Clinical Practice Guidelines

Advanced Life Support
Basic Life Support

For Utilization by Virtua EMS, Medical Transport, and agencies under Virtua M.O.R.E.

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Legend	Definition
E	EMT Standing Orders
P	Paramedic Standing Orders
CF/EC	Paramedic Communication Failure or Extended Care Orders
	Caution Information – Red Flag
	Contact Medical Command
	Orders for Pediatric Patients

EMS Protocols – (2023)

These protocols are a “living document” developed and drafted by the Protocol Committee of Vermont Emergency Medical Services. Permission was granted to New Jersey to utilize this document. They have been reviewed and edited to be consistent with New Jersey EMS standards by the NJ Mobile Intensive Care Advisory Committee.

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Please Note: For visual clarity, trademark and registered symbols have not been included with drug, product, or equipment names.

DISCLAIMER: Although the authors of this document have made great efforts to ensure that all the information is accurate, there may be errors. The authors cannot be held responsible for any such errors. To report a potential error to these protocols, contact your agency Chief, Clinical Manager or Medical Director.

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Preface

We welcome you to the 2023 Virtua EMS clinical protocols. These protocols represent the work of many people across the state and the continued evolution of prehospital medicine in New Jersey. In this process, these protocols have been reviewed by and specific feedback has been received and incorporated from medical directors and EMS stakeholders from across the state.

Emergency Medical Services stakeholders have attempted to ensure that all information in these protocols is accurate and in accordance with the best medical evidence, available and relevant professional guidelines as commonly practiced at the time of publication. Use of these protocols is intended for New Jersey EMS organizations and their affiliated personnel functioning under medical direction. EMS medical directors may restrict but not expand the scope of practice at each level as outlined in these protocols.

We continually scan for errors of all types (medication dosing, spelling, grammar, or punctuation), clarify wording that may be confusing, incorporate feedback from EMS providers, and monitor medical literature to keep abreast of current EMS practice. Please contact the EMS Chief, Clinical Manager or Medical Director if you identify any errors.

All providers functioning within the EMS system are required to be familiar with the contents of this document pertinent to their level of training and licensure. Agency heads are responsible for assuring that any updates are provided to their affiliated personnel and any required training and credentialing occurs. Any updates will also be sent to all EMS providers that have provided EMS with a valid email address.

When using electronic version of this document, you will find hyperlinks to each referenced protocol.

IMPORTANT CLARIFICATIONS AND EXPLANATIONS

Protocol Implementation

These protocols are written for the National EMS Scope of Practice Model levels (EMT and Paramedic). When an entire agency has completed training on these protocols, they may begin to use these new protocols.

EMR Scope of Practice

The skills and interventions of the EMR scope of practice are described in the EMR Routine Patient Care section of this document.

Protocol Labeling

Protocols that are labeled #-A or #-P indicate the adult and pediatric versions of that protocol when appropriate. If no designation is listed and it is not obvious (such as newborn resuscitation), the protocol applies to both adult and pediatric patients.

Standing Orders Are Cumulative

Standing orders are those orders that may be carried out by an EMS provider – at his or her discretion – without the need for on-line Medical Command. However, EMS providers at any level of training are encouraged to contact on-line Medical Command in cases where they believe treatment beyond standing orders is warranted, cases where there is uncertainty regarding treatment or in cases involving medico-legal or jurisdictional issues. The standing orders for paramedics inherently include the standing orders of the lower levels. In the event a patient's condition changes, providers are permitted to utilize an alternative/additional protocols to address the treatment needs of the patient.

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Preface

Calling for Advanced Life Support

Throughout the protocols, in any case where a paramedic can provide interventions beyond those of an EMT, the protocol indicates, “Call for paramedic intercept, if available.” When the protocol says **call** for paramedic intercept, it means **consider** obtaining an intercept based upon the clinical situation and availability. The intent of this statement is to indicate those clinical situations where a paramedic can provide assessment and interventions beyond those of an EMT. Nothing in these protocols should be interpreted as requiring paramedic level care. When paramedic care is available in the system that has been established locally, whether through that agency’s own personnel, through mutual aid, or intercept agreement, the protocols indicate which clinical situations should receive that level of care.

Transfer of Care

When transferring care of a patient, an on-duty EMS provider must ensure the receiving caregiver is licensed at an equal or higher level unless the patient’s condition and reasonably anticipated complications can be effectively managed by a lower-level provider’s scope practice. For example, a paramedic who is a member of a first responder agency may transfer care of a patient with an uncomplicated ankle injury to an EMT for transport. On the other hand, a patient who receives interventions at a higher level on the scene shall only have care transferred to the same or higher-level provider.

Requests for Out-of-Scope Procedures

Please note that while medical direction may have some variation from facility to facility, on-line Medical Command may not direct providers to practice outside their scope of practice. Likewise, providers should not ask to perform procedures outside their scope of practice as defined within these protocols. Providers that perform a procedure outside their scope of practice risk the loss of their EMS licensure.

Medication and Equipment Options

Multiple medications are sometimes listed within a protocol and multiple options for some medical equipment are provided (eg. LMA, i-gel, King-LT, different types of Intraosseous devices, etc.). This is intended to provide Medical Direction and agencies with options for treatment and help deal with inevitable medication or equipment shortages. This should not be interpreted as requiring agencies to stock all of the medications or devices listed in a given classification. Medical Directors will determine the medication options most suitable for their respective agencies. As an example, agencies may choose to stock only one benzodiazepine or may choose to stock multiple options. When a medication becomes unavailable to an agency and there is no alternative listed in these protocols, the agency head or designee should contact the New Jersey EMS office in a timely fashion. NJ OEMS will work with the agency, hospital, and other parties to identify and approve appropriate alternatives and any training that may be required for a medication not usually listed or approved.

Extended Care/Communication Failure Protocols

Throughout the document you will find sections in relevant protocols identified with an “E” or “CF” in blue. These are intended to be used in circumstances that prevent ALS crewmembers from engaging in two-way communication with medical command.

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Preface

Incident Command
Incident command will be structured in accordance with the Incident Command System (ICS) of the National Incident Management System (NIMS).

Off-Duty EMS Personnel
These protocols apply statewide. EMS providers that are bystanders (off duty outside the normal response area of their affiliated agency) should provide BLS care and notify 911. Once the agency with jurisdiction arrives, care should be transferred.

On-Duty EMS Crews Outside of Normal Response Area
These protocols apply statewide and therefore cover mutual aid responses as well as incidental patient contact regardless of where in New Jersey it occurs.

> **Example 1:** ABC Rescue squad comes across a car crash while returning to their station after transporting to a hospital that is in a different EMS district. ABC Rescue follows these statewide protocols.
>
> **Example 2:** XYZ Fire/Rescue is called to provide mutual aid into a different EMS district on a mass-casualty call. XYZ Fire/Rescue follows these statewide protocols.

Protocol Determination Regarding State Borders
Ambulance services that are licensed in New Jersey and a bordering state shall follow the protocols of the state where patient contact is made, regardless of the destination.

Ambulance services that are licensed in New Jersey only shall follow these protocols at all times.

Continuous Quality Improvement
Quality improvement permeates every aspect of our lives, we strive for a better outcome with each decision. The EMS Protocols are no different. With each edition, we endeavor to make them better than they were before, knowing that we will improve and refine them in the future as evidence, experience, and technology dictate.

1.0 Routine Patient Care

RESPOND TO SCENE IN A SAFE MANNER

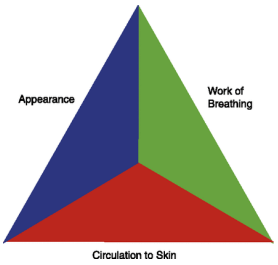
- Review dispatch information.
- Use lights and sirens and/or preemptive devices when responding as appropriate per emergency medical dispatch information and local guidelines.
- Use Incident Command System (ICS) for all responses and scene management.

SCENE ARRIVAL AND SIZE-UP

- Standard precautions, scene safety, environmental hazards assessment, number of patients, need for additional resources, and bystander safety.
- Initiate Mass Casualty Incident procedures as necessary.
- Call for paramedic intercept, if available, for patients with unstable vital signs, respiratory distress, or other life-threatening conditions. If paramedic intercept is not available, initiate transport to the most appropriate facility.

PATIENT APPROACH

- Determine mechanism of injury / nature of illness.
- Patients suffering exsanguinating hemorrhage should have their bleeding control needs immediately addressed. (X-A-B-C-D as opposed to A-B-C-D) Proceed to "Control Active Bleeding" under Circulation
- If patient is in cardiac arrest, refer to the Cardiac Arrest - Adult 3.2A or Cardiac Arrest - Pediatric 3.2P.
- Determine if pediatric protocols apply. As defined by N.J.A.C. 8:41- 1.3, "neonatal" means the period of time from the moment of birth up to and including the 28th day following birth and "pediatric" means the period of time beginning with the 29th day following birth up to, but not including a person's 13th birthday. Use a pediatric reference tool, such as a length-based resuscitation tape, when treating pediatric patients. Contact Medical Command in the case of any uncertainty regarding drug dosing.
- Establish responsiveness.



Comparison Of Adult and Pediatric Assessment Triangle			
	Appearance	Work of Breathing	Circulation of Skin
Adult	Awake, speaking, eye opening, agitated, limp, unresponsive	Labored, noisy, fast, slow, equal chest rise	Pink, flushed, pale, ashen, cyanosis
Pediatric	Muscle tone, interactiveness, consolability, gaze/look, speech/cry	Airway sounds, body position, head bobbing, chest wall retractions, nasal flaring, grunting	Pallor, mottling, cyanosis

- General impression.
- Determine if DNR/POLST protocol applies (DNR/POLST Policy 8.9).

AIRWAY AND BREATHING

- Airway
  - Assess the patient for a patent airway.
  - Open the airway using a head-tilt/chin-lift, or a jaw thrust if suspicious of cervical spine injury. Provide cervical spine protection. (Spinal Motion Restriction – 4.5)
  - Suction the airway as needed.
  - Treat foreign body obstruction in accordance with current guidelines.
  - Evaluate need for and place an oropharyngeal or nasopharyngeal airway if required.
  - Provide advanced airway interventions as appropriate and as trained and credentialed to perform.
- Assess breathing: rate, effort, tidal volume, and breath sounds.
  - If breathing is inadequate, ventilate with 100% oxygen using bag-valve-mask.
  - Administer oxygen to maintain O_2 saturation ≥ 94% (≥ 90% for COPD patient and pediatric patients with cardiac history).
  - Skin signs, pulse oximetry and mental status are important in assessing potential hypoxia.
  - Acquire quantitative/waveform capnography (i.e., $EtCO_2$) and/or CO-oximetry, as appropriate if available.
  - Assess lung sounds and chest.

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1.0 Routine Patient Care

CIRCULATION ASSESSMENT

- Assess patient's pulse, including rate, rhythm, and quality. If pulseless, initiate CPR (High Performance CPR-A4)
- Control active bleeding using direct pressure, pressure bandages, tourniquets, and/or hemostatic bandages. See Tourniquet & Hemostatic Agent – Adult & Pediatric 6.7.
  - Apply a topical hemostatic/pressure bandage, in combination with direct pressure, for wounds in anatomical areas where tourniquets cannot be applied and sustained direct pressure alone is ineffective or impractical. Only apply topical hemostatic agents in a gauze format that supports wound packing. Only utilize topical hemostatic agents which have been determined to be effective and safe in a standardized laboratory injury model.
  - Assess patient's skin color, capillary refill, temperature, and moisture.
- Paramedics: establish IV access and initiate fluid resuscitation as appropriate for the patient's condition.
  - For adult patients, administer fluids to maintain systolic blood pressure per the Shock – Adult 2.21A.
  - For pediatric patients, administer fluids based on physiological signs and therapeutic endpoints per the Shock -- Pediatric 2.21P. Administer IV fluid using a volume-controlled device/method such as an inline 3-way stopcock or similar device.

DISABILITY ASSESSMENT

- Assess level of consciousness appropriate for age; use Glasgow Coma Scale for trauma.
- If altered level of consciousness, check finger stick blood glucose via glucometer if approved for scope.
- Utilize spinal motion restriction, if indicated by assessment: See Advanced Spinal Assessment 6.0.
- For additional pediatric transport guidance, See Pediatric Transportation 8.11.
- For patients experiencing neurological distress/deficit; See Stroke 2.23

Glasgow Coma Scale						
Best Motor Response	Score	*Best Verbal Response*	Verbal - Infants	Score	*Eye Opening*	Score
Obeys commands/spontaneous	6	Oriented	Babbles	5	Open	4
Localizes pain	5	Disoriented	Irritable	4	To voice	3
Withdraws from pain	4	Inappropriate words	Cries to pain	3	To pain	2
Decorticate posturing/flexion	3	Moans, unintelligible	Moans	2	No response	1
Decerebrate posturing/extension	2	No response	No response	1		
No response	1					

A V P U Scale	
Awake	Patient is awake
Verbal	Responds to Verbal stimuli
Pain	Responds to Painful stimuli
Unresponsive	Does not respond

ADVANCED LIFE SUPPORT INTERCEPT

- When indicated in protocol, call for paramedic intercept, if available. If paramedic intercept is unavailable, initiate transport to the most appropriate facility. See ALS Indicators.

TRANSPORT DECISION

- In general, patients should be transported to the closest appropriate hospital. Operational needs and/or patient preference should be considered.
- The destination hospital and mode of transport are determined by the EMS provider with the highest medical level providing patient care; it should not be determined by other emergency responders or bystanders.
- Regionalized systems of care for STEMI, stroke and trauma patients may necessitate transport to a hospital beyond the nearest facility.
- Notify receiving facility as early as possible.
- Lights and sirens pose a risk to providers, the patient, and the general public. Utilization should be justified by the need for immediate medical intervention that is beyond the capabilities of the ambulance crew using available supplies and equipment. Use of lights and sirens should be documented on the patient care report. Exceptions can be made under extraordinary circumstances.
- https://www.nj.gov/health/ems/documents/special_services/nj_ems_vehicle_operations_safety_guidelines.pdf Determine need for aeromedical transportation when indicated by patient acuity and ground transport time.
  - Refer to: Air Medical Transport 8.1 and Trauma Triage and Transport Decision 8.4 as necessary.
  - NJ OEMS Fly/Drive guidance https://www.nj.gov/health/ems/special-services/fly-or-drive-criteria/#1

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1.0 Routine Patient Care

SECONDARY/FOCUSED ASSESSMENT AND TREATMENT

- Obtain chief complaint, history of present illness, and prior medical history.
- Complete a physical assessment as appropriate for the patient's presentation.
- Refer to appropriate protocol(s) for further treatment options.
- Determine level of pain.
- Consider field diagnostic tests including cardiac monitoring, obtain and transmit 12-lead ECG, blood glucose (if available), temperature, stroke assessment, pulse oximetry, quantitative/ waveform capnography, point-of-care ultrasound, etc.
- Dress and bandage lacerations and abrasions.
- Cover evisceration with a saline-moistened sterile dressing.
- Maintain normal body temperature.
- Stabilize impaled objects. Do not remove an impaled object unless it interferes with CPR or your ability to maintain the patient's airway.
- Monitor vital signs at least every 15 minutes (at least every 5 minutes if the patient is unstable).
- For pediatric patients, examine for any bruising, injury, or other potential signs of abuse.
- For geriatric patients, consider circumstances surrounding events to determine the potential of abuse.

MAJOR MULTIPLE SYSTEM TRAUMA

- Patients that meet trauma criteria must be expeditiously transported into the trauma system to maximize the likelihood of survival. (See Trauma Triage and Transport Decision Protocol 8.4.)
- Minimize scene time to less than 10 minutes post-extrication.
- On-scene field measures should be limited to the primary assessment, rapid trauma assessment, hemorrhage control, CPR, placement of a cervical collar and spinal motion restriction if indicated, rapid extrication if indicated, airway maneuvers, and chest injury management. Other treatment and assessment should be carried out enroute to the hospital.

CIRCUMSTANCES NOT COVERED UNDER STATEWIDE EMS PROTOCOLS

- It is impossible to write a protocol for every potential situation. In rare instances where the patient's best interests may not be specifically addressed in a protocol, contact on-line Medical Command.
- Please note that while medical direction can have some variation from facility to facility, on-line Medical Direction may not direct providers to practice outside their scope of practice, and likewise, providers should not request to perform procedures outside their scope of practice as defined within these protocols.

RESPIRATORY REFERENCE TABLES

Bag-Valve-Mask Ventilation (BVM) Rates		
Patient	Basic Airway	Supraglottic/ETT*
Adult	10 – 12 breaths per minute	6 – 10 breaths per minute
Child	12 – 20 breaths per minute	8 – 10 breaths per minute
Infant	20 – 30 breaths per minute	8 – 10 breaths per minute

**** Ventilation rates should be titrated to goal $EtCO_2$, if available, or patient conditions (e.g. severe asthma, aspirin overdose, and traumatic brain injury).***

- **When a child tires and is unable to maintain adequate oxygenation, respiratory failure occurs and may lead to rapid cardiac arrest.**
- **Children under 3 years of age do not require a blood pressure, however; the child's perfusion status requires close monitoring and documentation.**

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1.0 Routine Patient Care

Pulse Oximetry Readings and Oxygen Administration		
% O2 Saturation	Ranges	General Patient Care
≥ 94%	Normal	Usually indicates adequate oxygenation; validate with clinical assessment (see below).
90% – 93%	Mild hypoxia	Consider O2 to maintain saturation ≥ 94%. Caution in COPD patients.
< 90%	Moderate to severe hypoxia	Give oxygen to maintain saturation 94%, as needed.

Notes:

- Obtaining pulse oximetry on agitated children can be difficult; assess for S/S of hypoxia: skin perfusion/color, mental state, etc.
- If a patient is profoundly anemic or dehydrated, oxygen saturation may be 100%, but patient may be hypoxemic.
- False pulse oximetry readings may occur in the following: hypothermia, hyperthermia, acidosis, alkalosis, hypoperfusion, carbon monoxide poisoning, hemoglobin abnormality (sickle cell anemia), vasoconstriction, and in the presence of nail polish.

$ETCO_2$ Readings and Ventilatory Rates		
$EtCO_2$ Reading	Ranges	General Patient Care
35 mmHg – 45 mmHg	Normal	Usually indicates adequate ventilation; validate with clinical assessment (see below).
> 45 mmHg	Hypercarbia	Consider increasing ventilatory rate, assess adjuncts for occlusions.
< 35 mmHg	Hypocarbia	Consider slowing ventilatory rate.

Signs and Symptoms of Pediatric Respiratory Distress or Failure	
Pediatric Respiratory Distress	Pediatric Respiratory Failure
• Able to maintain adequate oxygenation by using extra effort to move air. • Symptoms include increased respiratory rate, sniffing position, nasal flaring, abnormal breath sounds, head bobbing, intercostal retractions, mild tachycardia.	• Hallmarks include respiratory rate less than 20 breaths per minute for children < 6 years old; < 12 breaths per minute for children < 16 years old; and > 60 breaths per minutes for any child; cyanosis, marked tachycardia or bradycardia, poor peripheral perfusion, decreased muscle tone, mottling, and depressed mental status.

Respiratory distress in children and infants must be promptly recognized and aggressively treated as the patient may decompensate quickly.

Pediatric Vital Signs	Age Group	Respiratory	Heart Rate	Systolic BP
	Newborn	30-50	120-160	>60
	Infant (1-2 mo)	20-40	80-140	>70
	Toddler (1-3 Yr)	20-30	80-130	>70
	Preschool (3-5 yr)	20-30	80-120	>75
	School Age (6-10)	15-30	70-110	>80
	Adolescent (11+yr)	20-30	60-105	>80
	Preterm < 1Kg	30-60	120-160	36-58
	Preterm 1 Kg	30-60	120-160	42-66
	Preterm 2 Kg	30-60	120-160	50-72

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1.2 Extended Care Guidelines

When New Jersey EMS providers treat patients in remote or difficult environments and ambulance transport to hospital care is significantly delayed, it may be necessary to provide extended patient care. Extended care applies to any low resource setting where access to definitive care is delayed or impossible. This may be due to a remote location or infrastructure destruction.

Extended care patients may require repeat administration of medications beyond what is specified in regular protocols or assistance with administration of the patient's prescribed medication.
In an extended care environment, EMS providers will follow the following guidelines:

1. Every effort should be made to contact **Medical Command** if available.
2. If medical direction is unavailable, it is reasonable to administer repeat medication dosing at the same intervals as prescribed in protocol or as prescribed for patient's own medications. Caution must be used to ensure medication administration does not exceed maximum dosing or cumulative effects that may result in over-sedation, hypotension, respiratory depression, etc.
3. If changes to regular protocol are necessary for medication use in extended care situations, these changes appear in the specific protocol under a separate Communication Failure/ Extended Care Section denoted by the following marker:

   CF/EC

4. Interventions performed during extended care circumstances must remain within the provider's scope of practice.

Special circumstances to consider in an extended care environment:

- Protecting the patient from the environment while awaiting extrication and/or transport. This may require an improvised shelter and insulation to protect the patient and providers from rain, snow, and wind.
- Requesting additional resources/personnel early if an extended care call is suspected.
- Oral fluids to maintain a patient's hydration and high-energy foods to maintain caloric requirements if the patient is conscious and able to swallow.
- Limited resources due to difficulty accessing patient and/or transporting equipment to the patient's location. These resources may include:
  - Oxygen
  - Suction
  - Cardiac Monitor/AED
  - Pulse Oximetry
  - Capnography
  - Glucose Meter
  - BP Cuff and Stethoscope
  - Intravenous access
  - Medications
  - Communication with online medical command

2.0A Abdominal Pain (Non-Traumatic) –Adult

EMT STANDING ORDERS	
E	• Routine Patient Care. • Abdominal history and physical exam. • Keep the patient NPO (nothing by mouth). • Allow patient to assume a position of comfort. • Minimize scene time. • If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.
PARAMEDIC STANDING ORDERS	
P	• Establish vascular access. • Acquire 12-lead ECG for patients' age ≥35 with a suspected cardiac event. • See Nausea/Vomiting – Adult & Pediatric 2.11. • If patient is hypotensive, see Shock – Adult 2.21A. • See Pain Management – Adult 2.17A. • Assess and monitor the cardiac rhythm, treat as indicated.

PEARLS:

- Obtain complete abdominal history
  - History of pain (OPQRST)
  - History of recent trauma
  - History of nausea/vomiting (color, bloody, coffee grounds)
  - History of bowel movement (last BM, diarrhea, bloody, tarry)
  - History of urine output (painful, dark, bloody)
  - History of prior abdominal surgery
  - History of acute onset of back pain
  - History of last menses/vaginal bleeding/pelvic pain
  - History of anticoagulant medication
  - SAMPLE history
- Abdominal physical assessment:
  - Ask the patient to point to the area of pain (palpate this area last).
  - Gently palpate for tenderness, rebound tenderness, distention, rigidity, guarding, and pulsatile masses. Also palpate the flank for CVA (costovertebral angle) tenderness.
  - An acute abdomen is rigid with guarding, distension, and diffuse tenderness and may indicate a surgical emergency. An acute abdomen can be caused by many things including the following: appendicitis, cholecystitis, ulcer perforation, diverticulitis, abdominal aortic aneurysm, kidney infection, urinary tract infection, kidney stone, ectopic pregnancy, pelvic inflammatory disease or pancreatitis.

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2.0P Abdominal Pain (Non-Traumatic) –Pediatric

EMT STANDING ORDERS	
E	• Routine Patient Care. • Abdominal history and physical exam. • Keep the patient NPO (nothing by mouth). • Allow patient to assume a position of comfort. • Minimize scene time. • If patient has unstable vital signs, call for Paramedic intercept, if available. If not available, initiate transport to most appropriate facility.
PARAMEDIC STANDING ORDERS	
P	• Establish vascular access. • If patient is hypotensive, see Shock – Pediatric 2.21P. • See Pain Management – Pediatric 2.17P. • See Nausea/Vomiting – Adult & Pediatric 2.11

PEARLS:

- Obtain complete abdominal history
  - History of pain (OPQRST)
  - History of recent trauma
  - History of nausea/vomiting (color, bloody, coffee grounds)
  - History of bowel movement (last BM, diarrhea, bloody, tarry)
  - History of urine output (painful, dark, bloody)
  - History of prior abdominal surgery
  - History of acute onset of back pain
  - History of last menses (if applicable)/vaginal bleeding/pelvic pain
  - SAMPLE history
- Abdominal physical assessment:
  - Ask the patient to point to the area of pain (palpate this area last).
  - Gently palpate for tenderness, rebound tenderness, distention, rigidity, guarding, and pulsatile masses. Also, palpate the flank for CVA (costovertebral angle) tenderness.
  - An acute abdomen is rigid with guarding, distension, and diffuse tenderness and may indicate a surgical emergency. An acute abdomen can be caused by many things including the following: *appendicitis, cholecystitis, ulcer perforation, bowel obstruction, kidney infection, urinary tract infection, kidney stone, ectopic pregnancy, pelvic inflammatory disease, pancreatitis or constipation*.

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2.1 Adrenal Insufficiency –Adult & Pediatric

EMT STANDING ORDERS	
B	• Routine Patient Care. • Obtain history of underlying condition. • Call for paramedic intercept, if available. If not available, initiate transport to appropriate facility
PARAMEDIC STANDING ORDERS	
P	• Establish vascular access
COMMUNICATION FAILURE/EXTENDED CARE	

CF	• Assist the patient/caregiver in giving the patient his or her own medications, as prescribed.
	• Patients with the following signs and symptoms may need a stress dose:
	  ○ Nausea, vomiting, weakness, dizziness, abdominal pain, muscle pain, dehydration, hypotension, tachycardia, fever, mental status changes.
	• Administer stress dose steroids to the patient that meets criteria:
	  ○ **Adult**: History of adrenal insufficiency;
	  ▪ ***Methylprednisolone*** 80-125 mg IV/IO/IM **OR**
	  ○ **Pediatric**: History of adrenal insufficiency; Care provider for child should have appropriate body surface area dose of *hydrocortisone*; assist/administer appropriate dose.
	  ▪ If *hydrocortisone* is not available, use the following alternative:
	  ➢ ***Methylprednisolone***: IV/IO/IM
	  ❖ 0 – 24 mo.: 5 mg; 25 mo. – 10 yrs.: 10 mg; > 10yrs.: 20 mg
	  OR
	• If symptoms continue after initial stress dose, may administer additional dose:
	  ○ **Adult**:
	  ▪ ***Methylprednisolone*** 80-125 mg IV/IO/IM **OR**
	  ○ **Pediatric**: Repeat the initial stress dose steroid that was administered
	• Additional Considerations:
	  ○ Aggressive volume replacement therapy.
	  ▪ Administer 10-20 mL/kg ***crystalloid solution*** IV/IO
	  ○ Vasopressors may be needed to treat refractory hypotension, see Shock – Adult 2.21A or Shock – 2.21P.
	  ○ Treat for hypoglycemia; see Diabetic Emergencies (Hypoglycemia) – Adult 2.8A or Diabetic Emergencies (Hypoglycemia) – Pediatric 2.8P.
	  ○ Normalize body temperature

PEARLS

A "stress dose" of steroids should be given to patients with known chronic adrenal insufficiency who have the following illnesses/injuries:

- Shock (any cause).
- Fever >100.4°F and ill appearing.
- Multi-system trauma.
- Submersion injury.
- Environmental hyperthermia or hypothermia.
- Multiple long bone fractures.
- Dehydration associated with vomiting/diarrhea.
- Respiratory distress.
- 2nd or 3rd degree burns >5% BSA
- Etomidate may precipitate adrenal crisis.

PEARLS

- Adrenal insufficiency results when the body does not produce the essential life-sustaining hormones cortisol and aldosterone, which are vital to maintaining blood pressure, cardiac contractility and water/salt balance. A number of conditions can cause chronic adrenal insufficiency:
- Congenital or acquired disorders of the adrenal gland.
- Congenital or acquired disorders of the pituitary gland.
- Long-term use of steroids (COPD, asthma, rheumatoid arthritis, and transplant patients).
- Acute adrenal insufficiency can result in refractory shock or death in patients on a maintenance dose of steroids who experience illness or trauma and are not given a stress dose and, as necessary, supplemental doses.

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2.2AR Allergic Reaction –Adult

EMT STANDING ORDERS	
E	• Routine Patient Care. • Initiate oxygen therapy as needed. • Do not delay transport as an allergic reaction can progress to anaphylaxis. • Call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.
PARAMEDIC STANDING ORDERS	
P	• Establish vascular access. • ***Diphenhydramine*** 25 – 50 mg IM/IV/IO to treat pruritus/hives.
COMMUNICATION FAILURE/EXTENDED CARE	
CF	• May repeat ***diphenhydramine*** 25 – 50 mg IM/IV/IO. (Maximum dose of 300 mg/24 hours).

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2.2Ana Anaphylaxis –Adult

EMT STANDING ORDERS	

E	• Routine Patient Care.
	• For anaphylaxis administer: (anterolateral thigh preferred administration site)
	  ○ Adult ***epinephrine*** auto-injector 0.3 mg IM
	  ▪ Contact **Medical Command** if additional dosing is required. 
	• Do not delay transport. (Patients receiving epinephrine should be transported. Consider contacting medical command for patients wishing to refuse that have received epinephrine)
	• Call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.

PARAMEDIC STANDING ORDERS	

P	• May repeat ***epinephrine*** *(1:1,000)* 0.3 mg IM every 5 - 15 min as needed for continued symptoms (maximum 3 doses.)
	• Establish vascular access. Administer ***crystalloid solution*** to maintain systolic blood pressure >90 mm Hg in 500 mL boluses.
	  ○ Total volume should not exceed 2,000 mL. See Shock-Adult 2.21A
	• For bronchospasm, administer:
	  ○ ***Albuterol*** 2.5 mg via nebulizer. May repeat every 5 minutes for continued symptoms.
	  OR
	  ○ ***DuoNeb*** 3 mL via nebulizer. May repeat every 5 minutes (maximum 3 doses).
	• ***Diphenhydramine*** 25-50 mg IM/IV/IO (maximum dose 300 mg/24 hours)
	• ***Methylprednisolone*** 40-62.5 mg IV

COMMUNICATION FAILURE/EXTENDED CARE	
CF	• May repeat ***diphenhydramine*** 25 – 50 mg IM/IV/IO. (maximum dose of 300 mg/24 hours). • For anaphylaxis refractory to IM epinephrine, administer ***epinephrine*** infusion 2 – 10 mcg/min, titrated to effect (infusion pump required).

- CAUTION: Epinephrine is available in different routes and concentrations. Providers are advised to re-check the dosing and concentration prior to administration.
- In anaphylaxis, epinephrine should not be delayed administering second-line medications such as diphenhydramine.

PEARLS

- Known/likely allergen exposure AND hypotension or respiratory compromise, OR
- Systemic allergic reaction (multi-system), including two or more of the following:
  - Respiratory distress
  - Airway compromise/impending airway compromise
    - Wheezing/stridor
    - Swelling of lips, tongue, or any airway structures
    - Throat tightness
    - Difficulty or inability swallowing
  - Widespread hives, itching, swelling, flushing
  - Gastrointestinal symptoms: vomiting, abdominal pain
  - Altered mental status, syncope, cyanosis, delayed capillary refill or decreased level of consciousness associated with known or suspected allergic reaction
  - Signs of shock see Shock – Adult 2.21A.
  - Do not delay transport except for epinephrine administration.
  - Patients can present with anaphylaxis without a prior history of allergy.
  - Wheezing may be caused by anaphylaxis but it is not the only sign.
  - Consider patients with history of asthma as having a high risk of anaphylaxis.

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2.2P-AR Allergic Reaction - Pediatric

Allergic Reaction presents with non-anaphylactic symptoms involving only one organ system. (i.e., Not associated with vomiting, urticaria, pruritus)	
EMT	
E	• Routine Patient Care. • Administer oxygen as patient condition indicates. • Maintain normal body temperature. • Do not delay transport. (Patients who receive epinephrine must be transported.) • Call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.
Paramedic Standing Orders	
P	• Establish IV access. • For urticaria or pruritus, administer ***diphenhydramine*** 1mg/kg, up to a max dose of 50 mg IM, IV

2.2P-Ana Anaphylaxis - Pediatric

EMT	

E	• Routine Patient Care.
	• For anaphylaxis, administer ***epinephrine*** auto-injector: (anterolateral thigh preferred administration site)
	  ○ For patients between 15 and 30 kg (33 - 66 lbs., **White**/**Blue**/**Orange** on weight based tape), use appropriate 0.15mg ***epinephrine*** auto-injector.
	  ○ For patients 30 kg or heavier (> 66 lbs., **Green** or above on weight-based tape), use 0.3mg ***epinephrine*** auto-injector.
	  ○ For patients less than 15 kg (33 lbs.), contact **Medical Command**.
	• Do not delay transport. (Patients who receive epinephrine should be encouraged to consent to transport.)
	• Call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.

Paramedic Standing Orders	

P	• ***Epinephrine*** (1:1,000) (1 mg/mL): Administer 0.01 mg/kg (0.01 mL/kg) IM (max single dose 0.3 mg).
	  ○ May repeat ***epinephrine*** every 5 – 15 min as needed for continued symptoms.
	• For bronchospasm, administer:
	  ○ **albuterol** 2.5 mg via nebulizer x 1 dose
	  OR
	  ○ ***DuoNeb*** 3 mL via nebulizer.
	  ▪ May repeat every 5 – 15 minutes (maximum 3 doses).
	• Establish vascular access.
	• Administer 20 mL/kg bolus isotonic ***crystalloid solution*** if hypotension is present. May repeat x 2 as needed.
	• ***Diphenhydramine*** 1 mg/kg PO/IV/IM/IO to treat pruritis (maximum dose 50 mg).
	• ***Methylprednisolone*** 2 mg/kg IV (max 125 mg) every 6 hours if symptomatic

Paramedic Communication Failure Orders	
CF/EC	• May repeat ***diphenhydramine*** 1 mg/kg PO/IV/IM/IO. (Maximum dose of 50 mg).

- CAUTION: Epinephrine is available in different routes and concentrations. Providers are advised to re-check the dosing and concentration prior to administration.
- In anaphylaxis, epinephrine should not be delayed administering second-line medications such as diphenhydramine.

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2.2P-Ana Anaphylaxis - Pediatric

Anaphylaxis is characterized by acute onset of symptoms involving:

- The skin(urticaria) and/or mucosa with any of the following:
  - Respiratory compromise or
  - Decreased blood pressure or
  - Signs of end-organ dysfunction/hypoperfusion

  OR
- Hypotension after known exposure to a known allergen (defined by using the Pediatric Vital Signs 1.0)

  OR
- Involvement of two or more body systems occurring rapidly after exposure to a known allergen (described, but not limited to those listed below)
  - Skin and/or mucosal involvement (urticaria, itchy, swollen tongue/lips)
  - Respiratory compromise (dyspnea, wheeze, stridor, hypoxemia)
  - Persistent gastrointestinal symptoms (vomiting, abdominal pain)

PEARLS:

- Known/likely allergen exposure AND hypotension or respiratory compromise, OR
- Systemic allergic reaction (multi-system), including two or more of the following:
  - Respiratory distress
  - Airway compromise/impending airway compromise
    - Wheezing/stridor
    - Swelling of lips, tongue, or any airway structures
    - Throat tightness
    - Difficulty or inability swallowing
  - Widespread hives, itching, swelling, flushing
  - Gastrointestinal symptoms: vomiting, abdominal pain
  - Altered mental status, syncope, cyanosis, delayed capillary refill or decreased level of consciousness associated with known or suspected allergic reaction
  - Signs of shock, see Shock – Pediatric 2.21P.
- Do not delay transport except for epinephrine administration.
- Patients can present with anaphylaxis without a prior history of allergy.
- Wheezing may be caused by anaphylaxis, but it is not the only sign.
- Consider patients with history of asthma as having a high risk of anaphylaxis.

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2.3A Altered Mental Status (Unknown Etiology) –Adult

EMT

E

- Routine Patient Care.
- Administer ***oxygen*** to maintain O_2 saturation ≥ 94%.
- Assist inadequate ventilations with BVM (bag-valve-mask ventilation) and oral/nasal airway.
  - Anticipate and avoid aspiration.
- Obtain **blood glucose level**
- If blood glucose < 60, as reported from bystanders, with associated altered mental status, refer to Diabetic Emergencies (Hypoglycemia) – Adult 2.8A.
- If the patient's mental status and respiratory effort are severely depressed, and opiate overdose is suspected:
  - Begin manual ventilation via BVM with 100% oxygen and nasopharyngeal airway.
  - A single spray of ***naloxone*** nasal spray (4mg) into one nostril. May repeat initial dose
    OR
  - **Naloxone** 1 mg (1 mL) per nostril via atomizer for a maximum of 2 mg. May repeat initial dose.
    - Patients given naloxone should be transported to the emergency department for further evaluation.
- If trauma can be excluded, transport the patient in the recovery position. If trauma is suspected, see Advanced Spinal Assessment 6.0.
- Perform a stroke assessment. Refer to Stroke – Adult 2.23 as indicated.
- If patient has unstable vital signs, or additional hypoxia of unknown etiology, call for paramedic intercept, if available. If not available, initiate transport to the closest appropriate facility.
- Minimize scene time.

Paramedic Standing Orders

P

- Establish vascular access.
- For suspected opiate overdose with severe respiratory depression, administer ***naloxone*** 0.4 – 2 mg IV/IM/IO/IN. Refer to Poisoning/Substance Abuse/Overdose - Adult 2.18A
  - Titrate to response.
  - If no response, may repeat the initial dose of ***naloxone*** every 3 – 5 minutes to a max total of 8 mg.
- Obtain blood glucose level.
  - If hypoglycemic, administer ***dextrose***. See Diabetic Emergencies (Hypoglycemia) – Adult 2.8A.
  - If hyperglycemic, give 500 mL bolus crystalloid solution IV/IO. See Diabetic Emergencies (Hyperglycemia) – Adult 2.7A.
- If respiratory arrest, manage airway with OPA/NPA and maintain oxygenation and ventilations with BVM. Initiate advanced airway management as indicated. See Airway Management-Adult 5.1A
- Assess and monitor cardiac rhythm. Treat as indicated per appropriate protocol.
- If suspected toxidrome, refer to Poisoning/Substance Abuse/Overdose - Adult 2.18A.
- If hypotensive (SBP <90) see: Shock – Adult 2.21A
- If patient is violent or agitated: See Behavioral Emergencies Including Suicide Attempts & Threats 2.5

PEARLS

- Altered mental status may be caused by many factors including the following: stroke, drug overdose, infection, hypoglycemia, hyperglycemia or trauma.
- Ensure patient is ventilated between naloxone doses
- Paramedic may titrate use of naloxone in patients with respiratory depression to avoid transition to combative behavior by patient.
- Use appropriate discretion regarding immediate intubation of patients who may quickly regain consciousness, such as hypoglycemic patients after administration of dextrose or opiate overdose patients after administration of naloxone.

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2.3P Altered Mental Status (Unknown Etiology) –Pediatric

EMT

E

- Routine Patient Care.
- Administer ***oxygen*** to maintain O_2 saturation ≥ 94%.
- Assist inadequate ventilations with BVM with oral or nasal pharyngeal airway.
- Anticipate and avoid aspiration.
- Obtain **blood glucose level.**
- If blood glucose < 60 as reported by bystanders, with associated altered mental status, refer to Diabetic Emergencies (Hypoglycemia) – Pediatric 2.8P.
- If the patient's mental status and respiratory effort are severely depressed and opiate overdose is suspected:
  - Administer ***naloxone*** Nasal Spray (4mg formulary) as follows:
    - >11 years old and/or >40 kg: ***naloxone*** 4 mg (may repeat x1 q 3-5 min.)
    - <11 years old and/or <40 kg: Contact **Medical Command**
  - Administer ***naloxone*** (2 mg formulary) as follows:
    - >5 years old and/or >20 kg: naloxone 1 mg (1 mL) per nostril for a total of 2 mg. (may repeat x1 q 3-5 min.)
    - <5 years old and/or <20 kg: Contact **Medical Command**
  - ➢ Patients given naloxone should be transported to the emergency department for further evaluation.
- If trauma can be excluded, transport patient in the coma/recovery position. If trauma suspected, see Advanced Spinal Assessment 6.0.
- If patient has unstable vital signs or additional hypoxia of unknown etiology, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.

Paramedic Standing Orders

P

- Establish vascular access.
- Obtain blood glucose level.
  - If hypoglycemic, administer ***dextrose***. See Diabetic Emergencies (Hypoglycemia) – Pediatric 2.8P.
  - If hyperglycemic, administer 10 mL/kg bolus of isotonic ***crystalloid solution*** IV/IO. See Diabetic Emergencies (Hyperglycemia) – Pediatric 2.7P.
- For respiratory depression, administer ***naloxone*** 0.1 mg/kg IV/IO/IM/IN, max single dose 2 mg.
  - If no response, may repeat initial dose every 3 – 5 minutes.
- If respiratory arrest, manage airway with OPA/NPA and maintain oxygenation and ventilations with BVM. Initiate advanced airway management as indicated. See Airway Management-Pediatric 5.1P
- If hypotensive per age-based tables, administer fluid bolus 20 mL/kg isotonic ***crystalloid solution*** IV/IO. May repeat x2.
- If hypotension persists after 60 mL/kg fluid bolus, administer ***vasopressors*** as needed. See Shock – Pediatric 2.21P.
- Assess and monitor cardiac rhythm. Treat as indicated per appropriate protocol.
- If toxidrome is suspected, refer to Poisoning/Substance Abuse/Overdose – Pediatric 2.18P.
- If the patient is violent or agitated, determine need for sedation. See Behavior Emergencies Including Suicide Attempts & Threats 2.5.

PEARLS

- Altered mental status may be caused by many factors including the following: stroke, drug overdose, infection, hypoglycemia, hyperglycemia or trauma.
- Ensure patient is ventilated between naloxone doses
- Paramedic may titrate use of naloxone in patients with respiratory depression to avoid transition to combative behavior by patient.
- Use appropriate discretion regarding immediate intubation of patients who may quickly regain consciousness, such as hypoglycemic patients after administration of dextrose or opiate overdose patients after administration of naloxone.

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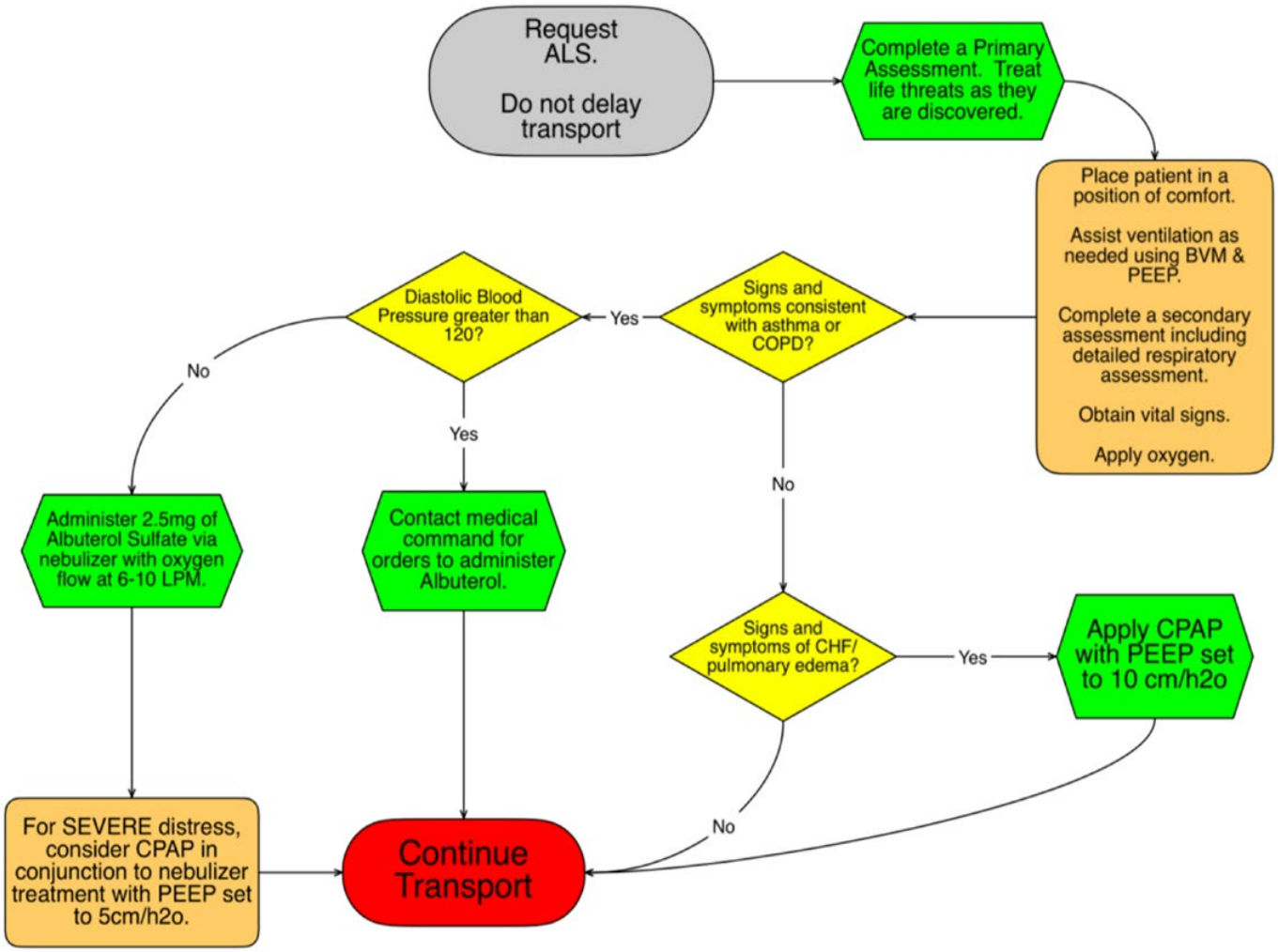
2.4A Asthma/COPD/Reactive Airway Disease – Adult

EMT Standing Orders

E

- Routine Patient Care.
- Place patient in a position of comfort. May prefer sitting up. Supine may worsen condition.
- Attempt to keep oxygen saturation ≥ 94% (90% in COPD); increase the oxygen rate with caution and observe for fatigue, decreased mentation, and respiratory failure.
- If rales are noted and history/exam are consistent with pulmonary edema, proceed to protocol Cardiac CHF 3.3
- If wheezes are noted and history/exam are consistent with asthma or COPD:
  - Assist the patient with their metered dose inhaler (MDI): 6 puffs. May repeat every 5 minutes (max 3 doses). Contact **Medical Command** for additional dosing.
  - MDI containing either albuterol, levalbuterol, a combination of albuterol/ipratropium bromide or other bronchodilator/rescue inhaler.
    - **OR**
  - Albuterol administration (*approved agencies only*)
    - Administer **albuterol sulfate** 1 ampule (2.5mg/3mL) via nebulizer with appropriate sized mask.
    - Reassess patient. May repeat treatment in 5-10 minutes if symptoms persist.
- If worsening or severe distress, provide ***CPAP*** with PEEP of 5 mmHg with in-line ***albuterol*** nebulization
- Call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility



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Continued

2.4A Asthma/COPD/Reactive Airway Disease – Adult

Paramedic Standing Orders

P

- Administer:
  - ***DuoNeb*** 3 mL via nebulizer. May repeat every 5 minutes for continued symptoms (maximum 3 doses)
    AND/OR
  - ***Albuterol*** 2.5 mg via nebulizer. May repeat every 5 minutes for continued symptoms.
  - In cases where the patient is presenting with concerning respiratory disease that placed the provider at risk of exposure to aerosolized viral/bacterial particles, such as COVID-19, proceed directly to:
    terbutaline 0.25 mg SQ
- Establish vascular access.
- For patients who do not respond to treatments or for impending respiratory failure:
  - ***CPAP*** up to a maximum of 10 cm H2O pressure support. See Continuous Positive Airway Pressure (CPAP) Procedure 5.3.
  - ***Magnesium sulfate*** 2 g in 50-100 mL crystalloid solution IV/IO over 10 minutes.
  - ***Terbutaline*** 0.25 mg SQ
- For Asthmatic patients who do not respond to treatment with impending respiratory failure, administer ***epinephrine*** (1:1,000) (1 mg/mL) 0.3 mg (0.3 mL) IM.
  - Do not administer Epinephrine to patients with COPD.
- Administer steroid:
  - ***Methylprednisolone*** 40-62.5 mg IV/IO/IM

PEARLS

- IVs should only be placed in order to administer fluids or when administering IV medications .
- Beware of patients with a “silent chest” (absence of breath sounds) as this may indicate severe reactive airway disease with bronchospasm and impending respiratory failure.
- Remember that not all wheezing is caused by asthma and that not all asthmatics wheeze.
- Patients with congestive heart failure (CHF) may present with lung sounds that mimic asthma (“cardiac wheeze”).
- Whether a patient is ventilated manually with a BVM or intubated and on a mechanical ventilator , take care to ensure a full exhalation is allowed between ventilations to prevent ventilator-induced dynamic hyperinflation, or “breath stacking.”
- “Breath stacking”: The gradual increase of residual volume and pressure within the lungs and chest, putting the patient at risk for barotrauma, hemodynamic instability, and cardiovascular collapse that can occur with increased intrathoracic pressure.

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2.4A Asthma/COPD/Reactive Airway Disease – Adult

Albuterol

Indications

- Dyspnea and signs of respiratory distress associated with bronchospasm.

Contraindications

- Allergy to albuterol
- BLS: Diastolic BP >120 mmHg (may be given if approved after discussion with on-line medical command)
- Concern for CHF, discuss with medical command before proceeding.

Dosing

- 1 ampule of Albuterol Sulfate 0.083% 2.5mg/3mL (2.5mg)
- May repeat in 5-10 minutes if symptoms persist.

Side Effects

- Common side effects include tachycardia, anxiety, tremors, and headache.
- Severe side effects are rare and likely limited to those with allergy to the parent medication or additives

CPAP

Indications

Dyspnea and signs of respiratory distress associated with acute pulmonary edema (APE; i.e. CHF, Sepsis, Drowning, Inhalation injury) or severe distress associated with bronchospasm from Asthma and/or COPD

Relative Contraindications

- Altered Mental Status; is not a definitive contraindication and may still be considered.
- Nausea/Vomiting

Contraindications/General Cautions: (Refer to manufacturers recommendations)

- Suspected or known pneumothorax
- Obvious chest trauma
- Severe facial or laryngeal injury or deformity
- Tracheostomy
- Hypotension or hypovolemia (defined as SBP <100)
- Respiratory depression or respiratory arrest
- Recent Gastric Surgery
- Basilar Skull Fracture
- Emphysematous Bullae
- GI Bleed
- Esophageal Anastomosis

Dosing

- Suspected APE: PEEP 10 mmHg
- Suspected COPD/Asthma: PEEP 5 mmHg
- Undifferentiated: 5 mmHg

Side Effects

- Hypotension
- Claustrophobia
- Anxiety (initial application, should improve as symptoms improve)

Index

Continued

2.4P Bronchospasm/Asthma - Pediatric

EMT Standing Orders	

E	• Routine patient care.
	• Give supplemental ***oxygen***. Escalate from a nasal cannula to a non-rebreather mask (NRB) as needed to maintain normal oxygenation. Observe for fatigue, decreased mentation, or respiratory failure.
	• Suction the nose and/or mouth if excessive secretions are present.
	• Maintain normal body temperature.
	• Albuterol administration *(approved agencies only):*
	  ○ Administer ***albuterol*** 1 ampule via nebulizer with appropriate-sized mask.
	  ○ Reassess the patient. May repeat treatment in 5 – 10 minutes if symptoms persist.
	• Transport should not be significantly delayed by bronchodilator administration.
	• If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility

Paramedic Standing Orders	
P	• Assess and secure airway; administer ***oxygen*** as needed. • Maintain normal body temperature. • Administer ***albuterol*** 2.5 mg via nebulizer. ○ May repeat in 5-10 minutes if symptoms persist. **OR** • Administer ***DuoNeb*** 3 mL via nebulizer. May repeat every 5 minutes for continued symptoms (maximum 3 doses) For Moderate to Severe cases: • Establish vascular access with a ***crystalloid solution*** at a KVO rate. • Administer ***Methylprednisolone*** 2 mg/kg IV/IO to a max dose of 125 mg • Administer ***Magnesium Sulfate*** 50 mg/kg IV/IO over 10 minutes, Maximum single dose 2 g. If patient condition becomes unstable: • Administer ***epinephrine*** (1:1,000) 0.01 mg/kg (0.1 ml) to a maximum of 0.5 mg via IM route (Lateral thigh preferred)

- Respiratory distress in children must be promptly recognized and aggressively treated. Respiratory arrest is the most common cause of cardiac arrest in children.
- Child with a “silent chest” may have severe bronchospasm with impending respiratory failure.

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2.4P Bronchiolitis - Pediatric

Bronchiolitis: Viral respiratory infection resulting in inflammation of the small airways in patients less than 2 years old that presents with diffuse rhonchi/wheezing, rhinorrhea, cough, fever, tachypnea, and/or respiratory distress.	
EMT Standing Orders	

E	• Routine Patient Care.
	• Give supplemental ***oxygen***.
	  ○ Escalate from a nasal cannula to a non-rebreather mask as needed, to maintain normal oxygenation.
	  ○ Observe for fatigue, decreased mentation, or respiratory failure.
	• BVM Ventilation should be utilized in children with respiratory failure.
	• Suction the nose and/or mouth if excessive secretions are present.
	• Maintain normal body temperature.
	• If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.

Paramedic Standing Orders	
P	• Suction as required. • For patients who do not respond to suctioning or for impending respiratory failure, administer ***epinephrine*** (1:1,000) (1 mg/mL) 5 mg (5 mL) via nebulizer. ○ Contact Medical Command for additional dosing.

Index

2.4P Croup - Pediatric

EMT Standing Orders	

E	• Routine Patient Care.
	• Give supplemental ***oxygen*** via non-rebreather mask.
	  ○ Observe for fatigue, decreased mentation, and respiratory failure.
	• Maintain normal body temperature and position of comfort.
	• Mild to moderate distress (barking cough):
	  ○ Cool humidified oxygen
	• Moderate to severe distress (stridor at rest, retractions, tripoding, and accessory muscle use):
	  ○ Request ALS unit
	  ○ If not available, initiate transport to closest appropriate facility.

Paramedic Standing Orders	
P	Mild to moderate distress (barking cough): • Administer 3 cc ***normal saline*** via nebulizer with simple mask Moderate to severe distress (stridor at rest, retractions, tripoding, and accessory muscle use): • Administer ***epinephrine*** 5 mg (5 ml) 1:1,000 solution via nebulizer. • If no change, establish IV/IO access with normal saline at a KVO rate. • Contact **Medical Command** for additional orders

PEARLS

- For suspected epiglottitis, transport the patient in an upright position and limit your assessment and interventions
- Bronchiolitis
  - Incidence peaks in 2-6 month old infants.
  - Frequent history of low-grade fever, runny nose, and sneezing.
  - Signs and symptoms include tachypnea, rhinorrhea, wheezes and / or crackles.
- Croup
  - Incidence peaks in children over age 6 months.
  - Signs and symptoms include hoarseness, barking cough, inspiratory stridor, signs of respiratory distress.
  - Avoid procedures that will distress child with severe croup and stridor at rest.
- Pneumonia
  - Signs and symptoms include tachypnea, fever, intercostal retractions, cough, hypoxia and chest pain.
- Tachypnea in children is defined as:
  - < 2 months: 60 bpm
  - 2-12 months: 50 bpm
  - 1-5 years: 40 bpm
  - >5 years: 20 bpm

Consider differential diagnosis:

- Asthma
- Pneumonia (See CPAP – 5.3 for respiratory failure)
- Bronchiolitis
- Anaphylaxis (See Anaphylaxis 2.2P ANA)
- Croup
- Sepsis (See Sepsis Shock 2.20P)
- Foreign body airway obstruction

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2.5 Behavioral Emergencies Including Suicide Attempts & Threats

EMT and Paramedic Standing Orders

E

P

- Routine Patient Care.
- Approach patient using the SAFER Model.
- Observe and record the patient's behavior.
- Consider associated domestic violence or child abuse.
- Determine if the patient is under the care of mental health professionals and record contact information.
- Assess for risk to self and others. Ask patient directly if he/she is thinking about hurting self or others.
- A patient who is a danger to self or others may not refuse care. If the patient refuses care and requires medical care or is danger to self or others, contact police and, if available, the local mental health crisis agency. (Refer Refusal of Care Policy 8.7)
- If the patient does not appear to be an immediate threat to self or others and refuses transport:
- Encourage patient to seek mental health evaluation.
- Avoid leaving the patient alone, if possible. Assist in contacting responsible family/friend.
- For patients whom are agitated and/or displaying violent behavior:
  - See Restraint Procedure 6.5.
  - See Sedation Procedure 6.9
  - Treat hyperthermia, see Hyperthermia (Environmental) – Adult & Pediatric 2.9.
  - Monitor cardiac activity (Paramedic only) and oxygen levels.
- ➢ **At no time should a patient be placed in the Prone Position**
- Establish an airway, maintain and/or suction as needed.
- Treat other injuries and illnesses. Should it appear that the patient will not be transported, contact **Medical Command**.

S A F E R Model

S Stabilize the situation by lowering stimuli, including voice.
A Assess and acknowledge crisis by validating patient's feelings and not minimizing them.
F Facilitate identification and activation of resources (clergy, family, friends, or police).
E Encourage the patient to use resources and take actions in his/her best interest.
R Recovery/referral - leave patient in the care of a responsible person, professional or transport appropriate medical facility. Do not leave the patient alone when EMS clears the scene.

- Severe life-threatening agitation is characterized by multiple of the following: violent destructive mania, hyperthermia, tachycardia, hallucinations, disorientation, bizarre behavior, insensitivity to pain, naked or under-clothed and/or increased strength. These patients may be considered at risk for imminent autonomic collapse.
- Medications should be administered cautiously in frail or debilitated patients; lower doses should be considered.
- Monitor airway and vital signs closely.

PEARLS:
Consider all possible medical / trauma causes for behavior and treat appropriately:

- Hypoglycemia
- Hypoxia
- Head Injury, stroke, seizure postictal
- Poisoning
- Infection

Index

2.6 Brief Resolved Unexplained Event (BRUE)

EMT and Paramedic Standing Orders

E

P

- Routine Patient Care.
- Obtain a history of present illness.
  - History of circumstances and symptoms before, during, and after the event including duration, interventions performed, and patient color, tone, breathing, feeding, position, location, activity, level of consciousness.
  - Other concurrent symptoms including fever, congestion, cough, rhinorrhea, vomiting, diarrhea, rash, labored breathing, fussy, less active, poor sleep, poor feeding.
  - Prior history of BRUE.
  - Past medical history including prematurity, prenatal/birth complications, gastric reflux, congenital heart disease, developmental delay, airway abnormalities, breathing problems, prior hospitalizations, surgeries, or injuries.
  - Family history of sudden unexplained death or cardiac arrhythmia in other children or young adults
  - Social history including who lives at home, recent household stressors, exposure to toxins/ drugs, contact with anyone ill.
  - Considerations for possible abuse such as multiple/changing versions of the story; reported mechanism of injury doesn't seem plausible, especially for child developmental stage.
- Perform Physical Exam
  - Full set of vital signs (per Routine Patient Care 1.0)
  - Signs of respiratory distress (grunting, nasal flaring, retracting)
  - Color (pallor, cyanosis, and normal)
  - Mental status (alert, tired, lethargic, unresponsive, irritability)
  - Physical exam for external signs of trauma
- Monitor pulse oximetry if available.
- Airway:
  - Give supplemental oxygen for signs of respiratory distress or hypoxemia. Escalate from a nasal cannula to a simple face mask to a non-rebreather mask as needed in order to maintain normal oxygenation.
  - Suction the nose and/or mouth if excessive secretions are present.
- Consider need for ALS intervention.
- Contact Medical Command for guidance, if needed.

PEARLS

A BRUE is a frightening episode in a child less than 1 years old that involves some combination of apnea, central cyanosis or pallor, marked change in tone or altered level of consciousness. This condition was formerly known as ALTE – Apparent Life-Threatening Event.

Note: Although children who experience BRUE may have a normal physical exam upon assessment by prehospital personnel, they should be transported to the emergency department for further assessment and treatment as they often may have a serious underlying condition.

Consider transport to a facility with pediatric critical care capability for patients with high risk criteria: less than 2 months of age, history of prematurity, more than 1 BRUE

Assume history provided by the family/witness is accurate.

Index

2.7A Diabetic Emergencies (Hyperglycemia) Adult

EMT Standing Orders	
E	• Routine Patient Care. • If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.
Paramedic Standing Orders	
P	• Obtain blood glucose level. • Establish vascular access. • Administer 1,000 mL bolus of isotonic ***crystalloid solution*** IV/IO. ○ Reassess and administer 1,000 mL of ***crystalloid solution*** IV/IO, if indicated. • For nausea/vomiting, see Nausea/Vomiting – Adult & Pediatric 2.11.
Paramedic Communication Failure Orders	
CF/EC	• Oral fluids: if the patient is not vomiting, provide oral hydration with water. ○ Patient must be alert enough to swallow and protect airway.

PEARLS

- Diabetic ketoacidosis is a life-threatening emergency defined as uncontrolled hyperglycemia with signs and symptoms of ketoacidosis.
  - Signs and symptoms of diabetic ketoacidosis include blood glucose greater than 250 mg/dL, weakness, altered mental status, abdominal pain, nausea, vomiting, polyuria (excessive urination), polydipsia (excessive thirst), a fruity odor on the breath (from ketones), and tachypnea.
  - Common causes of diabetic ketoacidosis include infection, acute coronary syndrome and medication non-compliance.

- Hyperglycemic Hyperosmolar Nonketotic Syndrome (HHNK/HHS) is characterized by blood glucose levels greater than 600 mg/dL and profound dehydration with significant neurologic deficits (e.g. coma, altered mental status).
  - Hyperglycemia may be detrimental to patients at risk for cerebral ischemia such as victims of stroke, cardiac arrest and head trauma.

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2.7P Diabetic Emergencies (Hyperglycemia) - Pediatric

Hyperglycemic emergency is defined as blood glucose greater than or equal to 250 mg/dL **AND** associated signs and symptoms, such as altered mental status, increased respiratory rate, abdominal pain and vomiting or dehydration.	
EMT Standing Orders	
E	• Routine Patient Care. • If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.
Paramedic Standing Orders	
P	• Obtain blood glucose level. • Establish vascular access. • Administer **10 mL/kg** bolus of isotonic ***crystalloid solution*** IV/IO. ○ Contact **Medical Command** for additional fluid bolus orders. • For nausea/vomiting, see Nausea/Vomiting – Adult & Pediatric 2.11.
Paramedic Communication Failure Orders	
CF/EC	• Oral fluids: if the patient is not vomiting, provide oral hydration with water. ○ Patient must be alert enough to swallow and protect airway.

PEARLS

- Use **10 mL/kg** fluid bolus to avoid potential risk of cerebral edema.
- **Diabetic ketoacidosis** is a life-threatening emergency defined as uncontrolled hyperglycemia with signs and symptoms of ketoacidosis.
  - Signs and symptoms of diabetic ketoacidosis include blood glucose greater than 250 mg/dL, weakness, altered mental status, abdominal pain, nausea, vomiting, polyuria (excessive urination), polydipsia (excessive thirst), a fruity odor on the breath (from ketones), and tachypnea.
  - Common causes of diabetic ketoacidosis include infection, acute coronary syndrome and medication non-compliance.
- **Hyperglycemic Hyperosmolar Nonketotic Syndrome (HHNK/HHS**) is characterized by blood glucose levels greater than 600 mg/dL and profound dehydration with significant neurologic deficits (e.g. coma, altered mental status).
- Hyperglycemia may be detrimental to patients at risk for cerebral ischemia such as victims of stroke, cardiac arrest and head trauma.

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2.8A Diabetic Emergencies (Hypoglycemia) Adult

EMT Standing Orders	
E	• Routine Patient Care. • ***Oral glucose***: administer 1 – 2 tubes of commercially prepared glucose gel. The patient must be alert enough to swallow and protect airway. • If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to the closest appropriate facility. • For patients with an insulin pump who are hypoglycemic with associated altered mental status (GCS<15): ○ Have patient, family member, or familiar bystander stop the pump
Paramedic Standing Orders	

P	• Obtain blood glucose level.
	• Establish vascular access. If unable to establish IV, may establish IO.
	• Administer up to 25 g ***dextrose*** 10% (preferred) or ***dextrose*** 50% IV/IO. Recheck glucose 5 minutes after administration.
	  ○ May repeat up to 25 g ***dextrose*** 10% or 50% IV/IO if glucose level is <60 mg/dl with continued altered mental status.
	• If unable to establish IV access, administer ***glucagon*** 1 mg IM. Recheck glucose 15 minutes after administration of glucagon.
	  ○ May repeat ***glucagon*** 1 mg IV/IM if glucose level is <60 mg/dl with continued altered mental status.

Paramedic: If patient has a severe hypoglycemic emergency with altered mental status or active seizures and the provider is unable to establish IV access, the provider may administer dextrose via intraosseous (IO). See Intraosseous Access Procedure 6.3.

Dextrose 10% is the preferred formulation for administration. A sterile IV bag containing 250 mL of D10W will deliver the standard dose of 25 g of glucose IV. Bolus up to the entire 250 mL bag as quickly as possible, stopping when patient's mental status returns to baseline and glucose level is ≥ 60 mg/dl. Often, only 100 – 200 mL of dextrose 10% is necessary.

PEARLS

- There are no statistically significant differences in the median recovery time to a GCS score of 15 following administration of D10% versus D50%. D10% could benefit patients in controlling their post-treatment high blood sugar levels.
- Causes of hypoglycemia include medication misuse or overdose, missed meal, infection, cardiovascular insults (e.g., myocardial infarction, arrhythmia), or changes in activity (e.g., exercise)
- Diabetics are not the only persons who become hypoglycemic. Alcoholics, some poisoned patients, and others may develop problems of glucose metabolism.
- Sulfonylureas (e.g., glyburide, glipizide) toxicity can last up to 72 hours. Patients with corrected hypoglycemia who are taking these agents are at particular risk for recurrent hypoglycemia and frequently require hospital admission. These patients should be evaluated in the Emergency Department.
- When administering dextrose, monitor IV site for signs of extravasation.

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2.8P Diabetic Emergencies (Hypoglycemia) - Pediatric

Hypoglycemic emergency is defined as blood glucose less than 60 mg/dl **AND/OR** associated symptoms including shaking/tremors, tachycardia, diaphoresis, pallor, drowsiness, weakness, dizziness, unsteady gait, altered mental status, loss of unconscious, or seizure.

EMT Standing Orders

E

- Routine Patient Care.
- ***Oral glucose***: administer 0.5 g/kg of commercially prepared glucose gel. The patient must be alert enough to swallow and protect airway.
- If the patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to the closest appropriate facility.
- For patients with an insulin pump who are hypoglycemic with associated altered mental status (GCS<15):
  - Have patient, family member, or familiar bystander stop the pump.

Paramedic Standing Orders

P

- Obtain blood glucose level.
- Establish vascular access.
- Administer ***dextrose 10%*** 0.5 g/kg IV/IO.
  OR
- Administer ***dextrose 25%*** 0.5 g/kg IV/IO
  - Recheck glucose 5 minutes after administration.
    - May repeat ***dextrose*** if glucose level is <60 mg/dl with continued altered mental status.
- If unable to establish IV/IO access, administer ***glucagon***. (Recheck glucose 15 minutes after administration of glucagon)
  - Patients <20 kg (44 lb), give ***glucagon*** 0.5 mg IM or IN.
  - Patients >20 kg (44 lb), give ***glucagon*** 1 mg IM or IN.

Paramedic: If patient has a severe hypoglycemic emergency with altered mental status or active seizures and the provider is unable to establish IV access, the provider may administer dextrose via intraosseous (IO). See Intraosseous Access Procedure 6.3.

PEARLS

- Causes of hypoglycemia include medication misuse or overdose, missed meal, infection, cardiovascular insults, trauma, traumatic brain injury, hypothermia, adrenal insufficiency, or changes in activity (e.g., exercise).
- When administering dextrose, monitor IV site for signs of extravasation.

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2.9 Hyperthermia (Environmental) – Adult & Pediatric

EMT Standing Orders

E

- Routine Patient Care.
- Move the victim to a cool area and shield from the sun or any external heat source.
- Remove as much clothing as is practical and loosen any restrictive garments.
- If alert and oriented, give small sips of cool liquids.
- Diagnosis of hyperthermia is based on clinical signs. Determine patient's core temperature, if possible.
- Monitor and record vital signs and level of consciousness.
- If temperature is >40°C (104°F) or if altered mental status is present, begin active cooling by:
  - Continually misting the exposed skin with tepid water while fanning the victim (most effective).
  - Utilize an ice bath, if available.
  - Truncal or axillary ice packs may be used but are less effective than evaporative cooling.
  - Discontinue active cooling if shivering occurs and cannot be managed by paramedics (see below), or temperature < 38.9°C (102°F).
- If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.

Paramedic Standing Orders

P

- If patient has altered mental state, check blood glucose.
- Establish vascular access.
- Initial treatment should be provided on scene if cooling system is available.

ADULT

- Administer 500 ml ***crystalloid solution*** IV fluid bolus for dehydration even if vital signs are normal.
- If uncontrolled shivering occurs during cooling, administer:
  - ***Midazolam*** 2.5 mg IV/IN, may repeat once in 5 minutes **OR** 5 mg IM, may repeat once in 10 minutes.

PEDIATRIC

- Administer 20 mL/kg ***crystalloid solution*** IV fluid bolus for dehydration, even if vital signs are normal.
- If uncontrolled shivering occurs during cooling, administer:
  - ***Midazolam*** 0.1 mg/kg IV (max dose 1 mg) or 0.2 mg/kg IN/IM (max dose 2 mg)

  (Note: a 5 mg/mL concentration is recommended for intranasal administration.)

Hyperthermia:

- Oral and other non-core thermometers may be inaccurate when the temperature is outside the normal range.
- Elevated temperature may be due to environmental exposure, pharmacologic agents, or hyperactive delirium with agitated features. See also Behavioral Emergencies Including Suicide Attempts & Threats – Adult & Pediatric 2.5, Septic Shock – Adult 2.20A, Septic Shock - Pediatric 2.20P, Poisoning/Substance Abuse/Overdose – Adult 2.18A or Poisoning/Substance Abuse/Overdose – Pediatric 2.18P.
- Mortality and morbidity are directly related to the length of time the victim is subject to the heat stress.
- Sweating (or lack of sweating) is an unreliable indicator of the severity of heat illness.
- The patient's vital signs and mental status are the primary concern.
- The patient's baseline health status and medications greatly determine the likelihood of developing and recovering from heat illness.
- The very young and very old are at greatest risk of heat illness.

For events with high risk of hyperthermia, consider having an ice bath available on scene.

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2.10 Hypothermia (Environmental) – Adult & Pediatric

EMT Standing Orders	
E	• Routine Patient Care. • Classify hypothermia clinically based on vital signs, level of consciousness and intensity of shivering. Core temperature, if available, provides additional information (see chart). • Handle patient gently. Maintain patient in horizontal position. Continue rewarming during transport. • Warm ambulance to 24°C (75.2°F) if possible. • Prevent further heat loss using insulation and vapor barrier. Move to a warm, sheltered environment. • Gently remove wet clothing and dry patient. • Support shivering with calorie replacement if alert and able to swallow. • Mildly hypothermic patients should not be allowed to stand or walk for 30 minutes, while being kept as warm as possible with calorie replacement and shelter. • Patients with moderate to severe hypothermia require active external rewarming with chemical, electrical, or forced-air heating packs/blankets. Active rewarming is also beneficial for mild hypothermia. • Assess the patient for signs of life and pulse carefully for a minimum of 60 seconds to confirm respiratory arrest or cardiac arrest. • If pulse and breathing are present, continue rewarming techniques. • If **pulse and breathing are absent,** see Cardiac Arrest-Adult 3.4A or Cardiac Arrest-Pediatric 3.4P • Transport patient to closest appropriate hospital.
Paramedic Standing Orders	

P	• Establish vascular access.
	• Administer warmed ***crystalloid solution*** IV 40°C - 42°C (104°F - 107.6°F):
	  ○ Adults: 500 ml.
	  ○ Pediatric: 20 ml/kg bolus.
	• Provide airway management as indicated. With advanced airway, ventilate at half-standard rate. See Airway Management Adult 5.1A. Airway Management Pedi 5.1P
	• Administer ***dextrose*** IV/IO if hypoglycemic. Diabetic-Hypoglycemia(Adult) 2.8A; Diabetic-Hypoglycemia(Pedi) 2.8P
	• Continue CPR if indicated:
	  ○ If < 30°C, and VT or VF, or AED advises shock: one shock at maximum power.
	  ○ Warm 1-2°C or > 30°C prior to additional shocks.
	  ○ No vasoactive drugs until 30°C or above. From 30-35°C, increase dosing interval to twice as long as normal. Administer epinephrine 1 mg IV/IO, up to 3 doses.

PEARLS

- Patients with prehospital cardiac instability (systolic blood pressure < 90 mm Hg or ventricular arrhythmias), core temperature <28°C (82°F), and those in cardiac arrest should be transported directly to a center capable of providing cardiopulmonary bypass (CPB) or extracorporeal membrane oxygenation (ECMO), if feasible. Hypothermic patients are often significantly dehydrated and may require repeat fluid boluses.
- Absence of vital signs, rigor mortis, dependent lividity or fixed and dilated pupils may be present in patients with reversible hypothermia and are not a contraindication to CPR. Assume that a hypothermic patient can be resuscitated even if there is an absence of vital signs, any sign of life, rigor mortis, or fixed and dilated pupils.
- Detecting a pulse in a patient with hypothermia may be difficult. Signs of life and pulse should be checked carefully for 60 seconds. Persistent breathing or movement by the patient should prompt a strategy of watchful waiting , but if no signs of life are detected, then cardiopulmonary resuscitation (CPR) should be started. Since metabolic needs are so low in severely hypothermic patients, a rate of only a few beats per minute is enough to provide adequate perfusion to vital organs. In such cases, it is better to attempt to maintain effective cardiac activity than to start CPR and cause VF.

Continued

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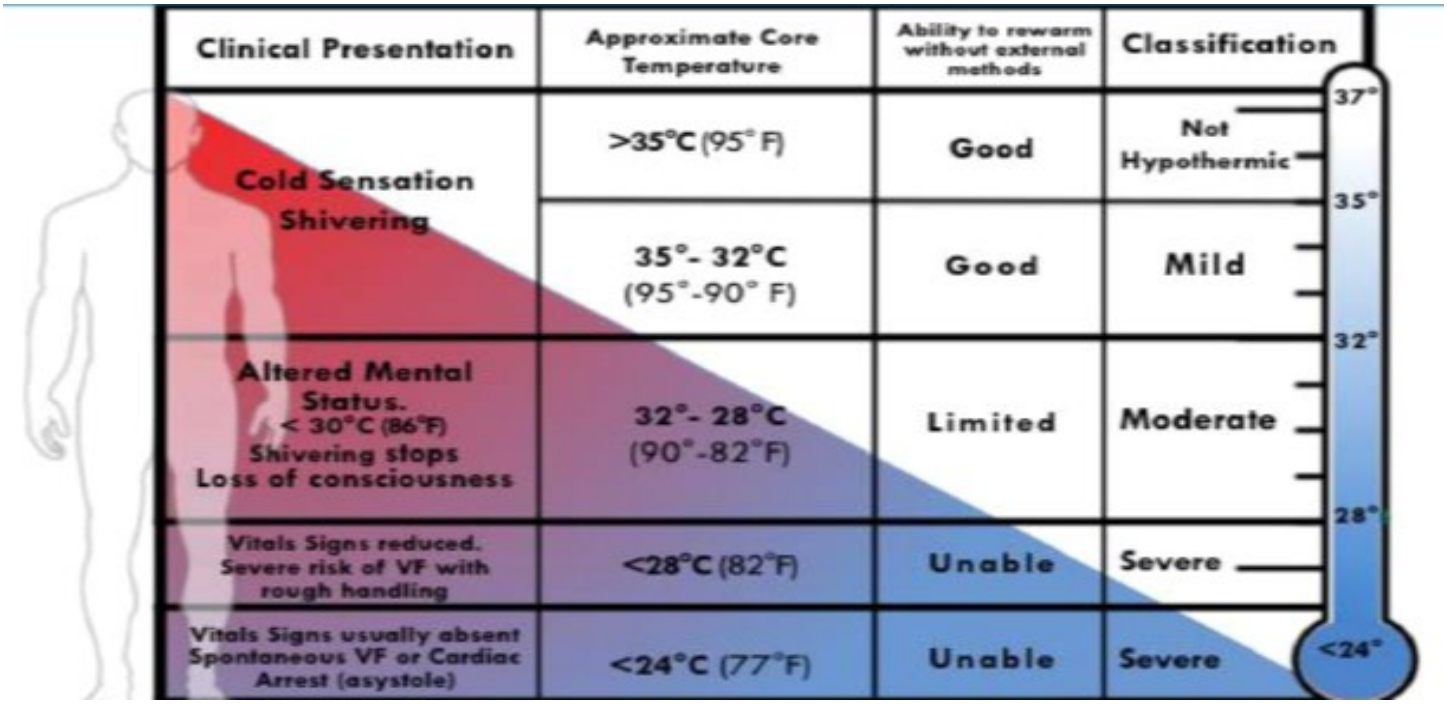
2.10 Hypothermia (Environmental) – Adult & Pediatric

PEARLS

- A rapid assessment of the patients core temperature may be performed by placing a warm ungloved hand against the skin of a patient's back, or chest. If the skin feels warm, hypothermia is unlikely. Measure core temperature. Utilize a rectal thermometer if available (after patient removed from cold environment), epitympanic thermometer designed for field use. Oral thermometers should only rule out hypothermia.
- Owing to the decrease in cerebral oxygen, requirements with cooling, survival without neurologic impairment may be possible even when it is necessary to perform CPR for hours. Transportation to CPB/ECMO capable facilities with continuing CPR may be justified if hypothermia is present or suspected. Contact destination hospital in advance to ensure availability of CPB/ECMO.
- Immediate continuous CPR is recommended for cardiac arrest due to primary severe hypothermia; interruptions in CPR should be avoided. If this is not possible, CPR can be delayed or performed intermittently. Based on available data, a patient with a core temperature <28◦ C or unknown with unequivocal hypothermic cardiac arrest, evidence supports alternating 5 min CPR and ≤5 min without CPR. With core temperature <20◦ C, current evidence supports alternating 5 min CPR and ≤ 10 min without CPR. If field conditions are not amenable to the safe administration of delayed or intermittent CPR, contact Medical Command to consider Termination of Resuscitation (TOR).
- If a patient with cardiac arrest due to hypothermia is rewarmed to a core body temperature that is higher than 32°C and asystole persists, irreversible cardiac arrest is very likely, and termination of CPR should be considered.
- A hypothermic patient should be assessed for coexisting injuries or illnesses that may mimic or conceal the signs and symptoms of hypothermia. The use of vital signs, mental status and presence or absence of shivering may be unreliable if the patient has another condition that coexists with hypothermia. Many conditions such as hypoglycemia, alcohol intoxication and exhaustion can cause altered mental status and can decrease or abolish shivering. A heart rate higher than expected for a given level of hypothermia may be due to another cause such as traumatic blood loss.



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2.11 Nausea/Vomiting –Adult & Pediatric

EMT Standing Orders	
E	• Routine Patient Care. • ***Isopropyl alcohol wipe***: inhale vapor from wipe 3 times q 15 min
Paramedic Standing Orders	

P	• Establish vascular access if patient appears dehydrated.
	• Administer ***crystalloid solution*** IV bolus for dehydration:
	  ○ Adult: 500 ml
	  ▪ May repeat 250 mL IV bolus if transport exceeds 15 minutes and patient's condition has not improved.
	  ○ Pediatric: 20 ml/kg
	• ***Ondansetron*** (Adult)
	  ○ 4 mg IV/IM
	  ▪ May repeat once after 10 minutes if nausea/vomiting persists. Maximum dose 8 mg.
	  OR
	  ○ 4 mg PO/ODT (oral dissolving tablets).
	  ▪ May give IV solution by oral route.
	• ***Ondansetron*** (Pediatric)
	  ○ 2 mg ODT for patient 8-20 kg, 4 mg ODT patient ≥ 20 kg
	  OR
	  ○ 0.15 mg/kg IV (maximum single dose 4mg).
	• For motion sickness administer ***diphenhydramine***:
	  ○ Adult: 25 mg IV
	  ○ Pediatric: 1 mg/ kg IV/IM/PO (max dose 50 mg)

Nausea, vomiting, and epigastric abdominal pain may be signs of acute coronary syndrome in adults. Consider obtaining and transmitting ECG, if available.

PEARLS

- Consider other causes of nausea such as the following: cardiac, GI bleeding, pregnancy, toxicologic, diabetes.

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2.12A Nerve Agents/Organophosphate Poisoning – Adult

POISON Help 1-800-222-1222

EMT STANDING ORDERS

E

- Routine Patient Care.
- Contact Poison Control at ***(800) 222-1222*** as soon as practical for consultation.
- Assess for SLUDGEM (Salivation, Lacrimation, Urination, Defecation, Gastric upset, Emesis, Muscle twitching, miosis) and KILLER B's (Bradycardia, Bronchorrhea, Bronchospasm).
- Evacuate to cold zone after decontamination and monitor for symptoms.

PARAMEDIC STANDING ORDERS

P

- Antidotal therapy should be started as soon as symptoms appear.
- All antidote auto-injections must be administered IM.
- Determine dosing according to the following symptom assessment and guidelines.

Category	Description/Example	Auto-injector Dose
Mild	If TWO (2) or more of the following are present: Blurred vision/ miosis (pupil constriction), excessive teary eyes, excessive runny nose, increased salivation, chest tightness/dyspnea, tremors/ twitching, nausea/vomiting, wheezing/coughing/secretions, acute stomach cramps, tachycardia, bradycardia	1 DuoDote (or MARK I kit); Monitor patient every 10 minutes
Worsening	If at any time after the first dose the patient develops any additional symptoms, or if symptoms worsen	2 DuoDotes (or 2 Mark I kits); Monitor patient every 10 minutes.
Severe	If ANY of the following are present: Strange/confused behavior, severe difficulty breathing/copious airway secretions, severe muscle twitching, involuntary urination/defecation, convulsions, loss of consciousness, respiratory arrest	3 DuoDotes (or 3 Mark I kits) AND 1 diazepam 10 mg auto-injector.

- If symptoms persist after the administration of 3 DuoDote kits (or MARK I kits) and field conditions permit:
  - Initiate cardiac monitoring.
  - Establish IV/IO access.
  - ***Atropine*** 2 mg IV/IO; repeat every 3 - 5 minutes until excess respiratory secretions cease.
    - Each subsequent ***atropine*** dose should be doubled (2nd dose = 4 mg; 3rd dose = 8 mg)
  - ***Pralidoxime*** 1 – 2 g IV if available.
    - Reconstitute ***pralidoxime*** 1 g vial with 20 mL sterile water for injection
    - Dilute reconstituted ***pralidoxime*** 1 g in 100 mL of 0.9% NaCl (may dilute 1-2 g in this manner)
    - Infuse over 5 minutes (1 g dose) to 10 minutes (2 g dose).
  - ***Diazepam***
    - 5 mg IV every 5 minutes **OR**
    - 10 mg IM auto-injector every 10 minutes, as needed.
- If diazepam is unavailable, may use either:
  - ***Midazolam*** 2.5 mg IV/IN every 5 minutes OR 5 mg IM every 10 minutes as needed.

CF

- ***Pralidoxime*** maintenance infusion:
  - Reconstitute ***pralidoxime*** 1 g vial with 20 mL of sterile water for injection (SWFI) or 0.9% NaCl.
  - Dilute reconstituted ***pralidoxime*** 1 g in 100 mL of 0.9% NaCl.
  - Infuse 1 g over 15-30 minutes. Maximum of 12 g/day.

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2.12P Nerve Agents/Organophosphate Poisoning – Pediatric

POISON Help 1-800-222-1222

EMT STANDING ORDERS

E

- Routine Patient Care.
- Consider contacting Poison Control at ***(800) 222-1222*** as soon as practical for consultation.
- Assess for SLUDGEM (Salivation, Lacrimation, Urination, Defecation, Gastric upset, Emesis, Muscle twitching, miosis) and KILLER B's (Bradycardia, Bronchorrhea, Bronchospasm).
  Evacuate to cold zone after decontamination and monitor for symptoms.

PARAMEDIC STANDING ORDERS

P

- Antidotal therapy should be started as soon as symptoms appear.
- All antidote auto-injections must be administered IM.
  Determine dosing according to the following symptom assessment and guidelines.

Length (cm)	Weight (kg)	Color (age)	Atropine Dose (MILD and SEVERE)	Pralidoxime Dose (MILD)	Pralidoxime Dose (SEVERE)
<59.5	3 to 5	Gray (0-3 mo.)	0.25 mg IM	60 mg IM	Give 3 MILD doses in rapid succession IM. If symptoms persist, may repeat series 1 hour after last IM injection.
59.5 to 66.5	6 to 7	Pink (3-6 months)		100 mg IM	
66.5 to 74	**8 to 9**	**Red (7-10months)**	0.5 mg IM	**125 mg IM**	
74 to 84.5	**10 to 11**	**Purple (11-18 mos)**		**150 mg IM**	
84.5 to 97.5	12 to 14	Yellow (19-35 mos)		200 mg IM	
97.5 to 110	15 to 18	White (3-4 years)		250 mg IM	
110 to 122	19 to 22	Blue (5-6 years)	1 mg IM	300 mg IM	
122 to 137	24 to 30	Orange (7-9 years)		400 mg IM	
137 to 150	30 to 40	Green (10-12 years)		500 mg IM	

❖ ***DuoDote (or MARK I kit) may be used for pediatric patients < 1 year old in a life-threatening situation with exposure symptoms when no pediatric doses of atropine or pralidoxime chloride are available.***

- In the unlikely event that field conditions permit, follow weight-based dosing and treatment guidelines:
  - Initiate cardiac monitoring.
  - Establish IV/IO access.
  - ***Atropine*** 0.05 – 0.1 mg/kg IV or IM (minimum dose of 0.1 mg, maximum single dose 5mg); repeat every 2 – 5 minutes as needed.
  - ***Pralidoxime*** 25 – 50 mg/kg IV (maximum dose 1 g) or IM (maximum dose of 2 g), may repeat within 30 – 60 minutes as needed, then again every hour for 1 – 2 doses as needed.
- ***Diazepam*** 0.1 mg/kg IV (0.5 mg/kg per rectum) (maximum dose 10 mg), repeat every 5 – 10 minutes as needed.
  Instead of diazepam, may use either:
  - ***Midazolam*** 0.2 mg/kg IM/intranasal/IV, repeat every 5 – 10 minutes as needed

PARAMEDIC EXTENDED CARE

EC

- ***Pralidoxime*** maintenance infusion:
  - Reconstitute ***pralidoxime*** 1 g vial with 20 mL of sterile water for injection (SWFI) or 0.9% NaCl.
  - Dilute reconstituted ***pralidoxime*** 1 g in 100 mL of 0.9% NaCl.

  Infuse 1 g over 15-30 minutes. Maximum of 12 g/day.

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2.13 Newborn Care

EMT and Paramedic Standing Orders

E P

- For newborns requiring resuscitation, see Newborn Resuscitation 2.14.
- Routine Patient Care—dry, warm, position, stimulate.
- Assess airway by positioning and clearing secretions (only if needed):
  - Place the newborn on back or side with head in a neutral or slightly extended position.
  - Routine suctioning is discouraged even in the presence of meconium-stained amniotic fluid.
  - Suction oropharynx then nares only if the patient exhibits respiratory depression and/or obstruction, see Newborn Resuscitation 2.14.
- Clamp and cut the umbilical cord.
  - After initial assessment and after the cord stops pulsating but no less than 1 minute.
  - Place the umbilical clamps approximately 8 and 10 inches from the baby.
  - Cut between the clamps.
- Prevent heat loss by rapidly drying and warming:
  - Remove wet linen, wrap newborn in blankets or silver swaddler (preferred) and cover newborn's head.
  - Place newborn skin-to-skin on the mother's chest or abdomen initially.
- Assess breathing and stimulate by providing tactile stimulation:
  - Flick soles of feet and/or rub the newborn's back.
  - If newborn is apneic or has gasping respirations, nasal flaring, or grunting, proceed to Newborn Resuscitation 2.14.
- Assess circulation, heart rate, and skin color:
  - Evaluate heart rate by one of several methods:
    - Auscultate apical beat with a stethoscope.
    - Palpate the pulse by lightly grasping the base of the umbilical cord.
  - If the pulse is <100 bpm and not increasing, proceed to Newborn Resuscitation 2.14.
  - Assess skin color; examine trunk, face, and mucus membranes.
- Record APGAR score at 1 minute and 5 minutes (see chart) only if newborn does not require resuscitation. APGAR score is less important than assessment and intervention.
- See Pediatric Vital Signs 1.0 for vital signs.
- Transport newborn in child safety seat. See Pediatric Transportation 8.11.

APGAR Scale

Feature Evaluated	2 Points	1 Point	0 Points
Activity (Muscle Tone)	Active Movement	Arms and legs flexed (Weak, some movement)	Limp or flaccid
Pulse	Over 100 bpm	Below 100 bpm	Absent
Grimace (Irritability/reflexes)	Cry, sneeze, cough, active movement	Grimace (some flexion of extremities)	No reflexes
Appearance (Skin Color)	Completely pink	Body pink, Extremities blue	Blue, pale
Respiration	Vigorous cry Full breaths	Slow, irregular, or gasping breaths, weak cry	Absent

PEARLS

- Newborn infants are prone to hypothermia which may lead to hypoglycemia, hypoxia and lethargy.
- Aggressive warming techniques should be initiated including drying, swaddling, and warm blankets covering body and head.
  - Utilize caution to avoid causing skin-tears/abrasions related to drying
- Raise temperature in ambulance patient compartment.

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2.14 Newborn Resuscitation

EMT Standing Orders

E

- Routine Patient Care—initial steps identified in Newborn Care 2.13.
- If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to the closest appropriate facility.
- For premature infants, initiate additional warming techniques, including newborn heating pad or wrapping the torso and extremities of the baby in food-grade or medical-grade plastic wrap.
- If the mouth or nose is obstructed or heavy secretions are present, suction oropharynx then nares using a bulb syringe or mechanical suction using the lowest pressure that effectively removes the secretions, not to exceed 120 mm Hg.
- If ventilations are inadequate, the chest fails to rise, or the heart rate is less than 100, initiate positive pressure (bag-valve-mask) ventilations at 40 – 60 breaths per minute.
  - Note: Resuscitation should be initiated with room air. Use oxygen if newborn is premature or low birth weight. If no response to resuscitation after 90 seconds, supplement with 100% oxygen.
  - Inflation pressures should be individualized to achieve an increase in heart rate or movement of the chest with each breath. Be aware that bag-valve-mask pop-off valves may deliver inconsistent results.
- After 30 seconds of ventilations, assess heart rate:
  - Auscultate apical beat with a stethoscope or palpate the pulse by lightly grasping the base of the umbilical cord.
- For heart rate <100, reassess ventilatory technique and continue ventilations.
- For heart rate <60 after attempts to correct ventilations:
  - Initiate CPR at a 3:1 ratio (for a rate of 120 compressions/minute and 30 ventilations/minute).
- Minimize interruptions. Reassess every 60 seconds; if not improving, continue CPR with 100% oxygen until recovery of a normal heart rate, then resume room air.

Paramedic Standing Orders

P

- If bag valve mask ventilation is inadequate or chest compressions are indicated, intubate the infant:
  - 3.0 mm cuffed endotracheal tube
  - 2.5 mm cuffed endotracheal tube (For an infant born before 28 weeks gestation)
  - Meconium aspiration may be indicated if airway is obstructed.
  - After direct visualization, improvement in heart rate and $EtCO_2$ are the best indicators of whether the tube is properly placed in the trachea.
- Establish vascular access. Obtain blood glucose.
  - If hypovolemia is suspected, administer 10 mL/kg bolus ***crystalloid solution*** over 5 – 10 minutes.
  - If the heart rate fails to improve with chest compressions, administer ***epinephrine*** (1:10,000) (0.1 mg/mL) 0.01 mg/kg IV (0.1 mL/kg).
  - IV/IO is preferred route for ***epinephrine***—if there is a delay in establishing access, may administer via ETT 0.1 mg/kg (1:10,000) (0.1 mg/mL).

PEARLS

- ALS NOTES: Flush all meds with 0.5 to 1.0 mL crystalloid solution
- Follow all ETT meds with positive-pressure ventilation.

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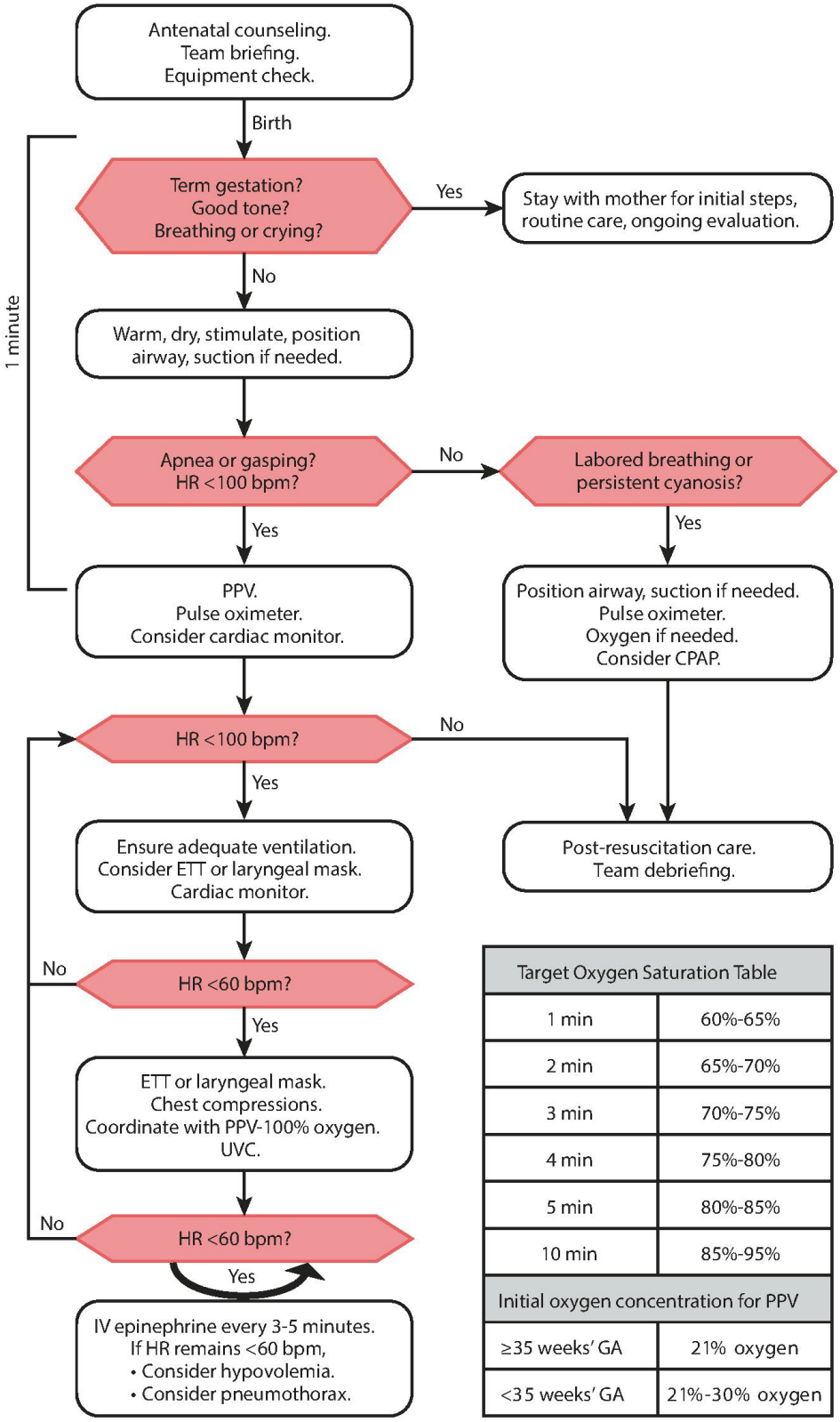
Neonatal Resuscitation Program® 8th Edition Algorithm



Target Oxygen Saturation Table	
1 min	60%-65%
2 min	65%-70%
3 min	70%-75%
4 min	75%-80%
5 min	80%-85%
10 min	85%-95%
Initial oxygen concentration for PPV	
≥35 weeks' GA	21% oxygen
<35 weeks' GA	21%-30% oxygen

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2.15 Normal Labor and Delivery

EMT and Paramedic Standing Orders

E

P

- For newborns requiring resuscitation, see Newborn Resuscitation 2.14.
- Routine Patient Care—dry, warm, position, stimulate.
- Assess airway by positioning and clearing secretions (only if needed):
  - Place the newborn on back or side with head in a neutral or slightly extended position.
  - Routine suctioning is discouraged even in the presence of meconium-stained amniotic fluid.
  - Suction oropharynx then nares only if the patient exhibits respiratory depression and/or obstruction, see Newborn Resuscitation 2.14.
- Clamp and cut the umbilical cord.
  - After initial assessment and after the cord stops pulsating but no less than 1 minute.
  - Place the umbilical clamps approximately 8 and 10 inches from the baby.
  - Cut between the clamps.
- Prevent heat loss by rapidly drying and warming:
  - Remove wet linen, wrap newborn in blankets or silver swaddler (preferred) and cover newborn's head.
  - Place newborn skin-to-skin on the mother's chest or abdomen initially.
- Assess breathing and stimulate by providing tactile stimulation:
  - Flick soles of feet and/or rub the newborn's back.
  - If newborn is apneic or has gasping respirations, nasal flaring, or grunting, proceed to Newborn Resuscitation 2.14.
- Assess circulation, heart rate, and skin color:
  - Evaluate heart rate by one of several methods:
    - Auscultate apical beat with a stethoscope.
    - Palpate the pulse by lightly grasping the base of the umbilical cord.
  - If the pulse is <100 bpm and not increasing, proceed to Newborn Resuscitation 2.14.
  - Assess skin color; examine trunk, face, and mucus membranes.
- Record APGAR score at 1 minute and 5 minutes (see chart) only if newborn does not require resuscitation. APGAR score is less important than assessment and intervention.
- See Pediatric Vital Signs 1.0 for vital signs.
- Transport newborn in child safety seat. See Pediatric Transportation 8.11.

PEARLS

- OB assessment:
  - Length of pregnancy.
  - History of prenatal medical problems:
  - Gestational diabetes, hypertension, etc.
  - Number of pregnancies.
  - Number of viable births.
  - Number of non-viable births.
  - Last menstrual period.
  - Due date.
  - Prenatal care.
  - Number of expected babies.
  - Stimulant or depressant drug use.

PEARLS

- Signs of imminent delivery:
  - Membrane rupture or bloody show.
  - Urge to move bowels.
  - Urge to push.

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2.16 Obstetrical Emergencies

EMT Standing Orders

E

- Routine Patient Care. Place patient in left-lateral recumbent position unless otherwise noted.
- Expose as necessary to assess for bleeding/discharge, crowning, prolapsed cord, breech, or limb presentation.
- Do not digitally examine or insert anything into the vagina.
  - Exceptions: fingers may be inserted to manage baby's airway in breech presentation or to treat prolapsed or nuchal cord.
- For imminent birth, call for Paramedic intercept, if available. If not available, initiate transport to the closest appropriate facility.
- For the complications listed below, initiate transport immediately (emergently) to the closest medical facility.

<u>Prolapsed Cord</u> (presentation of cord first)

- Place mother in knee-chest or supine position with pillows under the buttocks.
- Palpate cord for pulse. If pulse absent in the umbilical cord support infant head or body off the cord while gently pushing the fetus into the uterus and pressing on the lower abdomen in an upward direction only enough to regain pulse.
- DO NOT CUT CORD
- Do not attempt to push the cord back. Wrap cord in a warm, sterile-saline-soaked dressing.
- Transport emergently to closest hospital.

<u>Breech Birth</u> (presentation of legs or buttocks)

- **Do not pull on the newborn**. Support newborn and allow delivery to proceed normally.
- After delivery of torso, if head does not deliver within 3 minutes, place a gloved hand in the vagina with palm toward newborn's face forming a "V" with index and middle fingers on either side of the newborn's nose and push the vaginal wall away to create an airspace until delivery of the head. Suction as needed.
- Transport emergently to closest hospital while maintaining airspace for the newborn.

<u>Limb Presentation</u>

- Place mother in knee-chest or supine position with pillows under the buttocks.
- Transport emergently to closest hospital.

<u>Shoulder Dystocia</u> (shoulder(s) caught on pubic symphysis)

- Suspect shoulder dystocia if newborn's head delivers normally but then retracts back into the perineum because the shoulders are trapped (turtle sign).
- If this occurs, **do not pull on the newborn's head**.
- Position mother with buttocks dropped off end of stretcher and thighs flexed upward. Apply firm pressure with an open hand immediately above the pubic symphysis.
  - If delivery does not occur, transport emergently to closest hospital.

Paramedic Standing Orders

P

- Establish vascular access.
- Seizures—In the presence of seizures in the third trimester of pregnancy or up to 6-weeks postpartum, administer ***magnesium sulfate***, 4 g in 10 mL crystalloid solution, slow IV push over 5 minutes. See Seizures – Adult 2.19A.

Paramedic Communication Failure Orders

CF/EC

- For severe postpartum hemorrhage after placental delivery, administer:
  - ***Tranexamic Acid*** (if available) 1 g in 100 mL crystalloid solution

Continued

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2.16 Obstetrical Emergencies

CONTACT MEDICAL COMMAND FOR THE FOLLOWING CONDITIONS:

- Prepartum hemorrhage
- Postpartum hemorrhage
- Breech presentation
- Limb presentation
- Nuchal cord
- Prolapsed cord
- Cardiac arrest of mother

PEARLS

- Signs of preeclampsia:
  - Hypertension
  - Headache
  - Nausea
  - Vomiting
  - Visual changes
  - Edema

PEARLS

- When resuscitating pregnant patients, manual left uterine displacement should be used during CPR as this technique is the most compatible with high-quality CPR.

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2.17A Severe Pain Management – Adult

EMT STANDING ORDERS

E

- Routine Patient Care.
- Assess for cause of pain.
- Have the patient rate his/her pain from 0 to 10 or use another appropriate pain scale. Document value each time pain is assessed.
- Non-pharmacological pain control: Splinting; use ample padding when splinting musculoskeletal injuries; Ice; apply cold pack for 30 minutes; Elevation, Discussion/Distraction Techniques

PARAMEDIC STANDING ORDERS

P

- Establish vascular access.

For mild or moderate pain administer one of the following for pain control:

- ***Ketorolac*** 15 mg IV or 30 mg IM (no repeat).
  - See contraindications,
  - Administer as first-line agent for suspected renal colic.

Contraindications to ketorolac: patients with NSAID allergy, aspirin-sensitive asthma, renal insufficiency, pregnancy, or known peptic ulcer disease. Women who are pregnant or could be pregnant. Patients currently taking anticoagulants such as Coumadin.

For severe pain or pain refractory to above, administer one of the following: (Maintain SBP ≥ 100)

- ***Fentanyl:***
  - 1 mcg/kg slow IV push, repeat every 2 – 5 minutes for a maximum total of 300 mcg titrated to pain relief

OR

- ***Ketamine:***
  - 0.2 mg/kg IV infusion (in 100 mL bag 0.9% NaCl or D5W over 15 minutes)
  - Administer 0.15 mg/kg dose for frail or elderly patients.

Contraindications to narcotics: GCS < 15 or mentation not appropriate for age, hypotension SBP <100, SpO_2 <90% on 15L O2, hypoventilation, allergic to narcotics, or condition preventing administration (blocked nose or no IV). If no contraindications and pain scale ≥ 4, may administer narcotics.

Antidote: For *dysphoria* (emergence reaction) caused by ketamine, administer ***midazolam*** 1-2 mg IV/IM every 5 minutes, as needed.

Antidote: For hypoventilation from opiate administration by EMS personnel, assist ventilations and administer ***naloxone*** 0.4 to 2.0 mg IV/IO/IM or 2.0-4.0 mg IN.

- For nausea: see Nausea/Vomiting 2.11.
- Contact **Medical Command** for guidance in patients with:
  - Non-traumatic origin (not headache, abdominal or chest pain)
  - Altered mental status
  - Additional doses of a medication
  - Benzodiazepines administration alone or in conjunction with narcotic administration for patients with musculoskeletal spasms.

PARAMEDIC COMMUNICATION FAILURE

- Medications should be administered cautiously in frail, debilitated, or patients over 65 years of age; lower doses should be considered.
- Use caution for altered mental status, hypoventilation, hypotension, or allergy.

Continued

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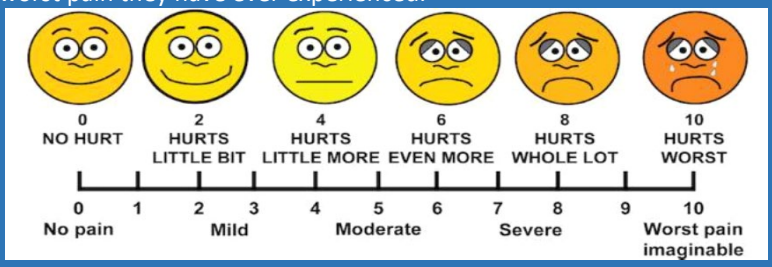
2.17A Severe Pain Management – Adult

- Ketamine should be administered in patients with severe pain, hemodynamic compromise, pain refractory to opiates, patients on chronic opiate treatment, patients unresponsive to other medications, or patients with history of substance use disorder and receiving medication assisted treatment (e.g. methadone, buprenorphine).
- Ketamine is contraindicated in patients unable to tolerate hyperdynamic states such as those with known or suspected aortic dissection, myocardial infarction, or aortic aneurysm, and those that cannot tolerate hypertension.
- Avoid ketamine in patients with known schizophrenia.
- Ketamine may cause appearance of intoxication at higher doses. Dysphoria (emergence reaction) may occur as the medication effects wear off.

PEARLS

- Place the patient in a position of comfort, if possible.
- Give reassurance, psychological support, and distraction.
- Avoid coaching the patient; simply ask them to rate their pain on a scale from 0 – 10, where 0 is no pain at all and 10 is the worst pain they have ever experienced.



- Reassess and document the patient's pain level and vital signs every 5 minutes.
- Narcotics are not recommended for first-line treatment of headache. Consult **Medical Command**.
- EMS professionals should not attempt to differentiate between pain and drug-seeking behavior, which could lead to under-treatment of pain.

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2.17P Severe Pain Management – Pediatric

EMT Standing Orders	

E	• Routine Patient Care.
	• Assess pain severity. Consider all patients as candidates for pain management regardless of transport time.
	• Have the patient rate his/her pain from 0 to 10, or
	  ○ Wong-Baker "faces" scale (appropriate for children ages 4-12):
	  ○ FLACC Scale (appropriate for children <4 years or developmentally delayed)
	• Non-pharmacological pain control: Splinting; use ample padding when splinting musculoskeletal injuries; Ice; apply cold pack for 30 minutes; Elevation, Discussion/Distraction Techniques
	• Document pain scale value each time assessed.

Paramedic Standing Orders	

P	• Establish vascular access.
	• Assess patient for contraindications to analgesic administration:
	  ○ GCS < 15 or mentation not appropriate for age, hypotension, SpO2 < 90 % on 15L O2, hypoventilation, allergic to narcotics, condition preventing administration (blocked nose or no IV). If no contraindications may administer:
	  ▪ ***Fentanyl*** 1 mcg/kg IV/IM/IO; 1.5 mcg/Kg IN (maximum initial dose 50 mcg). Administer slow over 2-3 minutes.
	  OR
	  ▪ ***Ketamine*** 0.25 mg/kg IV/IM/IO (maximum dose 25 mg)
	  OR
	  ▪ ***Ketamine*** 0.5 mg/kg IN (maximum dose 25 mg)
	  ○ Reassess patient every 5 minutes. If no contraindications and patient still in moderate to severe pain may re-dose at 5 – 10 minute intervals at half the original dose for one additional doses.
	• For nausea: see Nausea/Vomiting 2.11
	• Contact **Medical Command** for guidance for:
	  ▪ Patients under the age of 9 who do not meet any other contraindications.
	  ▪ Pain of non-traumatic origin (not headache, abdominal or chest pain)

FLACC Scale	0	1	2
1 Face	No particular expression or smile.	Occasional grimace or frown, withdrawn, disinterested.	Frequent to constant frown, clenched jaw, quivering chin.
2 Legs	Normal position or relaxed.	Uneasy, restless, tense.	Kicking, or legs drawn up.
3 Activity	Lying quietly, normal position, moves easily.	Squirming, shifting back and forth, tense.	Arched, rigid or jerking.
4 Cry	No crying (awake or asleep).	Moans or whimpers; occasional complaint.	Crying steadily, screams or sobs, frequent complaints.
5 Consolability	Content, relaxed.	Reassured by occasional touching, hugging or being talked to, distractible.	Difficult to console or comfort.

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2.18A Poisoning/Substance Abuse/Overdose – Adult

POISON Help 1-800-222-1222

EMT Standing Orders

E

- Routine Patient Care.
- For suspected opioid overdose with severe respiratory depression:
  - Begin manual ventilation via BVM with 100% oxygen and nasopharyngeal airway.
  - A single spray of ***naloxone*** nasal spray (4mg) into one nostril. May repeat every 3-5 minutes if no response, or if patient relapses, to a maximum of 2 doses (8 mg); **OR**
  - ***Naloxone*** 1 mg (1 mL) per nostril via atomizer for a total of 2 mg. May repeat every 3 – 5 minutes if no response to a maximum of 2 doses (4 mg).
  - ❖ Patients given naloxone should be transported to the emergency department for further evaluation.
- For suspected isolated cyanide poisoning, see Smoke Inhalation - Adult 2.22A.
- For decontamination/hazardous materials exposure, see Hazardous Materials Exposure 9.0.
- For hypoglycemia, see Diabetic Emergencies (Hypoglycemia) - Adult 2.8A.
- For seizures, see Seizure - Adult 2.19A.
- If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to the closest appropriate facility.
- Ingested poison: contact Poison Control at **(800) 222-1222** as soon as practical for consultation.

Paramedic Standing Orders

P

- For severe respiratory depression secondary to suspected opiate overdose, administer ***naloxone*** 0.4 – 2 mg IV/IM/IN.
  - Establish vascular access.
  - Utilize restraints as appropriate. See Restraint 6.5.
  - Titrate to response.
  - If no response, may repeat initial dose every 3 – 5 minutes to a maximum of 8 mg.

Suggested Treatments

- Beta Blocker and Ca Channel Blocker, see Bradycardia – Adult 3.1A.
- Dystonic Reaction:
  - ***Diphenhydramine*** 50 mg IV/IM
- Organophosphates, see Nerve Agent/Organophosphate – Adult 2.12A.
- For severe agitation, seizures, or hyperthermia:
  - ***Midazolam*** 2.5 mg IV/IN, may repeat once in 5 minutes **OR** 5 mg IM, may repeat once in 10 minutes.
- Ingested Poison:
  - Contact **Medical Command** to discuss possible treatments for specific exposure

Paramedic Communication Failure Orders

CF

- Tricyclic overdose with symptomatic dysrhythmias, (e.g., tachycardia and wide QRS > 110 ms): ***Sodium bicarbonate*** 1 to 2 mEq/kg IV/IO.

This protocol is designed to provide general guidelines for treatment. Specific treatments or antidotes may be appropriate as directed by on-line medical command. Consultation with Poison Control is encouraged.

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Continued

2.18A Poisoning/Substance Abuse/Overdose – Adult

Signs & Symptoms

- **Acetaminophen**: Initially normal or nausea/vomiting. If not detected and treated, may cause irreversible liver failure.
- **Anticholinergic**: Tachycardia, fever, dilated pupils, mental status changes.
- **Aspirin**: Abdominal pain, vomiting, pulmonary edema, tachypnea, fever, tinnitus and/or altered mental status. Renal dysfunction, liver failure, and/or cerebral edema among other things can take place later. Consider in elderly with altered mental status.
- **Cardiac Medications**: Dysrhythmias, altered mental status, hypotension, hypoglycemia.
- **Sedatives/Depressants**: Bradycardia, hypotension, decreased temperature, decreased respirations, pinpoint (miosis) or non-specific pupils.
- **Dystonic Reaction**: Neurological movement disorder, in which sustained muscle contractions cause twisting and repetitive movements or abnormal postures. This may be induced by antipsychotics, such as haloperidol, or anti-emetics such as prochlorperazine or metoclopramide.
- **Akathisia**: May consist of feelings of anxiety, agitation, and jitteriness, as well as inability to sit still /pacing. This may be induced by antipsychotics, such as haloperidol, or anti-emetics such as prochlorperazine or metoclopramide.
- **Opioids**: Respiratory arrest or hypoventilation, evidence of opiate use (bystander report, drug paraphernalia, opioid prescription bottles, "track marks"), depressed mental status, miosis.
- **Organophosphates**: Bradycardia, increased secretions, nausea, vomiting, diarrhea, pinpoint pupils, SLUDGEM, BBB. See Nerve Agent/Organophosphate Poisoning – Adult 2.12A
- **Solvents**: Nausea, coughing, vomiting, and mental status change.
- **Sympathomimetic/Stimulants**: Tachycardia, hypertension, increased temperature, dilated pupils, anxiety, paranoia, diaphoresis. Examples are bath salts, cocaine, caffeine, methamphetamine, ecstasy, ADHD drugs, thyroid meds (rarely), albuterol.
- **Tricyclic Antidepressants** (**TCA**): Seizures, dysrhythmias, hypotension, decreased mental status or coma.

PEARLS

- If possible, and not a risk to EMS crew members, bring container/bottles, and/or contents
- Pulse oximetry may NOT be accurate for toxic inhalational patients.

PEARLS

- Route, time, quantity and substance(s)
- Reason if known: intentional or accidental.
- Ask bystanders what medications are present/accessible

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2.18P Poisoning/Substance Abuse/Overdose – Pediatric

POISON Help 1-800-222-1222

EMT Standing Orders

E

- Routine Patient Care.
- For suspected opioid overdose with severe respiratory depression:
  - Begin manual ventilation via BVM with 100% oxygen and nasopharyngeal airway.
  - Administer ***naloxone*** nasal spray (4mg) as follows:
    - >11 years old and/or >40kg: naloxone 4 mg (may repeat x1 q3-5 min.)
    - <11 years old and/or <40kg: Contact **Medical Command**
  - Administer ***naloxone*** (2 mg formulary) as follows:
    - >5 years old and/or >20kg: Naloxone 1 mg (1 mL) per nostril for a total of 2 mg (may repeat x1 q3-5 min.).
    - 5 years old and/or <20kg: Contact **Medical Command**
  - Patients given naloxone should be transported to the emergency department for further evaluation.
- For suspected isolated cyanide poisoning, see Smoke Inhalation - Pediatric 2.22p.
- For decontamination/hazardous materials exposure, see Hazardous Materials Exposure 9.0.
- For hypoglycemia, see Diabetic Emergencies (Hypoglycemia) - Pediatric 2.8P.
- For seizures, see Seizure - Pediatric 2.19P.
- If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to the closest appropriate facility.
- Ingested poison: contact Poison Control at **(800) 222-1222** as soon as practical for consultation.

Paramedic Standing Orders

P

- Establish vascular access.
- For severe respiratory depression, administer ***naloxone*** 0.1 mg/kg IV/IM/IN.
  - Initial dose 0.4 mg-2 mg.
    - If no response, may repeat initial dose every 3 – 5 minutes to a maximum of 3 doses.
  - Utilize restraints as appropriate. See Restraint 6.5.

Suggested Treatments

- Beta Blocker and Ca Channel Blocker, see Bradycardia – Pediatric 3.1P.
- Dystonic Reaction:
  - ***Diphenhydramine*** 1 mg/kg IV/IM up to maximum dose 50 mg
- Organophosphates, see Nerve Agent/Organophosphate – Pediatric 2.12P.
- Ingested Poison:
  - Contact **Medical Command** to discuss possible treatments for specific exposure.

Paramedic Communication Failure Orders

CF

- Tricyclic overdose with symptomatic dysrhythmias, (e.g., tachycardia and wide QRS > 110 ms): ***Sodium bicarbonate*** 1 mEq/kg IV/IO.

This protocol is designed to provide general guidelines for treatment. Specific treatments or antidotes may be appropriate as directed by on-line medical command. Consultation with Poison Control is encouraged.

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2.18P Poisoning/Substance Abuse/Overdose – Pediatric

Signs & Symptoms

- **Acetaminophen**: Initially normal or nausea/vomiting. If not detected and treated, may cause irreversible liver failure.
- **Anticholinergic**: Tachycardia, fever, dilated pupils, mental status changes.
- **Aspirin**: Abdominal pain, vomiting, pulmonary edema, tachypnea, fever, tinnitus and/or altered mental status. Renal dysfunction, liver failure, and/or cerebral edema among other things can take place later. Consider in elderly with altered mental status.
- **Cardiac Medications**: Dysrhythmias, altered mental status, hypotension, hypoglycemia.
- **Sedatives/Depressants**: Bradycardia, hypotension, decreased temperature, decreased respirations, pinpoint (miosis) or non-specific pupils.
- **Dystonic Reaction**: Neurological movement disorder, in which sustained muscle contractions cause twisting and repetitive movements or abnormal postures. This may be induced by antipsychotics, such as haloperidol, or anti-emetics such as prochlorperazine or metoclopramide.
- **Akathisia**: May consist of feelings of anxiety, agitation, and jitteriness, as well as inability to sit still /pacing. This may be induced by antipsychotics, such as haloperidol, or anti-emetics such as prochlorperazine or metoclopramide.
- **Opioids**: Respiratory arrest or hypoventilation, evidence of opiate use (bystander report, drug paraphernalia, opioid prescription bottles, "track marks"), depressed mental status, miosis.
- **Organophosphates**: Bradycardia, increased secretions, nausea, vomiting, diarrhea, pinpoint pupils, SLUDGEM, BBB. See Nerve Agent/Organophosphate Poisoning – Adult 2.12A
- **Solvents**: Nausea, coughing, vomiting, and mental status change.
- **Sympathomimetic/Stimulants**: Tachycardia, hypertension, increased temperature, dilated pupils, anxiety, paranoia, diaphoresis. Examples are bath salts, cocaine, caffeine, methamphetamine, ecstasy, ADHD drugs, thyroid meds (rarely), albuterol.
- **Tricyclic Antidepressants** (**TCA**): Seizures, dysrhythmias, hypotension, decreased mental status or coma.

PEARLS

- If possible, and not a risk to EMS crew members, bring container/bottles, and/or contents
- Pulse oximetry may NOT be accurate for toxic inhalational patients.

PEARLS

- Route, time, quantity and substance(s)
- Reason if known: intentional or accidental.
- Ask bystanders what medications are present/accessible

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2.19A Seizure - Adult

EMT Standing Orders	

E	• Routine Patient Care.
	• Provide ventilatory support as required.
	• Call for paramedic intercept, if available for the following patients:
	  ○ First time seizure
	  ○ Seizure lasting greater than 5-minutes
	  ○ Multiple seizures

Paramedic Standing Orders	

P	• Do not delay administration of medications to establish vascular access.
	• Establish vascular access.
	• For seizure lasting > 2 minutes administer:
	  ○ ***Midazolam*** 5 mg IM (preferred) or IN/IV; (Note: a 5 mg/mL concentration is recommended for IM/ intranasal administration).
	• For suspected eclampsia (seizures in the third trimester of pregnancy or up to 6-weeks postpartum)
	  ○ Administer ***magnesium sulfate***, 4 g in 100 mL crystalloid solution slow IV push over 5 minutes,
	• Check blood glucose. If the blood glucose reading is < 60 mg/dl, treat patient for seizures and see Diabetic Emergencies (Hypoglycemia) – Adult 2.8A

Paramedic Communication Failure Orders	
CF	• For continued seizure activity, may administer every 5 minutes: ○ ***Midazolam*** 5 mg IM (preferred) or IN/IV; (Note: a 5 mg/mL concentration is recommended for IM/intranasal administration).

- If the patient has an implanted vagus nerve stimulator (VNS), suggest that family use the VNS magnet to activate the VNS and assist if required.
- To activate the VNS, move the magnet across the skin directly on the VNS device 2-3 times, and then remove the magnet. If unsuccessful, repeat every 3 – 5 minutes for a total of 3 times.

PEARLS

- Do not attempt to restrain the patient; protect the patient from injury.
- History preceding a seizure is very important. Find out what precipitated the seizure (e.g., medication non-compliance, active infection, seizure history, trauma, hypoglycemia, alcohol/substance abuse, third-trimester pregnancy or post partum).
- Consider tricyclic antidepressant overdose as etiology for seizure. Poisoning/Substance Abuse/Overdose –Adult 2.18A
- Post partum patients may experience eclamptic seizures up to several weeks after giving birth.
- Status epilepticus is defined a continuous seizure lasting more than 30 min, or two or more seizures without full recovery of consciousness between any of them. This is a true emergency requiring airway monitoring, treatment (including benzodiazepines), and transport.
- Any seizure still present upon EMS arrival and/or lasting more than 2 minutes should be treated with benzodiazepines.
- Diazepam and lorazepam are not effective when administered IM and should be given IV.
- **The preferred initial dose of benzodiazepine is midazolam IM/IN. After initial dose, establish an IV in case additional medication doses are needed. If an IV is already established, administer benzodiazepine IV.**

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2.19P Seizure – Pediatric

EMT Standing Orders	
E	• Routine Patient Care. • Provide ventilatory support as required. • Obtain the patient's temperature for suspected febrile seizure (rectal route preferred) if available. • If patient has unstable vital signs, first time, non-febrile seizure, seizure lasting 5-minutes or greater, or multiple seizures, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.
Paramedic Standing Orders	

P	• Do not delay administration of medications to establish vascular access.
	• For seizure lasting > 5 minutes administer:
	  ○ ***Midazolam*** 0.2 mg/kg IM (preferred) or IN (single maximum dose 10 mg) (Note: a 5 mg/mL concentration is recommended for IM/IN administration) **OR**
	  ○ ***Midazolam*** 0.1 mg/kg IV/IO (single maximum dose 4 mg)
	• Contact **Medical Command** if additional dosing is required.
	• Check blood glucose if available. If the blood glucose reading is < 60 mg/dl, treat patient for seizures and see Diabetic Emergencies (Hypoglycemia) – Pediatric 2.8P.

Paramedic Communication Failure Orders	
CF	For continued seizure activity, any of the above medications may be repeated once after 5 minutes.

- If the patient has an implanted vagus nerve stimulator (VNS), suggest that family use the VNS magnet to activate the VNS and assist if required.
- To activate the VNS, move the magnet across the skin directly on the VNS device 2-3 times, and then remove the magnet. If unsuccessful, repeat every 3 – 5 minutes for a total of 3 times.

PEARLS

- Do not attempt to restrain the patient; protect the patient from injury.
- History preceding a seizure is very important. Find out what precipitated the seizure (e.g., medication non-compliance, active infection, seizure history, trauma, hypoglycemia, alcohol/substance abuse, third-trimester pregnancy or post partum).
- Status epilepticus is defined a continuous seizure lasting more than 30 min, or two or more seizures without full recovery of consciousness between any of them. This is a true emergency requiring airway monitoring, treatment (including benzodiazepines), and transport.
- Any seizure still present upon EMS arrival and/or lasting more than 2 minutes should be treated with benzodiazepines.
- Diazepam and lorazepam are not effective when administered IM and should be given IV.
- **The preferred initial dose of benzodiazepine is midazolam IM/IN. After initial dose, establish an IV in case additional medication doses are needed. If an IV is already established, administer benzodiazepine IV.**

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2.20A Septic Shock - Adult

IDENTIFICATION OF POSSIBLE SEPSIS:

- Suspected infection – YES
- Evidence of sepsis criteria – YES (2 or more):
  - Temperature < 36°C or > 38°C (< 96.8°F or > 101°F)
  - Heart rate > 90 bpm
  - Respiratory rate > 20 bpm
  - Systolic blood pressure (SBP) < 90 mmHg **OR** Mean Arterial Pressure (MAP) < 65mmHg
  - New onset altered mental status **OR** increasing mental status change with previously altered mental status
  - ETCO2 < 25 mmHg

IF POSITIVE SEPSIS SCREEN, NOTIFY RECEIVING FACILITY OF A "**SEPSIS ALERT**".

EMT Standing Orders

E

- Routine Patient Care.
- Administer oxygen at a rate to keep oxygen saturation ≥94%.
- Do not delay transport.
- If patient has unstable vital signs or has a positive Sepsis screen, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.

Paramedic Standing Orders

P

- Establish vascular access. Do not delay transport to start IV.
- For patients with a systolic blood pressure of less than 90 mmHg, or a shock index > 0.8, administer ***crystalloid solution*** to maintain systolic blood pressure >90 mmHg in 500 mL boluses.
  - Reassess after each 500 ml bolus; assess lung sounds and monitor for volume overload.
  - If there is no response after 2,000 mL IV fluid infused, see Shock – Adult 2.21A

PEARLS

- Sepsis is a systemic inflammatory response syndrome due to infection, often resulting in significant morbidity and mortality. Septic shock is diagnosed if there is refractory hypotension that does not respond to fluid therapy.
- Severe septic shock has a 50% mortality rate and must be treated aggressively.
- Suspect infection in patients with cough, an indwelling catheter, open wounds, paralysis, recent antibiotic use, or bedridden/immuno-compromised individuals.
- Early goal directed therapy consisting of IV fluid administration and early antibiotics reduces mortality in septic patients.
- Notifying Emergency Departments of patients with possible septic shock will improve early initiation of goal directed therapy.
- When administering vasopressors, monitor IV site for signs of extravasation.

Shock Index (SI) = Heart Rate/ Systolic Blood Pressure.
Shock index been studied in patients experiencing shock from a variety of causes: trauma, hemorrhage, myocardial infarction, pulmonary embolism, sepsis, and ruptured ectopic pregnancy. While HR and SBP have traditionally been used to characterize shock in these patients, they often appear normal in the compensatory phase of shock and can be confounded by factors such as medications administered during RSI.
SI >0.8 has been widely found to predict post-intubation hypotension and increased risk of mortality and other markers of morbidity.

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2.20P Septic Shock - Pediatric

IDENTIFICATION OF POSSIBLE SEPSIS:

- Suspected infection – YES
- Temperature < 36 °C or > 38°C (< 96.8°F or > 100.4°F)
- Heart rate and respiratory rate will be outside of normal rage for each age group. Pedi Vital Signs 1.0
  AND at least one of the following indications of end organ dysfunction:
  - Altered mental status
  - Capillary refill time < 1 second (flash) or > 3 seconds
  - Mottled cool extremities
  - Hypoxia
  - Hypotension or poor perfusion
  - Decreased urine output

IF YES TO ALL SEPSIS ALERT CRITERIA, CONTACT RECEIVING HOSPITAL AND REPORT "***SEPSIS ALERT***".

EMT Standing Orders

E

- Routine Patient Care.
- Monitor and maintain airway and breathing as these may change precipitously.
- Administer ***oxygen*** at a rate to keep oxygen saturation ≥94%.
- Do not delay transport.
- If patient has unstable vital signs or has a positive Sepsis screen, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.

Paramedic Standing Orders

P

- Establish vascular access. Do not delay transport to start IV.
- IV fluids should be titrated to attaining normal capillary refill, peripheral pulses, and level of consciousness:
  - Administer fluid bolus of 20 mL/kg of ***crystalloid solution*** by syringe push method; reassess patient immediately after completion of bolus.
  - If inadequate response to initial fluid bolus, administer a second 20 mL/kg bolus of ***crystalloid solution*** by syringe push method; reassess patient immediately after completion of bolus.
  - If inadequate response to second fluid bolus, administer a third 20 mL/kg bolus of ***crystalloid solution*** by syringe push method; reassess patient immediately after completion of bolus.

  Note: Reassess patient between each bolus for improving clinical signs and signs of fluid overload (rales, increased work of breathing, or increased oxygen requirements).
- If there is no response after 3 fluid boluses (60 ml/kg), administer; (see Shock – Pediatric 2.21P)
  - ***Norepinephrine*** 0.05 mcg/kg/min via pump, titrated to effect (preferred), maximum dose of 2 mcg/kg/min

  OR
  - ***Epinephrine*** 0.05 mcg/kg/min via pump, titrated to effect; maximum dose 0.3 mcg/kg/min.

PEARLS

- Sepsis is a systemic inflammatory response syndrome due to infection. Frequent causes of septic shock include urinary, respiratory, or gastrointestinal infections and complications from catheters and feeding tubes. Patients who are immuno-compromised are also susceptible to sepsis.
- Septic shock has a high mortality and is one of the leading causes of pediatric mortality.
- Aggressive IV fluid therapy and early antibiotics significantly reduces mortality.
- When administering vasopressors, monitor IV site for signs of extravasation.

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2.21A Shock - Adult

Any patient with signs, symptoms, and history suggesting inadequate tissue perfusion should be considered to be in shock. Make every effort to determine and treat the underlying cause. Regardless of etiology, shock patients should be transported immediately to the nearest appropriate facility for definitive care. Provide advanced notification to hospitals for all patients with suspected shock.

Etiology of Shock

- **Cardiogenic Shock**: History of cardiac surgery, rhythm disturbances, or post cardiac arrest. Assess for acute MI and pulmonary edema.
  - Signs & Symptoms: chest pain, shortness of breath, crackles, JVD, hypotension, tachycardia, diaphoresis.
- **Distributive Shock**: Anaphylaxis, see Allergic Reaction/Anaphylaxis – Adult 2.2A, neuro-genic shock, sepsis, see Septic Shock – Adult 2.20A. Assess for fever and signs of infection.
  - Signs & Symptoms: sensory and/or motor loss, hypotension, bradycardia versus normal heart rate, warm, dry skin.
- **Hypovolemic Shock**: Dehydration, volume loss, or hemorrhagic shock.
  - Signs & Symptoms: tachycardia, tachypnea, hypotension, diaphoresis, cool skin, pallor, flat neck veins.
- **Obstructive Shock**: Determine tension pneumothorax, pulmonary embolism, and cardiac tamponade.
  - Signs and symptoms of tension pneumothorax: asymmetric or absent breath sounds, respiratory distress or hypoxia, signs of shock including tachycardia and hypotension, JVD, possible tracheal deviation upon palpation above the sternal notch (late sign)

EMT Standing Orders

E

- Routine Patient Care.
- Keep the patient supine. Do not elevate feet.
- Prevent heat loss by covering with warm blankets if available and if the patient is not febrile.

CARDIOGENIC SHOCK

- Assess for pulmonary edema and/or congestive heart failure (CHF).
  - If CHF is suspected, refer to Congestive Heart Failure (Pulmonary Edema) 3.3.

DISTRIBUTIVE SHOCK

- If patient has history of adrenal insufficiency, refer to Adrenal Insufficiency 2.1.
- If anaphylaxis is suspected, refer to Allergic Reaction/Anaphylaxis 2.2A.
- If septic shock is suspected, refer to Septic Shock 2.20A.
- If neurogenic shock is suspected, utilize spinal motion restriction

HYPOVOLEMIC SHOCK

- Control active bleeding using direct pressure, pressure bandages, tourniquets (commercial tourniquets preferred), or hemostatic bandage.
  - Refer to Tourniquet & Hemostatic Agent 6.7.

PEARLS

For patients with uncontrolled hemorrhagic or penetrating torso injuries:

- Restrict IV fluids to maintain BP of 80-90 systolic. Delaying aggressive fluid resuscitation until operative intervention may improve the outcome. Operative intervention must be available within 30-45 minutes to utilize this strategy.
- Patients should be reassessed frequently, with special attention given to the lung examination to ensure volume overload does not occur.
- Several mechanisms for worse outcomes associated with IV fluid administration have been suggested, including dislodgement of clot formation, dilution of clotting factors, and acceleration of hemorrhage caused by elevated blood pressure.

Continued

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2.21A Shock - Adult

Paramedic Standing Orders

P

- Administer warm ***crystalloid solution***, if feasible. IV fluid administration should be based on physiologic signs rather than routine IV fluid administration in all patients.
  - Physiological signs:
    - Altered mental status.
    - Radial pulse cannot be palpated.
    - Systolic blood pressure is < 90 mmHg.
    - Shock Index > 0.8

HYPOVOLEMIC SHOCK

- Administer ***crystalloid solution*** to maintain adequate mental status, peripheral perfusion and to maintain systolic blood pressure >90 mm Hg in 500 mL boluses.
  - Total volume should not exceed 2,000 mL.
  - Contact **Medical Command** after first 1,000 mL.

CARDIOGENIC SHOCK

- Assess for signs of pulmonary edema. If present:
  - ***CPAP***.
  - Establish IV ***crystalloid solution*** to keep vein open.
- Administer push dose medications for short transport times or as bridge to infusion:
  - ***Epinephrine***: administer 10 mcg IV/IO every 2-5 minutes to maintain SBP >90
    OR
  - ***Phenylephrine***: administer 100 mcg IV/IO every 2-5 minutes to maintain SBP >90
- ***Norepinephrine*** IV/IO via infusion pump 1 – 30 mcg/min (preferred agent)
  OR
- ***Epinephrine*** IV/IO via infusion pump 2 – 10 mcg/min titrated to effect.
- Administer additional 250 mL ***crystalloid solution*** fluid bolus.

DISTRIBUTIVE SHOCK

- Administer ***crystalloid solution*** to maintain systolic blood pressure >90 mm Hg in 500 mL boluses.
  - Total volume should not exceed 2,000 mL.
- For suspected Sepsis: Septic Shock 2.20A
- Administer push dose medications for short transport times or as bridge to infusion:
  - ***Epinephrine***: administer 10 mcg IV/IO every 2-5 minutes to maintain SBP >90
    OR
  - ***Phenylephrine***: administer 100 mcg IV/IO every 2-5 minutes to maintain SBP >90
- ***Norepinephrine*** IV/IO via infusion pump 1 – 30 mcg/min (preferred agent)
  OR
- ***Epinephrine*** IV/IO via infusion pump 2 – 10 mcg/min titrated to effect
- For suspected Anaphylaxis, see Anaphylaxis 2.0A-Ana

OBSTRUCTIVE SHOCK

- If tension pneumothorax suspected:
  - Needle decompression. See Needle Thoracostomy 5.14

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2.21P Shock – Pediatric

Any patient with signs, symptoms, and history suggesting inadequate tissue perfusion should be considered to be in shock. Make every effort to determine and treat the underlying cause. Regardless of etiology, shock patients should be transported immediately to the nearest appropriate facility for definitive care. Provide advanced notification to hospitals for all patients with suspected shock.

Etiology of Shock

- **Cardiogenic Shock**: History of cardiac surgery, rhythm disturbances, or post cardiac arrest. Assess for acute MI and pulmonary edema.
  - Signs & Symptoms: chest pain, shortness of breath, crackles, JVD, hypotension, tachycardia, diaphoresis.
- **Distributive Shock**: Anaphylaxis, see Allergic Reaction/Anaphylaxis – Pediatric 2.2P, neuro-genic shock, sepsis, see Septic Shock – Pediatric 2.20P. Assess for fever and signs of infection.
  - Signs & Symptoms of neurogenic shock: sensory and/or motor loss, hypotension, bradycardia versus normal heart rate, warm, dry skin.
- **Hypovolemic Shock**: Dehydration, volume loss, or hemorrhagic shock.
  - Signs & Symptoms: tachycardia, tachypnea, hypotension, diaphoresis, cool skin, pallor, flat neck veins.
- **Obstructive Shock**: Determine tension pneumothorax, pulmonary embolism, and cardiac tamponade.
  - Signs and symptoms of tension pneumothorax: asymmetric or absent breath sounds, respiratory distress or hypoxia, signs of shock including tachycardia and hypotension, JVD, possible tracheal deviation upon palpation above the sternal notch (late sign)

EMT Standing Orders

E

- Routine Patient Care.
- Keep the patient supine. Do not elevate feet.
- Prevent heat loss by covering with warm blankets if available and if the patient is not febrile.

CARDIOGENIC SHOCK

- Assess for pulmonary edema and/or congestive heart failure (CHF).
  - If CHF is suspected, refer to Congestive Heart Failure (Pulmonary Edema) 3.3.

DISTRIBUTIVE SHOCK

- If patient has history of adrenal insufficiency, refer to Adrenal Insufficiency 2.1.
- If anaphylaxis is suspected, refer to Allergic Reaction/Anaphylaxis 2.2P.
- If septic shock is suspected, refer to Septic Shock 2.20P.
- If neurogenic shock is suspected, utilize spinal motion restriction.

HYPOVOLEMIC SHOCK

- Control active bleeding using direct pressure, pressure bandages, tourniquets, or hemostatic bandage.
  - Only utilize topical hemostatic bandages which have been determined to be effective and safe in a standardized laboratory injury model.
- Refer to Tourniquet & Hemostatic Agent 6.7.

PEARLS

For patients with uncontrolled hemorrhagic or penetrating torso injuries:

- Contact **Medical Command** to discuss restriction of IV fluids.
  - Delaying aggressive fluid resuscitation until operative intervention may improve the outcome. Operative intervention must be available within 30-45 minutes to utilize this strategy. In rural areas with longer transport times, restricting fluid may result in exsanguination and irreversible shock
- Patients should be reassessed frequently, with special attention given to the lung examination to ensure volume overload does not occur.
- Several mechanisms for worse outcomes associated with IV fluid administration have been suggested, including dislodgement of clot formation, dilution of clotting factors, and acceleration of hemorrhage caused by elevated blood pressure.

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2.21P Shock – Pediatric

Paramedic Standing Orders

P

- Administer warm ***crystalloid solution***, if feasible. ***Crystalloid solution*** administration should be based on physiologic signs rather than routine IV fluid administration in all patients.
- Physiologic, therapeutic end points (in order of importance) are:
  - Normal mental status,
  - Capillary refill,
  - Normal pulses and heart rate,
  - No difference between peripheral and central pulses,
  - Warm extremities, and
  - THEN normal blood pressure, see, Pediatric Vital Signs 1.0.
- Consider crystalloid solution administration via infusion pump Obtain serum lactate level (if available and trained).

HYPOVOLEMIC SHOCK

- Administer ***crystalloid solution*** in 20 mL/kg bolus over < 15 min to improve clinical condition.
  - May repeat to a maximum 60 mL/kg.

CARDIOGENIC SHOCK

- Establish IV/IO to keep vein open.
- ***CPAP***.
- Administer ***crystalloid solution*** in 10 mL/kg bolus over < 15 min and repeat as tolerated.
  - Evaluate lung sounds after each fluid bolus to ensure the absence of pulmonary edema.
- If hypotensive administer:
- ***Norepinephrine*** IV/IO via infusion pump 0.05 mcg/kg/min titrated to effect.
  OR
- ***Epinephrine*** IV/IO via infusion pump 0.05 mcg/kg/min titrated to effect.

DISTRIBUTIVE SHOCK

- Administer ***crystalloid solution*** in 20 mL/kg bolus over < 15 min to improve clinical condition.
  - May repeat to a maximum 60 mL/kg.
- If still hypotensive:
  - ***Norepinephrine*** IV/IO via infusion pump 0.05 mcg/kg/min titrated to effect.
    OR
  - ***Epinephrine*** IV/IO via infusion pump 0.05 mcg/kg/min titrated to effect.
- For suspected Anaphylaxis: Anaphylaxis 2.0P-Ana
- For suspected Sepsis: (Septic Shock 2.20P)
- For patient with history of adrenal insufficiency, assist the patient/caregiver in giving the patient his or her own medications, as prescribed.
  - Refer to Adrenal Insufficiency 2.1

OBSTRUCTIVE SHOCK

- If tension pneumothorax suspected:
  - Needle decompression. See Needle Thoracostomy 5.14

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2.22A Smoke Inhalation - Adult

EMT Standing Orders	
E	• Routine Patient Care. • Oxygen 100% via non-rebreather mask or BVM. • Decontamination concurrent with initial resuscitation. • If a carbon monoxide (CO) oximeter is available, obtain carbon monoxide levels. • See Burn/Electrocution/Lightening – Adult & Pediatric 4.0. • If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.
Paramedic Standing Orders	

P	• Provide early advanced airway control in patients with suspected upper or lower airway burns or severe smoke inhalation. See Airway Management – Adult 5.1A.
	• If you have a patient with a history of smoke exposure and an altered level of consciousness and/or hemodynamic or respiratory compromise, establish IV access and administer, if available:
	  ○ ***Hydroxocobalamin*** via use of Cyanokit (if available):
	  ▪ Reconstitute: Place the vial of hydroxocobalamin in an upright position; add 0.9% NaCl to the vial (200 mL for 5 g vial or 100 mL for 2.5 g vial) using the transfer spike. Fill to the line.
	  ▪ Rock vial for at least 60 seconds (do not shake).
	  ▪ Using vented intravenous tubing, administer IV over 15 minutes.
	  ▪ Depending on clinical response, a second dose may be required.

- Oxygen saturation may be inaccurate in patients exposed to carbon monoxide or cyanide.
- CO oximeter devices may yield inaccurate low/normal results for patients with CO poisoning. All patients with probable or suspected CO poisoning should be transported to the nearest appropriate hospital, based on their presenting signs and symptoms.
- Do not administer other drugs concurrently in same IV as hydroxocobalamin.

PEARLS

- Smoke is a dangerous mixture of toxic gases and suspended chemicals resulting from combustion. Smoke inhalation is the result of inhaling these heated components. While it may be impossible to predict exactly what components of combustion are inhaled, cyanide (CN) and carbon monoxide (CO) are common elements found in smoke and should be suspected in all smoke inhalation victims.
- Cyanide exposure should be strongly considered in the smoke inhalation patient.

Symptoms: headache, confusion, dyspnea, chest tightness, nausea.
Signs: soot in the nose or mouth, change in level of consciousness, seizure, dilated pupils, coughing, tachypnea and hypertension (early), bradypnea and hypotension (late), shock, vomiting.

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2.22P Smoke Inhalation – Pediatric

EMT Standing Orders	
E	• Routine Patient Care. • ***Oxygen*** 100% via non-rebreather mask or BVM. • Decontamination concurrent with initial resuscitation. • If a carbon monoxide (CO) oximeter is available, obtain carbon monoxide levels. • See Burn/Electrocution/Lightening – Adult & Pediatric 4.0. • If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.
Paramedic Standing Orders	

P	• Provide early advanced airway control in patients with suspected upper or lower airway burns or severe smoke inhalation. See Airway Management – Pediatric 5.1P.
	  ○ Administer ***epinephrine*** 5 mg (5 mL) in 3 mL 0.9% NaCl via nebulizer for symptomatic patients, especially if unable to obtain advanced airway.
	• If you have a patient with a history of smoke exposure and an altered level of consciousness and/or hemodynamic or respiratory compromise, establish IV access and administer, if available:
	  ○ ***Hydroxocobalamin*** via use of Cyanokit (if available):
	  ▪ Reconstitute: Place the vial of hydroxocobalamin in an upright position; add 0.9% NaCl to the vial (200 mL for 5 g vial or 100 mL for 2.5 g vial) using the transfer spike. Fill to the line.
	  ▪ Rock vial for at least 60 seconds (do not shake).
	  ▪ Using vented intravenous tubing, infuse 70 mg/kg as per Pediatric Vital Signs 1.0 over 15 minutes.
	  ▪ Depending on clinical response, a second dose may be required.

- Oxygen saturation may be inaccurate in patients exposed to carbon monoxide or cyanide.
- CO oximeter devices may yield inaccurate low/normal results for patients with CO poisoning. All patients with probable or suspected CO poisoning should be transported to the nearest appropriate hospital, based on their presenting signs and symptoms.
- Do not administer other drugs concurrently in same IV as hydroxocobalamin.

PEARLS

- Smoke is a dangerous mixture of toxic gases and suspended chemicals resulting from combustion. Smoke inhalation is the result of inhaling these heated components. While it may be impossible to predict exactly what components of combustion are inhaled, cyanide (CN) and carbon monoxide (CO) are common elements found in smoke and should be suspected in all smoke inhalation victims.
- Cyanide exposure should be strongly considered in the smoke inhalation patient.

Symptoms: headache, confusion, dyspnea, chest tightness, nausea.
Signs: soot in the nose or mouth, change in level of consciousness, seizure, dilated pupils, coughing, tachypnea and hypertension (early), bradypnea and hypotension (late), shock, vomiting.

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2.23A Stroke – Adult & Pediatric

EMT Standing Orders	

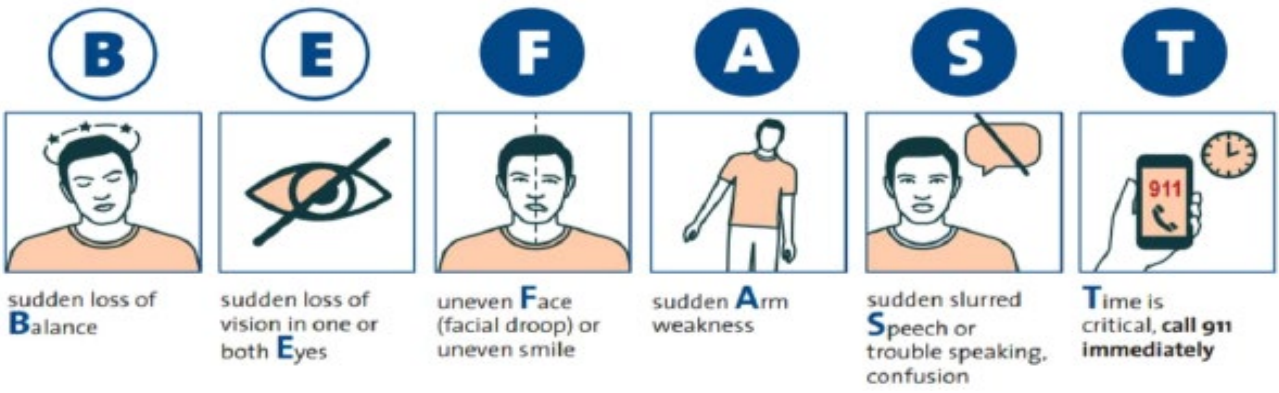
E	• Routine Patient Care.
	• Perform Stroke Assessment
	  ○ **B.E. F.A.S.T.**
	  ▪ If positive, perform **R.A.C.E. Scale** evaluation for *Large Vessel Occlusion*
	  ****For R.A.C.E. score > 4, consider transporting patient directly to a Comprehensive Stroke Center****
	• Establish Stroke Alert Criteria and notify receiving hospital of "**Stroke Alert and Time Last Known "Well**" if indicated.
	• For symptomatic patients:
	  ○ Administer oxygen to maintain O2 between 94% - 99%
	  ○ Elevate head of stretcher to 30° (unless patient requires spinal motion restriction).
	  ○ Minimize on-scene time. Do not delay for ALS intercept.
	  ○ Rapid transport to the most appropriate facility based on regional transport agreements.
	• Obtain an Emergency Contact number for the patient.
	• Request ALS unit

Paramedic Standing Orders	
P	• Establish vascular access enroute to stroke center when possible. • Check blood glucose level. • If time permits, collect lab specimens: 1 mint green tube, 1 blue tube, 1 lavender tube. • Ensure "**Stroke Alert**" has been reported to receiving facility

PEARLS:

- Consider transporting a witness, family member or caregiver with the patient to verify the time of the onset of stroke symptoms.
- For wake up stroke, check if patient had gotten up and been at baseline during the night.
- **Suspect stroke** in patients with any of the following new symptoms or complaints:
  - Acute visual disturbance
  - Altered mental state
  - Difficulty with balance or coordination
  - Difficulty with speech or understanding
  - Severe headache
  - Weakness/numbness left or right
- Determine stroke mimics including:
  - Hypoglycemia
  - Intoxication
  - Migraine
  - Seizure
  - Sepsis

How to Identify Stroke



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American Heart Association. Mission:Lifeline Stroke

Instructions & Scoring:
Rapid Arterial oCclusion Evaluation (RACE) Stroke Severity Scale

Stroke is a leading cause of serious long-term disability and the fifth leading cause of death in the United States. **Learning to recognize stroke, rate its severity, and transport a patient to the proper hospital is a fundamental contribution EMS can make in stroke management.** Several stroke severity scales have been developed to help EMS do just this.

If a prehospital stroke screen is positive, EMS providers should assess severity by using a stroke severity scale. The RACE Stroke Severity Scale is one of several nationally recognized stroke severity scale options. Like all stroke severity scales, **the purpose of the RACE Scale is to help EMS identify patients whose symptoms may be due to a Large Vessel Occlusion (LVO), and may benefit from mechanical thrombectomy – an endovascular therapy shown to improve outcomes for select LVO patients.**

Item	Instruction	Result	Score
Facial Palsy	Ask the patient to show his or her teeth, or to smile.	Absent facial palsy (Facial movement symmetrical) Mild facial palsy (Facial movement slightly asymmetrical) Moderate/severe facial palsy (Facial movement completely asymmetrical)	0 1 2
Arm Motor Function	Patient extends his or her arms, to 90 degrees if sitting or 45 degrees if lying on his or her back*.	Normal/mild arm motor dysfunction (Upholds both arms ≥10 seconds) Moderate arm motor dysfunction (Upholds either arm <10 seconds) Severe arm motor dysfunction (Unable to raise either arm against gravity)	0 1 2
Leg Motor Function	Patient separately raises his or her legs 30 degrees from the supine (lying on back) position*.	Normal/mild leg motor dysfunction (Upholds each leg ≥5 seconds) Moderate leg motor dysfunction (Upholds either leg <5 seconds) Severe leg motor dysfunction (Unable to raise either leg against gravity)	0 1 2
Head & Gaze Deviation	Ask the patient to look to the left, then to the right.	Absent: head & gaze deviation absent (Eye movement to both sides w/o head deviation) Present: head & gaze deviation present (Patient's eyes or head deviate to one side)	0 1
Aphasia (if right hemiparesis) -OR- Agnosia (if left hemiparesis)	<u>If right hemiparesis or without motor impairment:</u> First ask the patient to close his or her eyes; Second ask the patient to make a fist with his or her left hand. -OR- <u>If left hemiparesis:</u> First show the patient his or her left arm and ask, "Whose arm is this?"; Second ask the patient, "Can you move your arms and clap your hands?"	Absent aphasia (Performs both tasks correctly) Moderate aphasia (Performs one of two tasks correctly) Severe aphasia (Unable to perform either task correctly) -OR- Absent agnosia (Recognizes arm and attempts to move weakened arm) Moderate agnosia (Does not recognize arm <u>or</u> is unaware of arm weakness) Severe agnosia (Does not recognize arm <u>and</u> is unaware of arm weakness)	0 1 2 -OR- 0 1 2
Total Score			**= Sum of items**

*If the patient cannot lift his or her limbs, raise his or her limbs against gravity, without touching the bed or surface.

Pérez de la Ossa N, Carrera D, Gorchs M, et al. Design and validation of a prehospital stroke scale to predict large arterial occlusion: The Rapid Arterial Occlusion Evaluation Scale. Stroke. 2014; 45: 87-91.

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3.0 Acute Coronary Syndrome – Adult

All patients with complaints of chest pain should not automatically be treated with aspirin and nitrates. Determine the likelihood of ACS based on the nature of the symptoms, the patient's age, cardiac risk factors, past medical history, etc.

EMT Standing Orders

E

- Routine Patient Care.
- Administer ***oxygen*** only to patients with dyspnea, hypoxia (O2 saturation <94%), or signs of heart failure at a rate to keep O2 saturation ≥94%.
- Administer ***aspirin*** 324 mg PO (chewable). (Note: If patient has taken a partial dose, 81 mg, administer remaining 243 mg. Total dose taken should be 324 mg.)
- Facilitate administration of the patient's own ***nitroglycerin*** every 3-5 minutes while symptoms persist and systolic BP remains ≥100 mmHg, to a total of 3 doses.
- Ensure ALS unit is dispatched.

Paramedic Standing Orders

P

- Monitor ECG rhythm and obtain 12-lead ECG within 10 minutes of patient contact.
- Establish vascular access prior to administration of nitroglycerin.
- ***Nitroglycerin*** 0.4 mg SL every 3-5 minutes while symptoms persist and if systolic BP remains ≥100 mmHg.
- Treat dysrhythmias as needed; refer to the appropriate protocol.
- If **STEMI** is confirmed:
  - Transmit 12-Lead ECG to receiving facility.
  - Ensure **STEMI ALERT** has been activated.

Paramedic Communication Failure Orders

CF/EC

- For chest discomfort unresponsive to nitrates, administer analgesia: Pain Management-Adult 2.17A
- Administer ***IV nitroglycerin*** at 10 mcg/min if symptoms persist after 3rd SL nitroglycerin and SBP > 100 (it is recommended two (2) IV lines or equivalent in place and the IV nitroglycerin must be on an infusion pump).

- Avoid nitroglycerin in any patient who has used a phosphodiesterase inhibitor for erectile dysfunction and pulmonary hypertension, such as sildenafil (Viagra, Revatio) or vardenafil (Levitra, Staxyn) within 24 hours, or tadalafil (Cialis, Adcirca) within 48 hours. Also avoid use in patients receiving intravenous prostacyclins for pulmonary hypertension.
- Administer nitrates with extreme caution, if at all, to patients with inferior-wall STEMI or suspected right ventricular (RV) involvement because these patients require adequate RV preload.

PEARLS

- Transmission of 12-lead ECG and/or communication with receiving facility is critical to the activation of a STEMI system.
- If Paramedic or medical command interpretation, notify the receiving facility of a "STEMI ALERT."
- Administration of aspirin has been shown to decrease mortality in Acute Coronary Syndrome.
- Administer aspirin to every patient with suspected acute coronary syndrome unless they have:
  - History of anaphylaxis to aspirin or NSAIDs, OR
  - Evidence of active gastrointestinal or other internal bleeding.
- Patients with acute coronary syndrome (especially women, patients with a history of diabetes, and the elderly) may present with signs and symptoms other than chest pain including diaphoresis, shortness of breath, weakness, syncope and nausea.

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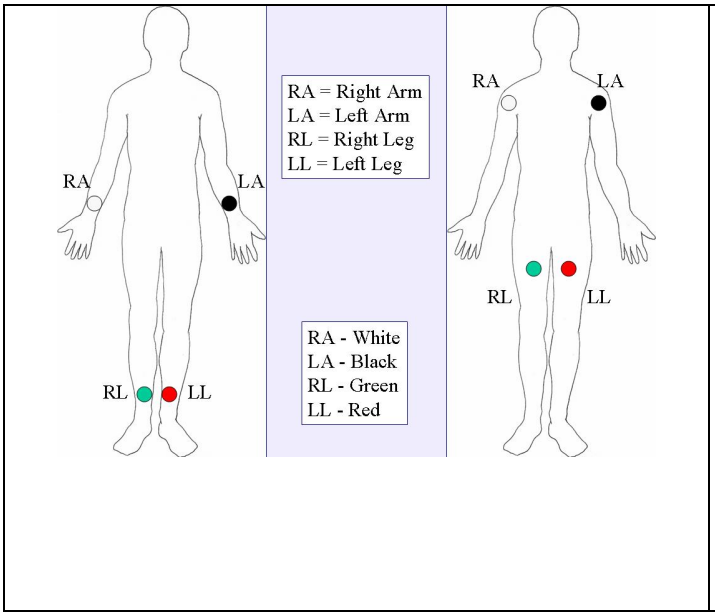
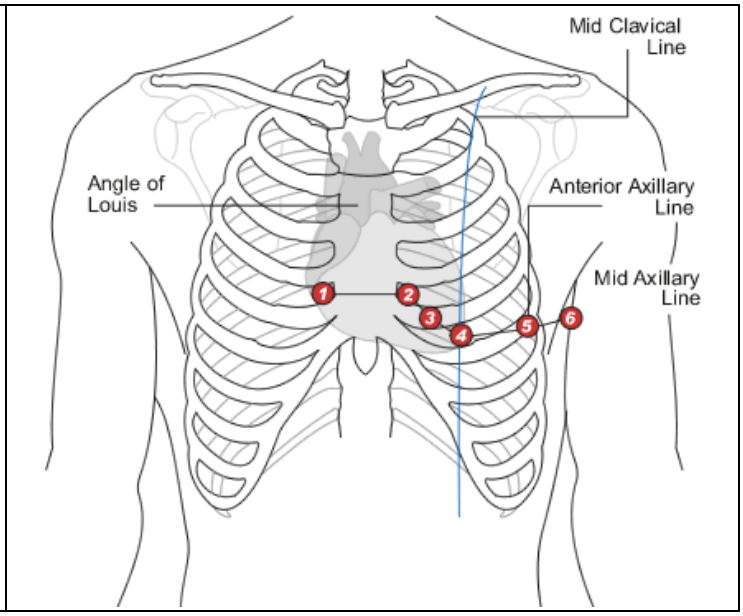
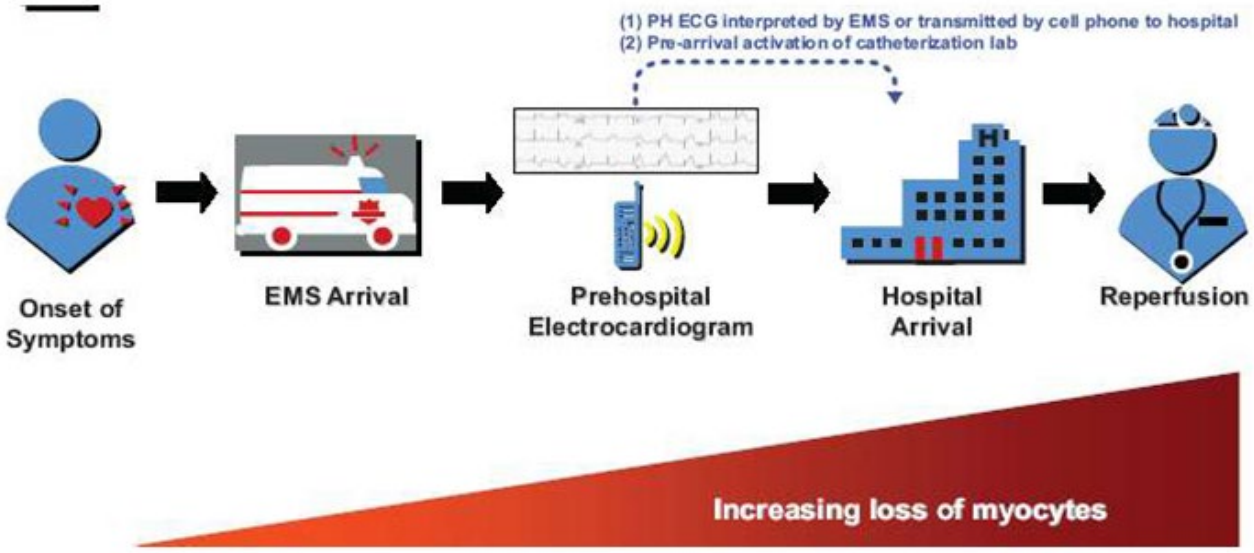
3.0 Acute Coronary Syndrome – Adult







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3.1A Bradycardia – Adult

EMT Standing Orders

E

- Routine Patient Care.
- Determine the underlying causes of bradycardia (e.g., hypoxia, hypoglycemia, toxicologic and hypothermia).
- Call for paramedic intercept if serious signs or symptoms (hypotension, acutely altered mental status, signs of shock, ischemic chest discomfort, or acute heart failure). Do not delay transport.

Paramedic Standing Orders

P

- Monitor ECG rhythm and obtain 12-lead ECG.
- Establish vascular access.
- Treat hypovolemia. Administer 500 mL ***crystalloid solution*** bolus.
- If serious signs or symptoms (hypotension, acutely altered mental status, signs of shock, ischemic chest discomfort, or acute heart failure):
  - Administer ***atropine*** 1 mg IV/IO every 3-5 minutes to a maximum of 3 mg.
- If atropine is ineffective:
  - Initiate ***transcutaneous pacing***.
    - Set rate to 60-80 beats per minute
    - Utilize lowest energy setting to achieve mechanical capture/response
  - Anxiolysis analgesia for pacing:
    - ***Midazolam*** 2.5 mg IV/IO/intranasal, may repeat once in 5 minutes OR 5 mg IM, may repeat once in 10 minutes
  - Administer analgesia prior to or during transcutaneous pacing, if feasible:
    - ***Fentanyl*** 25 – 50 mcg slow IV push, may repeat every 5 minutes to a total of 100 mcg

    OR
    - ***Ketamine***: 0.2 mg/kg IV infusion (in 100 mL bag 0.9% NaCl over 15 minutes).
      - Administer 0.15 mg/kg dose for frail or elderly patients.
  - Monitor ETCO2 for all administered analgesics and sedatives

Paramedic Communication Failure Orders

CF

- Administer epinephrine infusion at 2-10 mcg/min IV/IO, titrated to effect.
- Other Causes:
  - For symptomatic beta-blocker or calcium channel blocker overdose, administer ***glucagon*** 2 mg IV/IO over 3 -5 minutes. May repeat up to 10 mg; if effective, place on infusion 1-5 mg/hr IV/IO via pump.
  - For symptomatic calcium channel blocker overdose, beta-blocker toxicity or hyperkalemia/renal failure, administer ***calcium chloride*** 500-1,000 mg (5-10 mL of a 10% solution) IV/IO over 10 minutes.
    - May repeat as needed.

- Special caution must be utilized when administering sedation or analgesia to hypotensive patients. Close hemodynamic monitoring is required.
- For calcium chloride administration, ensure IV patency and do not exceed 1 mL per minute. Flush with **crystalloid solution** before and after administration. Contact **Medical Command.**

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3.1P Bradycardia – Pediatric

EMT Standing Orders

E

- Routine Patient Care. Administer 100% oxygen.
- Treat the underlying causes of bradycardia (e.g., hypoxia, hypoglycemia and hypothermia).
- Begin/continue CPR if heart rate is <60 bpm **AND** the child shows signs of poor systemic perfusion with hypoperfusion despite adequate ventilation and oxygenation.
- If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.

Paramedic Standing Orders

P

For Bradycardia With Serious Signs and Symptoms:

- Check blood sugar.
  - If low, proceed to: Hypoglycemia 2.8P
- Establish IV/IO access.
- Treat hypovolemia. Administer 20 mL/kg ***crystalloid solution*** bolus.
  - If child has a cardiac history, administer ***crystalloid solution*** 10 ml/kg
- ***Epinephrine*** 0.01 mg/kg IV/IO slow push (0.1 mL/kg of 1:10,000) every 3-5 minutes (max single dose 1 mL). If no IV/IO access, may give ***Epinephrine*** ET dose 0.1 mg/kg (0.1 mL/kg of 1:1,000).
- Administer ***atropine*** 0.02 mg/kg IV/IO for increased vagal tone or AV blocks, may repeat once (minimum dose 0.1mg; maximum single dose 0.5 mg).
- Initiate ***transcutaneous pacing***.
- Administer anxiolysis analgesia:
  - ***Midazolam*** 0.1 mg/kg IV/IO/intranasal (max single dose 4 mg)
- Administer analgesia prior to or during transcutaneous pacing, if feasible:
  - ***Fentanyl*** 1 mcg/kg IV/IM/IO; 1.5 mcg/Kg Intranasal (maximum initial dose 50 mcg). Administer slow over 2-3 minutes. (Fentanyl is preferred narcotic agent.) **OR**
  - ***Ketamine*** 0.25 mg/kg IV (maximum dose 25 mg) **OR**
  - ***Ketamine*** 0.5 mg/kg IN (maximum dose 25 mg)
    - Reassess patient every 5 minutes. If no contraindications and patient is still in moderate to severe pain, may redose at 5 – 10 minute intervals at half the original dose to a total of 3 doses.
- See Pain Management – Pediatric 2.17P.

CF

If no other intervention effectively alleviates severe symptomatic, bradycardia, administer:

- ***Glucagon*** 0.1 mg/kg. (max dose 5 mg)

- For ***calcium chloride*** administration, ensure IV patency and do not exceed 1 mL per minute.
- Flush with crystalloid solution before and after administration.

PEARLS

- In children, bradycardia almost always reflects hypoxia, rather than a primary cardiac problem. It is a pre-arrest rhythm, and the prognosis is poor if left untreated. Immediate delivery of high-flow oxygen and assisted ventilation are essential. Untreated bradycardia will quickly cause shock, hypotension and death.
- Combine age-specific heart rates with signs of respiratory failure and shock while assessing. If child is asymptomatic, consider supportive treatment.

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3.2A Cardiac Arrest – Adult

EMT Standing Orders

E

- Routine Patient Care—with focus on high-quality CPR. Administer 100% oxygen.
- Immediate chest compressions (high quality CPR with minimal interruptions).
- Apply AED and use as soon as possible (with minimum interruption of chest compressions).
- If Return of Spontaneous Circulation occurs, see Post Resuscitative Care – Adult 3.4A.
- Consider termination of efforts or not attempting resuscitation (see POLST Orders 8.9 and/or Resuscitation Initiation and Termination 8.12.
- For traumatic arrest, all interventions beyond CPR and spinal motion restriction should be performed enroute to receiving facility. Minimize scene time.
- Call for paramedic intercept, if available.
- After 10 minutes of BLS resuscitation, if ALS has not arrived, begin preparations for patient transport
  - If ALS has not arrived once patient is secured for transport; initiate transport.

Paramedic Standing Orders

P

- Do not interrupt chest compressions for advanced airway, IV/IO placement, or epinephrine administration.
  - May place supraglottic airway as this will not interrupt compressions.
- Establish IV/IO access. Administer 500 mL bolus ***crystalloid solution*** IV/IO in the absence of pulmonary edema.
- Monitor quantitative waveform capnography throughout resuscitation, if available, to assess and monitor airway placement and CPR quality, and to monitor for signs of Return of Spontaneous Circulation.
- Identify and correct treatable causes: hypoxia, overdose/poisoning, hypothermia and hypovolemia and hypoglycemia—treat as per specific protocol.
- After first AED shock or no-shock advisory, administer ***epinephrine*** (**1:10,000**) (**0.1 mg/mL**) 1 mg IV/IO; repeat every 3 to 5 minutes.
- Continue CPR for 2 minutes between interventions; stop only for rhythm check or Return of Spontaneous Circulation.
- Placement of an advanced airway during cardiac arrest **should not interrupt chest compressions**. In this setting, supraglottic airways and ETTs are considered equivalent.

For ventricular fibrillation (VF)/pulseless ventricular tachycardia (VT):

- ***Defibrillation*** at 200 joules, with minimum interruption in chest compressions. Continue CPR for 2 minutes; then rhythm check; then:
- Administer ***epinephrine*** (1:10,000) (0.1 mg/mL) 1 mg IV/IO; repeat every 3 – 5 minutes.
- Continue CPR for 2 minutes between interventions; do not stop for rhythm check or Return of Spontaneous Circulation for 2 minutes.
- If no response after second defibrillation, administer:
  - ***Lidocaine*** 0.75-1.5 mg/kg IV/IO, repeat dose 0.5-0.75 mg/kg (maximum total dose 3 mg/kg).
    OR
  - ***Amiodarone*** 300 mg IV/IO, repeat dose 150 mg as needed
  - For Torsade de Pointes: ***Magnesium sulfate*** 2 g IV/IO over 1 – 2 minutes.
  - For refractory ventricular fibrillation:
    - Change pad placement from anterior-apex to anterior-posterior.

For Hypothermic Cardiac Arrest

- If pulse and breathing are absent, Start CPR unless contraindications to CPR exist.
  - Contraindicsations to CPR in the hypothermic patient include: obvious signs of irreversible death, non-compressible chest wall (frozen), a valid DNR order, avalanche burial > 35 minutes and airway packed with snow, or rescuers exhausted or in danger.
  - Rigor mortis or fixed and dilated pupils are NOT contraindication to CPR in hypothermia.
- **Hypothermic patients without contraindications to CPR should have continued CPR and should not be considered for Termination of Resuscitation (TOR) until the core temperature has been rewarmed to 32°C (90°F) with no ROSC.**

Contraindications to prolonged CPR include patients who are thought to have cardiac arrest before cooling (temperature is thought to have been above 32°C (90°F) at the time of cardiac arrest). Causes of cardiac arrest before cooling include major trauma, witnessed normothermic arrest and avalanche burial < 35 min. and submersion.

Index

Continued

3.2A Cardiac Arrest – Adult

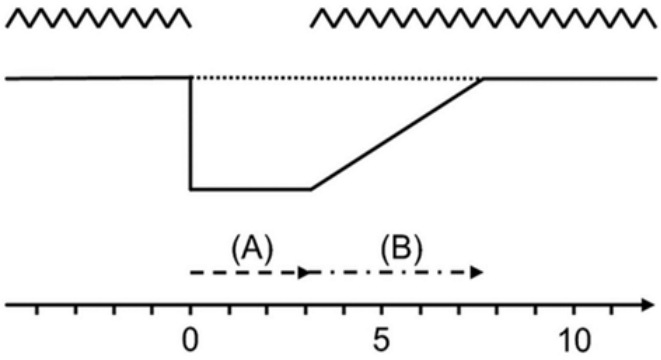
Paramedic Standing Orders

P

For asystole or pulseless electrical activity (PEA):
Continue CPR for 5 cycles (2 minutes), then rhythm check.

- Administer ***epinephrine*** **(1:10,000) (0.1 mg/mL)** 1 mg IV/IO, repeat every 3 to 5 minutes.
- Continue CPR for 2 minutes between interventions; don't stop for rhythm check or Return of Spontaneous Circulation for 2 minutes.
- Evaluate for tension pneumothorax and treat with ***needle decompression*** if indicated. See Needle Thoracostomy 5.14
- For suspected or known hyperkalemia (renal failure/dialysis patient), known tricyclic antidepressant overdose, or suspected severe life-threatening agitation, administer ***sodium bicarbonate*** 1 mEq/kg IV/IO. **Do not use routinely in cardiac arrest.**
  - Administer 0.9% NaCl flush before and after sodium bicarbonate. See Poisoning/Substance Abuse/Overdose – Adult 2.18A.
- For known or suspected hyperkalemia (dialysis patient/renal failure) or as an antidote for toxic effects (hypotension and arrhythmias) from calcium channel blocker or B-blocker overdose administer ***calcium chloride*** 500 to 1,000 mg (5 to 10 mL of a 10% solution) slow IV/IO. May repeat as needed.

Do not mix with or infuse immediately before or after sodium bicarbonate. **Do not use routinely in cardiac arrest.** See Poisoning/Substance Abuse/Overdose – Adult 2.18A.



COMPRESSIONS

Coronary perfusion pressure:
note the interval of interruption [A] as well as the interval until the restoration of coronary perfusion pressure [A+B]

TIME IN SECONDS

PEARLS

- High quality CPR and early defibrillation are the most effective therapies for cardiac arrest care.
- Minimize interruptions in chest compression, as pauses rapidly return the blood pressure to zero and stop perfusion to the heart and brain.
- The recommended chest compression rate is 100 to 120/min.
- Integrated teams of highly-trained rescuers may use a choreographed approach that accomplishes multiple steps and assessments simultaneously rather than the sequential manner used by individual rescuers. Where EMS systems have adopted bundles of care involving continuous chest compressions, the use of passive ventilation techniques may be considered as part of that bundle for victims of out-of-hospital cardiac arrest (OHCA). See High-Performance CPR – Adult – Appendix 4.
- Switch compressors at least every two minutes to minimize fatigue. Check rhythm and pulse during switch to avoid excessive interruptions in CPR.
- Compress when charging and resume compressions immediately after the shock is delivered to minimize interruptions to CPR.
- Do not hyperventilate as it increases intrathoracic pressure and decreases blood return to the heart. Ventilate at a rate of 8 – 10 breaths per minutes, with enough volume to produce adequate chest rise.
- Mechanical CPR devices are acceptable with appropriate training. Interruption in CPR to apply device should be limited to 10 seconds or less.

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3.2P Cardiac Arrest – Pediatric

EMT Standing Orders

E

- Routine Patient Care. Administer 100% oxygen.
- Immediate chest compressions (high quality CPR with minimal interruptions).
- Apply AED and use as soon as possible (with minimum interruption of chest compressions).
    - From birth to age 8 years, use pediatric AED pads.
    - If pediatric AED pads are unavailable, providers may use adult AED pads, provided the pads do not overlap.
- If Return of Spontaneous Circulation occurs, see Post Resuscitative Care – Adult 3.4P.
- Consider termination of efforts or not attempting resuscitation (see DNR/POLST Orders 8.9 and/or Resuscitation Initiation and Termination 8.12).
- For traumatic arrest, all interventions beyond CPR and spinal motion restriction should be performed enroute to receiving facility. Minimize scene time.
- Call for paramedic intercept, if available.

Paramedic Standing Orders

P

- Do not interrupt chest compressions for advanced airway or IV/IO placement.
- Establish vascular access.
- BVM ventilation is the preferred method of ventilation for pediatric population. However, if unsuccessful, place a supraglottic airway.
- Monitor quantitative waveform capnography throughout resuscitation, if available, to assess and monitor airway placement and CPR quality, and to monitor for signs of Return of Spontaneous Circulation.
- Correct treatable causes:
    - Hypoxia
    - Overdose/poisoning: Poisoning/Substance Abuse/Overdose – Pediatric 2.18P
    - Hypothermia: Hypothermia (Environmental) – Adult & Pediatric 2.10
    - Hypoglycemia: Diabetic Emergencies (Hypoglycemia) – Pediatric 2.8P
    - Hypovolemia: Shock - Pediatric 2.21P
- Administer ***crystalloid solution*** 20 mL/kg fluid bolus IV/IO.
- If ventilation is adequate with BVM, routine placement of advanced airway can be delayed. Consider advanced airway management as applicable.
- Placement of an advanced airway during cardiac arrest should not interrupt chest compressions.
    - In this setting, supraglottic airways and ETTs are considered equivalent. ETT placement, if used, should be limited to 1 attempt of 10 seconds or less, as long as BVM or alternate airway provides adequate chest rise.
- For suspected pre-arrest or known hyperkalemia (dialysis patient), or known tricyclic antidepressant overdose, administer ***sodium bicarbonate*** 1 mEq/kg IV/IO. Do not mix with any resuscitation drugs.
- Flush IV tubing with 0.9% NaCl before and after drug administration. **Do not use routinely in cardiac arrest**.
- For known or suspected hyperkalemia (renal failure) or as an antidote for toxic effects (hypotension and arrhythmias) from calcium channel blocker or B-blocker overdose administer ***calcium chloride*** 20 mg/kg (0.2 mL/kg) slow IV/IO push. Do not mix with or infuse immediately before or after sodium bicarbonate without intervening flush. Do not use routinely in cardiac arrest.
- Evaluate for tension pneumothorax and treat with ***needle decompression*** if indicated. See Needle Thoracostomy 5.14

For Ventricular Fibrillation (VF)/Pulseless Ventricular Tachycardia (VT):

- Defibrillation:
    - Defibrillate at 2 J/kg; perform CPR for 2 minutes and recheck rhythm;
    - if still a shockable rhythm, defibrillate at 4 J/kg; perform CPR for 2 minutes;
    - Reassess every 2 minutes and continue to defibrillate up to 8 J/kg.
- If no response after first defibrillation, administer
    - ***epinephrine*** (1:10,000) (0.1 mg/mL) 0.01 mg/kg (0.1 mL/kg) IV/IO

    OR
    - ***epinephrine*** 0.1 mg/kg (1:1,000; 0.1 mL/kg) via ETT.
    - Repeat every 3 – 5 minutes.

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Continued

3.2P Cardiac Arrest – Pediatric

Paramedic Standing Orders

P

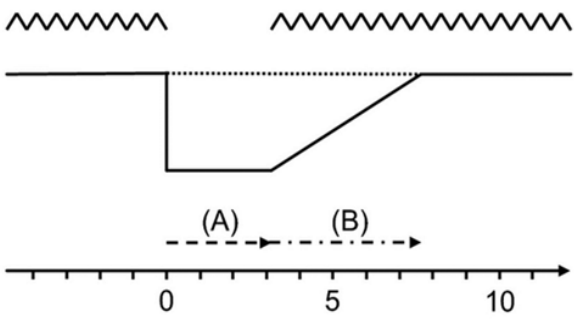
Ventricular Fibrillation (VF)/Pulseless Ventricular Tachycardia (VT) continued:

- If no response after second defibrillation, administer:
  - ***Amiodarone*** 5mg/kg (maximum 300 mg) IV/IO. May repeat up to 2 times for refractory VF/VT;
    - **OR**
  - **Lidocaine** 1 mg/kg IV/IO (maximum dose 100 mg). Maintenance: 20 – 50 mcg/kg/min infusion.
  - Repeat bolus dose if infusion initiated ≥ 15 minutes after initial bolus therapy.
- For Torsade de Pointes: ***Magnesium sulfate*** 50 mg/kg (maximum 2 g) IV/IO over 1 – 2 minutes.

For Asystole or Pulseless Electrical Activity (PEA):

- Administer ***Epinephrine*** (1:10,000) (0.1 mg/mL) 0.01 mg/kg (0.1 mL/kg) IV/IO
  OR
- ***Epinephrine*** 0.1 mg/kg (1:1,000) (1 mg/mL) 0.1 mL/kg via ETT; repeat every 3 – 5 minutes.
- Give 2 minutes of CPR, then check rhythm:
  - If asystole or PEA, continue ***epinephrine*** and 2 minutes of CPR until:
  - Pulse obtained
    OR
  - Shockable rhythm obtained
    OR
  - Decision made to terminate resuscitation efforts (contact Medical Command for guidance)

EFFECT OF INTERUPTIONS TO CPR ON CORONARY PERFUSION PRESSURE



COMPRESSIONS

Coronary perfusion pressure:
note the interval of interruption [A] as well as the interval until the restoration of coronary perfusion pressure [A+B]

TIME IN SECONDS

PEARLS

- Optimize oxygenation, ventilation and volume status. Cardiac arrest in children typically results from progressive deterioration in respiratory or cardiovascular function.
- Minimize interruptions in chest compression, as pauses rapidly return the blood pressure to zero and stop perfusion to the heart and brain.
- Switch compressors at least every two minutes to minimize fatigue. Check rhythm and pulse during switch to avoid excessive interruptions in CPR.
- Perform “hands on” defibrillation.
- Compress when charging and resume compressions immediately after the shock is delivered to minimize interruptions to CPR.
- Avoid excessive ventilation.
- Do not use mechanical CPR devices on children.

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3.3 Congestive Heart Failure (Pulmonary Edema) – Adult

EMT Standing Orders	

E	• Routine Patient Care.
	• Place the patient in a semi-sitting or full sitting position.
	• Provide Continuous Positive Airway Pressure (CPAP) with maximum 10 cm H2O pressure support. (See CPAP 5.3.)
	  ○ For patients with moderate to severe respiratory distress concurrent with the following signs and symptoms:
	  ▪ Oxygen saturation < 94%.
	  ▪ Respiratory rate > 25/minute.
	  ▪ Retractions or accessory muscle use.
	  ○ SBP must be ≥100 mmHg to utilize CPAP.
	• If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.

Paramedic Standing Orders	

P	• Establish vascular access.
	• Acquire 12-lead EKG.
	• Administer ***nitroglycerin***
	  ○ 0.4 mg SL every 3-5 minutes while symptoms persist and if the systolic BP is ≥110 mmHg.
	  ○ push-dose ***nitroglycerin***: 500 mcg IV every 3 minutes for respiratory distress and systolic BP>140
	  ▪ May transition to ***nitroglycerin*** drip after three push-dose administrations. Titrate until symptomatic improvement or systolic BP of 140 mmHg:
	  ▪ For systolic BP of 140 – 160 mmHg: IV nitroglycerin start at 50 mcg/min.
	  ▪ For systolic BP of 160 – 200 mmHg: IV nitroglycerin start at 100 mcg/min.
	  ▪ For systolic BP > 200 mmHg: nitroglycerin start at 200 mcg/min.
	  ❖ Note: It is recommended two (2) IV lines in place and the IV nitroglycerin must be on an infusion pump. Maximum dose of 400 mcg/min.

- Avoid nitroglycerin in any patient who has used a phosphodiesterase inhibitor for erectile dysfunction and pulmonary hypertension, such as: sildenafil (Viagra, Revatio) or vardenafil (Levitra, Staxyn) within 24 hours, or tadalafil (Cialis, Adcirca) within 48 hours. Also avoid use in patients receiving intravenous prostacyclins for pulmonary hypertension.
- Administer nitrates with extreme caution, if at all, to patients with inferior-wall STEMI or suspected right ventricular (RV) involvement because these patients require adequate RV preload.

PEARLS

- Nitroglycerin is the first-line medication for congestive heart failure.
- Furosemide and narcotics have NOT been shown to improve the outcomes of EMS patients with pulmonary edema. Even though this historically has been a mainstay of EMS treatment, it is no longer recommended.
- If patient has taken home nitroglycerin without relief, consider loss of potency of the medication due to age.
- Allow the patient to be in their position of comfort to optimize their breathing effort.

Index

3.4A Post Resuscitative Care – Adult

EMT Standing Orders

E

- Optimize ventilation and oxygenation.
- Initial ventilation rate of 10 - 12 BPM.
- Maintain oxygen saturation at ≥ 94%.

Paramedic Standing Orders

P

- When feasible, titrate FiO2 to minimum necessary to achieve SpO_2 ≥ 94%.
- Secure advanced airway if indicated. See:
  - I-Gel 5.6
    - If unsuccessful, refer to Orotracheal Intubation 5.10.
- Insert NG/OG tube for the intubated patient. See Nasal/Oral Gastric Tube Insertion 6.10

For Post-Resuscitation Hypotension:

- Maintain systolic blood pressure of ≥90 mmHg. See Shock Adult 2.21A
- If SBP < 90 mmHg administer crystalloid solution 500 mL fluid bolus IV/IO. Total volume should not exceed 2,000 mL.
- Administer: (An infusion pump is required for the use of these pressor agents)
  - ***Norepinephrine*** infusion 1 to 30 mcg/min IV/IO titrated to effect (preferred agent) OR
  - ***Epinephrine*** infusion 2-10 mcg/min IV/IO titrated to effect
    OR
  - ***Epinephrine*** push dose (10 mcg/mL). Administer 10-20 mcg IV/IO every 2 – 5 minutes (0.5 – 2 ml).

If Cardiac Arrest Was The Result of VF or VT, Manage The Patient As Follows:

- If ***lidocaine*** / ***amiodarone*** was administered during resuscitation, *do not* administer additional doses. However, if the patient is having frequent PVCs or runs of VT, or if the transport time will exceed 30
- minutes, start an antidysrhythmic:
  - ***Lidocaine*** maintenance infusion 1 – 4 mg/min IV/IO (30 – 50 mcg/kg/min)..
    OR
  - ***Amiodarone*** maintenance infusion of 1 mg/min IV/IO
    - Do not use amiodarone if the patient has a high-degree heart block or profound bradycardia (HR <60)

PEARLS

- Recognition and treatment of a STEMI are critical in the post-cardiac arrest patient. Transport patient to the most appropriate facility in accordance with local STEMI guidelines/agreements. Notify receiving facility of a **"STEMI ALERT"**. See Acute Coronary Syndrome – Adult 3.0.
- Avoid hyperventilation as it increases intrathoracic pressures, potentially worsening hemodynamic instability. Hyperventilation may also cause hypocarbia and elevated arterial oxygen levels (hyperoxia) and increased hospital mortality post-resuscitation from cardiac arrest.
- Monitor patient closely for recurrent cardiac arrest.
- Monitor for decreases in $ETCO_2$.

Index

3.4P Post Resuscitative Care – Pediatric

EMT Standing Orders

E

- Optimize ventilation and oxygenation.
- Initial ventilation at appropriate age-related rate. Pediatric Vital Signs 1.0
- Maintain oxygen saturation at ≥ 94%.

Paramedic Standing Orders

P

- When feasible, titrate FiO2 to minimum necessary to achieve SpO_2 ≥ 94%.
- Secure advanced airway if indicated. See:
  - I-Gel 5.6
    - If unsuccessful, refer to Orotracheal Intubation 5.10.
- Insert NG/OG tube for the intubated patient. See Nasal/Oral Gastric Tube Insertion 6.10

For Post-Resuscitation Hypotension:

- Maintain appropriate SBP for age: Pediatric Vital Signs 1.0. See Shock – Pediatric 2.21P
- If SBP remains hypotensive for patients age; administer bolus of ***crystalloid solution*** 20 mL/kg IV/IO (may repeat x 1)
- If still hypotensive after max fluid bolus, administer via IV infusion pump:
  - ***Epinephrine*** infusion 0.05mcg/kg/min IV/IO to maintain age appropriate SBP

  OR
  - ***Norepinephrine*** infusion 0.05 mcg/kg/min IV/IO to maintain age appropriate SBP.

If Cardiac Arrest Was the Result of VF or VT, Manage The Patient As Follows:

- If ***lidocaine*** / ***amiodarone*** was administered during resuscitation, ***do not*** administer additional doses. However, if the patient is having frequent PVCs or runs of VT, or if the transport time will exceed 30 minutes, start an antidysrhythmic:
  - ***Lidocaine*** 20 – 50 mcg/kg/min IV/IO via pump
    - *Do not use in cases of CHF, cardiogenic shock, heart block, or WPW*

  OR
  - ***Amiodarone*** maintenance infusion of 0.005 – 0.01 mg/kg/min IV/IO via pump
    - *Do not use if the patient has a high-degree heart block or profound bradycardia (HR <60).*

PEARLS

- Avoid hyperventilation as it increases intrathoracic pressures, potentially worsening hemodynamic instability. Hyperventilation may also cause hypocarbia and elevated arterial oxygen levels (hyperoxia) and increased hospital mortality post-resuscitation from cardiac arrest.
- Monitor patient closely for recurrent cardiac arrest.
- Monitor for decreases in $ETCO_2$.

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3.5A Tachycardia – Adult

EMT Standing Orders

E

- Routine patient care
- If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.

Paramedic Standing Orders

P

- Establish vascular access.
- Search for underlying causes.

For **hemodynamically unstable narrow complex tachycardia**:

- Perform ***synchronized cardioversion***:
  - Use the following initial energy doses, then escalate to the next higher energy level if no conversion.
  - Biphasic cardioversion:
    - For *narrow regular* rhythm: 100J, 150J, 200J
    - For *narrow irregular* rhythm: 120J, 150J, 200J
  - Provide anxiolysis analgesia prior to or during cardioversion, if feasible. Do not delay cardioversion.
    - ***Midazolam*** 2.5 mg IV/IO/intranasal, may repeat once in 5 minutes **OR** 5 mg IM may repeat once in 10 minutes

For **hemodynamically stable narrow complex tachycardia:**

- Attempt ***vagal maneuvers***, for regular rhythms >150 BPM;
- If vagal maneuvers fail and the rhythm is regular:
  - ***Adenosine*** 6 mg rapid IV/IO, followed by rapid flush.
    - May repeat at dose of 12 mg if no conversion.
    - May repeat successful dose if rhythm recurs after conversion.
  - If irregular rhythm >140, to control ventricular rate:
    - ***Diltiazem*** 0.25 mg/kg IV/IO (maximum dose 20 mg) over 2 minutes. (Administer 10 mg maximum dose for elderly patient or patient with Systolic BP <120.)
      - May repeat dose in 15 minutes at 0.35 mg/kg (maximum dose 25 mg), if necessary.
      - Administer maintenance infusion at 5 – 15 mg/hr IV/IO

      OR
    - ***Metoprolol*** 5 mg IV/IO over 2 – 5 minutes.
      - May repeat every five minutes to a maximum of 15 mg as needed to achieve a ventricular rate of 90 – 100 BPM.

For **hemodynamically unstable wide complex**:

- Consider *anxiolysis analgesia* (as listed above) prior to, or during cardioversion, if feasible. Do not delay cardioversion.
- Perform ***synchronized cardioversion***:
  - For wide regular rhythm: 100J, 150J, 200J
  - For wide irregular/polymorphic VT: 100J, 150J, 200J (use unsynchronized defibrillation if unable to sync).
- If rhythm converts: (Ensure to rule out Wolff-Parkinson White syndrome)
  - ***Lidocaine*** maintenance infusion 1 - 4 mg/min IV/IO (30 – 50 mcg/kg/min).

    OR
  - ***Amiodarone*** maintenance infusion of 1 mg/min IV/IO

Continued

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3.5A Tachycardia – Adult

Paramedic Standing Orders	

P	For **<u>hemodynamically Stable wide complex</u>**: (regular rhythm with monomorphic QRS; rule out Wolff-Parkinson White syndrome)
	• ***Amiodarone*** 150 mg IV/IO mixed in 100 ml crystalloid solution over 10 minutes
	  ○ May repeat once in 10 minutes
	  ○ If successful, administer maintenance infusion of 1 mg/min
	OR
	• ***Lidocaine*** 1 mg/kg IV/IO
	  ○ May repeat every 5 minutes to a max of 3 mg/kg (total of 3 doses)
	  ○ If successful, administer a maintenance infusion 1-4 mg/min IV/IO
	
	For **<u>polymorphic ventricular tachycardia/Torsades de Pointes</u>**
	• ***Defibrillate*** 200 J biphasic. Use unsynchronized defibrillation doses if unable to sync.
	• If pulse is present, administer ***magnesium sulfate*** 2 g IV/IO diluted in 50-100 ml crystalloid solution over 10 minutes.
	
	For **<u>Wolff-Parkinson White Syndrome</u>**
	• Contact **Medical Command**

- Diltiazem, metoprolol, amiodarone and adenosine are contraindicated in patients with a history of or suspected Wolff-Parkinson-White (WPW) syndrome.
- Medications should be administered cautiously in frail or debilitated patients; lower doses should be considered.
- Be cautious in rate controlling patients in rapid atrial fibrillation (A Fib) who may be compensating for another disease process such as sepsis or pulmonary embolism.

PEARLS

- Treat potential underlying causes e.g., hypoxemia, dehydration, fever.
  - Some rhythms such as atrial fibrillation with rapid ventricular response respond by treating the underlying cause rather than the rate.
- Wide complex tachycardia should be considered Ventricular Tachycardia until proven otherwise.
- Do not administer Diltiazem to wide complex tachycardia.
- Signs and symptoms of hemodynamic instability:
  - Hypotension
  - Acutely altered mental status
  - Signs of shock
  - Signs of acute heart failure
  - Ischemic chest pain
- If ventricular rate is >150/min, prepare for immediate cardioversion. May give brief trial of medications based on specific arrhythmias. Immediate cardioversion is generally not needed if heart rate is ≤150.
- Adenosine should be administered rapidly though a proximal (e.g., antecubital) vein site followed by a rapid saline flush.
- For best results of vagal maneuver, start with patient's head of bed elevated by 30 degrees. While patient performs vagal maneuver sustained over 15 seconds, lay the patient flat and elevate their legs.
- Carotid massage should not be attempted in the prehospital setting.
- In the unlikely event the monitor is unable to synchronize the rhythm for cardioversion, an unsynchronized defibrillation may be delivered.

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3.5P Tachycardia – Pediatric

EMT Standing Orders	
E	• Routine patient care • If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.

Paramedic Standing Orders

P

- Establish vascular access.
- Search for underlying causes.

For **<u>hemodynamically unstable narrow complex/probable SVT</u>**:

- Perform ***synchronized cardioversion***:
  - 0.5 J/kg; if unsuccessful, increase to 1 J/kg, then 2 J/kg.
  - Provide anxiolysis analgesia prior to or during cardioversion, if feasible:
    - ***Midazolam*** 0.1 mg/kg IV/IO, 0.2 mg/kg intranasal (max dose 4 mg)

For **<u>hemodynamically stable narrow complex/probable SVT</u>**

- Attempt ***vagal maneuvers***
  - Cover face with an icepack for up to 30 seconds
  - Have child blow through occluded straw/syringe
- If vagal maneuvers fail and the rhythm is regular:
  - ***Adenosine*** 0.1 mg/kg IV/IO not to exceed 6mg (first dose)
    - May repeat once at 0.2 mg/kg IV/IO not to exceed 12 mg (subsequent dose).

For **<u>hemodynamically unstable wide complex</u>**:

- Perform ***synchronized cardioversion***:
  - 0.5 J/kg: if unsuccessful, increase to 1 J/kg, then 2 J/kg

For **<u>hemodynamically stable wide complex</u>**:

- ***Lidocaine*** 1 mg/kg IV/IO bolus (maximum 100 mg)
  OR
- ***Amiodarone*** 5 mg/kg IV/IO (maximum 150 mg) over 10 minutes

For **<u>polymorphic ventricular tachycardia/Torsades de Pointes</u>**

- Magnesium sulfate 50 mg/kg IV/IO over 10-20 minutes (maximum dose 2 g).

For **<u>Wolff-Parkinson White Syndrome</u>**

- Contact **Medical Command**

PEARLS:

- Treat potential underlying causes, e.g., hypoxemia, dehydration, fever.
- Probable Supraventricular Tachycardia
  - Compatible history (vague, nonspecific); history of abrupt onset / rate changes
  - P waves absent / abnormal
  - Heart rate is NOT variable
  - Infants: rate usually >220/min
  - Children: rate usually >180/min
  - Adenosine should be administered rapidly though a proximal (e.g., antecubital) vein site followed by a rapid saline flush
- Signs and symptoms of hemodynamic instability:
  - Hypotension
  - Acutely altered mental status
  - Signs of shock
- Probable Sinus Tachycardia
  - Compatible history consistent with known cause
  - P waves are present and normal
  - Variable R-R and constant P-R interval
  - Infants: rate usually <220/min
  - Children: rate usually <180/min

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4.0 Burns/Electrocution/Lightning - Adult & Pediatric

EMT Standing Orders

E

- Routine Patient Care.
- Determine need for transport to a burn center. Refer to Burn Center Transport or refer to local protocol
  - Determine need for aeromedical transport. See Air Medical Transport 8.1
- Assess for evidence of smoke inhalation or burns, soot around mouth or nostrils, singed hair, carbonaceous sputum.
- If the patient has respiratory difficulty, altered level of consciousness and /or hemodynamic compromise, see Airway Management - Adult 5.1A or Airway Management - Pediatric 5.1P and Smoke Inhalation - Adult 2.22A or Smoke Inhalation - Pediatric 2.22P.

Thermal

- Stop burning process with tepid water or normal saline.
- Cut/remove non-adherent clothing and jewelry. Do not remove skin or tissue.
- To protect from infection, cover burns with clean dry sterile dressing or sheets.
- Keep patient warm and prevent hypothermia due to large thermal injuries.

Chemical

- Identify agent(s) and need for HAZMAT intervention, if indicated. See Hazardous Material Exposure 9.0
- Contact Poison Control at 800-222-1222.
- Decontaminate the patient as appropriate.
  - Brush off dry powders if present, before washing.
  - Scrape viscous material off with rigid device, i.e., tongue depressor.
  - Flush with copious amounts of clean water or sterile saline for 10 – 15 minutes, unless contraindicated by type of chemical agent (i.e., sodium, potassium or dry lime and/or phenols).

Electrical/Lightning

- Ensure your own safety; disconnect power source.
- For MCI associated with lightning, cardiac arrest patients should receive priority.
- Provide spinal motion restriction for burns due to electric flow across the body.

Assess Extent of Burn

- Determine extent of the burn using Rule of Nines
- Determine depth of injury.
- Do not include 1st degree burns in burn surface area (BSA) percentage.

Pain Control

- If a partial thickness, 2nd degree is < 10% body surface area:
  - Apply room-temperature water to burned area for a maximum of 15 minutes. Prolonged cooling may result in hypothermia.

Paramedic Standing Orders

P

- Establish vascular access.
- Administer up to 2000 ml ***crystalloid solution*** IV/IO
- Refer to: Airway Management – Adult 5.1A or Airway Management – Pediatric 5.1P.
- Refer to: Pain Management – Adult 2.17A or Pain Management – Pediatric 2.17P.

PEARLS

- Apnea may last longer than asystole in lightning injuries. Provide ventilatory support.
- Electrocution/lightning burns can occur anywhere along the path a current travels through the body. Evident surface burns may only comprise a small portion of the overall burn injury, and an injury's full extent may not be immediately apparent.
- Chemical burns: If 0.9% NaCl or sterile water is not readily available, do not delay, use tap water for flushing the affected area. Flush the area as soon as possible with copious amounts of the cleanest readily available water.

Continued

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4.0 Burns/Electrocution/Lightning - Adult & Pediatric

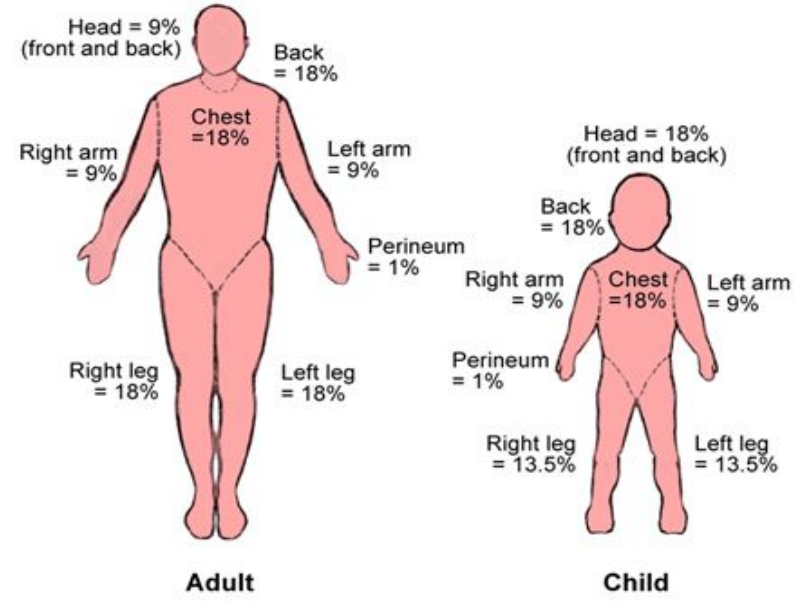
- Expert burn center opinion recommends limiting prehospital IV fluids based on concerns for fluid overload and development of compartment syndrome. In cases where burn patients are in shock, IV fluid administration should be based on use of the Shock-Adult 2.21A or Shock – Pediatric-2.21P.
- An IO device can be inserted through burned skin if the underlying bone has not been compromised.
- An IV may be placed through burnt skin if necessary.

Burn Center Transport:

- Determine need for air medical transport for major burns with greater than 20% BSA and/or inhalation injury with risk of airway compromise.
- Consider transport to a Trauma Center for patients suffering associated traumatic or blast injury.
- Transport to a burn center is recommended for patients suffering partial or full thickness burns for:
  - >10% Total Body Surface Area
  - Burns to hands, feet, genitals, face, major joints or circumferential burns
  - Third degree burns in any age group
  - Electrical burns, including lightning injury
  - Chemical burns
  - Smoke Inhalation (airway compromise should be transported to closest hospital without delay)
  - Burns in patients with preexisting medical conditions
  - Burns requiring long-term rehab and/or social support

Rule of Nines

	Adult	Pediatric
Head & Neck	9%	18%
Left arm	9%	9%
Right arm	9%	9%
Chest	9%	9%
Abdomen	9%	9%
Upper back	9%	9%
Lower back	9%	9%
Left leg	18%	13.5%
Right leg	18%	13.5%
Genital region	1%	1%



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4.1 Drowning/Submersion Injuries - Adult & Pediatric

EMT Standing Orders	

E	• Routine Patient Care.
	• Assume C-spine injury and stabilize C-spine. (See Advanced Spinal Assessment Procedure 6.0 and Spinal Motion Restriction 4.5.)
	• Obtain specific history: time, temperature, associated trauma, etc.
	• Begin resuscitation efforts while removing the patient from the water.
	• Consider hypothermia.
	• Remove wet clothes and warm the patient.
	• All patients with a history of submersion should be transported to the hospital.
	• Reassure anxious patient.
	• If water temperature cannot be estimated, initiate full resuscitation.
	• If patient submerged in water estimated to be less than 6 ºC (43 ºF):
	  ○ Less than 90 minutes: Initiate full resuscitation.
	  ○ Greater than 90 minutes: Consider not initiating resuscitation or termination of efforts.
	  ○ Contact **Medical Command** for guidance.
	• If patient submerged in water estimated to be greater than 6 ºC (43 ºF):
	  ○ Less than 30 minutes: Initiate full resuscitation.
	  ○ Greater than 30 minutes: Consider not initiating resuscitation or termination of efforts.
	  ○ Contact **Medical Command** for guidance.
	• If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to closest appropriate facility.

Paramedic Standing Orders	
P	• Administer CPAP to supplement the patient's own spontaneous respiratory effort as required and tolerated. • Provide airway management as required. See Airway Management-Adult 5.1A or Airway Management-Pediatric 5.1P • Establish vascular access.

- Do not attempt water rescues unless properly trained and equipped. When operating on scenes involving water, use extreme caution and wear a PFD.

PEARLS

SCUBA diving related injuries: for patients presenting with suspected diving-related emergencies, a thorough assessment should include obtaining the patient's dive computer and/or dive plan. The major types of dive-related illnesses include Pulmonary Over-Pressurization Syndromes (POPS) and Decompression Sickness (DCS). Seriously ill patients may present with any combination of altered mental status, respiratory distress or shock. After recognition of a suspected diving related emergency, treatment should focus on supplemental oxygen and rapid transport. ED staff should be fully briefed on the patient's dive history.

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4.2 Eye Injuries - Adult & Pediatric

EMT Standing Orders	

E	• Routine Patient Care.
	• Obtain visual history (e.g., use of corrective lenses, surgeries, use of protective equipment).
	• Obtain visual acuity, if possible.
	• Assist patient with the removal of contact lens, if applicable.
	• Chemical irritants, including pepper spray, alkali, acid, or other chemical exposure:
	  ◦ Flush with copious amounts of water or 0.9% NaCl for a minimum of 20 minutes.
	  ◦ Consider contacting Poison Control at ***(800) 222-1222*** as soon as practical.
	• Thermal burns to eyelids: patch both eyes with cool saline compress.
	• Impaled object: immobilize object and patch both eyes. Do not apply pressure. Do not attempt to remove objects.
	• Puncture wound: place rigid protective device over both eyes (e.g., eye shield). Do not apply pressure.
	• Foreign body: Minor foreign objects like dust or grit may be flushed with water or 0.9% NaCl.
	• Patch both eyes.
	• If the patient cannot close their eyelids, keep their eye moist with a sterile saline dressing

Paramedic Standing Orders	
P	• Refer to Pain Management – Adult 2.17A or Pain Management – Pediatric 2.17P. • Refer to the Nausea/Vomiting – Adult & Pediatric 2.11.

PEARLS

- For chemical exposure to eye position patient with the affected eye downward so irrigation does not run into the unaffected eye.
- For patients with suspected globe injury, consider administration of ondansetron as prophylaxis to vomiting, to prevent increase in intraocular pressure.

Dental Injuries - Adult & Pediatric

Paramedic Standing Orders	
E/P	• Routine Patient Care—dry, warm, position, stimulate. • Dental avulsions should be placed in an obviously labeled container with saline-soaked dressing, milk, or cell-culture medium (example: Save-a-tooth®). • Do not place in tap water.

4.3 Musculoskeletal Injuries - Adult & Pediatric

EMT Standing Orders

E

- Routine Patient Care.
- Manually stabilize the injury.
- For open fractures, control bleeding and treat for shock. See Tourniquet & Hemostatic Agent – Adult & Pediatric 6.7, Shock – Adult 2.21A or Shock – Pediatric 2.21P. Remove obvious debris, irrigate open wounds with saline solution, and cover with moist sterile dressing.
- For angulated fractures with circulatory compromise, attempt to reposition to anatomical position of function. In absence of circulatory compromise, splint in position of comfort.
- Assess Circulatory, Sensation, and Motor function distal to injury before and frequently after immobilization.
    - Splint extremity as required.
    - Traction splinting is the preferred technique for isolated adult and pediatric mid-shaft femur fractures.
        - Do not apply traction splints to proximal (hip) or distal femur fractures, partial amputations, or if lower leg or ankle injury. Do not delay transport to apply a traction splint in the multi-trauma patient. Traction splinting may be used for open fractures if no contraindications.
- All patients that have a mechanism of injury that could cause a spinal injury, including high risk or questionable injury mechanisms, should have an advanced spinal assessment and spinal motion restriction if indicated. See Spinal Motion Restriction 4.5 and Advanced Spinal Assessment 6.0.
- Stabilize suspected pelvic fractures with commercial device (preferred) or bed sheet.
- It is preferable to use a scoop stretcher rather than to log-roll a patient with a suspected pelvic fracture.
- Amputations should be dressed with moist sterile gauze covered with a bulky dressing. The amputated part should be placed in a plastic bag and transported to the hospital with the patient.
- See Trauma Triage and Transport Decision Policy 8.4 and Pain Management – Adult 2.17A or Pain Management – Pediatric 2.17P

Paramedic Standing Orders

P

- Establish vascular access.
- For significant injury, administer ***crystalloid solution***
    - Adults: 500 mL bolus IV
    - Pediatric: 20 mL/kg
- Assess pain level and provide pain control measures: Pain Management – Adult 2.17A or Pain Management – Pediatric 2.17P.

PEARLS

- Use ample padding when splinting possible fractures, dislocations, sprains, and strains. Remove and secure all jewelry. Elevate injured extremities, if possible. Consider the application of a cold pack for 30 minutes.
- Musculoskeletal injuries can occur from blunt and penetrating trauma. Fractures of the humerus, pelvis and femur, as well as fractures or dislocations involving circulatory or neurological deficits, take priority over other musculoskeletal injuries.
- Hip dislocations, pelvic, knee, and elbow fractures / dislocations have a high incidence of vascular compromise.
- Do not manipulate pelvis once fracture is suspected. Repeated manipulation can increase internal hemorrhage.

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4.5 Spinal Motion Restriction

EMT and Paramedic Standing Orders

- Routine Patient Care.
- Perform advanced spinal assessment (Advanced Spinal Assessment 6.0) to determine if patient requires spinal motion restriction.
- Maintain manual in-line stabilization during assessment unless patient is alert and spontaneously moving neck.
- Minimize spinal movement during assessment and extrication.
- A long backboard, scoop stretcher, vacuum mattress, or other appropriate full length extrication device may be used for extrication if needed. Do not use short board or KED device, except for vertical extrication or other special situations.
- Apply adequate padding to prevent tissue ischemia and minimize discomfort.

If patient requires Spinal Motion Restriction:

- Apply a rigid cervical collar.
- Self-extrication by patient is allowable if patient is capable.
- Allow ambulatory patients to sit on stretcher and then lie flat. (The "standing take-down" is eliminated.)
- Position backboarded patient on stretcher then remove backboard by using log roll or lift-and-slide technique.
- Longboard can be removed as long as patient's condition is not compromised, and transport is not delayed.
- Patient should be placed in a position to ensure comfort and maintain appropriate respiratory function.
- Situations or treatment priorities may require patient to remain on rigid vacuum mattress or backboard, including the multi-trauma patient, combative patient, elevated intracranial pressure (See also Traumatic Brain Injury – Adult & Pediatric 4.8), or rapid transport of unstable patient.
- With the patient lying flat, secure patient firmly with all stretcher straps and leave the cervical collar in place. Instruct the patient to avoid moving head or neck as much as possible.
- If patient poorly tolerates collar (e.g., due to anxiety, shortness of breath, torticollis), replace with towel roll and/or padding.
- Patients with nausea or vomiting may be placed in a lateral recumbent position. Maintain neutral head position with manual stabilization, padding/pillows, and/or the patient's arm. See also Nausea/Vomiting 2.11.

Pediatric Patients Requiring a Child Safety Seat

- For pediatric patients requiring spinal motion restriction, transport in a child safety seat per Pediatric Transportation Policy 8.11,
- Apply padding and cervical collar as tolerated to minimize the motion of the child's spine. Rolled towels may be used for very young children or those who do not tolerate a collar.
- Patient may remain in own safety seat after motor vehicle crash if it has a self-contained harness with a high back and two belt paths and is undamaged. If all criteria are not met, use ambulance's safety seat.
- If the patient requires significant care (e.g. airway management) that cannot be adequately performed in a car seat, remove the patient and secure him/her directly to the stretcher.

- Long backboards do not have a role for patients being transported between facilities. If the sending facility has the patient on a long backboard or is asking EMS to use a long backboard for transport, EMS providers should discuss not using a long backboard with the sending facility physician before transporting a patient. If a long backboard is used, it should be padded to minimize patient discomfort.
- Patients with isolated penetrating trauma do not require spinal motion restriction.
- Caution should be exercised in older patients (e.g. 65 years or older) and in young patients (e.g. less than 3 years of age), as spinal assessment may be less sensitive in discerning spinal fractures in these populations.

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4.6 Thoracic and Abdominal Injuries- Adult & Pediatric

EMT Standing Orders	

E	• Routine Patient Care.
	• If patient is in shock, see Shock – Adult 2.21A or Shock-Pediatric 2.21P.
	• Initiate rapid transport.
	• Impaled objects:
	  ○ Do not attempt to remove an impaled object; instead, stabilize/support it with a bulky dressing or other means. If the impaled object is very large or unwieldy, attempt to cut object, if possible, to no less than 6 inches from the patient.
	• Open chest wound/penetrating injuries to chest or upper back:
	  ○ Cover with an occlusive dressing or use a commercial device. If the patient's condition deteriorates, remove the dressing momentarily, then reapply. Monitor for tension pneumothorax.
	• Flail segment with paradoxical movement with respiratory distress:
	  ○ Consider positive-pressure ventilation for severe distress.
	  ○ Apply no weight to flail segment. Do not splint the chest.
	• Abdominal penetrating injuries
	  ○ Apply an occlusive dressing.
	  ○ For evisceration, cover the organs with a saline-soaked sterile dressing and then cover it with an occlusive dressing. Do not attempt to put the organs back into the abdomen.
	• If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to the closest appropriate facility.
	• Minimize scene time.
	• See Trauma Triage and Transport Decision Policy 8.4.

Paramedic Standing Orders	
P	• Establish vascular access. • Administer pain management; see Pain Management – Adult 2.17A or Pain Management – Pediatric 2.17P. • In the presence of tension pneumothorax, perform needle decompression on the affected side. ○ See Needle Thoracostomy 5.14 • For massive flail chest with severe respiratory compromise, consider endotracheal intubation for assisted ventilations.

SIGNS AND SYMPTOMS OF TENSION PNEUMOTHORAX:

- Increasing respiratory distress or hypoxia, AND
- Increasing signs of shock including tachycardia or hypotension ***AND*** one or more of the following:
  - Diminished or absent unilateral breath sounds
  - JVD (neck vein distension)
  - Possible tracheal deviation above the sternal notch away from the side of the injury (late sign)
  - Tympany (hyperresonance) to percussion on the affected side.

PEARLS

- Open chest wounds occur when the chest wall is penetrated by some object or the broken end of a fractured rib.
- Chest pain due to blunt trauma may be an indication of underlying injury.
- Blunt injuries such as pulmonary contusion and cardiac contusion may cause respiratory insufficiency and/or myocardial infarction. While enroute, acquire and transmit 12-lead ECG, if available.
- If occlusive dressing is not available, consider using a bulky dressing to seal open chest wounds.

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4.7 Tranexamic Acid (TXA) – Adult

Paramedic Communication Failure Orders

CF

Any patient who requires TXA administration should have transport initiated without delay.
TXA should be administered enroute to Trauma Center.

INDICATIONS:

- Evidence of significant blunt or penetrating trauma (e.g. ejection from automobile, fall > 20 feet, pedestrian struck, penetrating injury to neck, torso, etc.)
  AND
- Evidence or concern for severe external and/or internal hemorrhage (bleeding requiring tourniquet, amputation proximal to wrist or ankle, unstable pelvis, two or more long bone fractures, concern for significant intra-thoracic or intra-abdominal injury, etc.)
  AND
- Presence of one or more markers of hemodynamic instability:
  - Sustained BP < 90
  - Sustained HR > 110

  AND
- Injury must have occurred within the past 3 hours

CONTRAINDICATION:

- < 16 years old (Must be 16 years of age per Waiver Control Number: 14-8:41-6.1(b)-010)
- Previous allergic reaction to TXA
- Injury > 3 hours old
- Patients who have received or will receive prothrombin complex concentrate (PCCs), factor VIIa, or factor IX complex concentrates
- Women who are known or suspected to be pregnant with a fetus of viable gestational age (>24 weeks)

PROCEDURE:

- Mix 1 g of TXA in 100 mL of crystalloid solution. Infuse over approximately 10 minutes IV/IO via pump.
- Notify receiving facility of TXA administration prior to arriving.

PEARLS

- The greatest benefit is seen when TXA is administered to patients within 1 hour of injury.
- Rapid IV push may cause hypotension.
- If there is a new onset of hypotension, slow the TXA infusion.
- Protect patient from extremes in temperatures.
- Do not administer in the same line as blood products, rFVIIa, or PCN
- Good documentation of time of injury and time of TXA administration is necessary.

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4.8 Traumatic Brain Injury - Adult & Pediatric

EMT Standing Orders

E

- Routine Patient Care.
  - See Advanced Spinal Assessment 6.0 and Spinal Motion Restriction 4.5.
- If breathing is inadequate, ventilate with 100% oxygen utilizing normal ventilation parameters, maintaining SpO2 >94%.
- Assess and document pupillary response and Glasgow Coma Scale every 5 min.
- If the patient is not hypotensive (systolic BP >100 mmHg), elevate the head of the stretcher 30 degrees (12 to 18 inches), if possible.
- If patient has unstable vital signs, call for paramedic intercept, if available. If not available, initiate transport to the closest appropriate facility.
- See Trauma Triage and Transport Decision Policy 8.4.

Paramedic Standing Orders

P

- Ensure transport has been initiated.
- Check blood glucose if available; if hypoglycemic, see Diabetic Emergencies (Hypoglycemia) – Adult 2.8A or Diabetic Emergencies (Hypoglycemia) – Pediatric 2.8P.
- Establish vascular access.
- Avoid hypotension, maintain systolic BP.
  - Adult – maintain SBP:
    - Age > 10 years: ≥ 110 mmHg
  - Pediatric - maintain SBP: Pediatric Vital Signs 1.0
    - Age < 1 month: > 60 mmHg
    - Age 1 – 12 months: > 70 mmHg
    - Age 1 – 10 years: > 70 + 2x age in years
- If hypotensive, administer:
  - Adult: Fluid bolus 500 mL ***crystalloid solution*** IV. See Shock – Adult 2.21A.
  - Child and Infant: Fluid bolus 20 mL/kg ***crystalloid solution*** IV. See Shock - Pediatric 2.21P.
    - Administer 20 mL/kg ***crystalloid solution*** IV fluid bolus in a pediatric patient with normal systolic blood pressure and who has other signs of decreased perfusion including tachycardia, loss of peripheral pulses, and delayed capillary filling time of >2 seconds. See Shock - Pediatric 2.21P.
- For active seizure, see Seizure - Adult 2.19A, or Seizure - Pediatric 2.19P
- If quantitative waveform capnography is available:
  - Ventilate to maintain a quantitative waveform capnography of 35-40 mmHg.
  - If signs of cerebral herniation are present maintain quantitative waveform capnography of 30-35 mmHg.
- Provide advanced airway management if GCS is <8 and unable to maintain airway with non-invasive airway management techniques. See Airway Management – Adult 5.1A or Airway Management – Pediatric 5.1AP
- For patients that require sedation; see Sedation 6.9

Most patients with severe head injury retain airway reflexes. Rapid transport to hospital without intubation is appropriate when possible.

PEARLS

- Prevention of hypoxia and hypotension are imperative to prevent secondary brain injury.
- Intubation should be approached with extreme caution as it has been associated with worse outcomes when performed in the out-of-hospital environment for patients with traumatic brain injury.
- Both hypoxia and hyperoxia (too little or too much oxygen) have been associated with increased mortality and worse discharge GCS scores in TBI (traumatic brain injury) patients.
- Hyperventilation causes a decrease in the cerebral blood flow by vasoconstriction as a result of decreased levels of C02 (which is a vasodilator).

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5.0 Airway Management

ASSESSMENT
Each patient presents unique problems that cannot be fully outlined in any algorithm. As such, the provider must rely on thorough assessment techniques and consider each of the following:

Airway Patency: Assess for airway obstruction or risk of impending obstruction due to facial injuries, mass, foreign body, swelling, etc.

Ventilatory Status: Assess for adequate respiratory effort and impending fatigue/failure/apnea. Assess for accessory muscle use, tripod positioning, the ability of the patient to speak in full sentences. If available, assess quantitative waveform capnography.

Oxygenation: Any oxygen saturation <90% represents relatively severe hypoxia and should be considered an important warning sign. In some pediatric cases, SPO_2 is only minimally valuable. In addition to oxygen saturation, assess for additional signs of hypoxia: cyanosis, altered mental state, bradycardia, etc.

Hemodynamics: The blood pressure and heart rate should be factored into the decision making regarding the airway intervention. Resuscitation of the patient's hemodynamics should be performed while concomitantly addressing the oxygenation.

Airway Anatomy: Before attempting airway maneuvers or endotracheal intubation, especially with the use of RSI, assess patient anatomy to predict the probability of success and the need for backup device or technique.

- First, assess for difficulty of mask seal. Patients with facial hair, facial fractures, obesity, extremes of age, and pathologically stiff lungs (COPD, acute respiratory distress syndrome, etc.) may require special mask techniques or alternatives.
- Next, assess for difficulty of intubation. Patients with a short neck, the inability to open their mouth at least three finger widths (or other oral issues such as a large tongue or high arched palate), less than three finger-widths of thyromental distance (or a receding jaw), reduced atlanto-occipital movement (such as in suspected c-spine injury), obesity or evidence of obstruction (such as drooling or stridor) may be difficult to intubate.
- Evaluation of Mallampati: a simple scoring system that relates the amount of mouth opening to the size of the tongue and provides an estimate of space available for oral intubation by direct laryngoscopy. According to the Mallampati scale,
  - class I is present when the soft palate, uvula, and pillars are visible;
  - class II when the soft palate and the uvula are visible;
  - class III when only the soft palate and base of the uvula are visible; and
  - class IV when only the hard palate is visible.

DEVISE A PLAN
1. Each patient will present unique challenges to airway management. Therefore, before any intervention is attempted, the provider should contemplate a plan of action that addresses the needs of the patient and anticipates complications and how to manage them.
2. Airway management is a continuum of interventions, not an "all or none" treatment. Frequently patients may only need airway positioning or a nasal or oral airway to achieve adequate ventilation and oxygenation. Others will require more invasive procedures. The provider should choose the least invasive method that can be employed to achieve adequate ventilation and oxygenation.
3. Continually reassess the efficacy of the plan and change the plan of action as the patient's needs dictate.
4. In children, a graded approach to airway management is recommended. Basic airway maneuvers and basic adjuncts followed by bag-valve-mask (BVM) ventilation are usually effective.

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5.0 Airway Management

BASIC SKILLS
Mastery of basic airway skills is paramount to the successful management of a patient with respiratory compromise. Ensure a patent airway with the use of:

- Chin-lift/jaw-thrust
- Nasal airway (contraindicated in head or facial trauma)
- Oral airway
- Suction
- Removal of foreign body.
- Infants/Children: Elevate head of bed, or place padding to ensure ear canal is at equal level to sternum

Provide ventilation with a bag-valve-mask (BVM).

- **Consider using BVM with PEEP valve at 5 cmH2O.**
- **Consider using 2-Rescuer ventilation technique**.
- Proper use of the BVM includes appropriate mask selection and positioning to ensure a good seal. If possible, utilization of the BVM is best accomplished with two people: one person uses both hands to seal the mask and position the airway, while the other person provides ventilation. If the patient has some respiratory effort, synchronize ventilations with the patient's own inhalation effort, when possible. Use of PEEP valve can be especially helpful when patient is difficult to ventilate. Only provide enough volume to ensure chest rise.

NIV: Non-invasive ventilation with continuous positive airway pressure (CPAP) or high-flow nasal cannula has been shown to be effective in reducing the need for intubation and in decreasing mortality in properly- selected patients with acute respiratory distress.

ADVANCED AIRWAY SKILLS
Only after basic procedures are deemed inappropriate or have proven to be inadequate should more advanced methods be used. Procedures documenting the use of each device/technique listed below are found elsewhere in this manual.

Supraglottic Airways: Utilization of supraglottic airways is an acceptable alternative to endotracheal intubation as both a primary device or a back-up device when previous attempt(s) at ETT placement have failed. Each device has its own set of advantages/disadvantages and requires a unique insertion technique. Providers should have access to, and intimate knowledge of, at least one supraglottic airway.
Examples include:

- i-gel
- King LT
- LMA

ETT: The endotracheal tube was once considered the optimal method or "gold standard" for airway management. It is now clear, however, that the incidence of complications is unacceptably high when intubation is performed by inexperienced providers or monitoring of tube placement is inadequate. The optimal method for managing an airway will, therefore, vary based on provider experience, emergency medical services (EMS) or healthcare system characteristics, and the patient's condition.

Bougie: All providers who attempt ETT placement should become intimately familiar with the use of a Bougie. It is the device used most often by anesthesiologists and emergency physicians for helping guide placement when a difficult airway is encountered.

DOCUMENTATION
All efforts toward airway management should be clearly documented and, at the minimum, should include the following:

- Pre/post intervention vital signs including oxygen saturation as well as capnography.
- Procedures performed/attempted, including number of failed attempts and who performed each attempt/ procedure.
- Size of device(s) placed, depth of placement (if applicable).
- Placement confirmation: methods should include auscultation, symmetrical chest wall rise, and quantitative waveform capnography.

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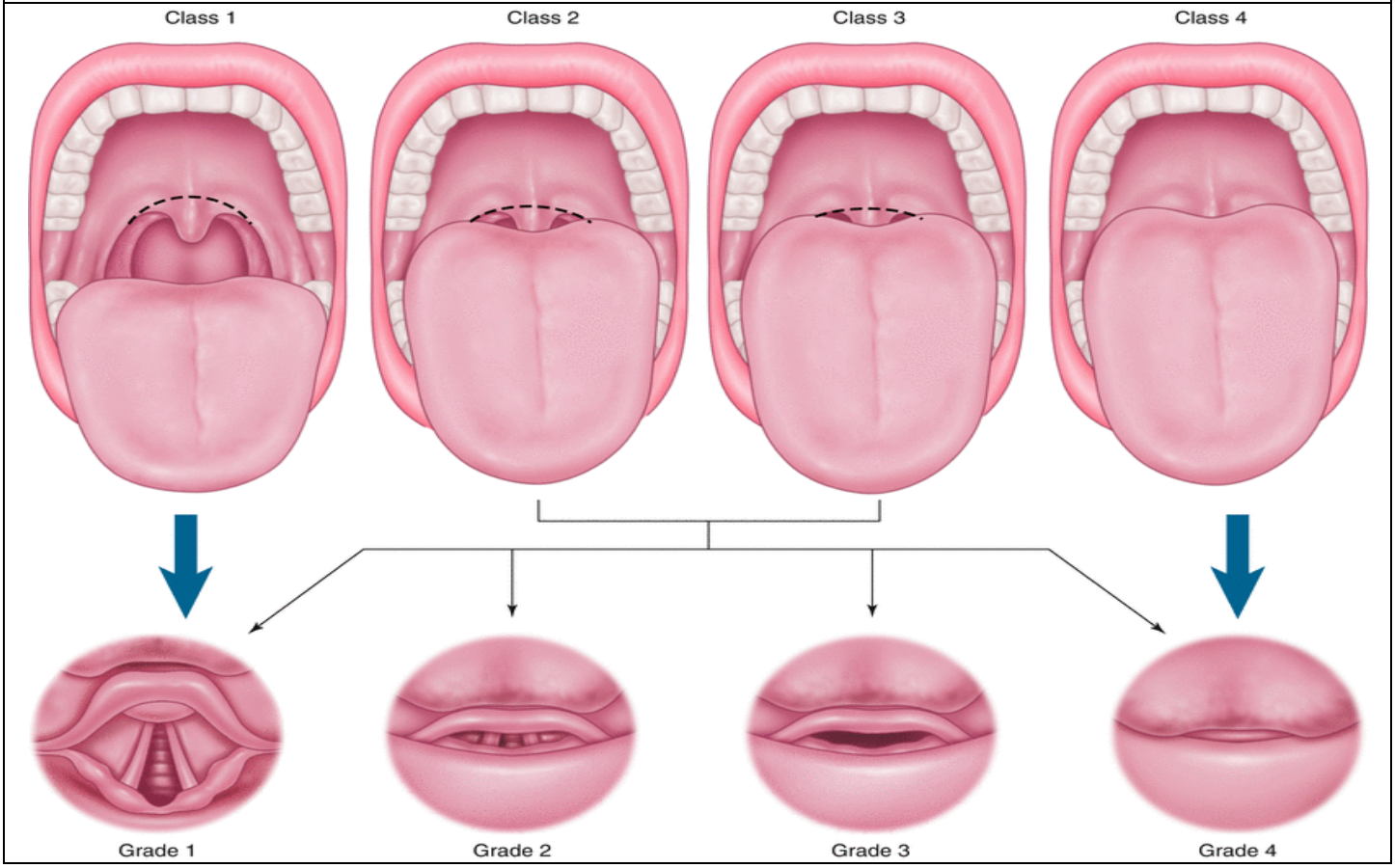
Airway Assessment Tools

Mallampati classifications and corresponding Cormack-Lehane laryngoscopy views



MOANS

Difficulty ventilating with a BVM may be identified by the mnemonic MOANS.

- **M:** represents "**mask"** to indicate difficult mask seal. Blood, facial injuries and beards are several examples of situations that may make BMV difficult or impossible.
- **O:** refers to "**obesity"** and "**obstruction.**" Obese and pregnant patients are inherently more difficult to bag- mask ventilate.
- **A:** refers to **aged** patients (older than 55 years) who may be more difficult to bag-mask ventilate due to physiological conditions that decrease compliance and promote loss of muscle tone in the upper airway, leading to collapse and obstruction to gas flow.
- **N:** or "**no teeth,**" may cause difficult BMV due to missing supporting structures needed to properly seat and seal the mask.
- **S:** refers to "**stiff lungs"** or " **chest wall."** Patients who require increased ventilatory pressure, such as the patient with chronic obstructive pulmonary disease, acute respiratory distress syndrome or pulmonary edema, may be difficult to ventilate because sufficient positive pressure may be difficult to achieve. Failure to complete this assessment prior to the administration of airway medications may lead to disastrous results, particularly in the event of a failed intubation. When employing an RSI technique or a PAI, the provider must have confidence that BMV will be successful. The provider should never take away something from a patient they're not confident they can replace.

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5.0 Airway Management

ROMAN

Difficulty ventilating with a BMV may be identified by the mnemonic ROMAN

- **R**: **Radiation/Restriction**: prior radiation treatment to the neck, or airway/lung restrictions with conditions like chronic obstructive pulmonary disease (COPD) or adult respiratory distress syndrome (ARDS) make ventilation difficult.
- **O**: **Obesity/Obstruction**: both conditions can make ventilation difficult.
- **M**: **Mask seal/Male/Mallampati**: beards, blood or facial debris, male gender, and limited visibility of throat structures inside the mouth are all indicators that bag and mask ventilation may be difficult to achieve.
- **A**: **Age**. Patients over age 55-57 may be more difficult to ventilate due to less muscle tone in the upper airway.
- **N**: **No** teeth: may make it difficult for the bag seal to stay formed to the face.

LEMONS

This assessment assists in predicting whether a difficult laryngoscopy and intubation will be encountered.

- **L**: stands for "**look** externally." These signs include a thick beard, bull neck or large tongue.
- **E**: or "**evaluate** the 3-3-2 rule," is an effective exam to reveal both the location of the larynx in relationship to the base of the tongue and whether the oral cavity will provide sufficient room to accommodate the intubation tools. (For more on the 3-3-2 rule, visit jems.com/airway.)
- **M**: **Mallampati** scale. This assessment of the awake, seated patient "classes" the view of anatomical structures seen when the patient opens their mouth, protrudes the tongue and doesn't phonate. A Class 1 airway is the least threatening; conversely, a Class 4 airway is considered to predict a difficult intubation.
- **O**: refers to "**obstruction**." Signs of anatomical obstruction include a hoarse or "hot potato" voice, stridor, or painful or difficulty swallowing.
- **N**: is for "**neck** mobility." Patients with limited neck mobility secondary to musculoskeletal diseases or injuries may be unable to assume the sniffing position, making the alignment of the airway structures and oral access difficult. Patients in C-collars aren't immediately considered to be difficult intubations because of the collar alone. With proper manual cervical spine stabilization, it's acceptable to remove the front of the collar during intubation.
- **S**: refers to "**space**," "**scene**" and "**skill**" of the intubator. Common problems associated with space and scene include confined spaces, limited physical access to the patient or their airway, unique patient presentation and extremely high- or low-light conditions. When placed in a unique or new situation, the intubator must assess their skill and comfort level before embarking on advanced airway management, especially RSI or a PAI.

HEAVEN

This assessment assists in predicting whether difficult video or direct laryngoscopy will be encountered as well as resuscitation.

- **H**: **Hypoxemia**. oxygen saturation value ≤93% at the time of initial laryngoscopy
- **E**: **Extremes** of size. pediatric patient (≤8 years of age) or clinical obesity, defined by the operator as anticipated to interfere with either bag-valve-mask ventilation and/or visualization of glottic structures during laryngoscopy
- **A**: **Anatomic** challenges. any structural abnormality that is anticipated to limit laryngoscopic view; this may include trauma to the airway structures themselves, limited oral aperture, large tongue, short neck, mass lesion or swelling, foreign body, or external structure that limits laryngoscopy or obstructs visualization
- **V**: **vomit**/blood/fluid in airway. clinically significant fluid noted in the pharynx/hypopharynx prior to laryngoscopy that is anticipated to interfere with either bag-valve-mask ventilation and/or visualization of glottic structures during laryngoscopy
- **E**: **Exsanguination**/anemia. suspected anemia, either chronic (based on past medical history) or acute (based on chief complaint, mechanism of injury, or examination findings), raising concerns about limiting safe apnea times.
- **N**: **Neck** mobility issues. limited cervical range-of-motion

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Continued

5.0 Airway Management

SALAD

An acronym for the technique to give practitioners an opportunity to manage an airway during regurgitation of large volumes of blood or gastric contents, and also a dedicated large-bore suction rigid suction catheter for these instances.

- **S**: Suction
- **A**: Assisted
- **L**: Laryngoscopic
- **A**: Airway
- **D**: Decontamination

RODS

Airway devices, such as the i-gel, LMA and the King LT airway have a substantial volume of literature attesting to their efficacy as rescue devices in EMS, the critical care unit and anesthesia. These can be assessed using the mnemonic RODS.

- **R**: stands for "**restricted** mouth opening." Depending on the device to be employed, more or less oral access may be needed.
- **O**: represents "**obstruction**" of the upper airway at the level of the larynx or below. An LMA or King won't bypass this obstruction.
- **D**: stands for "**disrupted**" or "**distorted**" airway that leads to a compromised seat and seal of the LMA/King. Seal may be exceedingly difficult or impossible to achieve in the face of a fixed flexion deformity of the neck or with the upper airway distortion of angioedema.
- **S**: refers to "**stiff** lungs" or "cervical **spine**." Ventilation with an LMA/King may be difficult or impossible in the face of substantial increases in airway resistance (e.g., deadly asthma) or decreases in pulmonary compliance (e.g., pulmonary edema). There are reports of difficult LMA insertion in patients with limited neck movement.

SMART

This evaluation identifies potentially difficult surgical cricothyrotomy in a "can't intubate, can't ventilate" scenario.

- **S**: identifies patients with previous neck **surgery**. Surgical scars of the neck should warn the operator of suspected distorted anatomy.
- **M**: refers to presence of a "**Mass**". External tumors, expanding neck hematomas and infectious processes, such as Ludwig's angina, may make accurate neck landmark identification difficult or impossible.
- **A**: is for "**Access** or **Anatomy**". Obesity, subcutaneous emphysema, infection, and edema may create difficulty in identifying anatomical landmarks.
- **R**: stands for "previous **radiation** therapy".
- **T**: for "**tumor**." May be internal.

Index

5.1A Airway Management - Adult

EMT Standing Orders

E

- Routine Patient Care.
- Establish airway patency.
  - Open and maintain the airway.
  - Suctioning as needed.
  - Clear foreign body obstructions.
- Administer oxygen to maintain oxygen saturation ≥ 94%.
- Insert an oropharyngeal or nasopharyngeal airway adjunct as required and tolerated.
- If patient has a tracheostomy tube, follow the procedure for Tracheostomy Care Procedure – Adult & Pediatric 5.13.
- For apnea or hypoventilation and decreased level of consciousness with possible narcotic overdose, administer naloxone. See Poisoning/Substance Abuse/Overdose – Adult 2.18A.
- Assist ventilations with a bag-valve-mask device and supplemental oxygen as needed.

Paramedic Standing Orders

P

- In cardiac arrest, consider insertion of a supraglottic airway. See procedure for I-gel 5.6.
- For severe respiratory distress secondary to pulmonary edema, COPD, asthma, pneumonia, near drowning or undifferentiated respiratory distress, consider use of CPAP. See CPAP Procedure 5.3.
- For apnea/respiratory failure or impending respiratory failure with impaired or absent gag reflex: consider supraglottic airway device or orotracheal intubation. See Orotracheal Intubation 5.10, I-gel 5.6.
- For severe airway compromise where respiratory arrest is imminent and other methods of airway management are ineffective: consider Rapid Sequence Intubation. See Rapid Sequence Intubation Procedure 7.1.
  - Whenever possible, resuscitate and address the hemodynamics of the patient prior to advanced airway intervention.
  - **Note: This procedure is only to be used by paramedics who are trained and credentialed to perform RSI in accordance with local Medical Direction policy and actively enrolled in an approved New Jersey MICU RSI Program.**
- If the patient exhibits signs and symptoms of gastric distention that compromise ventilation or circulation, place an NG/OG tube to relieve gastric distention. See Naso/Gastric Tube Insertion Procedure 6.10
- If tension pneumothorax is suspected, where the patient presents with signs and symptoms of a tension pneumothorax; perform a needle chest decompression. See Needle Thoracostomy Procedure 5.14.

SIGNS AND SYMPTOMS OF TENSION PNEUMOTHORAX:

- Increasing respiratory distress or hypoxia, **AND**
- Increasing signs of shock including tachycardia or hypotension **AND** one or more of the following:
  - Diminished or absent unilateral breath sounds
  - JVD (neck vein distension)
  - Possible tracheal deviation above the sternal notch away from the side of the injury (late sign)
  - Tympany (hyperresonance) to percussion on the affected side.

Index

5.1P Airway Management - Pediatric

EMT Standing Orders

E

- Routine Patient Care.
- Establish airway patency.
  - Open and maintain the airway.
  - Suctioning as needed.
  - Clear foreign body obstructions.
  - Insert an oropharyngeal or nasopharyngeal airway adjunct as required and tolerated.
- Administer ***oxygen*** to maintain oxygen saturation ≥ 94%.
- If patient has a tracheostomy tube, follow the procedure for Tracheostomy Care Procedure – Adult & Pediatric 5.13.
- For respiratory distress:
  - Administer high concentration oxygen (preferably humidified) via mask positioned on face or if child resists, held near face.
  - Attempt to keep oxygen saturation ≥ 94%; increase the oxygen rate with caution and observe for fatigue, decreased mentation, and respiratory failure.
  - For children with chronic lung disease or congenital heart disease, ask caregivers about patient's history, including home oxygen level or patient's target oxygen saturation. Maintain target saturation.
    Note: Pulse oximetry is difficult to obtain in children. Do not rely exclusively on pulse oximetry. If child continues to exhibit signs of respiratory distress despite high oxygen saturation levels, continue oxygen administration.
- For respiratory failure or for distress that does not improve with oxygen administration:
  - Assist ventilations with BVM at rate appropriate for child's age. Reference Pediatric Vital Signs 1.0.
  - If unable to maintain an open airway through positioning, consider placing an oropharyngeal or nasopharyngeal airway.
- Determine if child's respiratory distress/failure is caused by a preexisting condition:
  - For Allergic Reaction/Anaphylaxis, refer to the Allergic Reaction/Anaphylaxis Protocol – Pediatric 2.2P.
- For Asthma/Reactive Airway Disease/Croup, refer to the Asthma/Bronchiolitis/Croup/RAD Protocol – Pediatric 2.4P.

Paramedic Standing Orders

P

- For respiratory failure, use the most appropriate/least invasive method.
- BVM ventilation is the preferred method of ventilation for pediatric population. However, if unsuccessful, consider placement of supraglottic airway.
  - In cardiac arrest: consider insertion of a supraglottic airway. See procedure for i-gel 5.6
- Consider an endotracheal tube if airway cannot be maintained with a supraglottic airway.
- Prolonged transport time alone should not warrant more invasive interventions.
- See CPAP Protocol 5.3, Orotracheal Intubation 5.10, i-gel 5.6
- If feasible, place an orogastric tube to decompress the stomach. See Naso/Gastric Tube Insertion Procedure 6.10

RESPIRATORY DISTRESS:	**RESPIRATORY FAILURE**:
• Alert, irritable, anxious • Stridor • Audible wheezing/grunting • Respiratory rate outside normal range for child's age • Sniffing position • Nasal flaring • Head bobbing • Neck muscle use • Intercostal retractions • Central cyanosis that resolves with oxygen administration • Mild tachycardia	• Sleepy, intermittently combative or agitated • Respiratory rate < 10 breaths per minute • Absent or shallow respirations with poor air movement • Severe intercostal retractions • Paradoxical breathing • Limp muscle tone • Inability to sit up • Cyanosis and/or mottled skin • Bradycardia

Index

5.3 Continuous Positive Airway Pressure (CPAP) – Adult & Pediatric

EMT Standing Orders

E

INDICATIONS

- Spontaneously breathing patient in moderate to severe respiratory distress due to congestive heart failure/pulmonary edema, asthma/COPD, pneumonia, submersion injury or undifferentiated respiratory distress, concurrent with the following signs and symptoms:
  - Oxygen saturation < 94%
  - Retractions or accessory muscle use
  - Adult respiratory rate > 25 (see chart for pediatric)

CONTRAINDICATIONS

- Cardiac or respiratory arrest/apnea
- Unable to maintain their own airway
- Vomiting and/or active GI bleed
- Respiratory distress secondary to trauma
- Suspicion of pneumothorax
- Agitated or combative behavior and unable to tolerate mask
- Facial trauma or impossible face seal
- Hypotension with SBP < 100 mmHg (Pediatric Vital Signs 1.0)

Pediatric Respiratory Distress		
	Age	Resp. rate
Infant	0-1 year	> 60
Toddler	1-3 years	> 40
Preschooler	3-5 years	> 34
School Age	6-12 years	> 30
Teen	13 and older	> 25

PROCEDURE

- Ensure adequate oxygen supply for CPAP device.
- Explain procedure to patient. Be prepared to coach patient for claustrophobia or anxiety.
- Place patient in upright position. Apply pulse oximetry, capnography and nasal capture device.
- Choose appropriate sized device mask for patient, assemble the CPAP device, attach to oxygen supply and ensure oxygen is flowing (follow manufacturer's directions for preparation for your particular device). May attach additional oxygen to port on mask as needed to maintain appropriate SPO2.
- Place mask over face and secure with straps until minimal air leak.
- Adjust pressure to 5 – 10 cm H2O to effect for patient condition.
- Recheck mask for leaks and adjust straps as needed to minimize air leaks.
- Reassure anxious patient.
- Monitor vital signs, pulse oximetry and symptoms,
- If patient improves, maintain CPAP for duration of transport and notify receiving hospital to prepare for a CPAP patient.
- If patient begins to deteriorate, discontinue CPAP and assist respirations by BVM.
- Document CPAP procedure, including time and provider. Document serial pulse oximetry and capnography readings to demonstrate effects.

Paramedic Standing Orders

P

- ALS providers may administer CPAP to a non-vomiting patient with a decreased level of consciousness.
  - Airway must be constantly monitored.
- Administer anxiolytic.
  - ***Contact Medical Command for orders***

Administer benzodiazepines with caution in patients with signs of hypercarbia.

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5.4 Foreign Body Airway Obstruction

EMT Standing Orders

E

INDICATIONS

- Sudden onset of respiratory distress often with coughing, wheezing, gagging or stridor due to a foreign-body obstruction of the upper airway.

PROCEDURE

- Routine Patient Care
  - Assess the degree of foreign body obstruction.
  - Do not interfere with a mild obstruction allowing the patient to clear their airway by coughing.
  - In severe foreign body obstructions, the patient may not be able to make any sound. The victim may clutch his/her neck in the universal choking sign.
- **For an infant**: Deliver 5 back blows followed by 5 chest thrusts repeatedly until the object is expelled or the victim becomes unresponsive.
- **For a child**: Perform subdiaphragmatic abdominal thrusts (Heimlich Maneuver) until the object is expelled or the victim becomes unresponsive.
- **For adults**: A combination of maneuvers may be required,
  - First, subdiaphragmatic abdominal thrusts (Heimlich Maneuver) should be used in rapid sequence until the obstruction is relieved.
  - If abdominal thrusts are ineffective, chest thrusts should be used. Chest thrusts should be used primarily in morbidly obese patients and in patients who are in the late stages of pregnancy.
- If the victim becomes unresponsive, begin CPR immediately but look in the mouth before administering any ventilations. If a foreign body is visible, remove.
- **Do not perform blind finger sweeps in the mouth and posterior pharynx**. This may push the object farther into the airway.

Paramedic Standing Orders

P

- In unresponsive patients, visualize the posterior pharynx with a laryngoscope to potentially identify and remove the foreign body using Magill forceps.
- If unable to remove object, or if obstruction is secondary to trauma or edema, or if uncontrollable bleeding into the airway causes life-threatening ventilation impairment, perform endotracheal intubation. See Orotracheal Intubation 5.10.
- If unable to intubate and the patient cannot be adequately ventilated by other means, perform cricothyrotomy. See Cricothyrotomy: Control Cric ™ 5.11.

PEARLS

- If air exchange is adequate with a partial airway obstruction, do not interfere; instead, encourage the patient to cough up the obstruction. Continue to monitor the patient for adequacy of air exchange. If air exchange becomes inadequate, continue with the protocol.

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5.5 Gum Elastic Bougie/Flexguide

Paramedic Standing Orders

P

INDICATIONS

- Unable to fully visualize vocal cords during an intubation attempt.

PROCEDURE

1. Choose appropriately sized Bougie: adult, pediatric or neonatal.
2. Lubricate Bougie with water-based lubricant.
3. Using a laryngoscope (Macintosh or Miller blade) and standard ETT intubation techniques, attempt to visualize the vocal cords.
4. If the vocal cords are partially visualized, pass the Bougie through the cords while attempting to feel the signs of tracheal placement (see below). The Bougie is advanced until the black line on the Bougie reaches the lip line.
5. If the vocal cords are not visualized, pass the Bougie behind the epiglottis, guiding the tip of the Bougie anteriorly towards the trachea, and assess for signs of tracheal placement (see below).
6. With the laryngoscope still in place, have an assistant load the ETT over the Bougie and slide it to the level of the lip line.
7. Advance the ETT over the Bougie, rotating the ETT about 1/4 turn counterclockwise so that the bevel is oriented vertically as the ETT passes through the vocal cords. This maneuver allows the bevel to gently spread the arytenoids with a minimum of force, thus avoiding injury. If resistance is felt, withdraw the ETT, rotating it in a slightly more counterclockwise direction, and advance the tube again. Advance the tube to a lip-line of 24 cm in an adult male, and 22 cm in an adult female.
8. Holding the ETT firmly in place, have an assistant remove the Bougie.
9. Remove the laryngoscope.
10. Inflate the cuff with 5 – 10 mL of air.
11. Follow the procedures outlined in Orotracheal Intubation 5.10 to confirm placement, secure the ETT, monitor and document placement of the ETT.

SIGNS OF TRACHEAL PLACEMENT

- The Bougie is felt to stop or get “caught up” as the airway narrows and is unable to be advanced further. This is the most reliable sign of proper Bougie placement. If the Bougie enters the esophagus, it will continue to advance without resistance.
- It may be possible to feel the tactile sensation of “clicking” as the Bougie tip is advanced downward over the rigid cartilaginous tracheal rings.
- The Bougie can be felt to rotate as it enters a mainstem bronchus. Usually, it is a clockwise rotation as the Bougie enters the right mainstem bronchus, but occasionally it will rotate counterclockwise if the Bougie enters the left mainstem bronchus.
- If the patient is not paralyzed, he/she may cough.

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5.6 I-Gel Supraglottic Airway

Paramedic Standing Orders

P

INDICATIONS

- Inability to adequately ventilate a patient with a bag-valve-mask or longer EMS transports requiring a more definitive airway. Prolonged transport time alone should not warrant more invasive interventions.
- Back-up device for failed endotracheal intubation attempt. Patient must be unconscious.
- Primary airway device for cardiopulmonary resuscitation.

CONTRAINDICATIONS

- Intact gag reflex.
- Severe maxillofacial or oropharyngeal trauma

RELATIVE CONTRAINDICATIONS

- Ingestion of a caustic substance.
- Burns involving the airway.
- Known esophageal disease (e.g. cancer).

i-gel size	Patient Size	Patient Weight (kg)
1	Neonate	2-5
1.5	Infant	5-12
2	Sm pedi	10-25
2.5	Lg pedi	25-35
3	Sm Adult	30-60
4	Med Adult	50-90
5	Lg Adult	90+

PROCEDURE

1. Estimate ideal body weight from length-based resuscitation tape for pediatric patient.
2. Choose correct size.
3. Prepare i-gel. Refer to manufacturer's guidelines.
4. Open packaging and set up equipment.
5. Pre-oxygenate the patient if possible.
6. Pre-load nasogastric tube into gastric channel
7. Open the lubricant and place a small bolus on the inner side of the main shell of the packaging.
8. Lubricate the back, sides and front of the i-gel with a thin layer of enclosed lubricant.
9. Grasping the i-gel firmly along the bite block, place the patient in the sniffing position (unless contra-indicated) with the head extended and the neck flexed. Position the device so that the i-gel O2 cuff outlet is facing the patient. Introduce the leading soft tip into the mouth of the patient in the direction of the hard palate.
10. Glide the device downwards and backwards along the hard palate with a continuous but gentle push until a definitive resistance is felt.
11. The tip of the airway should be located into the upper esophageal opening with the cuff located against the laryngeal framework. The incisors should be resting on the bite block.
12. For sizes 3-5, if using the commercially available tube holder, secure the device by sliding the strap underneath the patient's neck and attaching it to the hook ring. Take care to ensure the strap is not secured too tight. For sizes 1-2.5, the device can be secured by taping maxilla to maxilla.
13. Commence with positive pressure ventilation per appropriate protocols.
14. Once ventilation has been confirmed, advance nasogastric tube. Confirm as per procedure.
15. Reassess tube placement frequently, especially after movement of the patient.
16. Document the time, provider, provider level and success for the procedure. Complete all applicable airway confirmation fields including chest rise, bilateral, equal breath sounds, absence of epigastric sounds and end-tidal CO_2 readings.

PEARLS

- Insertion can be achieved in less than 5 seconds.
- Sometimes a feel of "give-way" is felt before the end point resistance is met. This is due to the passage of the bowl of the i-gel through the faucial pillars. It is important to continue to insert the device until a definitive resistance is felt.
- Once correct insertion is achieved and the teeth are located on the integral bite block, do not repeatedly push down or apply excessive force during insertion.
- If there is resistance, remove, re-lubricate, and reposition the airway before repeat insertion. No more than three (3) attempts on one patient should be attempted.
- It is not necessary to insert fingers or thumbs into the patient's mouth during insertion.
- Use supplemental oxygen port for delivery of passive oxygenation as part of an appropriate Cardio-Cerebral Resuscitation (CCR) protocol.
- If required, an appropriate size nasogastric tube may be passed down the gastric channel.

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5.9 Nasotracheal Intubation

Paramedic Standing Orders

P

INDICATIONS

- Impending respiratory failure with intact gag reflex, or jaw is clenched and unable to be opened in a spontaneously breathing patient who is not a candidate for Rapid Sequence Induction.

CONTRAINDICATIONS

- Apnea.
- Nasal obstruction.
- Suspected basilar skull fracture.
- Severe facial trauma or suspected facial fractures.
- Patient fits on a pediatric length-based resuscitation tape.

PROCEDURE

1. If available, pre-medicate nasal mucosa with 2% lidocaine jelly.
2. Pre-oxygenate the patient.
3. Select the largest and least obstructed nostril and insert a lubricated nasal airway.
4. Lubricate the ETT with water-based lubricant.
5. Remove the nasal airway and gently insert the ETT with continuous quantitative waveform capnography monitoring, keeping the bevel toward the septum (a gentle rotation movement may be necessary at the turbinates).
6. Continue to advance the ETT while listening for maximum air movement and watching for capnography waveform. Consider use of BAAM device to aid in listening to airflow.
7. At the point of maximum air movement, indicating proximity to the level of the glottis, gently and evenly advance the tube through the glottic opening on inspiration.
    - If resistance is encountered, the tube may have become lodged into the pyriform sinus and you may note tenting of the skin on either side of the thyroid cartilage. If this happens, slightly withdraw the ETT and rotate it toward the midline and attempt to advance tube again with the next inspiration.
8. Upon entering the trachea, the tube may cause the patient to cough, buck, strain, or gag. This is normal. Do not remove the ETT. Be prepared to control the cervical spine and be alert for vomiting.
9. Placement depth should be from the nares to the tip of the tube: approximately 28 cm in males and 26 cm in females.
10. Inflate cuff with 5 – 10 mL of air.
11. Confirm appropriate placement by quantitative waveform capnography, symmetrical chest-wall rise, auscultation of equal breath sounds over the chest, a lack of epigastric sounds with bagging.
12. Secure the ETT.
13. Ongoing monitoring of ETT placement and ventilation status using waveform capnography is required for all patients.
14. Document each attempt as a separate procedure. An attempt is defined as placement of the tube into the patient's nostril. For each attempt, document the time, provider, placement success, pre-oxygenation, ETT size, placement depth, placement landmark (e.g. cm at the nare), and confirmation of tube placement including chest rise, bilateral, equal breath sounds, absence of epigastric sounds and end-tidal CO2 readings.
15. Sedation may not be necessary following nasotracheal intubation.

Continued

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5.9 Nasotracheal Intubation

Paramedic Standing Orders

P

POST INTUBATION CARE

- Sedation/Analgesia:
  - ***Ketamine**:*
    - *Adult:* 0.5 - 1.5 mg/Kg IV/IO; every 5 - 10 minutes as needed
    - *Pediatric:* 0.5 mg/Kg IV/IO; every 5 - 10 minutes as needed (max 50 mg)

    OR

  - ***Midazolam**:*
    - *Adult:* 2.5 - 5 mg IV/IO; every 5 - 10 minutes as needed
    - *Pediatric:* 0.1 mg/kg IV/IO; every 5 - 10 minutes as needed (max 4 mg)

    AND
  - ***Fentanyl**:*
    - *Adult:* 50 - 100 mcg slow IV/IO push; every 5 - 10 minutes as needed (max 100 mcg)
    - *Pediatric:* 1 mcg/kg IV/IO; every 5 - 10 minutes as needed (max 50 mcg)

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5.10 Orotracheal Intubation

Paramedic Standing Orders

P

GOAL: For maintenance of oxygenation, ventilation and airway patency while minimizing potential negative effects from interventions.

INDICATIONS

- Apnea/respiratory failure
- Impending respiratory failure
- Only after basic procedures are deemed inappropriate or have proven to be inadequate should more advanced methods be used.

CONTRAINDICATION

- Epiglottitis.
- Facial or neck injuries that prohibit visualization of airway anatomy (relative).

CAUTIONS

- Patients should, at least initially, be managed with BVM/SGA.
- Patients with CHF should be managed with trial of CPAP and nitrates if possible.
- Avoid intubating patients with severe TBI and asthmatics, if possible.

PROCEDURE

1. Prepare all equipment. Have suction and Bougie ready.
2. Pre-oxygenate the patient with high-concentration oxygen. Three-minute minimum of BVM ventilation or if patient is breathing, assuring 8 vital capacity breaths with NRB. Apply continuous nasal cannula at 15 LPM.
3. Assess for airway difficulty based on patient anatomy (e.g., short neck, obesity, decreased hyromental distance and Class III or IV oropharyngeal views on observation). Have fallback plan and equipment ready.
4. Open the patient's airway. While holding the laryngoscope in the left hand, insert the blade into the right side of the patient's mouth, sweeping the tongue to the left. Use video laryngoscopy, if available and trained.
5. Utilize the laryngoscope blade of choice appropriately to maximize view.
6. Once the glottic opening is visualized, insert the tube through the vocal cords and continue to visualize while passing the cuff through the cords.
7. Remove the laryngoscope and then the stylet from the ETT.
8. Inflate the cuff with 5 – 10 mL of air.
9. Confirm appropriate proper placement with quantitative waveform capnography and also document symmetrical chest-wall rise, auscultation of equal breath sounds over the chest and a lack of epigastric sounds with ventilations using bag-valve-mask
10. Secure the ETT with a commercial device. Consider applying a cervical collar to minimize head and neck motion during movement and transport.
11. Reassess tube placement frequently, especially after movement of the patient.
12. Ongoing monitoring of ETT placement and ventilation status using waveform capnography is required for all patients.
13. Document each attempt as a separate procedure so it can be time stamped in the ePCR. **An attempt is defined as placement of the blade into the patient's mouth**. For each attempt, document the time, provider, placement success, pre-oxygenation, airway grade, ETT size, placement depth, placement landmark (e.g. cm at the patient's lip), and confirmation of tube placement including chest rise, bilateral, equal breath sounds, absence of epigastric sounds and end-tidal CO2 readings.

- If intubation attempt is unsuccessful, ETT placement cannot be verified or ETT becomes dislodged:
  - Remove ETT
  - Monitor oxygen saturation and end-tidal CO2 AND
  - Ventilate the patient with 100% oxygen via a BVM until ready to attempt intubation again.
- If continued intubation attempts are unsuccessful (maximum of 3 attempts for cardiac arrest) or BVM ventilation is not adequate, consider placing a supraglottic airway.

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Continued

5.10 Orotracheal Intubation

Paramedic Standing Orders

P

POST INTUBATION CARE

- Sedation/Analgesia:
  - ***Ketamine**:*
    - *Adult:* 0.5 - 1.5 mg/Kg IV/IO; every 5 - 10 minutes as needed
    - *Pediatric:* 0.5 mg/Kg IV/IO; every 5 - 10 minutes as needed (max 50 mg)

    OR

  - ***Midazolam**:*
    - *Adult:* 2.5 - 5 mg IV/IO; every 5 - 10 minutes as needed
    - *Pediatric:* 0.1 mg/kg IV/IO; every 5 - 10 minutes as needed (max 4 mg)

    AND
  - ***Fentanyl**:*
    - *Adult:* 50 - 100 mcg slow IV/IO push; every 5 - 10 minutes as needed (max 100 mcg)
    - *Pediatric:* 1 mcg/kg IV/IO; every 5 - 10 minutes as needed (max 50 mcg)

PEARLS

- Video-laryngoscopy, If available to trained providers, has been shown to have better success rates than direct laryngoscopy.

- Video laryngoscopy may be utilized as the primary method for endotracheal intubation.

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5.11-CC Cricothyrotomy - Control-Cric™

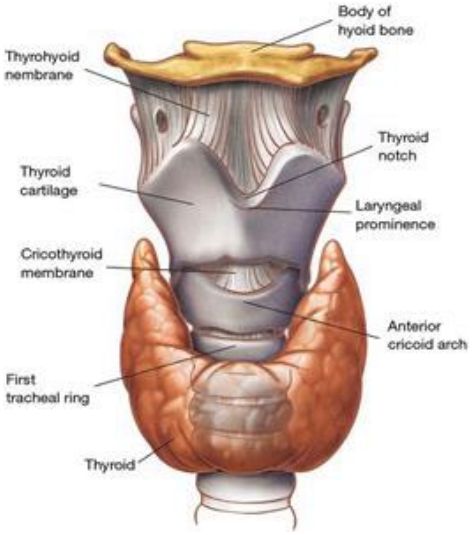
P

INDICATIONS

- Failed airway: Viable patient who cannot be ventilated by any other means available.
- All other methods to ventilate have been deemed unable to be successful.
- Massive mid-face trauma precluding use of BVM, obstruction, trismus (clenching).
- Inability to control the airway using less invasive measures.
- Last Resort: All other airway management techniques have failed. Unable to ventilate or oxygenate patient.

EQUIPMENT

- Chlorhexidine or other antiseptic solution
- 1 Cric-Key introducer tube
- 1 Cric-Knife with tracheal hook
- 1 Stabilizing strap
- 1 Inflation syringe
- 1 Wedge
- 1 Extension tube
- BVM
- Waveform ETCO2



PROCEDURE

1. Position patient supine and identify the cricothyroid membrane. Stabilize the larynx with thumb and middle finger with non-dominant hand.
2. Use the Cric-Knife to incise skin. A vertical skin incision from mid-thyroid cartilage to the cricoid cartilage is recommended (usually about 2 finger breadths.)
   - In Patients with a thick neck a longer incision may be needed. A horizontal skin incision may be used when landmarks are evident.
3. After palpating the cricothyroid membrane, turn the Cric-knife to a horizontal position over the cricothyroid membrane. Push the blade downward, perpendicular to the trachea, until the blade is fully inserted and the airway is entered.
4. While maintaining downward force, slide the tracheal hook down the handle with your thumb until the hook is felt to enter the trachea, and it disengages from the handle. Grab the tracheal hook with the non-dominant hand, lifting up on the thyroid cartilage.
5. Insert Cric-Key through incision. Confirm placement by moving the device along anterior wall of trachea to feel for tracheal rings.
   - Indicators of incorrect placement could be: tenting of the skin, difficulty advancing the Cric-key tube, or lack of tactile feedback from the tracheal rings.
6. Once placement has been confirmed, advance Cric-key tube to the flange. Stabilize the Cric-key tube and pivot the tracheal hook toward the patients shoulder to remove from airway.
7. While stabilizing the Cric-key tube, remove the Cric-key introducer. Inflate the cuff until resistance is met
8. Confirm placement and secure with stabilizing strap.
9. Attach manual BVM. Ventilate and auscultate lung fields. Reassess.

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5.12 Suctioning of Inserted Airway

Paramedic Standing Orders

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INDICATIONS

Obstruction of the airway (secondary to secretions, blood, and/or any other substance) in a patient currently being assisted by an inserted airway such as an endotracheal tube, King LTD, i-gel, or tracheostomy tube.

CONTRAINDICATIONS

None.

PROCEDURE

1. Ensure the suction device is operable.
2. Pre-oxygenate the patient.
3. While maintaining aseptic technique, attach the suction catheter to the suction unit.
4. If applicable, remove ventilation device from the airway.
5. Insert the sterile end of the suction catheter into the tube without suction. Insert to proper depth so that suction catheter does not extend past the tube/device.
6. Once the desired depth is met, apply suction by occluding the port of the suction catheter and slowly remove the catheter from the tube using a twisting motion.
7. Suctioning duration should not exceed 10 seconds, using lowest pressure that effectively removes secretions.
8. Saline flush may be used to help loosen secretions and facilitate suctioning.
9. Re-attach the ventilation device to the patient.

Relative Contraindications

- Neck swelling that obscures anatomic landmarks
- Damage to larynx, cricoid cartilage, trachea, and neck, including trauma and burns
- Anatomic anomalies/distortion of larynx and/or trachea, including evidence of prior neck surgery, hematoma, evidence of previous radiation to the neck, and obesity.

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5.13 Tracheostomy Care – Adult & Pediatric

EMT Standing Orders

E

INDICATIONS

An adult or pediatric patient with an established tracheostomy in respiratory distress or failure.

PROCEDURE

1. Consult with the patient's caregivers for assistance.
2. Assess tracheostomy tube. Look for possible and correctable causes of distress such as; *Dislodged tube, Obstructed tube/airway, Pneumothorax, Equipment failure, Stacked breaths.*
3. If the patient's breathing is adequate but exhibits continued signs of respiratory distress, administer high-flow oxygen via non-rebreather mask or blow-by, as tolerated, over the tracheostomy.
4. If patient's breathing is inadequate, assist ventilations using bag-valve-mask device with high-flow oxygen.
5. If on a ventilator, remove the patient from the ventilator prior to using bag valve mask device as there may be a problem with the ventilator or oxygen source.
6. Suction if unable to ventilate via tracheostomy or if respiratory distress continues.

Paramedic Standing Orders

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INDICATIONS

- An adult or pediatric patient with an established tracheostomy, in respiratory distress or failure where EMT tracheostomy interventions have been unsuccessful.
- Dislodged tracheostomy tube.

CONTRAINDICATIONS

- None

PROCEDURE

1. If the tracheostomy tube has a cannula, remove it prior to suctioning.
2. Determine proper suction catheter length by measuring the obturator.
3. If the obturator is unavailable, insert the suction catheter approximately 2 – 3 inches into the tracheostomy tube. **Do not use force!**
4. 2 – 3 mL of saline may be used to help loosen secretions.
5. If the patient remains in severe distress, continue ventilation attempts using bag valve mask with high-flow oxygen via the tracheostomy. Consider underlying reasons for respiratory distress and refer to the appropriate protocol for intervention.
6. If the patient remains in severe respiratory distress, remove tracheostomy tube and attempt bag valve mask ventilation.
    a. If BVM is applied to mouth, stoma must be sealed for ventilation to be effective.
    b. If mask is applied to stoma, a pediatric mask will provide the most effective seal.
7. If another tube is available from caregivers, insert into stoma and resume ventilation (a standard endotracheal tube may be used or the used tracheostomy tube, after being cleaned).
8. If unable to replace tube with another tracheostomy tube or endotracheal tube, assist ventilations with bag valve mask and high-flow oxygen.

PEARLS

- Total laryngectomy patients have no connection between oropharynx and airway as it has been surgically removed.
- These patients can only be oxygenated via tracheostomy.

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5.14 Needle Thoracostomy

Paramedic Standing Orders

P

INDICATIONS

- SIGNS AND SYMPTOMS OF TENSION PNEUMOTHORAX:
  - Increasing respiratory distress or hypoxia,
    AND
  - Increasing signs of shock including tachycardia or hypotension
    AND one or more of the following:
    - Diminished or absent unilateral breath sounds
    - JVD (neck vein distension)
    - Possible tracheal deviation above the sternal notch away from the side of the injury (late sign)
    - Tympany (hyperresonance) to percussion on the affected side.
- Traumatic cardiac arrest with associated chest or abdominal injuries
  - Bilateral needle thoracostomies should be performed

CONTRAINDICATIONS

- None in the life-threatening presentation

PROCEDURE

- For patients presenting with sign/symptoms of tension pneumothorax:
  1. Place the patient in either lateral recumbent position with the affected side up, or supine, with the head of the bed up 40-45 degrees, if possible.
     - This may allow for the select and identify insertion site air to rise to the superior portion of the lung increasing the distance from the parietal to visceral pleura decreasing the likelihood of penetrating the visceral pleura and lung parenchyma
  2. Select and identify insertion site
     - Fourth or fifth intercostal space in the mid-axillary line.
       - Abduct arm on affected side,
         - In males, the fifth intercostal space is approximately at the level of the nipple at the mid-axillary line.
         - In females, the breast can displace the nipple inferiorly. If displaced, the fifth intercostal space will be located just superior to the mammary fold/ crease.
     - Second intercostal space (ICS) midclavicular line(MCL)
       - The second ICS is between the second and third rib.
       - The MCL is the midpoint on the clavicle (measured from the jugular notch to the distal clavicle).
       - The intersection of the MCL and the second ICS is the location for needle decompression
  3. Prep the area with alcohol or chlorhexidine.
  4. Attach a 10 ml syringe partially filled with saline or water to the end of their angiocatheter/needle set
  5. Insert the 10 – 14 gauge angiocatheter with the needle placed just above the rib, perpendicular to the skin.
  6. As the needle enters the chest wall, aspirate and observe for the presence of air bubbles in the syringe. Insert the needle approximately ¼ inch further then deploy the catheter.
  7. Remove the needle and leave the catheter in place
  8. Place a one way valve chest seal over the catheter (if available)
  9. Re-evaluate the patient to ensure a positive clinical effect

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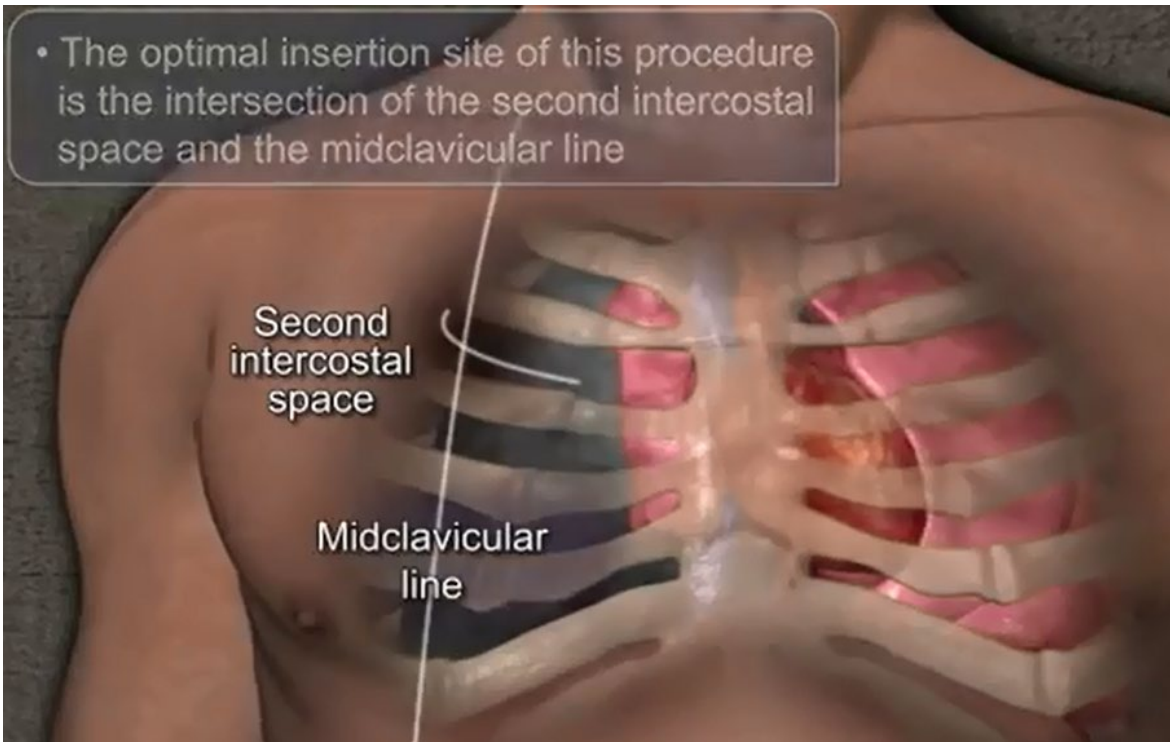
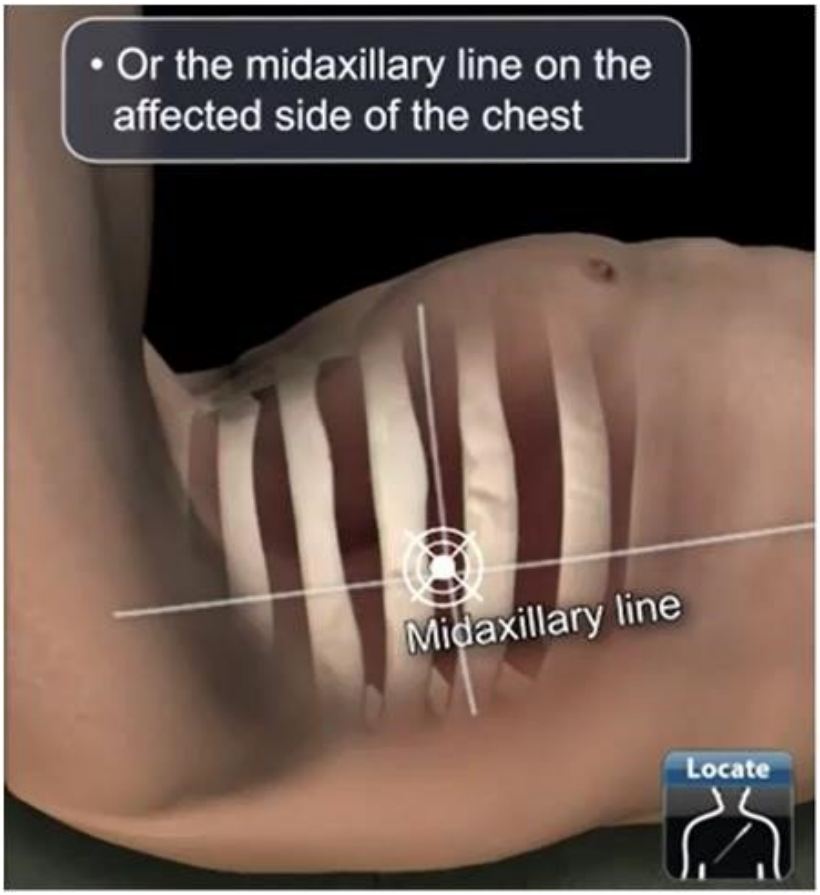
5.14 Needle Thoracostomy





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6.0 Advanced Spinal Assessment

EMT Standing Orders

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PURPOSE: This protocol provides guidance regarding the assessment and care of patients who have a possible spinal injury, utilizing spinal motion restriction. Spinal motion restriction is defined as application of a cervical collar and maintenance of the spine in neutral alignment. Determination that immobilization devices should be used should be made by the highest-level EMS provider. All steps of spinal assessment algorithm below must be documented in the ePCR

All patients that have a mechanism of injury that could cause a spinal injury, including high risk or questionable injury mechanisms, should have a spinal assessment.

- Spinal Assessment: Spinal motion restriction is required when ANY of the following conditions apply: (See Spinal Motion Restriction 4.5)
- Unreliable patient:
  - Child who cannot participate in assessment.
  - Anxious and/or uncooperative.
  - Communication barriers (e.g., deafness, hard of hearing, language, understanding).
  - Altered mental status (not alert and oriented x 3).
  - Evidence of alcohol or drug intoxication.
  - Distracted by circumstances or injuries to self or others (ie, any other injury capable of producing significant pain in this patient).
- Any abnormal neurological function in extremities (check all 4 extremities):
  - Numbness or tingling (paresthesia).
  - Motor strength not full and symmetrical.
  - Sensation not intact and symmetrical.
- Torticollis: neck disorders that exhibit flexion, extension, or twisting of muscles of the neck beyond their normal position
- Midline tenderness on palpation:
  - Explain to the patient the actions that you are going to take. Ask the patient to immediately report any pain, and to answer questions with a “yes” or “no” rather than shaking the head.
  - With the patient’s spine supported to limit movement, begin palpation at the base of the skull at the midline of the spine.
  - Palpate the vertebrae individually from the base of the skull to the bottom of the sacrum.
  - On palpation of each vertebral body, look for evidence of pain and ask the patient if they are experiencing pain. If evidence of pain along the spinal column is encountered, utilize spinal motion restriction.
- Pain with movement of neck (cervical flexion, extension and rotation).
  - Inquire as to the existence of pain when patient moved neck prior to EMS assessment
  - Do not assist patient in attempts to rotate neck.

High-risk mechanisms include:

- Motor vehicle crash >60 mph, rollover, ejection. Simple low-speed, rear-end MVC can usually be excluded. (Simple low-speed collision does not include: being pushed into oncoming traffic, being hit by a bus or large truck, rollover, or being hit by a high-speed vehicle.)
- Falls >10 feet or 2-3 times patient height. Patients >65 years or with a high-risk history such as osteoporosis should be given extra consideration, including falls from standing.
- Axial load to head/neck (e.g., diving accident, heavy object falling onto head, contact sports).
- Significant injury or mechanism of injury above the clavicle.
- Injuries involving motorized recreational vehicles.
- Bicycle or pedestrian struck/collision.

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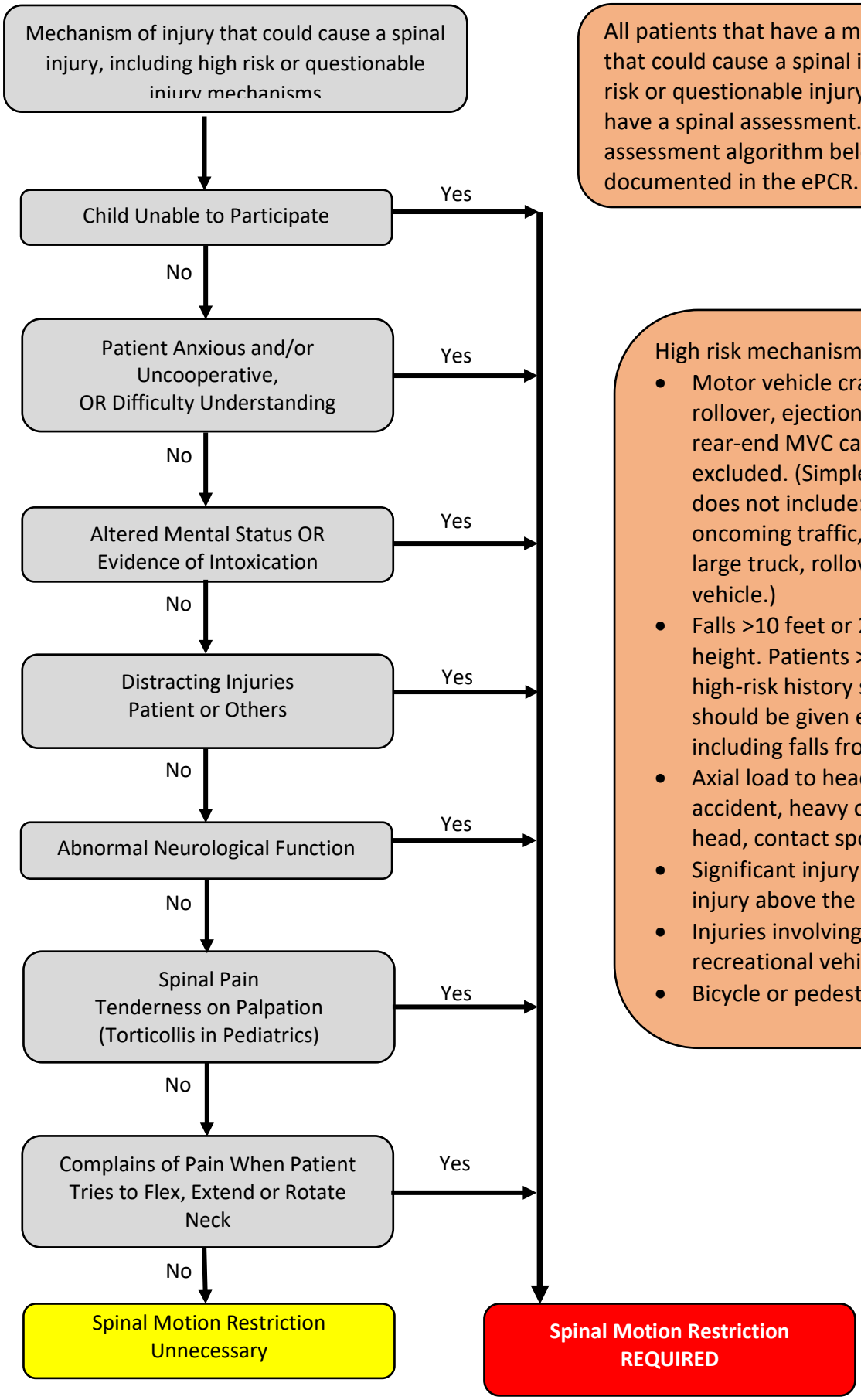
6.0 Advanced Spinal Assessment



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- Falls >10 feet or 2-3 times patient height. Patients >65 years or with a high-risk history such as osteoporosis should be given extra consideration, including falls from standing.
- Axial load to head/neck (e.g., diving accident, heavy object falling onto head, contact sports).
- Significant injury or mechanism of injury above the clavicle.
- Injuries involving motorized recreational vehicles.
- Bicycle or pedestrian struck/ collision.

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6.2 ECG Acquisition, Transmission and Interpretation

Paramedic Standing Orders

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Obtain 12-lead ECG with baseline vitals within 10 minutes if practical and transmit per indicators.

INDICATIONS

- A pre-hospital 12-Lead ECG will be acquired on all patients age ≥ 35, presenting with the following symptoms:
- Chest discomfort of any kind, including atypical presentations such as sharp, stabbing pain, "indigestion," epigastric pain, pleuritic, reproducible or positional discomfort, or discomfort relieved by antacids.
- Dyspnea or pulmonary edema
- Syncope/near syncope/dizziness
- Syncope in any pediatric patient
- General weakness
- Palpitations
- Diaphoresis unexplained by ambient temperature, nausea or vomiting, or "flu-like" symptoms
- Discomfort in the arms, neck, jaw, shoulders, or between the shoulder blades
- Thoracic back pain without trauma
- Diabetic Ketoacidosis/hyperglycemia
- Feeling of impending doom, anguish or non-specific fear/anxiety
- Overdose (any age patient) especially with cocaine, tricyclic antidepressants or any other substance known to cause cardiac dysrhythmias
- Cardiac transplant patients
- Patient with preexisting cardiovascular disease
- Further exploration of an identified arrhythmia or new-onset bundle branch block.

PROCEDURE

1. Prepare ECG Monitor and connect cable with electrodes.
2. Properly position the patient (supine or semi-reclined).
3. Enter patient information (e.g. age, gender) into monitor.
4. Prep chest as necessary, (e.g. hair removal, skin prep pads).
5. Apply chest and extremity leads using recommended landmarks:
    - RA – Right arm or shoulder
    - LA – Left arm or shoulder.
    - RL – Right leg or hip.
    - LL – Left leg or hip.
    - V1 – 4TH intercostal space at the right sternal border.
    - V2 – 4TH intercostal space at the left sternal border.
    - V3 – Directly between V2 and V4.
    - V4 – 5TH intercostal space midclavicular line.
    - V5 – Level with V4 at left anterior axillary line.
    - V6 – Level with V5 at left midaxillary line.
        - ➢ See Diagram
6. Instruct patient to remain still.
7. Obtain the 12-lead ECG and transmit to Medical Command if required/requested.
8. If ECG is interpreted to be an acute ST-elevation myocardial infarction (STEMI), transport patient to the most appropriate facility in accordance with local STEMI guidelines/agreements and notify receiving facility of a "**STEMI ALERT**."
9. For patients with continued symptoms consistent with acute coronary syndrome, perform repeat ECGs during transport to evaluate for evolving STEMI.
10. Copies of 12-lead ECG labeled with the patient's name and date of birth should be left with the receiving hospital and incorporated into the patient's record.

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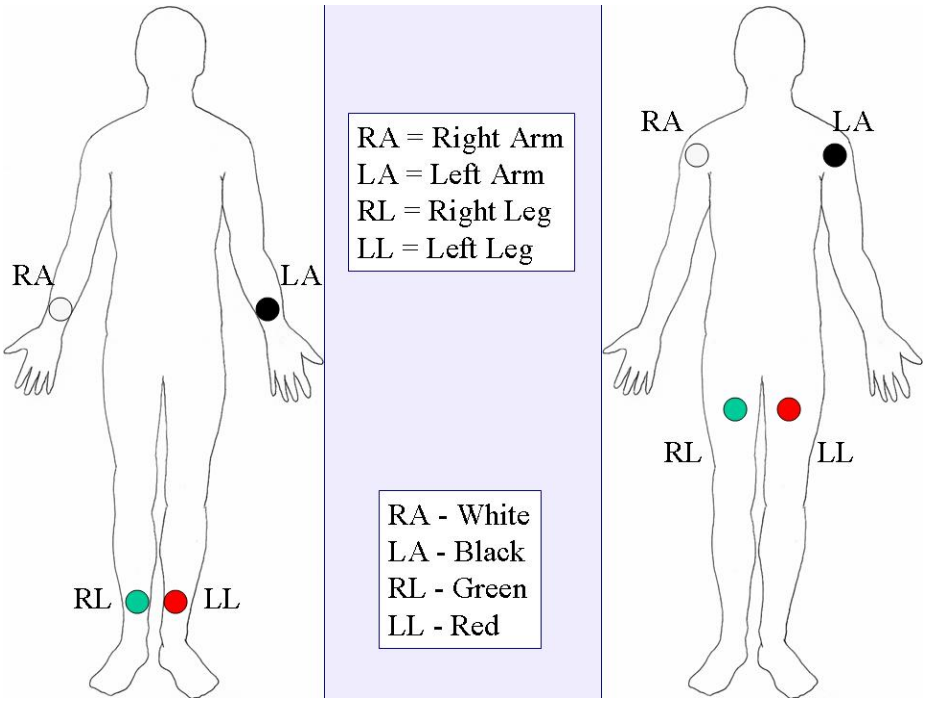
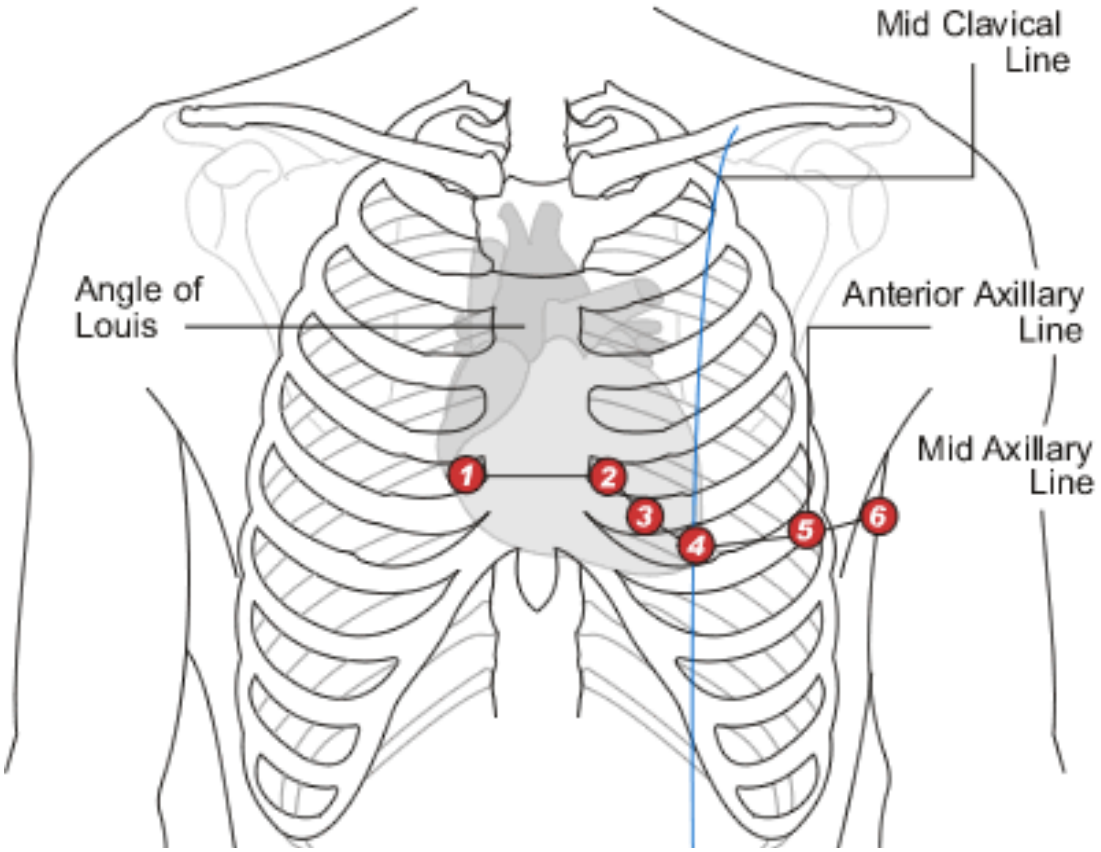

RA = Right Arm
LA = Left Arm
RL = Right Leg
LL = Left Leg
RA
LA
RL
LL
RA - White
LA - Black
RL - Green
LL - Red
RA
LA
RL
LL


Mid Clavical Line
Angle of Louis
Anterior Axillary Line
Mid Axillary Line
1
2
3
4
5
6

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6.3 Intraosseous Access

Paramedic Standing Orders

P

DEFINITION

Intraosseous insertion establishes access in a critically ill patient where venous access cannot be rapidly obtained. The bone marrow space is non-collapsible and provides access to the general circulation for the administration of fluids and resuscitation medications. This protocol applies to all appropriate IO insertion sites.

INDICATIONS

- Medication or fluid resuscitation of a patient in profound shock or other critical illness and in need of immediate life-saving intervention and unable to rapidly obtain peripheral IV access.

CONTRAINDICATIONS

- Placement in or distal to a fractured bone.
- Placement at an infected site.
- Placement at site where IO was already attempted.
- Placement at site near joint replacement.

COMPLICATIONS

- Infusion rate may not be adequate for resuscitation of ongoing hemorrhage or severe shock, extravasation of fluid.

EQUIPMENT

- 15 gauge EZ-IO needle
- Gloves and povidone-iodine, chlorhexidine solution or alcohol wipes.
- Primed IV tubing, IV stopcock.
- 10 mL syringe with 0.9% NaCl.
- Pressure pump/bag or 60 mL syringe for volume infusion or slow push.
- One vial of 2% lidocaine (preservative free).

PROCEDURE

When using an FDA-approved commercial IO device, follow manufacturer's instructions.

1. Place the patient in a supine position.
2. Identify the bony landmarks as appropriate for device.
3. Choose correct needle size: 45 mm proximal humerus, 25 mm anterior tibia, 15 mm anterior tibia.
4. Prep the site. Scrub site with alcohol wipe or other cleaning solution and allow drying.
5. Insert IO needle. Follow manufacturer's instructions for preferred sites.
6. Needle is appropriately placed if the following are present:
    - If appropriate, aspiration with syringe yields blood with marrow particulate matter.
    - Infusion of saline does not result in infiltration at the site.
    - Needle stands without support.
7. Attach IV tubing, with or without stopcock.
8. Prior to IO syringe bolus (flush) or continuous infusion in alert patients:
    - Ensure that the patient has no allergies or sensitivity to lidocaine.
    - SLOWLY administer lidocaine 2% (preservative free) through the IO device catheter.
    - Allow 2 – 5 minutes for anesthetic effects, if possible:
        - Adult: 40 mg ***2% lidocaine***.
        - Pediatric: 0.5 mg/kg ***2% lidocaine*** (maximum 50 mg).
9. Flush with 10 mL of ***0.9% NaCl*** rapid bolus prior to use:
    - Recommend use of a stop cock in-line with syringe for bolus infusions.
    - Use a pressure bag for continuous crystalloid solution infusions.
10. Stabilize needle:
    - Utilize a commercially available stabilization device as recommended by the manufacturer OR
    - Stabilize needle on both sides with sterile gauze and secure with tape (avoid tension on needle).
11. Apply ID bracelet to indicate patient has had an IO placed or attempted.

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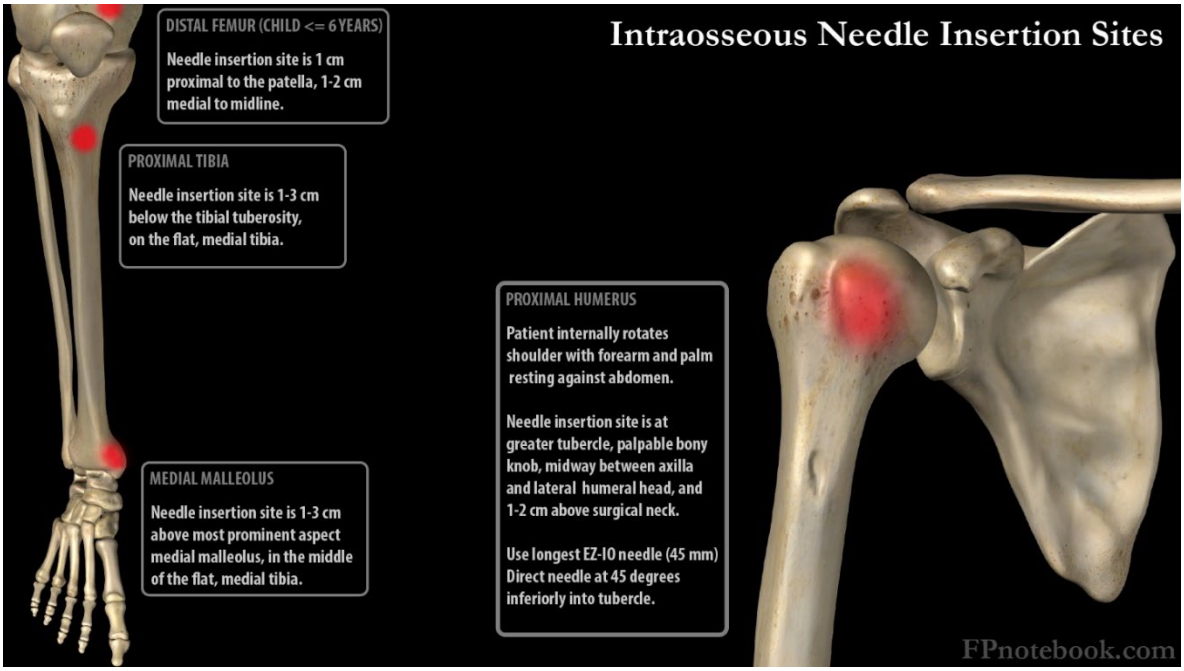
Continued

6.3 Intraosseous Access

May only attempt one IO needle per site. Notify ED of missed sites.

PEARLS

- Any fluid or medication that can be administered through an IV may be administered through an appropriately-placed IO device.



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Continued

6.3 Intraosseous Access

Proximal Humerus – infant/child

1. Place the patient's hand over the abdomen (elbow adducted and humerus internally rotated).
2. Place your palm on the patient's shoulder anteriorly.
    a. The area that feels like a "ball" under your palm is the general target area.
    b. You should be able to feel this ball, even on obese patients, by pushing deeply.
3. Place the ulnar aspect of your hand vertically over the axilla and the ulnar aspect of your other hand along the midline of the upper arm laterally.
4. Place your thumbs together over the arm; this identifies the vertical line of insertion on the proximal humerus.
5. Palpate deeply up the humerus to the surgical neck. This may feel like a golf ball on a tee – the spot where the "ball" meets the "tee" is the surgical neck. The insertion site is above the surgical neck, on the most prominent aspect of the greater tubercle.

Distal Femur – infant/child

1. Secure the leg out-stretched to ensure the knee does not bend. Identify the patella by palpation.
2. The insertion site is approximately 1 cm proximal to the superior border of the patella and approximately 1-2 cm medal to midline

Proximal tibia – infant/child

1. Extend the leg.
2. Insertion site is approximately 1 cm medial to the tibial tuberosity, or just below the patella (approximately 1 cm) and slightly medial (approximately 1 cm), along the flat aspect of the tibia.
3. Pinch the tibia between your fingers to identify the medial and lateral borders of the tibia.

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6.4 Quantitative Waveform Capnography

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INDICATIONS

- Confirmation of endotracheal tube placement (required). See Nasotracheal Intubation 5.9 / Orotracheal Intubation 5.10.
- Confirmation of supraglottic airway placement.
- Routine use of $ETCO_2$ for monitoring ventilation status is appropriate including:
  - BVM ventilation of patients with advanced airway in place
  - Monitoring patients who have received sedatives and/or analgesic medications
  - CPAP
  - Suspected metabolic abnormalities/shock.
  - Monitoring of CPR quality and for signs of ROSC in cardiac arrest patients.

PROCEDURE

1. Attach capnography sensor to endotracheal tube, supraglottic airway, BVM or oxygen delivery device.
2. Observe $ETCO_2$ level and waveform morphology changes. This should be documented for patients undergoing airway management, cardiac arrest, altered mental status and respiratory distress.

Printed waveform preferred for evaluating waveform morphology.

3. $ETCO_2$ should remain in place with the airway and be monitored until transfer of care in hospital.
4. Any loss of $ETCO_2$ detection or waveform may indicate an airway problem and should be immediately addressed.

NOTES

- There are three determinants of quantitative waveform capnography may include:
  - Alveolar ventilation
  - Pulmonary/vascular perfusion
  - Metabolism

- For sudden loss of quantitative waveform capnography, evaluate for the following:
  - Tube dislodged.
  - Circuit disconnected/obstructed.
  - Apnea (patients being monitored after receiving analgesia or sedation)

- High levels of CO2 (> 45 mmHg):
  - Hypoventilation
  - CO2 retention

- Low CO2 (< 25 mmHg):
  - Hyperventilation.
  - Low perfusion: shock, pulmonary embolus, sepsis.

- Cardiac Arrest: In low-pulmonary blood flow states, such as cardiac arrest, the primary determinant of quantitative waveform capnography is blood flow. Capnography levels are a good indicator of CPR quality.
  - If capnography levels are dropping, the CPR quality may be poor, consider changing chest compressors.
  - A sudden rise in $ETCO_2$ level to 40 mmHg or greater indicates substantial improvement in blood flow and likely return of spontaneous circulation (ROSC)
  - An $ETCO_2$ level of 10 mmHg or less measured 20 minutes after the initiation of advanced cardiac life support accurately predicts death in patients with cardiac arrest. See Resuscitation Initiation and Termination Policy 8.12

6.5 Restraints

EMT and Paramedic Standing Orders

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P

INDICATIONS

Any patient who may harm himself, herself, or others may be restrained to prevent injury to the patient or crew. Restraining must be performed in a humane manner and used only as a last resort.

PROCEDURE

1. Scene and EMS safety are always high priority.
2. Request law enforcement assistance, as necessary.
3. When appropriate, attempt less restrictive means of managing the patient, including verbal de-escalation.
4. Ensure that there are sufficient personnel available to physically restrain the patient safely.
5. Restrain the patient in a lateral or supine position. No devices such as backboards, splints, or other devices may be placed on top of the patient. Never hog-tie a patient.
    - At no time should the patient be placed in the prone position.
    - Patients should not be transported with hands behind their back.
6. The patient must be under constant observation by the EMS crew at all times.
7. The extremities that are restrained must have a circulation check at least every 15 minutes. The first of these checks should occur as soon after placement of the restraints as possible.
8. Documentation in the ePCR should include the reason for the use of restraints, the type of restraints used, the time restraints were placed, circulation checks, and any injuries resulting from restraints.
9. If a patient is restrained by law enforcement personnel with handcuffs or other devices EMS personnel cannot remove, a law enforcement officer ***MUST*** accompany the patient to the hospital in the transporting ambulance.
10. Once applied, restraint should not be removed in the field unless medically necessary to provide care.

PEARLS

- Causes of combativeness may be due to comorbid medical conditions or due to hypoxia, hypoglycemia, drug and/or alcohol intoxication, drug overdose, or traumatic brain injury.
- Struggling against restraints may lead to hyperkalemia, rhabdomyolysis, and/or cardiac arrest.
- Verbal de-escalation is the safest method and should be delivered in an honest, straightforward, friendly tone avoiding direct eye contact and encroachment of personal space.

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6.6 Taser (Conducted Electrical Weapon) Probe Removal and Assessment

State and local law enforcement may use a conducted electrical weapon (CEW), also called a taser. This device is a tool that can be deployed in either a drive stun (sensory nervous system) or dart (sensory & motor nervous systems that causes neuro-muscular incapacitation) mode. In the dart mode, two probes with attached wires are discharged from the CEW. The probes are #8 straightened fish hooks that penetrate the suspect's skin a maximum of ¼ inch. Each trigger pull discharges an electric charge for a 5-second cycle. The electric charge is high voltage (generally 12,000 volts) and low amperes (generally 0.0036 amp). Current medical literature does not support routine medical evaluation for an individual after a CEW application. In most circumstances probes can be removed by law enforcement without further EMS or other medical intervention.

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EMS should be activated and transport the patient following CEW (conducted electrical weapon) application (i.e., Taser™) in the following circumstances:

- Seizure is witnessed after CEW application
- There is excessive bleeding from probe site after probe removal by law enforcement
- Complaints of chest pain, palpitations, or cardiac arrest.
- Respiratory distress
- Altered mental status
- Pregnancy
- Developmental or physical disability and unable to assess the above

P

INDICATIONS FOR REMOVAL
Not currently approved for EMS providers

CONTRAINDICATIONS TO REMOVAL
Not currently approved for EMS providers

PROCEDURE
1. Transport

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6.7 Tourniquet & Hemostatic Agent – Adult & Pediatric

EMT Standing Orders

E

CLINICAL INDICATIONS

- Life threatening hemorrhage that cannot be controlled by other means (direct pressure).
- Serious or life-threatening hemorrhage and operational considerations that prevent the use of standard hemorrhage control techniques.

PROCEDURE

- Routine Patient Care.
- Attempt to control hemorrhage with direct pressure.
- If direct pressure ineffective or impractical and hemorrhage not controlled, apply tourniquet or hemostatic agent as indicated.
- Refer to Shock Protocol – Adult 2.21A or Shock Protocol – Pediatric 2.21P.
- Minimize scene time.
- If patient has unstable vital signs, call for Paramedic intercept, if available. If not available, initiate transport to the closest appropriate facility.
- See Trauma Triage and Transport Decision Protocol 8.4.
- Apply tourniquet for wound amenable to tourniquet placement (e.g., extremity injury). Use a commercially produced, windlass, pneumatic, or ratcheting device, which has been demonstrated to occlude arterial flow and avoid narrow, elastic, or bungee-type devices. Utilize improvised tourniquets only if no commercial device is available. Place tourniquet at least 2 - 3" proximal to wound.
  - Tighten per manufacturer instructions until hemorrhage stops and distal pulses in affected extremity disappear.
  - Secure tourniquet per manufacturer instructions.
  - Note time of tourniquet application and communicate this to receiving providers.
  - Dress wounds per standard wound care protocol.
  - Do not release a properly-applied tourniquet until the patient reaches definitive care.
  - If delayed or prolonged transport and tourniquet application time ≥ 5 hours contact **Medical Command**.
  - Consider application of a second tourniquet just proximal to the first for failure to control bleeding.
- Ensure the second tourniquet is placed “high” (proximal) and “tight” to occlude distal pulses.
- Apply a topical hemostatic bandage, in combination with direct pressure, for wounds in anatomical areas where tourniquets cannot be applied and sustained direct pressure alone is ineffective or impractical. (Junctional/torso injury or proximal extremity location where tourniquet application is not practical.)
  - Only apply topical hemostatic agents in a gauze format that supports wound packing.
  - Only utilize topical hemostatic bandage which have been determined to be effective and safe in a standardized laboratory injury model.

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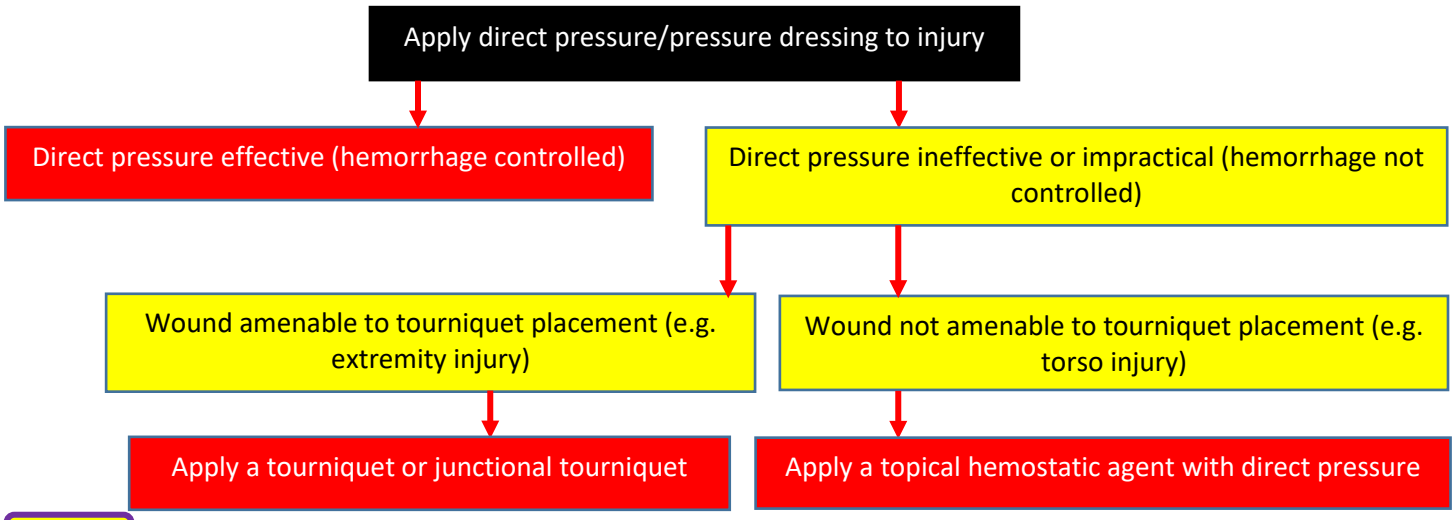
If patient presentation is consistent with hypovolemia, see Shock Adult 2.21A or Shock Pediatric 2.21P



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6.8 Vascular Access Via Pre-Existing Central Catheters

Paramedic Standing Orders

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INDICATIONS
In the presence of a life-threatening condition, a patient with a pre-existing central catheter with clear indications for immediate use of medication or fluid bolus. (Not for prophylactic IV access.)

CONTRAINDICATIONS
Suspected infection at skin site.
Inability to yield a blood return when aspirating as placement in vessel cannot be confirmed.

PROCEDURE
Determine the type of catheter present: PICC, Broviac, Hickman, Groshong, Mediport, etc.

Procedure For Peripherally Inserted Central Catheter (Cook, Neo-PICC, Etc.) And
Tunneled Catheter (Broviac, Hickman, Groshong, Etc.)

1. Prepare equipment:
   - 10 mL syringe (empty),
   - 10 mL syringe 0.9% NaCl, and
   - Sterile gloves (if available).
2. If more than one lumen is available (PICCs and Boviacs can have one, two, or three lumens), select the largest lumen available.
3. Vigorously prep the cap of the lumen with chlorhexidine.
4. Unclamp the catheter lumen and using a 10 mL syringe, (after unclamping the lumen) aspirate 3 – 5 mL of blood with the syringe and discard. If unable to aspirate blood, re-clamp the lumen and attempt to use another lumen (if present). If clots are present, contact Medical Command before proceeding.
5. Flush the lumen with 3 – 5 mL 0.9% NaCl using the 10 mL syringe. If the catheter does not flush easily (note that a PICC line will generally flush more slowly and with greater resistance than a typical intravenous catheter), re-clamp the selected lumen and attempt to use another lumen (if present).
6. Attach IV administration set and observe for free flow of IV fluid.
7. Allow titrate fluid to run at rate of 10 mL/hour to prevent the central line from clotting.

Procedure For Implanted Catheter (Port-a-Cath, P.A.S. Port, Medi-port)

1. Prepare all necessary equipment:
   - Non-coring, right angle (Huber/Haberman) needle specific for implanted vascular access ports
   - 10 mL syringe (empty),
   - Two 10 mL syringes 0.9% NaCl, and
   - Sterile gloves (if available).
2. Identify the access site; usually located in the chest.
3. Clean the access site with chlorhexidine solution.
4. Prime the non-coring needle tubing with saline.
5. Palpate the port to determine the size and center of the device. If not utilizing sterile gloves, re-clean the skin.
6. Secure the access point port firmly between two fingers and firmly insert the non-coring needle into the port, entering at a direct 90° angle. Attach a 10 mL syringe to Haberman/Huber needle.
7. Aspirate 3 – 5 mL of blood with the syringe. If unable to aspirate blood, re-clamp the catheter and do not attempt further use. If clots are present, contact Medical Command before proceeding.
8. Flush the catheter with 3 – 5 mL 0.9% NaCl using a 10 mL syringe. If the catheter does not flush easily, do not attempt further use.
9. Attach IV administration set and observe for free flow of IV fluid.
10. If shock is not present, allow fluid to run at rate of KVO to prevent the central line from clotting.

- The maximum flow rates for a PICC line are 125 mL/hour for < 2.0 Fr sized catheter and 250 mL/hour for > 2.0 Fr sized catheters.
- Note: Avoid taking a blood pressure reading in the same arm as the PICC.
- Only non-coring, right angle needles specific for implanted ports are to be used for vascular access devices that are implanted in the patient. These are generally not carried by EMS units but may be provided by the patient.
- Priming the tubing of the non-coring needle is essential to prevent air embolism.
- In case of cardiac arrest, implanted ports may be accessed with a standard needle, if a non-coring needle is unavailable.

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6.9 Sedation

Paramedic Standing Orders

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Sedation is a continuum of drug-induced states for facilitating the evaluation and/or treatment of a patient's underlying condition. The minimal amount required to accomplish the task should be used with frequent reassessments and monitoring of the patient's hemodynamic parameters. Sedatives should not be pushed fast via vascular access (unless specifically for Rapid Sequence Intubation). The clinician should be ready to resuscitate the patient in case of inadvertent changes in respiratory or hemodynamic status. Patients should be continuously monitored, with all available adjuncts when possible, including HR, 3-4 lead ECG, RR, SPO2, BP, $ETCO_2$, perfusion state, mental state.

Analgesia: See Severe Pain Management-Adult 2.17A or Severe Pain Management-Pediatric 2.17P

Minimal Sedation
For Cardioversion or Transcutaneous Pacing

- ***Midazolam***:
  - Adult: 1-2.5 mg IV/IO over 2-3 minutes; every 5 - 10 minutes as needed;
  - Pediatric: 0.1 mg/kg IV/IO over 2-3 minutes; every 5 - 10 minutes as needed (max 4 mg)

General Sedation: This is the use of a drug for altering the level of consciousness of a patient to facilitate evaluation and/or treatment of the patients underlying condition. This may be used for treatment of the patients where procedures or extrication/movement of the patient may produce significant pain or anxiety, or for patients where the patient would benefit from de-escalation of an agitated state (such as intoxication, post-ictal states, or withdrawal states with intermittent episodes of agitation).

- ***Midazolam:***
  - Adult: 2.5 – 5 mg slow IV/IO; every 5-10 minutes as needed;
  - Pediatric: 0.1 mg/kg slow IV/IO; every 5-10 minutes as needed; (max 4mg)
- ***Ketamine:***
  - Adult: 0.75 – 1 mg/kg slow IV/IO
  - Pediatric: 0.5 mg/kg slow IV/IO; (max 50 mg)

Sedation for mild to moderate agitation
For patients who do not represent an immediate danger to themselves, lack the capacity to refuse transport, and require sedation to facilitate treatment and transport, consider:

- ***Haloperidol*** 5 mg IM, may repeat once in 5 minutes (max total dose 10 mg).
  AND
- ***Midazolam*** 5 mg IM
  - May combine and administer Benzodiazepine and Haloperidol in one syringe.

Haloperidol can lower the seizure threshold and should be used with caution. Use lower doses of haloperidol in the elderly or frail.

PEARLS

- Sedation is never to be utilized for controlling behavior for the purpose of law enforcement initiatives or assistance.
- The utilization of medications, for the purpose of chemical restraint, is strictly prohibited.
- Vital sign must be monitored continuously following sedation and documented on your PCR at least every 5 minutes and immediately after any intervention.
- Documentation should include an explanation for why monitoring is not taking place every minute after sedation is administered.

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6.9 Sedation

Paramedic Standing Orders

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Sedation for severe life-threatening delirium with agitation: characterized by multiple of the following: violent destructive mania, hyperthermia, tachycardia, hallucinations, disorientation, bizarre behavior, insensitivity to pain, naked or under-clothed and/or increased strength. These patients may be considered at risk for imminent autonomic collapse.

1. Ensure that law enforcement and adequate assistance are present.
2. Use verbal calming and de-escalating techniques whenever possible.
   a. Speak calmly to the patient.
   b. Attempt to obtain cooperation.
   c. Ask if they will sit or lie down.
   d. Allow the patient to correct inappropriate behavior whenever possible.
3. Evaluate for other causes of acute agitated delirium (AEIOU-TIPS,) and treat as per appropriate standing orders.
   - A – Alcohol
   - E – Endocrine, Encephalopathy, Electrolytes
   - I – Insulin (hypoglycemia)
   - O– Oxygen (hypoxia), Opiates (drugs of abuse)
   - U – Uremia
   - T – Toxins, Trauma, Temperature
   - I – Infection
   - P – Pyschiatric, Porphyria
   - S – Stroke, Shock, Subarachnoid hemorrhage, Space-Occupying CNS lesions
4. Use the minimum physical restraint necessary while ensuring patient safety. See Restraints 6.5
5. Assess patient as soon as possible, and obtain vital signs, pulse oximetry, ECG, skin temperature.
6. Assess blood glucose as soon as possible; if blood glucose is less than 60mg/dl; See Diabetic Emergencies-Hypoglycemia 2.8A
7. All monitoring and resuscitation equipment must be next to the patient prior to sedation, and patient monitoring should be initiated as soon as possible after sedation. It should never be delayed for extrication.
8. Administer sedative:
   - ***Ketamine*** 3-4 mg/kg Ideal Body Weight IM injection only. (Use 100 mg/mL concentration, max dose 400 mg.)
     - Repeat 100 mg IM dose in 10 minutes for continued agitation; 5 minutes if safety is a concern.
9. Establish vascular access with ***crystalloid solution*** if possible if not already established.
10. Continually reassess:
    - Vital signs
    - ECG
    - Neurovascular status of distal extremities.
    - Monitor non-invasive waveform capnography when able.
      - (These sequence actions may be performed simultaneously as situation dictates, and does not need to be in specific order)

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6.10 Nasal/Oral Gastric Tube Insertion

Paramedic Standing Orders

P

INDICATIONS:
- Gastric distention/emptying

CONTRAINDICATIONS:
- Gastric decompression should not be performed if an esophageal obstruction is present.
- Nasogastric decompression should not be attempted in a patient with facial trauma, basilar skull fracture or esophageal varices.
- Use extreme caution in patients who have esophageal disease or trauma.
- Oral or nasal obstruction

COMPLICATIONS:
- May induce nausea/vomiting, even when the gag reflex is depressed.
- Nasal, esophageal, or gastric trauma
- Tracheal placement
- Gastric tube obstruction

PROCEDURE

1. Prepare the patient:

   Nasogastric/Orogastric Decompression:
   a. Place the head in a neutral position (if not contraindicated)
   b. Preoxygenate
   c. Locate the larger nostril (for nasal insertion)

   Supraglottic Decompression:
   a. Pre-load gastric tube into gastric channel if available on SGA device

2. Measure the NG tube from the patient's nose to the ear and from the ear to the xiphoid to determine the correct insertion length.
   a. Lubricate the tube with a water-soluble lubricant.

3. Advance the tube until the proper length is reached.
   a. Nasal: gently along the nasal floor and into the stomach.
   b. Oral: along the hard palate
      i. Having the patient swallow during insertion may help advance the tube into the esophagus.
      ii. If the patient is conscious and starts to cough vigorously, ask the patient to speak. If the patient is unable to speak, the tube has likely passed through the vocal cords.

4. Confirm placement:
   a. Auscultate the epigastric region while injecting 20 mL of air.
   b. Note gastric contents in the NG tube.
   c. Make sure no gastric contents appears around the NG tube.

5. Secure the NG tube in place and attach it to suction if indicated.

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7.1 Rapid Sequence Airway/Rapid Sequence Induction

PARAMEDIC MEDICAL COMMAND ORDER ONLY

This procedure is only to be used by paramedics who are trained to perform RSI with oversight by local Medical Direction and agency participation in an RSI educational and CQI program approved by NJ Office of EMS. Two RSI trained paramedics should be present however, new paramedics have 90-days to complete RSI training. A trained paramedic may perform RSI with an untrained paramedic if medical command is notified of the crew configuration requesting the procedure. **RSI may only be performed on patients >13 years of age.**

INDICATION

- Immediate, severe airway compromise in the adult patient where respiratory arrest is imminent and other methods of airway management are ineffective.

PROCEDURE

- Contact **Medical Command** for RSI orders. 

RAPID SEQUENCE AIRWAY (RSA) PROCEDURE

In the event of the airway assessment, or at any point during the advanced airway intervention that it becomes evident that the patient's condition or the circumstances surrounding the airway management necessitates it, a supraglottic airway should be substituted for the endotracheal tube using the same induction and neuro-muscular blocking agents.

This process would be beneficial in circumstances where the patient is rapidly desaturating, has difficulty maintaining critical oxygenation, or the position of the patient does not easily permit endotracheal intubation, but may allow for supraglottic airway placement.

PREPARATION "SOAPME": (T minus 10 minutes)

- **S**uction set up.
- **O**xygen: 100% non-rebreather mask, with bag-valve mask ready. Apply nasal cannula at 6 – 15 LPM in addition to non- rebreather or bag-valve mask preoxygenation. Do not remove nasal cannula during intubation attempt(s).
  - May use CPAP as alternative to NRB when appropriate.
- **A**ssessment: Evaluate airway difficulty based on patient anatomy (e.g., short neck, obesity, decreased thyromental distance and Class III or IV oropharyngeal views on observation). Have fallback plan and equipment ready.
- **P**harmacology: IV/Medications drawn.
- **M**onitor: Cardiac / O2 saturation/ ETCO2 and hemodynamics.
  - Set NIBP on monitor to cycle every 2-minutes
- **E**quipment: ETT (check cuff) / Stylet / BVM / PEEP Valve/ Laryngoscope / Blades / Suction / Bougie / Back-up supraglottic devices.

PREOXYGENATION: (T minus 10 minutes until medication administration)

- When possible, use a non-rebreather mask for at least 3 minutes to effect nitrogen washout and establish an adequate oxygen reserve.
  - In emergent cases, administer 8 vital capacity bag-valve-mask breaths with 100% oxygen.
- Apply nasal cannula with oxygen regulator turned up to its fullest capacity (nasal cannula should remain in place until endotracheal tube is secured).
- After preoxygenation attempts, if unable to achieve $SPO_2 \geq 94\%$ due to hypoxic delirium, move directly to DSA.
  - See Delayed Sequence Airway/Delayed Sequence Induction 7.2

ADDRESS HEMODYNAMICS: (T minus 5 minutes until medication administration)

- Patient presenting with Systolic BP <100 or Shock Index >0.8; can receive ***push-dose epinephrine*** 10-20 mcg IV/IO Q2-5 minutes to a max of 100 mcg. Refer to Shock – Adult 2.21A
  - ❖ Push-dose epinephrine is not indicated in the patient suffering traumatic injury

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7.1 Rapid Sequence Airway/Rapid Sequence Induction

PARAMEDIC MEDICAL COMMAND ORDER ONLY

SEDATE THEN PARALYZE: (T minus 0 seconds)

- Induction:
  - ***Ketamine*** 1.5 mg/kg administered over 1-minute via vascular access,
    OR
  - ***Etomidate*** 0.3 mg/kg via vascular access
    *** If hypotensive, adrenergically depleted or high shock index (> 0.8), decrease induction agent dose
    - ***Ketamine*** 0.75 mg/kg administered over 1-minute via vascular access,
      OR
    - ***Etomidate*** 0.15 mg/kg via vascular access
- Paralytic:
  - ***Rocuronium*** 1.5 mg/kg (ideal body weight) via vascular access

PASS THE TUBE: (T plus 90 seconds)

- After paralysis is achieved, follow the procedure outlined in Orotracheal Intubation Procedure 5.10

PROOF OF PLACEMENT

- Assess for proper placement by following the procedure outlined in Orotracheal Intubation Procedure 5.10.

FAILED AIRWAY

If unable to intubate or ventilate appropriately, proceed to Cricothyrotomy: Control Cric ™ 5.11

POST INTUBATION CARE

- Sedation/Analgesia:
  - After 10 minutes, consider the need for sedation if hemodynamically stable after evaluating vital signs.
  - If not, evaluate need for ***push-dose epinephrine***; administer 10-20 mcg IV/IO Q2-5 minutes, up to a max 100 mcg; refer to Shock-Adult 2.21A)
  - ***Ketamine***: 1.5 mg/Kg IV/IO administered slowly
    - If reduced dosage of Ketamine was used for induction, administer ***Ketamine*** 0.75 mg/kg over 1 minute

    OR
  - **Midazolam**: 0.05 mg/kg IV/IO; every 5 - 10 minutes as needed (max 5 mg)
    AND
  - ***Fentanyl***: 1 mcg/kg slow IV/IO push; every 5 - 10 minutes as needed (max 100 mcg)
    OR
- Insert an oral/nasal gastric tube; Refer to Nasal/Oral Gastric Tube Insertion 6.10

Shock Index (SI) = Heart Rate/ Systolic Blood Pressure.

- Shock index been studied in patients experiencing shock from a variety of causes: trauma, hemorrhage, myocardial infarction, pulmonary embolism, sepsis, and ruptured ectopic pregnancy. While HR and SBP have traditionally been used to characterize shock in these patients, they often appear normal in the compensatory phase of shock and can be confounded by factors such as medications administered during RSI.
- SI >0.8 has been widely found to predict post-intubation hypotension and increased risk of mortality and other markers of morbidity.

7.1 Rapid Sequence Airway/Rapid Sequence Induction

PARAMEDIC MEDICAL COMMAND ORDER ONLY

DOCUMENTATION

- Documentation of each RSI attempt shall include the following:
  - Indications for RSI, including supporting narrative, and the assessment tool used to verify that the patient was a candidate for RSI (3-3-2 rule, Mallampati scale, MOANS, ROMAN, LEMONS, HEAVEN, RODS, SMART).
  - Patient age and weight
  - Name of medical command physician as well as orders that were received.
  - Patient response to procedure
  - Presence or absence of complications
  - Documentation of all secondary ETT confirmation methods utilized
  - Documentation of confirmation of ETT placement before and after each transfer of the patient, including transfer to hospital staff
  - Documentation shall include number of attempts, technique (direct or video), blade size and types used, tube size and type (cuffed or uncuffed) used, tube depth at lip line and SpO2.
  - $ETCO_2$ value and waveform (and the presence or absence of waveform correlation). Waveforms will be attached to the patient's medical record.
- Follow all other required documentation outlined in Orotracheal Intubation Procedure 5.10

Adrenergic Depletion and Ketamine

Caution: Ketamine may cause worsening hemodynamic instability in patients who have depleted their natural stores of catecholamines. This most often occurs in patients who are in shock or who are otherwise hemodynamically unstable. EMS providers should **perform adequate resuscitation PRIOR** to intubation and anticipate, prepare for, and **treat POST intubation hypotension** with fluids and/or vasopressors as clinically indicated. Consider delaying post-intubation sedation dose of ketamine until any hemodynamic instability has been addressed.

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7.2 Delayed Sequence Airway/Delayed Sequence Induction

PARAMEDIC MEDICAL COMMAND ORDER ONLY

DELAYED SEQUENCE INTUBATION (DSI) PROCEDURE

If during the pre-oxygenation phase, the patient isn't able to be adequately oxygenated due to delirium from the underlying condition and hypoxia, leading to agitation and combativeness resulting in impedance of the attempts at pre-oxygenation, then DSA/DSI can be initiated.

The end goal may still be the advanced airway intervention with the induction agent having already been given. When the patient is appropriately pre-oxygenated and dissociated, the paralytic may be administered for the completion of the intervention.

DSI PROCEDURE

- Administer sedative:
  - ***ketamine*** 1.5 mg/kg over 1-minute via vascular access; may be administered via intramuscular route if vascular access is not available and patient has no concern for hemodynamic instability.

  *** If critically hypotensive, shock index > 0.8 or adrenergically depleted:
  - ***ketamine*** 0.75 mg/kg administered over 1-minute via vascular access

PREOXYGENATION

- When possible, use a non-rebreather mask for at least 3 minutes to effect nitrogen washout and establish an adequate oxygen reserve.
  - In emergent cases, administer 8 vital capacity bag-valve-mask breaths with 100% oxygen.
- Apply nasal cannula with oxygen regulator turned up to its fullest capacity (nasal cannula should remain in place until endotracheal tube is secured).
- Administer paralytic once dissociated, and patient has been oxygenated to an SpO_2 >94%
  - ***rocuronium*** 1.5 mg/kg via vascular access
- Proceed with intubation.

PASS THE TUBE: (T plus 90 seconds)

- After paralysis is achieved, follow the procedure outlined in Orotracheal Intubation Procedure 5.10

PROOF OF PLACEMENT

- Assess for proper placement by following the procedure outlined in Orotracheal Intubation Procedure 5.10.

FAILED AIRWAY

If unable to intubate or ventilate appropriately, proceed to Cricothyrotomy: Control Cric ™ 5.11

POST INTUBATION CARE

- Sedation/Analgesia:
  - After 10 minutes, consider the need for sedation if hemodynamically stable after evaluating vital signs.
  - If not, evaluate need for ***push-dose epinephrine***; administer 10-20 mcg IV/IO Q2-5 minutes, up to a max 100 mcg; refer to Shock-Adult 2.21A)
  - ***Ketamine***: 1.5 mg/Kg IV/IO administered slowly
    - If reduced dosage of Ketamine was used for induction, administer ***ketamine*** 0.75 mg/kg

    OR
  - **Midazolam**: 2.5 - 5 mg IV/IO; every 5 - 10 minutes as needed

    AND
  - ***Fentanyl***: 50 - 100 mcg slow IV/IO push; every 5 - 10 minutes as needed (max 100 mcg)
- Insert an oral/nasal gastric tube; Refer to Nasal/Oral Gastric Tube Insertion 6.10

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8.0 Abuse and Neglect Assessment and Management -- Child, Elder, and Human Trafficking

PURPOSE
To provide a process for identification, assessment, management, and reporting of patients who are suspected of having been abused, neglected, and/or exploited. This includes physical, sexual, or emotional abuse, neglectful acts or omissions by self or others, and/or the illegal use of an incapacitated adult's person or property for profit or advantage.

Patient Care Goals
- Recognize any act or series of acts of commission or omission by a caregiver or person in a position of power over the patient that results in harm, potential for harm, or threat of harm to a patient
- These situations may involve safety issues for responding providers, so take appropriate steps to protect the safety of the responders as well as bystanders
- Get the patient out of immediate danger
- Assess any patient injuries that may be a result of acute or chronic events
- Attempt to preserve evidence whenever possible, however the overriding concern should be providing appropriate emergency care to the patient

Patient Presentation
- Potential clues to abuse/maltreatment from caregivers or general environment:
  - Caregiver apathy about patient's current situation
  - Caregiver overreaction to questions about situation
  - Inconsistent histories from caregivers or bystanders regarding what happened.
  - Information provided by caregivers or patient that is not consistent with injury patterns.
  - Injuries not appropriate for patient's age or physical abilities (e.g. infants with injuries usually associated with ambulatory children)
  - Caregiver not allowing patient to speak for himself/herself, or who appears controlling.
  - Inadequate facilities where the patient lives and/or evidence of security measures that appear to confine people to the facility.
- Potential clues to abuse or maltreatment that can be obtained from the patient:
  - Multiple bruises in various stages of healing
  - Age-inappropriate behavior (are submissive or fearful outside age-appropriate norms or children who act in sexually inappropriate way)
  - Pattern burns, bruises, or scars suggestive of specific weaponry used.
  - Evidence of medical neglect for injuries or infections
  - Trauma to genitourinary systems or frequent infections to this system
  - Evidence of malnourishment and/or serious dental problems
- Have a high index of suspicion for abuse in children presenting with a mental status change

Patient Management
Assessment
- Start with a primary survey and identify any potentially life-threatening issues.
- Document thorough secondary survey for potential abuse/maltreatment red flags:
  - Multiple bruises in various stages of healing
  - Age-inappropriate behavior (are submissive or fearful outside age-appropriate norms or children who act in a sexually inappropriate way)
  - Pattern burns, bruises, or scars suggestive of specific weaponry used.
  - Evidence of medical neglect for injuries or infections
  - Trauma to genitourinary systems or frequent infections to this system
  - Evidence of malnourishment and/or serious dental problems
- Assess physical issues and avoid extensive investigation of the specifics of abuse or maltreatment, but document any statements made spontaneously by patient.

Treatment and Interventions
- Address life threatening issues
- Find way to get patient to a safe place even if no medical indication for transport.
- Report concerns about potential abuse/maltreatment as described below:
  - Caregivers impeding your ability to assess/transport patient
  - Caregivers refusing care for the patient

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8.0 Abuse and Neglect Assessment and Management -- Child, Elder, and Human Trafficking

In New Jersey, any person having reasonable cause to believe that a child has been subjected to abuse/neglect or acts of abuse/neglect should immediately report this information to the State Central Registry (SCR). If the child is in immediate danger, call law enforcement as well as ***1-877-NJ-ABUSE***. ***A concerned caller does not need proof to report an allegation of child abuse/neglect and can make the report anonymously. Children with suspected child abuse and/or neglect should be taken to a hospital with appropriate resources to deal with this concern unless they are unstable and/or need immediate medical attention that warrants taking them to the closest facility***.

SCR screeners are trained caseworkers who know how to respond to reports of child abuse/neglect. Whenever possible, a caller should provide all the following information:

- Who: The child and parent/caregiver's name, age and address and the name of the alleged perpetrator and that person's relationship to the child
- What: Type and frequency of alleged abuse/neglect, current or previous injuries to the child and what caused you to become concerned.
- When: When the alleged abuse/neglect occurred and when you learned of it.
- Where: Where the incident occurred, where the child is now and whether the alleged perpetrator has access to the child.
- How: How urgent the need is for intervention and whether there is a likelihood of imminent danger for the child.

Any person who, in good faith, makes a report of child abuse or neglect or testifies in a child abuse hearing resulting from such a report is immune from any criminal or civil liability because of such action. Calls can be placed to the hotline anonymously. However, any person who knowingly fails to report suspected abuse or neglect according to the law or to comply with the provisions of the law is a disorderly person and subject to a fine of up to $1000 or up to six months imprisonment, or both.

When a report indicates that a child may be at risk, an investigator from the Department of Children Protection and Permanency (DCPP), formerly the Division of Youth and Family Services will promptly investigate the allegations of child abuse and neglect.

Patient Safety Considerations

- If no medical emergency exists, next priority is safe patient disposition/removal from the potentially abusive situation.
- Do not confront suspected perpetrators of abuse/maltreatment. This can create an unsafe situation for EMS and for the patient.

Notes/Educational Pearls
Key Considerations

- Child maltreatment/abuse: Child maltreatment includes any act or series of acts of commission or omission by a parent or other caregiver that results in harm, potential for harm, or threat of harm to a child. An act of commission (child abuse) is the physical, sexual, or emotional maltreatment or neglect of a child or children. An act of omission (child neglect) includes failure to provide (e.g. physical, emotional, medical/dental, and educational neglect) and failure to supervise (e.g. inadequate supervision, and exposure to violent environments)
- Human trafficking: when people are abducted or coerced into service and often transported across international borders.

New Jersey Adult Protective Services

New Jersey's APS law (N.J.S.A. 52:27D-406 to 426) was amended to require health care professionals, law enforcement officers, firefighters, paramedics or emergency medical technicians who have reasonable cause to believe that a vulnerable adult is the subject of abuse, neglect or exploitation to report that information to the county Adult Protection Services office. Contact information for each county office below:

Abuse: Means the willful infliction of physical pain, injury or mental anguish, unreasonable confinement, or the willful deprivation of services necessary to maintain a person's physical and mental health.

Neglect: Means an act or failure to act by a vulnerable adult or his/her caregiver which results in the inadequate provision of care or services necessary to maintain the physical and mental health of the vulnerable adult, and which places the vulnerable adult in a situation which can result in serious injury, or which is life-threatening.
Exploitation: Means the act or process of illegally or improperly using a person or his resources for another person's profit or advantage.

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8.0 Abuse and Neglect Assessment and Management -- Child, Elder, and Human Trafficking

Vulnerable Adults: Are persons eligible for services under the APS Program, defined as being 18 years or older, residing in a community setting and subject to abuse, neglect, or exploitation, but who, because of physical or mental illnesses or disabilities lack sufficient understanding or capacity to make, communicate or carry out decisions concerning their well-being.

Camden	**Gloucester**	**Burlington**
Camden County Board of Social Services 600 Market Street, Lower Level Camden, NJ 08102 Phone: 856-225-8178 After Hrs: contact local police or 911 in case of emergency	Gloucester County Division of Social Services 400 Holly Dell Drive Sewell, NJ 08080 Phone: 856-582-9200 After Hrs: Call local police or 911 in case of emergency	Burlington County Board of Social Services Human Services Facility 795 Woodlane Road Mount Holly, NJ 08060 Phone: 609-518-4793 After Hrs: 856-234-8888

Human Trafficking
Human trafficking is modern-day slavery and involves the use of force, fraud, or coercion to obtain some type of labor or commercial sex act. Thousands of men, women, and children are trafficked into forced labor situations and into the sex trade. Many of these victims are lured from their homes with false promises of well-paying jobs; instead, they are forced or coerced into prostitution, domestic servitude, or other types of forced labor. Victims are found in legitimate and illegitimate labor industries, including sweatshops, massage parlors, agricultural fields, restaurants, hotels, and domestic service.

Trafficking victims can be any age, race, gender, American or from abroad, with or without legal status.

How do I identify human trafficking?
Human trafficking is often "hidden in plain sight." There are several red flags, or indicators, which can help alert you to human trafficking. Recognizing the signs is the first step in identifying victims. As a first responder, you may be the victim's only outside contact, so it is important that you recognize the indicators and know how to report your observations and potentially save a life.

Common Indicators Found in Trafficking Victims:
- Does the victim exhibit bruises/wounds in various stages of healing or consistent with the application of physical restraints?
- Does the victim exhibit scars, mutilations or untreated infections?
- Does the victim have urinary difficulties, pelvic pain, pregnancy or rectal trauma (from working in the sex industry)?
- Does the victim suffer from chronic back, hearing, eye/eyesight, cardiovascular or respiratory problems?
- Does the victim exhibit signs of malnourishment, serious dental problems or a lack of healthcare?
- Does the victim exhibit disoriented, confused, depressed, submissive, tense or nervous/paranoid behavior?
- Is the victim accompanied by someone who is controlling, provides the victim's information or who does all the communicating?
- Does the victim have trouble communicating due to a language/cultural barrier?
- Does the victim seem submissive or fearful, refuse to make eye contact or seem afraid to speak in the presence of others?
- Does the victim seem confused, claim to just be visiting or have difficulty identifying his or her location?
- Is the victim reluctant to discuss his or her injuries or are there inconsistencies in his or her account /medical history?
- Is the victim inadequately dressed for the situation/work he or she does?
- Are there security measures designed to restrict victim movement (blocked/barred windows, locked doors, barbed wire, or security cameras)?
- Does the victim live in a degraded, unsuitable place or share sleeping quarters?

REPORTING
If you suspect that a person may be a victim of human trafficking, please call the Immigration and Customs Enforcement (ICE) Homeland Security Investigations (HSI) Tip-line at ***1-866-DHS-2-ICE*** **(*1-866-347-2423*).** You can also report online at www.ice.gov/tips
An additional Special Report should be filled out on your ePCR.

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8.1 Air Medical Transport

EMS personnel may request Air Medical Transport (AMT) when operational and/or clinical conditions exist that would benefit from decreasing time to definitive care and/or advanced clinical capabilities offered by the AMT team.

The use of AMT is determined by the prehospital provider with the highest medical level providing patient care. It should not be determined by police or bystanders.

AMT does not require approval of on-line Medical Command. However, if in doubt of the appropriateness of a patient for AMT, please contact Medical Command as soon as possible.

OPERATIONAL CONDITIONS

- When a patient meets the defined clinical criteria listed below and the ground transport time to the closest hospital capable of providing definitive care (e.g., Level I or 2 trauma hospital, PCI center, stroke center) exceeds the ETA of air medical transport **OR**
- Patient location, weather, or road conditions preclude the use of ambulance, OR
- Multiple patients are present that will exceed the capabilities of local hospital and agencies.
- In general, the patient should begin movement toward the appropriate receiving facility as soon as practical. Consider landing zones to minimize total field time.

CLINICAL CONDITIONS

- Severe respiratory compromise with respiratory arrest or abnormal respiratory rate.
- Circulatory insufficiency: sustained systolic blood pressure <90mmHg in adults, age-appropriate hypotension in children, or other signs of shock.
- Neurologic compromise: total GCS <9 or motor component <5. If the patient's neurologic status improves above thee limits, consider canceling the helicopter and transporting to the local hospital.
- Trauma: All penetrating injuries to head, neck, torso, and extremities proximal to elbow or knee; chest wall instability or deformity (e.g., flail chest); two or more proximal long-bone fractures; crushed, degloved, mangled, or pulseless extremity; amputation proximal to wrist or ankle; pelvic fracture; open or depressed skull fracture; paralysis.
- Burns: Major burns with greater than 20% BSA and/or inhalation injury with risk of airway compromise.
- Electrocution injuries with loss of consciousness, arrhythmia, or any respiratory abnormality.
- STEMI: If 12-lead ECG interpretation indicates a STEMI. Consult Medical Command for additional confirmation as needed.
- Stroke: 1 or more abnormal signs of the stroke scale; and consistent with local stroke plans.
- Critically ill children, including those with acute decompensation of chronic and/or special healthcare needs.

ADDITIONAL NOTES

- Patients with an uncontrolled airway or uncontrollable hemorrhage should be brought to the nearest hospital unless advanced life support (ALS) service (by ground or air) can intercept in a timelier fashion.
- AMT is **NOT** indicated for patients in cardiac arrest (**except for hypothermic arrest**). Should the patient go into cardiac arrest after AMT request, the AMT crew may be utilized for resuscitation and stabilization.
- AMT is **NOT** indicated for a contaminated patient until **AFTER** decontamination.
- AMT may be indicated in a wide range of conditions other than those listed above. In cases where the patient's status is uncertain, consult with **Medical Command** and proceed as directed.
- Transfers from ground-ambulance to air-ambulance shall occur at the closest appropriate landing site, including a hospital heliport, an airport, or an unimproved landing site deemed safe per AMT crew discretion. In cases where a hospital heliport is used strictly as the ground-to-air ambulance transfer point, no transfer of care to the hospital is implied or should be assumed by hospital personnel, unless specifically requested by the EMS providers.
- Additional information can be found on the NJ OEMS website:

https://www.nj.gov/health/ems/special-services/fly-or-drive-criteria/#1

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8.2 Communication

EMS providers should routinely advise the receiving hospital, in a timely manner, of patients enroute to that Emergency Department (except in Mass Casualty Incidents (MCI) during which routine communications cease).

An EMS provider may establish contact with a Medical Direction physician via VHF radio on one of the assigned medical frequencies or via telephone direct to each Emergency Department (via recorded EMS line, if available). If a Medical Direction physician is needed for consultation, request this before giving patient information. It is recommended that all medical communications be recorded.

VHF MEDICAL FREQUENCIES

- Initiate call to the appropriate hospital and identify:
  - Destination hospital.
  - Ambulance unit calling.
  - Status of the patient.

TELEPHONE

- To contact the destination hospital via telephone, use of a direct-recorded line to the Emergency Department is recommended.
- Request Medical Direction, if needed, give the name of the patient, his or her age, status, and complaint.

Upon establishing voice communication with the destination hospital/medical direction physician (if needed), present the following information in a concise and clear manner:

- Emergency response unit and level of care: Paramedic/EMT, with ETA.
- Patient's age, sex, and status level.
- Patient's chief complaint.
- Patient's present medical condition.
- Patient's vital signs, including level of consciousness.
- Patient's physical signs of illness or injury.
- Patient's electrocardiogram rhythm, if indicated.
- Patient's relevant medical history.
- Prehospital diagnostic tests performed/results and treatment rendered/results.

Give a list of medications and allergies only if requested by the destination hospital, or if it is anticipated that a medication order would be given by Medical Direction

8.3 Communication Failure

In case of a communications failure with Medical Command due to equipment (cell phone, landline, radio) malfunction or incident location, the following will apply:

- EMS personnel may, within the limits of their level of licensure, perform necessary procedures described in these protocols that under normal circumstances would require online Medical Command.
- These procedures shall be the minimum necessary to prevent the loss of life or the critical deterioration of a patient's condition.
- All procedures performed under this order, and the conditions that created the communications failure, need to be thoroughly documented.
- Attempts must be made to establish contact with Medical Command as soon as possible.
- The EMS provider shall provide a written notification via "Special Report" pertaining to the communications failure describing the events, including the patient's condition and treatment given, and referencing the EMS Incident Report. This report must be filed with the EMS District Medical Advisor and/or Hospital EMS Coordinator within 24 hours of the event.

❖ Paralytics contained in the RSI/RSA/DSI/DSA protocols are **NOT** authorized to be administered under any circumstance when exercising Communication Failure procedure.

8.4 Trauma Triage and Transport Decision

National Guideline for the Field Triage of Injured Patients

RED CRITERIA

High Risk for Serious Injury

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

Patients meeting any one of the above RED criteria should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system

YELLOW CRITERIA

Moderate Risk for Serious Injury

Mechanism of Injury	EMS Judgement

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

Patients meeting any one of the YELLOW CRITERIA WHO DO NOT MEET RED CRITERIA should be preferentially transported to a trauma center, as available within the geographic constraints of the regional trauma system (need not be the highest-level trauma center)

When in doubt, transport to a Trauma Center

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8.5 Bloodborne/Airborne Pathogens

BLOOD BORNE PATHOGENS

Emergency medical services personnel should assume that all bodily fluids and tissues are potentially infectious with bloodborne pathogens and must protect themselves accordingly by use of appropriate Body Substance Isolation (BSI) and approved procedures.

Transmission of bloodborne pathogens has been shown to occur when infected blood or Other Potentially Infectious Materials ("OPIM") enter another individual's body through skin, mucous membrane, or parenteral contact.

STANDARD PRECAUTIONS

- Standard precautions include using protective barriers (such as gloves, masks, goggles, etc.), thorough hand washing, and proper use and disposal of needles and other sharp instruments.
- Centers for Disease Control and Prevention Guidelines for hand hygiene include:
  - When hands are visibly dirty, contaminated, or soiled, wash with non-antimicrobial or antimicrobial soap and water.
  - If hands are not visibly soiled, use an alcohol-based hand rub for routinely decontaminating hands.
- Personnel with any open wounds should refrain from all direct patient care and from handling patient-care equipment unless they can ensure complete isolation of these lesions and protection against seepage.
- Personnel who are potentially at risk of encountering blood or OPIM are encouraged to obtain appropriate vaccines to decrease the likelihood of transmission.

EXPOSURE - PROCEDURES AND CONSIDERATIONS

- Personnel who have had a blood borne pathogen exposure should immediately flush the exposed area or wash with an approved solution. At a minimum, use warm water and soap.
- The exposed area should then be covered with a sterile dressing.
- As soon as possible, or after transfer of patient care, the EMS provider should thoroughly cleanse the exposed site and obtain a medical evaluation by the medical advisor as dictated by their department's Exposure Control Plan and/or Workers Compensation policy.

AIRBORNE PATHOGENS

- Emergency medical services personnel should assume that all patients who present with respiratory distress, cough, fever, or rash are potentially infectious with airborne pathogens and must protect themselves accordingly by use of appropriate Airborne Personal Protective Equipment (APPE), Body Substance Isolation (BSI), and approved procedures.

AIRBORNE PERSONAL PROTECTIVE EQUIPMENT (APPE)

- The preferred APPE for EMS personnel is an N95 mask, to be worn whenever a patient is suspected of having any communicable respiratory disease.
- The N95 mask should be of the proper size for each individual provider, having been previously determined through an annual fit-test procedure.
- A surgical mask should also be placed on suspected patients, if tolerated. If oxygen therapy is indicated, a surgical mask should be placed over an oxygen mask to block pathogen release. This will require close monitoring of the patient's respiratory status and effort.

PRE-HOSPITAL – PROCEDURES AND CONSIDERATIONS

- Early notification to the receiving hospital should be made such that the receiving hospital may enact its respective airborne pathogen procedures.
- Limit the number of personnel in contact with suspected patients to reduce the potential of exposure to others.
- Limit procedures that may result in the spread of the suspected pathogen, (e.g., nebulizer treatments), if feasible.
- Utilize additional HEPA filtration on equipment, (e.g., BVM or suction).
- Exchange of fresh air into the patient compartment is recommended during transport of a patient with a suspected airborne pathogen.
- EMS providers who believe they have been exposed to an airborne pathogen may proceed as above in getting timely medical care. The Patient Care Report enables hospital infection control staff to contact at-risk EMS personnel, should that patient be found to have a potential airborne pathogen such as tuberculosis, Neisseria meningitidis, SARS, etc.

DECONTAMINATION AND FOLLOW-UP

- In addition to accepted procedures for cleaning and disinfecting surfaces and equipment with approved solutions and for the proper disposal of contaminated items, the use of fresh air ventilation should be incorporated (e.g., open all doors and window to allow fresh air after arrival at the hospital).
- All personnel in contact with the patient should wash their hands thoroughly with warm water and an approved hand cleansing solution. When soap and water are not immediately available, a hand sanitizer containing 60% isopropyl alcohol is recommended as an interim step until thorough hand washing is possible.
- Contaminated clothing should not be brought home by the employee for laundering but laundered in a department provided washer or by other uniform cleaning arrangements.
- Ambulances equipped with airborne pathogen filtration systems should be cleaned and maintained in accordance with the manufacturer's guidelines.
- As soon as possible following all suspected blood borne or airborne exposures, the EMS provider should complete all appropriate documentation as identified in their department's specific policies.

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8.6 Bariatric Care, Triage & Transport

PURPOSE
This policy provides guidance for providers concerning the triage, extrication, care, and transport for bariatric patients. The New Jersey EMS system strives to provide all patients, including bariatric patients, with timely and effective care that preserves the comfort, safety and dignity of the patients and ensures the safety of providers. At times, even a single patient can exceed the capacity of the immediately available resources. Like a multi-system trauma patient, a bariatric patient requires:

- Appropriate EMS resources to respond
- Appropriate protocols and equipment for the provision of care
- Specialized equipment for transfer to the ambulance and transport
- Careful selection of the appropriate destination hospital
- Pre-alerting of the ED to ensure adequate resources to manage the patient
- On scene times may be significantly extended for bariatric patients.

EQUIPMENT
Deployment of equipment and procedures shall be done under local or regional operating guidelines.

DEFINITIONS
A bariatric patient is a patient:

- Weight exceeds 400 pounds OR
- Weight, girth, body contours and/or co-morbidities that challenge the ability of a two-person EMS crew to effectively manage aspects of the incident.

DISPATCH
Bariatric Ambulance: If available, consider requesting a bariatric transport ambulance to respond to the scene. Resources should be requested as soon as it becomes clear that bariatric capabilities may be required. While standard ambulance stretchers can potentially handle some patients up to 750 pounds or more, the use of a specialized bariatric stretcher increases the ability to provide effective care, is more comfortable for the patient and enhances provider safety.
Additional Personnel: Consider requesting additional responders. Bariatric patients may require additional personnel to participate in safe lifting and moving. For significant extrications, consider designating a Safety Officer to oversee the safety of the operation in conjunction with Incident Command. It may be necessary to remove doors, walls, or windows to carry out a safe extrication. The priorities are similar to extrication from a vehicle, although fixed property repair costs might be higher.
Paramedic: Consider requesting a paramedic unit for patients experiencing life-threatening conditions.

MEDICAL CARE
Medical care must consider the unique challenges presented by the bariatric patient as well as the likelihood of extended on-scene times. Providers should use appropriately sized equipment to the extent it is available or can be readily obtained. For example, an appropriately sized blood pressure cuff will need to be used and intramuscular injection will need to be given with a longer needle.
If there are significant barriers to removing the patient from the structure in a timely manner (long narrow stairs, patient in the attic, etc.), there may be situations where EMS will provide extended care to the patient at the scene. In such cases, consult **Medical Command** and consider use of the extended care protocols. **TRANSFER TO AMBULANCE**
Specialized equipment will be needed to transfer the patient safely from the scene to the ambulance stretcher for transport. Many services utilize large transfer flats for moving bariatric patients. Be sure before you use any patient transfer device that you understand the procedure for using it safely and that you know the weight limits of the device.

HOSPITAL DESTINATION
Ensure that you select a destination hospital that has the capabilities to care for your patient. Bariatric patients may require specialized hospital stretchers, CT scanners, catheterization laboratory equipment, operating room equipment, etc. It may be appropriate to consider an alternate destination after consultation with Medical Command. Pre-notification serves both to ensure that the hospital is capable of caring for the patient and allows hospital staff time for adequate preparation. Communication with the hospital shall be in a professional manner. Respect for the patient's privacy and feelings will match the respect for all EMS patients.

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8.6 Bariatric Care, Triage & Transport

TRANSPORT TO THE HOSPITAL

A bariatric stretcher should be used to transport the patient to the hospital and equipment cache transfer devices (i.e. Mega Mover) may be utilized to facilitate transfer of the patient to the hospital stretcher. Be alert to ensure that the stretcher is adequately secured in the patient compartment. Transfer flats or other specialized transfer equipment may be left in place to facilitate transfer of the patient to the hospital stretcher.

PEARLS

- It may be difficult to establish IV and IO access. Consider intramuscular or intranasal as alternatives for some medications. For IM, ensure that the needle used is sufficiently long.
- Weight-based calculations may yield inappropriately large doses in obese patients. Consult with Medical Command when in doubt.
- Bariatric patients often have decreased functional residual capacity, and are at risk of rapid desaturation. Extremely obese individuals require more oxygen than non-obese individuals due to their diminished lung capacity. Pulse oximetry may not be reliable due to poor circulation. Even patients without respiratory distress may not tolerate the supine position.
- Bariatric patients may present with severe airway challenges. Carefully plan your approach to the airway, and be prepared with backup airway plans.
- If the patient has had recent bariatric surgery, possible complications may include anemia, dehydration, hypoglycemia, leakage, ulcers, localized infection, sepsis, etc.

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8.7 Refusal of Care

1. Patients who demonstrate capacity have the right to refuse any and all care. Patients may refuse treatment or transportation or insist on transportation to a destination other than that recommended by the ambulance personnel. However, their capacity must be verified, and the EMS crew must ensure that the patient understands the risks of refusing care and/or transportation.
2. The patient's condition shall be explained to the patient (or guardian), as well as the consequences of refusing medical care inclusive of disability and death. All patients shall be advised not to hesitate to call again if the situation recurs.
3. Instructions shall be given to the patient (guardian) as per the situation. These may include instructions to contact physician, eat a meal, or other necessary care, as the situation dictates. This information shall be documented in the narrative.
4. The following information must be completed for patient refusals:
   a) Patient Assessment
      i. Providers should obtain a history and physical, in as much detail as is permitted by the patient. If unable to do so, the reason why must be documented, as well as names of any witness to the event.
      ii. Providers should attempt to assess competency to refuse prior to permitting a patient to refuse care and/or transportation:
         1) Legal competence
            a. Ensure that patients is at least 18 years of age in order to refuse care
            b. Patients less than 18 years old cannot give legal/informed consent to treatment and cannot legally refuse treatment except in special circumstances listed below:
               i. Legally Married
               ii. Entered into military service
               iii. Currently Pregnant
               iv. Declared by a court or administrative agency to be emancipated
            c. If the patient is a non- emancipated minor, but is pregnant or delivers a newborn, the minor parent may act as an emancipated minor and make decisions for his/her own child, but the minor cannot give consent for his/her own care without a consenting parent or guardian.
            d. In an emergency when a parent or guardian is not available to give consent, emergency treatment and transport should be rendered based on implied consent.
            e. In an emergency or non-emergency situation when a parent or guardian is present, the EMS provider must obtain consent from the parent or guardian prior to rendering treatment or transport. If a parent or guardian is refusing to give consent for treatment or transport, and the EMS provider feels that treatment or transport is necessary, the EMS provider should obtain assistance from Police and an EMS Supervisor. ALS should be considered for a medical assessment for patients with an ALS indicator or when BLS is unsure about the acuity of the patient. Medical Command should be contacted, and the parent or guardian should be encouraged to speak with the physician.
            f. If the parent or guardian is still refusing treatment or transport and Law Enforcement/Medical Command is not directing the removal of the patient to a hospital, refusal of service must be allowed.
         2) Mental capacity
            a. Ensure that patient is oriented to person, place, time and purpose.
            b. Establish that patient is not a danger to himself or others.
            c. Ensure that patient is capable of understanding the risks of refusing care or transportation, inclusive of disability and death, and any proposed alternatives.
            d. Check to be sure that patient is exhibiting no other signs or symptoms of potential mental incapacity, including drug or alcohol intoxication, unsteady gait, slurred speech, etc.
         3) Medical or situational capacity
            a. Ensure that patient is suffering from no acute medical conditions that might impair his or her ability to make an informed decision to refuse care or transportation.
            b. If possible, rule out conditions such as hypovolemia, hypoxia, head trauma, unequal pupils, metabolic emergencies (e.g., diabetic shock), hypothermia, hyperthermia, etc.
            c. Attempt to determine if patient lost consciousness for any period of time.
            d. If any condition listed in a. – c. impair patient's decision-making ability, patient may not have the capacity to refuse care and your documentation should clearly establish that the patient understood the risks, benefits and advice given to them.

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b) Medical Command:
   i. Contact medical command for refusals of ALS care.
   ii. Contact medical command if you believe patient needs further medical attention yet refuses care; medical command may be able to help persuade patient.
   iii. Obtain medical command approval of any refusal where required by protocol.
   iv. If instructed to divert from the intended emergency room, determine if the hospital presently lacks the staff, beds and/or resources to care for the patient in the emergency department.

c) Who May Refuse Care
   i. The Patient:
      1) If patient is legally competent and has the mental and situational capacity to understand their circumstance, the patient has a right to refuse care. Obtain refusal signature.
      2) Implied consent -- if patient is unconscious, and seriously ill or injured, or in need of further medical attention, treat and transport patient despite patient's inability to consent or the unavailability of another party to provide consent.
      3) If a minor appears to need emergency care to avoid threat to life or limb and the parent or guardian is refusing care and appears to not be acting in the best interests of the child, the EMS personnel should contact supervisor and/or Risk Management and/or police to determine next steps.
   ii. Parent
      1) A custodial parent (i.e., a parent with a legal right to custody of a minor child) may refuse care on behalf of a minor child. Obtain refusal signature from parent.
      2) A parent of a patient who is 18 years of age or older may not refuse care on behalf of his or her child (unless the parent also happens to be a legal guardian – see below)
      3) A minor (i.e., under 18 years of age) may refuse care for his or her child. Obtain refusal signature from the minor parent.
   iii. Guardian
      1) A legal guardian is one who is appointed by a court to act as "guardian of the person" of an individual who has been found by a court to be incapacitated.
      2) A legal guardian may also be appointed in lieu of parents for a minor.
      3) If a person indicates they are a legal guardian to the patient, attempt to obtain documentation of this fact (court order, etc.) and attach to patient care report. If no such documentation is available, you may obtain refusal signature from the guardian as long as you do so in good faith and do not have any evidence or knowledge that the person is misrepresenting himself as a legal guardian of the patient.
   iv. Health Care Agent ("Attorney in Fact")
      1) When a person lacks capacity to make medical decisions for themselves, a person appointed by the patient in a durable power of attorney document may refuse care on behalf of the patient if the power of attorney contains such authorization.
      2) Attempt to obtain a copy of the durable power of attorney document to attach to the trip sheet. If no such documentation is available, you may obtain refusal signature from a health care agent ("attorney-in-fact") as long as you do so in good faith and do not have any evidence or knowledge that the person is misrepresenting himself as the health care agent or "attorney-in -fact" of the patient.
   v. Incompetent Patient
      1) If patient is incompetent, and no other authorized individual is available to provide a refusal signature, patient may be treated and transported as long as you act in good faith and without knowledge that the patient or authorized individual would refuse care.
      2) Take all reasonable steps to secure treatment or transportation for a patient who is legally or mentally incompetent to refuse care, but do not put yourself or your crew in jeopardy.

8.8 Consent for Treatment of a Minor

A “minor” is a person who has not yet reached his/her eighteenth birthday.

Note that the legal definition of a “minor” for purposes of consent is unrelated to the medical definitions of “pediatric patient,” “child,” and “children,” as used in these protocols.

EMS personnel may treat minors under the doctrine of implied consent when the minor’s parent or other authorized representative is unavailable to provide expressed consent. Except for life- threatening emergencies, personnel should attempt to contact the minor’s parent or legal guardian to obtain informed consent to treat and transport the child. When a parent or legal guardian is unavailable, another authorized representative (e.g., a school or camp official), who has been expressly authorized by the minor’s parent, may consent to health care treatment.

A parent or legal guardian may refuse care for a minor:

- When a parent or legal guardian is not reasonably available, another adult family member (e.g., grandparent), or other authorized representative having custody of the minor, may refuse care.
- EMS personnel may accept a telephonic refusal of care, provided that they have explained the consequences of refusing care; telephonic refusal of care should be carefully documented.

Except for the special circumstances listed below, a minor may not refuse care. When a minor attempts to refuse care and/or transport to the hospital, EMS personnel should enlist the assistance of the police, including requesting that the police place the minor in protective custody. Minors should be restrained only as a last resort.

SPECIAL CIRCUMSTANCES

- A minor parent who has not yet reached his/her eighteenth birthday may consent to or refuse care on behalf of his or her minor children, provided that the minor parent has the capacity to understand the nature of the treatment and the possible consequences of consenting to or refusing care.
- Contact Medical Command to discuss consent/refusals regarding minors. Always attempt to provide medical care that is in the best interest of the minor.
- Minors of any age may give informed consent to medical treatment associated with rape, incest, or sexual abuse.
- An emancipated minor may consent to or refuse care. A minor patient bears the burden of establishing, by legal documentation or otherwise, that he/she is emancipated.
- See Refusal of Care 8.7

8.9 POLST – Practitioner Orders for Life-Sustaining Treatment

POLST – Practitioner Orders for Life-Sustaining Treatment

The POLST Paradigm is a process designed to improve patient care by creating a system using a portable medical order form (aka "POLST form") that records patients' treatment wishes. It can be used across settings of care. A POLST form is intended to be used by individuals with a serious illness or frailty toward the end of life. For these patients, their current health status indicates the need for standing medical orders for emergency medical care. For example, one may be written for an individual with a diagnosis like cancer or needing kidney dialysis.

In a POLST conversation, the patient and his/her health care practitioner (i.e. physician or advanced practice nurse) discuss the patient's goals for care consistent with their values and beliefs, and the patient's diagnosis, prognosis, and treatment options, including the benefits and burdens of those treatment options. Together they reach an informed shared decision about what treatments the patient wants in case of medical emergency.

The POLST Paradigm is not a federal mandate or program but is developed state by state. The POLST Paradigm fundamentals are the same but there may be differences among the states. The National POLST Paradigm creates quality standards for states to follow, helping to ensure patients can have their POLST form honored throughout the United States.

A POLST form is a portable medical order that helps individuals with serious illness or frailty communicate their treatment decisions. The POLST form tells emergency personnel what treatments the patient wants in the event of a medical emergency.

The current standard of care during an emergency is for emergency medical services (EMS) to attempt everything possible to attempt to save a life. Not all patients who are seriously ill or frail want this treatment and the POLST Paradigm provides the option for them to: (1) confirm this is the treatment they want or (2) to state what level of treatment they do want.

The POLST form documents the medical orders that helps give patients more control over receiving treatments they do want to receive, and avoiding treatments they do not want to receive, in the event they cannot speak for themselves during a medical crisis.

A POLST form is completed by a health care practitioner in conversation with the patient. Since it is a medical order it must be signed by a health care practitioner, such as a physician or advanced practice nurse to be valid. Most states also require the patient or their surrogate sign the form. (In states where the patient's signature is not required, we encourage the patient to sign indicating their agreement to the orders.)

A POLST provides additional information that helps emergency personnel determine what treatments they should provide to a patient. Rather than automatically going to the hospital, a POLST may help keep the patient comfortable where they are located; if that is the treatment level, they have chosen.

Like a DNR, a POLST Form lets EMS know whether or not the patient wants CPR. DNR orders only apply when a person does not have a pulse, is not breathing and is unresponsive. However, in most medical emergencies, a person does have a pulse, is breathing or is responsive. That is where POLST is different.

A POLST form provides more information to emergency personnel than a DNR by indicating that:

- The patient still wants full treatment, meaning that they want to go to the hospital and that all treatment options should be considered, including use of a breathing machine;
- The patient wants limited interventions, meaning that they want basic medical treatments but wish to avoid the intensive care unit (ICU); or
- The patient just wants comfort measures, meaning that they do not wish to go to the hospital but want to be made comfortable wherever they are living.
- This additional section about desired medical treatments that a POLST form provides is incredibly important. Research has shown that when someone completes a DNR, health care professionals assume the patient wants less treatment. However, research looking at POLST forms in Oregon shows that that is not the case. Rather, approximately half of patients who complete a POLST form in Oregon indicating that they do not want CPR also show that they want full treatment or limited interventions (or a higher treatment level).

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8.9 POLST – Practitioner Orders for Life-Sustaining Treatment

Key Differences between the POLST and Advanced Directive:

Advanced Directive

- Not a medical order; requires evaluation by a physician of the individual's diagnosis/ prognosis and preferences about present condition.
- Usually, treatments cannot be limited in an emergency situation with only an Advance Directive. Therefore, unwanted treatments and interventions may be applied.
- Helps people communicate treatment preferences in advance of a serious illness and designates a proxy to make decisions should the individual lose capacity to do so.
- Recommended for all adults with decision-making capacity.

POLST

- Is a medical order that guides the care provided by all healthcare providers.
- Reflects the individual's goals of care and wishes around care near/at the end of life and transforms them into actionable orders that must be followed by all healthcare professionals.
- Recommended for individuals with advanced illness, frailty, or strong preferences about medical interventions in their current state of health.

ROLE OF EMS in POLST

- Review POLST for completeness/validity: Physician/APN signature
  - Patient or Surrogate signature
  - Review content of Orders prior to initiating treatment
  - Clarify with patient (if alert with capacity) or surrogate.
  - Notify EMS medical command of POLST
  - Bring POLST form with patient to hospital (make copy of POLST and attach to EMS patient report) -Follow EMS procedures for documentation of POLST form on your EMS call sheet.
- Follow orders for:
  - **Box D**: Do or Do Not Attempt Resuscitation (DNAR)–same as Out of Hospital DNR
  - **Box D**: Do or Do Not Intubate for respiratory distress (when patient is not in cardiopulmonary arrest): provide other means of respiratory relief –Oxygen, medications, manual relief of airway obstruction (applies to ALS units for intubation, medications and/or c-pap)
  - **Box B**: "Full Treatment" –all appropriate interventions (Resuscitation Status –See Section D)
  - **Box B**: "Limited Treatment" with "Transfer to hospital only if comfort needs cannot be met in current location – transport for comfort/symptom relief.

Special EMS issues

- If a box is left "blank" on POLST form: Assumption is that treatment will be provided for that category.
- If Box B is marked either Limited Treatment or Symptom Treatment Only with indication that transport to hospital should only take place if comfort needs cannot be met in current location: Follow instructions of sending facility after verifying that patient is indeed to be transported.
- Validity of POLST: Required MD or APN signature and signature of patient or surrogate.

<u>Section A</u>

- Goals of Care is NOT part of the order. It is used by the physician/APN to construct a care plan to meet patient goals.

<u>Section B</u>

- Consult with the base physician for guidance.
  - May include full treatment.
  - May include routine meds and treatments for comfort care unless refused in the document.
    - Document why comfort measures can not be provided at the patient's residence, if need to hospitalize becomes necessary.

<u>Section C</u>

- Outlines Artificial Nutrition

<u>Section D</u>

- Section D – for critical patients.
- Pulseless or apneic: Attempt resuscitation /CPR or DNAR
- Respiratory Distress with pulse: Outlines airway management
- May include doing everything possible or nothing at all

<u>Section E</u>

- Lists the surrogates decision-maker
- The patient or surrogate may void or modify an existing POLST form

<u>Section F</u>

- Check to make sure the appropriate signatures are on the bottom of the form – patient (or surrogate) and Physician/APN, and their license number.

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Continued

HIPAA PERMITS DISCLOSURE OF POLST TO OTHER HEALTHCARE PROFESSIONALS AS NECESSARY

NEW JERSEY PRACTITIONER ORDERS FOR LIFE-SUSTAINING TREATMENT (POLST)

Follow these orders, then contact physician/APN/PA. This Medical Order Sheet is based on the current medical condition of the person referenced below and their wishes stated verbally or in a written advance directive. Any section not completed implies full treatment for that section. Everyone will be treated with dignity and respect.

Person's Name (last, first, middle) _____ Date of Birth _____

Print Person's Address _____

A — GOALS OF CARE *(See reverse for instructions. This section does not constitute a medical order.)*

B — MEDICAL INTERVENTIONS *Person is breathing and/or has a pulse*

❒ **Full Treatment.** Use all appropriate medical and surgical interventions as indicated to support life. If in a nursing facility, transfer to hospital if indicated. See section D for resuscitation status.

❒ **Limited Treatment.** Use appropriate medical treatment such as antibiotics and IV fluids as indicated. May use non-invasive positive airway pressure. Generally avoid intensive care.

❒ Transfer to hospital for medical interventions. ❒ Transfer to hospital only if comfort needs cannot be met in current location.

❒ **Symptom Treatment Only.** Use aggressive comfort treatment to relieve pain and suffering by using any medication by any route, positioning, wound care and other measures. Use oxygen, suctioning and manual treatment of airway obstruction as needed for comfort. Use antibiotics only to promote comfort. Transfer only if comfort needs cannot be met in current location.

Additional Orders: _____

C — ARTIFICIALLY ADMINISTERED FLUIDS AND NUTRITION *Always offer food/fluids by mouth, if feasible and desired*

❑ No artificial nutrition ❑ Long-term artificial nutrition ❑ Defined trial period of artificial nutrition

D — CARDIOPULMONARY RESUSCITATION (CPR)

Person has no pulse and/or is not breathing

❑ Attempt resuscitation/CPR

❑ Do not attempt resuscitation/DNAR
Allow Natural Death

AIRWAY MANAGEMENT *Person is in respiratory distress with a pulse*

❑ Intubate/use artificial ventilation as needed

❑ Do not intubate - Use O2, manual treatment to relieve airway obstruction, medications for comfort

❑ Additional Order (for example defined trial period of mechanical ventilation)

E If I lose my decision-making capacity, I authorize my surrogate decision-maker, listed below, to modify or revoke the NJ POLST orders in consultation with my treating physician/APN/PA in keeping with my goals: ❑ Yes ❑ No

F — SIGNATURES

I have discussed this information with my physician/APN/PA

Print Name _____

Signature _____

❑ Person Named Above ❑ Spouse/Civil Union Partner
❑ Health Care Representative/ Legal Guardian ❑ Parent of Minor
❑ Other Surrogate

Has the person named above made an anatomical gift:
❑ Yes ❑ No ❑ Unknown

These orders are consistent with the person's medical condition, known preferences and best known information.

PRINT - Physician/APN/PA Name _____ Phone Number _____

Physician/APN/PA Signature (Mandatory) _____ Date/Time _____

Professional License Number _____

SURROGATE INFORMATION

Surrogate listed here is the healthcare representative previously identified in an advance directive: ❑ Yes ❑ No ❑ Unknown

Print Name of Surrogate _____ Phone Number _____

Print Surrogate Address _____

■ **Surrogate listed is only authorized to change this form if "yes" is checked in Section E above.**

August 2019

SEND ORIGINAL FORM WITH PERSON, WHENEVER TRANSFERRED

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8.10 Implantable Ventricular Devices (VAD)

EMT and Paramedic Standing Orders

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Patient Care Goals

- Rapid identification of, and interventions for, cardiovascular compromise in patients with VADs
- Rapid identification of, and interventions for VAD-related malfunctions or complications

Indications

- Adult patients that have had an implantable ventricular assist device (VAD) including Left Ventricular Assist Device (LVAD), right ventricular assist device (RVADs); and biventricular-assist devices (BiVADs) and have symptoms of cardiovascular compromise.
- Patients with VADs that are in cardiac arrest.
- Patients with VADs that are experiencing a medical or injury-related event not involving the cardiovascular system or VAD malfunction.

Contraindications

- Adult patients who do not have a VAD in place.

Assessment:

- Contact patients **VAD coordinator** for guidance 
  - Assess for possible pump malfunction
  - Assess for alarms
  - Auscultate for pump sound “hum” or “whirl”
  - Signs of hypoperfusion including pallor, diaphoresis, altered mental status
- If the VAD pump has malfunctioned:
  - Utilize available resources to troubleshoot potential VAD malfunctions and to determine appropriate corrective actions to restore normal VAD function:
    - Contact the patient’s VAD-trained companion, if available.
    - Contact the patient’s VAD coordinator, using the phone number on the device
    - Check all the connections to system controller.
    - Change VAD batteries, and/or change system controller if indicated.
    - Have patient stop all activity and assess for patient tolerance.
    - Follow appropriate cardiovascular condition-specific protocol(s) as indicated.

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Treatment and Interventions:

- Manage airway as indicated
- Cardiac monitoring
- IV Access
- Acquire 12-lead ECG and Transmit if requested. (ALS only)
- **If patient is experiencing VAD-related complications or cardiovascular problems, expedite transport to a tertiary care facility if patient’s clinical condition and time allows.**
- **If patient has a functioning VAD and is experiencing a non-cardiovascular-related problem, transport to a facility that is appropriate for the patient’s main presenting problem without manipulating the device.**
- If patient is in full cardiac arrest
  - CPR should **NOT** be performed if there is any evidence the pump is still functioning. The decision whether to perform CPR should be made based upon best clinical judgment in consultation with the patient’s VAD-trained companion and the VAD coordinator (or medical control if VAD coordinator unavailable).
- CPR may be initiated only when:
  - You have confirmed the pump has stopped AND troubleshooting efforts to restart it have failed.
    AND
  - The patient is unresponsive and has no detectable signs of life

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8.10 Implantable Ventricular Devices (VAD)

EMT and Paramedic Standing Orders

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Key Documentation Elements

- Information gained from the VAD control box indicating any specific device malfunctions.
- Interventions performed to restore a malfunctioning VAD to normal function.
- Time of notification to and instructions from VAD-trained companion and/or VAD Coordinator.

Performance Measures

Identify and mitigate any correctable VAD malfunctions.
Perform CPR for patients in cardiac arrest when indicated.

Resources:

Recommended Unit Resource: Print EMS Field Guide. This guide has excellent information and troubleshooting guidance for VAD devices that patients could have out in the public.
Access the resource guide at:
https://www.mylvad.com/medical-professionals/resource-library/ems-field-guides

Available for download; "MyLVAD" Hospital Locator App

P

References:

- Garg S, Ayers CR, Fitzsimmons C, et al. In-Hospital Cardiopulmonary Arrests in Patients With Left Ventricular Assist Devices. J Card Fail. 2014;20(12):899-904. doi:10.1016/ j.cardfail.2014.10.007
- Mabvuure NT., et al., External cardiac compression during cardiopulmonary resuscitation with left ventricular assist devices Interact Cardiovasc Thorac Surg. 2014 Aug;19(2):286-9.
- Mechem M., Prehospital assessment and management of patients with ventricular –assist devices Prehosp Emerg Care. 2013 Apr-Jun;17(2):223-9.
- Shinar Z., et. al., Chest compressions may be safe in arresting patients with left ventricular assist devices (LVADs) Resuscitation 2014 May;85(5):702-4.

PEARLS

- You do not need to disconnect the controller or batteries in order to defibrillate or cardiovert.
- You do not need to disconnect the controller or batteries in order to acquire a 12-lead EKG.
- Flow though many VAD devices is not pulsatile and patients may not have a palpable pulse or accurate pule oximetry .
- The blood pressure may not be obtainable or measurable and therefore is not an accurate measure of perfusion.
- Ventricular fibrillation, ventricular tachycardia, or asystole/PEA may be the patient's "normal" underlying rhythm. Evaluate clinical condition and provide care in consultation with VAD coordinator.
- The patient's travel bag should accompany him/her at all times with back-up controller and spare batteries.
- If feasible, bring the patient's Power Module, cable and Display Module with patient to the hospital.
- All patients should carry a spare pump controller with them.
- The most common cause for VAD alarms are low batteries or battery failures.
- Although automatic non-invasive blood pressure cuffs are often ineffective in measuring systolic and diastolic pressure, if they do obtain a measurement, the MAP is usually accurate.
- Other VAD complications:
  - Infection - Arrythmias - Congestive Heart Failure
  - Stroke/TIA - Cardiac Tamponade - Aortic Insufficiency
  - Bleeding (GI)

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8.11 Pediatric Transportation

- These guidelines apply to every EMS response resulting in the need to transport pediatric patients who are of an age/weight that require the use of a child safety seat from the scene of an emergency. Pediatric patients that do not require a child safety seat should be transported following the same procedure as adult patients.
- These guidelines offer recommendations, as published by NHTSA, for the transportation of children in five (5) different possible situations:
  - The transport of a child who is not injured or ill.
  - The transport of a child who is ill and/or injured and whose condition does not require continuous and/or intensive medical monitoring or intervention.
  - The transport of an ill or injured child who does require continuous and/or intensive monitoring or intervention.
  - The transport of a child whose condition requires spinal motion restriction and/or lying flat.
  - The transport of a child or children who require transport as part of a multiple patient transport (newborn with mother, multiple children, etc.).
- These guidelines do not offer recommendations on specific child restraint systems or products.
- The child's age and weight shall be considered when determining an appropriate restraint system. Child seat models offer a wide range of age/weight limits, so each individual device must be evaluated to determine the appropriateness of use.
- When possible, and with the exception of a minor vehicle crash (e.g. "fender-bender"), avoid transporting children in their own safety seats if the seat was involved in a moderate to severe motor vehicle crash.
  - NHTSA considers a crash minor if all the following situations are true:
    - The vehicle could be driven away from the crash.
    - The vehicle door closest to the car seat was not damaged.
    - No one in the vehicle was injured.
    - The air bags did not go off.
    - You can't see any damage to the car seat from the motor vehicle crash. Use of the child's own seat can be considered if no other restraint systems are available and the seat shows no visible damage/defect.
- Transportation of a child in any of the following ways is NEVER appropriate:
  - Unrestrained
  - On a parent/guardian/other caregiver's lap or held in their arms.
  - Using only horizontal stretcher straps, if the child does not fit according to cot manufacturer's specifications for proper restraint of patients.
  - On the multi-occupant bench seat or any seat perpendicular to the forward motion of the vehicle, even if the child is in a child safety seat.




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8.11 Pediatric Transportation

Situation Guidelines:
(*__Ideal transport method is in bold__, with acceptable alternatives listed if ideal is not achievable)

- Transport of an uninjured/not ill child
  - **Transport child in a vehicle other than a ground ambulance using a properly installed, size-appropriate child restraint system.**
  - Transport in a size-appropriate child seat properly installed in the front passenger seat of the ambulance with the airbags off or in another forward-facing seat.
  - Transport in a size-appropriate child seat properly installed on the rear-facing EMS provider's seat.
  - Consider delaying the transport of the child (ensuring appropriate adult supervision) until additional vehicles are available without compromising other patients on the scene. Consult medical command if necessary.

- Transport of an ill/injured child not requiring continuous intensive medical monitoring or interventions
  - **Transport child in a size-appropriate child restraint system secured appropriately on the cot.**
  - Transport child in the EMS provider's seat in a size-appropriate restraint system.
  - Transport child on the cot using three horizontal straps (chest, waist, knees) and one vertical restraint across each shoulder.

- Transport of an ill/injured child whose condition requires continuous intensive monitoring or intervention.
  - **Transport child in a size-appropriate child restraint system secured appropriately to the cot.**
  - With the child's head at the top of the cot, secure the child to the cot with three horizontal straps and one vertical strap across each shoulder. If assessment/intervention requires the removing of restraint strap(s), restraints should be re-secured as quickly as possible.

- Transport of an ill/injured child who requires spinal motion restriction or lying flat.
  - **Secure the child to a size-appropriate spine board (when appropriate) and secure the spine board to the cot, head first with a tether at the foot (if possible) to prevent forward movement, and with three horizontal restraints (chest, waist, and knees) and a vertical restraint across each shoulder.**
  - Secure the child to a standard spine board with padding added as needed and secure using the strap configuration listed above.

- Transport of a child or children requiring transport as part of a multiple patient transport (newborn with mother, multiple children, etc.).
  - **If possible, for multiple patients, transport each as a single patient according to the guidance provided for situations 1 through 4. For mother and newborn, transport the newborn in an approved size-appropriate restraint system in the rear-facing EMS provider seat with a belt-path that prevents both lateral and forward movement, leaving the cot for the mother.**
  - Consider the use of additional units to accomplish safe transport, remembering that non-patient children should be transported in non-EMS vehicles, if possible.
  - Note: Even with childbirth in the field, it is NEVER appropriate to transport a child held in the parent/guardian/caregiver's arms or on a parent/guardian/caregiver's lap.

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RESUSCITATION EFFORTS SHOULD BE WITHHELD UNDER THE FOLLOWING CIRCUMSTANCES:

- **Valid Do Not Resuscitate**: Refer to Do Not Resuscitate (DNR) & (POLST) Protocol 8.9.
- **Scene Safety**: The physical environment is not safe for providers.
- **Dead on Arrival (DOA)**: A person is presumed dead on arrival when all five "Signs of Death" are present **AND** at least one associated "Factor of Death" is present.

Signs of Death (All five signs of death must be present)

- Unresponsiveness.
- Apnea.
- Absence of palpable pulses at carotid, radial, and femoral sites.
- Unresponsive pupils.
- Absence of heart sounds.

Factors of Death (At least one associated factor of death must be present)

- Damage or destruction of the body incompatible with life, such as, but not limited to:
  - ✓ Decapitation.
  - ✓ Decomposition.
  - ✓ Deforming brain injury.
  - ✓ Incineration or extensive full thickness burns.
- Body frozen solid—unable to perform chest compressions.
- Patients with ventricular assist devices (VAD) should almost never be pronounced dead at the scene unless one of the "Factors of Death" is present.
- Lividity/Rigor mortis of any degree.
  - Rigor mortis appears ~ 2 hours after death in the muscles of the face and progresses to hand, Upper Extremities by ~ 4 hours. Full rigor completes ~ 6-8 hours after death
  - Lividity (Livor Mortis) Purplish discoloration of the skin with blanching over areas not subject to pressure and appears extensively ~ 6 -12 hours after death.
  - Methods Of Estimation Of Time Since Death https://www.ncbi.nlm.nih.gov/books/NBK549867/

SUDDEN UNEXPLAINED INFANT DEATH (SUID)

- An infant <12 months who is apneic, asystolic (no heartbeat or umbilical cord pulse), and exhibiting lividity and/or rigor mortis may be presumed dead.

NEONATE

- A neonate who is apneic, asystolic, and exhibits either neonatal maceration (softening or degeneration of the tissues after death in utero) or anencephaly (absence of a major portion of the brain, skull, and scalp) may be presumed dead.
- Contact Medical Command if gestational age is less than 22 weeks and neonate shows signs of obvious immaturity (translucent and gelatinous skin, lack of fingernails, fused eyelids).

RESUSCITATION MAY BE STOPPED UNDER THE FOLLOWING CIRCUMSTANCES:

- When the patient regains pulse/respirations: See
  - Post Resuscitative Care – Adult 3.4A, or Post Resuscitative Care -- Pediatric 3.4P,
  - Cardiac Arrest -- Adult 3.2A or Cardiac Arrest – Pediatric 3.2P.
- The physical environment becomes unsafe for providers.
- The exhaustion of EMS providers.
- Termination of resuscitation criteria exists.

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TERMINATION OF RESUSCITATION (TOR)

- Contact **Medical Command** to consider Termination of Resuscitation for any of the following:
  - If patient has NO return of spontaneous circulation after 20 minutes of either
  - BLS alone or combined BLS and ALS in the absence of hypothermia AND no shocks were delivered or advised; or
  - Extrication is prolonged (>30 minutes) with no resuscitation possible during extrication (hypothermia is an exception); or
  - If extenuating circumstances or questions.
- Consider ED transport in the following circumstances:
  - Witnessed arrest
  - Shockable rhythm any time during resuscitation
  - Persistent Narrow Complex Pulseless Electrical Activity
  - Persistent $ETCO_2$ > 10 mmHg
  - Hypothermic patient without contraindications to CPR should have continued CPR and should not be considered for TOR until the core temperature has been rewarmed to 32° C (90o F) with no Return of Spontaneous Circulation
  - May continue resuscitation and transport if conditions on scene are NOT amenable to cessation of resuscitation.

DETERMINING DEATH IN THE FIELD

- When efforts to resuscitate are not initiated or are terminated under the above provisions, EMS providers shall:
  - Document time that death is pronounced, as well as the criteria used in the determination.
  - Notify law enforcement, who will alert Medical Examiner.
  - Be mindful of the possibility of a crime scene and restrict access.
  - Any decision to move the body must be made in collaboration with law enforcement and the medical examiner.
  - Leave any resuscitation adjuncts such as advanced airway devices, IV/IO access devices, electrode pads, etc., in place.
  - Inform family on scene of patient's death and offer to contact family, friends, clergy, or other support systems.

The above requirements apply to situations in which law enforcement or the medical examiner may take jurisdiction. Law enforcement and the medical examiner are not required to take jurisdiction of hospice or other patients who are known to have been terminally ill from natural causes or congenital anomaly, and death was imminent and expected. Where law enforcement is not involved, EMS providers may provide appropriate assistance to families or other caregivers.

DOCUMENTATION

- Complete a patient care record in all cases. If available, include ECG rhythm strips and code summary with the patient care report.
- Document special orders including DNR, on-line Medical Command, etc.
- MCI conditions may require a triage tag in addition to an abbreviated PCR.
- Record any special circumstances or events that might impact patient care or forensic issues.

N.J.A.C. 8:41-3.9 Pronouncement of death

a) All pronouncements of death shall be made in accordance with the New Jersey State Board of Medical Examiners' rules, which are set forth at N.J.A.C. 13:35-6.2, as amended and supplemented.
   1. All patients who appear dead shall be checked for vital signs (including any cardiac activity) and, where appropriate, given a complete external examination. An ALS crewmember shall then contact the medical command physician and relay all findings. These findings shall include a telemetered electrocardiogram sent when requested by the medical command physician unless the condition of the patient precludes the application of electrocardiogram tracing leads.

b) In the event of communications failure, no pronouncement shall be made.

c) No vehicle shall be placed in PIOOS status or be deemed unavailable for response to an emergency call for the sole purpose of performing a pronouncement of death.

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8.12 Resuscitation Initiation and Termination

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PROCEDURE

- Follow appropriate resuscitation protocol including medical command contact to consider termination of resuscitation. Verify the following patient parameters:
  - No femoral and/or carotid pulses
  - No respiratory effort
  - ALS providers apply the cardiac monitor to confirm absence of electrical activity in at least two leads for 10 seconds.
  - $ETCO_2$ < 10 during CPR correlates with irreversible death, but field termination may also be considered with $ETCO_2$ levels > 10.
  - Verify the patient meets the DOA criteria listed above.
- If any doubt exists, initiate resuscitation, request a MICU to be dispatched (if not already done), and consider medical command contact.
- Contact medical command. (EMS providers may terminate resuscitation only after order from a medical command physician.)
- Transmit ECG to base command
- Terminate resuscitation efforts and document time of death.
- Consider the possibility of a crime scene. If suspected, restrict access (if possible) and notify law enforcement immediately.
- Inform any family at the scene of the patient's death and facilitate early grieving.
- Ensure law enforcement is on scene.
  - Do not move the body or remove any resuscitation adjuncts (e.g. endotracheal tube or IV lines) until given permission by the coroner or medical examiner.
- Provide for dignity. If the coroner has given permission:
  - Remove airway devices and IV catheters
  - Place the patient in a position that appears comfortable
  - Clean up debris from the resuscitation
- Assist the family.
  - Offer to call a friend, pastor, or funeral director.
  - Consider notifying the patient's primary care physician.
  - Do not leave the scene until the family has adequate support.
- If patient meets DOA criteria listed above, ALS should report available. Continuing into the scene to perform a pronouncement will be at the discretion of the on-duty Paramedic supervisor.
  - ALS units will not respond out of their primary response area for the purposes of performing a pronouncement.
- In the event of a communications failure, no pronouncement will be made.
- No EMS vehicle shall be placed in a Provider Initiated Out of Service (PIOOS) status solely for the purpose of performing a pronouncement of death.

N.J.A.C. 13:35-6.2 PRONOUNCEMENT OF DEATH

d) Where the apparent death has occurred outside a licensed hospital and the attending or covering physician has been notified but is unable to go to the location to make the determination and pronouncement, said physician may specify another physician or may arrange with a professional nurse (R.N.) or a paramedic in accordance with N.J.A.C. 8:41-3.9, which requires the relay of findings, including telemetered electrocardiograms, if feasible to attend the presumed decedent and make the determination and pronouncement. In every such instance a written record, which may be contained within a police record, shall be prepared describing the circumstance and identifying the physician and any other person designated as above to perform the death pronouncement responsibility. Such report shall be promptly communicated orally to the attending physician for use in preparation of the death certificate. A copy of the report shall be provided to the physician as soon as practicable.

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8.13 Baby Safe Haven

New Jersey Department of Children and Families' Safe Haven hotline at 1-877-839-2339

Guidelines

New Jersey's Safe Haven Infant Protection Act allows parents or their representatives to anonymously surrender a newborn baby at any hospital emergency room, police station, fire station, ambulance, first aid, and rescue squads that are staffed 24 hours a day, seven days a week. If the baby appears to be 30 days old or less, and free of any abuse or neglect, the baby should be accepted with no questions asked.

Safe Haven Guidelines for Police, Fire Station, Ambulance, First Aid, and Rescue Squads

- When a baby is brought to any Safe Haven, personnel should:
  - Take the Baby
    - If the baby appears older than 30 days or abused or neglected, handle according to normal police procedures.
  - Offer Support
    - If the birth mother surrenders the baby, she is free to walk away, but always offer to connect her to medical care or social services. Explain that by accepting services, she will not give up her legal protections or anonymity, which are provided under the Safe Haven law.
  - Don't Ask, But If Someone Tells…
    - The law requires that you take the baby without asking questions. Whenever possible, hand a Safe Haven questionnaire to the person surrendering the baby and stress that mailing the pre-addressed questionnaire will not compromise the parents' legal protections or anonymity.
    - Document any information that is offered voluntarily. Useful information includes:
      - Physical or developmental problems the baby may have.
      - Parent information, such as race, age and medical history
      - Baby's birthplace and first name
      - Any prenatal care provided to birth mother.
  - Immediately notify the on-duty supervisor
    - Supervisor should contact the Operational or Clinical Manager
  - Get the Baby to the Hospital
    - The baby should be taken immediately to a hospital emergency room by patrol car, ambulance or first aid squad. All information shared by the birth mother or her representative should be reported to the emergency room staff.
  - Call the Safe Haven Hotline
    - The receiving hospital is required to call the ***New Jersey Department of Children and Families' Safe Haven hotline at 1-877-839-2339*** no later than the first business day after the baby is surrendered. Police staff may also call when a baby is surrendered to them at a police station.
  - Complete an ePCR for the baby.

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8.13 Baby Safe Haven

What is Safe Haven?
It's a law: the New Jersey Safe Haven Infant Protection Act. Under this law a person may give up an unwanted infant anonymously. As long as the baby has not been abused, the person may do so without fear of arrest or prosecution.

Why does New Jersey do this?
The purpose of Safe Haven is to protect unwanted babies from being hurt or killed from unsafe abandonment. Abandoning a baby puts the infant in extreme danger. Too often it results in the baby's death. It is also illegal, with severe consequences. However, with Safe Haven, this tragedy does not ever have to happen again in New Jersey.

How does it work?
A distressed parent who is unable to care for an infant can give up custody of a baby less than 30 days old safely, legally and anonymously. All that is required is that the baby be brought to any hospital emergency room, police station, fire station, ambulance, first aid, and rescue squads in New Jersey that are staffed 24 hours a day, seven days a week. As long as the child shows no signs of intentional abuse, no name or other information is required.

Can only a parent bring in the baby?
No. The parent may choose to have someone else bring in the infant. It can be a family member, a friend, a clergy member, a social worker - practically anyone.

Do you have to call before bringing in the baby?
No. You can walk in anytime.

Can you help a parent decide where to bring the baby?
Yes. The parent can call the ***Safe Haven Hotline - 1-877-839-2339*** - and get the address and directions for any hospital emergency room, police station, fire station, ambulance, first aid, and rescue squad in the state.

Does a parent have to tell anything to the people taking the baby?
No. Nothing is required. However, personnel from any hospital emergency room, police station, fire station, ambulance, first aid or rescue squad will record any information that a parent is willing to share, such as the child's health, race, date of birth, place of birth or medical history of the parents. This could be very useful in caring for the child. These questions can be answered anonymously on a medical questionnaire that is available.

What happens if a woman voluntarily provides her personal identifying information to hospital staff while delivering her baby at the hospital or being admitted?
If a woman voluntarily provides her personal identifying information to hospital staff while delivering her baby or being admitted, her anonymity will no longer be protected under the New Jersey Safe Haven Law and the State will have the mandate to search for and contact the infant's father and/or relatives.

What happens to the mother when she drops off a baby?
If the mother brings in the baby, she will be offered medical treatment and social services. She can, of course, refuse if she wishes. Once she has safely turned over the baby, she is free to go. She can complete an anonymous medical questionnaire and drop it in any mailbox.

What happens to the baby once the baby is dropped off?
The child will be examined and given medical treatment, if needed. Then DCF's Child Protection and Permanency, CP&P will immediately take custody and place the child in a foster or pre-adoptive home. After 21 days, CP&P will proceed with the permanent adoption of the baby. There are always many families available who want to adopt an infant.

What happens if the mother, or a relative, wishes to regain custody of a baby?
If the mother, or a relative, wishes to regain custody of the baby, they should contact the Safe Have Hotline at ***1-877-839-2339*** so that they can begin the process towards a safe reunification.

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9.0 Hazardous Material Exposure

POISON Help 1-800-222-1222

PURPOSE

The goal of the hazardous materials exposure protocol is to prepare the EMS provider for the potential risks that may be encountered and to provide guidelines to mitigate the effects of a hazardous exposure incident. The EMS provider may reference additional protocols for the management of specific hazardous materials exposure in dealing with known chemicals.

Successful management of a hazardous materials exposure depends on effective coordination between EMS, local hazardous materials teams, fire and police departments, the Poison Control Center, and appropriate state and federal agencies.

IDENTIFICATION

- Identification of the exposed material should be made at the earliest convenient time possible.
- Proper chemical name and spelling will be necessary for identification of procedures for ***Poison Control (1-800-222-1222)*** and receiving hospitals. Consider contacting Poison Control as soon as practical for consultation.
- Utilization of shipping papers, waybills, and Material Safety Data Sheets (MSDS) may assist in identifying chemical hazards, safety precautions, personal protective equipment, and treatments.
  Note: Many household chemicals may not require activation of a hazardous materials team. Utilize manufacturer's recommendation for decontamination and treatment or contact Poison Control for treatment and decontamination procedures.

PERSONAL SAFETY

- Personal protection is the highest priority when responding to an incident where hazardous material exposure is suspected. DO NOT ENTER THE HOT ZONE. Only HazMat Teams should enter the hot zone.
- If there is a major hazardous materials release:
  - Request specific staging information and be alert for clusters of injured patients.
  - Maintain safe location upwind and uphill of the site (at least 300 ft.).
  - Observe strict adherence to hot, warm, and cold-zone areas for personal safety, decontamination, and treatment.

PATIENT DECONTAMINATION

Only properly trained and protected personnel should conduct patient decontamination. The decontamination system is established by the appropriately trained fire department/HazMat Team.
EMS personnel will work cooperatively with them during the decontamination process. Patient decontamination is necessary to minimize injury due to exposure, as well as to mitigate risk of secondary exposure.

MASS/GROSS DECONTAMINATION

- Mass Decontamination (Large-scale Multiple/Mass Casualty) involves the effective dilution of a chemical or hazardous substance utilizing large quantities of water. This process should be supervised by the appropriately trained local fire department or HazMat Team.
- This process is necessary due to the involvement of an overwhelming number of patients, the severity of symptoms, and where technical or fine decontamination cannot be utilized due to time and personnel.

TECHNICAL DECONTAMINATION

- Technical Decontamination involves a multi-step process, supervised by the appropriately trained fire department or HazMat Team.
- This decontamination process is dependent on the type of chemical hazard present, and may require different methods such as:
  - Dilution.
  - Absorption.
  - Neutralization.
  - Chemical degradation.
  - Solidification.

Each method of decontamination has specific uses. Ascertain from the HazMat Team which method was used, if there are any hazards associated with the decontamination process, and if further definitive decontamination is required at the hospital.

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DEFINITIVE/FINE DECONTAMINATION
Usually completed at the hospital, it involves additional washing and rinsing to further dilute and finally remove any contaminants. Definitive decontamination should be performed in an authorized decontamination facility and with appropriately trained personnel.

DECONTAMINATION OF SPECIAL POPULATIONS
Children and their families, the elderly/frail, and patients with medical appliances will require more EMS personnel and time for general assistance and may also require simultaneous basic life support assistance during decontamination. An individual patient requiring special needs decontamination may take 10 – 15 minutes to complete.

Although the principles of decontamination are the same, certain precautions may need to be taken, depending on the patient.

- These patients may have the inability to give history or describe symptoms and physical complaints.
- Typical stress response of children is to be highly anxious and inconsolable, making assessment difficult.
- Small children are more difficult to handle while wearing personal protection equipment (PPE).
- Attempt to keep children with their families, as the decontamination process is likely to be frightening and children may resist.
- Keep patients with existing medical conditions together with their caregivers, if feasible.
- Children and elderly, and possibly special needs patients, are inherently unable to maintain body temperature and quickly become hypothermic. Utilize water warmed to 100ºF, if available, and keep warm after drying procedure.
- Use low-pressure water and soft washcloths and protect the airway and eyes throughout the decontamination process.

TREATMENT DURING DECONTAMINATION

- If medication is required, limit administration route to intramuscular or medi-inhaler.
- Intravenous therapy and advanced airway interventions should be delayed until after gross decontamination.
- Specific individual treatment should be referenced from Poison Control or MSDS sheets.

DOCUMENT EXPOSURE AND TREATMENT INFORMATION

- Name of chemical(s).
- Amount, time, and route of exposure.
- Decontamination information.
- Treatment/antidotes administered.

TRANSPORT

- EMS personnel transporting potentially contaminated patients (e.g., patients who have received gross decontamination) must have appropriate PPE.
- If an ambulance has transported a contaminated patient, it can only be used to transport similarly contaminated patients until proper decontamination of the vehicle is complete.
- Contaminated patients will not be transported by helicopter.
- Lining of the interior of the ambulance and further use of PPE may be necessary, dependent upon the level of completed decontamination.
- Communication of chemical exposure should be transmitted to the receiving hospital at the earliest possible time. Transmitted information should include such information as covered under the documentation and treatment section.

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9.1 Mass/Multiple Casualty Triage

PURPOSE

- The goal of the mass/multiple Casualty Triage protocol is to prepare for a unified, coordinated, and immediate EMS mutual aid response by prehospital and hospital agencies to effectively expedite the emergency management of the victims of any type of Mass Casualty Incident (MCI).
- Successful management of any MCI depends upon the effective cooperation, organization, and planning among health care professionals, hospital administrators and out-of-hospital EMS agencies, state and local government representatives, and individuals and/or organizations associated with disaster-related support agencies.
- Adoption of Model Uniform Core Criteria (MUCC).

DEFINITIONS

Multiple Casualty Situations

The number of patients and the severity of the injuries do not exceed the ability of the provider to render care. Patients with life-threatening injuries are treated first.

Mass Casualty Incidents

The number of patients and the severity of the injuries exceed the capability of the provider, and patients sustaining major injuries who have the greatest chance of survival with the least expenditure of time, equipment, supplies, and personnel are managed first.

GENERAL CONSIDERATIONS

Initial assessment to include the following:

- Location of incident.
- Type of incident.
- Any hazards.
- Approximate number of victims.
- Type of assistance required.

COMMUNICATION

- Within the scope of a Mass Casualty Incident, the EMS provider may, within the limits of their scope of practice, perform necessary ALS procedures, that under normal circumstances would require a direct physician's order.
- These procedures shall be the minimum necessary to prevent the loss of life or the critical deterioration of a patient's condition.
- All procedures performed under this order shall be documented thoroughly.
- See Communications Policy 8.2 or Communications Failure Policy 8.3.

TRIAGE

- Utilize a triage system such as "START" or "SALT" (Sort, Assess, Lifesaving Interventions, Treatment/Transport) to prioritize patients. SALT is part of a CDC-sponsored project based upon best evidence and designed to develop a national standard for mass casualty triage.
- Assess each patient as quickly and safely as possible.
- Conduct rapid assessment.
- Assign patients to broad categories based on need for treatment (Still, Wave, Walk).
- Remember: Triage is not treatment! Stopping to provide care to one patient will only delay care for others. Standard triage care is only to correct airway and severe bleeding problems.

TRIAGE CATEGORIES

- Immediate: **-RED-** Seriously injuries, immediately life-threatening problems, high potential for survival (i.e., tension pneumothorax, exposure to nerve agent resulting in severe shortness of breath or seizures). Likely to survive given available resources. If no to any of the following: Has a peripheral pulse? Not in respiratory distress? Hemorrhage is controlled? Follows commands or makes purposeful movements?
- Delayed: **-YELLOW-** Serious (not minor) injuries requiring care but management can be delayed without increasing morbidity or mortality (i.e., long bone fractures, 40% BSA exposure to Mustard gas). If yes to all of the following: Has a peripheral pulse? Not in respiratory distress? Hemorrhage is controlled? Follows commands or makes purposeful movements?
- Minimal: **-GREEN-** Injuries require minor care or no care (i.e., abrasions, minor lacerations, nerve agent exposure with mild runny nose). If yes to all of the following: Has a peripheral pulse? Not in respiratory distress? Hemorrhage is controlled? Follows commands or makes purposeful movements?

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Continued

TRIAGE CATEGORIES (continued)

- Expectant: **BLACK** -GREY- Unlikely to survive given available resources. Does not mean Dead. Method of preserving resources: should receive comfort care or resuscitation when resources are available. Serious injuries: very poor survivability even with maximal care in hospital or pre-hospital setting (i.e., 90% body surface area burn, multiple trauma with exposed brain matter). If no to any of the following: Has a peripheral pulse? Not in respiratory distress? Hemorrhage is controlled? Follows commands or makes purposeful movements?
- Deceased: **BLACK** Patient is not breathing after opening airway. (In children, if after giving 2 rescue breaths, if appropriate.) Deceased or casualties whose injuries are so severe that their chance of survival does not justify expenditure of limited resources. Tag patients to prevent re-triage. Do not move bodies unless they are hindering efforts to rescue live patients, or they are in danger of being further damaged, for example, burned by fire, building collapse, etc.

TAGGING SYSTEM

- Use water-repellent triage tags with waterproof markers and attach to the patient .
- Indicate patient's triage priority, degree of decontamination performed, treatment and medications received.

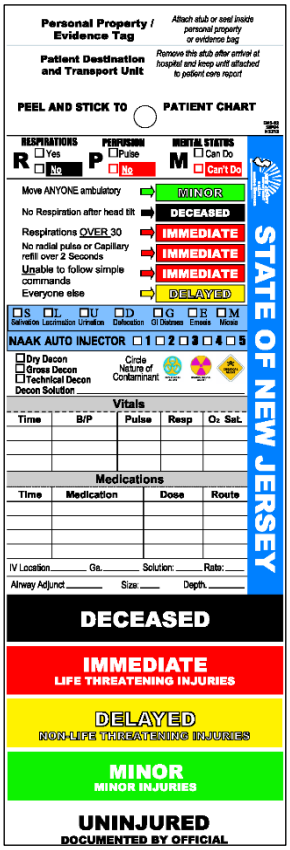
TRIAGE IN HAZARDOUS MATERIAL INCIDENTS

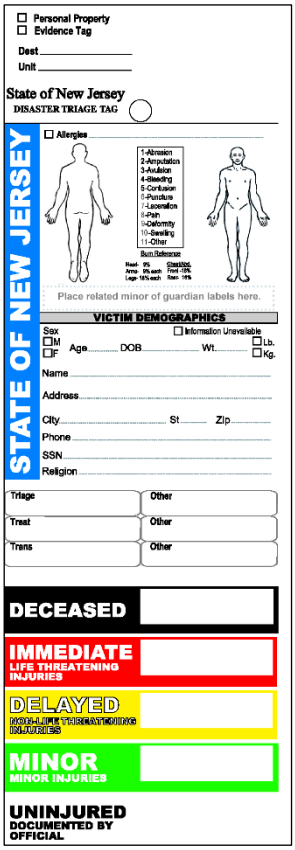
Decontamination

The need for decontamination is the "first triage decision." since decontamination can be a lengthy process, the "second decision" is which patient(s) are the first to be decontaminated. The "third decision" is based on need for treatment during the decontamination process, since only simple procedures such as antidote administration can be accomplished while wearing PPE.

Identification and Treatment

- Signs and symptoms of exposure will usually dictate the treatment required, however, at the earliest possible time, identification of the specific chemical should be made.
- Reference additional hazardous materials protocols as necessary.
- Request additional resources. Initial antidote and medical supplies may be limited to priority patients.
- Respiratory compromise is a leading factor of fatalities due to hazardous material exposure. Symptoms of chemical exposure may be delayed and occur suddenly. Constant reevaluation of respiratory status is necessary.





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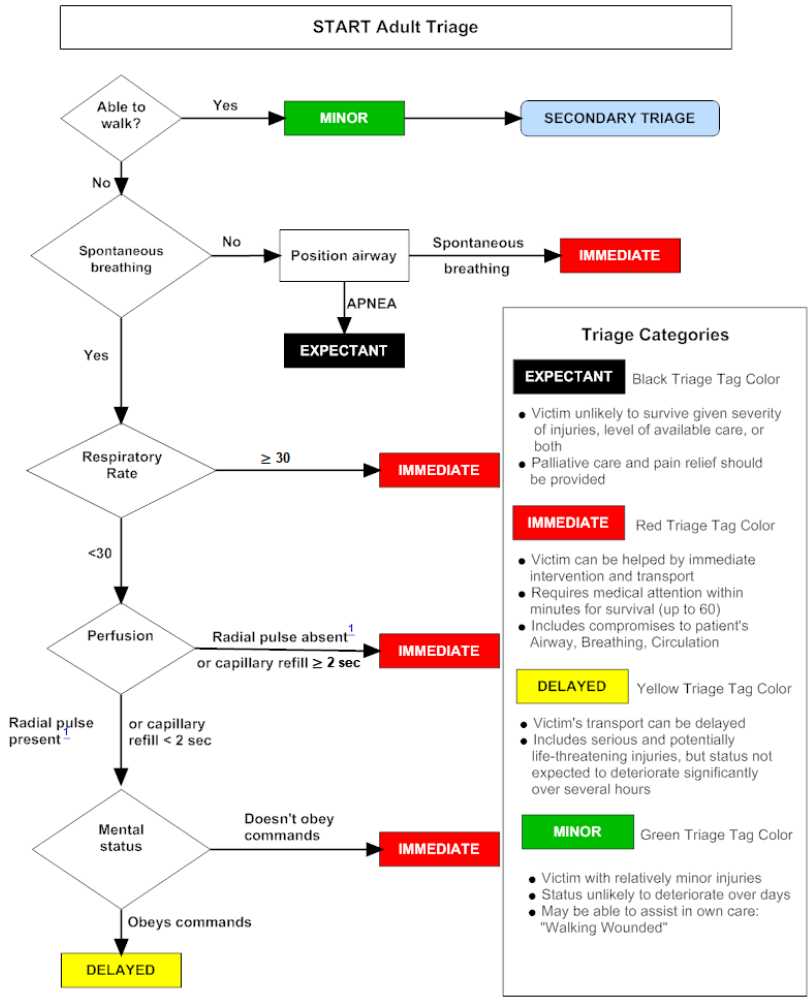
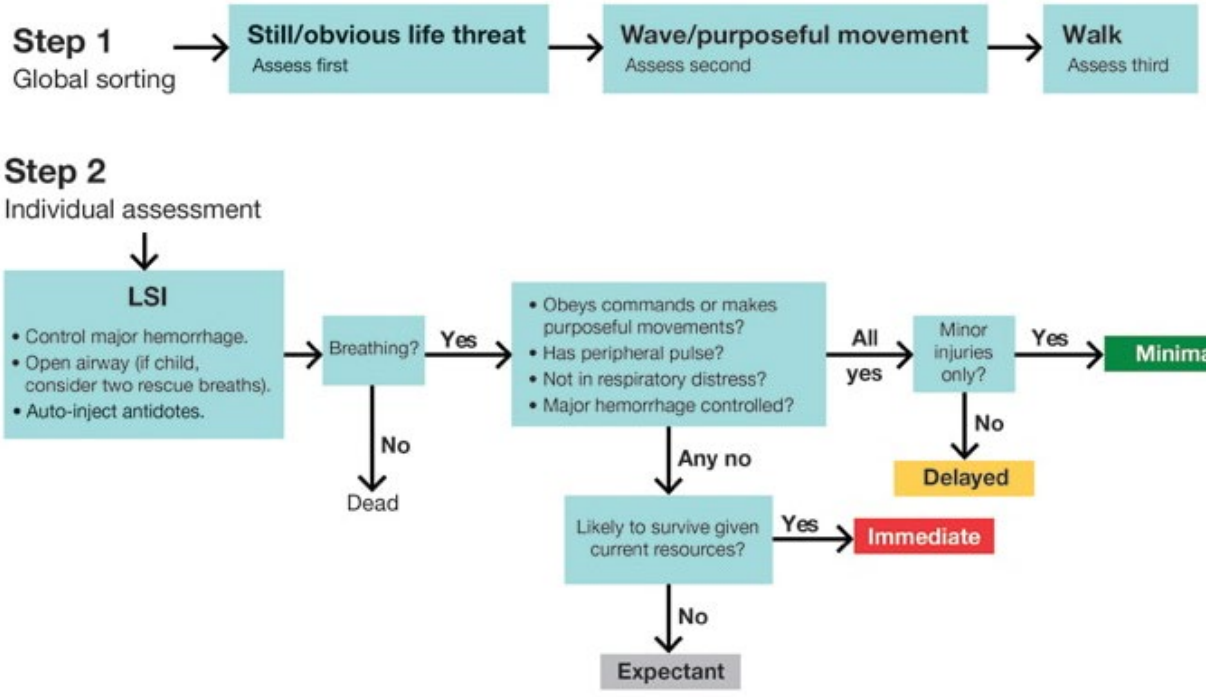
9.1 Mass/Multiple Casualty Triage



SALT Mass Casualty Triage



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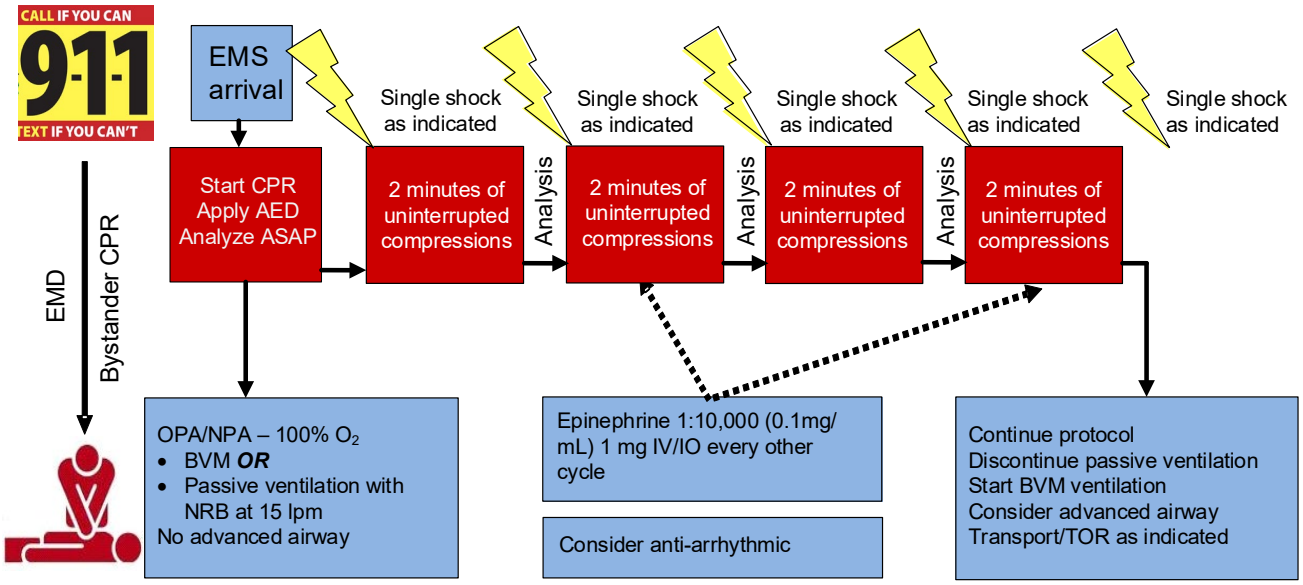
High Performance CPR - Adult



Key Points:

- Perform 2-minute cycles of uninterrupted chest compressions.
- Interrupt chest compressions only for rhythm/pulse check and defibrillation.
- Ventilation / Oxygenation options:
  - BVM ventilation 1 breath every 10 chest compressions without interrupting compressions. OR
  - Apply high flow oxygen via non-rebreather mask (NRB) for passive insufflation.
    - For arrests of non-cardiac etiology, including respiratory and trauma, use BVM ventilation.

EMT Standing Orders

E

- Routine Patient Care—with focus on CPR. Administer 100% oxygen.
- Immediate high-quality CPR with minimal interruptions. Use metronome if possible.
- Apply AED and use as soon as possible with minimum interruption of chest compressions.
- Continue 2-minute cycles of uninterrupted chest compressions followed by AED analysis and shock for 4 cycles.
- Place an oral or nasal airway.
- Ventilation / oxygenation options during 4 cycles:
  - BVM ventilation 1 breath every 10 chest compressions during recoil and without interrupting compressions (avoid hyperventilation), OR
  - Apply high flow oxygen via NRB.
- After 4 cycles:
- Continue 2-minute cycles of uninterrupted chest compressions.
- If passive insufflation was used, switch to BVM ventilation.
- If a shock is delivered to patient, transport as soon as one of the following occurs:
  - You have administered 5 (five) shocks.
  - The patient regains a pulse.
  - If you have performed 20 minutes of CPR, contact Medical Command to consider termination of resuscitation OR continue resuscitation and transport.
- Consider treatable causes: hypoxia, overdose/poisoning, hypothermia, hypoglycemia, and hypovolemia—treat as per specific protocol.
- If return of spontaneous circulation (ROSC) occurs, see Post Resuscitative Care 3.4A.
- Consider termination of efforts or not attempting resuscitation (see Do Not Resuscitate/POLST 8.9 and/or Resuscitation Initiation & Termination 8.12.
- Call for Paramedic intercept, if available.

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High Performance CPR - Adult

Paramedic Standing Orders

P

- Do not interrupt chest compressions for advanced airway, IV/IO placement, or epinephrine administration.
- During the first 4 cycles, consider placement of a supraglottic airway without interrupting chest compressions.
- Establish IV/IO access. Administer 500 mL bolus ***crystalloid solution*** IV/IO in the absence of pulmonary edema.
- After the first 2-minute cycle, administer ***epinephrine*** 1:10,000 (0.1mg/mL) 1 mg IV/IO; repeat every other cycle.
- Monitor quantitative waveform capnography throughout resuscitation, if available, to assess and monitor airway placement and CPR quality, and to monitor for signs of ROSC.
- Consider and correct treatable causes: hypoxia, overdose/poisoning, hypothermia, and hypovolemia—treat as per specific protocol.
- Follow ACLS guidelines as trained and credentialed. (See Cardiac Algorithms in Appendices.)
- During the first 4 cycles, consider advanced airway only if airway patency cannot be maintained using basic maneuvers and adjuncts.
- After 4 cycles (8 minutes), consider advanced airway without interrupting chest compressions.

For ventricular fibrillation (VF)/pulseless ventricular tachycardia (VT):

- Defibrillation when available, with minimum interruption in chest compressions. Use manufacturer's recommendations. Continue CPR for 2 minutes; then rhythm check; then:
- Refer to Cardiac Arrest – Adult 3.2A or Cardiac Arrest – Pediatric 3.2P
- For refractory ventricular fibrillation, consider:
  - Changing pad placement from anterior-apex to anterior-posterior.

For asystole or pulseless electrical activity (PEA):

- Continue CPR for 5 cycles (2 minutes), then rhythm check.
- Administer ***epinephrine*** (1:10,000) (0.1 mg/mL) 1 mg IV/IO, repeat every 3 to 5 minutes.
- Refer to Cardiac Arrest – Adult 3.2A or Cardiac Arrest – Pediatric 3.2P
- Consider tension pneumothorax and treat with needle decompression if indicated.
- For suspected pre-arrest metabolic acidosis, suspected, or known hyperkalemia (renal failure/dialysis patient), known tricyclic antidepressant overdose, or suspected excited/agitated delirium, consider ***sodium bicarbonate*** 1 mEq/kg IV/IO.
  - Do not use routinely in cardiac arrest. Administer 0.9% NaCl flush before and after sodium bicarbonate. See Poisoning/Substance Abuse/Overdose - Adult 2.18A.
- For known or suspected hyperkalemia (dialysis patient/renal failure) or as an antidote for toxic effects (hypotension and arrhythmias) from calcium channel blocker or B-blocker overdose consider ***calcium chloride*** 500 to 1,000 mg (5 to 10 mL of a 10% solution) IV/IO over 10 minutes.
  - May repeat as needed. Contact Medical Direction. Do not mix with or infuse immediately before or after sodium bicarbonate.
  - Do not use routinely in cardiac arrest. See Poisoning/Substance Abuse/Overdose - Adult 2.18A.

PEARLS

- EMS agency should use a "pit crew" approach to ensure the most effective and efficient cardiac arrest care.
- Except as indicated in this protocol, follow applicable AHA ACLS and BLS guidelines.

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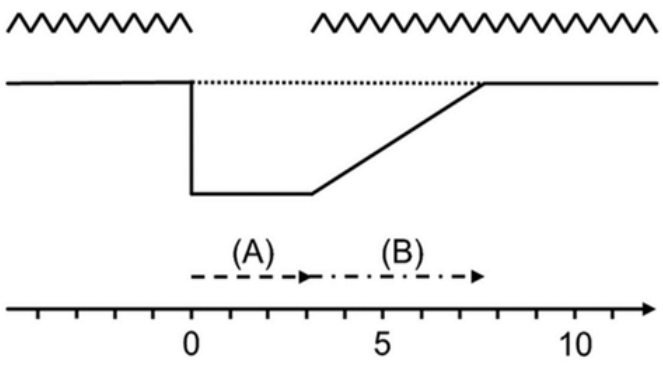
High Performance CPR - Adult



COMPRESSIONS

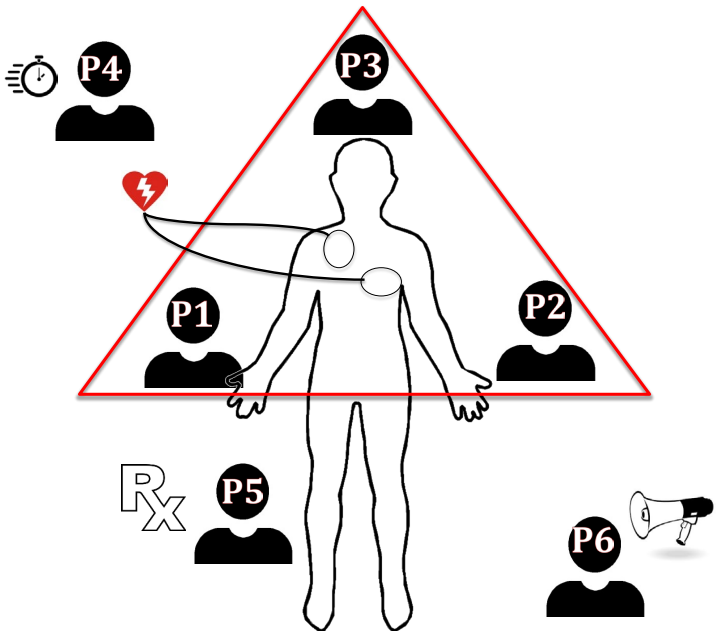
Coronary perfusion pressure:
note the interval of interruption [A] as well as the interval until the restoration of coronary perfusion pressure [A+B]

TIME IN SECONDS

PEARLS

- Early CPR and early defibrillation are the most effective therapies for cardiac arrest .
- Minimize interruptions in chest compression, as pauses rapidly return the blood pressure to zero and stop perfusion to the heart and brain.
- Delay application of mechanical CPR devices until after the first four cycles (8 minutes) of CPR and decision to transport. Mechanical devices should only be used by services that are practiced and skilled at their application, with minimal interruption to compressions.
- Switch compressors every two minutes to minimize fatigue.
- Perform chest compressions while defibrillator is charging and resume compressions immediately after the shock is delivered.
- When possible, use live CPR feedback devices and voice recorder to facilitate high-quality CPR and for QA.

EMS agency should use a “pit crew” approach when using this protocol to ensure the most effective and efficient cardiac arrest care. Training should include teamwork simulations integrating BLS, and ALS crew members who regularly work together. EMS systems should practice teamwork using “pit crew” techniques with predefined roles and crew resource management principles. One example is as follows:



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High Performance CPR - Adult

POSITION #1-**Compressor 1** (right side of patient):
- Initiates 2 minutes of chest compressions at rate of 100-120 / min.
- Assists Position 3 with ventilations in off cycle.
- Monitor femoral pulse and coach CPR effectiveness.

POSITION #2-**Compressor 2** (left side of patient):
- Sets up defibrillator.
- Alternates 2 minutes of chest compressions with Position 1
- Assists Position 3 with ventilations in off cycle.
- Monitor femoral pulse and coach CPR effectiveness.

POSITION #3-**Airway** (At patient's head):
- Opens airway and inserts OPA.
- Assembles NRB or BVM.
- If using BVM, provide 2 handed mask seal.
- Inserts advanced airway after 8 minutes/4 cycles.

POSITION #4-**Team Leader** (Outside CPR triangle):
- Coaches the metrics.
- Calls for compressor change every 2 minutes.
- Calls for rhythm analysis every 2 minutes, immediate shock if indicated.
- Monitor CPR quality and use of metronome at 100-120 bpm.
- Assumes duties of Position 5/6 if limited to four rescuers throughout resuscitation.

POSITION #5-**Vascular/Meds** (Outside CPR triangle):
- Initiates IV/IO access.
- Administers medications per protocol.

POSITION #6-**Code Commander** (Outside CPR triangle):
- Ideally highest-level provider.
- Communicates/interfaces with CPR Team Leader.
- Coordinates patient treatment decisions.
- Communicates with family/loved ones.
- Completes Cardiac Arrest Check List.

Example Cardiac Arrest Check List	Consider Possible Causes	
☐ Code commander and pit crew roles identified. ☐ Chest compression interruptions minimized. ☐ Compressors rotated at minimum every 2 minutes. ☐ Metronome set between 100 and 120 beats per minute. ☐ AED/defibrillator applied. ☐ O2 flowing and attached to BVM/NRB ☐ ETCO2 waveform present ☐ IV/IO access established. ☐ Possible causes considered. ☐ Gastric insufflation limited and gastric decompression considered. ☐ Family present and ongoing communication provided	Hypovolemia Hypoxia Hydrogen Ions (acidosis) Hypothermia Hyper/hypokalemia Hypoglycemia	Tablets/toxins Tamponade Tension pneumothorax Thrombosis (MI) Thrombosis (PE) Trauma

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High Performance CPR - Adult

- If feasible and the scene is safe, immediately upon arrival, begin chest compressions.
- Clear some space to optimize your working environment. Move furniture or get the patient in a position that will allow a rescuer space to kneel on both sides of them, and where there is sufficient room at the head.
- Effectiveness of chest compressions decrease during patient movement. Therefore resuscitate the patient as close to the scene as operationally feasible.
- Position 1 and 2 are ideally set up on opposite sides of patient's chest and perform continuous chest compressions, alternating after two minutes to avoid fatigue.
- REMEMBER: Effective chest compressions are the most important initial therapy for the pulseless patient.
- Effective is defined as:
- A rate of at least 100 and less than 120 compressions/minute - Use of metronome or CPR feedback device is essential. (e.g. built into monitor or smart phone app)
- A depth of 2 - 2.4 inches
- Allow for complete chest recoil (avoid leaning on chest)
- Do not interrupt compressions to obtain IV access or perform airway management.
- Do not hyperventilate as it increases intrathoracic pressure and decreases blood return to the heart. Ventilate 1 breath every 10 compressions during recoil without interrupting chest compressions.
- Chest compressions should only be interrupted during rhythm check (AED analysis or manual) and defibrillation shocks. Continue compressions when AED/ defibrillator is charging, if device allows.
- During interruptions compressor's hands should hover over chest.
- Perform pulse check simultaneously with rhythm check.
- With the goal of immediate uninterrupted chest compressions, if a mechanical CPR device is used, it should not lead t delay or interruption in chest compressions. Delay application of mechanical CPR device until after the initial 4 cycles of CPR and a decision to transport has been made.
- Pre-charge manual defibrillators prior to rhythm check to ensure rapid defibrillation if a shockable rhythm is present. If no shock is indicated, disarm the device (dump the charge)
- Utilize ETCO2 to assess CPR quality and monitor for signs of ROSC.
- Use of a CPR checklist to ensure that all best practices are followed during CPR.

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9.2 Radiation Injuries – Adult & Pediatric

EMT Standing Orders	

E	• Remove the patient from scene and decontaminate by appropriately trained personnel.
	• If triage is required for a mass casualty event, use the following guidelines:
	  ○ If vomiting starts:
	  ▪ Within 1 hour of exposure, survival is unlikely, and patient should be tagged “Expectant”.
	  ▪ Less than 4 hours after exposure, patient needs immediate decontamination and evaluation and should be tagged “Immediate”.
	  ▪ 4 hours after exposure, reevaluation can be delayed 24 – 72 hours if no other injury is present and patient should be tagged “Minimal”.
	• Routine Patient Care.
	• Treat traumatic injuries and underlying medical conditions.
	• Patients with residual contamination risk from wounds, shrapnel, or internal contamination should be wrapped in water repellent dressings to reduce cross contamination.
	• Consider Air Medical Transport after proven definitive decontamination of patient.

Paramedic Standing Orders	
P	• Administer anti-emetic as needed. See Nausea/Vomiting – Adult & Pediatric 2.11 • Administer pain management. See Pain Management – Adult 2.17A or Pain Management – Pediatric 2.17P

PEARLS

- In general, trauma patients who have been exposed to or contaminated by radiation should be triaged and treated on the basis of the severity of their conventional injuries.
- A patient who is contaminated with radioactive material (e.g. flecks of radioactive material embedded in their clothing and skin) generally poses a minimal exposure risk to medical personnel.

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ALS Indicators

- Chest Pain/ Suspected acute coronary syndrome (ACS)
  - Respiratory distress concerning for ACS equivalent.
  - Upper abdominal pain in Diabetics or elderly patients concerning for ACS.
- Syncope/near syncope with
  - Age over 50
  - Exertional at any age
  - Abnormal Vitals
  - Multiple Episodes
- Hypertension with another ALS Indicator
  - Asymptomatic hypertension does not require ALS.
- Cardiac Arrest
- Respiratory Arrest
- Respiratory Distress
- Compromised Airway
  - Obstruction
  - Burns to Face/Airway
- Large volume Hemoptysis/hematemesis with potential for airway compromise
- Symptomatic Hypotension or signs of impending shock
- Bradycardia with Rate < 40
- Adult Tachycardia with rate > 150
- Acute Stroke-like symptoms
- Altered Mental Status
  - Unresponsive
  - Active seizure/Status Epilepticus/Multiple Seizures
  - ETOH intoxication/substance abuse with GCS <9 or abnormal vitals
- Diabetic Emergencies
  - Hypoglycemia with change in mental status
  - Hyperglycemia with change in mental status or abnormal breathing
    - Asymptomatic hyperglycemia does not require ALS.
- Blunt/penetrating chest trauma with respiratory distress
- Imminent Delivery
- Severe Hyperthermia
- Sepsis (suspected) - evidence of infection with unstable vital signs
- LVAD Patients

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ALS Triage to BLS

The purpose of this protocol is to establish the need for an ALS crew to contact Online Medical Control (OLMC) before releasing patients with specific complaints to BLS for transport without ALS services. Before triaging a patient to BLS, all ALS providers on scene must agree that treatment by ALS following their assessment is not required. If the paramedics don't agree, then they are to treat the patient or contact OLMC and speak with a physician for approval before releasing a patient to BLS.

If the ALS crew has initiated treatment beyond assessment, in any circumstance, they are to accompany the patient during transport to the emergency department, and cannot release the patient to BLS.

If an ALS crew believe ALS services are not required, and a patient presents with any one of the following items listed below, a paramedic must contact OLMC and speak with a physician for approval before releasing a patient to BLS.

Complaints not eligible for SNR designation:

- Altered mental status (new onset or acute)
- Seizures; except for pediatric febrile seizures in which the patient has returned to baseline mental status.
- Chest pain of any age with documented or assumed (ex. chronic smoker) cardiac risk factors.
- Syncope
- CVA or TIA like symptoms
- Pulse Oximetry <94% on Room Air
- Anaphylaxis or allergic reaction-like symptoms
- Vaginal bleeding in the second or third trimester
- Overdose or poisonings, except for opiate cases; reversed with naloxone administration by BLS or First Responder only.
- Burns: all 2nd degree with > 9% TBS, all 3rd degree burns, all chemical or electrical burns, all suspected inhalation injury.
- Hypoglycemic episodes with patients on oral diabetic medications or long-acting injectable medications (Lantus).
- Adult patients with unexplained abnormal vital signs
    - RR <10 or >24
    - HR <50 or >120
    - SBP <100
    - EKG abnormalities for which an underlying suspected life-threatening or potentially life-threatening cause cannot be ruled out.
    - Pediatric patient with abnormal vital signs

**The above scenarios are not a complete list. Providers are encouraged to utilize OLMC for any triage which the patient presents with atypical symptoms. Cases such as cardiac or respiratory arrest were purposefully left out due to the obvious nature of treatment required.*

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