Protocols

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Protocols

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.

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.

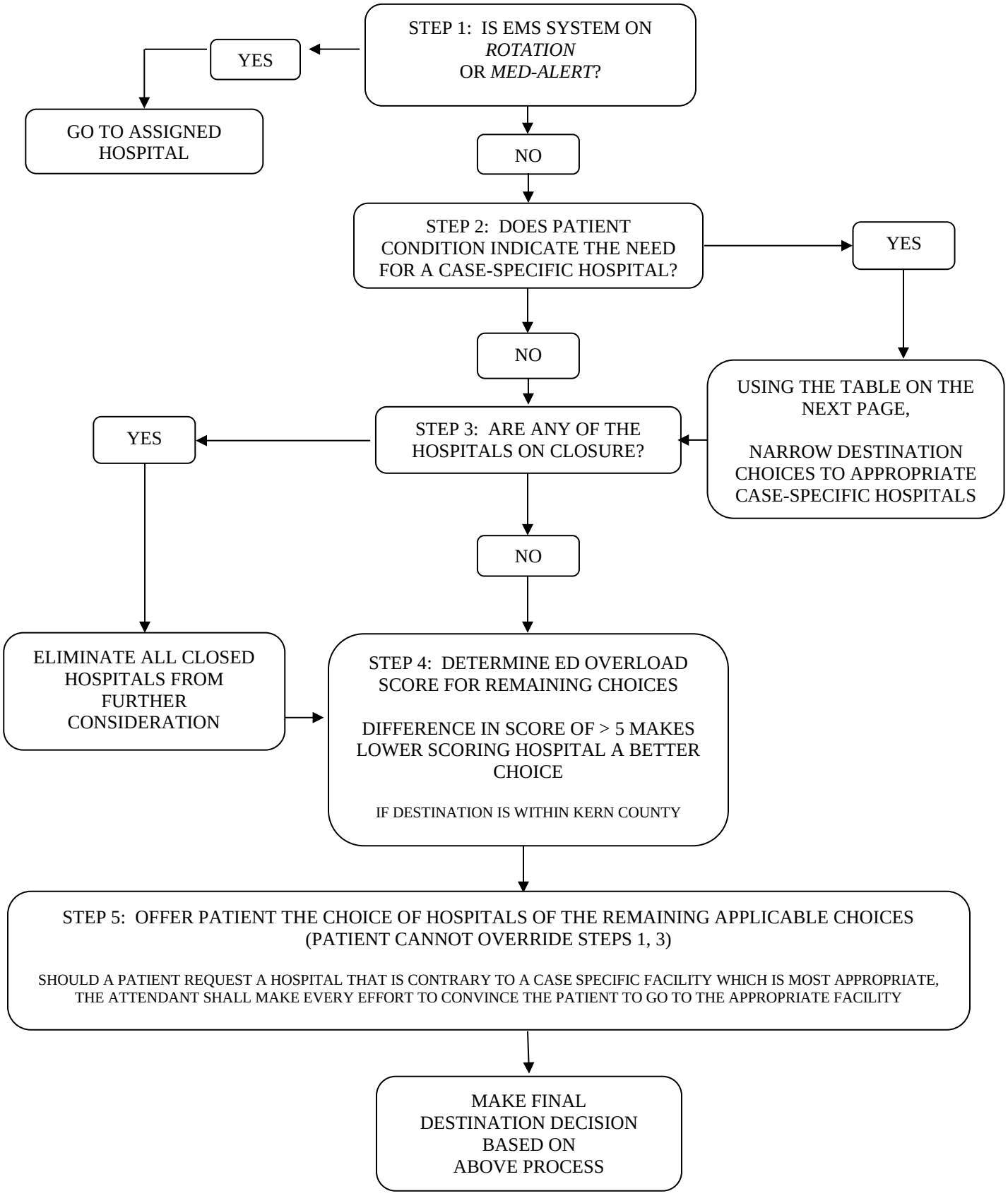
5. Monitor naso-gastric infusions.

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 are 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-METRO BAKERSFIELD AREA

Policy Number:	Effective Date: **April 10, 2010**	Revision Date: **July 1, 2013**



DESTINATION DECISION SUMMARY-METRO BAKERSFIELD AREA

Policy Number:	Effective Date: **April 10, 2010**	Revision Date: **July 1, 2013**

Hospital destination decision shall be based on "patient choice" and "closest, most appropriate hospital" criteria. The following table provides the case specific information necessary for defining, "most appropriate hospital":

	BMH	**Heart**	**KM**	**Mercy**	**MSW**	**AH-B**	**DRMC**	**KVH**	**TH**	**RRH**
Base Station	X	X	X	X	X	X	X			X
Burns	X									
Trauma - Step 1 or 2*			X							
Trauma - Step 3*	X	X	X	X	X	X	X	X	X	X
Orthopedic	X		X	X	X	X				
Cardiac	X	X				X				
STEMI	X	X				X				
Neonatal	X		X		X	X				
Obstetrical	X		X		X	X				X
Pediatric Emergent Medical***	X		X							
Pediatric Non-Emergent Medical***	X		X			X	X			X
Sexual Assault						X				
Psychiatric w/out other medical condition ruled out	X	X	X	X	X	X	X	X	X	X
Psychiatric with other medical condition ruled out			X							
Stroke meeting activation criteria**	X		X	X	X	X				
Stroke not meeting actv. criteria	X		X	X	X	X				
Stroke Satellite with Primary Stroke center consult and approval										X
Prison inmate	contracted facility as directed by prison staff unless patient condition warrants a different facility (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	PALM REG	Henry Mayo
Trauma- Step 1 or 2*	X		X
Trauma- Step 3*	X		X
Orthopedic	X	X	X
Cardiac	X	X	X
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 meeting activation criteria**	X		X
Stroke not meeting activation criteria	X		X
Prison inmate			
Medical extremis			
Any other patient condition	X	X	X
Traumatic Arrest*	X		
Traumatic unmanageable airway or inability to ventilate*			
* Per Trauma Policy - ** Per Stroke Policy			

SPECIAL CONSIDERATIONS

1. **Conscious Patients**: Conscious, alert, and oriented patients shall have a choice in destination, so long as the requested hospital is a Kern County EMS approved receiving center. (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.

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. (See above table) If the requested receiving hospital is contrary to a case specific hospital which is most appropriate, the attendant shall inform the MD/PA/NP/RN of contraindications of transport to a facility other than an appropriate case specific hospital. If the MD/PA/NP/RN remains adamant about their destination decision the attendant shall attempt to obtain a signed AMA from the patient and continue appropriate care and transport to the requested hospital. 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:
   - The specialty care required by the patient is not available at a Kern County EMS Approved Receiving Center
   - The clinician coordinating the care for the patient is requesting transport to the facility
   - The clinician confirms acceptance of the patient at the receiving facility
   - 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 above criteria has been met and after assessing the patient, agrees that the patient condition should tolerate the transport
   - All above criteria

3. **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.

4. **Transporting From A Clinical Setting:** When responding to a clinical facility and an MD/PA/NP/RN requests ambulance transport of an emergent 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 stable and deemed to be safe for the 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 above criteria has been met and after assessing the patient, agrees that the patient 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
- All above criteria must be clearly documented on PCR

5. **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.

6. **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)

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

8. **Emergent Medical Pediatric Criteria**: Patients that are younger than fourteen (14) years with an emergent medical complaint shall be transported to a Comprehensive or Advanced Ped RC if ground transport time is thirty (30) minutes or less. Ground transport times that are greater than thirty (30) minutes may be transported to the closest, most appropriate receiving hospital. 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
   - Any apparent life-threatening event in less than one (1) year of age

9. **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 PedRC.

10. **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 Step 1 or Step 2 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 Step 3 or Step 4 trauma triage criteria for injuries in addition to burns should consider consult with a Level I or II trauma center for assistance with destination decision 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 bypassing 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 a Burn Center for consideration of closest destination.
- Pre-hospital personnel may consider base contact with a Burn Center to assist in destination decision.

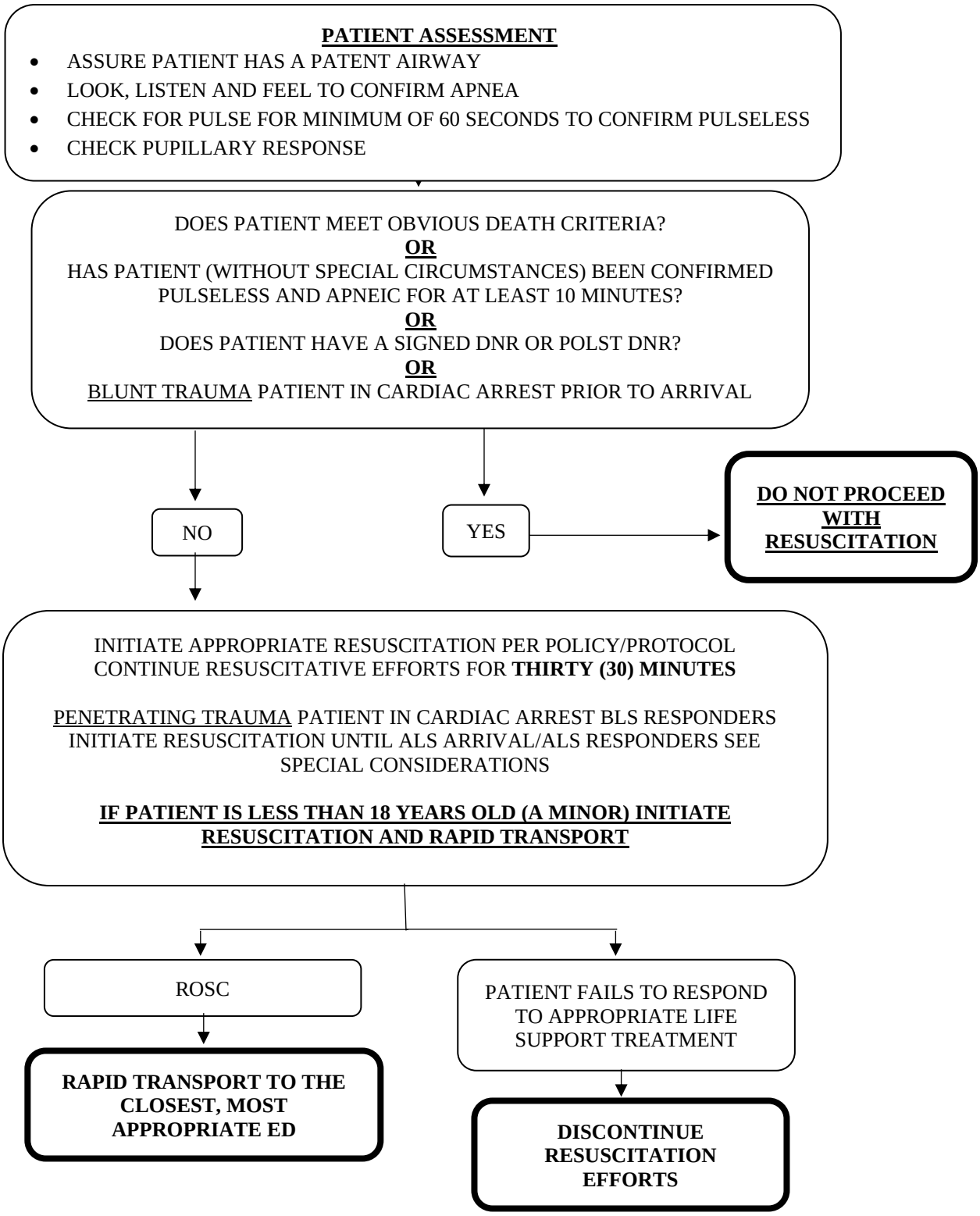
11. <u>Turn Over of Patient Care Authority:</u> A paramedic may transfer patient care authority to a BLS transport ambulance, when all of the following circumstances exist:

- 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) in order to fully assess the patient and determine eligibility for turnover to BLS.
- Patient airway 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.

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

DETERMINATION OF DEATH

Effective Date: **May 23, 2003** | Revision Date: **January 1, 2017**



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 condition, but necessary for crew safety or considered the best course of action in any given situation.

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 with 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>
   1. 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 drownings, hypothermia and barbiturate overdoses.
   2. Blunt trauma patient, who on the arrival of EMS personnel, is found to be apneic, pulseless and with fixed pupils.
      a. 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.
   3. Penetrating trauma patient who on the arrival of BLS EMS personnel shall initiate resuscitation until arrival of ALS personnel. 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. If resuscitation initiated by BLS, cease resuscitative efforts.
   4. A patient with an approved "Do-Not-Resuscitate" (DNR) document in accordance with Division policy.

F. **Termination of CPR by <u>EMT Personnel</u>** may be considered under the following circumstances for adult patients:
   1. Arrest was not witnessed by EMS provider or first responder; AND
   2. No return of spontaneous circulation (ROSC) after 30 minutes of CPR and automated external defibrillator (AED) analysis; AND
   3. No AED shocks were delivered

G. **Termination of CPR by <u>Paramedic Personnel</u>**:
   1. Paramedic personnel may discontinue resuscitative efforts as outlined below:
      a. Any case in which information becomes available that would have prevented initiation of CPR had that information been available before CPR was initiated, CPR should be terminated.
      b. If patient does not meet above criteria, initiate CPR. Consider termination of resuscitation after 30 minutes of resuscitation without ROSC.
      c. Personnel may consider further resuscitative efforts in the following situations:
         i. Persistent PEA with End Tidal Carbon Dioxide >20 or trending upwards.
         ii. Persistent shockable rhythm
         iii. Paramedic judgement
      d. 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.
         i. Does not apply to lightning strike injuries or drownings
         ii. If transport time to an ED or Trauma Center is less than fifteen (15) minutes, transport should be initiated immediately. Resuscitation while in transport.
      e. EMS personnel shall initiate transport and continue resuscitation <u>ONLY</u> when one of the following factors are present:
         i. ROSC occurs following cardiac arrest
         ii. Hypothermia
         iii. Barbiturate overdose
         iv. Drownings
         v. Patient age <18 years (Patient is a minor)
         vi. Extreme, unusual or dangerous social or scene situations.
         vii. Provider discretion with base order.

H. **Documentation:** An ePCR shall be completed in accordance with existing Division 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.

I. **Disposition of the Decedent**:
   1. If a determination of death has occurred and the decedent has not been moved from the original place of death:
      a. The decedent shall remain at 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 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 siren (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 patient is able to talk, calm patient, do not attempt to examine throat or dislodge potential obstruction. • Suction secretions as needed. • If patient is unable to talk but is conscious ask patient to cough. If unable, perform Heimlich maneuver appropriate for patient age/size (per AHA guidelines) reassess airway, ask patient to speak or cough re-enter as needed. • 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).	• Primary survey and ABC's, Pulse oximetry, and give Oxygen only if SpO2<94% or respiratory distress. • If patient is able to talk, calm patient, do not attempt to examine throat or dislodge potential obstruction. • Suction secretions as needed. • If patient is unable to talk but is conscious ask patient to cough. If unable, perform Heimlich maneuver appropriate for patient age/size (per AHA guidelines) reassess airway, ask patient to speak or cough re-enter as needed. If patient is < 1 year alternate between 5 back blows and 5 chest thrust. • 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).
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 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. • If no success and unable to ventilate by any other means, perform Cricothyrotomy and Ventilate with 100% Oxygen	• Attempt to clear using direct laryngoscopy and forceps. • If no success rapid transport to closest most appropriate facility. Advanced Pediatric Receiving Center preferred. • If complete airway obstruction or occlusion with inability to ventilate **NOT** due to foreign object. • If no success and unable to ventilate by any other means, perform Cricothyrotomy and Ventilate with 100% Oxygen
Base Hospital Contact Required	**Base Hospital Contact Required**

Airway Obstruction (101)

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, which may be from a foreign object or laryngeal swelling and spasm caused by burns, anaphylaxis, or epiglottitis. If epiglottitis is suspected, do not attempt to visualize airway until prepared to intubate.

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

4. Successful placement of a smaller size tube is less invasive than a needle cricothyrotomy. If unable to ventilate by any other means, needle cricothyrotomy must be done quickly. Needle cricothyrotomy will only be effective if the obstruction is above the level of the crico-thyroid membrane. Needle cricothyrotomy is considered a short-term, temporary airway. If needle cricothyrotomy is performed, patient should be transported to the closest receiving hospital.

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

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 • 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 • 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 (118) • Signs of head injury? If yes, enter Head/Eye/Ear Trauma Protocol (113) • Is patient possibly postictal? If yes, enter Seizure Activity Protocol (121) • Is patient complaining of stroke signs or symptoms? If yes, enter Acute Stroke/CVA Protocol (122)	• 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 (118) • Signs of head injury? If yes, enter Head/Eye/Ear Trauma Protocol (113) • Is patient possibly postictal? If yes, enter Seizure Activity Protocol (121) • Is patient complaining of stroke signs or symptoms? If yes, enter Acute Stroke/CVA Protocol (122)
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. If the patient is presenting with an altered mental status, blood sugar between 60 and 80mg/dL, and has a history of diabetes, only after all other causes of altered mentation have been ruled out or signs and symptoms of hypoglycemia are present, refer to Diabetic Emergency Protocol (112).

2. If treatment is unsuccessful, re-assessment of the patient is indicated with examination of factors leading to the event.

3. If possibility of seizure exists, refer to seizure activity protocol.

4. If ALOC is suspected due to oral ingestion or overdose, refer to poisoning, ingestion, overdose protocol.

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 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 severe allergic reaction, administer epinephrine auto injector 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 (optional scope only). Treat hypotension in accordance with Shock/Hypoperfusion Protocol (124). • 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 or Epinephrine manually drawn 0.15 mg/IM of 1:1000 (optional scope only). Treat hypotension in accordance with Shock/Hypoperfusion Protocol (124). • Rapid transport or ALS rendezvous
ALS Prior to Base Hospital Contact: Paramedic Only	**ALS Prior to Base Hospital Contact: Paramedic Only**
• IV/Monitor • Epinephrine 0.3 mg IM of 1:1000 • If signs and symptoms unresolved administer Benadryl 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 effect. • If any signs of airway compromise or complaint of difficulty breathing initiate transport early.	• IV/Monitor • Epinephrine 0.01 mg/kg IM of 1:1000 • If signs and symptoms unresolved administer Benadryl 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**

Allergic Reaction/Anaphylaxis (103)

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 allergen with symptoms
    - Itching and hives (with one or more of the symptoms listed above)

2. Allergic reactions and anaphylaxis commonly present with extreme variation of signs and symptoms between patients. True anaphylactic reactions progress very quickly. Rapid assessment and early transport should be implemented for these patients.

3. Push dose epinephrine or epinephrine drip is indicated for major 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.

4. Benadryl is indicated for use after epinephrine in patients with respiratory distress or hypoperfusion. Benadryl is the primary therapy for idiosyncratic reactions to Haldol or phenothiazine group medications. For Haldol or phenothiazine medication group reactions, Benadryl 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 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 • 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 and 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 • After 10 minutes of High-Performance CPR Sodium Bicarbonate 1 mEq/kg establish a secondary IV access or flush IV line before and after administration. • If no change after 30 minutes, consider termination of efforts per determination of death policy • Enter V-FIB/Pulseless V-TACH Protocol (125) 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 • After 10 minutes of High-Performance CPR Sodium Bicarbonate 1 mEq/kg establish a secondary IV access or flush IV line before and after administration. • Transport after 10 minutes of High-Performance CPR or if ROSC is achieved. • Enter V-FIB/Pulseless V-TACH Protocol (125) 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.

Asystole/ Pulseless Electrical Activity (104)

Special Considerations

1. Patients with PEA have poor outcomes. 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	

2. Asystole should be confirmed in 2 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

3. 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.

4. Transcutaneous pacing is not recommended for asystole.

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

6. 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	Pediatrics *(13 years and under)*
Public Safety First Aid Procedures:	**Public Safety First Aid Procedures:**
• Remove victim 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 involved area • 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.	• Remove victim 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 involved area • 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	**BLS Procedures: EMT's and Paramedics**
• Remove 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 involved area • 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.	• Remove 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 involved area • 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	**ALS Prior to Base Hospital Contact: Paramedic only**
Base Hospital Contact Required	**Base Hospital Contact Required**

BITES/STINGS/ENVENOMATION (105)

Special Considerations

Reminders for snake bite

- 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. 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

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 Versed 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	• Maintain and support ABC's • 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 **before** Epinephrine. 0.02 mg/kg. Minimum dose 0.1 mg. May repeat as needed to max of 1 mg. • Consider Transcutaneous pacing • Consider pain management with Versed 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 initial dose.	• Pain control beyond initial dose.

Bradycardia (106)

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 Versed 1mg slow IV push and Fentanyl 50 mcg IV or Morphine 5 mg IV, titrated to patient comfort. Contact 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.

Bradycardia (106)

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 Procedure.

    - Acquire baseline rhythm strip
    - Obtain vital signs, consider premedication with Versed for conscious patients
    - Apply pacing electrodes to clean, dry, skin
    - Select demand pacing mode on monitor
    - Confirm sensing of QRS complex in the demand pacing mode
    - Set current at minimum level
    - Set pace 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 2-8 mcg/ min, titrated to patient response.

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

Brief Resolved Unexplained Event (BRUE) (107)

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 event, 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 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 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 >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** creams 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** creams 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 versed once airway is secured.
  ○ Adult 1 mg Versed slow IVP may repeat in 1 mg increments to max of 5 mg.
• Normal Saline follow Parkland Formula (see chart below)
• Hypoperfusing? Shock/Hypoperfusion Protocol (124)
• **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 add NS to increase volume to 1mL total volume) may repeat one time in 15 minutes.
	• Respiratory compromise or stridor? Supraglottic airway insertion, administer versed once airway is secure
	  ○ Pediatrics 0.2 mg/kg Versed slow IVP may repeat in 0.2 mg/kg increments to max dose of 5 mg
	• Normal Saline follow Parkland Formula (see chart below)
	• Hypoperfusing? Shock/Hypoperfusion Protocol (124)

Burns (108)

• **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** 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 (bronchial swelling & spasm) or respiratory stridor (laryngeal & tracheal swelling and spasm) warrant aggressive airway control and ventilation if possible. If respiratory stridor exists, the higher the pitch of stridor – the smaller the airway opening. ET Intubation is indicated prior to complete airway occlusion. If airway occlusion occurs, refer to airway obstruction protocol.

2. Only one type of pain medication may be given to any patient. Ketamine should be 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 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.

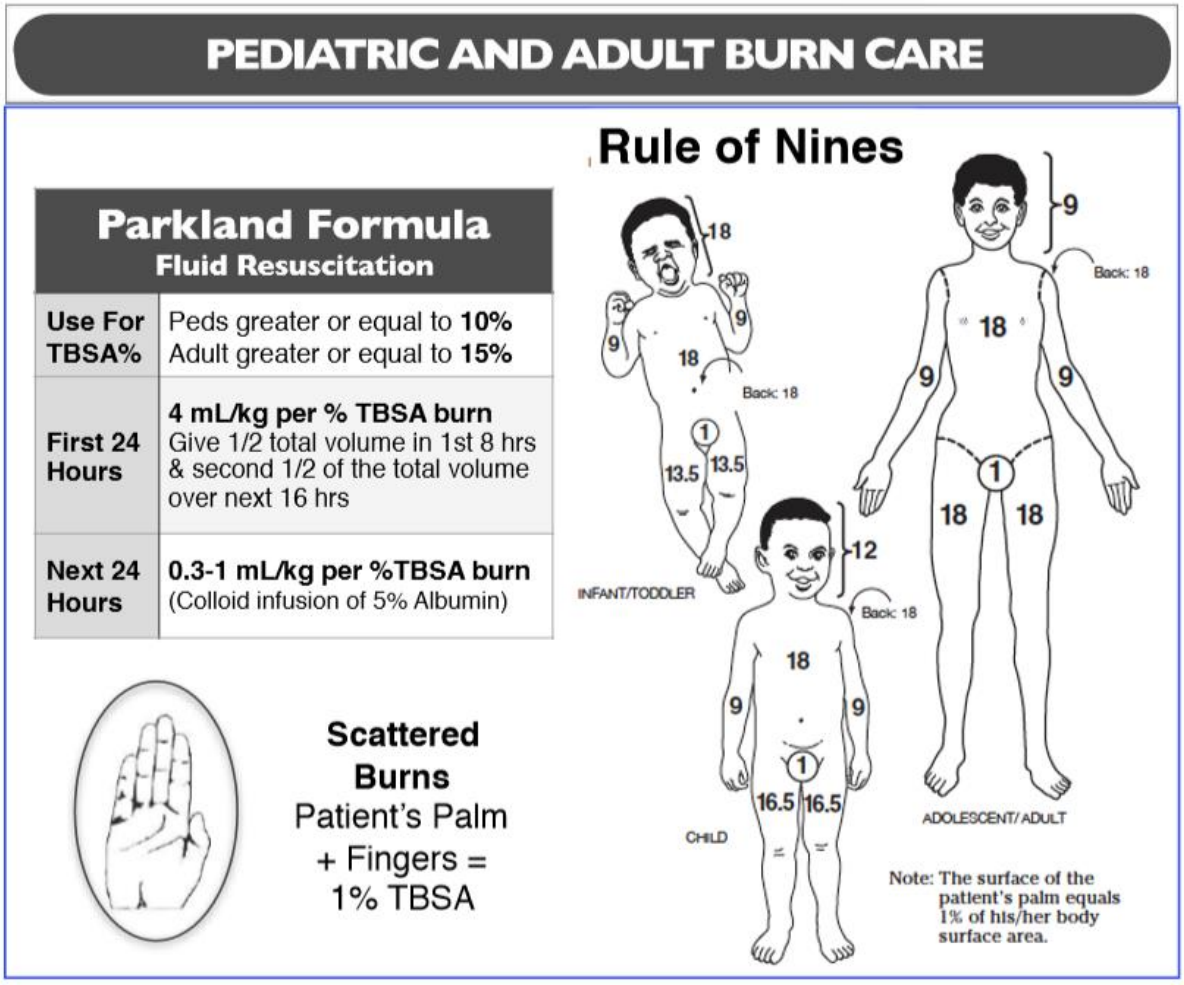
6. Burns without trauma may be transported to any designated burn receiving facility. Burns with trauma should be transported to a trauma center.

Burns (108)

7. Burns to large body surface areas should be cooled initially to stop burning process and then wrapped in dry, sterile dressing to prevent hypothermia.

8. If patient is experiencing nausea/vomiting from analgesia administration, refer to nausea/vomiting protocol for treatment.

Burns (108)



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. Valium 10 mg IM or Versed 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. Valium 0.05-0.3 mg/kg IV/IM May

ChemPack (109)

	repeat in 5 min to max of 10 mg. OR Versed 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

ChemPack (109)

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 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 nearest cardiac facility.	• Possible Cardiac Origin? • Administer oxygen only if SpO2 <94% or if in respiratory distress • Request ALS Rendezvous or transport to 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 unresolved and systolic B/P >90 administer opiate pain medication. Fentanyl 50 mcg slow IVP/IO/IM/IN to max dose of 200 mcg. • If chest pain still present and Systolic B/P > 90 Administer Fentanyl 50 mcg slow IVP/IO/IM/IN to max dose of 200mcg unless contraindicated by B/P or HR.	• 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 my 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.

Chest Pain or Acute Coronary Syndrome (110)

1. Rapidly obtain high quality 12 lead ECG, if STEMI Alert transmit to STEMI receiving center 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. 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 (124).

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.

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 less than 100 mm Hg or heart rate less than 50 beats per minute. Due to lack of IV access.
   - BLS: Not prescribed to patient.

   If the patient becomes hypotensive after administration of nitroglycerin, place the patient in shock position. Do not immediately give fluid bolus. If no improvement within 5 minutes, refer to Shock/Hypoperfusion Protocol (124).

7. Administer Fentanyl or Morphine when chest pain/discomfort is unresponsive to nitroglycerin. Give the patient 50 mcg of Fentanyl, Slow IVP or 5 mg of morphine, slow IV push, to relieve persistent chest pain/discomfort. Repeat in 2-3 minutes until pain relieved or max dose is reached.
   Contraindications:
   - Allergy or hypersensitivity
   - Heart rate 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.	• 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.
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 (124) • Rapid transport to trauma center	• 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 (124) • Rapid transport to trauma center
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.

Chest Trauma (111)

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 adult is a 10-gauge IV needle with catheter at least 3.25 inches in length. Standard length 2-inch needle should be used for pediatric patients.

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

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 appropriate protocol • Oxygen if SpO2 < 94% or if in respiratory distress • If 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	• Altered mental status? If yes, enter appropriate protocol • Oxygen if SpO2 < 94% or if in respiratory distress • If 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
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• IV/Monitor/Airway/Ventilation • Altered mental status not diabetic related? If yes, enter 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 patient 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 • Altered mental status not diabetic related? If yes, enter 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 patient 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**

Diabetic Emergency (112)

Special Considerations

1. Dextrose 10% is to be rapidly infused, not administered at a slow rate.

2. If patient has an altered level of consciousness refer to Altered Level of Consciousness (102) protocol first. If Altered Level of Consciousness (102) protocol was already referred to, continue treatment on this protocol for the patient with a diabetic emergency.

3. 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.

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

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

Hypoglycemia	**Diabetic Ketoacidosis**	**Hyperglycemic Hyperosmolar Nonketonic (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, uncoordination	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 patient to remain still in position of comfort • Control external bleeding as needed	• Request Fire/EMS • Support ABC's • Encourage 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 only if SpO2 <94% or if in respiratory distress • If Head injury: Perform neuro assessment, monitor airway, control hemorrhage. If patient 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 only if SpO2 <94% or if in respiratory distress • If Head injury: Perform neuro assessment, monitor airway, control hemorrhage. If patient 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 patient unresponsive or rapidly declining level of consciousness, consider ET intubation • Establish large bore IV/IO • If poor profusion enter Shock/ Hypoperfusion Protocol (124) • Rapid transport to trauma center	• If patient unresponsive or rapidly declining level of consciousness, consider supraglottic airway device only if unable to ventilate. • Establish large bore IV/IO • If poor profusion enter Shock/ Hypoperfusion Protocol (124) • 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

Head/Eye/Ear Trauma (113)

Special Considerations

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

2. 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 begins to drop.

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

Nausea/Vomiting (114)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures:	**Public Safety First Aid Procedures:**
• Support ABC'S • Request ambulance transport • Administer oxygen if patient has difficulty breathing	• Support ABC'S • Request 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	• 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 present? Patient >4 years old? If yes, give Zofran 4 mg Oral Dissolving Tablet or May be given slow IV push over 1-2 minutes or IM. If no improvement may repeat Zofran every 10 minutes. MAX 12 mg. • Is patient dehydrated? If yes, enter Shock/Hypoperfusion Protocol (124)	• IV/monitor as needed • Nausea/Vomiting present? Patient >4 years old? If yes give Zofran 4 mg Oral Dissolving Tablet or May be given slow IVP over 1-2 minutes or IM. MAX 4 mg. • Is patient dehydrated? If yes, enter Shock/Hypoperfusion Protocol (124)
Base Hospital Contact Required	**Base Hospital Contact Required**

Nausea/Vomiting (114)

Special Considerations

1. Vomiting is a sign and symptom of illness or disease. Assess patient 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 (Zofran) is indicated for patients with nausea/vomiting. 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 (Zofran) is contraindicated in patients:

    - Less than 4 years of age
    - History of hypersensitivity to Zofran 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 (Zofran) can be used in pregnancy and breast-feeding mothers (pregnancy class B).

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

9. Max dose of Ondansetron (Zofran) is 4mg for pediatrics and 12mg for adults, contact base hospital for further orders.

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 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 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 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 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 no improvement after 30 seconds, consider supraglottic airway/ reassess and re-enter as heart rate changes • Consider fluid bolus if blood loss suspected, 10 mL/kg may repeat once
Base Hospital Contact Required

Neonatal Resuscitation (115)

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 ventilations. 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 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 below chart:

   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. Perform chest compressions with both thumbs (the 2 thumb-encircling hands technique), on the lower third of the sternum, to a depth of 1/3 the chest. The recommended ratio for compressions to ventilations is 3:1 with 90 compressions and 30 ventilations for a total of approximately 120 events per minute.

6. 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.

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

Neonatal Resuscitation (115)

8. 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.

9. 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 flexion	Active movement
Respiratory Effort	Absent	Slow, irregular, weak cry	Strong cry

Pain Control/Fever (116)

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 patient 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, (after drawing up medication add NS to increase volume to 1mL total volume) may repeat one time in 15 minutes. • **OR** • Fentanyl 50 mcg slow IVP/IO/IM/IN may repeat every 5 minutes to MAX of 200 mcg. **OR** Fentanyl 25 mcg per nostril. No repeat dose, MAX 1 mL/nare • If Fentanyl unavailable administer Morphine 5 mg slow IV/IM/IO every 5 minutes to MAX of 20 mg. • Repeat pain assessment and primary survey.	• Assess patient pain level and contraindications for analgesia • If patient experiencing significant pain (use faces scale) 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, do not exceed 15 mg per dose. • **OR** • Fentanyl 1 mcg/kg slow IVP/IO/IM/IN MAX 50 mcg per dose. MAX dose 3 mcg/kg total max not to exceed adult. **OR** Intranasal split dose between nostrils. No repeat dose, MAX 1 mL/nare • If Fentanyl unavailable administer Morphine 0.1-0.2 mg/kg slow IV/IM/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**

Pain Control/Fever (116)

1. Only one type of ALS analgesic shall be used.
2. Ketamine should be first line pain medication for trauma and hypotensive patients.
3. 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

4. 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.

5. Fentanyl is 100 times more potent than Morphine (100 mcg of Fentanyl = 10 mg of Morphine).

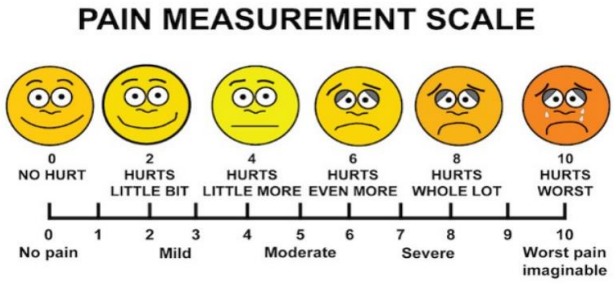
6. Have Naloxone and respiratory assistance readily available.

7. Fentanyl must be given slow IVP (over 2 minutes)/IM/IO/Atomized. Intranasal dose must be split 25 mcg per nostril NO REPEAT.

8. 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.

9. If patient is experiencing nausea/vomiting from analgesia administration, refer to nausea/vomiting protocol for treatment.

10. Altered mental status is considered anything below the patients' baseline mental status.



Pediatric Post Resuscitation (117)

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 (121)
Base Hospital Contact Required
• If suspected cardiogenic shock Epinephrine drip 0.1 - 1 mcg/kg/min not to exceed adult dose repeat as needed. Start at higher end and titrate down to effect.

Pediatric Post Resuscitation (117)

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 physiologic state.

2. Frequent reassessment of the patient is necessary because cardiorespiratory status may deteriorate.

3. AHA data suggests that hyperoxemia enhances the oxidative injury following reperfusion. 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.

4. 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.

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

6. Signs of impending Intracranial herniation:

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

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

Poisoning/Ingestion/Overdose (118)

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.	• Support ABC's • Request Fire/EMS • Consider Naloxone if signs of opiate overdose with respiratory depression, for children < 1 year give 0.5 mg, split dose between nares. Children 1-7 years give 1 mg, split dose between nares. For children > 8 give 2 mg, split dose between nares.
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 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 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 25 grams PO. • If suspected opiate overdose with respiratory depression, administer Naloxone, if 5 years old or older 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

Poisoning/Ingestion/Overdose (118)

• If symptomatic beta blocker overdose, consider Glucagon 2 mg IV/IO • If dystonic reaction to phenothiazines, administer Benadryl 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 Benadryl 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 an oral ingestion is to prevent the absorption of the toxic substance by the small intestine.

4. Activated charcoal is considered safe and effective for most ingestions. 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.

Poisoning/Ingestion/Overdose (118)

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 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 dysrhythmias hyperventilate; administer 1mEq/kg Sodium Bicarbonate. Refer to Seizure Activity (121) or Shock/Hypoperfusion Protocol (124) 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 appropriate protocol as needed.

10. **Dystonic reactions:** to phenothiazine's or butyrphenone (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 appropriate protocol as needed.

11. 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

    - **ALS**- Generally a full 2 mg IV dose should not be given as an immediate bolus. Naloxone may be repeated as needed after the first dose. Naloxone may also be given IM for the second patient dose when a slower rate of action onset is indicated to prevent reoccurrence of the condition.
    - **BLS**- Does not repeat intranasal dose after 1 mL of volume per nare. IM doses may be repeated.

Pulseless Arrest Entry Algorithm (119)

Adults	Pediatrics *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• If patient is unconscious and pulseless begin High Performance CPR • Request EMS and Fire response • 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	• If patient is unconscious and pulseless begin High Performance CPR • Request EMS and Fire response • 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 30 compressions 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 • 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 30 compressions 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**
• Attach Monitor/Defibrillator • Enter V-Fib/Pulseless V-Tach Protocol (125) if shockable rhythm • Enter Asystole/PEA Protocol (104) if non-shockable rhythm • If 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 (125) 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

Pulseless Arrest Entry Algorithm (119)

Special Considerations

Consider H's and T's and correct if possible

- Compressions should be 100-120 min delivered hard and fast.
- 2" depth
- Ensure full chest recoil
- Hover hands over chest during shocks
- Use 30:2 or 10:1 compression to ventilation rate as preferred

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 (120)

Adults	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 patient is wheezing and has a prescribed rescue inhaler assist patient with use • If **SEVERE** wheezing, stridor, or signs of bronchospasm administer Epinephrine auto injector or Epinephrine manually drawn 0.3 mg/IM of 1:1000 (optional scope only) • 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 patient is wheezing and has a prescribed rescue inhaler assist patient with use • If **SEVERE** wheezing, stridor, or signs of bronchospasm administer Epinephrine auto injector or Epinephrine manually drawn 0.15mg/IM 1:1000 (optional scope only) • 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 Atrovent 500 mcg in 2.5 mL NS. May repeat Albuterol as needed or continuous. May repeat Atrovent every 20 minutes to max 3 doses. • If not relieved by Albuterol, consider CPAP if available and not contraindicated. • Consider Epinephrine 0.3 mg IM of 1:1000 **OR** Give Epinephrine Push Dose 0.5 mL every 1-5 minutes **OR** Epinephrine DRIP 2-8 mcg/min. Start at 2 mcg/min and titrate to effect. • If severe distress and no response, consider Magnesium Sulfate 1-2 grams in 50 mL NS over 5-10 minutes • If **Pulmonary Edema** with Systolic B/P >100 give Nitroglycerin 0.4 mg SL, Repeat every 5 minutes as long as Systolic B/P >100	• Attach monitor/SpO2/EtCO2. • If **Bronchospasm** give nebulized Albuterol 2.5 mg in 3 mL NS and Atrovent 500 mcg in 2.5 mL NS. May repeat Albuterol as needed or continuous. May repeat Atrovent every 20 minutes to max 3 doses. • If not relieved by Albuterol/Atrovent consider Epinephrine 0.01 mg/kg IM of 1:1000. • 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 ventilations.

Respiratory Compromise (120)

• Consider CPAP if available and Systolic B/P > 90 • No response to CPAP or Medications apply 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 (124) • 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. ○ Patient not responding or deteriorating 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. Intramuscular epinephrine is indicated with minor to moderate cases of bronchospasm not responsive to albuterol. IV push epinephrine is indicated for severe bronchospasm or rapid onset of bronchospasm that is not responsive to albuterol.

3. Administer nitroglycerin to reduce myocardial workload and oxygen consumption in cases of pulmonary edema. If an IV is established, morphine administration is indicated. Monitor vital signs carefully during any nitroglycerin or morphine administration due to vasodilation effects of these medications.

4. In cases of pulmonary edema where BP is under 100 mm/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.

Respiratory Compromise (120)

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

6. Contraindications for Morphine Sulfate include:
   - Allergy or hypersensitivity
   - Heart rate less than 50 beats per minute or blood pressure less than 90 systolic
   - Respiratory depression
   - Altered Mental Status

7. 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 patient and can cause rapid deterioration to complete airway obstruction.

8. **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.

9. **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.

Respiratory Compromise (120)

10. **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 (121)

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 VERSED PRIOR TO BLOOD GLUCOSE CHECK** • **Active Seizure:** Versed Initial dose 5mg <40kg **OR** 10mg >40kg **IM/IN ONLY** MAX 1 mL per nare. • **Repeat doses** shall be weight based Versed 0.2mg/kg **IM/IN** MAX 5mg **OR** 0.1mg/kg **IV/IO** MAX 5mg. • If patient **Actively Seizing** and is **PREGNANT** give Magnesium Sulfate 4-6 grams slow IV drip **OR** slow IVP over 5-10 minutes, drip preferred. If patient continues to seize give 10mg if >40kg **OR** 5mg if <40kg **IM/IN ONLY** MAX 1 mL per nare • If active seizure lasts longer than 10 minutes may repeat dose 1 time, BASE for further direction • If Versed not available give Valium 5 mg/IV/IO if seizure lasts longer than 10 minutes may repeat dose 1-time BASE for further direction	• Monitor/SpO2/Blood Glucose check **IF ACTIVELY SEIZING GIVE VERSED PRIOR TO BLOOD GLUCOSE CHECK,** if hypoglycemia or narcotic overdose enter appropriate protocol • **Active Seizure:** Versed Initial dose 10mg >40kg **OR** 5mg <40kg **IM/IN ONLY** MAX 1 mL per nare. • **Repeat doses** shall be weight based Versed 0.2mg/kg **IM/IN** MAX 5mg **OR** 0.1mg/kg **IV/IO** MAX 5mg. • If Versed not available give Valium 0.3 mg/kg IV/IO MAX dose 5 mg 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

Seizure Activity (121)

Base Hospital Contact Required	Base Hospital Contact Required
• Versed or Valium beyond 2 doses	• Versed or Valium beyond 2 doses

Special Considerations

1. Consider Naloxone in situations of potential drug abuse or if 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. Initial dose of Versed for active seizure for patients with a weight under 40kg is 5mg. For a patient with a weight over 40kg initial dose of Versed is 10mg. Initial dose shall be IM/IN ONLY with a MAX of 1 mL per nare. Initial IM/IN dosing should be administered immediately for active seizures. Weight based dosing for Versed 0.2mg/kg IM/IN **OR** 0.1mg/kg IV shall be used for subsequent dosing.

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

5. Versed 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. Versed 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.

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

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

8. 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.

Acute Stroke/CVA (122)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**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	• 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	**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 positive • Elevate patients head 30 degrees, suction as needed to maintain patent airway • If patient showing signs of hypoglycemia or narcosis enter appropriate protocol • ALS rendezvous or transport to stroke center	• 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 positive • Elevate patients head 30 degrees, suction as needed to maintain patent airway • If patient showing signs of hypoglycemia or narcosis enter appropriate protocol • ALS rendezvous or transport to stroke center
ALS Prior to Base Hospital Contact: Paramedic only	**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	• 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	**Base Hospital Contact Required**

Acute Stroke/CVA (122)

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 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:

   - Establish early contact with a certified stroke center **Base Station and advise of "STROKE ALERT"**
   - Transport to nearest designated certified stroke center

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

7. Acute stroke with one or more abnormal Cincinnati Prehospital Stroke Scale (CPSS) finding and last known normal greater than four (4) hours, may not be a candidate for fibrinolytic therapy:

   - Establish early contact with **Base Station**
   - Transport in accordance with Ambulance Destination Policies and Procedures.

Acute Stroke/CVA (122)

Patient Information:

A. Age _____ B. Sex _____ Last known well _____

C. Past medical History:_____

D. Current medications:_____

E. Drug allergies: _____

F. Initial B/P: _____ _____ _____ _____
(Right Arm) (Military Time) (Left Arm) (Military Time)

	YES	NO
g. Age less than or = 18 years	{ }	{ }
h. Onset of symptoms greater than or = 3 hours	{ }	{ }
i. Patient was asleep when symptoms started	{ }	{ }
j. Rapidly improving or minor symptoms	{ }	{ }
k. History of intracranial hemorrhage	{ }	{ }
l. Seizure at onset of symptoms	{ }	{ }
m. Stoke or serious head injury in less than or = 3 months	{ }	{ }
n. Major surgery or other serious trauma in less than or = 2 weeks	{ }	{ }
o. GI or urinary tract hemorrhage in less than or = 3 weeks	{ }	{ }
p. Systolic B/P greater than or = 185 mmHg	{ }	{ }
q. Diastolic B/P greater than or = 110 mmHg	{ }	{ }
r. Aggressive treatment to lower B/P (use of vasodilators)	{ }	{ }
s. Blood glucose less than or = 60	{ }	{ }
t. Blood glucose greater than or = 400	{ }	{ }
u. Symptoms of subarachnoid hemorrhage (sudden severe headache followed by a brief loss of consciousness)	{ }	{ }
v. Arterial puncture at non-compressible site or lumbar puncture less than or = 1 week	{ }	{ }
w. Pregnant or lactating females	{ }	{ }

PRE-HOSPITAL THROMBOLYTIC SCREEN (CVA)

If all of the **Pre-hospital Thrombolytic Screen (CVA)** criteria are met (all **NO's)**, alert the receiving facility of a possible thrombolytic candidate as soon as possible.
If not (one or more YES), make base contact with a Stroke Center to verify bypass of the nearest hospital for transport directly to a Stroke Center.

Tachycardia with Pulse (123)

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 cardioversion. See Energy Doses for Cardioversion Chart. • **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 • **Stable Irregular Narrow QRS <0.12 SEC >150** beats per minute Initiate transport, base if further direction needed. Do not attempt Valsalva or administer Adenosine 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 diluted in 100 mL N/S over 5-10 minutes for TORSADES DE POINTES	• Acquire 12 lead • Establish IV/IO access • Identify and treat reversible causes • **Narrow regular rhythm QRS <0.08 SEC** If sinus tachycardia identify and treat underlying causes. • If SVT consider vagal maneuvers if no delay 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 • **Wide QRS >0.08 SEC:** possible VT? Synchronized cardioversion consider sedation but do not delay cardioversion. See Energy Doses for Cardioversion Chart. • **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.

Tachycardia with Pulse (123)

Special Considerations

1. The primary decision point for tachycardia is adequacy of perfusion. If the patient has inadequate perfusion, prepare for immediate synchronized cardioversion. Adenosine may be given if IV already established, but cardioversion should not be delayed to obtain 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 heart rate for a person in compensatory tachycardia the cardiac output will fall, and the patient will likely deteriorate. The goal for care is to identify and treat the underlying cause.

3. Key questions to answer are:

    a. Are there serious signs and symptoms? (CP or SOB, hypotension, decreased LOC, other signs of shock)
    b. Are the signs and symptoms related to the patient's rapid heart rate?
    c. Is the QRS complex wide or narrow?
    d. Is the rhythm regular or irregular?

4. 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.

5. Adenosine is to be administered as follows: for adults 6mg in a 20mL syringe with 18mL of normal saline, rapid IVP. Repeat 12mg mixed in a 20 mL syringe with a 16mL normal saline, if needed. May repeat a third dose if needed. (Total dose 30mg) For pediatrics 0.1mg/kg mixed in a 10mL syringe with enough normal saline to equal 10mL, rapid IVP (MAX dose 6mg). May repeat in 3 minutes at 0.2mg/kg in a 10mL syringe with enough normal saline to equal 10mL, rapid IVP (MAX dose 12). May repeat a third dose if needed.

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

Tachycardia with Pulse (123)

7. Synchronized Cardioversion Procedure:
    a. Place the pads on patient's chest per monitor manufacture recommendations.
    b. Select the synchronize button on the monitor.
    c. Select appropriate joules (see chart below-Energy Doses for Cardioversion).
    d. Clear the patient.
    e. Deliver shock.

Energy Doses for Cardioversion

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

8. 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 deteriorate 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.

Characteristic	Sinus Tachycardia	Supraventricular Tachycardia
History	**Gradual onset** with compatible history (eg, fever, pain, dehydration)	**Abrupt onset** or termination. Possible complaint of palpitations or CHF symptoms
Physical Exam	Signs of **underlying cause** (eg, fever, hypovolemia, anemia)	**No attributable cause**. Signs of CHF (eg, 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

Tachycardia with Pulse (123)

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

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

11. Key questions to answer are:

    - Are there serious signs and symptoms?
    - Are the signs and symptoms related to the patient's fast heart rate?

12. Serious sign and symptoms (older children):

    - Chest pain
    - Shortness of breath
    - Weak, dizzy, lightheaded
    - Decreased LOC
    - Syncope
    - Hypotension

13. Serious signs and symptoms (infants):

    - Poor feeding
    - Rapid breathing
    - Irritability
    - Unusual sleepiness
    - Pale or blue skin
    - Vomiting

Shock/Hypoperfusion (124)

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 patient in 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 patient in 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 1 gram administered over 10 minutes for the initial dose. Mix 1 gram (10 mL) in 100 mL of NS and infuse via: - Macro 10gtts/mL over 10 minutes @ 110 gtts. **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. **Post-Partum Hemorrhage** • Fundus massage	**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 higher end and titrate down to effect.

Shock/Hypoperfusion (124)

Base Hospital Contact Required	Base Hospital Contact Required
Trauma • Give 250 mL fluid bolus to maintain Systolic B/P >80 mmHg **Post-Partum Hemorrhage** • Consider Tranexamic Acid 1 gram administered over 10 minutes for the initial dose. Mix 1 gram (10 mL) in 100 mL of NS and infuse via: - Macro 10gtts/mL over 10 minutes @ 110 gtts.	**Trauma** • 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:

- 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 Vaseline gauze and tape three (3) sides loosely or commercially available chest seal (preferred). 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 proximal 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.

Shock/Hypoperfusion (124)

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. 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.

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

V-FIB/Pulseless V-Tach (125)

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**
• 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. First Lidocaine dose should be given at the 2nd shock. • 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. First Lidocaine dose should be given at the 2nd shock. • 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

V-FIB/Pulseless V-Tach (125)

Special considerations

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.

V-FIB/Pulseless V-Tach (125)

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 (126)

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. Reassess patient, consider causes if no change after 30 minutes consider termination of efforts per determination of death policy	• ABC's • Monitor/IV • If Tension Pneumothorax perform Thoracic Decompression. Reassess patient, Provide rapid transport if under 18.
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 (126)

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 adult is a 10-gauge IV needle with catheter at least 3.25 inches in length. Standard length 2-inch needle should be used for pediatric patients. Assess patient 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.

3. The goal for blood pressure after fluid challenge is 80-90 systolic. Higher blood pressures may cause proportionately faster bleeding. Lower pressures are not adequate to perfuse 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 (127)

Adults	Pediatrics *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Support ABC'S • Request 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 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**

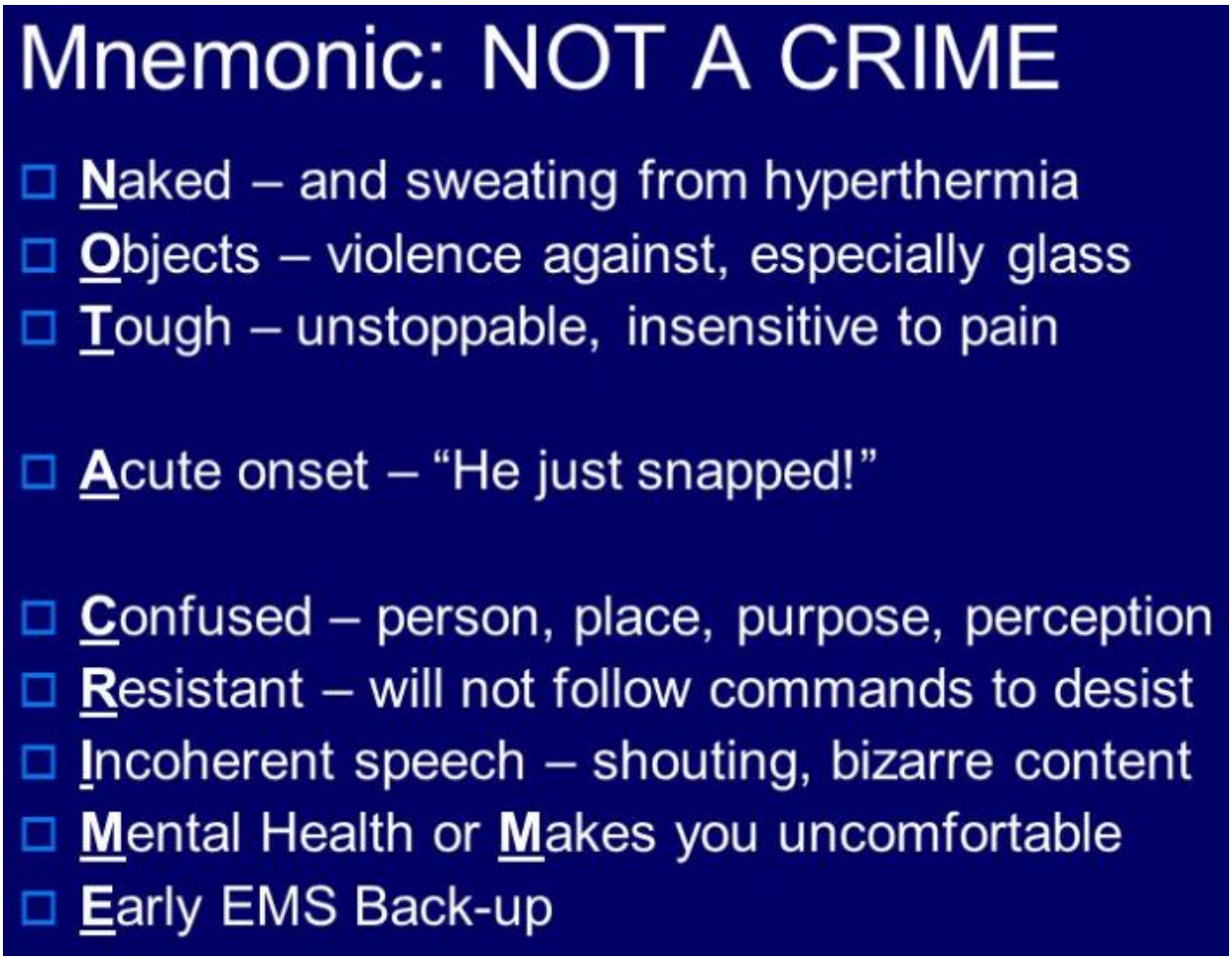
• If bleeding has lasted more than 3 hours and is not controlled by BLS procedures, consider administration of Tranexamic Acid.
  ○ Have patient blow nose to clear any blood clots.
  ○ Administer 1mL (100mg) MAD per nostril.
  ○ Immediately compress or clamp nares after administration of Tranexamic Acid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

Excited Delirium (128)

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 patient until 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 patient until 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**
• Request ALS. • Ensure law enforcement is enroute or at scene. • Attempt to limit contact with patient until ALS ambulance is on scene and ready to manage the patient. • 4 officers as a minimum are recommended for subdual while paramedic personnel prepare agitation control and has taken effect.	• Request ALS. • Ensure law enforcement is enroute or at scene. • Attempt to limit contact with patient until ALS ambulance is on scene and ready to manage the patient. • 4 officers as a minimum are recommended for subdual while paramedic personnel prepare agitation control and has taken effect.
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• When law enforcement and paramedic has 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 chest while subduing the patient and avoid putting the patient in the prone position. • Administer versed for agitation control 5mg IM/IN. • Rapid transport to closest appropriate facility with law enforcement in attendance.	• When law enforcement and paramedic has 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 chest while subduing the patient or putting the patient in the prone position. • Rapid transport to closest appropriate facility with law enforcement in attendance.
Base Hospital Contact Required	**Base Hospital Contact Required**
• Beyond initial dosing	• Administer Versed for agitation control 0.1mg/kg IM/IN.

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

Excited Delirium (128)



12-Lead EKG (201)

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**
ALS Prior to Base Hospital Contact: Paramedics only	**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 • 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	• 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 • 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	**Base Hospital Contact Required**

12-Lead EKG (201)

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 SRC to initiate the internal procedures to provide appropriate and rapid treatment interventions.
   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 Division.
   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 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

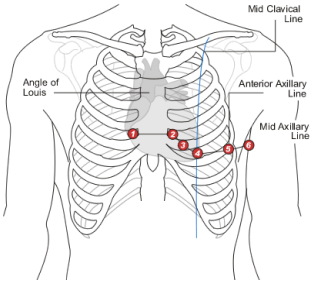
12-Lead EKG (201)

- 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.
   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.

12-Lead EKG (201)

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:
      - 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 12 Lead EKG does not indicate an "Acute MI" treat the patient based on their presenting signs/symptoms according to the appropriate Kern County protocol. A "STEMI Alert" is not necessary.
      - 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	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Support ABC's • Administer oxygen as needed • Request fire/EMS	• Support ABC's • Administer oxygen as needed • 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 • Request ALS or rapid transport to 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 no contraindications, initiate CPAP otherwise enter appropriate protocol.	• Support ABC's • Give oxygen only if SpO2 <94% or if in respiratory distress • Request ALS or rapid transport to 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 no contraindications, initiate CPAP otherwise enter appropriate protocol.
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
Base Hospital Contact Required:	**Base Hospital Contact Required:**

CONTINUOUS POSITIVE AIRWAY PRESSURE (202)

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 age eight (8) and older. The use of CPAP is dependent of 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 the 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. Versed may be carefully considered for anxiety related to respiratory distress and the procedure. Versed may allow the patient to tolerate CPAP, thereby avoiding endotracheal intubation. Versed may also decrease respiratory rate. Versed should be given in the lowest possible dose to achieve patient cooperation and likely will 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.

CONTINUOUS POSITIVE AIRWAY PRESSURE (202)

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 ventilations 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 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**
• As above for Supraglottic devices • For all ETT intubation candidates use the following guide. Maximum of two attempts *shall* be made, tube introducer is optional for initial attempt, however, *shall* be used for repeat attempt. If unsuccessful after 2 attempts, refer to supraglottic airway section above. • **Preparation**: Select and assemble laryngoscope blade to handle, ensure it is functional. Select ETT and test the cuff with a 10mL syringe. Ensure cuff has no leaks. Assemble and test suction device. Prepare securement method, commercial device preferred, ensure tube introducer is at patient side. **Appropriately sized supraglottic device should be immediately available.** 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.	• If BVM with OPA/NPA adjuncts is not adequate proceed with Supraglottic device. • Select appropriately sized Supraglottic device, ensure 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%.

Intubation (203)

• 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. Apply nasal cannula oxygen 15lpm to provide Apneic Oxygenation. • **Position:** Non-traumatic patient use sheets/towels to ramp patient as necessary to obtain ear to sternal notch position. Trauma patients use inline cervical stabilization, ensure C-collar allows jaw to open. • **Pass the Tube:** Suction as needed. Insert blade into patient's mouth, sweep tongue to the left. *Curved blade:* insert into Vallecula and apply longitudinal traction while staying off the teeth until cords are visualized. *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 not visualized abandon attempt. Use tube introducer for second attempt. • **Proof of placement:** Waveform capnography *shall* be used to immediately confirm placement and *shall* remain in place until patient care is transferred to higher level of care. Auscultate bilateral lung sounds and epigastric area. Observe chest rise and fall. Assess SpO2 if patient is pulsatile. • **Post intubation care:** Secure tube with commercial device or if not available secure with cloth tape. Ensure patient is being ventilated at appropriate rate and volume with O2 attached. Use only sufficient volume for chest rise and maintenance of pulse ox between 88%-94%. • Post intubation analgesia and sedation if normotensive with fentanyl 1mcg/kg IV if patient needs further sedation after the Fentanyl midazolam 0.1mg/kg	• 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:**

Intubation (203)

Special Considerations

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

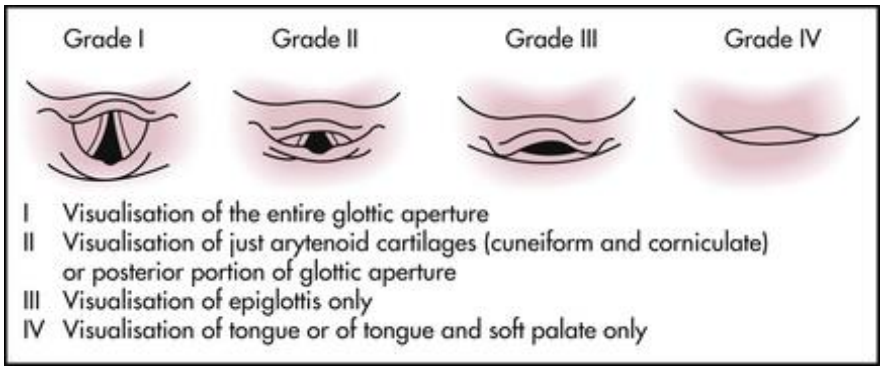
2. Intubation Definition: Insertion of laryngoscope blade into mouth (for orotracheal methods)

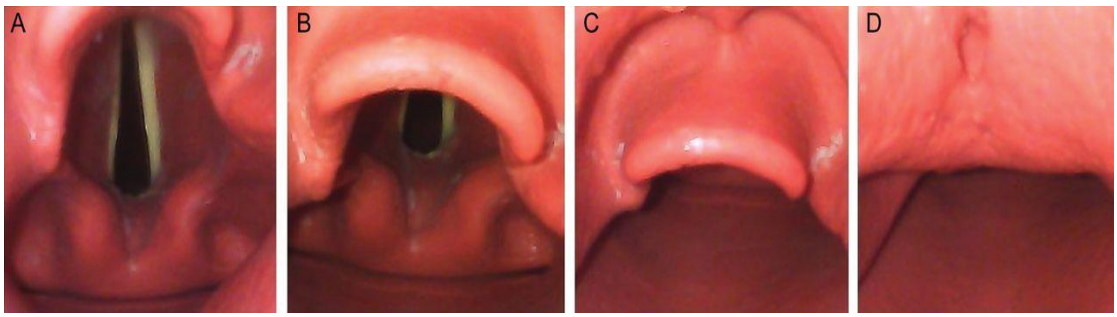
3. Removal of foreign body does not count as intubation attempt.

4. Airway management definition: Insertion of laryngeal mask/tube into mouth (for Combitube, King, LMA, and other oral non airway devices)

5. Primary airway management: BVM
   For post sedation Fentanyl should be utilized first. If it is unsuccessful you may try midazolam.

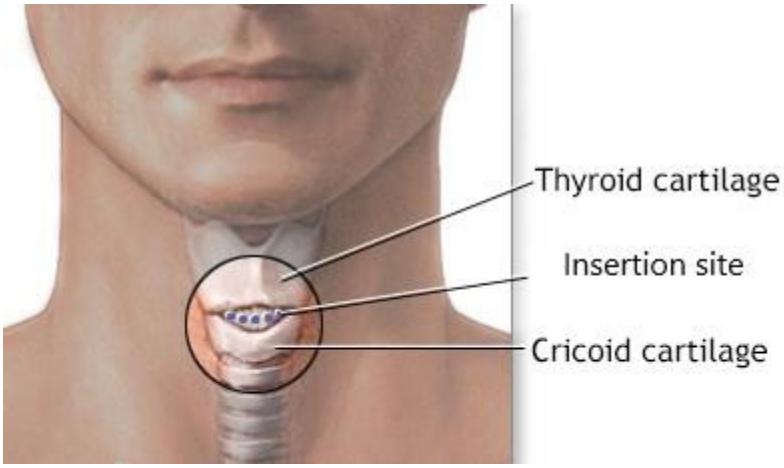
   Cormack Lehane Scale:





Intubation (203)

6. **Secondary airway management**:
   If unable to ventilate by any other means, needle cricothyrotomy must be done quickly. Needle cricothyrotomy will only be effective if the obstruction is above the level of the crico-thyroid membrane. Needle cricothyrotomy is considered a short-term, temporary airway. If needle cricothyrotomy is performed, patient should be transported to the closest receiving hospital.



Spinal Motion Restriction (204)

Adults	**Pediatrics** *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Support ABC's • Request Fire/EMS • Encourage patient to remain still if in a safe area/environment	• Support ABC's • Request Fire/EMS • Encourage patient to remain still if in a safe area/environment
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• If patient 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 patient is ambulatory and can safely self-extricate, assist to gurney • If extrication needed: Use backboard or rigid extrication device to move patient to 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.	• If patient 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 • Severe head or facial trauma • Language barrier without reliable translator • **If yes Perform spinal motion restriction**. • Apply Cervical Collar • If patient is ambulatory and can safely self-extricate, assist to gurney • If extrication needed: Use backboard or rigid extrication device to move patient to 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:	**ALS Prior to Base Hospital Contact:**
Base Hospital Contact Required	**Base Hospital Contact Required**

Spinal Motion Restriction (204)

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 restriction includes 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 patient 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 gurney and other surfaces such as ambulance bench seat or hospital bed.

Combative Patient Restraint (205)

Adults	Pediatrics *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Manage patient as per agency policy • Request ambulance if medically necessary	• Manage patient as per agency policy • Request ambulance if medically necessary
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Complete primary survey/ABC's • Administer oxygen only if SpO2<94% or if in respiratory distress • 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	• Complete primary survey/ABC's • Administer oxygen only if SpO2 <94% or if in respiratory distress • If altered mental status, rule out treatable causes and apply restraints. If GCS=15 calm and reassure patient, 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	**ALS Prior to Base Hospital Contact: Paramedic only**
• Assess blood glucose if <60mg/dL enter diabetic or altered mental status protocol if altered • Versed 5mg IM or 2mg IV for agitation control	• Assess blood glucose if <60mg/dL enter diabetic or altered mental status protocol if altered • Versed 0.1 mg/kg IM or 0.05 mg/kg IV to max at Adult dose for agitation control
Base Hospital Contact Required	**Base Hospital Contact Required**
• Versed 5mg IM or 2mg IV base contact required beyond initial dose for agitation control.	• Versed 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.

Combative Patient Restraint (205)

Special Considerations

1. Patients should be reassured, and their cooperation enlisted whenever possible. Restraints should be 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 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 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

Combative Patient Restraint (205)

11. Agitation control beyond the first dose requires a BASE STATION order. Indications for agitation control would include extreme agitation in which patient 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 is the <u>only</u> approved IO site • 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.	**Interosseous-proximal tibia is the <u>only</u> approved IO site** • 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%** 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.

Interosseous Intravenous Intranasal (206)

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 for hypoperfusion (i.e. cardiac arrest, burn, or signs of physiological shock).	**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 for hypoperfusion (i.e. cardiac arrest, burn, or signs of physiological shock).
Base Hospital Contact Required	**Base Hospital Contact Required**

Revision Log

Revision Log

09-03-2020- Removed equals sign from page 31. Added Parkland formula to Burns (108) protocol. Added sodium bicarbonate and calcium chloride dose to Asystole/ PEA (104) protocol. Further defined neonatal age range.

09-11-2020- Pediatric magnesium sulfate doses all updated for protocols 120, 123, and 125. Subsequent midazolam doses have been modified to weight base Seizure Activity (121). Nasogastric tube has been added to Pulseless Arrest Entry Algorithm (119). Midazolam dose for pediatric Excited Delirium (128) has been modified.