transport time to an ED or Trauma Center with effective airway management (effective bag valve mask ventilations with OPA and NPA (unless contraindicated) successful intubation, or supraglottic airway), thoracic needle decompression (if appropriate), and IV therapy.
   - Does not apply to lightning strike injuries or drownings
   - If transport time to an ED or Trauma Center is less than fifteen (15) minutes, transport should be initiated immediately. Resuscitate while in transport.

H. EMS personnel shall initiate transport and continue resuscitation ONLY when one of the following factors are present:

   a. ROSC occurs following medical cardiac arrest
   b. Hypothermia
   c. Barbiturate overdose
   d. Drownings
   e. Penetrating trauma with no obvious signs of death
   f. Patient age <18 years (Patient is a minor)
   g. Extreme, unusual, or dangerous social or scene situations.
   h. Provider discretion with base order.

I. **Documentation:** An ePCR shall be completed in accordance with the existing programs policy. All appropriate patient information must be included in the ePCR and shall describe the patient assessment and the time the patient was determined to be dead.

J. **Disposition of the Decedent**:
   1. If determination of death has occurred and the decedent has not been moved from the original place of death:
      a. The decedent shall remain at the scene and not be transported by Prehospital Care Personnel.
      b. Any treatment items, such as endotracheal tubes, intravenous catheters, ECG or defibrillation electrodes, shall be left in place.

c. Resuscitation equipment, such as bag-valve-mask devices ECG monitoring equipment, etc., may be removed from the decedent.
d. Prehospital Care Personnel should ensure that the agency with primary investigative authority has notified the Kern County Coroner's Office of the incident.
e. The agency on-scene with primary investigative authority should remain at the scene until released by the Kern County Coroner's Department.
f. If public safety personnel are not present at the scene, Prehospital Care Personnel shall remain at the scene until public safety personnel or Coroner Investigator arrival; and
g. Prehospital Care Personnel shall complete a PCR in accordance with existing Department policy; ensuring to include the time the determination of death was made.

2. If the patient has been moved from the original place of death (i.e. transport has been started; or the patient has been loaded into an ambulance), Prehospital Care Personnel shall inform on-board patient family members of the determination of death and shall cease all resuscitation efforts.

3. Prehospital Care Personnel are not responsible to find and inform family members inside a residence or away from the ambulance if the patient has been loaded and a Base Hospital Physician order to terminate resuscitation has been received.

4. If the patient has been placed into an ambulance but transport has not been started, the ambulance shall remain on the scene with the patient loaded inside the vehicle until released by the law enforcement agency with primary investigative authority.

5. If the patient has been loaded into an ambulance and transport has been started, the patient shall be transported to the closest and most appropriate authorized Receiving Hospital or Base Hospital, but without further resuscitation efforts (termination of resuscitation effort only). Transport should be provided without emergency lights and sirens (Code-2 transport).

6. If the patient is to be transported to an emergency department that did not order termination of resuscitation, Prehospital Care Personnel shall make immediate contact and inform the receiving hospital emergency department physician of the situation.

Airway Obstruction (101)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Support ABC'S and clear airway as appropriate. • Provide O2 to support respiration. • Request EMS.	• Support ABC'S and clear airway as appropriate. • Provide O2 to support respiration. • Request EMS.
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Primary survey and ABC's, Pulse oximetry, and give Oxygen only if SpO2 <94% or respiratory distress. • If a patient is able to talk, calm the patient, do not attempt to examine throat or dislodge potential obstruction. • Suction secretions as needed. • If a patient is unable to talk or cough but is conscious, perform Heimlich maneuver per AHA guidelines. • If patient is unconscious, open airway, position head and attempt to ventilate. Remove obstruction with finger sweep **ONLY IF VISIBLE**. Reassess and attempt to ventilate. If unable to ventilate begin CPR and refer to Pulseless Arrest Entry Algorithm protocol (119).	• For BLS procedures, refer to Adult
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• Attempt to clear using direct laryngoscopy and forceps. • If there is no success, attempt to intubate using small adult ET tube. • If complete airway obstruction or occlusion with inability to ventilate **NOT** due to foreign object, attempt ET Intubation with small adult ET tube.	• Attempt to clear using direct laryngoscopy and forceps. • If there is no success, rapid transport to the closest most appropriate facility. • If complete airway obstruction or occlusion with inability to ventilate **NOT** due to foreign object attempt to utilize smaller supraglottic airway and refer to Respiratory Compromise (121)
Base Hospital Contact Required	**Base Hospital Contact Required**

Special Considerations

1. Airway obstruction is characterized by the inability to speak, no respiratory tidal volume and decline of condition. Treatment of complete airway obstruction using this protocol takes precedence over all other protocols.

2. Laryngoscopy and assessment of factors leading to the event may be required to adequately assess the cause of airway obstruction.

3. If epiglottitis, laryngeal swelling, anaphylaxis, or spasm caused by burns is suspected, **do not** attempt to visualize airway **until prepared to intubate**.

4. Heimlich maneuver is the current accepted practice for airway obstruction due to foreign objects. Refer to AHA guidelines for appropriate age/size procedure.

5. When the airway is successfully cleared, ventilate, and refer to the appropriate protocol for further treatment.

6. If patient is < 1-year alternate between 5 back blows and 5 chest thrust to attempt to dislodge obstruction.

Altered Level of Consciousness (ALOC) (102)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Suspected Narcotic OD with respiratory depression or altered level of consciousness **with** respiratory depression? (RESPIRATIONS <8) Give Naloxone 2 mg Intranasal 1 mg per nare **OR** give entire single dose Narcan Nasal Spray. • Request EMS transport and continually monitor patient's airway and respirations until hand off to a higher level of care in accordance with the scene control policy	• Suspected Narcotic OD with respiratory depression or Altered level of consciousness **with** respiratory depression? If greater than 8 years old, give Naloxone 2 mg Intranasal 1 mg per nare **OR** give entire single dose Narcan Nasal Spray. • Request EMS transport and continually monitor patient's airway and respirations until hand off to a higher level of care in accordance with the scene control policy
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Complete Primary Survey/ABC • Give oxygen only if SpO2<94% or if in respiratory distress • Check Glucose if hypoglycemia enter Diabetic Emergency Protocol (112) • Monitor Airway and Suction as Needed • Prepare for Rapid Transport or ALS Handoff • Suspected overdose enter Poisoning/Ingestion/Overdose Protocol (119) • Signs of head injury? If yes, enter Head/Eye/Ear Trauma Protocol (113) • Is patient possibly postictal? If yes, enter Seizure Activity Protocol (122) • Is the patient complaining of stroke signs or symptoms? If yes, enter Acute Stroke/CVA Protocol (123)	• For BLS procedures, refer to Adult
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• Advanced Airway/Ventilation • Attach ECG/SpO2 • Establish IV/IO	• Supraglottic Airway/Ventilation • Attach ECG/SpO2 • Establish IV/IO
Base Hospital Contact Required	**Base Hospital Contact Required**

Altered Level of Consciousness (ALOC) (102)

Special Considerations

1. Assessment – Airway, vital signs, mental status, pupils, needle tracks, head or spine trauma, pill bottles, ETOH, neuro deficits, focal seizure, postictal paralysis, and medications.
2. Always suspect head and/or spine trauma as a result of falls from syncope or seizures. Take cervical spine precautions as needed.
3. The Paramedic may also perform a blood glucose reading on a patient complaining of generalized weakness who presents with a diabetic history or if any suspicion of the patient being altered even if the patient is answering all questions appropriately. If a blood glucose reading is performed and blood glucose is 60 or less, treat per protocol.
4. For all further assessment guidance, refer to A.E.I.O.U.T.I.P.S
   - "A" Alcohol
   - "E" Epilepsy/Electrolytes
   - "I" Insulin
   - "O" Overdose
   - "U" Uremia
   - "T" Trauma/Tumor/Time
   - "I" Infection
   - "P" Psychiatric
   - "S" Stroke/Shock/Hypertensive Encephalopathy

Allergic Reaction/Anaphylaxis (103)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Assess ABC's • Request EMS • Administer Oxygen if patient has difficulty breathing • If there is severe allergic reaction, administer epinephrine auto injector and monitor patient respiratory status and airway closely until EMS handoff.	• Assess ABC's • Request EMS • Administer Oxygen if patient has difficulty breathing • If there is severe allergic reaction, administer Epi auto injector (EpiPen Jr) and monitor patient respiratory status and airway closely until EMS handoff.
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Pulse oximetry • Administer Oxygen only if SpO2<94% or in respiratory distress • If mild reaction, monitor patient closely for deterioration, transport in position of comfort if patient remains stable • Moderate or severe reaction (see list in special considerations), administer Epinephrine auto injector or Epinephrine manually drawn 0.3 mg/IM of 1:1000 to lateral thigh (optional scope only). Treat hypotension in accordance with Shock/Hypoperfusion Protocol (125). • Rapid transport or ALS rendezvous	• Pulse Oximetry • Administer Oxygen only if SpO2<94% or in respiratory distress • If mild reaction, monitor patient closely for deterioration, transport in position of comfort if patient remains stable • Moderate or severe reaction (see list in special considerations), administer Epinephrine auto injector (EpiPen Jr) or Epinephrine manually drawn 0.15 mg/IM of 1:1000 to lateral thigh (optional scope only). Treat hypotension in accordance with Shock/Hypoperfusion Protocol (125). • Rapid transport or ALS rendezvous
ALS Prior to Base Hospital Contact: Paramedic Only	**ALS Prior to Base Hospital Contact: Paramedic Only**
• IV/Monitor • Administer Epinephrine 0.3 mg IM of 1:1000 to lateral thigh. • If signs and symptoms unresolved administer Diphenhydramine 50 mg IM **OR** 25-50 mg slow IVP • If unresolved, may repeat IM Epinephrine • If severe distress initiate Push Dose Epinephrine 0.5 mL IVP every 1-5 minutes to Systolic B/P > 90 **OR** Epinephrine drip 2-8 mcg/min. Start at 2mcg/min and titrate to affect. • If any signs of airway compromise or complaint of difficulty breathing initiate transport early.	• IV/Monitor • Administer Epinephrine 0.01 mg/kg IM of 1:1000 to lateral thigh. • If signs and symptoms unresolved administer Diphenhydramine 1 mg/kg IV/IO/IM • If unresolved, may repeat IM Epinephrine • If severe distress initiate Push Dose Epinephrine 0.5 mL IVP every 1-5 minutes to Systolic B/P age 1-10 > 70 mmHg, over 10 years > 90 **OR** Epinephrine drip 0.1-1 mcg/kg/min. Start at lower dose and titrate to effect not to exceed adult dose.

	• If any signs of airway compromise or complaint of difficulty breathing initiate transport early.
Base Hospital Contact Required	**Base Hospital Contact Required**

Special Considerations

1. Signs and Symptoms of severe reaction (Anaphylaxis):
   - Respiratory distress (including but not limited to wheezing, stridor, or signs of bronchospasm)
   - Airway occlusion
   - Swelling to face and/or tongue
   - Tightness in throat and/or chest
   - Loss of voice
   - Hypotension/shock
   - Exposure to known allergens with symptoms
   - Itching and hives (with one or more of the symptoms listed above)

2. Mild allergic reactions usually require less aggressive therapy. Consider Diphenhydramine.

3. Epinephrine drip 2-8 mcg/min preparation:

   - **Epinephrine drip**
     - Begin with a 100mL bag of normal saline and apply medication label to indicate epinephrine drip.
     - Obtain 1 ampule or vial of epinephrine 1:1000
     - With a 10mL syringe and a filtered needle withdraw 0.8mg of epinephrine 1:1000
     - Remove filtered needle attach hypodermic needle and inject epinephrine 1:1000 in labeled 100mL saline bag. Shake well.
     - Attach the 60 drops/mL IV tubing set to the extension set with flow controller (Dial-a-flow). Prime the line and set your desired drops, see below for rates.

       - 2mcg/min set rate to 15 drops
       - 4mcg/min set rate to 30 drops
       - 6mcg/min set rate to 45 drops

- 8mcg/min set rate to 60 drops

4. Push dose epinephrine or epinephrine drip is indicated for severe allergic reactions/anaphylaxis or fast onset of symptoms. Push dose epinephrine is preferred over drip for continued severe allergic reaction. If patient fails to respond to push dose epinephrine or if you expect to have a long transport time epinephrine drip shall be used.

   - Push dose epinephrine for profoundly hypotensive patients after standard treatments fail to improve blood pressure.
   - Push dose epinephrine is 1mL (0.1 mg) of 1 mg in 10 mL epinephrine (cardiac epinephrine 1:10,000) mixed with 9 mL of N/S resulting in Epinephrine 0.01 mg/mL.

     - Begin with an empty 10mL syringe and apply a medication label to indicate push dose epinephrine.
     - Withdraw 1 mL of 0.1 mg/mL preparation (cardiac epinephrine 1:10,000)
     - Withdraw 9 mL of normal saline. Shake well.
     - Mixture now provides 10 mL of epinephrine at a 10 mcg/mL concentration.
     - Push Dose: 0.5 mL (5 mcg) IV/IO, every 1-5 minutes.

5. Diphenhydramine is indicated for use after epinephrine in patients with respiratory distress or hypoperfusion. Diphenhydramine is the primary therapy for idiosyncratic reactions to Haldol or phenothiazine medication group. Phenothiazine medication group reactions, Diphenhydramine IV push is indicated with bypass of other treatment listed in this protocol.

Asystole/ Pulseless Electrical Activity (104)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Begin High-Performance CPR • Attach AED and follow prompts • Ensure Fire/ALS have been requested	• Begin High-Performance CPR • Attach AED and follow prompts use pediatric pads or dose attenuator if available • Ensure Fire/ALS have been requested
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Begin High-Performance CPR • Attach AED/monitor and follow prompts • Pulse checks every 2 minutes for no longer than 10 seconds • Rapid transport or ALS rendezvous if ROSC • If no change after 30 minutes, consider termination of efforts per determination of death policy	• Begin High-Performance CPR • Attach AED/monitor and follow prompts use pediatric pads or dose attenuator if available • Pulse checks every 2 minutes for no longer than 10 seconds • Request ALS rendezvous. Initiate transport if ALS ETA is greater than 10 min
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• Monitor/EtCO2 • When IV/IO established give Epinephrine IV drip 2-8 mcg/min repeat as needed. Start at 8mcg/min and titrate down once ROSC is achieved. • Consider H's and T's • Suspected Hyperkalemia? If yes, give Calcium Chloride 20mg/kg • Consider fluid challenge 20mL/kg • If no change after 30 minutes, consider termination of efforts per determination of death policy • Enter V-FIB/Pulseless V-TACH Protocol (126) as needed for rhythm change	• Monitor/EtCO2 • When IV/IO established give Epinephrine IV drip 0.1-1 mcg/kg/min not to exceed adult dose repeat as needed. Start at higher dose and titrate down once ROSC is achieved. • Consider H's and T's • Suspected Hyperkalemia? If yes, give Calcium Chloride 20mg/kg • Consider fluid challenge 20mL/kg • Transport after 10 minutes of High-Performance CPR or if ROSC is achieved. • Enter V-FIB/Pulseless V-TACH Protocol (126) as needed for rhythm change
Base Hospital Contact Required	**Base Hospital Contact Required**

For patients < 18 years begin transport after 10 minutes of High-Performance CPR or if ROSC is achieved.

Special Considerations

1. Epinephrine drip 2-8 mcg/min preparation:

➢ **Epinephrine Drip Setup**

- Begin with a 100mL bag of normal saline and apply medication label to indicate epinephrine drip.
- Obtain 1 ampules or vials of epinephrine 1:1000
- With a 1 mL syringe and a filtered needle withdraw 0.8mg of epinephrine 1:1000
- Remove filtered needle, attach hypodermic needle and inject 0.8mg of epinephrine 1:1000 in labeled 100mL saline bag. Shake well.
- Attach the 60 drops/mL IV tubing set to the extension set with flow controller (Dial-a-flow). Prime the line and set your desired drops, see below for rates.

  - 2mcg/min set rate to 15 drops
  - 4mcg/min set rate to 30 drops
  - 6mcg/min set rate to 45 drops
  - 8mcg/min set rate to 60drops

2. The most common and easily reversible causes of PEA are hypovolemia and hypoxia. The best chance of success in treating PEA is to recognize and treat the underlying cause. The most common causes of PEA are presented in the H's and T's table below:

H's	T's
Hypovolemia	Toxins
Hypoxia	Tamponade (cardiac)
Hydrogen ion (acidosis)	Tension Pneumothorax
Hyper/hypokalemia	Thrombosis (coronary and pulmonary)
Hypoglycemia	Trauma
Hypothermia	

3. Asystole should be confirmed in 3 leads and other causes of a flat line on the monitor should be ruled out. Causes of a flat line on the monitor, other than asystole include:

   - Loose leads
   - Leads not connected to the patient or the monitor
   - No power
   - Signal gain too low

4. Prognosis for asystole is very poor and is usually seen as confirmation of death. Prolonged efforts at resuscitation of asystole are unnecessary and futile unless special resuscitation situations exist, such as hypothermia and drug overdose.

5. Transcutaneous pacing is not indicated for asystole.

6. Routine shock of asystole is not indicated unless it is questionable whether the patient is in asystole or fine ventricular fibrillation.

7. If a reversible cause is not rapidly identified and the patient fails to respond to resuscitative efforts termination of resuscitation should be considered.

Bites/Stings/Envenomation (105)

Adults and Pediatrics
Public Safety First Aid Procedures:
• Remove victims from vicinity of animal/insect if safe to do so • Support ABC's • Request Fire/EMS • Determine type of injury • If signs of anaphylaxis or shock, enter Allergic Reaction/Anaphylaxis Protocol (103) • Remove jewelry and clothing from the area involved • Immobilize affected area, at or slightly below level of heart • Outline area of swelling with pen and record time • If insect bite/sting, keep extremities at heart level, splint and apply ice. • If bee sting remove stinger by scraping only.
BLS Procedures: EMT's and Paramedics
• Remove the victim from vicinity of animal/insect if safe to do so • Give Oxygen only if SpO2<94% or if in respiratory distress • If signs of Allergic reaction/anaphylaxis enter Allergic Reaction/Anaphylaxis Protocol (103) • Remove jewelry and clothing from the area involved • Immobilize affected area at or slightly below level of heart • Outline area of swelling with pen and record time • If insect bite/sting, keep extremities at heart level, splint and apply ice. • If bee sting remove stinger by scraping only.
ALS Prior to Base Hospital Contact: Paramedic only
• Consider IV access to non-affected limb
Base Hospital Contact Required

Special Considerations

Reminders for Snake Bites

- Tourniquets should not be used.
- Remove any tight-fitting jewelry or clothing near the envenomation site.
- Keep patient at rest.
- DO NOT apply ice or cooling.
- DO NOT allow incision of the wound. The provider should try to safely ascertain the type of snake if possible.
- DO NOT transport or bring the snake to the hospital.

If snake was an exotic pet or zoo animal, patient may present with the following:

- Neurologic or respiratory depression.
- Observe for changes to mental status, respiratory status, convulsions, or paralysis.

Reminders for insect Bites/Stings

- Bring animal or insect to the hospital only if dead.
- DO NOT touch a bee stinger that is still in place.
- Use an object to scrape the stinger off of the skin (i.e. a hard piece of plastic, credit card, etc.).
- DO NOT submerge extremities in ice.
- Apply an ice pack, or cooling compress localized to the area of the bites/stings
- Consider intravenous access to a non-affected limb if possible.

Bradycardia (106)

Adults	Pediatrics *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Request Fire/EMS transport • Support ABC's as needed	• Request Fire/EMS Transport • Support ABC's as needed
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Assess/support ABC's • Give oxygen only if Spo2 <94% or if in respiratory distress • Rapid transport or ALS Rendezvous	• Assess/support ABC's • Give oxygen only if SpO2 <94% or if in respiratory distress • Rapid transport or ALS Rendezvous
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• Attach monitor/SpO2/Obtain 12 lead ECG • Establish IV • Assess for signs of poor perfusion related to Bradycardia, such as Altered Mental Status, Chest Pain, Shortness of Breath, Hypotension. • If poor perfusion is present, prepare for **TRANSCUTANEOUS PACING** at a rate of 80 bpm • Consider pain management with 1 mg Midazolam and 50 mcg Fentanyl • prior to TCP if Systolic B/P >90 • Consider Atropine 0.5 mg IV while preparing pacer. May repeat to a max dose of 3 mg. • Consider Push Dose Epinephrine 0.5 mL every 1-5 minutes **OR** Epinephrine drip 2-8 mcg/min. Start at 2mcg/min and titrate to effect, if pacing ineffective. • Treat underlying causes and establish base contact	• Attach monitor/SpO2/obtain 12 lead • Bradycardia causing cardio-respiratory compromise? • Establish IV/IO • Under 1 year with heart rate <60 BPM with signs of shock despite oxygenation/ventilation? Perform CPR for 2 minutes, is patient still bradycardic? • If increased vagal tone or primary AV block, give Atropine 0.02 mg/kg minimum dose 0.1 mg BEFORE epinephrine administration. May repeat as needed to max of 1 mg. • Consider Transcutaneous pacing • Consider pain management with Midazolam 0.1 mg/kg IM or 0.05 mg/kg IV and 1mcg/kg Fentanyl prior to TCP if over 10 years old Systolic B/P > 90 mmHg or less than 10 years old Systolic B/P > 70 mmHg • Push Dose Epinephrine 0.5 mL every 1-5 minutes **OR** Epinephrine drip 0.1-1 mcg/kg/min. Start at lower dose and titrate to effect not to exceed adult dose.
Base Hospital Contact Required	**Base Hospital Contact Required**
• Pain control beyond the initial dose.	• Pain control beyond the initial dose.

Special Considerations

Primary point of concern is adequacy of perfusion if patient is hemodynamically stable then monitor and transport patient.
Key questions to answer, are there serious signs and symptoms and if so, are they related to the slow heart rate?
Serious signs and symptoms:

- Chest pain
- Shortness of breath
- Decreased LOC
- Fatigue
- Weak, dizzy, lightheaded
- Syncope
- Hypotension
- CHF
- Ventricular escape rhythms

1. Before TCP: Consider Midazolam and Fentanyl or Morphine, titrated to patient comfort. Contact a base hospital for further orders if additional sedation/pain relief is required.

2. Start TCP immediately if:
   - No response to atropine
   - Atropine is unlikely to be effective in heart blocks such as second-degree type II or third-degree
   - IV access cannot be quickly established.
   - Patient is severely symptomatic.
3. After TCP:
   - Assess electrical and mechanical capture
   - Reassess patient perfusion
   - Give analgesics and sedatives for pain control if not done before TCP.

4. If patient fails to respond to TCP or ATROPINE consider: Push dose Epinephrine for profoundly hypotensive patients after standard treatments fail to improve blood pressure.
   - Push Dose epinephrine is 1mL (0.1 mg) of 1 mg in 10 mL epinephrine (cardiac epinephrine 1:10,000) mixed with 9 mL of N/S resulting in Epinephrine 0.01 mg/mL.

     - Begin with an empty 10mL syringe and apply a medication label to indicate push dose epinephrine.
     - Withdraw 1 mL of 0.1 mg/mL preparation (cardiac epinephrine 1:10,000)
     - Withdraw 9 mL of normal saline. Shake well.
     - Mixture now provides 10 mL of epinephrine at a 10 mcg/mL concentration.

- Push Dose: 0.5 mL (5 mcg) IV/IO, every 1-5 minutes.

5. TCP Operational Considerations

   - Acquire baseline rhythm strip
   - Consider premedication with Midazolam for conscious patients
   - Apply pacing electrodes to clean, dry, skin
   - Set pacer rate at 80
   - Activate pacer and adjust current upward until electrical and mechanical capture is identified.
   - Typical capture thresholds range between 50-90 mA

6. For long transports consider Epinephrine infusion, titrated to patient response. See below for epinephrine drip preparation.

   - **Epinephrine Drip Setup**

     - Begin with a 100mL bag of normal saline and apply medication label to indicate drip.
     - Obtain 1 ampules or vials of epinephrine 1:1000
     - With a 1 mL syringe and a filtered needle withdraw 0.8mg of epinephrine 1:1000
     - Remove filtered needle attach hypodermic needle and inject 0.8mg of epinephrine 1:1000 in labeled 100mL saline bag. Shake well.
     - Attach the 60 drops/mL IV tubing set to the extension set with flow controller (Dial-a-flow). Prime the line and set your desired drops, see below for rates.

       - 2mcg/min set rate to 15 drops
       - 4mcg/min set rate to 30 drops
       - 6mcg/min set rate to 45 drops
       - 8mcg/min set rate to 60drops

Brief Resolved Unexplained Event (BRUE) (107)

Pediatrics *(13 years and under)*
Public Safety First Aid Procedures: Only
• Assess ABC's • Request EMS
BLS Procedures: EMT's and Paramedics start here
• Assess ABC's, Pulse oximetry, and vital signs • Complete primary and secondary assessment • Obtain complete history of event from caretaker • Identifiable cause discovered? If yes, transport and enter appropriate protocol • If no identifiable cause discovered, Observe/transport and enter appropriate protocol if condition changes
ALS Prior to Base Hospital Contact: Paramedic only
• Follow BLS procedures
Base Hospital Contact Required

Special Considerations

1. A Brief Resolved Unexplained Event (BRUE) is an event that is frightening to the observer (may think infant has died) and involved one or more of the following:

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

2. It usually occurs in infants less than 12 months of age, though any child with symptoms described under 2 years of age may be considered A BRUE

3. Most patients have a normal physical exam when assessed by pre-hospital personnel. Approximately half of the cases have no known cause, but the remainder of the cases have a significant underlying cause such as, but not limited to:

    - Airway Disease
    - Cardiac Arrhythmias/anomalies
    - Child Abuse
    - Gastroesophageal reflux
    - Infantile Botulism
    - Infections
    - Inborn errors of metabolism
    - Meningitis
    - "Near-miss" SIDS
    - Pertussis (whooping cough)
    - Respiratory Syncytial Virus
    - Seizure
    - Sepsis

4. Obtain history of events, duration and severity, whether patient was awake or asleep at the time of the episode, and what resuscitative measures were done.

5. Obtain past medical history, including chronic diseases, seizure activity, current or recent infections, history of gastroesophageal reflux, recent trauma, medication history, and mixing of formula.

Burns (108)

Adults	Pediatrics *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Stop the burning process if safe to do so • Remove burned clothing/jewelry unless it melted to the skin • Support ABC's and administer oxygen if signs of respiratory distress	• Stop the burning process if safe to do so • Remove burned clothing/jewelry unless it melted to the skin • Support ABC's and administer oxygen if signs of respiratory distress
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Primary assessment and ABC's • Oxygen only if SpO2 <94% or if in respiratory distress or concern of CO toxicity • Thermal burn? <30% TBSA? Stop the burning process and place burn wound under cool running tap water for 20 minutes prior to transport and then wrap in dry sterile dressing. • Chemical burn? Don appropriate PPE determine chemical agent via labeling or SDS, if unable to identify brush off dry chemical, blot excess liquid chemical. Wash with copious amounts of water, apply sterile dressing • Check for associated injuries, treat shock as needed, do not apply ice **or** cream to burned areas. • Transport to burn center or closest appropriate facility or ALS rendezvous	• Primary assessment and ABC's • Oxygen only if SpO2 <94% or if in respiratory distress or concern for CO toxicity • Thermal burn >10% TBSA? Stop the burning process and cover with dry sterile dressing • Chemical burn? Don appropriate PPE determine chemical agent via labeling or SDS, if unable to identify brush off dry chemical, blot excess liquid chemical. Wash with copious amounts of water, apply sterile dressing • Check for associated injuries, treat shock as needed, do not apply ice **or** cream to burned areas. • Transport to burn center or closest appropriate facility or ALS rendezvous
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**

• Respiratory compromise or stridor? ET Intubation administer Midazolam after airway is secured.
  ○ Adult 1 mg Midazolam slow IVP may repeat in 1 mg increments to max of 5 mg.
• Normal Saline follow Parkland Formula (see chart below)
• Hypoperfusion? Shock/Hypoperfusion Protocol (125)
• **Pain management**: Ketamine: 15mg in 100mL N.S. infused over 5 minutes, may repeat one time in 15 minutes or 25mg IN, (after drawing up medication
	• Respiratory compromise or stridor? Supraglottic airway insertion, administer Midazolam after airway is secure
	  ○ Pediatrics 0.2 mg/kg Midazolam slow IVP may repeat in 0.2 mg/kg increments to max dose of 5 mg
	• Normal Saline follow Parkland Formula (see chart below)
	• Hypoperfusion? Shock/Hypoperfusion Protocol (125)

add NS to increase volume to 1mL total volume) may repeat one time in 15 minutes or 15mg IM – do not dilute. Repeat in 15 minutes prn X 1, maximum total dose 30mg. • **OR** Fentanyl: Adult 50 mcg slow IV/IM/IO/IN may repeat in 50 mcg increments to max of 200 mcg. • **OR** Morphine: Adult 5mg IV/IO/IM, may repeat in 5mg increments to a max of 20mg	• **Pain management**: Ketamine 0.5mg/kg IN, (after drawing up medication add NS to increase volume to 1mL total volume) not to exceed adult dose; may repeat one time in 15 minutes. **OR** 0.2mg/kg IM (do not dilute). Single max dose of 15mg IM. Repeat in 15 minutes prn x1, maximum 2 total doses. • **OR** Fentanyl: 1 mcg/kg slow IV/IM/IN/IO 50 mcg max single dose. 3 mcg/kg max dose. • **OR** Morphine: 0.02mg/kg, may repeat to max of 10 mg.
Base Hospital Contact Required	**Base Hospital Contact Required**

Special Considerations

1. Burns associated with respiratory compromise or respiratory stridor warrant aggressive airway control and ventilation if possible. ET Intubation is indicated prior to complete airway occlusion. If an airway occlusion occurs, refer to the airway obstruction protocol.

2. Ketamine should be the first line medication for hypotensive patients or patients at risk of respiratory depression. Fentanyl and Morphine sulfate for pain control is contraindicated in patients with hypoperfusion or respiratory compromise or potential for deterioration of blood pressure or respiratory status. Fentanyl or Morphine sulfate for pain control may be given to patients with respiratory compromise once the airway is secured by ET intubation.

3. Hypoperfusion associated with large body surface thermal burns is common but not usually seen in the first twelve hours. If hypoperfusion exists, consider underlying trauma.

4. Interstitial swelling and circumferential extremity burns may cause problems with infusion of IV fluids. Whenever possible establish an IV in an unaffected or least affected extremity. If no options are available an IV may be established in a burned extremity though the IV bag may need to be pressurized (blood pump or BP cuff) to maintain IV flow. Use only the amount of pressure needed to maintain flow.

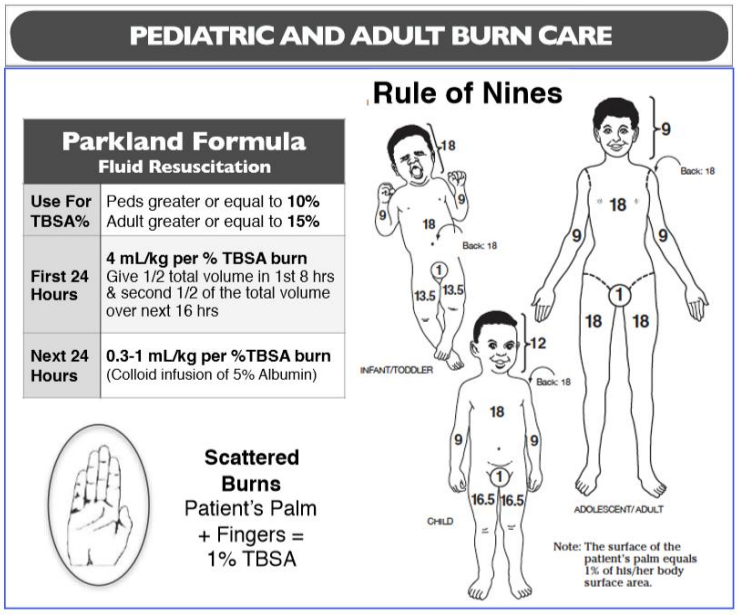
5. With chemical burns, consider the Hazardous Materials emergency potential and personnel safety, appropriate PPE should be used. Patients that are contaminated with hazardous chemicals must be decontaminated prior to unprotected personnel access or standard means of transport.

6. Burns without red tier trauma may be transported to any designated burn-receiving facility. Burns with red tier trauma should be transported to a trauma center.

7. Burns to large body surface (<30% TBSA) areas should be cooled initially with cold running tap water for 20 minutes prior to transport and then wrap in dry sterile dressing to prevent hypothermia. EMS personnel shall perform this procedure up to 3 hours after the injury has occurred.

8. Ketamine Analgesia Table:

Contraindications	**Caution**	**Side Effects**
Age < 4 years	Likelihood of respiratory depression and undesired pressor effects are increased by too rapid IV administration	Tachycardia
GCS 14 or less		Increased salivation
Known or suspected alcohol or drug intoxication		Laryngospasm occurs mostly at higher doses
Known or suspected pregnancy		Nausea/Vomiting



Lactated Ringer's is the preferred fluid for burn resuscitation, though Normal Saline may be used initially

ChemPack (109)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	Public Safety First Aid Procedures: Only
• If large scale chemical release/exposure suspected request Fire, HazMat, and Ambulances as appropriate. • Alert ECC for CHEMPACK release. Consider patient count of Adult and Pediatric persons	• If large scale chemical release/exposure suspected request Fire, HazMat, and Ambulances as appropriate. • Alert ECC for CHEMPACK release. Consider patient count of Adult and Pediatric persons
BLS Procedures: EMT's and Paramedics start here	BLS Procedures: EMT's and Paramedics start here
• **Mild exposure**- Administer one dose Atropine 2 mg in 0.7mL / Pralidoxime Chloride 600mg in 2ml via IM Auto Injector (optional scope only) • **Moderate exposure**- Administer 1-2 doses Atropine 2 mg in 0.7mL / Pralidoxime Chloride 600mg in 2ml via IM Auto Injector (optional scope only) • **Severe Exposure** administer 3 doses in rapid succession Atropine 2 mg in 0.7mL / Pralidoxime Chloride 600mg in 2ml via IM Auto Injector (optional scope only)	• Follow Public Safety First Aid Procedures
ALS Prior to Base Hospital Contact: Paramedic only	ALS Prior to Base Hospital Contact: Paramedic only
• **Mild Exposure:** Duodote or Mark I kit once IM. (may repeat for total of 3 if symptoms progress) If unavailable, Atropen IM (may repeat every 5 minutes to max of 6 mg) 2Pam chloride 25 mg/kg IM/IV once. Max 1650 mg IM or 1000 mg IV. • **Moderate Exposure:** Duodote or Mark I kit x 2 (may repeat to total of 3 if symptoms progress) If unavailable, Atropen IM (may repeat every 5 minutes to max of 6 mg) 2Pam chloride 25-50 mg/kg IM/IV X 1. Max of 1650 mg IM or 1000 mg IV • **Severe Exposure:** Duodote or Mark I kit X 3 IM. Diazepam 10 mg IM or Midazolam 2-5 mg IV for Seizure control. 5 mg IN or IM if no IV. (repeat X 1 in 5 minutes to max of 10 mg.	• **Mild Exposure**: Duodote or Mark 1 kit <25 kg 1 kit. 25-50 kg 1 kit may repeat x 1. If unavailable Atropen IM < 4 kg: 0.5 mg Repeat 0.5 mg 4-10 kg: 0.5 mg Repeat 1 mg 10.5-13 kg: 1 mg Repeat 1 mg 13-20.5 kg: 1 mg Repeat 2 mg 21-33 kg 1.5 mg Repeat 4 mg 2Pam Chloride 25 mg/kg IM/IV x1 Max 1650 mg/IM 1000 mg/IV • **Moderate Exposure**: Duodote or Mark 1 Kit IM < 25 kg 1 kit. 25-50 kg 2 kits If unavailable: Atropen IM: < 4 kg: 0.5 mg Repeat 0.5 mg 4-10 kg: 0.5 mg Repeat 1 mg 10.5-13 kg: 1 mg Repeat 1 mg 13-20.5 kg: 1 mg Repeat 2 mg 21-33 kg 1.5 mg Repeat 4 mg 2Pam Chloride 25-50 mg/kg IM/IV x1 Max 1650 mg/IM 1000 mg/IV

	• **Severe Exposure**: Duodote or Mark 1 kit: < 25 kg 1 kit 26-50 kg 2 kits. Diazepam 0.05-0.3 mg/kg IV/IM May repeat in 5 min to max of 10 mg. OR Midazolam 0.1-0.2 mg/kg IV/IM May repeat in 5 min to max of 10 mg • 60 Min after duodote or mark 1 kit Atropen IM or 0.1 mg/kg from multi dose Atropine vial: < 4 kg:0.5 mg or 0.4 mg 4-6.5 kg: 1 mg or 0.7 mg 6.5-8 kg: 1 mg or 0.9 mg 8.5-10.5 kg: 1 mg 10.5-13 kg: 1.5 mg or 1.3 mg 13-16.5 kg: 2 mg or 1.6 mg 16.5-20.5 kg: 2 mg 20.5-26 kg: 4 mg or 2.6 mg 26-33 kg: 4 mg or 3.3 mg • 2Pam Chloride: 50 mg/kg IM/IV x1 Max 1650 mg/IM 1000 Mg/IV
Base Hospital Contact Required	Base Hospital Contact Required

Special Considerations

The CHEMPACK resource should be utilized on any Organophosphate/Nerve Agent release, that effects a significant number of patients. Early communication and transport of CHEMPACK medications is a key element is patient and first responder survival.

SPECIAL NOTE: CHEMPACK medications have doses for both Pediatric and Adult patients and proper patient count should be communicated to ECC dispatch as soon as it is known. Additionally, some CHEMPACK medication will show out date expiration but have been deemed by CDC as still effective.

1. Contact HazMat resources if not already done.

2. Don protective equipment/gear appropriate for the exposure according to agency protocol.

3. SLUDGEM: salivation, lacrimation, urination, defecation, gastrointestinal distress, emesis, and miosis.

4. Once resources allow, perform supportive treatment as appropriate according to protocol.

5. Administer additional DuoDote or Mark I kits for a total of 3, if symptoms progress in MILD or MODERATE exposures.
   - Mild Exposure: miosis, rhinorrhea, increased salivation
   - Moderate Exposure: mild symptoms plus shortness of breath, vomiting, diarrhea
   - Severe Exposure: moderate symptoms plus respiratory distress or arrest, cyanosis, severe SLUDGEM, seizures, unconsciousness

6. ALS -PEDIATRICS: 1 DuoDote or Mark I kit can be given to any child, regardless of age or weight, as the initial antidote therapy when no other atropine or pralidoxime source is available.

7. ALS -PEDIATRICS: Atropine auto-injectors (AtroPen) come in 0.5mg, 1 mg, and 2mg devices. Initial does based off 0.05mg/kg, repeat dosage based off 0.1mg/kg. May repeat every 5 minutes until secretions begin to dry or maximum 6mg IM.

Chest Pain or Acute Coronary Syndrome (110)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Request Fire/EMS • Monitor patient closely, anticipate the need to provide High-Performance CPR	• Request Fire/EMS • Monitor patient closely, anticipate the need to provide High-Performance CPR
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Possible Cardiac Origin? • Administer oxygen only if SpO2 <94% or if in severe respiratory distress • Administer Aspirin 325 mg to Chew. • If patient has prescription administer Nitroglycerin 0.4 mg SL May repeat every 3-5 minutes as long as systolic blood pressure > 100mmHg. • Request ALS Rendezvous or transport to the nearest cardiac facility.	• Possible Cardiac Origin? • Administer oxygen only if SpO2 <94% or if in severe respiratory distress • Request ALS Rendezvous or transport to the nearest cardiac facility.
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• Possible Cardiac Origin? IV, Monitor, 12 Lead. • Make early base contact if AMI is suspected or 12 lead advises ***Acute MI***, within 5 minutes of acquisition • Administer Nitroglycerin 0.4 mg SL May repeat every 3-5 minutes as long as systolic blood pressure > 90mmHg. • If chest pain is unresolved and systolic B/P >90 administer opiate pain medication. Fentanyl 50 mcg slow IVP/IO/IM/IN to max dose of 200 mcg.	• Possible Cardiac Origin? IV, Monitor, 12 Lead • Make early base contact if AMI is suspected or 12 lead advises ***Acute MI***, within 5 minutes of acquisition.
Base Hospital Contact Required	**Base Hospital Contact Required**
	Base for guidance

Special Considerations

Chest pain is a possible symptom of ACS. In silent MI's, common in females, elderly, and diabetics, chest pain may not be present. If the patient exhibits signs of ACS without chest pain or the 12 lead reads acute MI, the patient should still be treated appropriately per this protocol.

1. Rapidly obtain high quality 12 lead ECG, if STEMI Alert transmit to STEMI receiving center and make base contact to notify of STEMI Alert within 5 minutes of acquisition.

2. A copy of the ECG should be delivered to the nurse caring for the patient upon arrival at the Emergency Department and a copy must be included in the patient care record.

3. If patient is having a STEMI and is within 60 minutes of STEMI receiving center see BYPASSING A STEMI REFERRAL (Non-PCI hospital). Patients in the metropolitan Bakersfield area with chest pain/discomfort of suspected cardiac origin should be transported to a cardiac receiving facility.

4. If acute MI is suspected with signs of hypoperfusion, administer 250 mL fluid challenge. May repeat one time if patient remains hypotensive. Consult with cardiac facility if patient remains hypotensive. Refer to Shock/Hypoperfusion Protocol (125).

5. If the patient has not taken aspirin and has no history of aspirin allergy or evidence of recent GI bleeding, administer **ASPIRIN** (325mg) to chew. Aspirin administration, even if it is prior to patient contact, must be documented.

6. Give the patient sublingual nitroglycerin (0.4mg metered dose or gr. 1/150) every 5 minutes for ongoing symptoms, monitor blood pressure and pulse rate between administrations.

   Contraindications:
   - Suspected or known that the patient has taken sildenafil (Viagra) or vardenafil (Levitra) within the previous 24 hours or tadalafil (Cialis) within the previous 48 hours.
   - ALS: Systolic blood pressure less than 90 mm Hg or heart rate less than 50 beats per minute.
   - BLS: Systolic blood pressure is less than 100 mm Hg or heart rate less than 50 beats per minute.
   - BLS: Not prescribed to patient.

If the patient becomes hypotensive after administration of nitroglycerin, place the patient in shock position. If there is no improvement within 5 minutes, refer to Shock/Hypoperfusion Protocol (125).

7. Administer Fentanyl or Morphine when chest pain/discomfort is unresponsive to nitroglycerin. Give the patient Fentanyl or Morphine to relieve persistent chest pain/discomfort.

   Contraindications:
   - Allergy or hypersensitivity
   - Heart rate is less than 50 beats per minute or blood pressure less than 90 systolic
   - Respiratory depression

8. If the Paramedic believes the patient is suffering an AMI and the 12-lead is not showing "STEMI" the paramedic may call a STEMI receiving center for guidance.

Chest Trauma (111)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Request fire/EMS • Administer oxygen as appropriate • Support ABC's	• Request fire/EMS • Administer oxygen as appropriate • Support ABC's
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• ABC'S • Spinal Motion restriction as appropriate • Oxygen only if SpO2 <94% or if in respiratory distress • Sucking chest wound? If yes, cover with occlusive dressing or chest seal, stabilize flail segments and consider positive pressure ventilation. Rapid transport to trauma center.	• For BLS procedures, refer to Adult
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• Absent or significantly diminished lung sounds? Thoracic decompression with department approved device. Monitor lung sounds, rapid transport to trauma center. • Establish large bore IV/IO • If poor profusion enter Shock/ Hypoperfusion Protocol (125) • Rapid transport to trauma center	• For ALS procedures, refer to Adult
Base Hospital Contact Required	**Base Hospital Contact Required**

• Neck vein distention? If yes, consider pericardial tamponade, give 250 mL fluid bolus to maintain Systolic B/P >80 mmHg	• Neck vein distention? If yes, consider pericardial tamponade give 5 mL/kg fluid bolus to maintain Systolic B/P.
	  ○ 1-10 years old >70 mmHg
	  ○ 10 + years old >80 mmHg

Special Considerations

1. Signs and symptoms of pneumothorax include dyspnea, diminished lung sounds on the affected side, and increased resonance to percussion. Additionally, tracheal deviation away from the affected side, hypotension, and neck vein distention may be seen in tension pneumothorax.

2. If pericardial tamponade is present without pneumothorax, neck vein distention may be present, but lung sounds will be equal. Base contact is required for administration of fluid challenge. Fluid challenge may be required to maintain a systolic blood pressure of >80mm/Hg.

3. Apply occlusive dressings Vaseline gauze or commercially available chest seal to sucking chest wounds. Monitor patient for development of pneumothorax. If lung sounds diminish, remove dressing to allow air to escape and reassess lung sounds to determine need for thoracic decompression.

4. On scene times should be **ten minutes** or less for trauma patients that are accessible and do not require prolonged extrication. Situations that delay on scene times must be documented in the patient care record.

5. The correct placement for the county approved device for the purpose of thoracic decompression is **2nd intercostal space, mid-clavicular line for pediatric patients** or **4th intercostal space, mid-axillary line for adult patients**. The approved thoracic decompression device for an adult is a 10-gauge IV needle with a catheter at least 3.25 inches in length. Standard length 2-inch needle should be used for pediatric patients.

Diabetic Emergency (112)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Request Fire/EMS • Support ABC's	• Request Fire/EMS • Support ABC's
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Altered mental status? If yes, enter the appropriate protocol • Oxygen if SpO2 < 94% or if in respiratory distress • If the history of diabetes or concern for new onset diabetes assess blood glucose. • <60mg/dL and patient showing signs/symptoms of hypoglycemia? If able to swallow, administer oral glucose 15 grams/PO	• For BLS procedures, refer to Adult
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• IV/Monitor/Airway/Ventilation • Is altered mental status not related to diabetic? If yes, enter an appropriate protocol • If unable to swallow administer Dextrose: 10% Dextrose 5 mL/kg Max 250 mL Rapid IV Bolus • If unable to establish IV, administer Glucagon 1mg via IM. • Glucose > than 300mg/dL? And a patient is exhibiting signs/symptoms of acidosis, administer 500 mL fluid bolus may repeat to max of 2 liters if no signs of fluid overload or pulmonary edema	• IV/Monitor/Airway/Ventilation • Is altered mental status not diabetic related? If yes, enter an appropriate protocol • If unable to swallow administer Dextrose: 10% Dextrose 5 mL/kg Max 250 mL Rapid IV Bolus • If unable to establish IV, administer Glucagon >8 years old 1 mg via IM. < 8 years old 0.5mg via IM • Glucose > than 300mg/dL? And a patient is exhibiting signs/symptoms of acidosis, administer 10mL/kg fluid bolus monitor for signs of fluid overload or pulmonary edema
Base Hospital Contact Required	**Base Hospital Contact Required**

Special Considerations

1. Assessment of patient should include attempting to locate Med Alert bracelet/pendant, patient refrigerator or belongings for insulin, and assessment of abdomen for indications of insulin injection.

2. Frequently assess lung sounds for development of pulmonary edema or peripheral edema while administering fluid challenges.

3. Common signs and symptoms of diabetic emergencies are below:

Hypoglycemia	**Diabetic Ketoacidosis**	**Hyperglycemic Hyperosmolar Non-ketonic (HHNK) Acidosis**
Weak, rapid pulse	Tachycardia	Tachycardia
Normal or shallow respirations	Deep, rapid respirations (Kussmaul's respirations)	Normal
Cold, clammy skin	Warm, dry skin and mucous membranes	Warm, dry skin and mucous membranes
Weakness, uncoordinated	Fever	Orthostatic hypotension
Headache	Nausea/vomiting	Vomiting
Irritable, agitated behavior	Abdominal pain	Decreased mental function/ lethargy
Decreased mental function or bizarre behavior	Decreased mental function/ restlessness	Coma
Coma	Coma	Possible seizures
Seizures	Polyuria, polydipsia, polyphagia	
	Fruity odor on breath	

Head/Eye/Ear Trauma (113)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Request Fire/EMS • Support ABC's • Encourage the patient to remain still in position of comfort • Control external bleeding as needed	• Request Fire/EMS • Support ABC's • Encourage the patient to remain still in position of comfort • Control external bleeding as needed
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Perform assessment • Spinal motion restriction if indicated • Administer O2 if SpO2 <94% or if in respiratory distress; HOWEVER, apply high flow oxygen to all patients with head injury and altered level of consciousness or loss of consciousness. • If Head injury: Perform neuro assessment, monitor airway, control hemorrhage. If a patient is unresponsive or rapidly declining LOC consider supraglottic airway • If Ear injury: Control external hemorrhage with direct pressure, apply dressing DO NOT pack ear canal • If Eye injury: Trauma, loosely cover both eyes/ stabilize impaled objects. Chemical: Determine chemical/follow SDS or Label directions for eye injuries, if unavailable irrigate with water for 20 minutes. Cover both eyes. • Prepare for transport if patient becomes unstable provide rapid transport or ALS rendezvous	• Perform assessment • Spinal motion restriction if indicated • Administer O2 if SpO2 <94% or if in respiratory distress; HOWEVER, apply high flow oxygen to all patients with head injury and altered level of consciousness or loss of consciousness. • If Head injury: Perform neuro assessment, monitor airway, control hemorrhage. If a patient is unresponsive or rapidly declining LOC consider Ventilation with BVM • If Ear injury: Control external hemorrhage with direct pressure, apply dressing. DO NOT pack ear canal • If Eye injury: Trauma, loosely cover both eyes/ stabilize impaled objects. Chemical: Determine chemical/follow SDS or Label directions for eye injuries, if unavailable irrigate with water for 20 min. Cover both eyes • Prepare for transport if patient becomes unstable provide rapid transport or ALS rendezvous
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• If a patient is unresponsive or rapidly declining level of consciousness, consider ET intubation. • **Closed Head Injury:** If altered level of consciousness or loss of consciousness, give 1000mL IV fluid bolus and may repeat 500mL bolus to maintain BP over 90mm/Hg. • Establish large bore IV/IO	• If a patient is unresponsive or rapidly declining level of consciousness, consider supraglottic airway device only if unable to ventilate. • If an altered level of consciousness or loss of consciousness due to head injury, give 20mL/kg bolus with 10mL/kg repeat bolus to maintain BP over 70 + 2x(Age). • Establish large bore IV/IO

• If poor profusion enter Shock/ Hypoperfusion Protocol (125) • Rapid transport to trauma center	• If poor profusion enter Shock/ Hypoperfusion Protocol (125) • Rapid transport to trauma center
Base Hospital Contact Required	**Base Hospital Contact Required**
• Give 250 mL fluid bolus to maintain Systolic B/P >80 mmHg	• Give 5 mL/kg fluid bolus to maintain Systolic B/P. ○ 1-10 years old >70 mmHg ○ 10 + years old >80 mmHg

Special Considerations

1. Endotracheal intubation should be considered for patients > 13 years with a Glasgow Coma Score of 8 or less.

2. If BVM is needed for ventilation, adults ventilate at 10 breaths per minute, pediatrics at 20 breaths per minute and infants at 25 breaths per minute. DO NOT HYPERVENTILATE. Maintain End-Tidal 35-45 and use airway adjuncts with enough personnel to ventilate adequately.

3. Cushing's Triad is associated with increased intracranial pressure and is manifested by a decreased heart rate, increased blood pressure and increased or irregular respiratory rate. Decompensation can be rapid once blood pressure and respiratory rate begin to drop.

4. Fluid challenges in trauma patients should be avoided unless otherwise advised by trauma facility.

Nausea/Vomiting (114)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures:	**Public Safety First Aid Procedures:**
• Support ABC'S • Request for ambulance transport • Administer oxygen if patient has difficulty breathing	• Support ABC'S • Request for ambulance transport • Administer oxygen if patient has difficulty breathing
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Primary assessment/ABC's • Give oxygen only if SpO2 <94% or if in respiratory distress • Transport to closest appropriate facility or ALS rendezvous • Prepare to suction patient as indicated • Inhaled isopropyl alcohol • Nausea/Vomiting still present? Patient >18 years old? If yes, give Ondansetron 4 mg Oral Dissolving Tablet. If no improvement may repeat Ondansetron every 10 minutes. MAX 12 mg.	• Primary assessment/ABC's • Give oxygen only if SpO2 <94% or if in respiratory distress • Transport to closest appropriate facility or ALS rendezvous • Prepare to suction patient as indicated
ALS Prior to Base Hospital Contact: Paramedics Only	**ALS Prior to Base Hospital Contact: Paramedics Only**
• IV/monitor as needed • Nausea/Vomiting still present? Patient >4 years old? If yes, give Ondansetron 4 mg Oral Dissolving Tablet or May be given slow IV push over 1-2 minutes or IM. If no improvement may repeat Ondansetron every 10 minutes. MAX 12 mg. • Is the patient dehydrated? If yes, enter Shock/Hypoperfusion Protocol (125)	• IV/monitor as needed • Nausea/Vomiting present? Patient >4 years old? If yes, give Ondansetron 4 mg Oral Dissolving Tablet or May be given slow IVP over 1-2 minutes or IM. MAX 4 mg. • Is the patient dehydrated? If yes, enter Shock/Hypoperfusion Protocol (125)
Base Hospital Contact Required	**Base Hospital Contact Required**
• Contact for use beyond max dose	• Contact for use beyond max dose

Nausea/Vomiting (114)

Special Considerations

1. Vomiting is a sign and symptom of illness or disease. Assess patients for potential illness or injury.

2. Inhaled isopropyl alcohol, have patient inhale through their nose with an alcohol prep pad below the nares.

3. Ondansetron is indicated for patients with nausea/vomiting.

    a. (ALS Only) IV administration must be given over 1-2 minutes. **Rapid administration results in increased side effects and may result in a syncopal episode.**

4. Side effects include hypotension, dizziness, anaphylaxis, flushing, rash, headache, diarrhea, syncope, and QT prolongation.

5. Ondansetron is contraindicated in patients:

    - Less than 4 years of age
    - History of hypersensitivity to Ondansetron or similar medications (Dolasetron (Anzemet), Granisetron (Kytril), or Palonosetron (Aloxi).
    - Patients taking Apomorphine (Apokyn, Ixense, Spontane, Uprima) – an injectable drug for Parkinson's disease and in rare cases used for erectile dysfunction.
    - Do not give oral tablet or solution to known Phenylketonurics (contains phenylalanine).

6. Oral disintegrating tablets can be placed on tongue and do not need to be chewed. Medication will dissolve and be swallowed with saliva. This is the preferred method of drug administration.

7. Ondansetron can be used in pregnancy and breast-feeding mothers.

8. Ondansetron may be used for nausea/vomiting associated with the use of Morphine (see pain protocol).

Neonatal Resuscitation (115)

Neonate (20 weeks gestation or less than 28 days old)
Public Safety First Aid Procedures: only
• Dry newborn and keep warm/Stimulate by drying vigorously including head and back • Do not cut the cord await Fire/EMS arrival • If a child is limp, silent and cyanotic begin CPR
BLS Procedures: EMT's and Paramedics start here
• Dry newborn and keep warm/Stimulate by drying vigorously including head and back • Clamp and cut cord when no longer pulsatile for approximately 1 minute • Assess respiratory status/pulse oximetry • Mild distress = Administer oxygen or blended air/oxygen via blow by mask • Severe distress = Agonal/gasping/absent respirations: Assist respirations with BVM and 100% oxygen at a rate of 40-60 per minute • Evaluate Heart rate via auscultation or at umbilical cord • Heart rate less than 60 = Ventilate for 30 seconds and start compressions at a rate of 120/min reassess heart rate after 30 seconds • Heart rate 60-100 ventilate for 30 seconds reassess and re-enter as heart rate changes
ALS Prior to Base Hospital Contact: Paramedic only
• Attach monitor/EtCO2 • If the heart rate still <60bpm establish IV/IO and administer Epinephrine drip 0.1-1 mcg/kg/min not to exceed adult dose, repeat as needed. Start at a higher dose and titrate down. • Assess blood glucose via heel stick if <40mg/dL administer dextrose 10% 5 mL/kg IV/IO rapid IV bolus • If there is no improvement after 30 seconds, consider supraglottic airway/ reassess and re-enter as heart rate changes • Consider fluid bolus if blood loss is suspected, 10 mL/kg may repeat once
Base Hospital Contact Required

Special Considerations

1. Neonatal resuscitation should be initiated on all premature infants who are reported to be over 20 weeks gestation or less than 28 days old. If over 28 days old refer to appropriate pediatric protocol. If unknown length of gestation, initiate neonatal resuscitation.

2. Low birth weight and premature infants are likely to become hypothermic despite traditional warming techniques. Extra care should be taken to avoid heat loss to the infant during resuscitation.

3. Hypoxia is the most common cause of bradycardia and cardiac arrest in neonates. This can be prevented by prompt suctioning and assisted ventilation. The primary measure of adequate ventilation is prompt improvement in heart rate.

4. Studies have shown that insufficient or excessive oxygenation of neonates may be harmful. Optimal oxygen saturation levels may not be achieved until 10 minutes following birth. Pulse oximeters should be attached to a preductal location (i.e. right upper extremity, usually the wrist or medial surface of the palm). Studies have discovered that if the pulse oximeter is applied to the neonate and connected before it is turned on, the accuracy of the reading is increased. Initial resuscitation attempts on neonates with mild distress should include room air, or a mixture to achieve oxygen saturation levels titrated to the chart below:

   Targeted Preductal SpO2 After Birth

1 min	60-65%
2 min	65-70%
3 min	70-75%
4 min	75-80%
5 min	80-85%
10 min	85-95%

5. Initiate transport for an infant in distress after 10 minutes of High-Performance CPR or if ROSC is achieved. Priorities should be good CPR followed by rapid transport.

6. Refer to Handtevy or length-based tape for specific pediatric doses.

7. Volume expansion should be considered when blood loss is known or suspected (pale skin, poor perfusion, and weak pulse) and the infant's heart rate has not responded adequately to other resuscitative measures. Avoid giving volume expanders rapidly. Rapid infusions of large volumes have been related to intraventricular hemorrhage.

8. Naloxone is not recommended as part of the initial resuscitation for newborns with respiratory depression. The focus needs to remain on effective ventilation and airway support for the persistently apneic newborn.

APGAR	0	1	2
Appearance	Blue or Pale	Body Pink, limbs blue	Complete Pink
Pulse	0	Less than 100	100 or greater
Grimace	No response	Grimace	Cough, sneeze, cry
Activity	Flaccid	Some flexions	Active movement
Respiratory Effort	Absent	Slow, irregular, weak cry	Strong cry

Obstetric Patients

Public Safety First Aid Procedures: only

- Support ABC's
- Place patient in position of comfort
- Request EMS

BLS Procedures: EMT's and Paramedics start here

- Complete primary survey/ABC's
- Give oxygen only if SpO2 <94% or if in respiratory distress
- **Active Labor**- If signs of active labor present (contractions, membrane rupture, or bloody show), but no imminent deliver, transport to the appropriate receiving facility.
  - Transport pregnant patient on their left side.
- **Imminent Delivery**- If signs of imminent delivery present (crowning or other presentation in vaginal opening, urge to push, etc.) proceed with delivery, unless complicated delivery is suspected. If complicated delivery is suspected initiate immediate transport.
  - Ensure ALS is in route.
  - Use hands to prevent explosive delivery.
  - Support infant's head as needed, gently guide head up to allow delivery of shoulders, and then slowly deliver the remainder of the infant.
  - After 1 minute or when cord stops pulsating, clamp and cut the cord 6-8 inches from newborn
  - Assess Newborn with APGAR score at 1&5 minutes.
  - Perform fundus massage following delivery of placenta.

ALS Prior to Base Hospital Contact: Paramedic only

- Pitocin (Oxytocin) administer immediately after birth of infant.
  - 10 units IM.
- **Postpartum Hemorrhage** Consider TXA
- If estimated blood loss greater than or equal to 1000 mL with continued bleeding, administered 1 gram of Tranexamic Acid over 10 minutes. Mix 1 gram (10 mL) in 100 mL of NS and infuse via:
  - Macro 10gtts/mL over 10 minutes @ 110 gtts.
- May repeat after 30 min.

Base Hospital Contact Required

Postpartum Hemorrhage (Under 18y/o)

- Consider TXA
- If estimated blood loss greater than or equal to 1000 mL with continued bleeding, administered 1 gram of Tranexamic Acid over 10 minutes. Mix 1 gram (10 mL) in 100 mL of NS and infuse via:
  - Macro 10gtts/mL over 10 minutes @ 110 gtts.

Special Considerations

1. For all complicated deliveries, BLS should request to rendezvous with ALS if ALS is closer than an OB destination, but should start toward an OB destination. Complicated deliveries include presenting part other than head, prolapsed cord, placenta previa, abruptio placenta, shoulder dystocia if initial maneuvers are not successful or if the patient indicates that they were a high-risk pregnancy.
2. Do NOT routinely suction the infant's airway (even with a bulb syringe) during delivery. Only if respiratory distress is noted.
3. After 1 minute, clamp cord about 6-8 inches from the infant's abdomen with two clamps; cut the cord between the clamps
   a. If resuscitation is needed, the baby can still benefit from a 1-minute delay in cord clamping. Start resuscitation immediately after birth and then clamp and cut the cord at 1 minute.
   b. While cord is attached, take care to ensure the baby is not significantly higher positioned than the mother to prevent blood from flowing backwards from baby to placenta.
4. Resuscitation takes priority over recording APGAR scores. Record APGAR scores at 1 and 5 minutes once neonate is stabilized.
5. The placenta will deliver spontaneously 5–15 minutes after the infant is delivered. In some cases, placenta may not deliver until up to an hour after delivery.
   a. Do not force the placenta to deliver; do not pull on the umbilical cord
   b. Contain all tissue in plastic bag and transport
6. Abruptio placenta: Most frequently occurs in third trimester of pregnancy; placenta prematurely separates from the uterus causing intrauterine bleeding
   a. Lower abdominal pain, uterine rigidity (often not present until abruption is advanced)
   b. Vaginal bleeding – this symptom may not occur in cases of concealed abruption
   c. Clinical index of suspicion for abruption (history of trauma, maternal hypertension, maternal drug use especially cocaine)
   d. Shock, with minimal or no vaginal bleeding
7. Placenta previa: placenta covers part or the entire cervical opening
   a. Generally, late second or third trimester
   b. Painless vaginal bleeding, unless in active labor
8. Ectopic pregnancy
   a. First trimester

   b. Abdominal/pelvic pain with or without minimal bleeding
   c. Shock is possible even with minimal or no vaginal bleeding
9. Spontaneous abortion (miscarriage)
   a. Generally, first trimester
   b. Intermittent pelvic pain (uterine contractions) with vaginal bleeding/passage of clots or tissue
10. Spina Bifida (birth defect)
   a. Keep clean
   b. Place moist sterile gauze
11. Omphalocele (birth defect)
   a. Keep clean
   b. Place moist sterile gauze

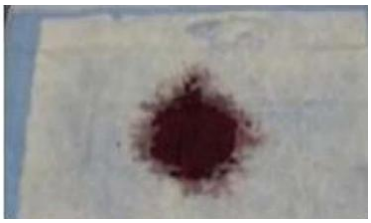
Most deliveries proceed without complications – If complications of delivery occur, apply high flow oxygen to mother and expedite transport to the appropriate receiving facility. Maternal resuscitation is critical for best fetal outcome. Contact medical direction and/or closest appropriate receiving facility for direct medical oversight and to prepare the receiving team.

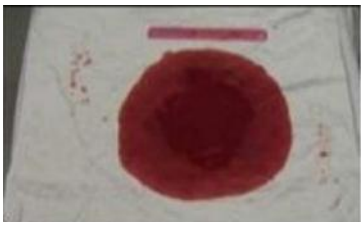
Complicated Deliveries:

- **Prolapsed Cord**
- Position- Place pregnant patient with hips elevated on pillows or knees to chest (Shock Position)
- Protect Umbilical Cord-Insert gloved hand into vagina and gently push presenting part off cord.
- Transport- while protecting the umbilical cord.
- **Shoulder Dystocia**
- If infants' shoulders get stuck during vaginal delivery preform McRoberts Maneuver.
- Elevate both knees to the patient's chest.
- Apply suprapubic pressure by pushing above the pubic bone towards the direction the head is facing.
- Do this to try to dislodge the shoulder.
- **Nuchal Cord**
- After the head has been delivered, palpate the neck for presence of nuchal cord. If present, slip over the head or over the shoulders.
- If the cord is too tight to slip over the head or shoulders, clamp the cord on two sections and cut between the clamps; the newborn should be delivered promptly.

Blood Loss Reference

A. 50mL



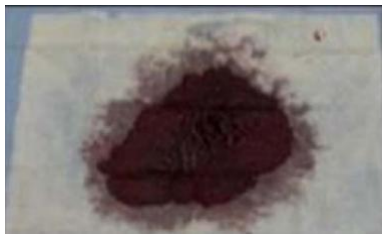


D. 250 mL

B. 100mL

E. 300 mL

C. 200mL



F. 500mL

Pain Control/Fever (117)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Support ABC's • Place patient in position of comfort • Request EMS	• Support ABC's • Place patient in position of comfort • Request EMS
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Complete primary survey/ABC's • Give oxygen only if SpO2 <94% or if in respiratory distress • Transport to closest appropriate facility or ALS rendezvous • Fever > 100.4 or pain control Acetaminophen 650 mg PO.	• Complete primary survey/ABC's • Give oxygen only if SpO2<94% or if in respiratory distress • Transport to closest appropriate facility or ALS rendezvous • Fever > 100.4 or pain control Acetaminophen 15 mg/kg PO.
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• Assess patient pain level and contraindications for analgesia • If a patient is experiencing **pain less than or equal to 5** on pain scale give: • Single dose of Ketorolac (Toradol) 15mg IV over 2 minutes OR a single dose of Ketorolac (Toradol) 15mg IM. **OR** • Acetaminophen 15 mg/kg IV infusion over 15 minutes. Max single dose of 1 gram (1000 mg). • If a patient is experiencing **pain >5 on pain scale** give: • Ketamine: 15mg in 100mL N.S. infused over 5 minutes, may repeat one time in 15 minutes. **OR** Ketamine 25mg IN, (add NS to increase volume to 1mL total volume, **IN only**) may repeat one time in 15 minutes. **OR** 15mg IM. Repeat in 15 minutes prn 1x, maximum total dose 30mg. **OR** • Fentanyl 50 mcg IM or slow IVP/IO may repeat every 5 minutes to MAX of 200 mcg. **OR** Fentanyl 25 mcg IN per nostril. No repeat dose. (Max volume: 1mL/nare) • If Fentanyl unavailable; administer Morphine	• Assess patient pain level and contraindications for analgesia • If a patient is experiencing **pain less than or equal to 5** on pain scale give: • Single dose of Ketorolac (Toradol) 0.5mg/kg (max of 15mg) IV over 2 minutes OR a single dose of Ketorolac (Toradol) 0.5mg/kg (max of 15mg IM. **OR** • Acetaminophen 15 mg/kg IV infusion over 15 minutes. Max single dose of 1 gram (1000 mg). • If a patient is experiencing **significant pain** (face scale), give: • Ketamine 0.5mg/kg IN, (add NS to increase volume to 1mL total volume **IN only**), may repeat one time in 15 minutes, do not exceed 15 mg per dose. **OR** 0.2mg/kg IM. Single max dose of 15mg IM. Repeat in 15 minutes prn x1, maximum 2 total doses. **OR** Fentanyl 1 mcg/kg slow IVP/IO Fentanyl 1mcg/kg IM/IN (Max volume: 1mL/nare) **All max doses must never exceed adult doses.**

5 mg slow IV/IM/IO every 5 minutes to MAX of 20 mg. • Repeat pain assessment and primary survey.	• If Fentanyl unavailable; administer Morphine 0.1-0.2 mg/kg IM or slow IV/IO may repeat every 5 minutes to max of 10 mg. • Repeat pain assessment and primary survey.
Base Hospital Contact Required	**Base Hospital Contact Required**
• Any dose beyond max	• Any dose beyond max

Special Considerations

1. **Acetaminophen administered orally** shall not be given to newborns or premature infants less than 6 months of age.
2. **Acetaminophen administered via IV** shall not be given to pediatric patients who are 2 years of age or younger.
3. **Prior to Acetaminophen administration: If not using max dose, remove excess dose amount and discard per policy.**
4. Acetaminophen IV can be used with fentanyl, ketamine, or ketorolac if inadequate pain control with initial agent.
5. Contraindications for Acetaminophen include allergy/ hypersensitivity, severe liver disease, chronic alcoholism, or hepatic impairments including transplant.
6. Ketorolac (Toradol) or Acetaminophen should be first line pain medication for mild to moderate pain.
7. Ketorolac is the preferred agent for renal colic/ kidney stone pain.
8. Ketamine should be first line pain medication for trauma and hypotensive patients.

Ketorolac (Toradol) Table:

Contraindications	Side Effects
Age < 2 years old	Nausea
Multisystem Trauma	Hypertension
Hypersensitivity/Allergy to (NSAIDS)	Ulcers
Active Bleeding	Rash/Itching
Pregnancy	
History of renal disease, kidney transplant	
Age>65 years old	

Ketamine Analgesia Table:

Contraindications	Side Effects
Age < 4 years	Tachycardia
GCS 14 or less	Increased salivation
Known or suspected alcohol or drug intoxication	Laryngospasm, respiratory depression, and undesired pressor effects occur mostly at higher doses or by rapid IV administration.
Known or suspected pregnancy	Nausea/Vomiting

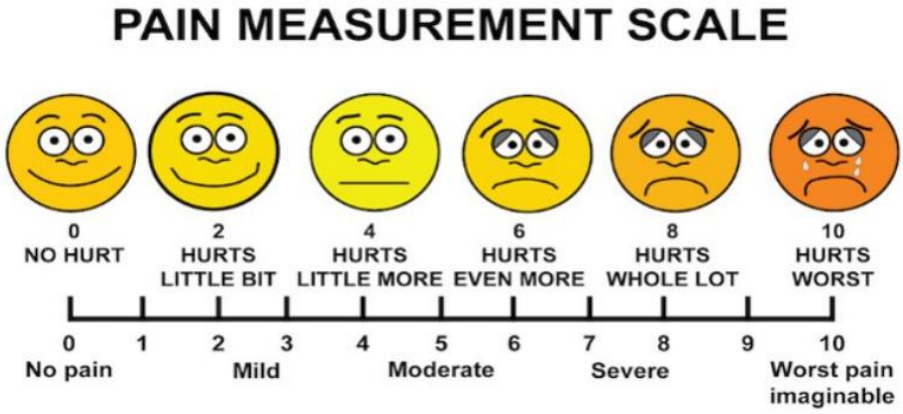
Opioid Analgesia Table:

Contraindications	Cautions	Side Effects
BP<90 Systolic	Use with Caution in elderly	Respiratory Depression
Respiratory Depression	Head Trauma	Hypotension/Bradycardia
Altered Mental Status		Altered Mental Status
		Nausea/Vomiting

9. Morphine Sulfate should be administered slowly and cautiously for children weighing less than 100 pounds. Blood pressure and respiratory rate must be closely observed during administration.

10. In the case of infants, children, or adults unable to verbally communicate where a painful situation may exist, vital signs should be assessed for elevations in respiratory rate and heart rate as indicators of pain.

11. If a patient is experiencing nausea/vomiting from analgesia administration, refer to 114 NAUSEA/VOMITING protocol for treatment.



Pediatric Post Resuscitation (118)

Pediatrics *(13 years and under)*
Public Safety First Aid Procedures: Only
• Request Fire/ EMS • Keep patient warm and monitor vital signs
BLS Procedures: EMT's and Paramedics start here
• Ensure return of spontaneous circulation, maintain airway, SpO2, vitals • Perform thorough reassessment/obtain complete history of event from caretaker • Administer oxygen only if SpO2 <94% or in respiratory distress • Search for identifiable causes and correct as possible, enter appropriate protocol • Do not hyperventilate patient • Rapid transport to closest appropriate facility (Advanced Pediatric Receiving Center preferred)
ALS Prior to Base Hospital Contact: Paramedic only
• Monitor heart rate and obtain 12-lead ECG • Consider supraglottic airway if patient remains unresponsive and does not already have an advanced airway in place if unable to ventilate via BVM • Treat seizures aggressively per Seizure Activity Protocol (122) • If suspected cardiogenic shock Epinephrine drip 0.1 - 1 mcg/kg/min not to exceed adult dose repeat as needed. Start at a higher end and titrate down to effect.
Base Hospital Contact Required

Special Considerations

1. The goals of post resuscitation care are to preserve neurologic function, prevent secondary organ injury, treat identifiable causes, and enable the patient to arrive at the destination facility in an optimal physiological state.

2. One goal of the post resuscitation phase is to reduce the risk of oxidative injury while maintaining adequate oxygen delivery. Apply oxygen only if SpO2 < 94% or in respiratory distress.

3. Epinephrine:

   - low-dose infusions (<0.3 mcg/kg/min) generally produce tachycardia, potent inotropy, and decreased systemic vascular resistance.
   - Higher dose infusions (>0.3 mcg/kg/min) cause vasoconstriction.
   - Titrate drug to desired effect.
   - May be preferable to dopamine in patients (especially infants) with marked circulatory instability and decompensated shock.

4. Do not routinely provide excessive ventilation or hyperventilation. Hyperventilation may impair neurologic outcome by adversely affecting cardiac output and cerebral perfusion.

5. Signs of impending Intracranial herniation:

   - Dilated pupil(s) not responsive to light
   - Bradycardia
   - Hypertension

6. Consider transport to facility capable of therapeutic hypothermia for children who remain comatose after resuscitation from cardiac arrest.

Poisoning/Ingestion/Overdose (119)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Support ABC's • Request Fire/EMS • Consider Naloxone if signs of opiate overdose with respiratory depression, 1 mg per nare. • If using 4mg preload intranasal may use this as initial dose.	• Support ABC's • Request Fire/EMS • Consider Naloxone if signs of opiate overdose with respiratory depression, If using 4mg preload intranasal may use this as initial dose.
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• In HAZ-MAT situations, prevent responder contamination. If is substance is powder brush off first then flush with water, remove clothing, decontaminate. • Administer oxygen only if SpO2 <94% or if in respiratory distress • Support ABC'S • If suspected opiate overdose with respiratory depression administer Naloxone: Adult 2 mg intramuscular or intranasal MAX dose, 1 mg per nare. • Prepare for rapid transport or ALS rendezvous.	• In HAZ-MAT situations, prevent responder contamination. If is substance is powder brush off first then flush with water, remove clothing, decontaminate. • Administer oxygen SpO2 <94% or if in respiratory distress • Support ABC'S • If suspected opiate overdose with respiratory depression administer Naloxone intramuscular or intranasal for children < 1 year give 0.5 mg. Children 1-7 years give 1 mg, for children > 8 give 2 mg. ○ If given intranasal split dose between nares. • Prepare for rapid transport or ALS rendezvous.
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• If patient has altered mentation, rule out other treatable causes. • If oral ingestion and patient is oriented with patent airway and ingestion was not a caustic substance administer Activated Charcoal 50 grams PO. • If suspected opiate overdose with respiratory depression administer Naloxone 0.4-2 mg IV/IM/IN/IO • If suspected opioid withdrawals, immediately use "COWS" score to determine if patient meets criteria to receive buprenorphine. Patients must have a score of 7 or higher. If criteria met administer 16mg SL May administer a 2nd dose of 8mg SL if symptoms persist or	• If patient has altered mentation, rule out other treatable causes. • If oral ingestion and patients are oriented with patent airway and ingestion was not a caustic substance administer Activated Charcoal 25 grams PO. • If suspected opiate overdose with respiratory depression, administer Naloxone, if 5 years old or older 0.4-2 mg IV/IO/IM/IN. If <5 years 0.1 mg/kg IV/IO/IM/IN • If symptomatic tricyclic antidepressant overdose, consider Sodium Bicarbonate 1 mEq/kg IV

worsen after 10 minutes. Base contact for any questions or concerns. • If symptomatic tricyclic antidepressant overdose, consider Sodium Bicarbonate 1 mEq/kg IV • If symptomatic calcium channel blocker overdose, consider Calcium Chloride 1 gram slow IV/IO • If symptomatic beta blocker overdose, consider Glucagon 2 mg IV/IO • If dystonic reaction to phenothiazines, administer Diphenhydramine 50 mg slow IVP or IM • If symptomatic organophosphate poisoning, administer Atropine 2 mg IV every 5 minutes as needed.	• If symptomatic calcium channel blocker overdose, consider Calcium Chloride 20 mg/kg slow IV/IO • If symptomatic beta blocker overdose, consider Glucagon 0.1 mg/kg IV/IO • If dystonic reaction to phenothiazines administer Diphenhydramine 1 mg/kg slow IV/IM • If symptomatic organophosphate poisoning administer Atropine 0.05-0.1mg/kg IV/IM every 5 minutes as needed
Base Hospital Contact Required	**Base Hospital Contact Required**

Special Considerations

1. Ingestions

Obtain accurate history

a. Name of product or substance
b. Quantity ingested
c. Time of ingestion
d. Pertinent medical history
e. Pill bottles/ description of pills

2. Haz-Mat

Cholinergic crisis:

a. Initially patients may experience tachycardia.
b. Bradycardia, salivation, lacrimation, urination, defecation, sweating, twitching, abdominal cramps, vomiting, pinpoint pupils, smell of pesticides, hypoxia, seizure, coma.

- Obtain name of product or substance.
- Determine time of exposure.

- Obtain route of exposure (i.e. inhalation, absorption, etc.).

3. The primary goal in the treatment of oral ingestion is to prevent the absorption of the toxic substance by the small intestine.

4. Activated charcoal should not be used if the toxin is a strong acid, strong alkali, or ethanol. Activated charcoal should not be used if a specific antidote exists. Activated charcoal is given P.O. only, no N.G. tube administration shall be attempted.

5. In caustic ingestions, do not give anything by mouth.

6. **Insecticides** (Organophosphates, Carbonates): decontaminate as soon as possible; avoid contamination of prehospital personnel; assess for SLUDGE (Salivation, Lacrimation, Urination, Diaphoresis/Diarrhea, Gastric Hypermotility, and Emesis/Eye [small pupils and/or blurry vision]). Administer Atropine 2.0mg IVP slowly. If there is no tachycardia or pupil dilation, may give repeat dose every 5 minutes as needed. Minimum pediatric dose 0.1mg.

7. **Tricyclic Ingestion**: Continued assessment of patients with tricyclic ingestions is very important. These patients can deteriorate rapidly. In the presence of life-threatening dysrhythmia hyperventilate; administer 1mEq/kg Sodium Bicarbonate. Refer to Seizure Activity (122) or Shock/Hypoperfusion Protocol (125) as needed.

8. **Calcium Channel Blockers**: if bradycardic and/or hypotensive, consider administration 1 gram of Calcium Chloride slow IV push. Enter appropriate protocol as needed

9. **Beta Blockers**: If bradycardic and/or hypotensive, consider administration 2mg of Glucagon. Enter the appropriate protocol as needed.

10. **Dystonic reactions:** to phenothiazine's or butyrophenone (Haldol) should be treated with 50 mg Diphenhydramine slow IV push preferred, may give IM. Signs and symptoms include fixed, deviated gaze to one side of the body, painful spasm of trunk or extremity muscles, and difficulty speaking. Enter the appropriate protocol as needed.

11. Buprenorphine is FDA-approved for managing opioid dependence or opioid withdrawals with a Clinical Opiate Withdrawal Scale (COWS) score of 7 or higher.

12. Do not administer buprenorphine if the following contraindications are present:

    - patient is under 16 years of age

- any methadone use with in the last 10 days
- altered mental status
- Sepsis
- Current intoxication or recent use of benzodiazepine
- COWS score of less than 6

Naloxone leave behind (documentation requirement) shall be dispensed to all patients receiving buprenorphine.

To review indications and arrange for follow up. MDCalc COWS score calculator:
https://www.mdcalc.com/calc/1985/cows-score-opiate-withdrawal

13. Naloxone is intended to reverse respiratory depression associated with narcotic use. Naloxone may be withheld if respiratory depression is not present. The goal is to titrate Naloxone to improve respiratory distress but not precipitate severe withdrawals.

    a. **ALS** – Generally a full 2mg IV dose, should not be given as an immediate bolus. Naloxone may be repeated as needed after the first dose.

    b. **BLS** – Does not repeat intranasal dose after 1ml of volume per nare. IM doses may be repeated.

    c. **Public Safety-First Aid** – If using 4mg preload intranasal may use this as initial dose.

Poisoning/Ingestion/Overdose (119)

Patient's Name:_____ Date and Time ____/_____/____:_____

Reason for this assessment:_____

Resting Pulse Rate: _____beats/minute *Measured after patient is sitting or lying for one minute* 0 pulse rate 80 or below 1 pulse rate 81-100 2 pulse rate 101-120 4 pulse rate greater than 120	**GI Upset**: *over last 1/2 hour* 0 no GI symptoms 1 stomach cramps 2 nausea or loose stool 3 vomiting or diarrhea 5 multiple episodes of diarrhea or vomiting
Sweating: *over past 1/2 hour not accounted for by room temperature or patient activity.* 0 no report of chills or flushing 1 subjective report of chills or flushing 2 flushed or observable moistness on face 3 beads of sweat on brow or face 4 sweat streaming off face	**Tremor** *observation of outstretched hands* 0 no tremor 1 tremor can be felt, but not observed 2 slight tremor observable 4 gross tremor or muscle twitching
Restlessness *Observation during assessment* 0 able to sit still 1 reports difficulty sitting still, but is able to do so 3 frequent shifting or extraneous movements of legs/arms 5 unable to sit still for more than a few seconds	**Yawning** *Observation during assessment* 0 no yawning 1 yawning once or twice during assessment 2 yawning three or more times during assessment 4 yawning several times/minute
Pupil size 0 pupils pinned or normal size for room light 1 pupils possibly larger than normal for room light 2 pupils moderately dilated 5 pupils so dilated that only the rim of the iris is visible	**Anxiety or Irritability** 0 none 1 patient reports increasing irritability or anxiousness 2 patient obviously irritable or anxious 4 patient so irritable or anxious that participation in the assessment is difficult
Bone or Joint aches *If patient was having pain previously, only the additional component attributed to opiates withdrawal is scored* 0 not present 1 mild diffuse discomfort 2 patient reports severe diffuse aching of joints/muscles 4 patient is rubbing joints or muscles and is unable to sit still because of discomfort	**Gooseflesh skin** 0 skin is smooth 3 piloerrection of skin can be felt or hairs standing up on arms 5 prominent piloerrection
Runny nose or tearing *Not accounted for by cold symptoms or allergies* 0 not present 1 nasal stuffiness or unusually moist eyes 2 nose running or tearing 4 nose constantly running or tears streaming down cheeks	Total Score _____ The total score is the sum of all 11 items Initials of person completing assessment: _____

Score: 5-12 = mild; 13-24 = moderate; 25-36 = moderately severe; more than 36 = severe withdrawal

Pulseless Arrest Entry Algorithm (120)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• If the patient is unconscious and pulseless begin High-Performance CPR • Request EMS and Fire response • Begin cycles of 30 compressions and 2 breaths. • Use an AED as soon as it is available. Attach AED, follow AED prompts, if AED indicates "shock advised," give 30 compressions and shock as indicated by device. • Resume High-Performance CPR immediately post shock • Closely monitor patient for changes	• If the patient is unconscious and pulseless begin High-Performance CPR • Request EMS and Fire response • 1 Rescuer: Begin cycles of 30 compressions and 2 breaths. (Use 15:2 ratio if second rescuer arrives.) • Use an AED as soon as it is available. Attach AED, follow AED prompts, if AED indicates "shock advised," give 30 compressions and shock as indicated by device if patient is over 1 year of age • Resume High-Performance CPR immediately post shock • Closely monitor patient for changes
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Begin/Continue High-Performance CPR if no signs of obvious death • Give Oxygen and ventilate • Attach AED, follow AED prompts, if AED indicates "shock advised," give compressions as device is charging and shock as indicated by device. • Minimize interruptions in High-Performance CPR • Ensure high quality compressions are being delivered • If no change after 30 minutes, consider termination of efforts per determination of death policy	• Begin/Continue High-Performance CPR if no signs of obvious death • Give Oxygen and ventilate • Attach AED, follow AED prompts, if AED indicates "shock advised," give compressions as device is charging and shock as indicated by device if patient is over 1 year of age. • Minimize interruptions in High-Performance CPR • Ensure high quality compressions are being delivered • Request ALS rendezvous. Initiate transport if ALS ETA is greater than 10 min
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**

Pulseless Arrest Entry Algorithm (120)

• Attach Monitor/Defibrillator • Enter V-Fib/Pulseless V-Tach Protocol (126) if shockable rhythm • Enter Asystole/PEA Protocol (104) if non-shockable rhythm • If there is no change after 30 minutes, consider termination of efforts • Do not pause compressions to perform ALS procedures. • Consider placement of nasogastric tube for gastric distension	• Attach Monitor/Defibrillator • Enter V-Fib/Pulseless V-Tach Protocol (126) if shockable rhythm • Enter Asystole/PEA Protocol (104) if non-shockable rhythm • Consider placement of nasogastric tube for gastric distension
Base Hospital Contact Required	**Base Hospital Contact Required**

For patients < 18 years begin transport after 10 minutes of High-Performance CPR or if ROSC is achieved

Special Considerations

Consider H's and T's when applicable.

1. High-Performance CPR increases sudden cardiac arrest survival rates significantly. To implement High-Performance CPR, ensure Compression rate of 100-120 CPM with a depth of 2 inches for adults. Metronome shall be used and set at 105-115. 30-2 or 10-1 continual compression to ventilation rate are both acceptable depending upon agency policy. Ventilations should be performed to achieve chest rise only (approximately 300-400 mL). Utilize the 3-finger method or ventilate from the back of the BVM. Defibrillators should be pre-charged prior to rhythm/pulse checks. Pauses in compressions should be for AED analysis periods only. Give 30 compressions prior to shock delivery. CPR should not be stopped to perform ALS interventions such as IV/IO or Intubation. Compressors should be rotated every 2 minutes as personnel are available. Transitions in compressors should be during pulse checks and take < 3 seconds. Full chest recoil between each compression is crucial to provide perfusion to the myocardium.

2. ALS apply waveform capnography to BVM or airway device immediately after ventilations are initiated.

3. BLS apply colorimetric or waveform capnography to BVM airway device immediately after ventilations are initiated (Waveform Capnography preferred).

4. Consider Naloxone, blood glucose analysis and Dextrose (if hypoglycemic) in all unresponsive patients including cardiopulmonary arrest. When possible, blood glucose analysis is indicated prior to administration of 10% Dextrose

Respiratory Compromise (121)

Adult	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Request EMS • Support ABC's • Give Oxygen if available	• Request EMS • Support ABC's • Give Oxygen if available
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Consider rapid transport or ALS rendezvous if severe distress • Administer Oxygen only if SpO2 <94% or if in respiratory distress • If the patient is wheezing and has a prescribed rescue inhaler, assist patient with use • If **SEVERE** wheezing, stridor, or signs of bronchospasm consider CPAP. • If wet lung sounds, consider CPAP if Systolic B/P > 90. No response to CPAP move to positive pressure ventilation	• Consider rapid transport or ALS rendezvous if severe distress • Administer Oxygen only if SpO2 <94% or if in respiratory distress • If the patient is wheezing and has a prescribed rescue inhaler, assist patient with use • If **SEVERE** wheezing, stridor, or signs of bronchospasm consider CPAP.If wet lung sounds, consider CPAP if > 8 years old and systolic B/P > 90. No response to CPAP move to positive pressure ventilation
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• Attach monitor/SpO2/EtCO2 • If **Bronchospasm** give nebulized Albuterol 2.5 mg in 3 mL NS and Ipratropium bromide 500 mcg in 2.5 mL NS. May repeat Albuterol as needed or continuous. May repeat Ipratropium bromide every 20 minutes to max 3 doses. • If not relieved by Albuterol, consider CPAP if available and not contraindicated. • May only use epinephrine if suspected anaphylaxis (Refer to Allergic Reaction/ Anaphylaxis Protocol) • If severe distress and no response, consider Magnesium Sulfate 1-2 grams over 5-10 minutes • If **Pulmonary Edema** with Systolic B/P >150 give Nitroglycerin 0.4 mg SL, Repeat every 5 minutes as long as Systolic B/P >150 • Consider CPAP if available and Systolic B/P > 90	• Attach monitor/SpO2/EtCO2. • If **Bronchospasm** give nebulized Albuterol 2.5 mg in 3 mL NS and Ipratropium bromide 500 mcg in 2.5 mL NS. May repeat Albuterol as needed or continuous. May repeat Ipratropium bromide every 20 minutes to max 3 doses. • Severe distress not responding consider Magnesium Sulfate 25mg/kg max 2 grams. Give over 5-10 minutes. • Consider CPAP if > 8 years old if no response to meds. If not available or contraindicated apply Positive Pressure Ventilation via bag valve mask. • **Pulmonary Edema** consider CPAP if > 8 years old. ○ If systolic B/P < 90 or not responding to CPAP begin bag valve mask ventilation.

Respiratory Compromise (121)

• No response to CPAP or Medications apply a Positive Pressure Ventilation Via Bag Valve Mask
• If Systolic B/P <90 or Patient not responding to Medications or CPAP Apply Positive Pressure Ventilation Via Bag Valve Mask, refer to Shock/ Hypoperfusion Protocol (125)
• Consider Intubation
	• **Upper Airway (Stridor or Barky Cough)** If suspected Allergic Reaction or Foreign Body refer to appropriate protocol,
	• **Suspected Epiglottitis** Calm the Patient/ Avoid IV access if possible. Attempt early base contact and rapid transport.
	• **Suspected Croup.** Calm the patient/assess for severity**.**
	  ○ **Mild** Observe. **Moderate to Severe** Give nebulized Epinephrine 1:10,000, 0.5 mg. Consider fluid bolus.
	  ○ Patients who do not respond or deteriorate rapidly apply Positive Pressure Ventilation.

Base Hospital Contact Required	**Base Hospital Contact Required**

Special Considerations

1. Complications of epinephrine for bronchospasm include tachycardia and myocardial irritability. Use extreme caution with patients having pre-existing cardiac problem history, older patients with tachycardia, or patients showing ventricular ectopy on the ECG monitor.

2. Administer nitroglycerin to reduce myocardial workload and oxygen consumption in cases of pulmonary edema. Monitor vital signs carefully during any nitroglycerin administration due to vasodilation effects of this medication.

3. In cases of pulmonary edema where BP is under 150mm/Hg systolic, administration of vasodilator medication may further compromise the patient condition. Endotracheal intubation with positive pressure ventilation, or just positive pressure ventilation if unable to intubate can be an effective means of treatment for pulmonary edema. Consider sedation with Midazolam after intubation of conscious patients.

4. If using drip method for Magnesium Sulfate, use 100ml Normal Saline.

5. Continuous Positive Airway Pressure (CPAP) may be considered. Refer to CPAP protocol.

6. In cases of **croup or epiglottitis** do not attempt to visualize the throat. Attempts should be made at calming the patient. Consider allowing the parent to hold the child or the oxygen mask, and transport in a position of comfort. Avoid obtaining IV access if possible. Procedure may cause increased anxiety in patients and can cause rapid deterioration to complete airway obstruction.

7. **Suspected epiglottitis**: Abrupt onset of severe symptoms. Patients deteriorate rapidly. Usually patients present with fever first, followed by stridor and labored breathing. Stridor may diminish as the disease progresses. Stridor may be accompanied by marked suprasternal, subcostal, and intercostal retractions. Dysphagia, refusal to eat, muffled or hoarse voice, sore throat, and anxiety are common. The clinical triad of drooling, dysphagia, and distress is the classic presentation. Epiglottitis is not solely caused by bacterial infection. Other causes may exhibit slightly different presentations.

8. **Suspected croup**: Clinical syndrome of hoarse voice, barking cough, and inspiratory stridor. It is usually caused by a viral infection and mostly affects children between six (6) months and thirty-six (36) months of age, although it may occur in older children. Children with croup do not appear pale, very febrile with poor perfusion; this presentation is more commonly seen in bacterial infections such as epiglottitis. Viral croup typically develops over days. Careful assessment of the patient with suspected croup is essential. Mild cases may not require pre-hospital treatment, while moderate and severe distress may require pharmacological intervention.

   - **Mild**: Child appears happy, can eat, drink, play and is interested in surroundings. May be mild chest wall retractions and mild tachycardia, but stridor at rest will not be present.
   - **Moderate**: Persisting stridor at rest, chest wall retractions, use of accessory muscles, tracheal tug, and increasing heart rate. Child is interactive with surroundings. Progression of disease is indicated by the child becoming worried, preoccupied, or unusually tired.
   - **Severe**: Increased tiredness and exhaustion. Marked tachycardia is usually present, restlessness, agitation, irrational behavior, decreased level of consciousness, hypotonia, cyanosis, and pallor. Stridor may become softer in the presence of lethargy due to impending obstruction.

9. **Bronchospasm** is usually accompanied by respiratory distress with the following findings: wheezing, prolonged expiration, increased respiratory effort, severe agitation, lethargy, suprasternal and substernal retractions, tripod positioning. A silent chest is an ominous sign indicating that respiratory failure or arrest is imminent.

Seizure Activity (122)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Remove nearby objects to prevent injury to Patient. Place patient in recovery position on left side • Give Oxygen if available • Request Fire/EMS	• Remove nearby objects to prevent injury to Patient. Place patient in recovery position on left side • Give Oxygen if available • Request Fire/EMS
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Support ABC's • Give Oxygen only if SpO2 < 94% or if in respiratory distress • Blood Glucose Check, if hypoglycemic enter Diabetic Emergency Protocol (112) • If Focal seizure, place patient in position of comfort, rapid transport, or ALS Rendezvous • If full body tonic/clonic seizure, prepare to support respirations, provide cooling measures if febrile • Spinal motion restriction if trauma is suspected • Rapid transport or ALS rendezvous for repetitive or prolonged seizure activity	• Support ABC's • Give Oxygen only if SpO2 <94% or if in respiratory distress • Blood Glucose check, if hypoglycemic enter Diabetic Emergency Protocol (112) • If Focal seizure, place patient in position of comfort, rapid transport, or ALS Rendezvous • If full body tonic/clonic seizure, prepare to support respirations. • If febrile seizure, start cooling measures. Acetaminophen 15 mg/kg PO after seizure has ended and patient can safely swallow. • Spinal motion restriction if trauma is suspected • Rapid transport or ALS rendezvous for repetitive or prolonged seizure activity
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• Monitor/SpO2/Blood Glucose Check. **IF ACTIVELY SEIZING GIVE MIDAZOLAM PRIOR TO BLOOD GLUCOSE CHECK** • **Active Seizure** ➢ **No IV/IO access**: Midazolam initial dose 5mg <40kg **OR** 10mg >40kg **IM/IN ONLY** MAX 1 mL per nare. ➢ **IV/IO access**: Midazolam 0.1mg/kg IV/IO MAX of 5mg. • **Repeat doses** shall be weight-based Midazolam 0.2mg/kg **IM/IN** MAX 5mg **OR** 0.1mg/kg **IV/IO** MAX 5mg. • If patient **Actively Seizing** and is **PREGNANT OR POST PARTUM (up to 30 days after delivery)** give Magnesium Sulfate 4-6 grams slow IV drip over 5-10	• Monitor/SpO2/Blood Glucose check **IF ACTIVELY SEIZING GIVE MIDAZOLAM PRIOR TO BLOOD GLUCOSE CHECK,** if hypoglycemia or narcotic overdose enter appropriate protocol • **Active Seizure:** ➢ **No IV/IO access:** Midazolam initial dose ○ 10mg >40kg **IM/IN** MAX 1 mL per nare. ○ 5mg <40kg **IM/IN** MAX 1 mL per nare. ○ <13kg 0.2 mg/kg **IM/IN** MAX 1 mL per nare ➢ **IV/IO access:** Midazolam 0.1mg/kg IV/IO MAX of 5mg. • **Repeat doses** shall be weight-based Midazolam 0.2mg/kg **IM/IN** MAX 5mg **OR** 0.1mg/kg **IV/IO** MAX 5mg.

minutes. If the patient continues to seize, give Midazolam 10mg if >40kg **OR** 5mg if <40kg **IM/IN ONLY** MAX 1 mL per nare • If an active seizure lasts longer than 10 minutes may repeat dose 1 time, BASE for further direction • If Midazolam is not available give Diazepam 5 mg/IV/IO if seizure lasts longer than 10 minutes may repeat dose 1-time BASE for further direction	• If the patient **Actively Seizing** and is **PREGNANT OR POST PARTUM (up to 30 days after delivery)** give Magnesium Sulfate 2 grams slow IV drip over 5-10 minutes. If the patient continues to seize give Midazolam 10mg if >40kg **OR** 5mg if <40kg **IM/IN ONLY** MAX 1 mL per nare • If Midazolam not available give Diazepam 0.3 mg/kg IV/IO MAX dose 5 mg **OR** Rectal 0.5 mg/kg. MAX dose 10 mg • If seizure lasts longer than 10 minutes, may repeat dose 1 time. BASE for further direction
Base Hospital Contact Required	**Base Hospital Contact Required**
• Midazolam or Diazepam beyond 2 doses	• Midazolam or Diazepam beyond 2 doses

Special Considerations

1. Consider Naloxone in situations of potential drug abuse or if there is no history of seizure disorder.

2. Seizures present in several forms. A generalized motor seizure (Grand Mal) is the most common witnessed in the field. Generalized motor seizure activity frequently affects a victim's ability to breathe. Proper assessment of the patient's airway and ventilatory status is critical to the field management of these patients.

3. **If IV access has not been established**: Initial IM/IN dosing should be administered immediately for active seizures. Intramuscular administration is preferred for all patients.

4. **Do not attempt IV access during an active seizure.**

5. Midazolam is associated with a higher degree of respiratory depression than Diazepam, be prepared to manage the airway with the administration of any benzodiazepine. Midazolam IM is the preferred first line therapy for pediatric patients. Be sure to wait approximately 10 minutes before repeating doses by IM route. Midazolam has been shown to have an onset of action of 10 minutes with peak action in 30 min.

6. Midazolam given intranasal has a volume limit of 1 mL per nare. More than 1 mL per nare will simply run off and not be absorbed. Midazolam concentration of 5 mg/mL vial is preferred as the volume limit will not be reached with a max single dose of 10mg, however

multiple concentrations of the drug are to be avoided in MICU inventory due to potential medication errors.

7. Diazepam is preferably administered IV push, but in the pediatric patient it may be administered via the rectum if IV access is not available.

8. Status epilepticus is manifested by two or more seizures without regaining consciousness in between seizures or continuous seizure activity without cessation.

9. The highest risk for patients with continuous generalized seizures (status epilepticus) is hypoxia. Airway and ventilation to resolve hypoxia is a high patient care priority. ET intubation and ventilation should be used if indicated.

10. If using drip method for Magnesium Sulfate, use 100ml Normal Saline.

Acute Stroke/CVA (123)

Adults and Pediatrics
Public Safety First Aid Procedures: Only
• Assess ABC's • Position patient with head elevated 30 degrees if practical and safe to do so. • Request Fire/EMS
BLS Procedures: EMT's and Paramedics start here
• Primary survey/ABC/Blood Glucose • Apply oxygen only if less than 94% or if in respiratory distress • Assess Cincinnati prehospital stroke scale (CPSS) • Activate stroke alert if CPSS is positive • Elevate patients' head 30 degrees, suction as needed to maintain patent airway • If a patient is showing signs of hypoglycemia or narcosis enter appropriate protocol • ALS rendezvous or transport to stroke center
ALS Prior to Base Hospital Contact: Paramedic only
• Monitor, IV and blood glucose • If Cincinnati Prehospital Stroke Scale (CPSS) positive and under 4 hours since last known normal expedite base contact and transport to appropriate facility in accordance with stroke policy
Base Hospital Contact Required

Special Considerations

1. Apply O2 only if pulse ox <94% or signs of respiratory distress.

2. No more than two (2) IV attempts.

3. Patients that present with altered mental status may be oriented to self, place, time and event, but are unable to communicate their orientation effectively.

4. Perform Cincinnati prehospital stroke scale (CPSS):

Test	Findings
Facial Droop: Have the patient show teeth or smile.	**Normal** – both sides of the face move equally. **Abnormal** – one side of face does not move as well as the other side.
Arm Drift: Patient closes eyes and extends both arms straight out, with palms up, for 10 seconds.	**Normal** – both arms move the same or both arms do not move at all. **Abnormal** – one arm does not move, or one arm drifts down compared with the other.
Abnormal Speech: Have the patient say, "you can't teach an old dog new tricks".	**Normal** – patient uses correct words with no slurring of words. **Abnormal** – patient slurs words, uses the wrong words, or in unable to speak.

5. Acute stroke with one or more abnormal Cincinnati Prehospital Stroke Scale (CPSS) findings and last known normal at or within four (4) hours (observed by a valid historian), may be a candidate for fibrinolytic therapy.

6. Transport patients in semi-Fowler's position with no more than 30 degrees head elevation.

KERN COUNTY PUBLIC HEALTH

Emergency Medical Services Program
Policies – Procedures – Protocols

Tachycardia with Pulse (124)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures	**Public Safety First Aid Procedures**
• Request Fire/ALS	• Request Fire/ALS
BLS Procedures:	**BLS Procedures:**
• Assess ABC's • Give oxygen to titrate SpO2 94-99% or if in respiratory distress • Hand off to ALS as needed	• Assess ABC's • Give oxygen to titrate SpO2 94-99% or if in respiratory distress • Hand off to ALS as needed
ALS Prior to Base Hospital Contact:	**ALS Prior to Base Hospital Contact:**
• Acquire 12-lead • Establish IV/IO access • Identify and treat reversible causes • **Unstable Tachycardia**, PERFORM IMMEDIATE SYNCHRONIZED CARDIOVERSION, consider sedation but do not delay synchronized cardioversion. See Energy Doses for Cardioversion Chart. • **SVT Stable narrow QRS <0.12 SEC.>150 With Regular Pulse**. Attempt Vagal Maneuvers, if no change Give Adenosine 6 mg Rapid IVP if no change repeat Adenosine at 12 mg rapid IVP X 2 as needed **Atrial Fibrillation: Stable Irregular Narrow QRS <0.12 SEC >150** beats per minute administer Magnesium 2-4 grams in 100ml NS IV drip over 5-10 minutes. Do not attempt Valsalva or adenosine administration to AFIB with RVR. • **Stable Wide QRS** >0.12 SEC. with regular rate Give Lidocaine 1 – 1.5 mg/kg IV/IO, may repeat Lidocaine 0.5 – 0.75 mg/kg every 5 – 10 minutes to MAX dose of 3 mg • **Stable Wide QRS** >0.12 SEC with irregular rate consider Magnesium Sulfate 1-2 grams over 5-10 minutes for TORSADES DE POINTES	• Acquire 12 lead • Establish IV/IO access • Identify and treat reversible causes • **Unstable Wide QRS >0.08 SEC:** possible VT? Synchronized cardioversion consider sedation but do not delay synchronized cardioversion. See Energy Doses for Cardioversion Chart. • **Narrow regular rhythm QRS <0.08 SEC** If sinus tachycardia, identify and treat underlying causes. • If SVT consider vagal maneuvers, if no delay and If IV access immediately available give Adenosine 0.1 mg/kg rapid IVP, MAX of 6 mg. May repeat X 2 with 0.2 mg/kg rapid IVP MAX of 12 mg • If IV access delayed or no change with Adenosine • Synchronized Cardioversion consider sedation but do not delay cardioversion. See Energy Doses for Cardioversion Chart. • **If irregular narrow complex rhythm QRS <0.08 SEC** transport to appropriate facility, base for direction • **Stable Wide QRS >0.08SEC: Possible VT?** Monitor and transport be ready for patient to decompensate. • **Stable Wide QRS** with an irregular rate consider Magnesium Sulfate 25mg/kg IV/IO drip **OR** IVP, over 5-10 minutes. MAX 2 grams for TORSADES DE POINTES
Base Hospital Contact Required	**Base Hospital Contact Required**
	• Make base contact for Lidocaine for Tachycardia that fails to respond to cardioversion, IV/IO: 1 mg/kg. If rhythm persists, repeat dose in 10 minutes.

Effective Date: 09/01/2020
Revision Date: 06/01/2026

Kristopher Lyon, M.D.
(Signature on File)

Tachycardia with Pulse (124)

Special Considerations

1. The primary decision point for tachycardia is the adequacy of perfusion. If the patient has inadequate perfusion, prepare for immediate synchronized cardioversion. Adenosine may be given if IV is already established, but cardioversion should not be delayed by obtaining IV access. Provide sedation to a conscious patient, if possible, but do not delay cardioversion if the patient is unstable.

2. Serious signs and symptoms are unlikely to be present with rate < 150 bpm. Sinus Tachycardia is caused by external influences on the heart, such as fever, blood loss, stress, or as compensation for hypoperfusion. If you attempt to reduce the heart rate for a person in compensatory tachycardia the cardiac output will fall, and the patient will likely deteriorate. The goal of care is to identify and treat the underlying cause.

    a. Sinus tachycardia with signs of infection: Consider sepsis and give fluid bolus 10mL/kg may repeat as needed.

3. It may be difficult to distinguish between supraventricular and ventricular tachycardia. Most wide complex tachycardia's are ventricular in origin; therefore, if a patient has wide complex tachycardia and is unstable, assume it is VT until proven otherwise.

4. Low energy shocks should always be delivered as synchronized shocks. Low energy unsynchronized shocks (defibrillation) are likely to induce VF.

5. Tachycardia may be a compensatory response to a medical issue, such as stress or fever or it may be of cardiac origin that may lead to shock and deterioration into cardiac arrest. The key to proper treatment of tachycardia is to differentiate whether the tachycardia is the primary cause of the patient's symptoms, or if the tachycardia is a compensatory response to a separate medical issue.

6. Common causes of sinus tachycardia include hypoxia, hypovolemia, fever, metabolic stress, injury, pain, anxiety, toxins, and anemia.

7. Supraventricular tachycardia often appears abruptly and may be intermittent.

8. If using drip method for Magnesium Sulfate, use 100ml Normal Saline.

Tachycardia with Pulse (124)

LIFEPAK	Adult energy dose	Pediatric energy dose Joules/kg
1st	50J	0.5 J/kg
2nd	100J	1 J/kg
3rd	100J	2 J/kg
4th	100J	2J/kg
ZOLL-X	**Adult energy dose**	**Pediatric energy dose Joules/kg**
1st	100J	0.5 J/kg
2nd	150J	1 J/kg
3rd	200J	2 J/kg
4th	200J	2 J/kg

Characteristic	Sinus Tachycardia	Supraventricular Tachycardia
History	**Gradual onset** with compatible history (ex: fever, pain, dehydration)	**Abrupt onset** or termination. Possible complaint of palpitations or CHF symptoms
Physical Exam	Signs of **underlying cause** (ex: fever, hypovolemia, anemia)	**No attributable cause**. Signs of CHF (ex: rales, edema)
Heart Rate	**Infant: < 220/min** **Child: < 180/min** **Variability in HR** in response to changes in activity/stimulation, P waves present/normal	Infant:> 220/min Child: > 180/min **Minimal variability in HR** with changes in activity/stimulation, P waves absent/abnormal

Shock/Hypoperfusion/Bleeding Control (125)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Request EMS • If **Trauma** Control massive bleeding in extremities with Tourniquet. Use Hemostatic gauze to pack Junctions. • Keep patient warm • Give oxygen as appropriate	• Request EMS • If **Trauma** Control massive bleeding in extremities with Tourniquet. Use Hemostatic gauze to pack Junctions. • Keep patient warm • Give oxygen as appropriate
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• ABC's • Is B/P < 90 Systolic with signs of hypoperfusion? • Give oxygen if SpO2< 94% or in respiratory distress • Place the patient in a shock position and keep warm • Spinal motion restriction as indicated • Prepare for rapid transport or ALS hand off • Immobilize fractures enroute • If **Medical** correct Hypoglycemia • Apply cold pack to site if insect stings are present	• ABC's • Is B/P < 90 Systolic with signs of hypoperfusion? • Give oxygen if SpO2< 94% or in respiratory distress • Place the patient in a shock position and keep warm • Spinal motion restriction as indicated • Prepare for rapid transport or ALS hand off • Immobilize fractures enroute • If **Medical** correct Hypoglycemia • Apply cold pack to site if insect stings are present
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
Trauma • Address treatable causes • Establish large bore IV/IO • Consider Tranexamic Acid 2 gram administered slow IV push. **Medical** • Give 500 mL fluid bolus to maintain Systolic B/P >80 mmHg MAX 30mL/kg • If not responsive to fluids • Give Epinephrine Push Dose 0.5 mL every 1-5 minutes **OR** Epinephrine drip 2-8 mcg/min. Start at 8mcg/min and titrate down to effect.	**Trauma** • Address treatable causes • Establish large bore IV/IO **Medical** • Give 20 mL/kg fluid bolus to maintain Systolic B/P 1-10 years old >70 mmHg 10 + years old >80 mmHg • If not responsive to fluids • Give Epinephrine Push Dose 0.5 mL every 1-5 minutes **OR** Epinephrine drip 0.1 - 1 mcg/kg/min not to exceed adult dose repeat as needed. Start at the higher end and titrate down to effect.
Base Hospital Contact Required	**Base Hospital Contact Required**
Trauma • Give 250 mL fluid bolus to maintain Systolic B/P >80 mmHg	**Trauma** • Give 5 mL/kg fluid bolus to maintain Systolic B/P. ○ 1-10 years old >70 mmHg ○ 10 + years old >80 mmHg

Shock/Hypoperfusion/Bleeding Control (125)

Special Considerations

1. Signs and symptoms:

- Altered Mental Status
- Tachycardia
- Tachypnea
- Skin pale, cool, diaphoretic, mottled
- Delayed capillary refill
- Weak peripheral pulses
- Narrowed pulse pressure
- Hypotension

2. Special treatment situations:

- Open chest wounds- Cover with commercially available chest seal. If signs of tension pneumothorax develop (distended neck veins, cyanosis, tracheal shift, absent breath sounds on one side, falling BP, dyspnea), remove dressing, allow air to escape, and reapply dressing.
- External hemorrhage control should include:

    1) For exsanguinating hemorrhage go straight to a tourniquet
    2) Direct pressure
    3) Compression dressings
        a) Gauze pad and elastic bandage
        b) Blood pressure cuff
        c) Air splint
    4) Tourniquet for extremity injuries
        a) Use tourniquet with windlass such as CAT Tourniquet
        b) Apply 2-3 inches proximally to the wound.
        c) May apply a second tourniquet above the first if needed.
        d) Tighten enough to stop all bleeding.
        e) Time and date must be written on tourniquet when applied.
        f) Once applied do not remove until arrival at the hospital. Due to possible surgical needs attempt to transport to a trauma center.

    5) Hemostatic gauze dressing or commercially available junctional tourniquet for uncontrolled junctional hemorrhage.
        a) Direct pressure and wound packing should be applied with the hemostatic dressing.
        b) Use only hemostatic gauze. DO NOT use granular type hemostatic agents.

3. Fluid challenge in trauma patients should be avoided due to increased mortality.

4. Epinephrine drip 2-8mcg/mL preparation

   - **Option 1**

     - Begin with a 100mL bag of normal saline and apply medication label to indicate epinephrine drip.
     - Obtain 1 ampules or vials of epinephrine 1:1000
     - With a 10mL syringe and a filtered needle withdraw 0.8mg of epinephrine 1:1000
     - Remove filtered needle attach hypodermic needle and inject 0.8mg of epinephrine 1:1000 into a labeled 100mL saline bag. Shake well.
     - Attach the 60 drops/mL IV tubing set to the extension set with flow controller (Dial-a-flow). Prime the line and set your desired drops, see below for rates.
       - 2mcg/min set rate to 15 drops
       - 4mcg/min set rate to 30 drops
       - 6mcg/min set rate to 45 drops
       - 8mcg/min set rate to 60 drops

   - **Using 10 drops/mL IV tubing is not recommended for anaphylaxis, bradycardia, or respiratory distress.**

5. Push dose epinephrine:

   - Push Dose epinephrine is 1mL (0.1 mg) of 1 mg in 10 mL epinephrine (cardiac epinephrine 1:10,000) mixed with 9 mL of N/S resulting in Epinephrine 0.01 mg/mL.

     - Begin with an empty 10mL syringe and apply a medication label to indicate push dose epinephrine.
     - Withdraw 1 mL of 0.1 mg/mL preparation (cardiac epinephrine 1:10,000)
     - Withdraw 9 mL of normal saline. Shake well.
     - Mixture now provides 10 mL of epinephrine at a 10 mcg/mL concentration.
     - Push Dose: 0.5 mL (5 mcg) IV/IO, every 1-5 minutes.

6. Ketamine should be first line pain medication for hypotensive patients, or patients at risk for respiratory depression.

V-FIB/Pulseless V-Tach (126)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: only	**Public Safety First Aid Procedures: Only**
• Begin High-Performance CPR • Attach AED and follow prompts • Ensure Fire/ALS have been requested	• Begin High-Performance CPR • Attach AED and follow prompts use pediatric pads and dose attenuator if available • Ensure Fire/ALS have been requested
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Begin High-Performance CPR • Attach AED/monitor and follow prompts • Resume High-Performance CPR immediately post shock • Pulse checks every 2 minutes for no longer than 10 seconds • If no change after 30 minutes, consider termination of efforts per determination of death policy	• Begin High-Performance CPR • Attach AED/monitor and follow prompts use pediatric pads and dose attenuator if available • Resume High-Performance CPR immediately post shock • Pulse checks every 2 minutes for no longer than 10 seconds • Request ALS rendezvous. Initiate transport if ALS ETA is greater than 10 min
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**

V-FIB/Pulseless V-Tach (126)

• Give 1 Shock device specific, see Energy Doses for Defibrillation Chart. • Pulse/Rhythm checks every 2 minutes for no longer than 10 seconds • Deliver repeat shocks during rhythm checks, continue High-Performance CPR while defibrillator is charging • Lidocaine 1-1.5 mg/kg IV/IO first dose then 0.5-0.75 mg/kg every 5-10 minutes MAX 3 doses or 3 mg/kg. The first Lidocaine dose should be given at the 2nd shock. • If a patient is in refractory V-Fib after 3 shocks, begin Vector Change pad placement. The D-Fib pads will be changed from anterior lateral to anterior posterior (Vector Change). If there is no improvement, consider dual sequential defibrillation if feasible. • Torsades De Pointes Give Magnesium Sulfate 1-2 Grams diluted in 10 mL Saline IV/IO. • If no change after 30 minutes, consider termination of efforts per determination of death policy	• Give 1 shock see Energy Doses for Defibrillation Chart. • Pulse/Rhythm checks every 2 minutes for no longer than 10 seconds • Deliver repeat shocks during rhythm checks, continue High-Performance CPR while defibrillator is charging • Lidocaine 1 mg/kg IV/IO first dose then 0.5-0.75 mg/kg may repeat dose X 2 in 3-5 minutes with 1 mg/kg for 3 mg/kg MAX. The first Lidocaine dose should be given at the 2nd shock. • If a patient is in refractory V-Fib after 3 shocks, begin Vector Change pad placement. The D-Fib pads will be changed from anterior lateral to anterior posterior (Vector Change). If there is no improvement, consider dual sequential defibrillation if feasible. • Torsades De Pointes give Magnesium Sulfate 25mg/kg diluted in 10 mL Saline IV/IO. 2 Grams MAX dose. Given 1 time only
Base Hospital Contact Required	**Base Hospital Contact Required**

For patients < 18 years begin transport after 10 minutes of High-Performance CPR or if ROSC is achieved

Special Considerations

V-FIB/Pulseless V-Tach (126)

1. Chest compressions should be interrupted only for ventilation (unless an advance airway is placed), rhythm checks and shock delivery.

2. For a cardiac arrest patient in VF/VT who has a body temperature of <30°C (<86°F), a single defibrillation attempt is appropriate. If the patient fails to respond to the initial defibrillation attempt, defer subsequent attempts and drug therapy until the core temperature rises above 30°C (86°F). The hypothermic heart may be unresponsive to drug therapy, defibrillation, and pacemaker therapy. Drug metabolism is reduced which may allow drug levels to accumulate to toxic levels with standard dosing regimens.

3. For patients in moderate hypothermia with a body temperature of 30°C to 34°C (86°F to 93.2°F), attempt defibrillation and give medications spaced at longer intervals.

4. Priorities during cardiac arrest are high-quality CPR and early defibrillation. Insertion of advanced airway and drug administration are of secondary importance.

5. General priorities for vascular access during resuscitation are:

   - IV route
   - IO route

   If reliable IV access cannot be established quickly, establish IO access.

   Drugs given by the IV route take 1 to 2 minutes to reach the central circulation. When administering medications by the IV route, administer as follows:

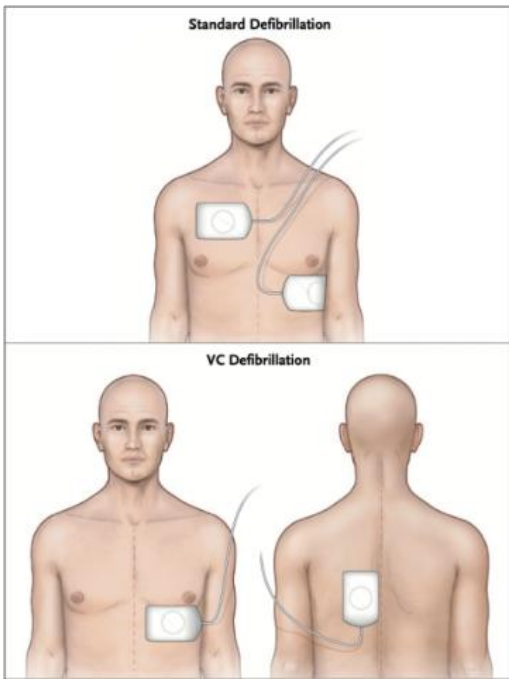
   - Give bolus injection, unless otherwise specified.
   - Follow with a 10 mL bolus of IV fluid.
   - Elevate extremity for 10 to 20 seconds to facilitate delivery to central circulation.

6. If Lidocaine was used to convert rhythm, follow with continuous infusion of adult 1-4mg/min, pediatrics 20-50 mcg/kg/min during the post-resuscitation period.

7. If persistent VF/pulseless VT after third defibrillation, begin Vector Change. Vector Change is achieved by changing orientation of pads from anterior-lateral to anterior-posterior. If there is no improvement with Vector Change and persistent VF/pulseless VT may use dual sequential defibrillation by using the pads used in Vector Change with two separate defibrillators. If persistent or recurrent VF/VT resuscitation beyond 30 minutes is recommended.

V-FIB/Pulseless V-Tach (126)

Vector Change vs Standard Defibrillation



Energy Doses for Defibrillation

LIFEPAK	Adult energy dose	Pediatric energy dose Joules/kg
1st	200J	2 J/kg
2nd	300J	4 J/kg
3rd	360J	6 J/kg
4th	360J	8 J/kg
ZOLL-X	**Adult energy dose**	**Pediatric energy dose Joules/kg**
1st	200J	2 J/kg
2nd	200J	4 J/kg
3rd	200J	6 J/kg
4th	200J	8 J/kg

Traumatic Cardiac Arrest (127)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Begin High-Performance CPR if no signs of obvious death • Attach AED and follow prompts • Request EMS	• Begin High-Performance CPR if no signs of obvious death • Attach AED and follow prompts • Request EMS
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Begin/Continue High-Performance CPR if no signs of obvious death • Attach AED and follow prompts • If blunt trauma, and patient is pulseless and apneic **DO NOT PROCEED WITH RESUSCITATION** • If penetrating trauma initiate resuscitation and rendezvous with ALS or no change in condition after 30 minutes and no AED shocks were delivered	• Begin/Continue High-Performance CPR if no signs of obvious death • Attach AED and follow prompts • Initiate rapid transport or ALS rendezvous if <18 years old
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• ABC's • Monitor/IV • If Tension Pneumothorax perform Thoracic Decompression. • If penetrating trauma and does not meet determination of death, initiate immediate transport.	• ABC's • Monitor/IV • If Tension Pneumothorax perform Thoracic Decompression. Reassess patient and provide rapid transport if under 18 years of age.
Base Hospital Contact Required	**Base Hospital Contact Required**

• Post ROSC give 250mL fluid challenge	• Post ROSC, give 5 mL/kg fluid bolus to maintain Systolic B/P.
	  ○ 1-10 years old >70 mmHg
	  ○ 10 + years old >80 mmHg

Traumatic Cardiac Arrest (127)

Special Considerations

1. Tension pneumothorax requires immediate decompression. The correct placement for the county approved device for the purpose of thoracic decompression is **2nd intercostal space, mid-clavicular line for pediatric patients or 4th intercostal space, mid-axillary line for adult patients**. The approved thoracic decompression device for an adult is a 10-gauge IV needle with a catheter at least 3.25 inches in length. Standard length 2-inch needle should be used for pediatric patients. Assess patients for return of pulses after decompression and evaluate need for fluid challenge.

2. On scene times should be ten minutes or less for trauma patients that are accessible and do not require prolonged extrication. Situations that delay on scene times must be documented in the patient care record. On scene resuscitation is contraindicated in trauma extremis patients.

3. The goal for blood pressure after fluid challenge is 80-90 systolic. Higher blood pressure may cause proportionately faster bleeding. Lower pressures are not adequate for perfusing the major organs. Fluid challenges for traumatic arrest should occur in 250mL increments.

4. Termination of resuscitation should be considered in accordance with the Determination of Death policy.

Epistaxis (128)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Support ABC'S • Request for ambulance transport • Administer oxygen if patient has difficulty breathing • Position patient leaning forward • Apply firm pressure to fleshy part of nose	• Support ABC'S • Request for ambulance transport • Administer oxygen if patient has difficulty breathing • Position patient leaning forward • Apply firm pressure to fleshy part of nose
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Primary assessment/ABC's • Give oxygen only if SpO2 <94% or if in respiratory distress • Transport to closest appropriate facility or ALS rendezvous • Prepare to suction patient as indicated	• Primary assessment/ABC's • Give oxygen only if SpO2 <94% or if in respiratory distress • Transport to closest appropriate facility or ALS rendezvous • Prepare to suction patient as indicated
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**

• IV/monitor as needed
• If bleeding started less than 3 hours ago and is not controlled by BLS procedures, consider administration of Tranexamic Acid.
  ○ Have patient blow nose to clear any blood clots.
  ○ Administer 1mL (100mg) MAD per nostril.
  ○ Immediately compress or clamp nares after administration of Tranexamic Acid
  ○ Repeat in 5 minutes if continued massive hemorrhage.
	• IV/monitor as needed

Base Hospital Contact Required	**Base Hospital Contact Required**

• If bleeding has lasted more than 3 hours and is not controlled by BLS procedures, consider administration of Tranexamic Acid.
  ○ Have patient blow nose to clear any blood clots.
  ○ Administer 1mL (100mg) MAD per nostril.
  ○ Immediately compress or clamp nares after administration of Tranexamic Acid
  ○ Repeat in 5 minutes if continued massive hemorrhage.	

Severe Agitation (129)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Ensure adequate law enforcement personnel at scene to safely manage patient. • Request fire and ALS ambulance early. • Attempt to limit contact with the patient until the ALS ambulance is on scene and ready to manage the patient. • 4 officers as a minimum are recommended for subdual while paramedic personnel sedate patient and restrain once sedation has taken effect.	• Ensure adequate law enforcement personnel at scene to safely manage patient. • Request fire and ALS ambulance early. • Attempt to limit contact with the patient until the ALS ambulance is on scene and ready to manage the patient. • 4 officers as a minimum are recommended for subdual while paramedic personnel sedate patient and restrain once sedation has taken effect.
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Once patient contact is established and an assessment can be performed safely: - Establish primary assessment and patient stabilization of life-threatening conditions. - Perform risk assessment for potential cause/causes of agitation, coexisting medical conditions, and risk for cardiac and/or respiratory deterioration. • Request ALS. • Ensure law enforcement is enroute or at scene. • 4 officers as a minimum are recommended for subdual while paramedic personnel prepare agitation control and has taken effect. • If scene is determined to be safe, attempt verbal de-escalation with a calm, reassuring approach and manner.	• Follow adult BLS procedures.
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**

• Restraints may be utilized after medication administration. • Administer Olanzapine 10 mg PO single dose for cooperative, anxious patients with behavioral health presentation and with a history of psychiatric disorder. **OR** • Administer Midazolam 5 mg IM/IN for agitation control. If no response in 5 minutes, administer Droperidol 5mg IM single dose. If no response after 5 minutes, may repeat an additional midazolam 5mg IM/IN. • Rapid transport to closest appropriate facility with law enforcement in attendance.	• See Adult Protocol for physical restraint usage/transport decisions. • **There are NO approved medications/chemical restraints for pediatrics without base hospital contact.**
Base Hospital Contact Required	**Base Hospital Contact Required**
• Beyond initial dosing	• Administer Midazolam for agitation control 0.1mg/kg IM/IN.

Special Considerations

If patient physical restraint is necessary to assure patient and/or EMS provider safety, prehospital personnel must ensure there is sufficient personnel present to physically restrain the patient safely.

- When law enforcement and paramedic have developed a plan and is ready, law enforcement will subdue the patient and apply appropriate restraint devices

- Law enforcement and paramedic should try to eliminate any pressure to the back, chest, or neck while subduing the patient and avoid putting the patient in the prone position.

1. Olanzapine (Zyprexa)

a. **Indication:** For cooperative, anxious adult patients with a primarily behavioral health presentation and a history of psychiatric disorder. These patients will commonly hear voices or having paranoid thoughts after not taking their usual psychiatric medications.

b. **Administration:** Medication should be handed to the patient for sublingual self-administration. Patient must be willing to take olanzapine willingly with no assistance from EMS personnel. No water is needed for the orally disintegrating tablet.

c. **Precautions:**

- Hyperglycemia
- Dystonic Reactions
- Anticholinergic Effects
- Altered mental status
- Generalized Weakness
- High Fever
- Excessive sweating
- Central Nervous System Depression
- Arrythmias

d. **Contraindications**:

- Alzheimer's disease
- Breast Cancer
- Patients less than 18 years of age
- Pregnant patients
- Seizures

2. Droperidol (Inapsine)

a. **Indications:** Agitated patients who pose serious probable and imminent bodily harm to self/others. They will have some or all the following symptoms: paranoia, disorientation, hyper- aggression, hallucination, tachycardia, diaphoresis, increased strength, hyperthermia

b. **Precautions:**

- Anticholinergic effect
- CNS depression
- Extrapyramidal
- Hyperprolactinemia
- Orthostatic Hypotension
- Temperature regulation
- Arrythmias

a. **Contraindications:**

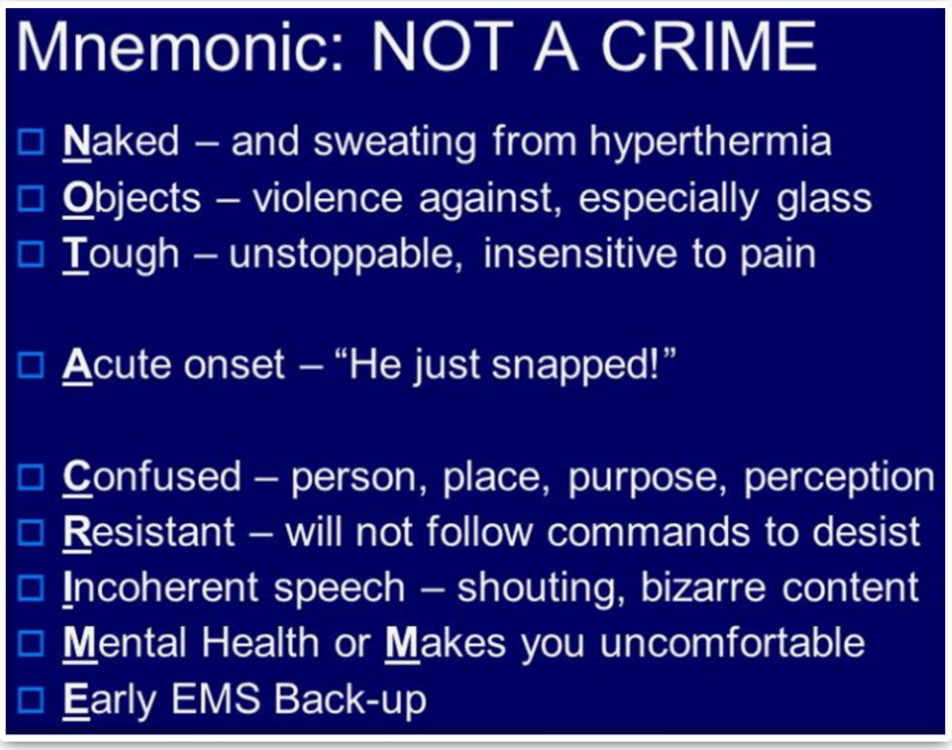
- Hypersensitivity
- Pediatrics

3. If Droperidol or Midazolam is administered:

   a) Monitor airway and intervene if airway becomes compromised
   b) Administer high flow oxygen unless medically contraindicated. Use caution with COPD or chronic hypercapnic respiratory failure.
   c) Continuous cardiac monitoring, capnography and SpO2 monitoring
   d) Start 2 large bore IVs
   e) Check blood glucose

4. The decision to chemically restrain a patient is a medical decision, not a law enforcement decision.

The Not A Crime Mnemonic shown below may be helpful in recognizing these patients.



Crush Injury/Syndrome (130)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Assess ABC's • Administer oxygen as needed • Hold manual spinal motion restriction if indicated • Request fire/EMS	• Assess ABC's • Administer oxygen as needed • Hold manual spinal motion restriction if indicated • Request fire/EMS
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Assess ABC's • Administer oxygen as needed • Provide spinal motion restriction if indicated • Apply blanket to keep patient warm • For multi-system trauma, treat in conjunction with Trauma Policies and Procedures. • For anticipated prolonged extrication (> 30 minutes) • Consider Trauma Activation	• Assess ABC's • Administer oxygen as needed • Provide spinal motion restriction if indicated • Apply blanket to keep patient warm • For multi-system trauma, treat in conjunction with Trauma Policies and Procedures. • For anticipated prolonged extrication (> 30 minutes) • Consider Trauma Activation
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• Establish IV/IO access. • Initiate cardiac monitoring. • If unable to establish vascular access while entrapped place tourniquet PRIOR to extrication. If patient is at risk for **crush injury syndrome** or if there is **evidence of hyperkalemia** (peaked T-waves in multiple leads, absent p-waves, and/or widened QRS complex) administer: **Calcium Chloride** 20mg/kg slow IV/IO push, Repeat x1 for persistent ECG abnormalities. **Sodium Bicarbonate** 1 mEq/kg slow IV/IO push, Repeat x1 for persistent ECG abnormalities. **Albuterol** 5mg via neb, repeat continuously until hospital arrival. • For pain management refer to protocol Pain Control/Fever (117) Normal Saline 20mL/kg IV/IO rapid prior to release of compressive force. May repeat x1 for a total of 40mL/kg IV/IO, maximum prior to Base contact 2L. • For nausea or vomiting administer Ondansetron 4mg	• Establish IV/IO access. • Initiate cardiac monitoring. • If unable to establish vascular access while entrapped place tourniquet PRIOR to extrication. If patient is at risk for **crush injury syndrome** or if there is **evidence of hyperkalemia** (peaked T-waves in multiple leads, absent p-waves, and/or widened QRS complex) administer: **Calcium Chloride** 20mg/kg slow IV/IO push, Repeat x1 for persistent ECG abnormalities. **Sodium Bicarbonate** 1 mEq/kg slow IV/IO push, Repeat x1 for persistent ECG abnormalities. **Albuterol** 5mg via neb, repeat continuously until hospital arrival. • For pain management refer to protocol Pain Control/Fever (117) Normal Saline 20mL/kg IV/IO rapid prior to release of compressive force. May repeat x1 for a total of 40mL/kg IV/IO, maximum prior to Base contact 2L. • For nausea or vomiting administer Ondansetron 4mg

Crush Injury/Syndrome (130)

Base Hospital Contact Required	Base Hospital Contact Required
• Obtain order for additional Normal Saline 20mL/kg IV/IO if persistent entrapment. • For persistent ECG abnormalities, obtain order for additional medications.	• Obtain order for additional Normal Saline 20mL/kg IV/IO if persistent entrapment. • For persistent ECG abnormalities, obtain order for additional medications.

Special Considerations

1. Crush syndrome is a systemic illness characterized by dysrhythmia and shock. It results from toxins released from crushed muscle tissue into the blood stream. Patients are at risk for crush syndrome if they have all of the following: 1) circumferential compression causing crush injury; AND 2) involvement of a large muscle group (lower extremity including the thigh(s) and/or pelvic girdle or upper extremity including the pectoral girdle); AND 3) entrapment for at least 1hour. The risk of crush syndrome increases with the amount of muscle involved and the duration of the entrapment.

2. For CRUSH INJURY without risk of crush syndrome release compression and extricate patient. Monitor cardiac rhythm for signs of hyperkalemia.

3. A backboard is not required for spinal motion restriction (SMR) and may cause harm as well as increased pain. Patients should not be transported on a backboard for the purpose of SMR. If a backboard is used for extrication, patients who are alert should then be logrolled onto the gurney prior to transport. The backboard may be used during patient transport for splinting of multiple simultaneous extremity fractures or to assist with maneuvering the unconscious patient. In all cases, the backboard should be removed immediately if causing respiratory compromise.

4. Patients with crush injury require large volumes of fluid resuscitation. Patients with prolonged entrapment will require maintenance fluids. IO access should be considered when attempts at IV access are not successful if: 1) prolonged entrapment is likely (> 30 minutes) and/or 2) there are signs of hyperkalemia and/or 3) there is risk of crush syndrome requiring medication administration.

5. Flush the IV line with normal saline after each medication. Administration of Calcium and Bicarbonate together will cause precipitation of the medication.

6. Higher doses of albuterol are required to treat hyperkalemia. Consider blow-by to avoid agitation in pediatric patients if a mask cannot be tolerated (e.g., infants and toddlers).

7. The duration of the action of the medications is approximately 30 minutes. Contact Base to discuss re-dosing the medications if persistent signs of hyperkalemia or if the patient will not arrive at the hospital within 30 minutes.

8. Tourniquet placement PRIOR to extrication is a last resort for patients who are at risk for crush syndrome in whom vascular access cannot be established or when transport time is anticipated to be > 30 minutes. The tourniquet must completely occlude venous and arterial flow in order to protect the patient from crush syndrome. Establish vascular access and cardiac monitoring immediately after extrication and be prepared to treat symptoms of crush syndrome upon extrication of the patient. Calcium stabilizes the cardiac muscle and should be administered first.

9. These medications should be administered prior to release of the compressive force to prevent complications from the cellular toxins that enter the circulation.

10. Infants and small children are at high risk for hypothermia due to their large surface area to body mass ratio, reduced ability to shiver, and limited body fat.

12-Lead EKG (201)

Adults and Pediatric
Public Safety First Aid Procedures (ONLY)
BLS Procedures: EMT's and Paramedics start here
ALS Prior to Base Hospital Contact: Paramedics only
• Patient complaining of chest pain/pressure, upper abdominal pain, syncope or dizziness, shortness of breath? Does patient complain of associated cardiac ischemia pain such as jaw, neck, shoulder, back, left arm that is not associated with Injury? OR nausea/vomiting, diaphoresis, feelings of doom? • Attach monitor and obtain vital signs • If patient is hemodynamically stable conduct 12-lead as soon as possible. • If patient is **unstable,** enter appropriate protocol and provide treatment, obtain 12-lead once patient is stable, time permitting • If 12-lead indicates **ACUTE MI contact STEMI receiving center within 5 minutes of acquisition and advise STEMI ALERT** • Consider rapid transport and provide necessary treatment
Base Hospital Contact Required

12-Lead EKG (201)

Special Considerations

Purpose: To provide a procedure for the performance of 12-lead EKG monitoring and reporting. This procedure is limited to use by paramedics only.

1. Definitions

   A. **12 Lead EKG** – a transthoracic interpretation of the electrical activity of the heart over a period of time, as detected by electrodes attached to the outer surface of the skin and recorded by a device external to the body.
   B. **STEMI** – ST Elevation Myocardial Infarction - >1mm ST-segment elevation in two contiguous leads (either precordial or limb leads). (ACC/AHA)
   C. **STEMI Alert –** A declaration by prehospital personnel notifying a STEMI Receiving Center (SRC) that a patient has a specific computer-interpreted 12 Lead EKG indicating an Acute MI, allowing the STEMI Receiving Center to initiate the internal procedures to provide appropriate and rapid treatment interventions, or in consultation with the base physician regarding paramedic concern for STEMI not recognized by the machine.
   D. **STEMI Receiving Center (SRC) –** A facility licensed and operating a cardiac catheterization laboratory and designated an SRC by the Kern County Emergency Medical Services Program.
   E. **STEMI Referral Hospital (SRH) –** An acute care hospital in Kern County that is not designated as a STEMI Receiving Center.
   F. **Acute Coronary Syndrome –** Sudden lack of oxygen to the heart muscle.
   G. **Hemodynamically Stable -** Alert, systolic blood pressure of at least 90 mmHg, and cardiac rhythm does not pose an immediate life threat.

2. Indications

   A. 12 Lead EKG shall be performed on patients exhibiting any of the following signs/symptoms:

      - Chest pain or pressure
      - Upper abdominal pain
      - Syncope or dizziness
      - Shortness of breath
      - Pain/discomfort is often associated with cardiac ischemia

- Jaw, neck, shoulder, back, left arm or other presentation; unless no other symptoms exist, and the cause of the specific pain can be identified with a traumatic or musculoskeletal injury.
- If there is any doubt about the origin of the pain/discomfort, or the presentation seems atypical for the mechanism, a 12 lead EKG should be performed.

B. Patients exhibiting the following signs/symptoms should have a 12 lead EKG performed if the etiology of the illness is indicative of an Acute Coronary Syndrome or the etiology of the illness is indeterminate:

- Nausea
- Vomiting
- Diaphoresis
- Patient expression of "feelings of doom"

C. A 12 lead EKG may be performed based on the clinical judgment of the paramedic even in the absence of the above signs/symptoms.
D. Consider repeat or serial EKG for any changes in rhythm, ST changes, or C/C and Hemodynamic status.

3. EKG Performance Procedure

A. Administer oxygen if SpO2 < 94% or in respiratory distress, titrate oxygen only to use minimal amount needed. In general, O2 should not be given to chest pain patients unless they are hypoxic or in severe respiratory distress.
B. Provide a thorough patient assessment including baseline VS.
C. Apply limb leads (I, II and III) to determine rhythm or dysrhythmia.
D. If the patient is hemodynamically stable conduct the 12 lead EKG prior to administration of medication.
E. If the patient is not hemodynamically stable immediately provide appropriate treatment and perform the 12 lead EKG once the patient's condition stabilizes or time permits.
F. If at any time during the application or performance of the 12 Lead EKG, should the patient's condition deteriorate, immediately administer appropriate treatment and then proceed to the performance of the 12 lead EKG once the patient's condition stabilizes or time permits.

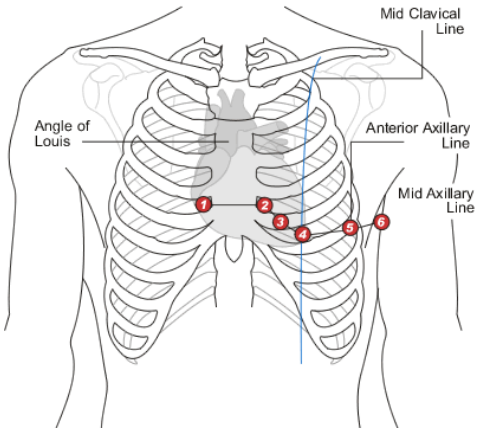
4. Lead Placement

A. Limb leads (at least 10cm from the heart)

- Black – left shoulder or arm
- White – right shoulder or arm
- Red – left leg
- Green – right leg

B. Chest leads

- V1: Right 4th intercostal space (adjacent to sternum)
- V2: Left 4th intercostal space (adjacent to sternum)
- V3: Halfway between V2 and V4
- V4: Left 5th intercostal space, midclavicular line
- V5: Horizontal to V4, anterior axillary line
- V6: Horizontal to V5, mid-axillary line



Note: To find the 4th intercostal space, first locate the Angle of Louis. This is a hump near the top third of the sternum. Start feeling down the sternum from the top and you will feel it. It is located next to the second rib. The space directly beneath it is the 2nd intercostal space. Count down 2 additional intercostal spaces and place V1 on the right and V2 on the left immediately adjacent to the sternum.

5. STEMI Alert

A. The monitor's interpretation, on the printed 12 Lead EKG, shall be the trigger for the notification of a "STEMI Alert."

B. If there is a positive indication of a "Acute MI" on the printed 12 Lead EKG (Ensure that tracing is as clean as possible. Artifact can cause the device to misidentify STEMI)

- If available patient shall be transported to a "STEMI Receiving Center." Outlying hospitals may be bypassed entirely if total transport time to a "STEMI Receiving Center" is less than one hour either by Air or Ground.
- Contact the "STEMI Receiving Center" to which the patient will be transported within 5 minutes of 12 lead acquisition and provide a brief report that begins with

the phrase "STEMI Alert". The patient's age, gender, duration of symptoms, pertinent presentation symptoms, 12 Lead EKG findings and ETA to the hospital should be reported.

- If transporting to a "STEMI Receiving Center" and time permits, electronically transmit the 12 Lead EKG for physician verification.
- Consider establishing a second IV during transport if time permits.

C. If the cardiac monitor does not read STEMI but Paramedic feels that the ECG is consistent the paramedic may transmit the ECG and discuss with base physician to activate. If unable to transmit the paramedic must be able to adequately describe the ECG to the base physician.
   - Do not withhold treatment of chest pain if the 12 Lead EKG does not indicate "Acute MI".
   - Lack of "Acute MI" indication on the 12 Lead EKG does not rule out the possibility of infarct or ischemia.

D. If a "STEMI Alert" report was called to the "STEMI Receiving Center", an update should be given during transport, time permitting.

6. Documentation

A. A copy of the 12 lead EKG must be maintained by the transporting agency, a copy given to the hospital ED for inclusion in the patient chart and a copy made available to EMS upon request. The 12 lead EKG print-out shall be presented to hospital staff at the time the patient is delivered.

CONTINUOUS POSITIVE AIRWAY PRESSURE (202)

Adults and Pediatric

Public Safety First Aid Procedures: Only

- Support ABC's
- Administer oxygen as needed
- Request fire/EMS

BLS Procedures: EMT's and Paramedics start here

- Support ABC's
- Apply oxygen
- Request ALS or rapid transport to the appropriate facility
- Is patient > 8 years old, GCS >10, Able to follow commands with B/P > 90 systolic?
- Two of the following criteria present:
  Respiratory rate > 25, retractions or accessory muscle use, SpO2 <94%, abnormal or diminished lung sounds?
- If yes, check for contraindications, agonal respirations or apnea, pneumothorax or penetrating chest trauma, tracheostomy, systolic B/P < 90, aspiration risk (vomiting, epistaxis, facial trauma)
  If there are no contraindications, initiate CPAP otherwise enter appropriate protocol.

ALS Prior to Base Hospital Contact: Paramedic only

Base Hospital Contact Required:

- Adult - Midazolam 5mg IM or 2mg IV
- Pediatric - Midazolam 0.1 mg/kg IM or 0.05 mg/kg IV, not to exceed adult dose.

Special Considerations

- Use caution if patient has decreased mentation or is unable to cooperate with procedure
- Recent G.I. bleed or epigastric surgery
- May cause hypotension due to increased intrathoracic pressure
- May cause pneumothorax, gastric distention, corneal drying

1. Continuous Positive Airway Pressure (CPAP) may be considered if available for emergency medical technicians and paramedics who have met the training requirements for the skill.

2. Continuous Positive Airway Pressure (CPAP) is a non-invasive mechanically assisted oxygen delivery system designed to decrease work of breathing while allowing time for patients to respond to other medical interventions.

3. CPAP has been shown to rapidly improve pulmonary gas exchange, decreasing the need to endotracheal intubation. Endotracheal intubation is associated with a longer length of hospital stay and an increase in morbidity and mortality.

4. Continuous airway pressure offers several significant benefits to a patient experiencing respiratory distress. The continuous pressure prevents the small airway from collapsing on exhalation, providing an increase in alveolar ventilation. Additionally, fluid is moved from the airway, back into the vasculature which reduces pulmonary edema.

5. CPAP is approved for use on adults, and children aged eight (8) and older. The use of CPAP depends on the proper mask fit. The size and anatomy of the patient is a more important factor than the age in determining eligibility for CPAP.

6. The administration of CPAP requires patient understanding and cooperation. The procedure must be explained to the patient and the paramedic should offer verbal support and encouragement. Onset of relief of symptoms usually begins to occur within five minutes.

7. Midazolam may be carefully considered for anxiety related to respiratory distress and the procedure. Midazolam may allow the patient to tolerate CPAP, thereby avoiding endotracheal intubation. Midazolam may also decrease respiratory rate. Midazolam should be given in the lowest possible dose to achieve patient cooperation and will likely only be required in the initial application of CPAP. Anxiety will likely diminish once respiratory status

begins to improve. The paramedic should be prepared for intubation if respiratory status worsens.

8. CPAP may be briefly removed to administer Nitroglycerine for CHF, ensure the entire tablet has dissolved prior to reapplying CPAP.

9. CPAP must be used in accordance with manufacturer guidelines. CPAP pressures should be titrated to desired effect, demonstrated by improved respiratory status, decrease in heart rate, and an increase in SpO2. Pressure should be titrated between 5cm/water to a maximum of 15 cm/water. Typically, 10 cm/water is effective for pulmonary edema and 5 cm/water is effective for other respiratory complaints.

10. Patients receiving CPAP require close observation of respiratory status and hemodynamic stability. Vitals signs, including respiratory rate, heart rate, blood pressure, and Sp02 must be recorded every five minutes throughout treatment and transport until release from care. Prepare to assist ventilation or intubate if patient condition worsens.

11. Patients with CPAP in use may only be released to a paramedic with equal training for transport to the hospital. In cases where the transport paramedic is not trained in the use of the device, the paramedic who initiated CPAP must accompany the patient to the hospital.

Intubation (203)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Assess patient for Trismus • If signs of Hypoglycemia or Narcosis enter appropriate protocol • Select an appropriately sized Supraglottic device, ensure device is intact and serviceable • Prepare BVM, OPA, NPA and ensure suction is assembled and functioning • Pre-Oxygenate patient for a minimum of 30 seconds using BVM. Apply Nasal Cannula oxygen 15LPM during procedure to provide Apneic Oxygenation. • Place and secure Device as per Kern County EMS, manufacturer, and provider policy. • Ventilate patient and assess patient response via capnography, breath sounds, chest rise and fall, skin signs and SpO2 if patient is pulsatile	• If signs of Hypoglycemia or Narcosis enter appropriate protocol • Use size appropriate BVM, OPA, NPA and ensure suction is assembled and functioning • Place and secure Device as per Kern County EMS, manufacturer, and provider policy. • Ventilate patient and assess patient response via breath sounds, chest rise and fall, skin signs and SpO2 if patient is pulsatile
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
For all ETT intubation: • Maximum of two attempts *shall* be made, tube introducer is required for all attempts • If unsuccessful after 2 attempts, refer to supraglottic airway section above. • Post intubation analgesia and sedation if normotensive with Fentanyl 1mcg/kg IV if patient needs further sedation after the Fentanyl midazolam 0.1mg/kg • For further guidance, see special considerations.	• If BVM with OPA/NPA adjuncts is not adequate proceed with Supraglottic device. • Select an appropriately sized Supraglottic device, ensure the device is intact and serviceable • Prepare BVM and ensure suction is assembled and functioning • Pre-Oxygenate patient for a minimum of 30 seconds using BVM. Apply Nasal Cannula oxygen 15LPM during procedure to provide Apneic Oxygenation. • Place and secure Device as per Kern County EMS, manufacturer, and provider policy • Ventilate patient and assess patient response via waveform capnography, breath sounds, chest rise and fall, skin signs and SpO2 if patient is pulsatile

	• Use only sufficient volume for chest rise and maintenance of pulse ox between 88%-94%. • Post device placement analgesia and sedation if normotensive with Fentanyl 1mcg/kg IV if patient needs further sedation after the Fentanyl midazolam 0.1mg/kg • **Oral ETT placement shall NOT be attempted if patient is 13 years of age or younger.**
Base Hospital Contact Required:	**Base Hospital Contact Reqired:**

Special Considerations

1. If a patient is 14 years of age or older or longer than the length-based tape, intubation procedures fall under the adult category.

2. Tube introducers are required for all attempts.

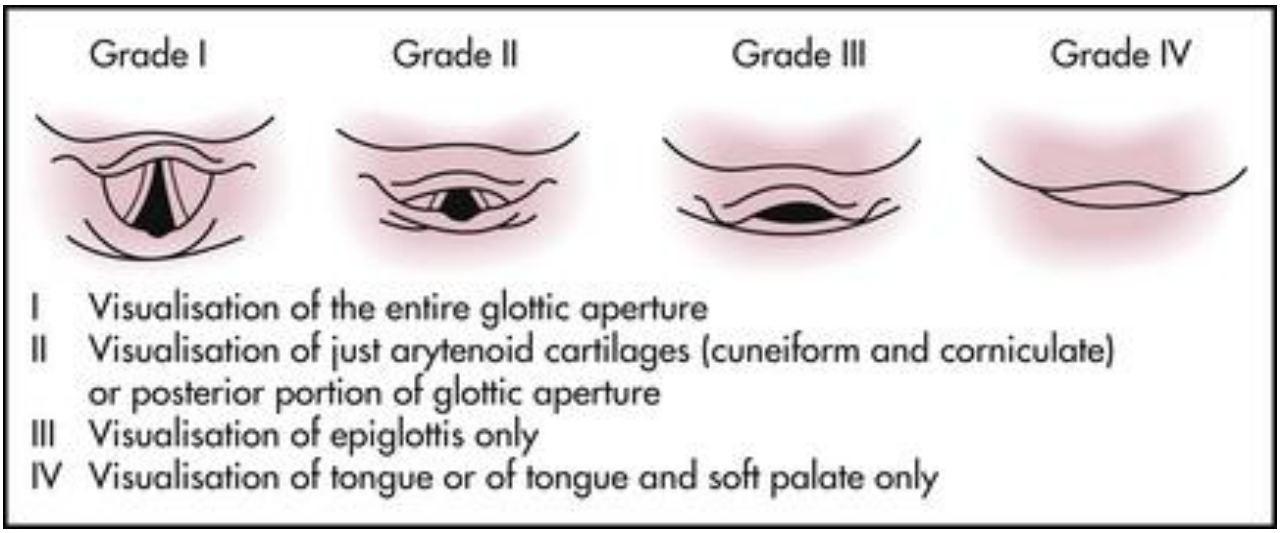
3. End Tidal CO2 is required for **ALL** advanced airways.

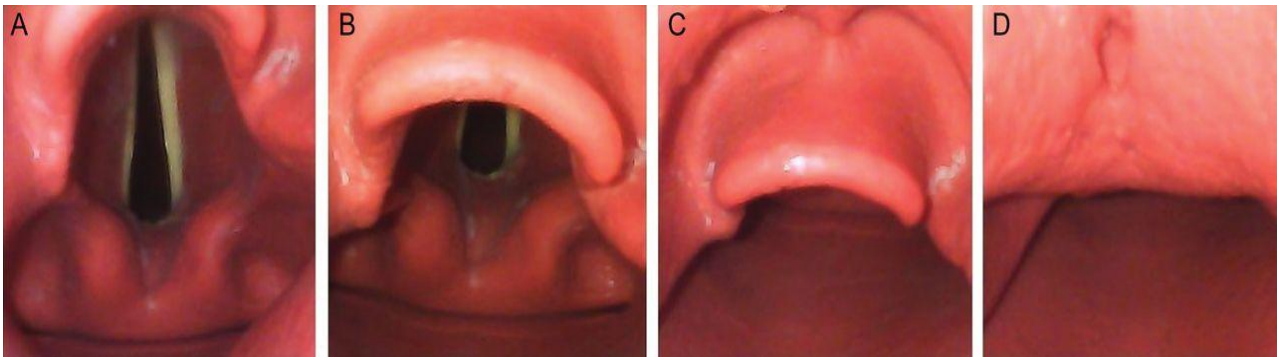
    a. BLS placed King Airways SHALL be confirmed with colorimetric End Tidal CO2 OR wave form Capnography.
    b. ALS placed King Airways or Endotracheal Tubes SHALL be confirmed with waveform End Tidal CO2 Capnography which shall remain in place until transfer of care. In the event of equipment failure or persistent ETCO2 level less than 10 a colorimetric device may be used to confirm placement. HOWEVER, if both devices do not adequately confirm positioning the device SHALL be removed and BVM ventilation with adjuncts shall be used.
    c. Tubes with Persistent ETCO2 below 10 should be removed.

4. Intubation Attempt Definition: Insertion of tube introducer and tube passed the teeth.

5. Removal of foreign bodies does not count as an intubation attempt.

Cormack Lehane Scale:





Intubation Attempt Process:

1. Preparation:

    a. Select and assemble laryngoscope blade to handle, ensure it is functional.
    b. Select ETT and test the cuff with a 10mL syringe.
    c. Ensure the cuff has no leaks.
    d. Assemble and test suction device.
    e. Prepare securement method, commercial device preferred, ensure tube introducer is at patient side. Appropriately sized supraglottic device should be immediately available.

f. Assess Cormack-Lehane Grade. If Grade 3-4, do not attempt ETT placement. Refer to supraglottic placement above. If Grade 1-2 continue with ETT procedure.
g. Pre-oxygenate patient for at least 30 seconds prior to each attempt via BVM and OPA/NPA or NRB mask if patient has adequate spontaneous respirations.
h. Apply nasal cannula oxygen 15lpm to provide Apneic Oxygenation.

2. Position:

   a. Non-traumatic patients use sheets/towels to ramp patients as necessary to obtain ear to sternal notch position. Trauma patients use inline cervical stabilization, ensure C-collar allows jaw to open.

3. Pass the Tube:

   a. Suction as needed. Insert blade into patient's mouth, sweep tongue to the left.
      i. Curved blade: insert into Vallecula and apply longitudinal traction while staying off the teeth until cords are visualized.
      ii. Straight blade: Insert blade fully and withdraw slowly until cords are visualized, avoiding the teeth, insert tube through cords, pass cuff 1 CM beyond cords, inflate cuff, blade should not be inserted for longer than 30 seconds. If cords are not visualized abandon attempt.

4. Proof of placement:

   a. **Waveform capnography shall be used to immediately confirm placement and shall remain in place until patient care is transferred to a higher level of care.** Auscultate bilateral lung sounds and epigastric area. Observe chest rise and fall. Assess SpO2 if patient is pulsatile.

5. Post intubation care:

   a. Secure tube with commercial device or if not available secure with cloth tape. Ensure patients are being ventilated at an appropriate rate and volume with O2 attached. Use only sufficient volume for chest rise and maintenance of pulse ox between 88%-94%

Spinal Motion Restriction (204)

Adults and Pediatrics

Public Safety First Aid Procedures: Only

- Support ABC's
- Request Fire/EMS
- Encourage the patient to remain still if in a safe area/environment

BLS Procedures: EMT's and Paramedics start here

- If a patient is found in setting of significant trauma, perform spinal assessment. **Does patient have any of the following?**
- Posterior midline vertebral pain, tenderness, or deformity
- Numbness or weakness in any extremity post trauma
- Painful distracting injury
- GCS<15
- Intoxication
- AGE <3 or >65
- Severe head or facial trauma
- Language barrier without reliable translator
- **If yes Perform spinal motion restriction**.
- Apply Cervical Collar
- If a patient is ambulatory and can safely self-extricate, assist to gurney
- If extrication is needed: Use a backboard or rigid extrication device to move patients to the gurney. **Remove backboard or rigid extrication device once patient is on gurney**
- Secure patient with seatbelts or straps in supine position or position of comfort if supine position not tolerated
- If isolated penetrating trauma, do not apply Cervical Collar, encourage patient to minimize cervical motion.

ALS Prior to Base Hospital Contact:

Base Hospital Contact Required

Special Considerations

1. Implement spinal motion restriction in the following circumstances in the setting of significant trauma:

   A. Posterior midline spinal pain or tenderness with a history of or suspicion of trauma.
   B. Numbness or weakness in any extremity after trauma.
   C. Unreliable exam including:
      1) Injuries distracting patient from distinguishing spinal pain (e.g., pelvic fracture, multi-system trauma, crush injury to hands or feet, long bone fracture proximal to the knee/elbow, or to the humerus/femur, severe head or facial trauma, etc.)
      2) Penetrating trauma does not require spinal motion restriction unless injury is suspected
      3) Altered Mental Status GCS <15
      4) Intoxication
      5) Language barrier, unless reliable translation is available
      6) Age less than 3 or greater than 65

2. Examples of significant trauma include but are not limited to MVC>40 MPH, MVC rollover and/or ejection, fall > 3 feet or 5 stairs, axial loading, recreational vehicle crash (motorcycles, ATVs, etc.), car vs pedestrian or bicycle, vehicle intrusion > 12 inches to occupant side > 18 inches to any site.

3. Patients who require spinal motion restriction are determined by the above criteria, **not mechanism of injury alone.**

4. Victims of isolated penetrating trauma should not have a Cervical Collar applied.

5. Complete spinal motion restrictions include cervical collar (C-Collar) and gurney straps or seatbelts only. Head blocks may be used to prevent rotation.

6. Backboard or rigid extrication device shall not be used for spinal motion restriction. No patient shall be transported on backboard or rigid extrication device unless removing patient from device interferes with critical treatments or interventions. Vacuum splint is acceptable.

7. If neurologically intact patient can safely self-extricate assist the patient to the gurney after C-Collar has been applied. If ambulatory, instruct patients to sit on the gurney. Do not use standing takedown on ambulatory patients.

8. Providers should use a slide board or flat to facilitate movement between the gurney and other surfaces such as ambulance bench seat or hospital bed.

Combative Patient Restraint (205)

Adults and Pediatric
Public Safety First Aid Procedures: Only
• Manage patients as per agency policy • Request ambulance if medically necessary
BLS Procedures: EMT's and Paramedics start here
• Complete primary survey/ABC's • Apply NRB at 15LPM to all combative patients requiring restraints. • If altered mental status, rule out treatable causes and apply restraints. If GCS=15 apply restraints • Assess blood glucose if <60mg/dL enter diabetic or altered mental status protocol if altered
ALS Prior to Base Hospital Contact: Paramedic only
• Assess blood glucose if <60mg/dL enter diabetic or altered mental status protocol if altered • Midazolam 5mg IM or 2mg IV for agitation control
Base Hospital Contact Required
• **Adult** - Midazolam 5mg IM or 2mg IV base contact required beyond initial dose for agitation control. • **Pediatric** - Midazolam 0.1 mg/kg IM or 0.05 mg/kg IV not to exceed adult dose. Base contact required beyond initial dose for agitation control.

Special Considerations

1. Patients should be reassured, and their cooperation enlisted whenever possible. Restraints should only be used when the patient poses a danger to self or others and all other measures to control patient behavior are inadequate.

2. Patients should be restrained using the least restrictive means possible to provide for the safety of the patient and persons providing care during treatment and transport. Two-point restraints may be used to secure the patient's arms at the wrists, or four-point restraints may be used to secure the patient's arms at the wrists and legs at the ankles. **Patients must *never* be transported prone.**

3. Only commercially manufactured devices intended for restraint may be used to restrain a patient.

4. Restrained patients must be transported in a position that allows for monitoring and protection of the patient's airway.

5. Restraints should be secured to a non- moving part of a gurney and tied in a fashion that will allow for quick release.

6. When a patient is restrained, gurney safety belts may be used to secure the legs above the knees and across the chest without impeding expansion of respiration. The patient's arms should be on the outside of the chest straps.

7. Handcuffs may only be used as restraint devices when a law enforcement officer accompanies the patient in the ambulance.

8. Transfer of patients that have been restrained requires careful and frequent monitoring of airway, breathing, and circulation. This shall include pulse oximetry and ECG monitoring when possible. Capillary refill, warmth, and movement distal to the restraint must be assessed every fifteen (15) minutes after restraint application and documented on the ePCR.

9. Transferring physicians that order the application or maintenance of physical or chemical restraint must provide a written order.

10. Additional required documentation specific to this protocol:

- Reasons restraints were applied
- Agencies and individuals involved in the application of the restraints
- Capillary refill, warmth, and movement distal to the restraint

11. Agitation control beyond the first dose requires a BASE STATION order. Indications for agitation control would include extreme agitation in which patients cannot be safely restrained using physical restraints and is a danger to ambulance personnel and/or self. The paramedic should be prepared to handle respiratory depression in chemically restrained patients.

Interosseous/ Intravenous/ Intranasal (206)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures	**Public Safety First Aid Procedures**
Intranasal • Ensure syringe, nasal atomizer and medication are intact and serviceable, check expiration date • If not pre-assembled attach syringe to atomizer • Verify nasal passages are clear • Administer medication to a max of 1mL per nare	**Intranasal** • Ensure syringe, nasal atomizer and medication are intact and serviceable, check expiration date • If not pre-assembled attach syringe to atomizer • Verify nasal passages are clear • Administer medication to a max of 1mL per nare
BLS Procedures:	**BLS Procedures:**
Intranasal • Ensure syringe, nasal atomizer and medication are intact and serviceable, check expiration date • If not pre-assembled attach syringe to atomizer • Verify nasal passages are clear • Administer medication to a max of 1mL per nare • EMT may not repeat intranasal dose after 1 mL of volume per nare.	**Intranasal** • Ensure syringe, nasal atomizer and medication are intact and serviceable, check expiration date • If not pre-assembled attach syringe to atomizer • Verify nasal passages are clear • Administer medication to a max of 1mL per nare • EMT may not repeat intranasal dose after 1 mL of volume per nare.
ALS Prior to Base Hospital Contact:	**ALS Prior to Base Hospital Contact:**
Interosseous ***Proximal tibia:*** • Palpate the tibial tuberosity locate insertion site approximately 2-3 cm medially at the broad flat aspect of the tibia • Insert intraosseous needle into the broad flat anterio-medial surface of the tibia • Aspirate to confirm placement • Secure in place • For patients that respond to painful stimuli, consider slow administration of **Lidocaine 2%** 40mg slow IO, prior to infusing fluids for pain associated with IO infusion. • The initial bolus of lidocaine should be given **prior** to administration of the 10mL saline flush. Allow the lidocaine to work for 30 to 60 seconds before administering fluids. ***Proximal Humerus***	**Interosseous** **Proximal tibia IO site:** • Refer to Adult Protocol for landmarking. • For patients that respond to painful stimuli, consider slow administration of **Lidocaine 2%** 0.5mg/kg slow IO, max of 40 mg prior to infusing fluids for pain associated with IO infusion. • The initial bolus of lidocaine should be given **prior** to administration of the 10mL saline flush. Allow the lidocaine to work for 30 to 60 seconds before administering fluids. **Distal Femur:** • Ensure the leg is stretched out with the foot pointing straight up and the knee does not bend. Palpate the patella. Insert intraosseous needle approximately 1 to 2 cm (1-2 finger breadths proximal to the patella and approximately 1 to 2 cm medial to the midline • Insert needle at a 90-degree angle to the bone.

• Place the hand over the abdomen with the arm tight against the body to landmark on the anterior shoulder • Palpate the greater tubercle by letting it sink into the palm of your hand • Insert needle at 45-degree angle, towards opposite hip • If the patient is unable to place arm across abdomen, you may adduct and internally rotate the arm with thumb facing down. This will also expose site for access. • Do not raise arm above 45-degree angle, this will cause risk of needle dislodgement. **Intravenous** • A saline lock may be used for blood draw or when a patient requires intravenous access but does not require continuous infusion of an intravenous solution. A saline lock alone may not be used for patients at risk of hypoperfusion (i.e. cardiac arrest, burn, or signs of physiological shock).	• Aspirate to confirm placement. **Intravenous** • A saline lock may be used for blood draw or when a patient requires intravenous access but does not require continuous infusion of an intravenous solution. A saline lock alone may not be used for patients at risk of hypoperfusion (i.e. cardiac arrest, burn, or signs of physiological shock).
Base Hospital Contact Required	**Base Hospital Contact Required**

Special Considerations

Proximal Tibia

Proximal Humerus

Distal Femur

1. Indications:

    a. Cardiac Arrest
    b. Critical patients where rapid vascular access is unavailable by other means in the following conditions:
        i. Multisystem trauma with severe hypovolemia
        ii. Severe dehydration with vascular collapse and/or loss of consciousness
        iii. Respiratory failure or respiratory arrest.
        iv. Patient is unstable.

2. Contraindications:

    a. Fracture is proximal to the proposed intraosseous site.
    b. History of osteogenesis imperfecta.
    c. Current or recent infection at proposed intraosseous site.
    d. Previous intraosseous insertion at the identified site within 24 hours.
    e. Joint replacement at or above the selected intraosseous site.
    f. Excessive tissue (severe obesity) and/or absence of adequate anatomical landmarks.
    g. **Distal femur IO** access **SHALL NOT** be obtained on **CONSCIOUS** patients.

Proximal Humerus IO Site

A) Place the patient's hand over the abdomen (elbow adducted and humerus internally rotated). Place your palm on the patient's shoulder anteriorly. The area that feels like a "ball" under your palm is the general target area. You should be able to feel this ball, even on obese patients, by pushing deeply.

B) Place the ulnar aspect of your hand vertically over the axilla. Place the ulnar aspect of your other hand along the midline of the upper arm laterally.

C) Place your thumbs together over the arm. This identifies the vertical line of insertion on the proximal humerus.

D) Palpate deeply up the humerus to the surgical neck. This may feel like a golf ball on a tee – the spot where the "ball" meets the "tee" is the surgical neck. The insertion site is 1 to 2 cm above the surgical neck, on the most prominent aspect of the greater tubercle.

E) Point the needle set tip at a 45-degree angle to the anterior plane and posteromedial.

Central Vascular Access Devices (Cvad) (207)

I. Purpose:

A. To define training requirements, indications, guidelines, and the standard procedure for access of pre-existing central vascular access devices (CVAD) on critically ill patients.

II. Authority:

A. Health and Safety Code, Section 1797.220, 1798. Title 22, Section 100170.

III. Definitions:

A. Pre-existing vascular access device (PVAD): An indwelling catheter or device placed into a central vein to provide vascular access for long term use or hemodialysis.

1. Externally accessible central venous line: External central venous catheter; may be single or multi-lumen. Usually located in subclavian, jugular or femoral veins. Often called a PICC line (peripherally inserted central catheter) or central venous catheter. Accessed through injection cap.

2. Tunneled temporary or permanent dialysis catheter: External central venous catheter with two lumens, usually located in the subclavian vein and located on the anterior chest. Occasionally it may be found in the femoral or jugular. This shall only be used in unstable patients with impending or existing cardiac arrest with no other option for vascular access.

3. Hemodialysis fistula/graft: A permanent surgical connection that diverts blood flow from an artery to a vein. Usually located on the upper extremity and is used for dialysis. This shall not be used by prehospital personnel.

4. Internal indwelling catheter: Tunneled and implanted long term port. Usually on the chest wall or arm. No external lumens noted. This device is not to be used by prehospital personnel.

IV. Policy:

PVADs may be used in the prehospital setting as set forth by this document.

A. Paramedics shall successfully complete a PVAD training module approved by Kern County EMS Agency and have skill checked off by an approved trainer prior to administering fluids and/or medications through a PVAD.

B. Indications:

a. Existing peripheral inserted central catheter (PICC) or central venous catheter (CVC)- May be used in any situation as long as patency is established.

b. External central venous catheters (Dialysis catheter) - May be used in unstable patients with impending arrest when no other access can be established.

C. Documentation will include:

a. Date and time device accessed

b. Type of device accessed

c. Prior attempts to establish peripheral access

d. Patient's condition requiring device to be accessed

e. Any complications encountered

f. Medication dosages and/or total amount of fluids administered

D. Risks:

1. Introduction of an air embolism (and possible stroke, heart attack, or end organ damage)

2. Uncontrolled bleeding

3. Blood or local skin infection

4. Loss of access in a difficult venous access patient

Procedure:

A. Externally accessible central venous line or peripheral inserted central catheter:

1. Assemble necessary equipment

a. Appropriate PPE

b. Two 10 cc syringes; 1 empty and 1 with 10cc NS

c. IV tubing and fluids

d. Alcohol prep pads

2. Educate the patient on the procedure.

3. Perform hand hygiene and don exam gloves

4. Disconnect any existing IV lines

5. Prep injection caps by vigorously scrub the top and sides of needleless connector hub with alcohol prep pad using friction and a twisting motion for no less than 15 seconds.

6. Allow to completely air-dry

7. Assess patency and flush IV catheter prior to medication administration:

8. Attach empty 10 cc syringe and unclamp catheter

9. Withdraw 5 cc of blood and discard. *If at any time resistance is met, discontinue the procedure.*

10. Slowly inject 5-10 cc of normal saline with prefilled syringe. *If at any time, resistance is met, discontinue the procedure.*

11. Use a new alcohol prep pad to clean the needleless connector using friction and a twisting motion for no less than 15 seconds and allow to completely air dry and attach IV tubing. Once it is flowing well, it can be used for medication administration

12. Closely monitor site.

13. Medication Administration:

a. Connect the medication syringe or administration set maintaining sterility of syringe or line tip.

b. Administer medication.

14. Post Medication Administration/Flush:

a. Discard supplies

b. Remove Gloves

c. Performs hand hygiene

d. Documents procedure

Central Vascular Access Devices (Cvad) (207)

Special Considerations

1. CVADs are aspirated for blood return and flushed prior to each infusion to assess catheter function and prevent complications.

2. CVADs are flushed after each infusion to clear the infused medication from the catheter lumen, thereby reducing the risk of contact between incompatible medications.

3. Single-use flushing and locking syringes are used.

4. Single use normal saline flushing syringes are never re-used even on same lumen.

5. The patency of the CVAD is assessed using a 10-ml syringe to reduce the risk of catheter damage.

6. Recommended flushing/locking solution – 10 ml prefilled normal saline syringe.

7. A CVAD is never forcibly flushed.

8. Never access red catheter port.

9. Always clamp red catheter port before procedure is initiated.

10. The CVAD may be locked after the final flush to maintain patency and decrease the risk of intra-luminal occlusion.

11. Do not use intravenous (IV) solution containers (e.g., bags or bottles) as a source for obtaining flush solutions.

12. After confirmation of patency using a 10-ml syringe, use syringes appropriately sized for the medication being injected.

13. Recommended flushing/locking solution – 10 mL prefilled normal saline syringe.

14. Flush before and after use using vigorously pulsatile technique.

Revision Log

05/12/2026 – Removal of telehealth policy and procedure reference.

06/01/2026 – Correction to Magnesium sulfate procedure and the special considerations. The addition of BLS Zofran/Ondansetron procedures. Clarification regarding determination of death criteria, created bold indications and comas. Behavioral Health and law enforcement collaboration guidelines included in destination decisions.
07/06/2026 – Burn Designation for BMH removed. Marked available for KM as they are the trauma designation facility .
10/05/2026 – IV Acetaminophen changed to infusion over 15 minutes.