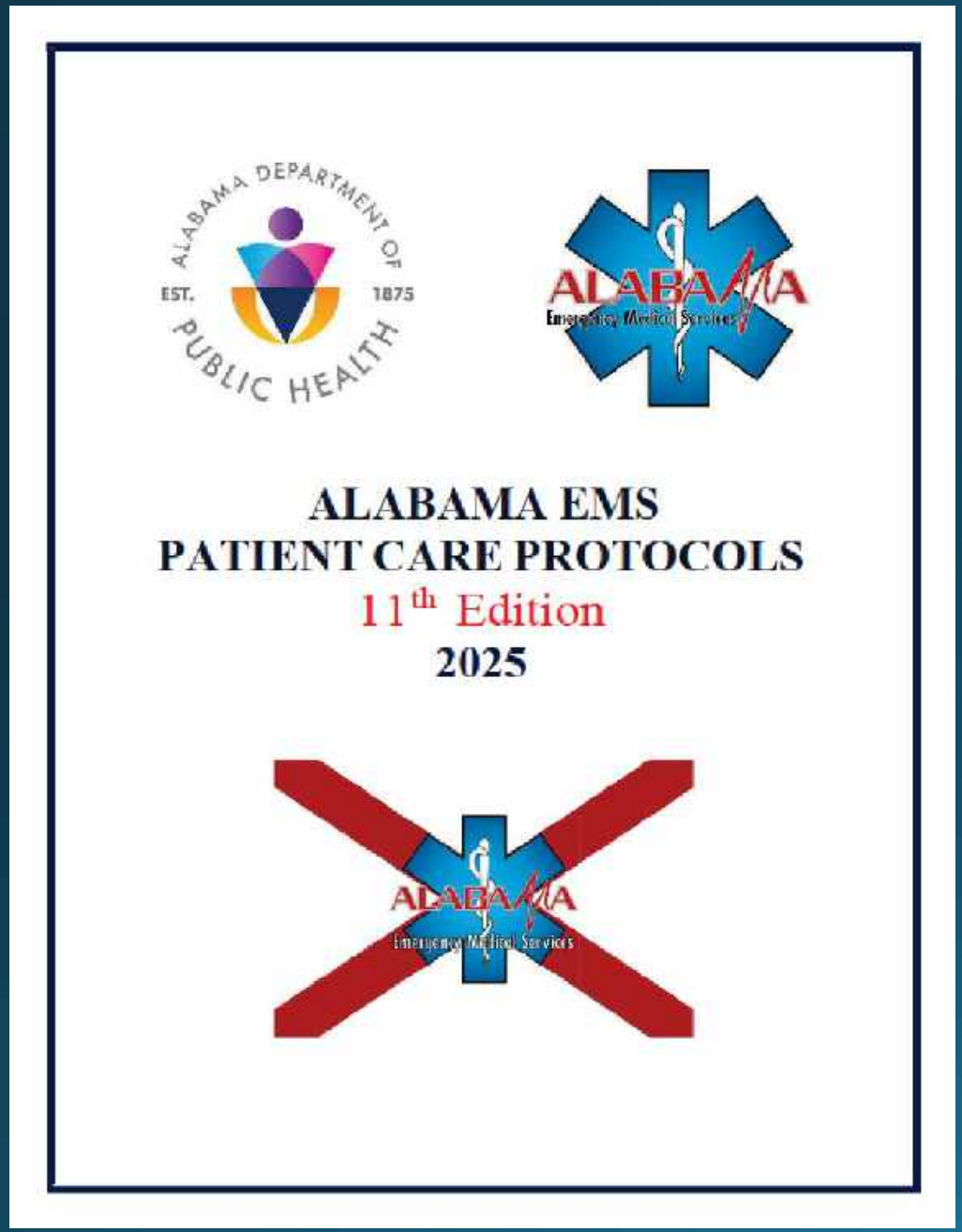

Alabama EMS Patient Care Protocols Updates

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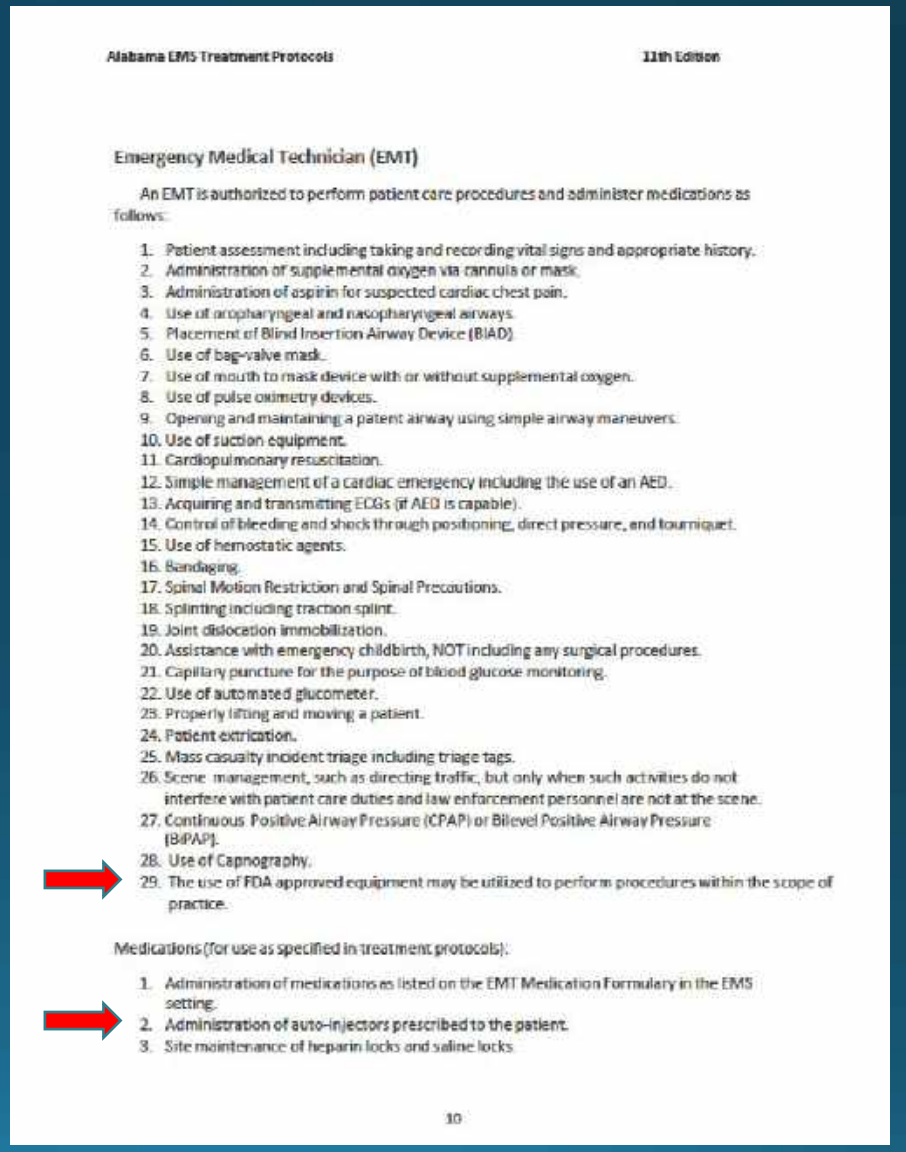
Protocol Basics

- All protocols and procedures are statewide
- All medications and procedures are Category A (intubation/Heparin/needle cric)
- Removal of section numbers

Scope of Practice

EMT

- Epi auto injector
- FDA approved devices



Alabama EMS Treatment Protocols 11th Edition

Emergency Medical Technician (EMT)

An EMT is authorized to perform patient care procedures and administer medications as follows:

1. Patient assessment including taking and recording vital signs and appropriate history.
2. Administration of supplemental oxygen via cannula or mask.
3. Administration of aspirin for suspected cardiac chest pain.
4. Use of oropharyngeal and nasopharyngeal airways.
5. Placement of Blind Insertion Airway Device (BIAD).
6. Use of bag-valve mask.
7. Use of mouth to mask device with or without supplemental oxygen.
8. Use of pulse oximetry devices.
9. Opening and maintaining a patent airway using simple airway maneuvers.
10. Use of suction equipment.
11. Cardiopulmonary resuscitation.
12. Simple management of a cardiac emergency including the use of an AED.
13. Acquiring and transmitting ECGs (if AED is capable).
14. Control of bleeding and shock through positioning, direct pressure, and tourniquet.
15. Use of hemostatic agents.
16. Bandaging.
17. Spinal Motion Restriction and Spinal Precautions.
18. Splinting including traction splint.
19. Joint dislocation immobilization.
20. Assistance with emergency childbirth, NOT including any surgical procedures.
21. Capillary puncture for the purpose of blood glucose monitoring.
22. Use of automated glucometer.
23. Properly lifting and moving a patient.
24. Patient extrication.
25. Mass casualty incident triage including triage tags.
26. Scene management, such as directing traffic, but only when such activities do not interfere with patient care duties and law enforcement personnel are not at the scene.
27. Continuous Positive Airway Pressure (CPAP) or Bilevel Positive Airway Pressure (BiPAP).
28. Use of Capnography.
29. The use of FDA approved equipment may be utilized to perform procedures within the scope of practice.

Medications (for use as specified in treatment protocols):

1. Administration of medications as listed on the EMT Medication Formulary in the EMS setting.
2. Administration of auto-injectors prescribed to the patient.
3. Site maintenance of heparin locks and saline locks.

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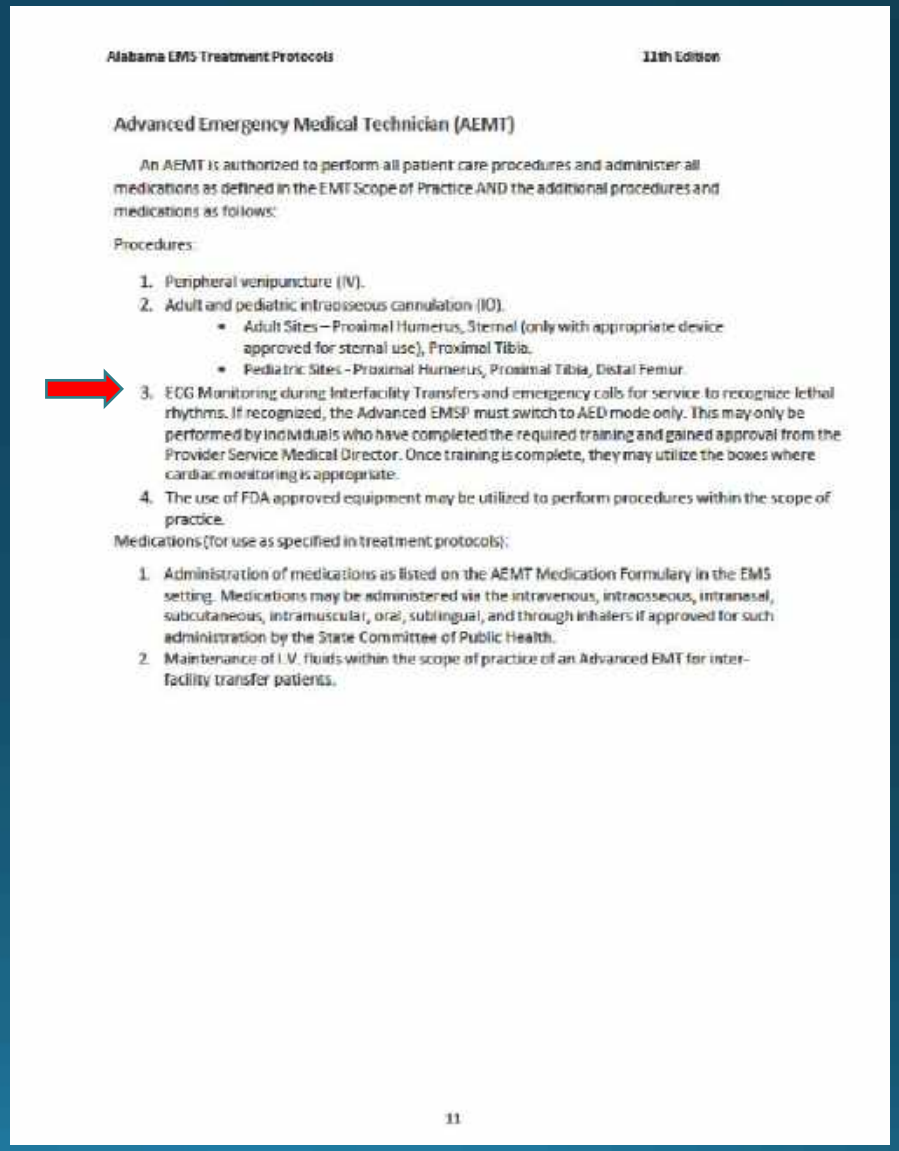
Scope of Practice

AEMT

- Cardiac monitors
- Must complete required training



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Advanced Emergency Medical Technician (AEMT)

An AEMT is authorized to perform all patient care procedures and administer all medications as defined in the EMT Scope of Practice AND the additional procedures and medications as follows:

Procedures:

1. Peripheral venipuncture (IV).
2. Adult and pediatric intraosseous cannulation (IO).
   - Adult Sites – Proximal Humerus, Sternal (only with appropriate device approved for sternal use), Proximal Tibia.
   - Pediatric Sites - Proximal Humerus, Proximal Tibia, Distal Femur.
3. ECG Monitoring during Interfacility Transfers and emergency calls for service to recognize lethal rhythms. If recognized, the Advanced EMSP must switch to AED mode only. This may only be performed by individuals who have completed the required training and gained approval from the Provider Service Medical Director. Once training is complete, they may utilize the boxes where cardiac monitoring is appropriate.
4. The use of FDA approved equipment may be utilized to perform procedures within the scope of practice.

Medications (for use as specified in treatment protocols):

1. Administration of medications as listed on the AEMT Medication Formulary in the EMS setting. Medications may be administered via the intravenous, intraosseous, intranasal, subcutaneous, intramuscular, oral, sublingual, and through inhalers if approved for such administration by the State Committee of Public Health.
2. Maintenance of I.V. fluids within the scope of practice of an Advanced EMT for inter-facility transfer patients.

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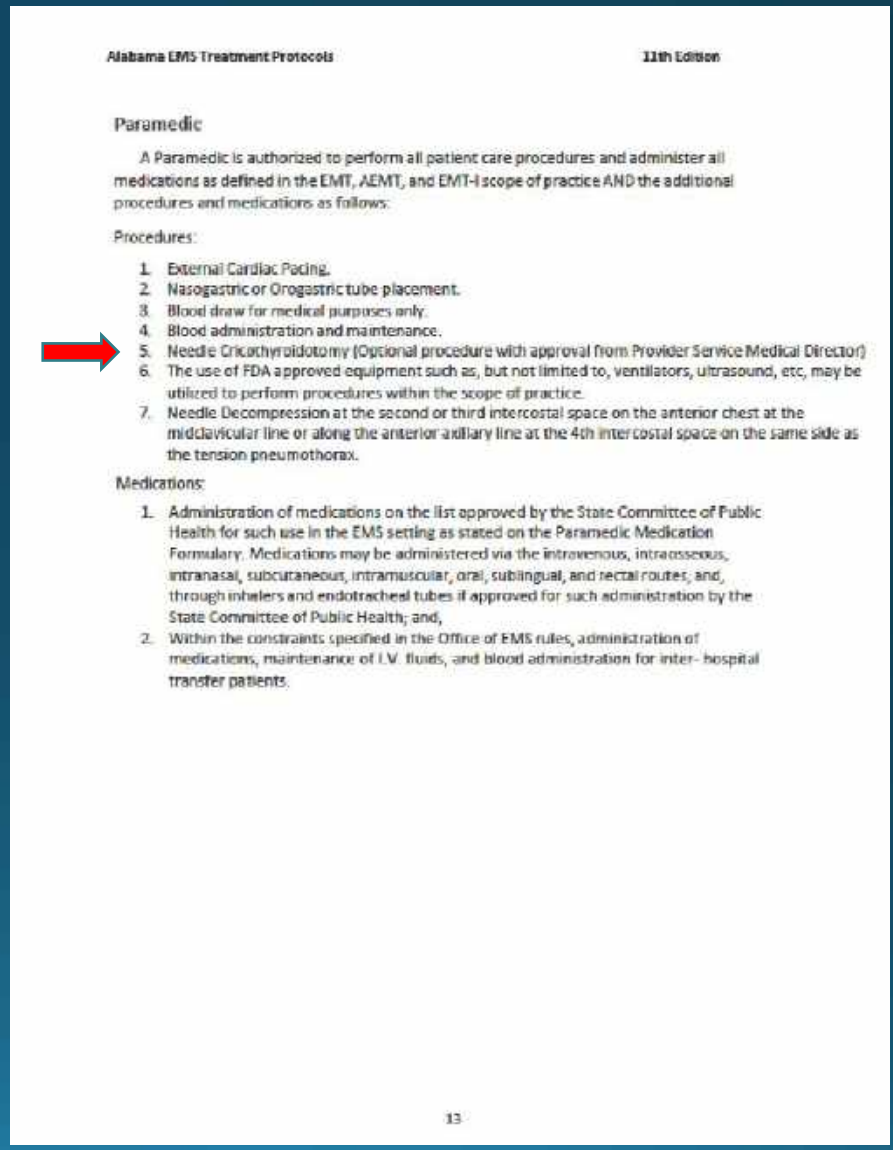
Scope of Practice

Paramedic

- Needle cricothyrotomy
- FDA approved devices



Alabama EMS Treatment Protocols 11th Edition

Paramedic

A Paramedic is authorized to perform all patient care procedures and administer all medications as defined in the EMT, AEMT, and EMT-I scope of practice AND the additional procedures and medications as follows:

Procedures:

1. External Cardiac Pacing.
2. Nasogastric or Orogastric tube placement.
3. Blood draw for medical purposes only.
4. Blood administration and maintenance.
5. Needle Cricothyroidotomy (Optional procedure with approval from Provider Service Medical Director)
6. The use of FDA approved equipment such as, but not limited to, ventilators, ultrasound, etc, may be utilized to perform procedures within the scope of practice.
7. Needle Decompression at the second or third intercostal space on the anterior chest at the midclavicular line or along the anterior axillary line at the 4th intercostal space on the same side as the tension pneumothorax.

Medications:

1. Administration of medications on the list approved by the State Committee of Public Health for such use in the EMS setting as stated on the Paramedic Medication Formulary. Medications may be administered via the intravenous, intraosseous, intranasal, subcutaneous, intramuscular, oral, sublingual, and rectal routes; and, through inhalers and endotracheal tubes if approved for such administration by the State Committee of Public Health; and,
2. Within the constraints specified in the Office of EMS rules, administration of medications, maintenance of I.V. fluids, and blood administration for inter- hospital transfer patients.

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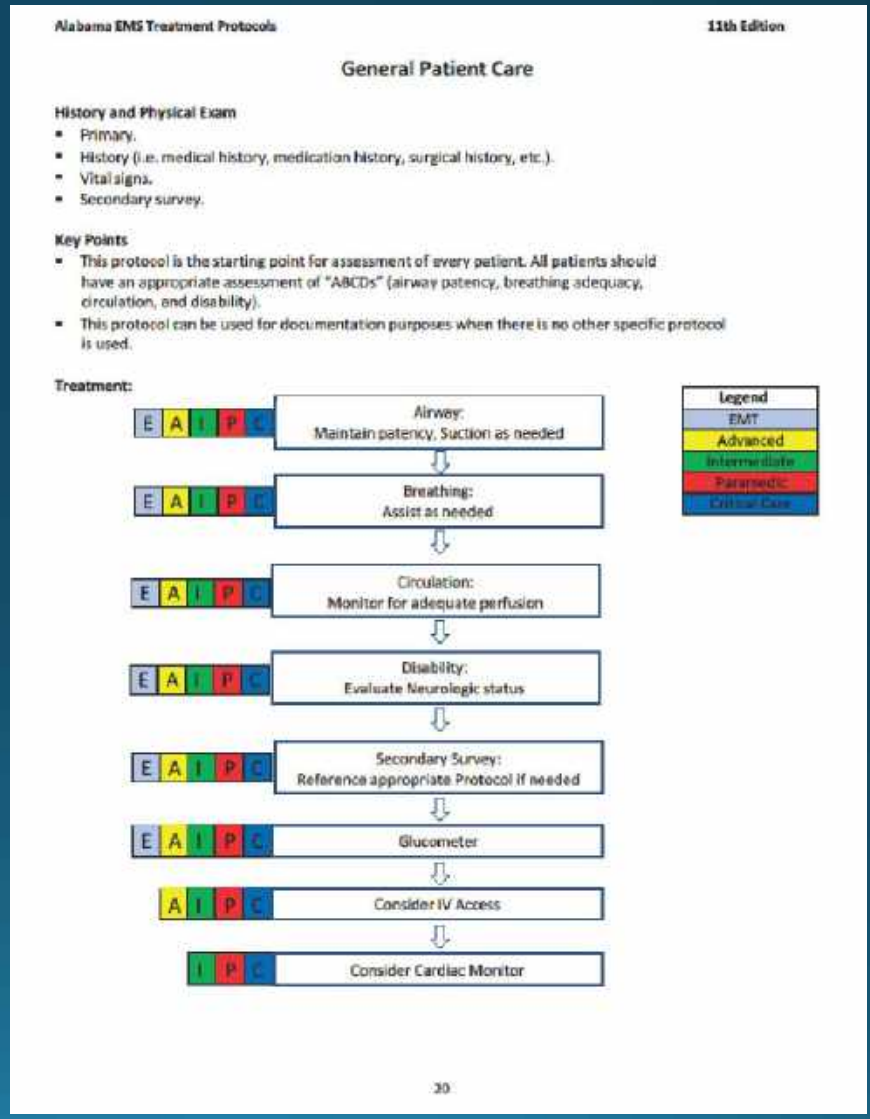
Treatment Protocols

- 37 to 38 protocols
- Name changes
- Letter changes
- Color addition for levels



Alabama EMS Treatment Protocols 11th Edition

General Patient Care

History and Physical Exam

- Primary.
- History (i.e. medical history, medication history, surgical history, etc.).
- Vital signs.
- Secondary survey.

Key Points

- This protocol is the starting point for assessment of every patient. All patients should have an appropriate assessment of "ABCDs" (airway patency, breathing adequacy, circulation, and disability).
- This protocol can be used for documentation purposes when there is no other specific protocol is used.

Treatment:

E A I P C Airway: Maintain patency. Suction as needed

E A I P C Breathing: Assist as needed

E A I P C Circulation: Monitor for adequate perfusion

E A I P C Disability: Evaluate Neurologic status

E A I P C Secondary Survey: Reference appropriate Protocol if needed

E A I P C Glucometer

A I P C Consider IV Access

I P C Consider Cardiac Monitor

Legend: EMT, Advanced, Intermediate, Paramedic, Critical Care

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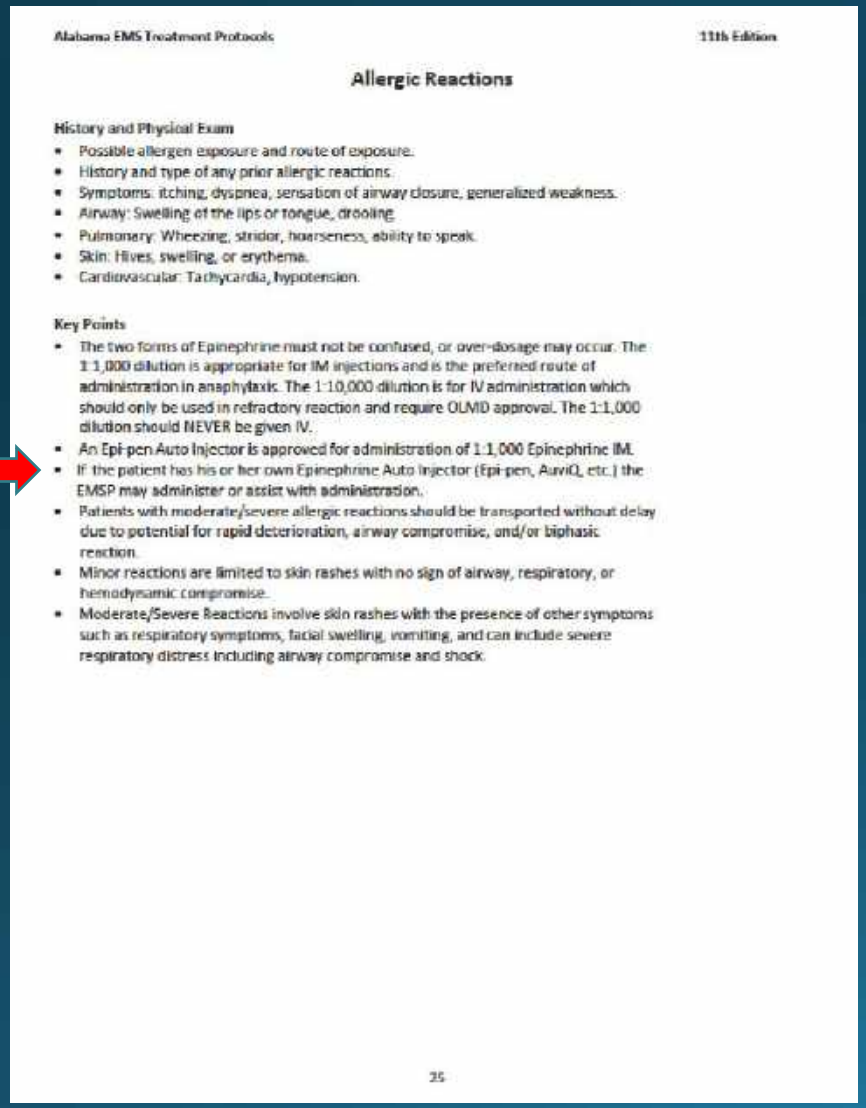
Allergic Reactions



Alabama EMS Treatment Protocols 11th Edition

Allergic Reactions

History and Physical Exam

- Possible allergen exposure and route of exposure.
- History and type of any prior allergic reactions.
- Symptoms: itching, dyspnea, sensation of airway closure, generalized weakness.
- Airway: Swelling of the lips or tongue, drooling.
- Pulmonary: Wheezing, stridor, hoarseness, ability to speak.
- Skin: Hives, swelling, or erythema.
- Cardiovascular: Tachycardia, hypotension.

Key Points

- The two forms of Epinephrine must not be confused, or over-dosage may occur. The 1:1,000 dilution is appropriate for IM injections and is the preferred route of administration in anaphylaxis. The 1:10,000 dilution is for IV administration which should only be used in refractory reaction and require OLMD approval. The 1:1,000 dilution should NEVER be given IV.
- An Epi-pen Auto Injector is approved for administration of 1:1,000 Epinephrine IM.
- If the patient has his or her own Epinephrine Auto Injector (Epi-pen, AuviQ, etc.) the EMSP may administer or assist with administration.
- Patients with moderate/severe allergic reactions should be transported without delay due to potential for rapid deterioration, airway compromise, and/or biphasic reaction.
- Minor reactions are limited to skin rashes with no sign of airway, respiratory, or hemodynamic compromise.
- Moderate/Severe Reactions involve skin rashes with the presence of other symptoms such as respiratory symptoms, facial swelling, vomiting, and can include severe respiratory distress including airway compromise and shock.

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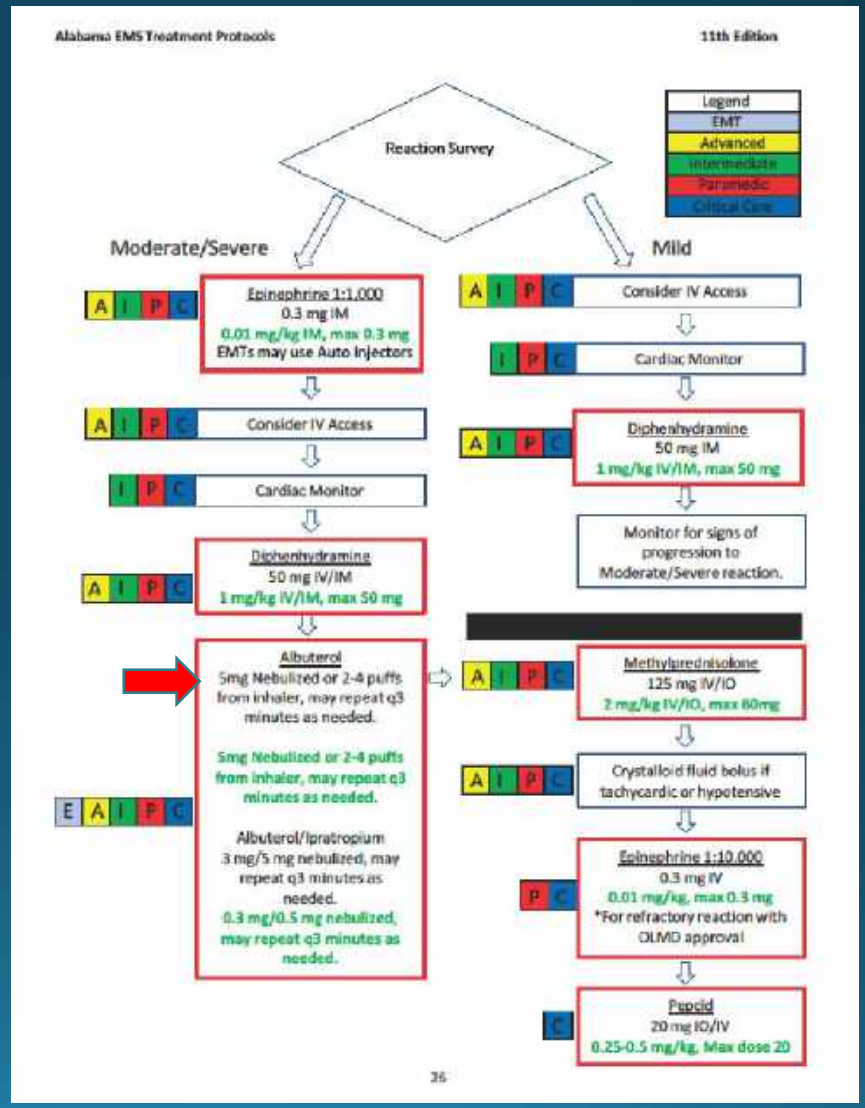

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Altered Mental Status

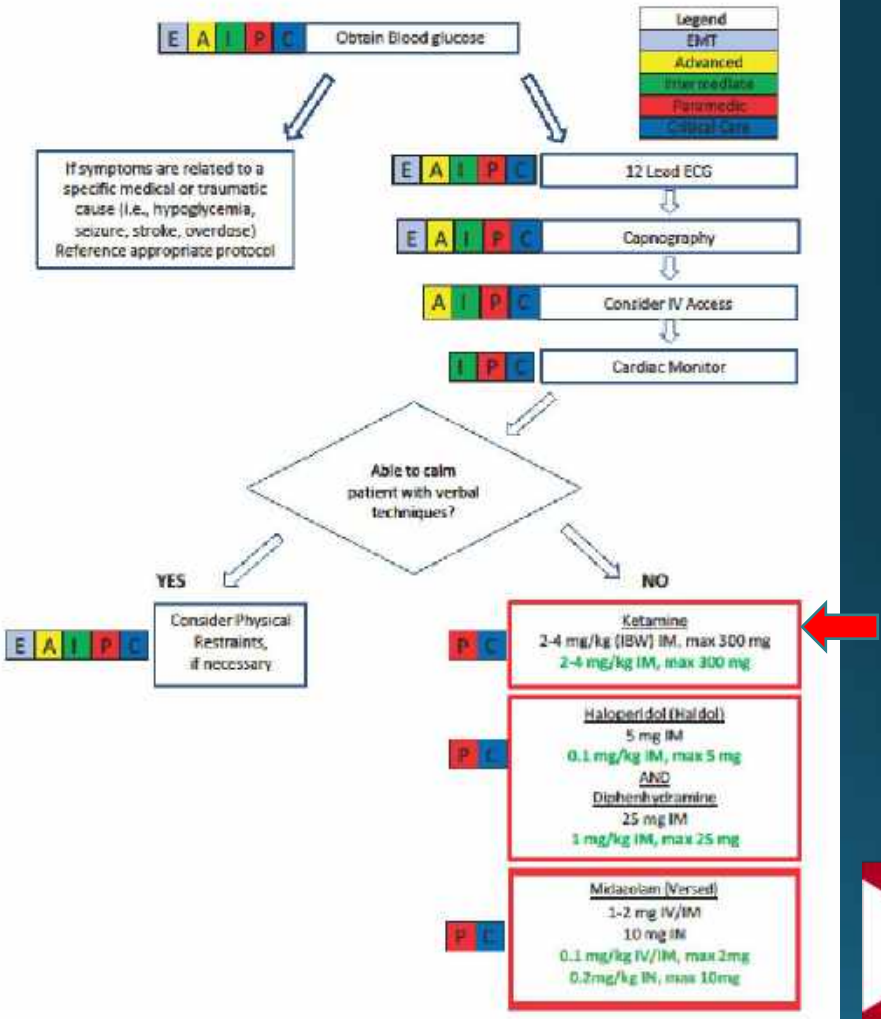
Altered Mental Status

History and Physical Exam

- Last time seen conscious or normal, progression of symptoms, recent symptoms such as headache, seizure, confusion, or trauma, possible toxin exposure.
- History of psychiatric illness, history of recent crisis, bizarre or abrupt changes in behavior, suicidal ideation, alcohol or drug intoxication, psychotropic drug use.
- Medical problems and medication history, toxin exposure, history of seizure or stroke.
- Surroundings: Note any pill bottles, syringes, etc., found with patient, as well as any peculiar odors in the environment.
- Pupils: Size, symmetry, and reactivity.
- Mental Status: Note level of consciousness, neurologic status (including any focal deficits), and any irrational activity (verbal attacks, spitting, combativeness). Document GCS if applicable.
- Look for signs of trauma and evidence of drug use.
- Note any characteristic odor on the patient's breath.

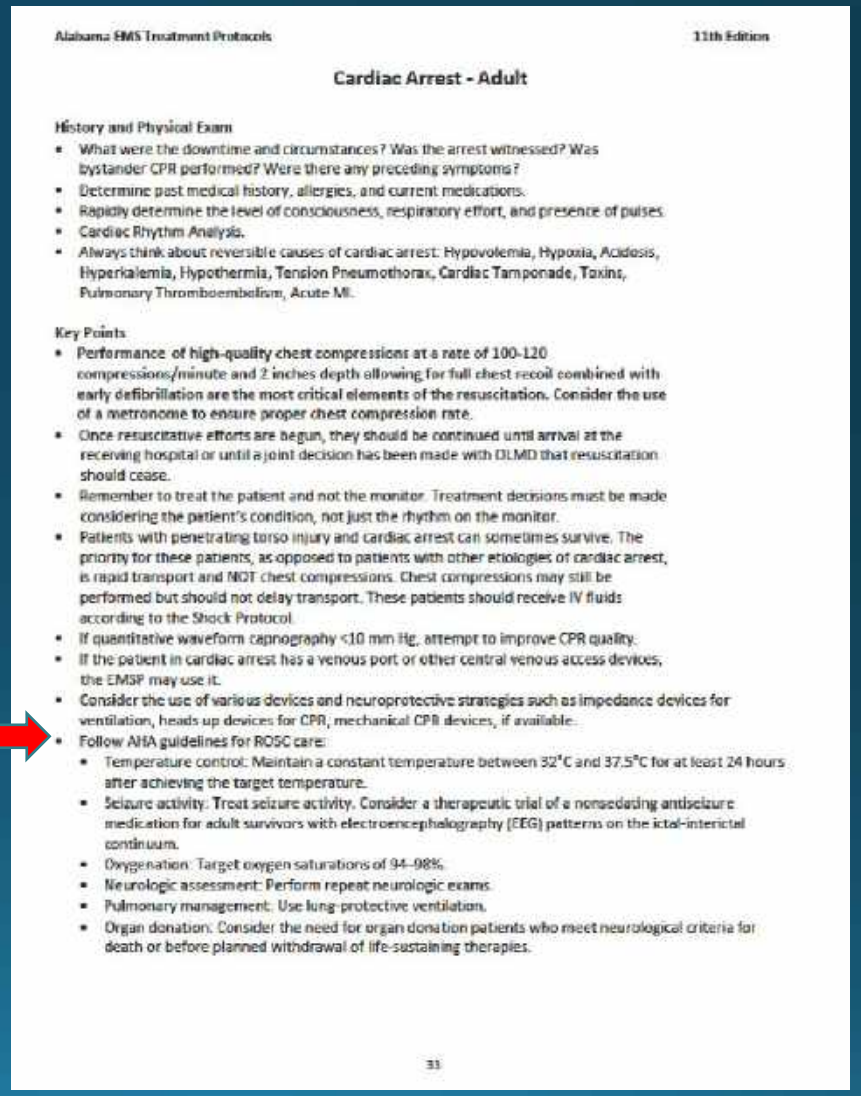
Key Points

- In cases of a dangerous environment, the safety of personnel on scene is paramount.
- Be particularly attentive to airway management. Aspiration of secretions, vomiting, and inadequate ventilations may be present in patients with severely altered mental status.
- Hypoglycemia may present with a focal neurologic deficit or altered mental status, particularly in elderly patients. Follow the Hypoglycemia Protocol if indicated.
- All patients treated using this protocol should have a medical evaluation and not be considered or referred to as a psychiatric patient, unless under a bona fide mental health hold by a physician, mental health professional, or law enforcement officer. Medical causes of altered mental status should be considered first before psychiatric causes of altered mental status.
- CAUTION: Do not leave suicidal patients alone. Suicidal patients and patients with hallucinations or delusions may potentially exhibit violent behavior. Search patients for and remove dangerous objects (i.e., knives, guns, pills).
- NOTE: Ketamine dosing is based on ideal body weight and based on best estimate of height). Any patient that receives a chemical restraint must be placed on capnography and SPO2 monitoring.
- Any patient that receives a chemical restraint must be transported by EMS to a facility for medical evaluation.



Cardiac Arrest- Adult

- Guidelines
- Devices and neuroprotective strategies



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Cardiac Arrest - Adult

History and Physical Exam

- What were the downtime and circumstances? Was the arrest witnessed? Was bystander CPR performed? Were there any preceding symptoms?
- Determine past medical history, allergies, and current medications.
- Rapidly determine the level of consciousness, respiratory effort, and presence of pulses.
- Cardiac Rhythm Analysis.
- Always think about reversible causes of cardiac arrest: Hypovolemia, Hypoxia, Acidosis, Hyperkalemia, Hypothermia, Tension Pneumothorax, Cardiac Tamponade, Toxins, Pulmonary Thromboembolism, Acute MI.

Key Points

- Performance of high-quality chest compressions at a rate of 100-120 compressions/minute and 2 inches depth allowing for full chest recoil combined with early defibrillation are the most critical elements of the resuscitation. Consider the use of a metronome to ensure proper chest compression rate.
- Once resuscitative efforts are begun, they should be continued until arrival at the receiving hospital or until a joint decision has been made with OLMD that resuscitation should cease.
- Remember to treat the patient and not the monitor. Treatment decisions must be made considering the patient's condition, not just the rhythm on the monitor.
- Patients with penetrating torso injury and cardiac arrest can sometimes survive. The priority for these patients, as opposed to patients with other etiologies of cardiac arrest, is rapid transport and NOT chest compressions. Chest compressions may still be performed but should not delay transport. These patients should receive IV fluids according to the Shock Protocol.
- If quantitative waveform capnography <10 mm Hg, attempt to improve CPR quality.
- If the patient in cardiac arrest has a venous port or other central venous access devices, the EMSP may use it.
- Consider the use of various devices and neuroprotective strategies such as impedance devices for ventilation, heads up devices for CPR, mechanical CPR devices, if available.
- Follow AHA guidelines for ROSC care:
  - Temperature control: Maintain a constant temperature between 32°C and 37.5°C for at least 24 hours after achieving the target temperature.
  - Seizure activity: Treat seizure activity. Consider a therapeutic trial of a nonsedating antiseizure medication for adult survivors with electroencephalography (EEG) patterns on the ictal-interictal continuum.
  - Oxygenation: Target oxygen saturations of 94–98%.
  - Neurologic assessment: Perform repeat neurologic exams.
  - Pulmonary management: Use lung-protective ventilation.
  - Organ donation: Consider the need for organ donation patients who meet neurological criteria for death or before planned withdrawal of life-sustaining therapies.

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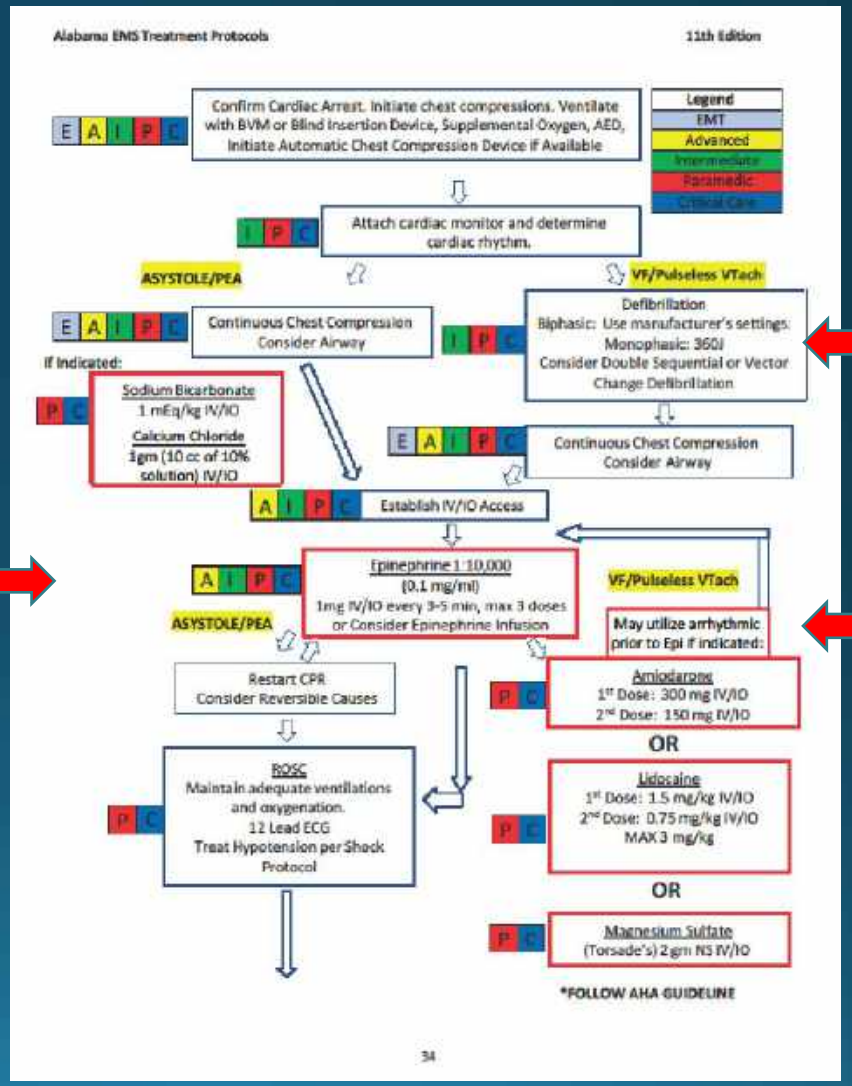
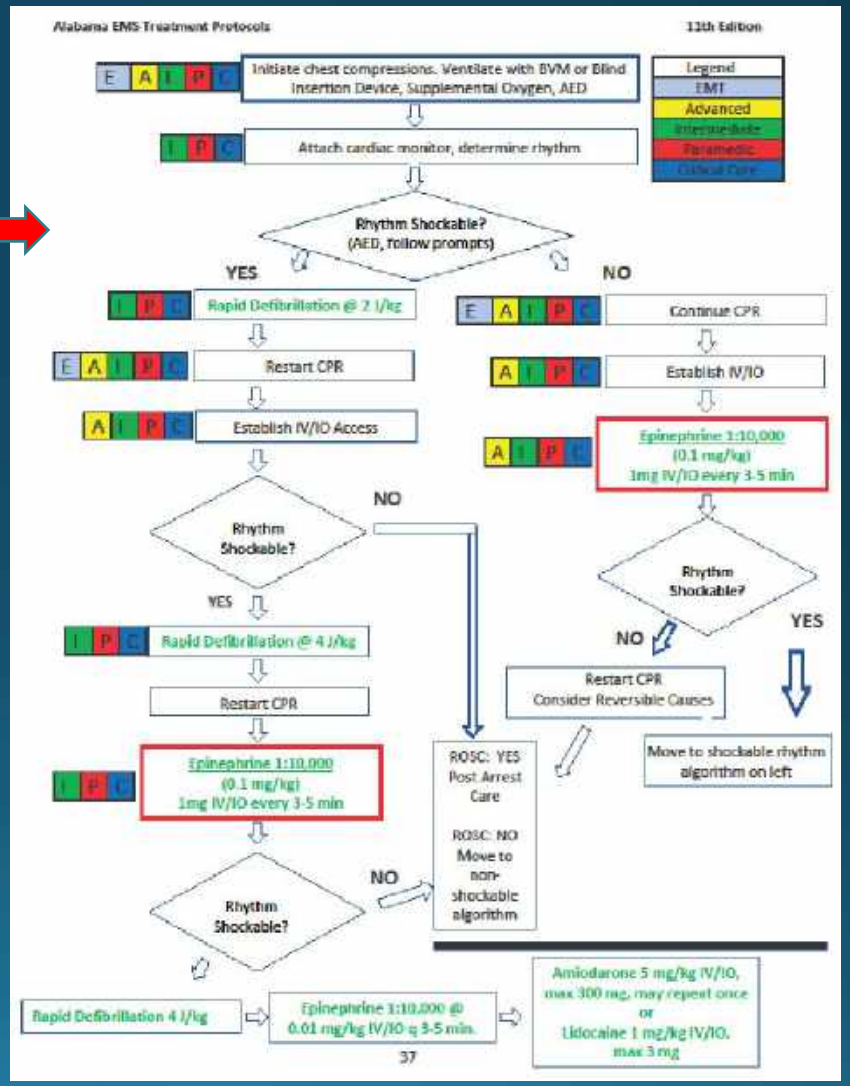
Cardiac Arrest- Adult

- Epi dosage change
- Epi infusion
- Defibrillator changes



Cardiac Arrest- Pediatric

- AED usage



Cardiac Arrythmia Protocols

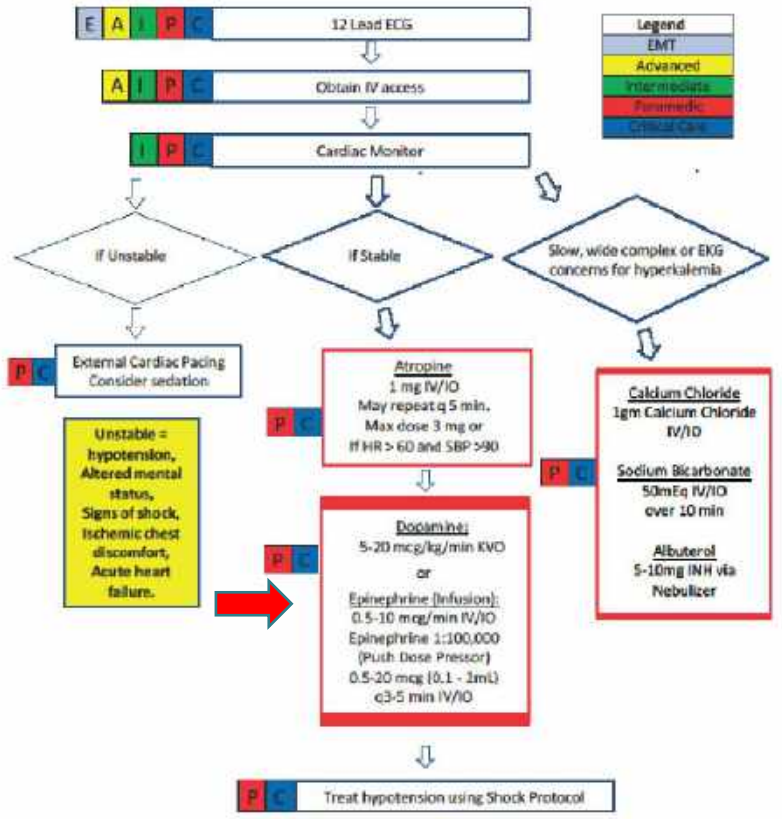
Cardiac Dysrhythmias – Adult Bradycardia

History and Physical Exam

- Chief complaint, onset (sudden or gradual).
- Associated symptoms: palpitations, dizziness, chest pain, syncope, dyspnea.
- Past medical history and medication history.
- Look for evidence of low cardiac output such as altered level of consciousness, presence of shock syndrome, and signs of congestive heart failure.

Key Points

- Cardiac dysrhythmias with signs of impaired perfusion require immediate treatment in the field. However, if the patient has no signs of impaired perfusion, he or she may not require immediate treatment.



Childbirth

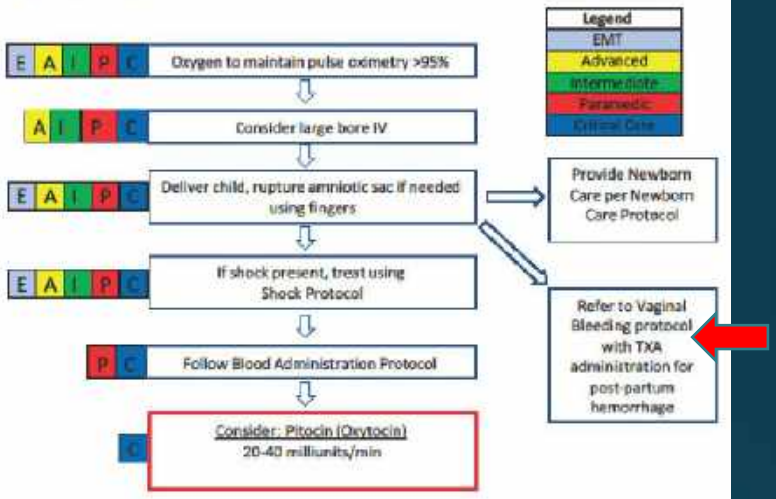
Childbirth

History and Physical Exam

- History of pregnancy: Due date, last menstrual period, is known multiple gestations?
- Does the patient feel that she is in labor or about to deliver (e.g., rectal or vaginal pressure)?
- Recent symptoms such as pain or contractions? Timing and regularity? Vaginal bleeding, ruptured membranes, urge to push?
- Medical history: medications, medical problems, age, number of prior pregnancies
- Vital signs and fetal heart rate if possible.
- Contractions and relaxation of the uterus.
- Where privacy is possible, inspect perineum for vaginal bleeding or fluid (note color and presence of meconium), crowning (check during contraction), abnormal presentation (foot, arm, cord, or breech).

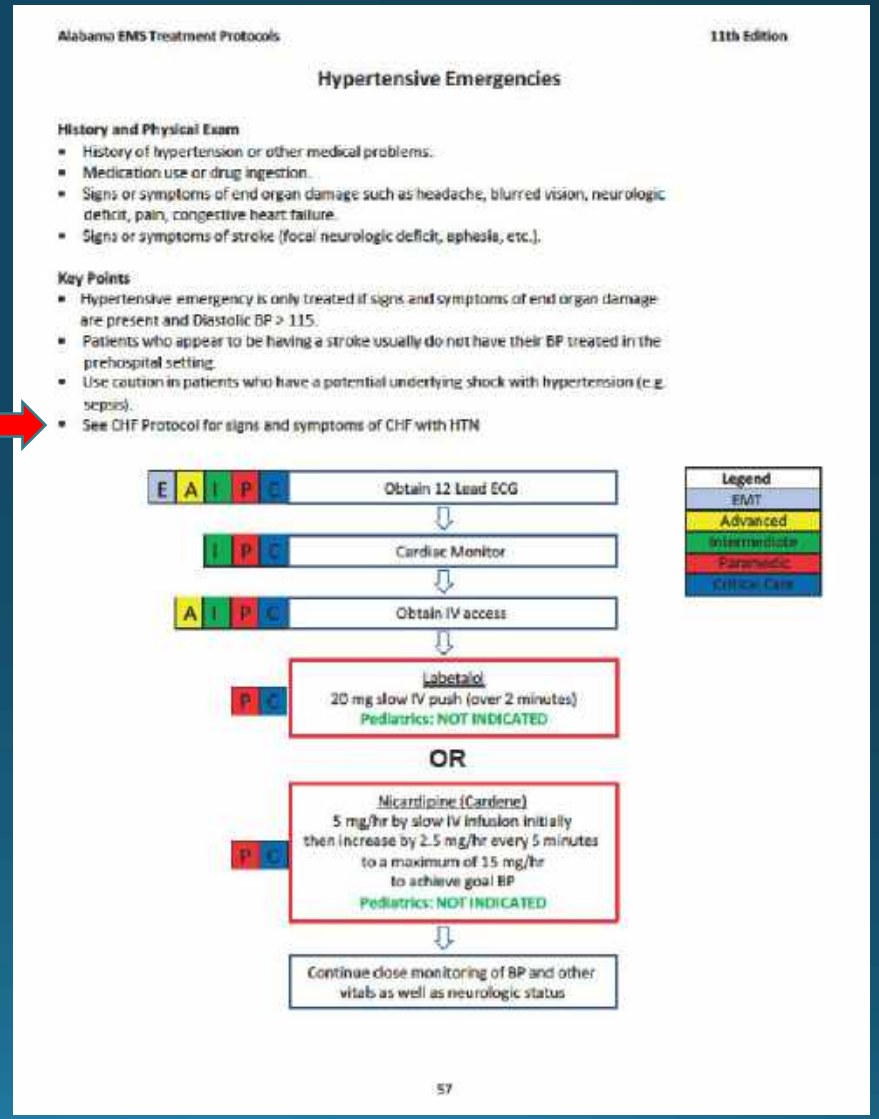
Key Points

- Do not delay transport particularly for patients with previous cesarean section, known imminent multiple births, abnormal presenting parts, excessive bleeding, and premature labor.
- In case of the prolapsed umbilical cord, place the mother in Trendelenburg or knee- chest position. The elevated presenting body part relieves pressure on the cord and keeps the cord moist with saline gauze if it is exposed. Do not delay transport.
- In the case of a nuchal cord, make an attempt to slide the cord over the fetus' head or, if unable, attempt to relieve pressure on the neck.
- If a non-viable premature fetus is delivered and the fetus is available, place the fetus in a clean container and transport it to the hospital with the mother. Remember to treat the fetus with the same respect as the EMSP would treat any deceased patient.
- Do not delay transport to hospital for delivery of placenta. If placenta is delivered in the field then it needs to be transported to the hospital with the patient.
- Observe fetal heart sounds if equipment is available.



Hypertensive Emergencies

- CHF protocol



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Hypertensive Emergencies

History and Physical Exam

- History of hypertension or other medical problems.
- Medication use or drug ingestion.
- Signs or symptoms of end organ damage such as headache, blurred vision, neurologic deficit, pain, congestive heart failure.
- Signs or symptoms of stroke (focal neurologic deficit, aphasia, etc.).

Key Points

- Hypertensive emergency is only treated if signs and symptoms of end organ damage are present and Diastolic BP > 115.
- Patients who appear to be having a stroke usually do not have their BP treated in the prehospital setting.
- Use caution in patients who have a potential underlying shock with hypertension (e.g. sepsis).
- See CHF Protocol for signs and symptoms of CHF with HTN

E A I P C Obtain 12 Lead ECG

⇩

I P C Cardiac Monitor

⇩

A I P C Obtain IV access

⇩

P C Labetalol
20 mg slow IV push (over 2 minutes)
Pediatrics: NOT INDICATED

OR

P C Nicardipine (Cardene)
5 mg/hr by slow IV infusion initially
then increase by 2.5 mg/hr every 5 minutes
to a maximum of 15 mg/hr
to achieve goal BP
Pediatrics: NOT INDICATED

⇩

Continue close monitoring of BP and other vitals as well as neurologic status

Legend
EMT
Advanced
Intermediate
Paramedic
Critical Care

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Hyperthermia

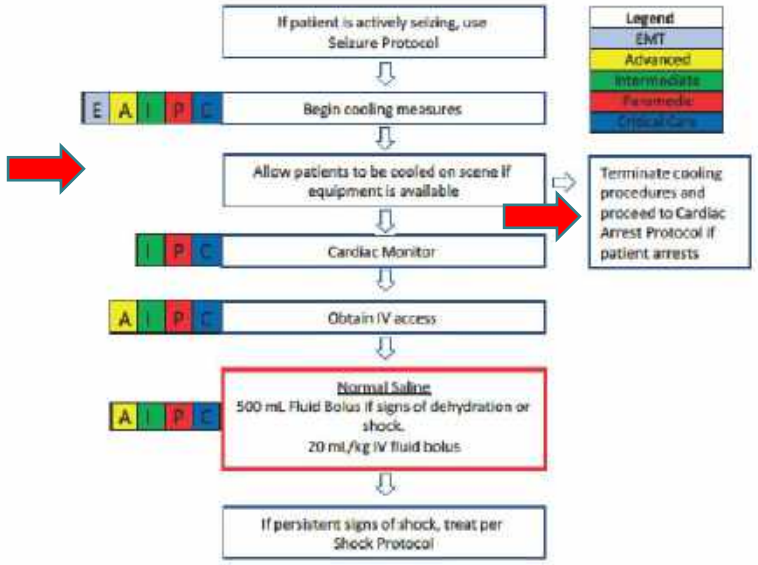
Hyperthermia

History and Physical Exam

- Sudden collapse or gradual development?
- Exercise induced?
- Environmental conditions?
- Previous history of hyperthermia?
- Vital signs: Oral or rectal temperature (if available) greater than 104°F or 40°C usually consistent with heat stroke, but lower temperatures can be seen.
- Skin: temperature, presence or absence of sweat.

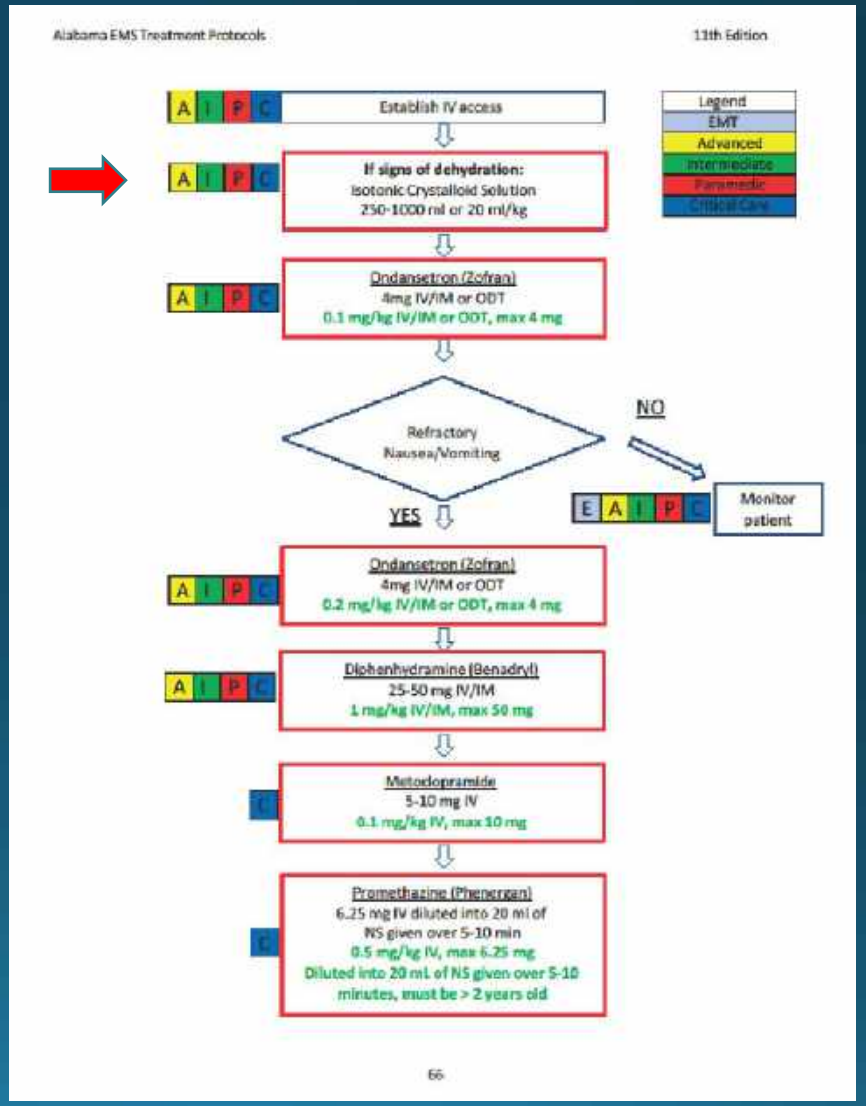
Key Points

- There are three classic syndromes of hyperthermia – heat cramps, heat exhaustion, and heat stroke. Heat cramps occur secondary to inadequate intake of fluids and electrolytes resulting in muscle cramping. Heat cramps can progress to heat exhaustion resulting in dehydration, nausea and vomiting, and generalized weakness. Higher temperatures are usually seen with heat exhaustion (101-104°F or 38.3-40°C). Heat exhaustion can progress to heat stroke.
- Heat stroke is a medical emergency. It is defined as hyperthermia (usually >104°F or 40°C) with altered mental status.
- Suspect hyperthermia/heat stroke in patients with acute psychosis or seizure on a hot, humid day.
- If a physician with expertise in hyperthermia management is on scene, contact OLMD to relinquish control.
- Cool patient if possible while transporting. If ice water bath equipment or iced towels are immediately available, immerse the patient until his or her core temperature returns to normal. Wet sheets wrapped over a patient without good air flow may increase temperature and should be avoided.
- Patient temperature should be acquired and monitored frequently using a patient contact method such as orally, axillary, rectally, etc., rather than utilizing a "non-touch" thermometer.

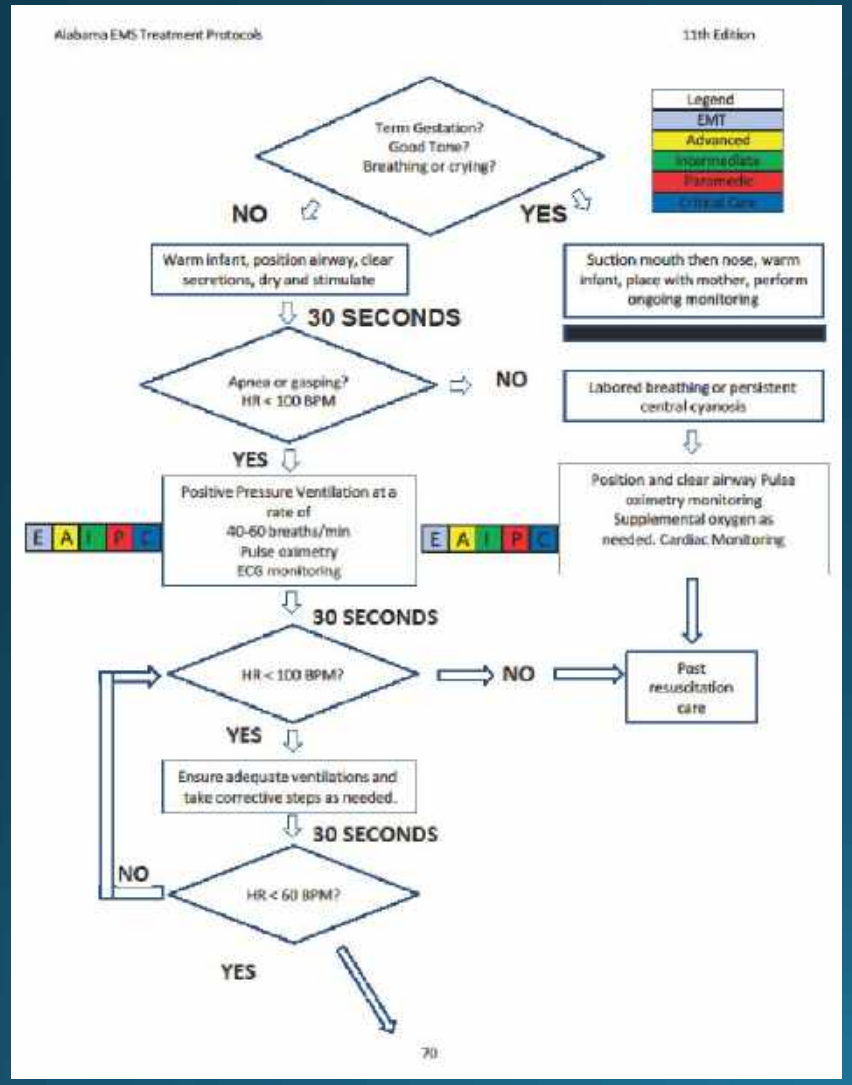


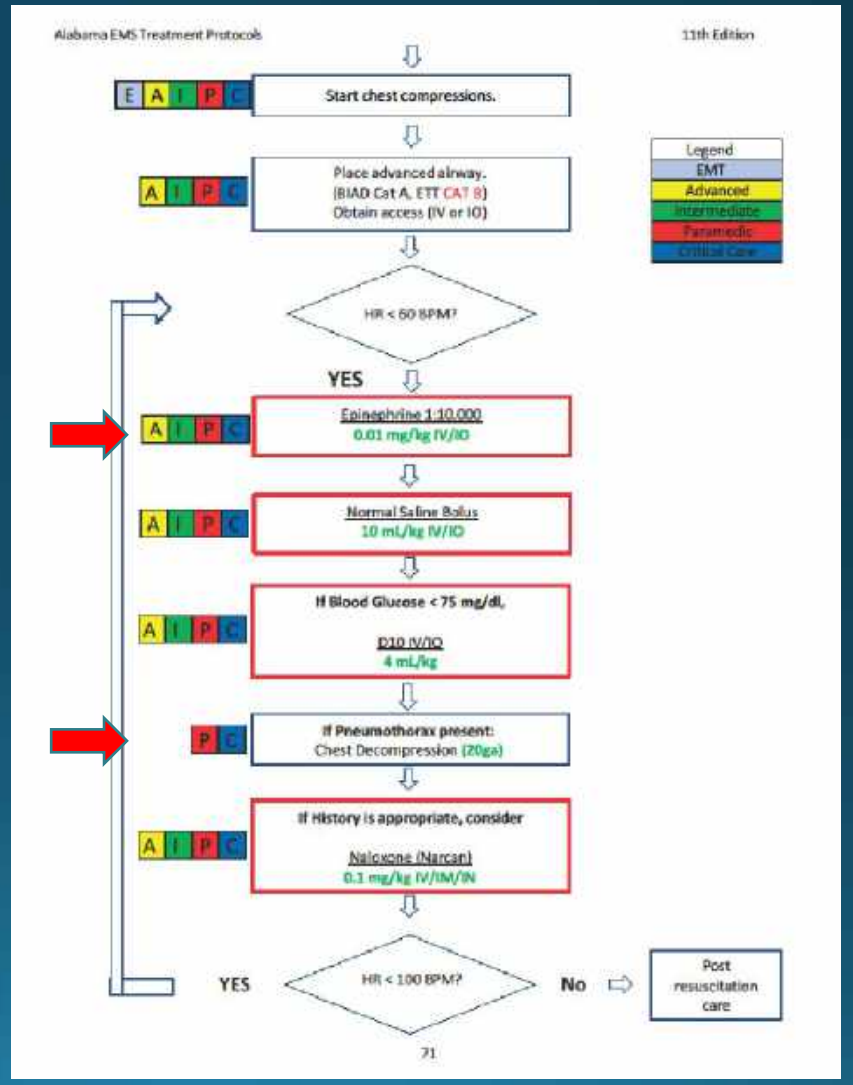
Nausea/Vomiting

- IV bolus change

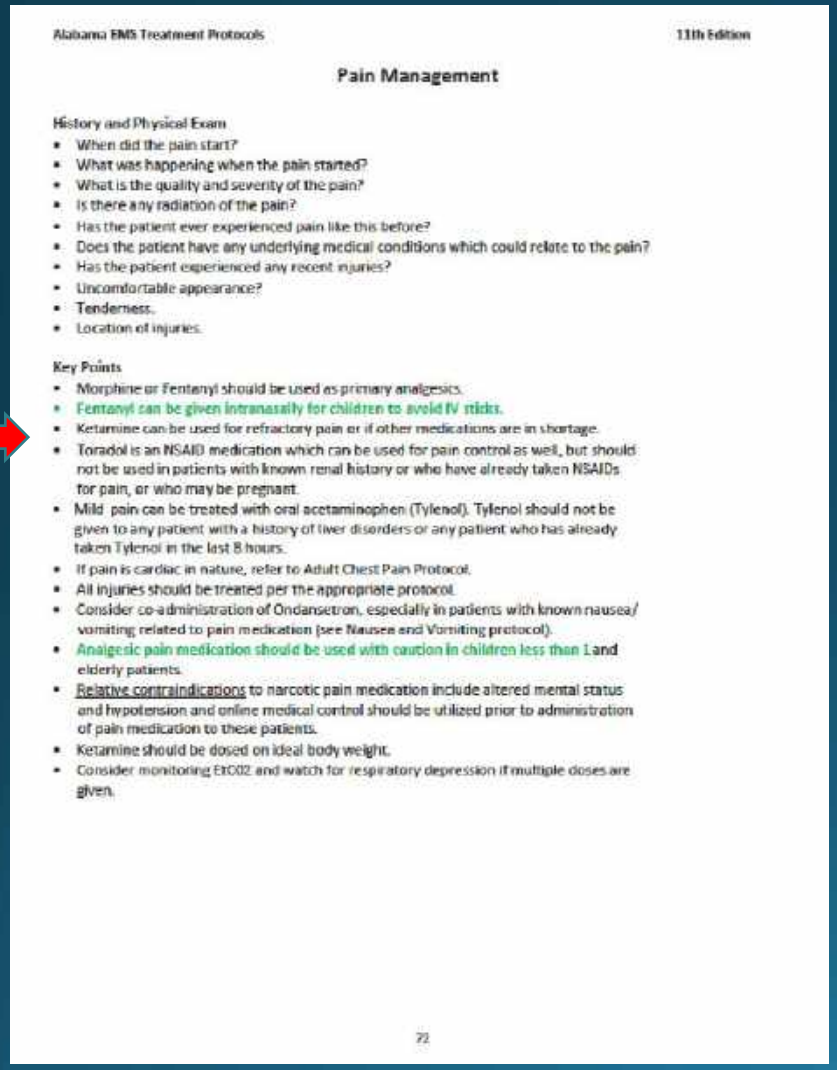


Newborn Care





Pain Management



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Pain Management

History and Physical Exam

- When did the pain start?
- What was happening when the pain started?
- What is the quality and severity of the pain?
- Is there any radiation of the pain?
- Has the patient ever experienced pain like this before?
- Does the patient have any underlying medical conditions which could relate to the pain?
- Has the patient experienced any recent injuries?
- Uncomfortable appearance?
- Tenderness.
- Location of injuries.

Key Points

- Morphine or Fentanyl should be used as primary analgesics.
- Fentanyl can be given intranasally for children to avoid IV sticks.
- Ketamine can be used for refractory pain or if other medications are in shortage.
- Toradol is an NSAID medication which can be used for pain control as well, but should not be used in patients with known renal history or who have already taken NSAIDs for pain, or who may be pregnant.
- Mild pain can be treated with oral acetaminophen (Tylenol). Tylenol should not be given to any patient with a history of liver disorders or any patient who has already taken Tylenol in the last 8 hours.
- If pain is cardiac in nature, refer to Adult Chest Pain Protocol.
- All injuries should be treated per the appropriate protocol.
- Consider co-administration of Ondansetron, especially in patients with known nausea/vomiting related to pain medication (see Nausea and Vomiting protocol).
- Analgesic pain medication should be used with caution in children less than 1 and elderly patients.
- Relative contraindications to narcotic pain medication include altered mental status and hypotension and online medical control should be utilized prior to administration of pain medication to these patients.
- Ketamine should be dosed on ideal body weight.
- Consider monitoring EtCO2 and watch for respiratory depression if multiple doses are given.

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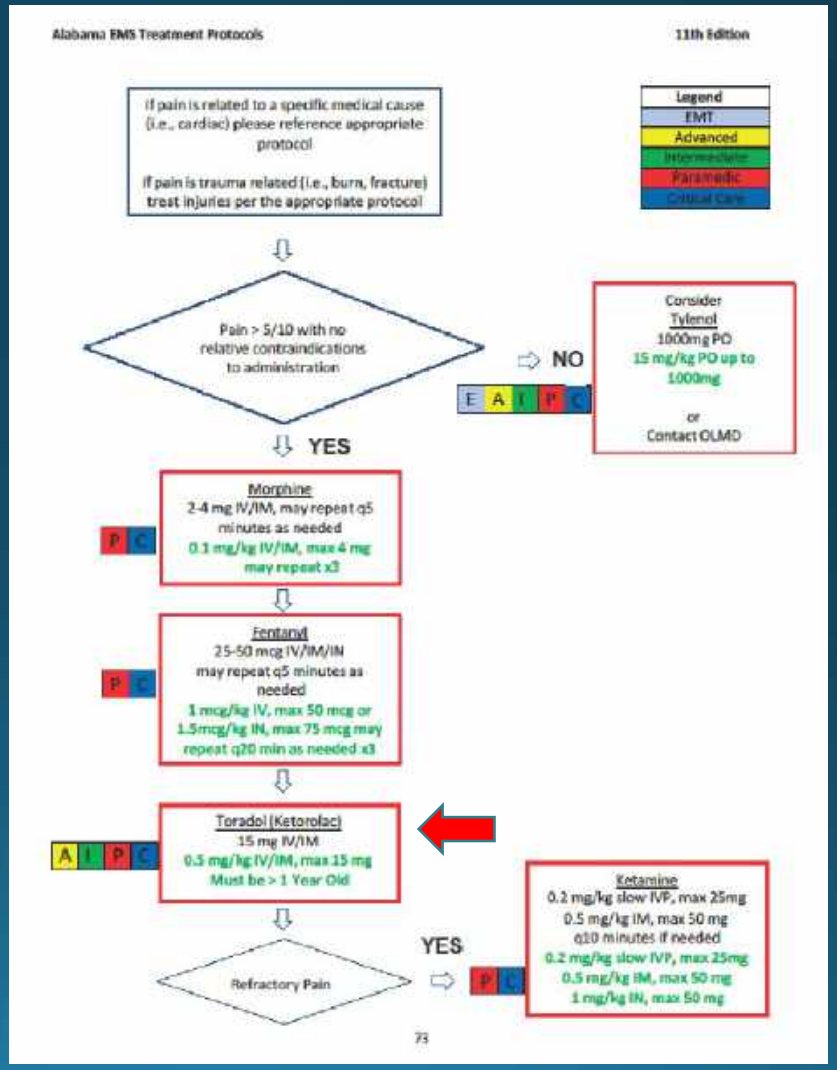
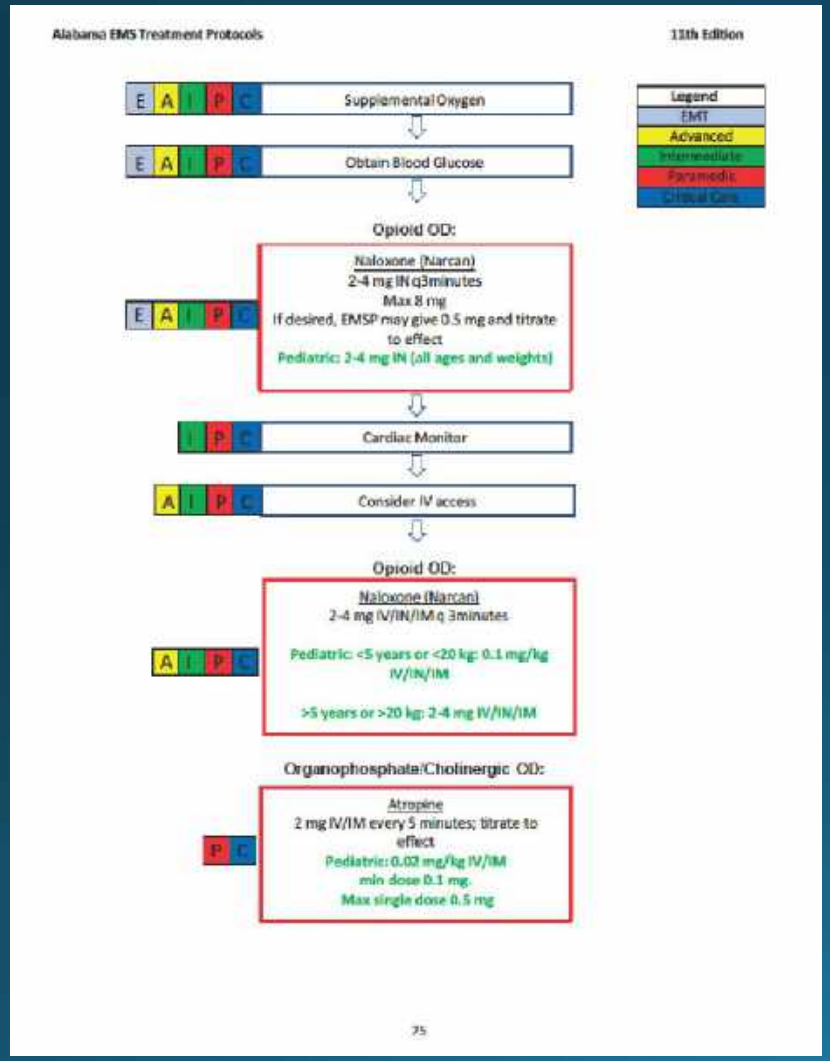
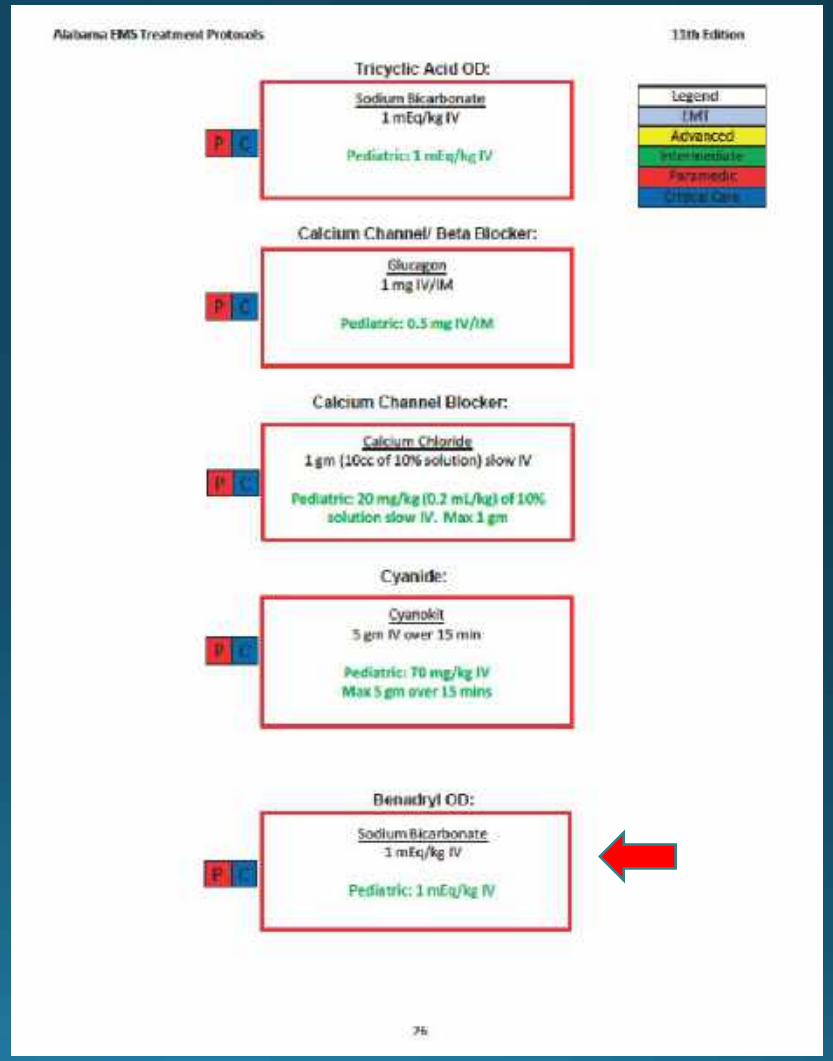
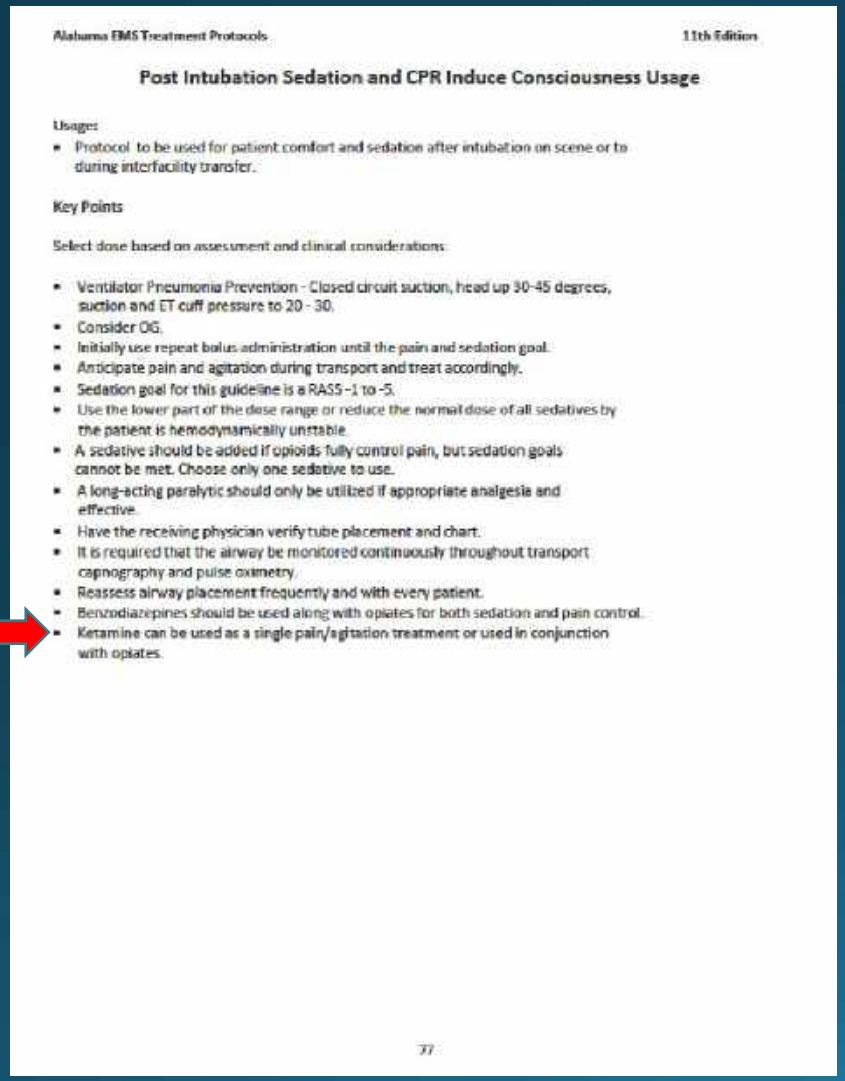


Poisoning/Overdose





Post Intubation Sedation and CPR Induced Consciousness



Alabama EMS Treatment Protocols 11th Edition

Post Intubation Sedation and CPR Induce Consciousness Usage

Usage:

- Protocol to be used for patient comfort and sedation after intubation on scene or to during interfacility transfer.

Key Points

Select dose based on assessment and clinical considerations

- Ventilator Pneumonia Prevention - Closed circuit suction, head up 30-45 degrees, suction and ET cuff pressure to 20 - 30.
- Consider OG.
- Initially use repeat bolus administration until the pain and sedation goal.
- Anticipate pain and agitation during transport and treat accordingly.
- Sedation goal for this guideline is a RASS -1 to -5.
- Use the lower part of the dose range or reduce the normal dose of all sedatives by the patient is hemodynamically unstable.
- A sedative should be added if opioids fully control pain, but sedation goals cannot be met. Choose only one sedative to use.
- A long-acting paralytic should only be utilized if appropriate analgesia and effective.
- Have the receiving physician verify tube placement and chart.
- It is required that the airway be monitored continuously throughout transport capnography and pulse oximetry.
- Reassess airway placement frequently and with every patient.
- Benzodiazepines should be used along with opiates for both sedation and pain control.
- Ketamine can be used as a single pain/agitation treatment or used in conjunction with opiates.

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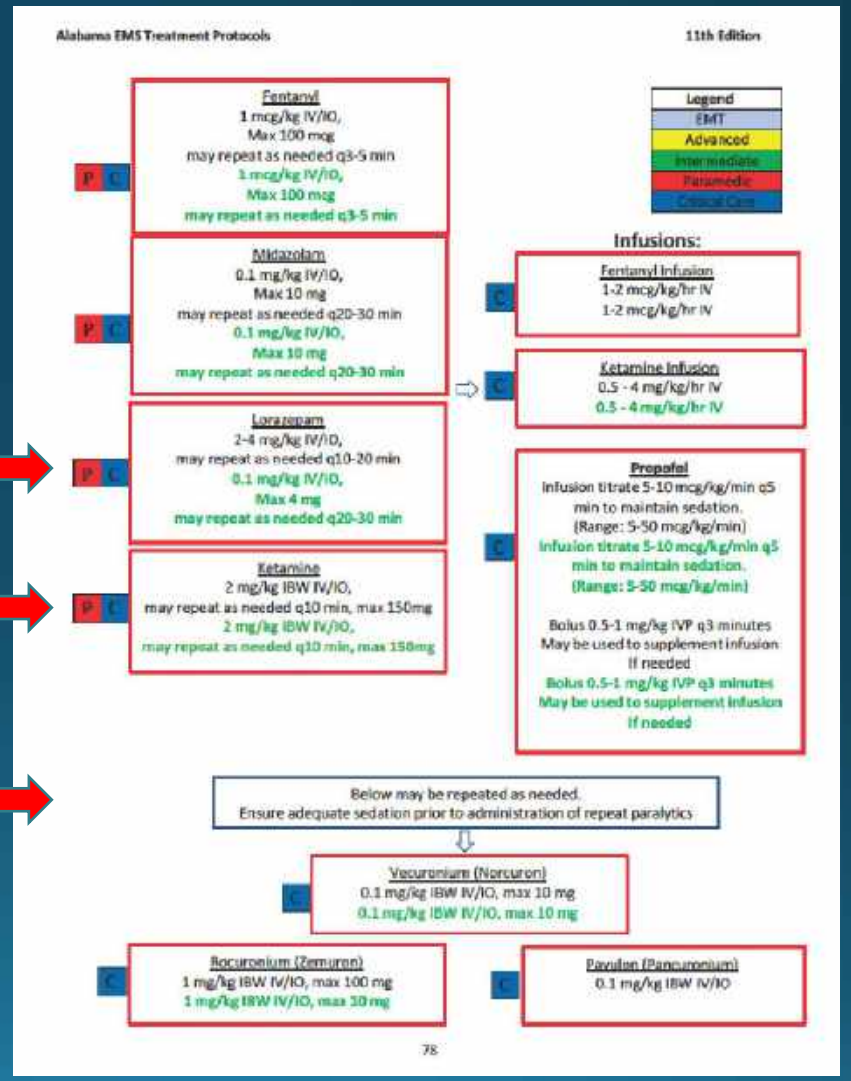

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Fentanyl
1 mcg/kg IV/IO,
Max 100 mcg
may repeat as needed q3-5 min
1 mcg/kg IV/IO,
Max 100 mcg
may repeat as needed q3-5 min

Midazolam
0.1 mg/kg IV/IO,
Max 10 mg
may repeat as needed q20-30 min
0.1 mg/kg IV/IO,
Max 10 mg
may repeat as needed q20-30 min

Lorazepam
2-4 mg/kg IV/IO,
may repeat as needed q10-20 min
0.1 mg/kg IV/IO,
Max 4 mg
may repeat as needed q20-30 min

Ketamine
2 mg/kg IBW IV/IO,
may repeat as needed q10 min, max 150mg
2 mg/kg IBW IV/IO,
may repeat as needed q10 min, max 150mg

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Infusions:

Fentanyl Infusion
1-2 mcg/kg/hr IV
1-2 mcg/kg/hr IV

Ketamine Infusion
0.5 - 4 mg/kg/hr IV
0.5 - 4 mg/kg/hr IV

Propofol
Infusion titrate 5-10 mcg/kg/min q5 min to maintain sedation.
(Range: 5-50 mcg/kg/min)
Infusion titrate 5-10 mcg/kg/min q5 min to maintain sedation.
(Range: 5-50 mcg/kg/min)

Bolus 0.5-1 mg/kg IVP q3 minutes
May be used to supplement infusion if needed
Bolus 0.5-1 mg/kg IVP q3 minutes
May be used to supplement infusion if needed

Below may be repeated as needed.
Ensure adequate sedation prior to administration of repeat paralytics

Vecuronium (Norcuron)
0.1 mg/kg IBW IV/IO, max 10 mg
0.1 mg/kg IBW IV/IO, max 10 mg

Rocuronium (Zemuron)
1 mg/kg IBW IV/IO, max 100 mg
1 mg/kg IBW IV/IO, max 10 mg

Pavulon (Pancuronium)
0.1 mg/kg IBW IV/IO

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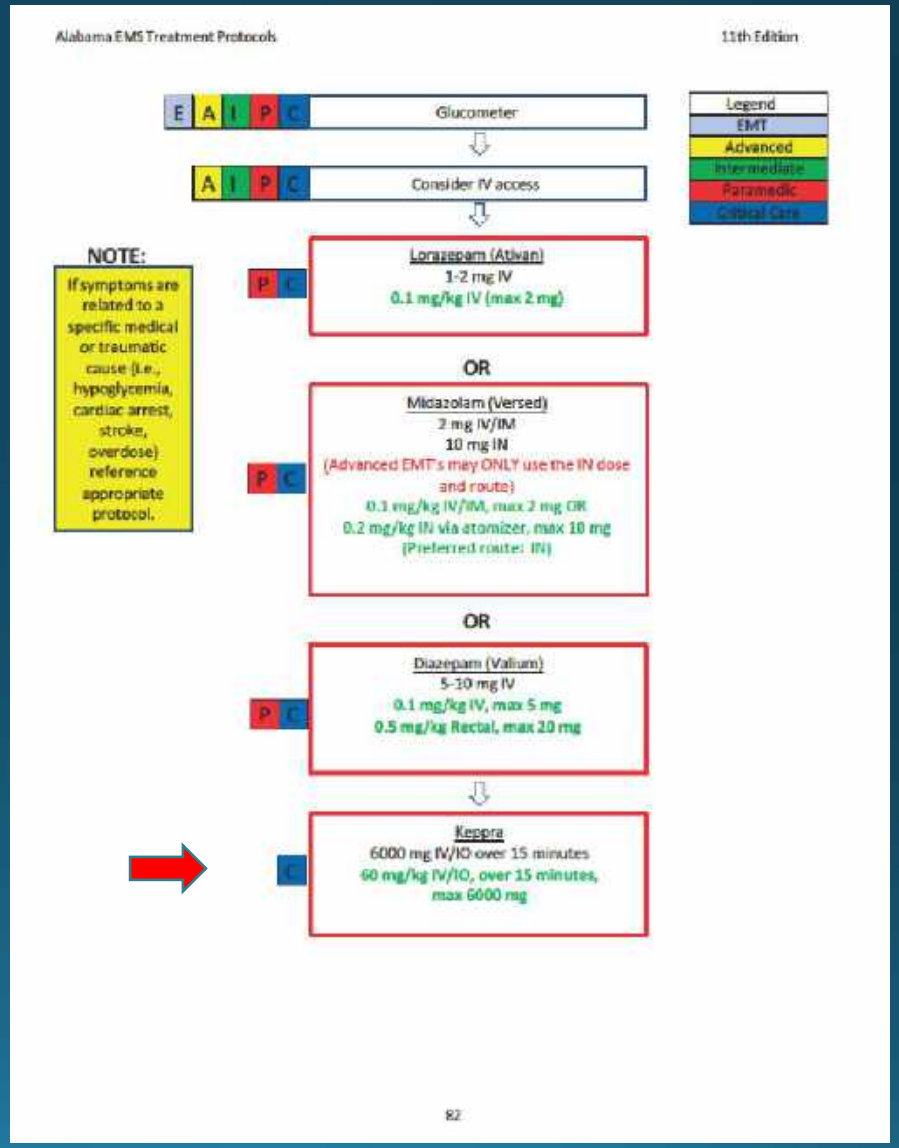
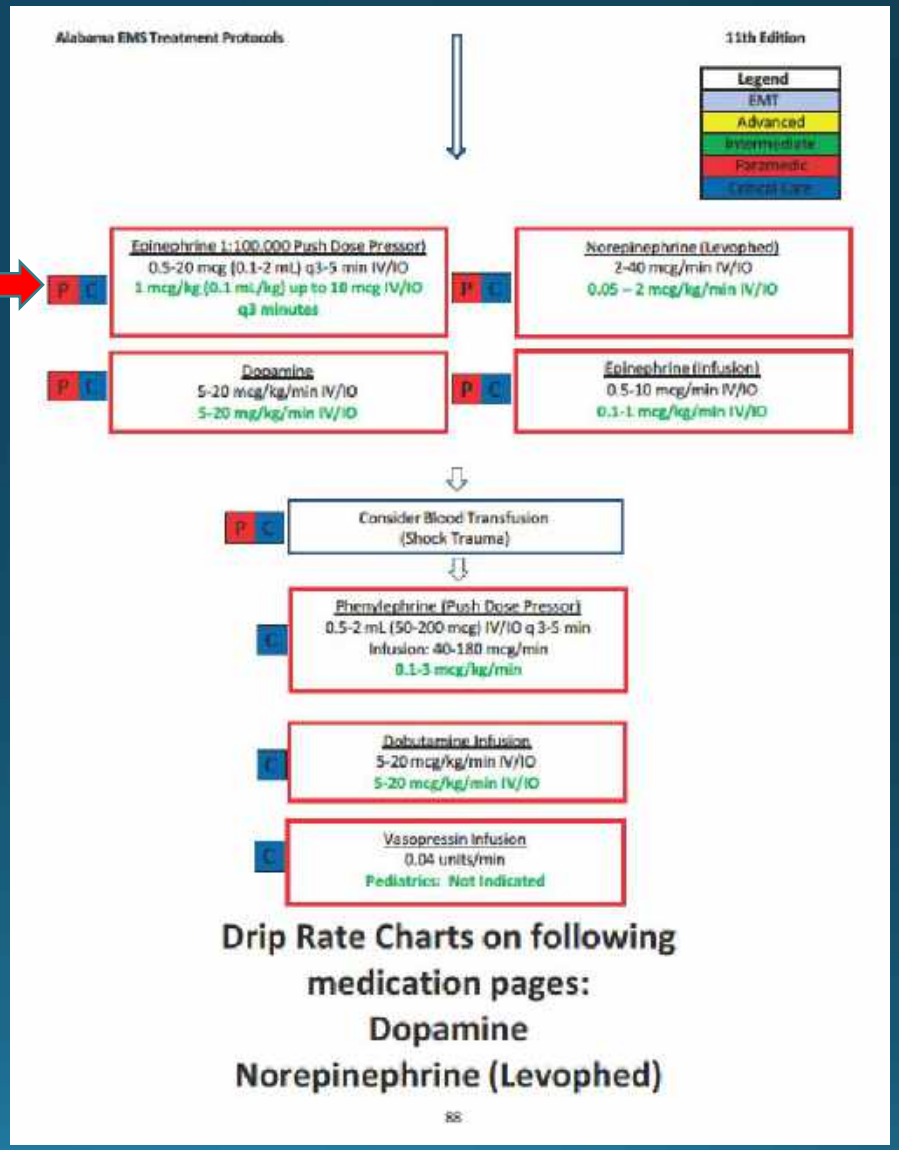
Seizure

- Keppra dosage change



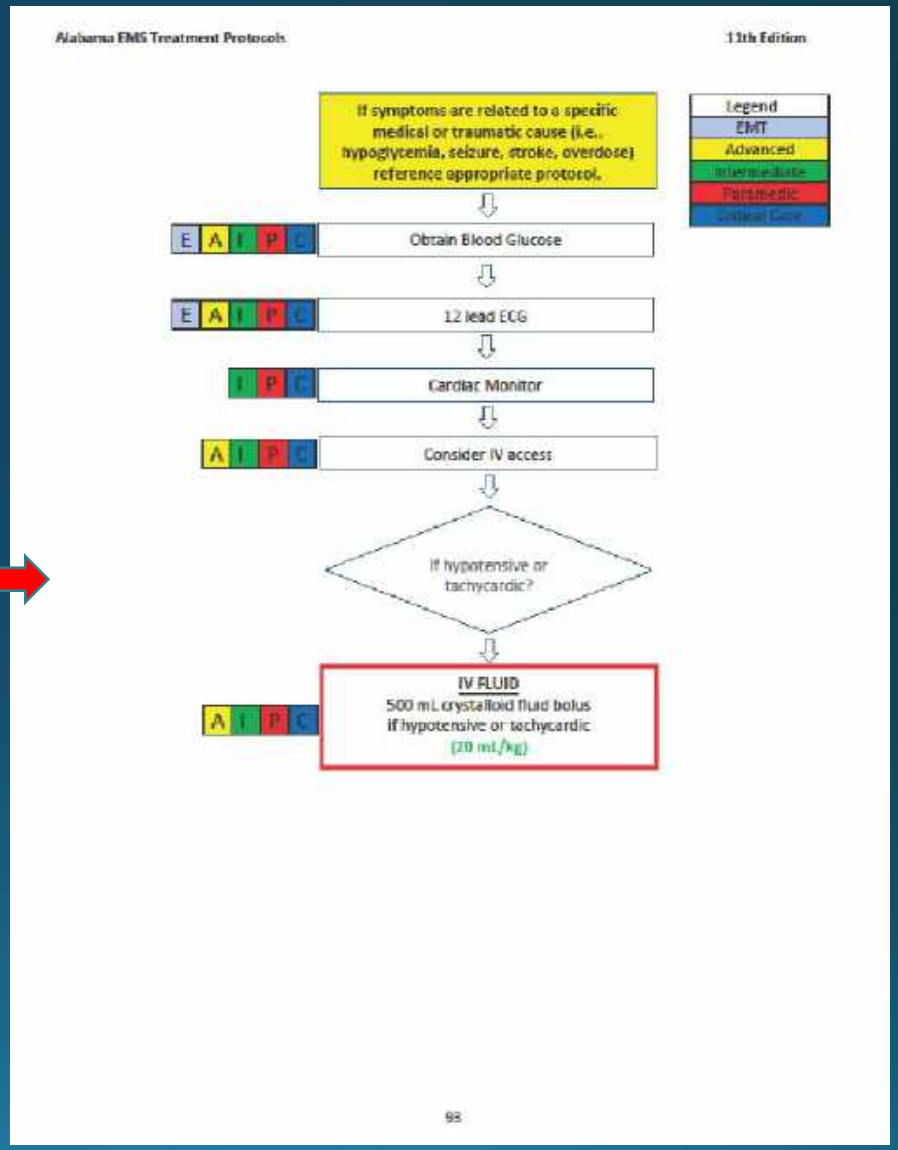
Shock

- Pressor dosage changes



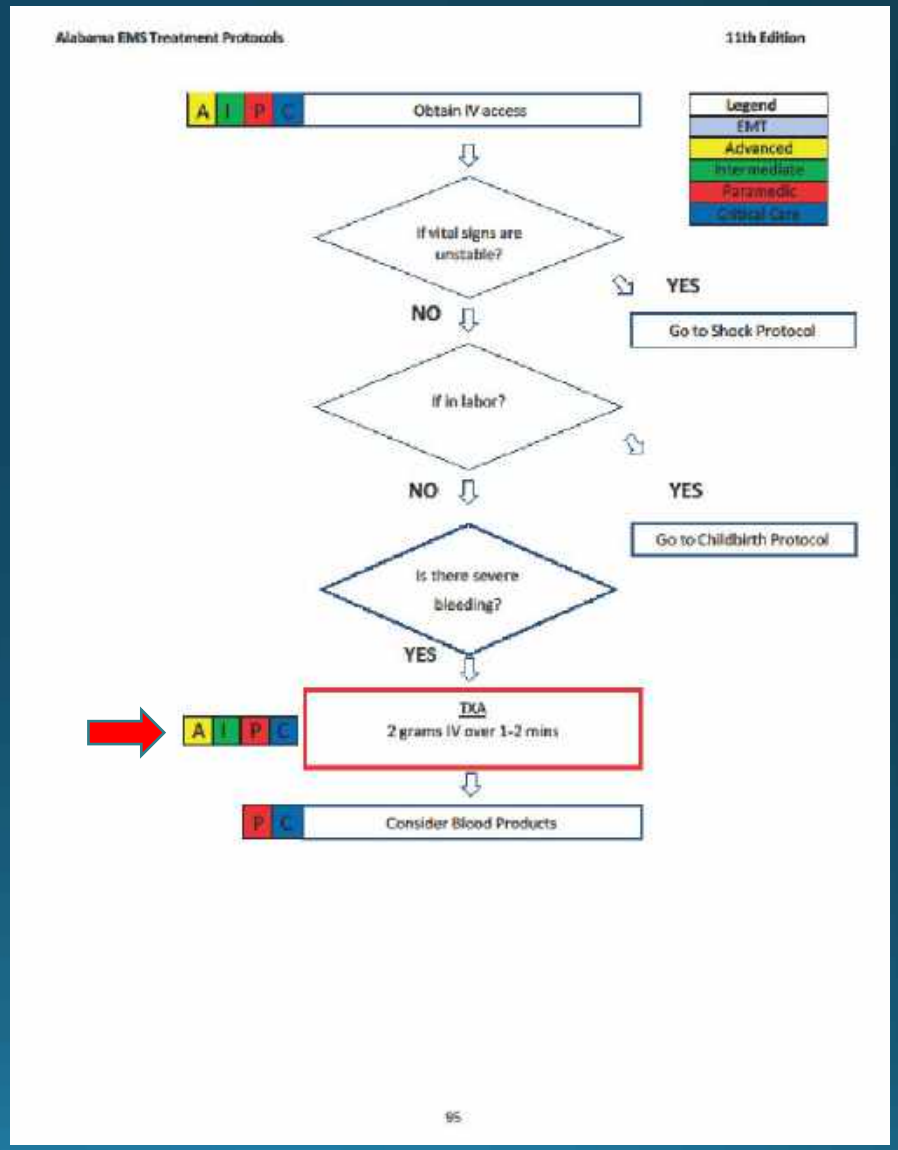
Syncope

- IV fluid changes



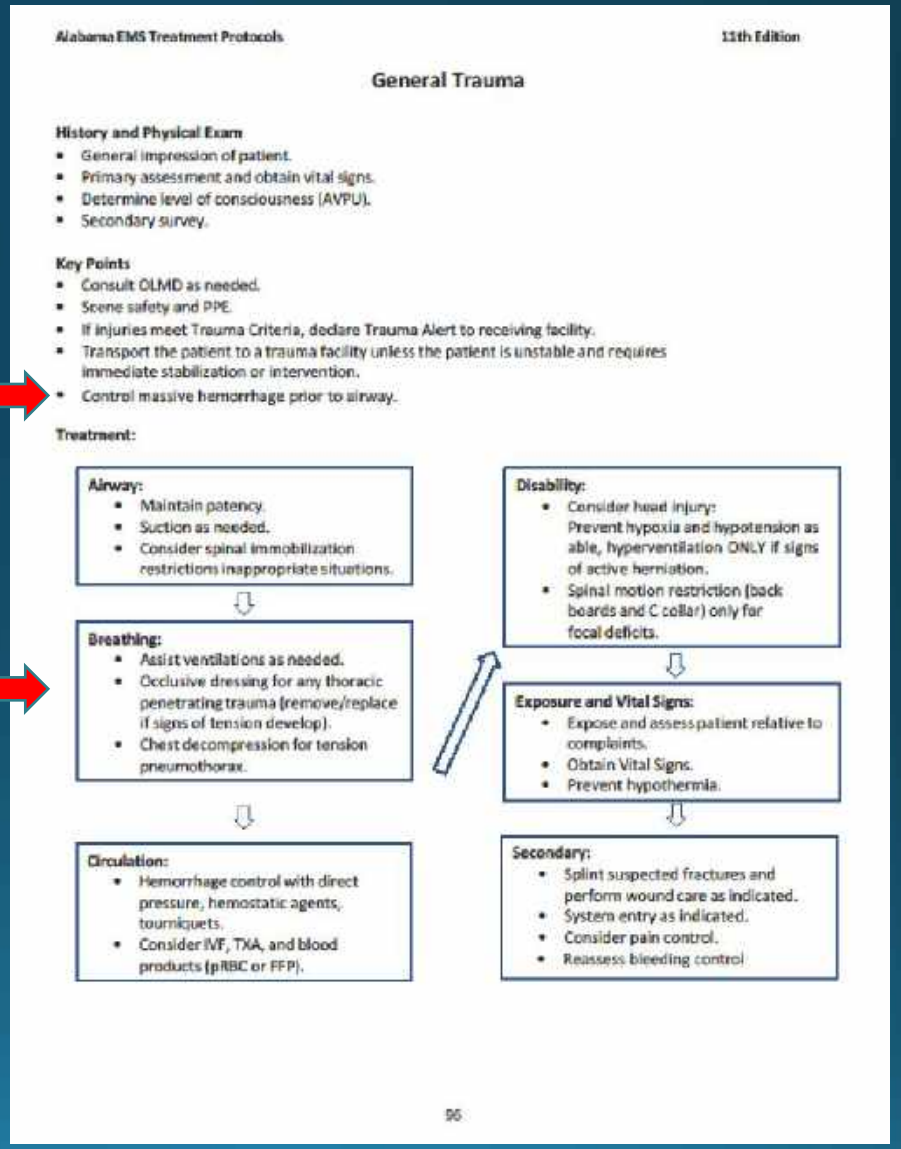
Vaginal Bleeding

- TXA dosage



General Trauma

- Massive hemorrhage control
- Bleeding control reassessment



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General Trauma

History and Physical Exam

- General impression of patient.
- Primary assessment and obtain vital signs.
- Determine level of consciousness (AVPU).
- Secondary survey.

Key Points

- Consult OLMD as needed.
- Scene safety and PPE.
- If injuries meet Trauma Criteria, declare Trauma Alert to receiving facility.
- Transport the patient to a trauma facility unless the patient is unstable and requires immediate stabilization or intervention.
- Control massive hemorrhage prior to airway.

Treatment:

Airway:
- Maintain patency.
- Suction as needed.
- Consider spinal immobilization restrictions inappropriate situations.

Breathing:
- Assist ventilations as needed.
- Occlusive dressing for any thoracic penetrating trauma (remove/replace if signs of tension develop).
- Chest decompression for tension pneumothorax.

Circulation:
- Hemorrhage control with direct pressure, hemostatic agents, tourniquets.
- Consider IVF, TXA, and blood products (pRBC or FFP).

Disability:
- Consider head injury: Prevent hypoxia and hypotension as able, hyperventilation ONLY if signs of active herniation.
- Spinal motion restriction (back boards and C collar) only for focal deficits.

Exposure and Vital Signs:
- Expose and assess patient relative to complaints.
- Obtain Vital Signs.
- Prevent hypothermia.

Secondary:
- Splint suspected fractures and perform wound care as indicated.
- System entry as indicated.
- Consider pain control.
- Reassess bleeding control

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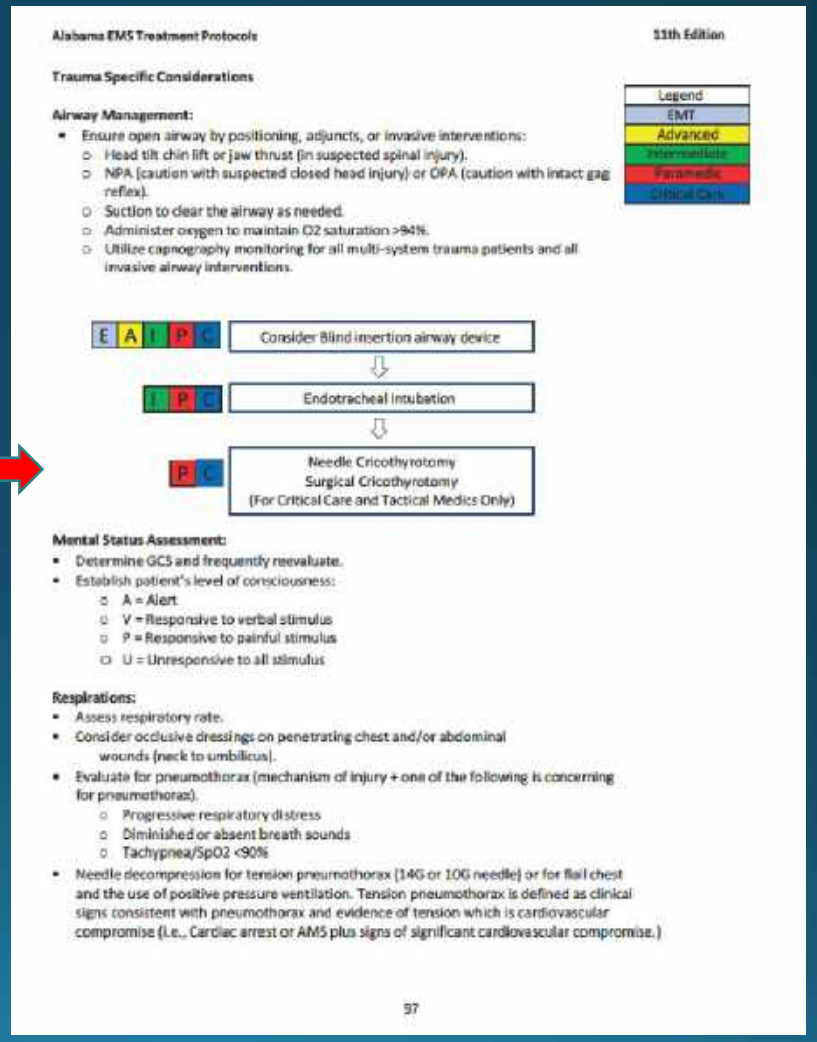
General Trauma- Airway Management

- Needle cricothyrotomy



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Trauma Specific Considerations

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Airway Management:

- Ensure open airway by positioning, adjuncts, or invasive interventions:
  - Head tilt chin lift or jaw thrust (in suspected spinal injury).
  - NPA (caution with suspected closed head injury) or OPA (caution with intact gag reflex).
  - Suction to clear the airway as needed.
  - Administer oxygen to maintain O2 saturation >94%.
  - Utilize capnography monitoring for all multi-system trauma patients and all invasive airway interventions.

E A I P C — Consider Blind insertion airway device

I P C — Endotracheal Intubation

P C — Needle Cricothyrotomy
Surgical Cricothyrotomy
(For Critical Care and Tactical Medics Only)

Mental Status Assessment:

- Determine GCS and frequently reevaluate.
- Establish patient's level of consciousness:
  - A = Alert
  - V = Responsive to verbal stimulus
  - P = Responsive to painful stimulus
  - U = Unresponsive to all stimulus

Respirations:

- Assess respiratory rate.
- Consider occlusive dressings on penetrating chest and/or abdominal wounds (neck to umbilicus).
- Evaluate for pneumothorax (mechanism of injury + one of the following is concerning for pneumothorax).
  - Progressive respiratory distress
  - Diminished or absent breath sounds
  - Tachypnea/SpO2 <90%
- Needle decompression for tension pneumothorax (14G or 10G needle) or for flail chest and the use of positive pressure ventilation. Tension pneumothorax is defined as clinical signs consistent with pneumothorax and evidence of tension which is cardiovascular compromise (i.e., Cardiac arrest or AMS plus signs of significant cardiovascular compromise.)

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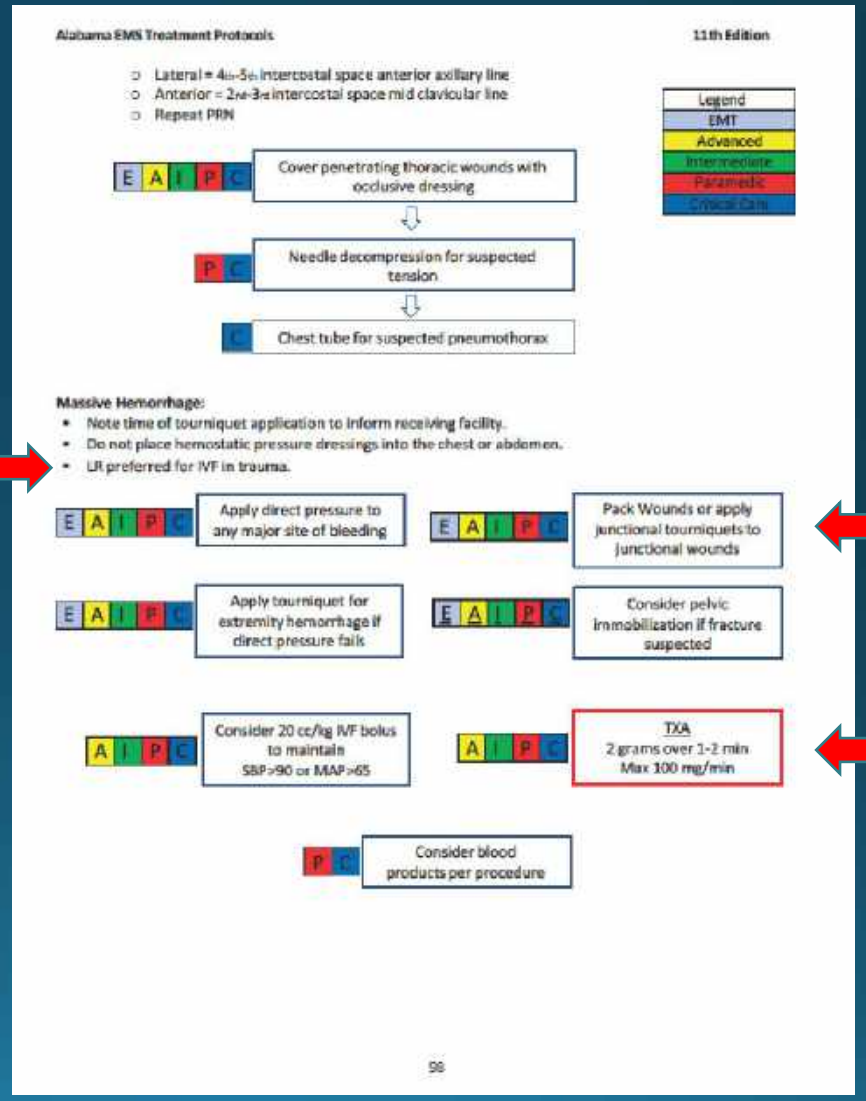
General Trauma- Massive Hemorrhage

- Wound packing
- Junctional tourniquets
- IVF recommendation change



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- Lateral = 4th-5th intercostal space anterior axillary line
- Anterior = 2nd-3rd intercostal space mid clavicular line
- Repeat PRN

Legend: EMT, Advanced, Intermediate, Paramedic, Critical Care

E A I P C — Cover penetrating thoracic wounds with occlusive dressing

P C — Needle decompression for suspected tension

C — Chest tube for suspected pneumothorax

Massive Hemorrhage:

- Note time of tourniquet application to inform receiving facility.
- Do not place hemostatic pressure dressings into the chest or abdomen.
- LR preferred for IVF in trauma.

E A I P C — Apply direct pressure to any major site of bleeding

E A I P C — Pack Wounds or apply junctional tourniquets to junctional wounds

E A I P C — Apply tourniquet for extremity hemorrhage if direct pressure fails

E A I P C — Consider pelvic immobilization if fracture suspected

A I P C — Consider 20 cc/kg IVF bolus to maintain SBP>90 or MAP>65

A I P C — TXA 2 grams over 1-2 min Max 100 mg/min

P C — Consider blood products per procedure

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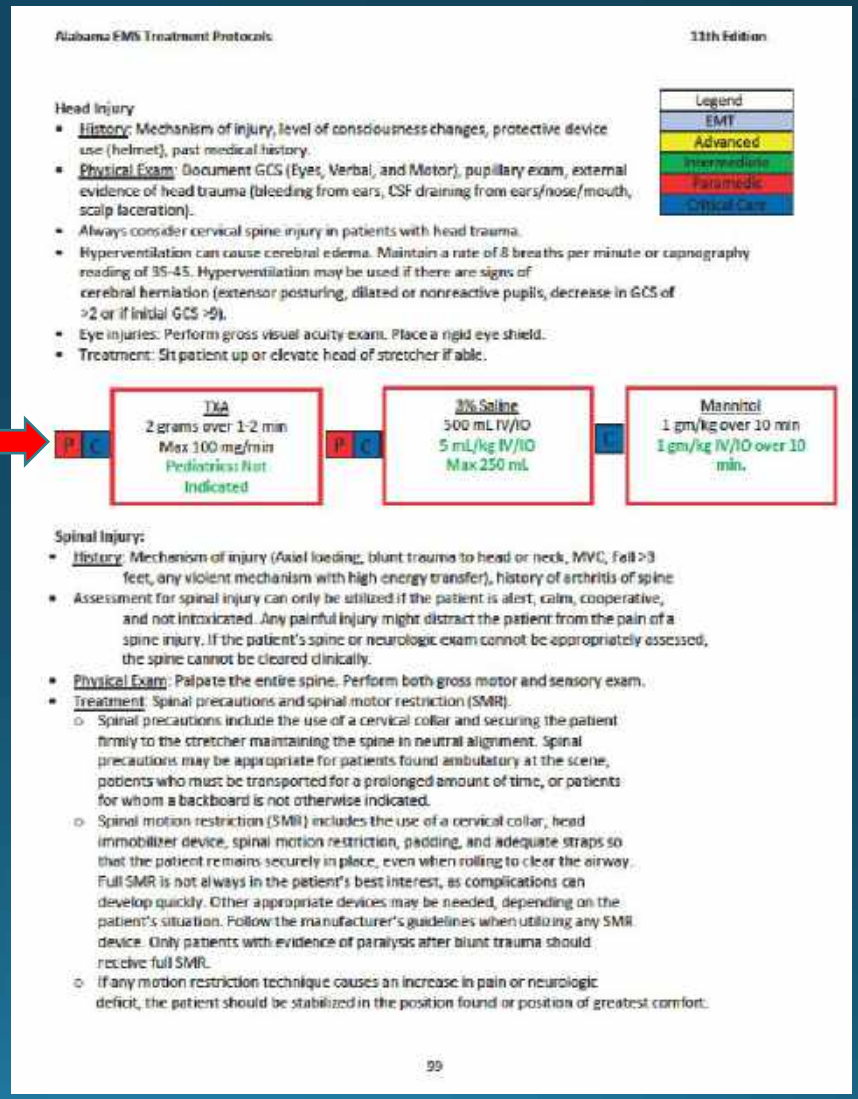
General Trauma- Head Injury

- TXA dosage change
- 3% dosage change



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Head Injury

- History: Mechanism of injury, level of consciousness changes, protective device use (helmet), past medical history.
- Physical Exam: Document GCS (Eyes, Verbal, and Motor), pupillary exam, external evidence of head trauma (bleeding from ears, CSF draining from ears/nose/mouth, scalp laceration).
- Always consider cervical spine injury in patients with head trauma.
- Hyperventilation can cause cerebral edema. Maintain a rate of 8 breaths per minute or capnography reading of 35-45. Hyperventilation may be used if there are signs of cerebral herniation (extensor posturing, dilated or nonreactive pupils, decrease in GCS of >2 or if initial GCS >9).
- Eye injuries: Perform gross visual acuity exam. Place a rigid eye shield.
- Treatment: Sit patient up or elevate head of stretcher if able.

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P C | TXA: 2 grams over 1-2 min, Max 100 mg/min, Pediatrics: Not Indicated

P C | 3% Saline: 500 mL IV/IO, 5 mL/kg IV/IO, Max 250 mL

C | Mannitol: 1 gm/kg over 10 min, 1 gm/kg IV/IO over 10 min.

Spinal Injury:

- History: Mechanism of injury (Axial loading, blunt trauma to head or neck, MVC, Fall >3 feet, any violent mechanism with high energy transfer), history of arthritis of spine
- Assessment for spinal injury can only be utilized if the patient is alert, calm, cooperative, and not intoxicated. Any painful injury might distract the patient from the pain of a spine injury. If the patient's spine or neurologic exam cannot be appropriately assessed, the spine cannot be cleared clinically.
- Physical Exam: Palpate the entire spine. Perform both gross motor and sensory exam.
- Treatment: Spinal precautions and spinal motor restriction (SMR).
  - Spinal precautions include the use of a cervical collar and securing the patient firmly to the stretcher maintaining the spine in neutral alignment. Spinal precautions may be appropriate for patients found ambulatory at the scene, patients who must be transported for a prolonged amount of time, or patients for whom a backboard is not otherwise indicated.
  - Spinal motion restriction (SMR) includes the use of a cervical collar, head immobilizer device, spinal motion restriction, padding, and adequate straps so that the patient remains securely in place, even when rolling to clear the airway. Full SMR is not always in the patient's best interest, as complications can develop quickly. Other appropriate devices may be needed, depending on the patient's situation. Follow the manufacturer's guidelines when utilizing any SMR device. Only patients with evidence of paralysis after blunt trauma should receive full SMR.
  - If any motion restriction technique causes an increase in pain or neurologic deficit, the patient should be stabilized in the position found or position of greatest comfort.

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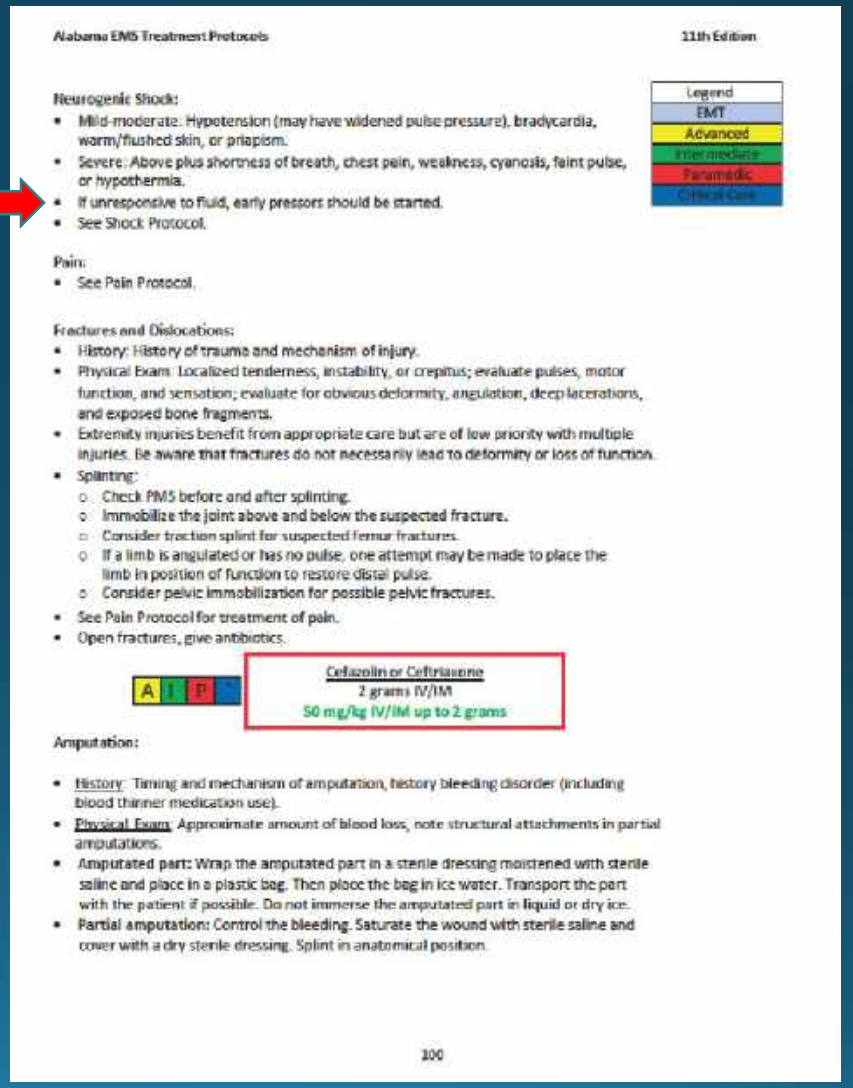
General Trauma- Neurogenic Shock

- Early pressor administration



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Neurogenic Shock:
- Mild-moderate: Hypotension (may have widened pulse pressure), bradycardia, warm/flushed skin, or priapism.
- Severe: Above plus shortness of breath, chest pain, weakness, cyanosis, faint pulse, or hypothermia.
- If unresponsive to fluid, early pressors should be started.
- See Shock Protocol.

Pain:
- See Pain Protocol.

Fractures and Dislocations:
- History: History of trauma and mechanism of injury.
- Physical Exam: Localized tenderness, instability, or crepitus; evaluate pulses, motor function, and sensation; evaluate for obvious deformity, angulation, deep lacerations, and exposed bone fragments.
- Extremity injuries benefit from appropriate care but are of low priority with multiple injuries. Be aware that fractures do not necessarily lead to deformity or loss of function.
- Splinting:
  - Check PMS before and after splinting.
  - Immobilize the joint above and below the suspected fracture.
  - Consider traction splint for suspected femur fractures.
  - If a limb is angulated or has no pulse, one attempt may be made to place the limb in position of function to restore distal pulse.
  - Consider pelvic immobilization for possible pelvic fractures.
- See Pain Protocol for treatment of pain.
- Open fractures, give antibiotics.

A I P

Cefazolin or Ceftriaxone
2 grams IV/IM
50 mg/kg IV/IM up to 2 grams

Amputation:
- History: Timing and mechanism of amputation, history bleeding disorder (including blood thinner medication use).
- Physical Exam: Approximate amount of blood loss, note structural attachments in partial amputations.
- Amputated part: Wrap the amputated part in a sterile dressing moistened with sterile saline and place in a plastic bag. Then place the bag in ice water. Transport the part with the patient if possible. Do not immerse the amputated part in liquid or dry ice.
- Partial amputation: Control the bleeding. Saturate the wound with sterile saline and cover with a dry sterile dressing. Splint in anatomical position.

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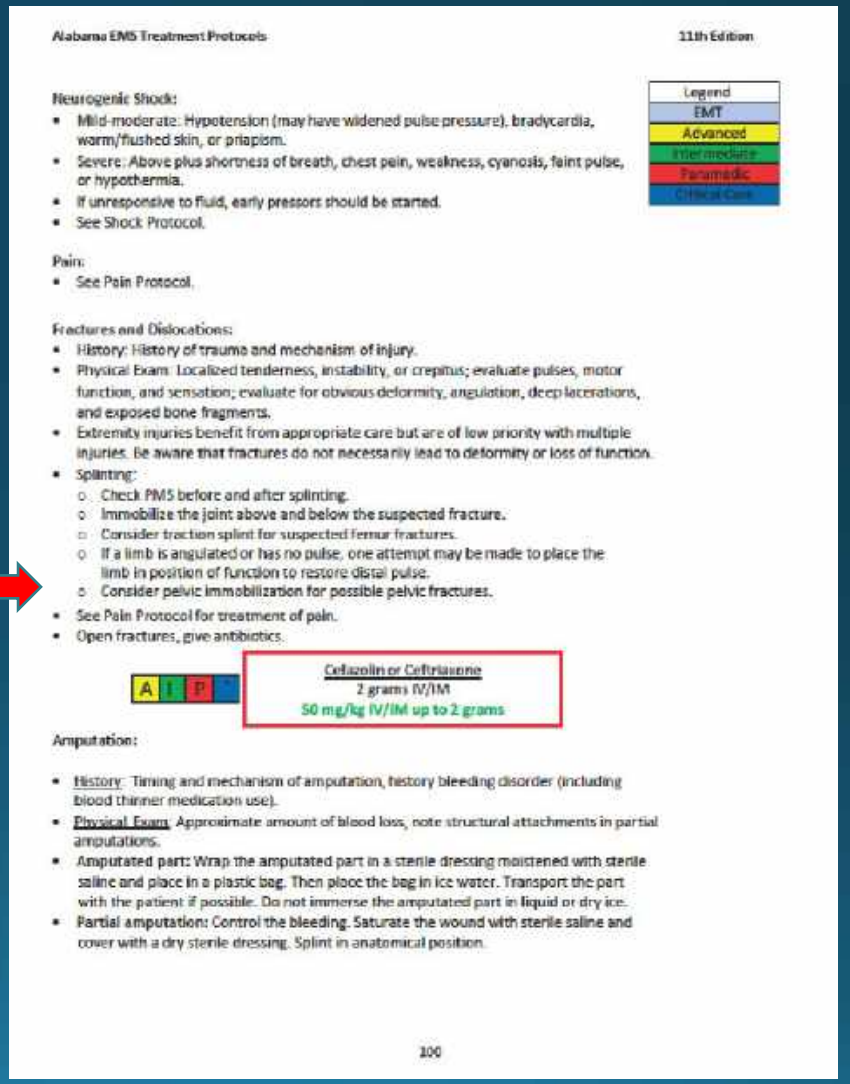
General Trauma- Fractures and Dislocations

- Pelvic immobilization



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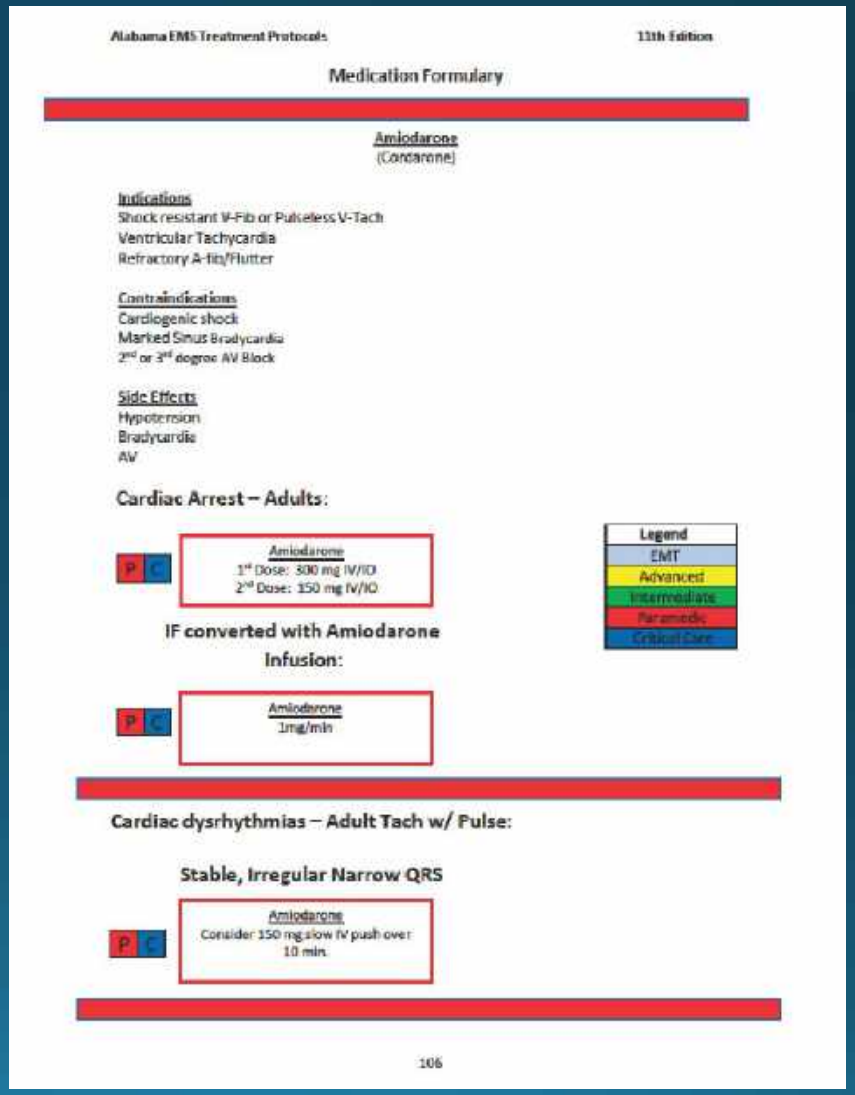
Medication Formulary

- Formatting changes
- Indications and contraindications



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Medication Formulary

Amiodarone
(Cordarone)

Indications
Shock resistant V-Fib or Pulseless V-Tach
Ventricular Tachycardia
Refractory A-fib/Flutter

Contraindications
Cardiogenic shock
Marked Sinus Bradycardia
2nd or 3rd degree AV Block

Side Effects
Hypotension
Bradycardia
AV

Cardiac Arrest – Adults:

P C Amiodarone
1st Dose: 300 mg IV/IO
2nd Dose: 150 mg IV/IO

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IF converted with Amiodarone Infusion:

P C Amiodarone
1mg/min

Cardiac dysrhythmias – Adult Tach w/ Pulse:

Stable, Irregular Narrow QRS

P C Amiodarone
Consider 150 mg slow IV push over 10 min

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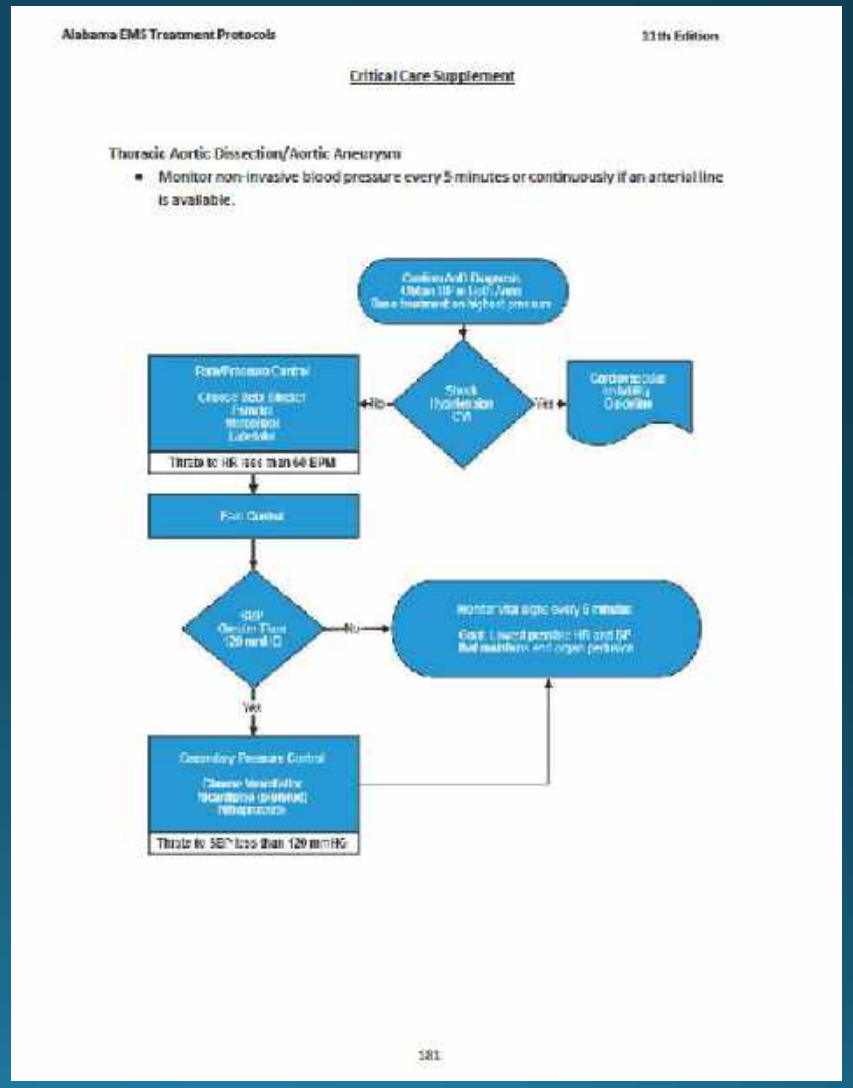
Critical Care

- Guideline to supplement
- Structural Searching Procedure removed



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Critical Care Supplement

Thoracic Aortic Dissection/Aortic Aneurysm

- Monitor non-invasive blood pressure every 5 minutes or continuously if an arterial line is available.

Conclusion

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