Washington State 2024 BLS/ILS Protocol Guidance EMR, EMT, AEMT Level

Washington State Department of HEALTH

Updated August 2024

Preface

This protocol guidance was developed in collaboration with the Washington State Protocol workgroup, Washington State Medical Program Directors (MPD) workgroup, Pediatric Technical Advisory Committee and Prehospital Technical Advisory Committee. The sources used to inform this document represent the consolidation of medical procedures and emergency pre-hospital guidelines, NASEMSO Clinical Guidelines, Washington State Emergency Medical Services Prehospital Pediatric Guidelines, and publications from local, national, and international sources.

This document is approved by the Washington State Department of Health for use by EMS MPDs as a foundation to develop local protocols for use by certified EMS providers. The skills and procedures identified in this document are consistent with the scope of practice standards of the United States Department of Transportation (USDOT) and Washington State Approved Skills and Procedures for Certified EMS Providers list (DOH530-173). This document provides recommended guidelines for patient care provided by certified emergency medical providers. Medical Program Directors may make modifications to meet local community needs if modifications are within the current scope of practice for certified EMS providers, consistent with national standards, state guidelines and regulations, regional patient care procedures and county operating procedures.

WAC 246-976-920 Medical program director provides that *"MPDs must provide medical control and direction of certified EMS personnel in their medical duties. This is done by oral or written communication. MPDs develop and adopt written prehospital patient care protocols to direct EMS certified personnel in patient care."* As provided in WAC 246-976-182 Authorized care – scope of practice, *"If protocols and regional patient care procedures do not provide off-line direction for the situation, the certified person in charge of the patient must consult with their online medical control as soon as possible".*

WAC 246-976-144 EMS certification provides that *"EMS certification is valid "while responding to other counties for mutual aid purposes, mass care, or other incidents. In these situations, EMS provider will provide patient care following the prehospital patient care protocols of their supervising MPD."*

Editors and Contributors

The Department of Health, Office of Emergency Care Systems would like to recognize and express our appreciation to all individuals who attended the monthly meetings to provide input into this work.

Medical Oversight

The MPD is a physician certified and designated by the Washington state Department of Health. MPD duties are prescribed by the Secretary as authorized in RCW 18.71.212 and are described in WAC 246-976-920 and throughout WAC 246-976.

Purpose

The purpose of this document is to provide MPDs and certified EMS personnel with guidelines for the pre-hospital treatment of many of the types of emergency medical scenarios that patients may present. Certified EMS providers should rely on knowledge gained from training, consultation with medical control, and common sense when encountering situations not covered in these guidelines. Always do what is right for the patient and within your scope of practice.

Emergency medicine continues to evolve at a rapid pace. This document is subject to change as new information becomes available.

These guidelines are intended to:

- Support MPDs in their work in developing patient care protocols for EMR, EMT, and AEMT providers.
- Support standardization of basic life support and intermediate life support pre-hospital medical care across the state.

These guidelines are not intended to:

- Be absolute treatment doctrines. Rather they are guidelines with sufficient flexibility to support the MPDs in developing protocols.
- Replace initial or ongoing training programs, textbooks, or other comprehensive resources designed to prepare EMS providers to provide out of hospital patient care.
- Warrant the EMS provider as an independent field practitioner.

Specific treatment protocols address the treatment and disposition of each condition. Interventions are listed in recommended sequential order. It is understood that circumstances may require flexibility.

Table of Contents

Administrative Section

Scope of Practice

As provided in WAC 246-976-182 Authorized scope of practice, certified EMS personnel are only authorized to provide patient care:

- When performing:
  - In a prehospital emergency setting; or
  - During interfacility ambulance transport; or
  - When participating in a community assistance education and referral (CARES) program authorized under RCW 35.21.930; or
  - When providing collaborative medical care in agreement with local, regional, or state public health agencies to control and prevent the spread of communicable diseases; and
  - When performing for a licensed EMS service or an emergency services supervisory organization (ESSO) recognized by the secretary; and
- Within the scope of care that is:
  - Included in the approved instructional guidelines/curriculum or approved specialized training and is included on the department-approved EMS Skills and Procedures list (DOH 530-173) for the individual's level of certification; and
  - When following department approved county MPD protocols.

If protocols, MPD policies, county operating procedures, or regional patient care procedures do not provide off-line direction for the situation, the certified person in charge of the patient must consult with their on-line medical control as soon as possible. Medical control can only authorize a certified person to perform within their scope of practice.

All prehospital providers must follow state approved triage procedures, county operating procedures, regional patient care procedures, county MPD policies, and patient care protocols.

Scope by Level

Identification of symbol and meaning

W* - Skill requires specialized training as authorized by WAC 246-976-024.

W** - Washington State Endorsement for EMT certification is required.

Emergency Medical Responder (EMR)

Emergency Medical Responder (EMR). An EMR may perform the following:

1. Assessment and Diagnostic Procedures.
   a. Pulse, Respirations, Blood Pressure (manual and automated).
   b. Blood glucose analysis (capillary puncture) (W*).
   c. Pulse oximetry monitoring.

2. Airway/Breathing management.
   a. Head Tilt/Chin Lift, Jaw Thrust.
   b. Mouth-to-barrier, mouth-to-mask, mouth-to-mouth, mouth-to-nose, mouth-to-stoma.
   c. Oropharynx adjuncts.

d. O_2 administration by Nasal cannula, Non-rebreather Mask.
e. Ventilation by BVM.
f. Obstructed airway care (all ages).
g. Suction upper airway.

3. Circulation management.
   a. CPR (all ages)
   b. Automated and Semi-Automated External Defibrillation (AED/SAED)
   c. Bleeding/Hemorrhage control with wound care
      1)Direct pressure
      2)Dressings/Bandages
      3)Hemostatic gauze/agent dressing
      4)Wound packing
      5)Tourniquet
4. Medication administration
   a. Routes: PO, IN, IM (auto-injector)
   b. Routes: Buccal, Mucosal, Sublingual, Inhalation (W*)
   c. May administer per medication section:
      1) Aspirin (W*)
      2) Bronchodilator/Beta Agonist (MDI) - Assist Patient's Own (W*)
      3) Epinephrine (auto-injector)
      4) Oral Glucose (W*)
      5) Oxygen
      6) Naloxone (Narcan) IN or IM via auto-injector
      7) Nerve Agent Antidote Kit (e.g., DuoDote or Mark I) (self/peer) IM
5. Splinting
   a. Traction (W*)
   b. Extremity immobilization with rigid, or non-rigid device
   c. Extremity stabilization - manual
6. Spine management
   a. Cervical collar, spinal motion restriction, immobilization, manual stabilization, long backboard, KED, standing board, sports equipment removal, rapid extrication, log roll, securing patient.
7. OB assists with normal delivery.
8. Simple eye irrigation does not include Morgan Lens

Emergency Medical Technician (EMT)

Emergency Medical Technician (EMT). In addition to Emergency Medical Responder scope of practice, an EMT may perform the following:

1. Assessment and Diagnostic Procedures.
   a. Telemetric cardiac monitoring
   b. Nasopharyngeal Swabbing (W*)
   c. Vaccinations (W*)

2. Airway/Breathing management.
   a. O_2 administration by Partial Re-breather Mask, Simple Face Mask, Venturi Mask
   b. Positive pressure ventilation devices
   c. Automatic Transport Ventilators (ATV) - adjust rate and tidal volume. (W*)
   d. Continuous Positive Airway Pressure (CPAP)

e. Humidifiers with O_2 administration
f. Carbon monoxide monitoring (W*)
g. End-tidal carbon dioxide ($EtCO_2$) monitoring (W*)
h. Suctioning tracheostomy and tracheal bronchial of an intubated patient (W*)
i. Supraglottic airway placement (SGA) (W**)

3. Circulation management.
   a. CPR with or without mechanical CPR device.
   b. ECG: 12 lead ECG placement, 12 lead ECG acquisition, computerized analysis, and transmission.
   c. Ventricular Assist Device (VAD)- transport patient with VAD in place.

4. Administer IV/IO fluids.

   a. Peripheral IV / IO insertion (W**)
   b. Venipuncture to obtain blood samples (W**)

5. Medication administration.
   a. Routes: PO, Inhalation (aerosolized/nebulized), IM, MDI, PR.
   b. May administer per medication section.
      1) Aspirin – PO
      2) Activated Charcoal (W*)
      3) Beta agonist/bronchodilators (Nebulizer or MDI)
      4) D10 IV (W*/W**)
      5) Antihistamine (Cetirizine and Diphenhydramine) -PO (W*)
      6) Epinephrine IM - 1 mg/mL by syringe (W*) or Epi-Auto Injector
      7) Glucagon IN/IM (W*)
      8) Naloxone (Narcan)- IN/IM (W*)
      9) Nerve Agent Antidote Kit (e.g. DuoDote or Mark I)
      10) Nitrous Oxide (W*)
      11) Ondansetron PO (W*)
      12) OTC medications Acetaminophen -PO, PR and Ibuprofen - PO
      13) Oxymetazoline IN (W*)
      14) Vaccination during a public health emergency when there is a state or local declaration of an emergency (W*)
   c. May assist with:
      1. Nitroglycerin.
6. Patient Restraint Device (mechanical, e.g. Posey wrist, ankle, chest).
7. OB- assist with complicated delivery.

Advanced Emergency Medical Technician (AEMT)

Advanced Emergency Medical Technician (AEMT). In addition to EMR and EMT scope of practice, an AEMT in may perform the following:

1. Airway/Breathing management.
   a. Positive pressure ventilation devices (manually triggered pressure device).
   b. Automatic Transport Ventilators (ATV) - adjust rate and tidal volume.
   c. Continuous Positive Airway Pressure (CPAP).
   d. Carbon monoxide monitoring.
   e. End-tidal carbon dioxide ($EtCO_2$) monitoring.

f. Suctioning tracheostomy and tracheal bronchial of an intubated patient (W*).
g. Supraglottic airway placement.

2. Administer IV/IO fluids.
   a. Peripheral IV / IO insertion.
   b. Venipuncture to obtain blood samples.
3. Medication administration.
   a. Routes: SQ aerosolized, intravenous (IV).
   b. May administer per medication section:
      1) Activated Charcoal
      2) Anticholinergics
      3) Beta agonist/bronchodilators
      4) Epinephrine 1:1,000 by syringe IM or Epi-Auto Injector IM
      5) Epinephrine 1:10,000 IV for cardiac arrest (W*)
      6) Narcan IM, IV, IN
      7) Antihistamine (Cetirizine and Diphenhydramine)-IV, PO, IM (W*)
      8) Glucagon IM
      9) Dextrose D50, D10 IV
      10) mAb (W*)
      11) Nitroglycerin SL
      12) Nitrous Oxide
      13) Ondansetron – IV, IM, PO
      14) Oxymetazoline IN (W*)

Professional Conduct

All patients should be treated with dignity and respect in a calm and reassuring manner.

Physician On scene

A physician on scene with a medical license in hand may:

1. Participate in patient care management by:
   a. Assisting the EMS personnel in carrying out protocols.
   b. Performing additional interventions at the direction of the online medical control.
2. Give orders if both:
   a. The online medical control concurs, and
   b. The physician accompanies the patient to the hospital.

Withholding/Terminating Resuscitation

1. **Resuscitation will be withheld if any of the following clinical signs of irreversible death exist**:
   a. Rigor mortis.
   b. Incineration.
   c. Decomposition.
   d. Decapitation.
   e. Lividity.
   f. Evisceration of the heart.
   g. External brain matter combined with an absence of vital signs/signs of life.
   h. Situations when attempts to do CPR would place the rescuer at risk of serious injury or mortal peril (to include exposure to incurable, highly infectious disease).

2. Fetal Demise

a. Contact online medical control for advice, consider pediatric online medical control if available.
b. If there is no fetal age known, use step c below.
c. If the fetus has no signs of life and is >20 weeks of age, consider it a still birth.
    1) Contact the Medical Examiner's office for directions.
    2) Contact LE if the situation warrants.
    3) Transport mother to the hospital.
d. If the fetus has no signs of life and is <20 weeks.
    1) EMS personnel should transport the mother and fetus to the hospital.
e. If the mother refuses transport, then follow the AMA protocol.

3. Trauma cardiac arrest

a. In blunt or penetrating trauma, resuscitation efforts may be withheld if the patient is pulseless, apneic, without witnessed signs of life by EMS responder on arrival. For pediatric patients consider contacting online medical control.

4. Medical cardiac arrest

a. Resuscitation efforts may be terminated after providing > 40 minutes of high-quality CPR for the patient with witnessed collapse or who remains in shockable rhythms.
b. Resuscitation efforts may be terminated after providing > 25 minutes of high-quality CPR for the unwitnessed cardiac arrest patient, and those with non-shockable rhythms.
c. Quantitative end-tidal capnography ($EtCO_2$) may be used to monitor effectiveness of chest compressions, if available.
d. Consider transporting the medical patient with CPR in progress if at least one of the following is suspected:
    1) Drug overdose.
    2) Drowning.
    3) Hypothermia.
    4) Refractory shockable rhythm.
    5) Age ≤ 30 years old.
    6) Circumstances require that the patient be transported.
    7) Lightning strike.

5. Advanced Directives

a. Full resuscitation should not be initiated according to the POLST (Portable Orders for Life Sustaining Treatment) guideline.
    1) If POLST form indicates "Comfort-Focused Treatment", online medical control may be contacted to help determine the need for transport to the Emergency Department.
    2) Communication with the legal surrogate should be considered if there is concern about the patient's wishes.
b. Compelling reasons permit EMS personnel to withhold resuscitation from a patient in cardiac arrest when the following two criteria are both present:
    1) The patient is at the end stage of a terminal condition.
    2) There is written or verbal information from family, caregivers, or the patient stating that the patient did not want resuscitation.
c. A Living will should be honored if present.
d. All documentation must be made in a Patient Care Report (PCR).

6. **Other**
    a. Providers should contact online medical control for consultation for termination of resuscitation efforts.
    b. EMS must notify the Medical Examiner (ME) and/or Law Enforcement (LE).
    c. All documentation must be made on a Patient Care Report (PCR) and a copy provided to the ME's office.

Confidentiality

Patient confidentiality must be always maintained.

Patient's Right to Privacy

Respect for a patient's right to privacy is paramount.

1. Remove only enough clothing to determine the presence or absence of a condition or injury.
2. When practical, attempt to have another provider present when clothing is removed to conduct a patient assessment.
3. Privacy may be achieved by having additional members shield the patient with blankets or sheets.

Vulnerable Populations

1. EMS shall notify Law Enforcement and/or Child Protective Services (CPS) to report any suspicion of child abuse or neglect, child death or near death.
    a. Children's Administration Intake (CPS), 24 hours: 800-562-5624.

2. EMS shall notify Law Enforcement and/or Adult Protective Services to report any suspicion of geriatric abuse or neglect.
    a. If the person you suspect of being abused or neglected is living in a licensed facility (e.g. nursing home, boarding home, or adult family home) contact: WA State Complaint Resolution Unit toll-free hotline, 24 hours: 800-562-6078.
    b. If the person you suspect of being abused or neglected is living in their own home or somewhere other than a licensed residential care facility, contact:
        1) Aging & Disability Resource Center (ADRC) – Aging & Disability Resource Centers (ADRCs) | DSHS (wa.gov) * MPD can insert local contact information.
        2) Adult Protective Services Intake (APS) – The Department of Social and Health Services' Adult Protective Services has a new centralized intake phone number to receive all reports of suspected abuse, neglect, self-neglect, abandonment, and financial exploitation of vulnerable adults. The phone number is 877-734-6277.
3. EMS should report any suspicion of adult domestic violence to Law Enforcement and/or Receiving Facility staff.
4. EMS may also discreetly inform the victim of the local domestic violence resources: MPD can insert local contact information.

Domestic Violence and Human Trafficking

1. Attempt to identify victims of domestic violence or human trafficking.
2. All patient questioning should take place in a confidential place and not in front of children or a partner.
3. Communicate this information to the Receiving Facility.
4. Transport the patient whenever possible.

5. Discreetly inform patients that the situation is potentially lethal and remind them battering is a crime and they can be protected by law.
6. Do not use the patient's phone.
7. Privately furnish patient with the domestic violence resources phone number even if he/she doesn't ask for it. National Human Trafficking Hotline: 1-888-373-7888 or local resources as available
8. Assess the patient's safety. If a patient refuses care and there is risk of continued harm, notify law enforcement.

Patients with Access and Functional Needs

1. EMS providers must meet and maintain the additional support required for patients with functional needs during the delivery of prehospital care. This includes, but is not limited to:
    a. Identifying individuals with physical, sensory, mental health, and cognitive and/or intellectual disabilities affecting their ability to function independently without assistance.
    b. Identifying the functional need by means of information from the patient, the patient's family, caregiver, bystanders, medic-alert bracelets or documents, or the patient's assistive devices.
2. Medical care should not intentionally be reduced or abbreviated, however the way the care is provided may need to be modified to accommodate the specific needs of the patient.
3. Assistive devices that facilitate the activities of life/functions of daily living for the patient should accompany the patient, to include service animals. Patients may have specific requirements on how assistance adjuncts are transported.
4. When possible, EMS providers should discuss methods for transporting assistive devices with the patient.

Mass Casualty Incidents (MCI)

Local processes and procedure should be identified by MPD.

Crime Scene Preservation

1. EMS personnel will communicate with Law Enforcement (LE) to ensure that the scene is safe.
2. Forensic guidelines emphasizing crime scene preservation are important; however, the most important role of EMS providers is to ensure the preservation of life, therefore access to patient assessment and care must not be delayed.
    a. EMS is in charge of the patient and should be aware of signs of possible abuse and neglect.
    b. LE is in charge of the crime scene.
3. While an emotional cause of death, such as apparent Sudden Unexplained Infant Death (SUID), may cause a scene to be difficult, this is not an acceptable reason to move or transport a deceased person. If the patient is obviously deceased, EMS providers should not disturb or move the body unless there is a clear potential the body will be lost or further damaged. If the body is moved, EMS shall document the reason why and what actions were taken.
4. At the request of the Medical Examiner or LE, EMS will assist with the completion of the Sudden Unexplained Infant Death Investigation (SUIDI) form when an infant has died. EMS will make sure LE has been notified and will provide contact information to LE.
5. EMS limits access and egress to a single path/route. This may be identified by LE; or if EMS arrives first, EMS will notify LE of their route.
6. EMS limits the number of personnel entering a potential crime scene to only those essential to care for the patient safely and efficiently. Upon request from LE or Medical Examiner, EMS will provide a list of responders' names, when they arrived/departed, and any pertinent documentation.

7. EMS providers should not disturb the scene unless absolutely necessary to perform critical patient care. EMS providers should not move anything; they should leave items alone unless absolutely necessary to perform lifesaving patient care.
8. EMS providers will not cut through bullet/stab holes on patient's clothing or otherwise disturb binding knots, etc. in an effort to preserve critical evidence.
9. EMS providers shall not use phones, sinks, toilets, garbage containers, or anything at a crime scene. They will only utilize equipment that they brought to the scene and remove the equipment when absolutely necessary.
10. EMS shall not take anything from a crime scene that can be left; they will give clothes, blankets, and sheets to LE.
11. When practical, EMS providers will document everything they observed (lighting, weather, temperature, odors, bystanders' behavior, position of patient), moved, and performed as patient care. Include statements made by the patient, being as specific and exact as possible. EMS should consider the following:
    a. All statements and demeanor (emotional state) of speakers.
    b. Explain that their job is to provide medical care; ask for caretaker's explanation with specific details; record observations of both words and actions.
    c. Consider all personal observations of the environment as soon as possible. Focus all their senses on the surroundings. Describe the scene accurately and completely. Determine possibility of mechanism of injury.
    d. Record the child's developmental level. Compare reasonableness of history given regarding mechanism of injury to child's age and developmental abilities and scene observations.
12. EMS will document any unusual observations in a supplemental report.
13. If no LE is present, EMS will document all adults and children present including who has left, noting what they did, said, and their appearance.

Non-Patients

Non-Patients are asymptomatic persons without a significant mechanism of injury, no obvious injury or illness, without a desire for care, and are not medically evaluated.

On-scene Patient Care

The medical person with the highest level of EMS certification shall direct patient care. The incident commander may decide if there is any question as to who should direct patient care.

Release of Responsibility/Against Medical Advice

1. Release of Responsibility (ROR) may be considered by EMS personnel when, after evaluation of the patient, the patient's medical needs are considered to be of such a minor nature that 9-1-1 activation was unnecessary and/or signs and symptoms do not meet treatment/transport criteria as outlined in local County Patient Care Protocols. No adult online medical control contact is necessary by the treating EMS personnel and a patient may be released under ROR if the following conditions are met:
    a. No substantial medical intervention has been rendered by EMS.
    b. There is no potential risk for loss of life or limb.
    c. It is reasonable not to expect a recurrence of the condition within the next 6 hours.
    d. There is an individual with adequate decision-making capacity who can observe the patient for a reasonable amount of time.

e. The adult patient or his/her caregiver meets all elements of the County Decision-Making Capacity Checklist and agrees to sign the agency's ROR form.
f. Contact online medical as needed for questions, consider pediatric online medical control if in local area.
g. If the patient does not meet the above criteria, ROR of the patient can only be done at the discretion of the online medical control.

2. A patient with diminished decision-making capacity does not meet all the elements of the County Decision-Making Capacity Checklist. Non-transport of the patient with diminished decision-making capacity can only be done at the direction of the online medical control.

3. Documentation of every ROR and AMA shall be accomplished on a Patient Care Report (PCR). EMS personnel shall document the following:
   a. Reason(s) for the 9-1-1 call (description of events).
   b. Patient's medical history and current assessment findings.
   c. Quotes made by the patient, to include reasons for ROR or AMA.
   d. Signs of injury/illness (why treatment/transport is recommended).
   e. When applicable, the name of the online medical control RN report was given to, and name of physician and whether they spoke with the patient or not.
   f. Time of online medical control contact and any orders given.
   g. Disposition of the patient (e.g. left at scene and with whom; taken to another location, by what mode of transportation and by whom).
   h. Name and agency of Law Enforcement officer when appropriate.

Decision-Making Capacity Checklist

YES = Patient meets all elements of the listed criteria (all must be marked).

NO = Patient does not meet all elements of the listed criteria (if any are marked NO, the patient is considered to have diminished decision-making capacity).

Patient/caregiver is:		YES	NO
1.	18 years old or believed to be an emancipated minor.		
2.	Oriented (GCS 15) and understands the situation and consequences; and is able to weigh risk/benefit options; and rationally/logically processes information before making a decision; and communicates their desires.		
3.	Neither physically, nor cognitively impaired by the use of alcohol and/or drug(s).		
4.	Neither suspected of brain trauma, nor hypoxia as evidenced by pulse oximetry > 85%, when pulse oximetry is available.		
5.	Absent of dementia, mental illness, or other medical disease that impairs the patient's decision-making.		
6.	Absent of attempted suicide, verbalized suicidal intent, or other factors suggesting suicidal intent.		

Refusals

To refuse care and/or transport against medical advice (AMA), a patient (or a person authorized to speak on their behalf) must be oriented and understand the situation and consequences; and be able to weigh risk/benefit options; and rationally/logically process information before making a decision; and communicate their desires.

This statement should be read by the patient who is making AMA choices or have it read to them by the EMS professional caring for them:

"This form has been given to you because you do not want treatment and/or transport by EMS. Your health and safety concern us, even though you have decided not to accept our advice. In doing so, please remember the following:

1. Your condition may not seem as bad to you as it may actually be. Without treatment your condition or problem could become worse. If you are planning to get medical treatment, a decision to refuse treatment or transport by EMS may result in a delay of care, which could make your condition or problem worse.
2. The evaluation and/or treatment offered to you by EMS cannot replace treatment by a doctor. You should obtain medical evaluation and/or treatment by going to any hospital Emergency Department in this area, or by calling your doctor if you have one.
3. If you change your mind or your condition becomes worse, do not hesitate to call 9-1-1. Don't wait. When medical treatment is needed, call 9-1-1; it is better to get help immediately."

Hazardous Materials

1. If a scene is potentially contaminated with hazardous material, do not enter the scene until it can be done safely, and the scene is secured by a hazardous materials team.
2. If a concern remains regarding patient or provider exposure, a hazardous materials team shall be notified immediately.

Documentation

1. A Patient Care Record (PCR) will be completed for each incident/patient encounter, in accordance with current EMS Regulations. A patient is any individual that, upon contact with an EMS system, has any of the following:
   a) A complaint or mechanism suggestive of potential illness or injury
   b) Obvious evidence of illness or injury
   c) An individual or informed 2nd/3rd party caller requests evaluation for potential illness or injury
   d) Lift assists or "home assists" response based on local MPD guidance.
2. The MPD approved format should be used on all PCRs (SOAP, CHART, other)
3. The verbal or abbreviated written run report provided at the time of transfer of care does not take the place of or negate the requirement for the provision of a complete electronic or written medical record of the care provided by EMS personnel.
4. Complete and accurate documentation is essential for continuity of patient care.
5. Strict adherence to the Health Insurance Portability and Accountability Act (HIPAA) and protection of a patient's confidential Protected Health Information (PHI) shall guide all documentation and communication as it relates to patient care.
6. If a complete patient report cannot be left at the time of patient delivery, then at the time the patient is delivered, the certified EMS provider in charge of patient care must provide information to the Receiving Facility staff in accordance with WAC 246-976-330 requirements. The minimum of a brief written, or electronic patient report must include agency name, EMS personnel names, date/time of the emergency, time of onset, vital signs including serial vital signs where indicated, patient assessment findings, procedures and therapies provided by EMS, any changes in patient condition while in the care of EMS personnel, and mechanism of injury or type of illness. Individual EMS agencies may require additional data points to be recorded. All ALS and BLS prehospital providers that do not accompany the patient to the hospital shall provide a report of their patient care to the transporting agency.
7. Within 24 hours of patient delivery, the certified EMS provider in charge of patient care must provide the final complete written or electronic patient care report to the Receiving Facility staff in accordance with WAC 246-976-330 and WAC 246-976-430 requirements. The minimum information must include: 12 agency name, EMS personnel names and certification levels, date/time of the emergency, applicable components of system response time, age of the patient, vital signs including serial vital signs where indicated, patient assessment findings, procedures and therapies provided by EMS to include times each procedure or therapy was provided, patient response to procedures and therapies while in the care of EMS personnel, mechanism of injury or type of illness, and patient destination. The minimum information for the Trauma Registry must also include incident information, patient information, times, vital signs, and treatment. Individual EMS agencies may require additional data points to be recorded.

Documentation standards for unsecured scenes and uncooperative patients.

In addition to standard documentation that is traditionally completed by EMS providers to document the care and decisions made by EMS personnel, EMS should also complete documentation that supports assessment and determination of scene safety, physical or pharmacological management, medical care, and transport or no transport decisions made by the EMS personnel for these types of calls.

Documentation should include:

1. Descriptive overview of physical characteristics of the scene.
2. Description of the danger or safety elements involved.
3. List and describe measures used to attempt to engage the patient.

4. List and describe measures used to attempt to create safety.
5. Describe why safety could not be established.
6. Document exposure to violence or threats of violence in personnel module if available on PCR platform.
7. Document medical care.
8. Document other agencies that interacted or attempted to interact with the person.
9. Document information acquired about the situation that resulted in EMS being called.

Patient Safety Considerations

1. Routine use of lights and sirens is not warranted.
2. Even when lights and sirens are in use, always limit speeds to a level that is safe for the emergency vehicle being driven and road conditions on which it is being operated.
3. Be aware of legal issues and patient rights as they pertain to and impact patient care (e.g., patients with functional needs or children with special healthcare needs).
4. Be aware of potential need to adjust management based on patient age and comorbidities, including medication dosages.
5. The maximum weight-based dose of medication administered to a pediatric patient should not exceed the maximum adult dose except where specifically stated in a patient care guideline.
6. Medical direction should be contacted when mandated or as needed.
7. Consider air medical transport, if available, for patients with time-critical conditions where ground transport time exceeds 30 minutes.

Interfacility Transports

1. Prehospital providers shall not function beyond their level of certification. Patients that require care beyond this level shall be accompanied by appropriately/specially trained, certified, or licensed personnel.
2. Communication with the Receiving Facility before and during interfacility transport is encouraged to facilitate a smooth transfer with the receiving hospital.
3. Communication with the Receiving Facility/ online medical control shall be made if a patient deteriorates enroute.

Communications

Communications with receiving facility should include the minimum:

1. Attendant (Level of certification) / vehicle identification
2. Nature of call: INFORMATION ONLY or REQUEST FOR PHYSICIAN ORDERS
3. Patient information: i.e., number, age, sex
4. Patient condition: i.e., stable, full arrest
5. History
    a. Basic problem or chief complaint
    b. Pertinent associated symptoms
    c. Time since onset
    d. Past history, if pertinent
6. Objective findings
    a. General status of patient
    b. Level of responsiveness
    c. Vital signs
    d. Pertinent localized findings
    e. Working impression of patients' problem

7. Treatment
    a. In progress or completed
    b. Requests for drugs or procedures
8. Estimated Time of Arrival, including any special circumstances that may cause a delay in transport.
9. Full or Modified Trauma activation, CVA Activation, STEMI activation, Sepsis Activation, if indicated.

Transportation Considerations

General

1. Patients sustaining traumatic injuries shall be transported in accordance with the Prehospital Trauma Triage Destination Procedure.
2. Patients sustaining burn injuries shall be transported in accordance with the Prehospital Trauma Triage Destination Procedure.
3. Pediatric patients (<18 y/o for transport purposes ONLY) shall be transported in accordance with local county guidance and resources.
4. Patients with evidence of an acute cerebrovascular accident (CVA) shall be transported in accordance with the Prehospital Stroke Triage Destination Procedure.
5. All patients with acute STEMI (EKG verified) should be transported in accordance with the Prehospital Cardiac Triage Destination Procedure.
6. Stable patients should be transported to the hospital of their choice if request is reasonable as determined by EMS provider/system status and resources.
    a. If the patient does not have a preference, the patient should be transported to the closest appropriate facility.
7. If a hospital declares an Internal Disaster, that facility should be bypassed for EMS transports.
8. Unstable patients will be taken to the nearest appropriate facility for stabilization regardless of divert status.
9. If the patient is deemed in need of transport to a medical facility for further medical evaluation and treatment, and declines prehospital care and/or transport, the following procedures shall be followed:
    a. Talk with the patient: Provide information to the patient of the need for treatment. Reinforce the gravity of the situation.
    b. Talk with family/friends: Establish their relationship with the patient. They may be able to convince the patient to accept care.
10. If the patient agrees to treatment/transport at this time, initiate appropriate care and transport.
11. If the patient continues to decline treatment/transport and is determined to be mentally competent, emancipated minor or legal adult, contact Medical Control as needed for direction.
12. Ensure complete documentation on the PCR to include a minimum of mental status exam and complete vital signs.
13. Complete waiver and have patient sign if they continue to decline treatment/transport.
14. If patient refuses to sign, document refusal on PCR and waiver.
15. If possible, have patient's refusal witnessed by a third-party (other EMS provider, friend, law enforcement, etc.).

Recognized Receiving Facilities and Capabilities

Prior to local implementation, Medical Program Directors will need to identify local receiving facilities, to include location and contact information. Receiving facilities may include Emergency Departments, Hospitals, and Behavioral Health facilities. Consideration for pediatric specific locations based on local availability and MPD guidance.

Transfer of Care / Rendezvous

1. Providers will relay assessment findings and treatment provided to the individual(s) assuming responsibility for the patient(s).
2. The content and quality of information provided during the transfer of patient care to another party is critical for seamless patient care and maintenance of patient safety.
3. A completed electronic or written medical record should be provided to the next caregiver at the time of transfer of care.

Universal Patient Care Protocol

Universal care should be followed based on scope of practice for level of certification. Numbered items should be done sequentially, and bulleted items could be done in any order.

A. **Response**

1. Review the dispatch information and select appropriate response.

B. Assess scene safety.

1. Evaluate hazards to EMS personnel, patients, bystanders.
2. Safely remove patient from hazards prior to beginning medical care.
3. Determine number of patients.
4. Determine the mechanism of injury or potential source of illness.
5. Request additional resources if needed and weigh the benefits of waiting for additional resources against rapid transport to definitive care.
6. Consider declaration of mass casualty incident if needed.

C. Use appropriate personal protective equipment (PPE)

- Consider suspected or confirmed hazards on scene.
- Consider suspected or confirmed highly contagious infectious disease (e.g., contact [bodily fluids], droplet, airborne).
- Wear high-visibility, retro-reflective apparel when deemed appropriate (e.g., operations at night or in darkness, on or near roadways).

D. Patient Approach

- Determine the Mechanism of Injury (MOI) / Nature of Illness (NOI).

E. Primary survey

1. Determine level of responsiveness (AVPU) and breathing. If unresponsive and apneic or abnormal or gasping breathing, check for a pulse for no more than 10 seconds. If no pulse, begin appropriate arrest procedures. Otherwise, follow the following ABCDE assessment.
2. Correct life -threatening problems as identified.
3. Manual c-spine stabilization as needed.

Recognition of Signs and Symptoms / Assessment

Airway (assess for patency and open the airway as indicated)

1. Open Airway
    a. Head tilt – chin lift if no suspicion of cervical spine injury.
    b. Jaw thrust if evidence of potential cervical spine injury.
2. Suction as necessary.

3. If necessary, insert the airway adjunct.
    a. Oropharyngeal airway if gag reflex is absent.
    b. Nasopharyngeal airway if gag reflex is present.
    c. Supraglottic airway device (EMT with SGA Endorsement).
    d. For patients with laryngectomies or tracheostomies, remove all objects or clothing that may obstruct the opening of these devices, maintain the flow of prescribed oxygen, and reposition the head and/or neck, if no cervical spine injury is suspected.
4. Give nothing by mouth if the patient is unable to swallow or maintain their own airway.

Breathing

1. Evaluate rate, breath sounds, accessory muscle use, retractions, patient positioning, oxygen saturation.
2. Apnea (not breathing) or inadequate:
    a. If patient's ventilations are not adequate, provide assistance with 100% oxygen using Bag-Valve-Mask (BVM).
    b. Consider using adjuncts.
3. Administer Oxygen as appropriate.
    1) Utilize pulse oximetry, if available. Oxygen treatment should be titrated to maintain a SPO2 > 94%.
    2) Patients with a history of prescribed home oxygen for chronic conditions should receive their prescribed home dosage of oxygen or an amount sufficient to provide for a SPO2 > 92%.
4. Position of comfort or recovery position if no trauma suspected.
5. Consider CPAP for the patient with severe respiratory distress or respiratory failure associated with CHF, pulmonary edema, asthma, or COPD and who:
    a. Is awake and able to follow directions.
    b. Is > 8 years old and able to fit in a CPAP mask.
    c. Has the ability to maintain an open airway without assistance.
    d. Exhibits two or more of the following:
        1) Respiratory rate > 25 per minute.
        2) SPO2 < 90% or EtCO2> 50.
        3) Using accessory muscles during respirations.
        4) Unable to speak in full sentences.
    e. Contraindications include:
        1) Apnea or respirations < 8 per minute.
        2) Pneumothorax or significant chest trauma (excluding pulmonary contusion).
        3) Tracheostomy.
        4) Vomiting.
        5) Upper GI bleeding.
    f. CPAP therapy needs to be continuous and should not be removed unless patient:
        1) Cannot tolerate the mask.
        2) Is unable to maintain their own airway.
        3) Experiences respiratory arrest.
        4) Begins to vomit.
        5) Needs medication administered orally.
    g. To ensure continuous treatment, notify Receiving Facility enroute of CPAP use so necessary equipment is available at time of arrival.

Circulation

1. Control any major external bleeding.
2. Assess pulse.
3. If pulse is absent, begin CPR and attach AED.
   a. Reminder LVAD patients have no pulse.
4. Assess the rate and quality of carotid and radial pulses.
5. Evaluate perfusion by assessing skin color, temperature, and capillary refill.
6. If acute coronary syndrome suspected – go to Prehospital Cardiac Triage Destination Procedure.

Disability / Neurologic exam

1. Evaluate patient responsiveness: AVPU (Alert, Verbal, Painful, Unresponsive).
2. Evaluate gross motor and sensory function in all extremities.
3. If acute stroke suspected – go to Prehospital Stroke Triage Destination Procedure.
4. Perform Glascow Coma Scale (GCS) on all head injury patients.
5. Check blood glucose in patients with altered mental status (AMS) or suspected stroke.
   a. If blood glucose is less than 60 mg/dL – treat per Diabetic Emergency Protocol.

Expose patient for exam as appropriate to complaint

1. To assess patient's injuries, remove clothing as necessary, considering condition and environment. Be considerate of patient modesty and keep patient warm.
2. Assess for urgency of transport and/or need for intercept with higher level of field care (AEMT or PM).
3. History and Physical Exam (secondary assessment).
   a. The performance of the secondary survey should not delay transport in critical patients. Secondary surveys should be tailored to patient presentation and chief complaint.
   b. Considerations for secondary survey assessment:
      1) Head
      2) Pupils
      3) Ears
      4) Naso-oropharynx
      5) Skull and scalp
         a) Neck
         b) JVD
         c) Tracheal Deviation
         d) Spinal tenderness
      6) Chest
         a) Chest wall tenderness, deformity, crepitus, and excursion
         b) Respiratory pattern
         c) Paradoxical Motion / retractions
         d) Breath Sounds
      7) Abdomen / Back
         a) Tenderness, Bruising, Rigidity, Distention
         b) Abdominal distension, rebound, or guarding
         c) Spinal tenderness, crepitus, or step-offs
      8) Pelvis / GU
      9) Pain on Motion Pelvic stability or tenderness
      10) Blood, Urine, Feces
      11) Extremities
         a) Pulse / Motor / Sensory
         b) Edema

c) Deformity/crepitus
d) Evaluate for medical equipment
e) (E.g., pacemaker/defibrillator, left ventricular assist device (LVAD), insulin pump, dialysis fistula)

12) Obtain history of episode (OPQRST), if able based on patient condition.
a) Onset of symptoms
b) Provocation: location; any exacerbating or alleviating factors
c) Quality of pain
d) Radiation of pain
e) Severity of symptoms: pain scale
f) Time of onset and circumstances around onset

13) Obtain Baseline Vital Signs, if able based on patient condition.

14) Obtain SAMPLE History, if able based on patient condition.
a) Symptoms
b) Allergies: medication, environmental, and foods
c) Medications: prescription and over the counter; bring containers to ED if possible
d) Past medical
e) oral intake
f) Events leading up to the 911 call.
g) history
I. Look for medical alert tags, medication bottles, portable medical records, advance directives, POLST.
II. Look for medical devices/implants (some common ones may be dialysis shunt, insulin pump, pacemaker, central venous access port, gastric tubes, urinary catheter).
III. For females of childbearing age, inquire of potential or recent pregnancy

Treatment and Interventions

1. Follow specific treatment section based on clinical presentation.
2. Administer Oxygen as appropriate with a target of achieving 94–98% saturation and select the appropriate method of oxygen delivery to mitigate or treat hypercarbia associated with hypoventilation.
3. Place appropriate monitoring equipment as dictated by assessment; these may include:
    a. Continuous pulse oximetry
    b. Cardiac rhythm monitoring
    c. Waveform capnography or digital capnometry
    d. Carbon monoxide assessment
4. Establish vascular access if indicated in the protocol for patient condition.
5. Monitor the pain scale if appropriate.
6. Reassess patient.
7. Pain Management: treat per Pain Management protocol.
8. Perform detailed and ongoing assessments as dictated by patient condition.
    a. Reassess unstable patients frequently (recommended every 5 minutes).
    b. Reassess stable patients at a minimum of every 15 minutes or to include a minimum of two sets of vitals.

Additional Information / Key considerations

- Geriatrics: although the defined age varies by state, the geriatric population is generally defined as those patients who are 65 years old or more.

    - In these patients, as well as all adult patients, reduced medication dosages may apply to patients with renal disease (i.e., on dialysis or a diagnosis of chronic renal insufficiency) or hepatic disease (i.e., severe cirrhosis or end-stage liver disease).
- If a patient is unable to provide medical history, check for medical alert bracelets and necklaces, or other means of documenting medical history which can provide critical medical information and treatment.

Pediatric General Assessment Considerations

A child's psychosocial and communication skills are constantly changing. Therefore, a child may be unable to convey key information to assist the emergency personnel in their assessment. These differences, as well as numerous others, are why emergency personnel must develop assessment skills that address the unique aspects and needs of the child. A systematic and comprehensive approach to the initial assessment of the child is important.

- Pediatrics: use a weight-based assessment tool (length-based tape or other system) to estimate patient weight and guide medication therapy and adjunct choice.
- Although the defined age varies by state, the pediatric population is generally defined by those patients who weigh up to 50 kg or up to 14 years of age, whichever comes first.
- Consider using the pediatric assessment triangle (appearance, work of breathing, circulation) when first approaching a child to help with assessment.

General Approach to a Stable Pediatric Patient

Assessment and interventions must be tailored to each child in terms of age, size, development, and metabolic status. The following information may be useful in communicating with a pediatric patient:

- Make as many observations as possible before touching the child.
- Smile if appropriate to the situation.
- Keep your voice at an even quiet tone, don't yell.
- Speak slowly; use simple age-appropriate terms.
- Kneel to the level of the child if possible.
- Use toys or penlights as distractors; make game of assessment.
- Keep children with their caregiver(s); encourage assessment while caregiver is holding the child when appropriate.
- Whenever appropriate, transport the child with the caregiver.
- Initial inspections while walking up to the child, observe/inspect the following:
- General appearance
- Age-appropriate behavior and level of consciousness
- Obvious respiratory distress or extreme pain
- Position of patient
- Unusual/significant odor
- Muscle tone: good or limp
- Movement: spontaneous, purposeful, symmetrical
- Color: pink, pale, flushed, cyanotic, mottled

Medical Section

Abdominal / Back / Flank (Non-Traumatic Pain)

History	Signs/Symptoms	Differential
Bold – Consider Paramedic (ALS) evaluation and/or transport, if available.		
SAMPLE /OPQRST • Allergies • Medications • Past medical / surgical history • Last meal eaten. • Last bowel movement / emesis • Onset • Palliation / Provocation • Quality (crampy, constant, sharp, dull, etc.) • Region / Radiation / Referred • Severity (1-10) • Time (duration / repetition) • Menstrual history (pregnancy)	• **Abnormal vital signs** • **Chest pain** • Constipation • Diarrhea • Dysuria • Fever • Nausea • Pain (location / migration) • **Pregnancy** • **Pulsating mass** • **Shortness of breath** • Tenderness • **Vaginal bleeding** • Vomiting	• AAA • Appendicitis • Bowel obstruction • Cardiac (MI) • Cholecystitis • Diverticulitis • Ectopic pregnancy • GI bleed • Kidney stones / infections • Pancreatitis • Pregnancy (ectopic?)

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- Place patient in a position of comfort.
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol, consider rapid transport.
- Do not allow the patient to eat or drink.
- Treat nausea/vomiting – per Nausea/Vomiting protocol.

EMT

- Consider ECG / 12 lead, if available.
- Treat pain per Pain Management protocol.

EMT with IV endorsement / AEMT

- Consider Vascular Access.

Pediatric Considerations:

- Consider non-accidental trauma.
- Closely monitor vital signs; blood pressure may drop quickly. Treat per Shock/Hypotension protocol, if indicated.
- Lowest normal pediatric systolic blood pressure by age:
  - < one month: > 60 mmHg.
  - One month to 1 year: > 70 mmHg.
  - > 1 year: 70 + 2 x age in years.

Allergic Reaction / Anaphylaxis

History	Signs/Symptoms	Differential
Bold – Consider Paramedic (ALS) evaluation and/or transport, if available.		
SAMPLE /OPQRST • History of Anaphylaxis • Prescribed or use of EpiPen. • Known allergy/exposure. (Insect sting or bite) • New clothing, soap, detergent	• **Altered Mental Status** • **Angioedema, Hoarseness, difficulty swallowing** • Anxiety • Diaphoresis • Hives • **Hypotension /Shock** • Itching / Rash • Nausea/vomiting/diarrhea • Pale • **Shortness of breath, wheezing, stridor, hypoxia**	• Asthma or COPD • Aspiration/airway obstruction • Angioedema (drug induced: lisinopril) • Anxiety

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- Assess for signs and symptoms of allergic reaction.
- Adult / Pediatric - For severe allergic reaction involving ANGIOEDEMA/STRIDOR and/or Shock, administer Epinephrine (Epi) Auto-Injector per manufacturers guidelines.
- W* For allergic reaction WITH WHEEZING, assist the patients in administering their own MDI.

EMT

- Adult
  - W* Epi 1mg/1mL - 0.3 mg IM outer thigh. OR Epi Autoinjector per manufacturers guidelines. May repeat once, after 5 mins as needed.
  - W* Diphenhydramine 50 mg PO or Cetirizine 10 mg PO.
  - W* For allergic reaction WITH WHEEZING, administer Albuterol (Proventil) 2.5 mg in 3.0 mL (0.083% solution) via nebulizer or MDI with spacer if available; and or
  - W* Atrovent 0.5 mg in 2.5 mL via nebulizer, or
  - W* DuoNeb - Albuterol / Atrovent combination or MDI with spacer if available.
- Pediatrics
  - W* Epi 0.15 mg 1mg/1mL IM or 0.01 mg/kg of 1mg/1mL IM (max single dose 0.3mg)
  - W* Albuterol Patient weight <15kg 2.5-5mg. >15kg 5-10mg via Neb for wheezes.
  - W* Diphenhydramine 1mg/kg PO up to 25 mg or cetirizine 2.5 mg PO 6 months to 5 years old, 6 yrs. to 12 yrs. cetirizine 5 mg PO, 13 to 18 years cetirizine 10 mg PO.

EMT with IV

- Consider Vascular Access.
- Adult- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.
- Adult - If vital signs and patient's condition indicate hypoperfusion, administer initial fluid challenge of 500 mL LR/NS. Administer additional challenges as needed, not to exceed 2,000 mL.
- Pediatric- Below minimum acceptable BP for age, treat per Shock/Hypotension protocol.
- Pediatric - fluid bolus is 20 mL/kg LR/NS. May repeat as clinically indicated to a maximum of 60 mL/kg to restore adequate perfusion.

AEMT

- Diphenhydramine 1mg/kg IV (IM if unable to start IV)/PO Adult max 50mg Pediatric max 50 mg.
- Epinephrine 0.3 mg 1mg/1 mL IM or 0.01mg/kg of 1mg/1 mL IM max 0.3mg

Altered Mental Status

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available		
SAMPLE /OPQRST • Hx of Diabetes (self/family) • Hx cardiac/ stroke/seizure • Hx of Trauma • Previous / Current illicit drug use • Toxic ingestion • Recent illness • Syncope	• **Abnormal Vital signs persist** • Bizarre behavior (hallucinations, delusions) • Change in baseline mental status • **Decreased mental status** • Hypoglycemia (cool, diaphoretic, skin, seizure) • **Hyperglycemia** (warm, dry skin, Kussmaul respirations) • **Shortness of breath** • **Syncope**	AEIOU-TIPS • A- Alcohol/ Acidosis • E- Endocrine/ Epilepsy/ Electrolytes/ Encephalopathy • I- Insulin • O- Opiates/ Overdose/ Oxygen • U – Uremia • T- Trauma • I- Infection • P- Poisoning/ Psychosis/ Pharmacology • S- Stroke/ Seizure/ Syncope

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- W* Check blood glucose level
- Treat underlying cause if known.
  - If Trauma suspected, treat per General Trauma Management.
  - If Cardiac suspected, treat per Chest Pain/ACS/MI/STEMI protocol.
  - If Sepsis suspected, treat per Sepsis protocol.
  - If Stroke suspected, treat per Stroke/Suspected Stroke/TIA/Neurological protocol.
  - If Diabetic suspected, treat per Diabetic Emergency protocol.
  - If Overdose suspected, treat per Overdose/Toxicology/Poisoning protocol.

EMT

- Consider ECG/12 lead, if available
- W* Consider End Tidal Co2, if available

EMT IV endorsement / AEMT

- Consider Vascular Access.
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.

General considerations:

- Be aware of AMS as presenting sign of an environmental toxin or Haz-Mat exposure and protect personal safety.
- It is safer to assume hypoglycemia than hyperglycemia if doubt exists.
- Do not let suspected alcohol or drug use confuse the clinical picture. Intoxication frequently masks underlying conditions such as hypoglycemia and or head trauma.
- Low glucose (< 60), normal glucose (60 - 120), high glucose (> 250).
- Consider Restraints if necessary for patient's and/or personnel's protection per the Physical Restraint procedure.
- Repeat blood glucose should be considered for any change in mental status.

Behavioral Medical Emergencies

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available		
SAMPLE /OPQRST • Diabetes • Medic alert tag • Injury to self or threats to others • Psychiatric illness/medications • History of suicidal / homicidal thoughts • Situational crisis • Substance abuse/OD	• Affect change, hallucinations • Anxiety • Agitation • Combative violent • **Confusion** • Delusional thoughts, bizarre behavior • Expression of suicidal / homicidal thoughts	• Alcohol Intoxication • Alzheimer's / Dementia • Bipolar, Schizophrenia • DKA or Infection • Electrolyte Disturbances • Excited Delirium • Head Injury • Hypertensive Emergency • Medication effect / overdose • Sepsis / Meningitis • Seizure/Postictal • See Altered Mental Status • Toxin / Substance abuse • Withdrawal syndromes

Patient Management

EMR

- Determine scene safety. If not safe, leave the scene and stage.
- Initiate Universal Patient Care Protocol.
- W* Check blood glucose level
- Treat underlying cause if known.

EMT

- Consider ECG/12 lead, if available
- W* Consider End Tidal Co2, if available

EMT with IV / AEMT

- Consider Vascular Access
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.

General Considerations:

- Be sure to consider all possible medical/trauma causes for behavior.
- Do not overlook the possibility of associated domestic violence or child abuse.
- Consider Uncooperative Patients / Unsecured Scenes procedure

Bites / Envenomation

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available **Contact Poison Control at 1-800-709-0911 (knowledgeable in animal bites/stings) as needed** **Rapid Transport with early Alert to Receiving Facility (See Considerations)**		
SAMPLE /OPQRST • Type of bite/sting • Time/location of bite/sting • Known allergy/anaphylaxis • Immunocompromised Patient • Tetanus and Rabies Risk • Domestic vs Wild • Previous reaction to bite/sting	• Allergic Reaction, hives, itching • Blood oozing from the bite wound • **Hypotension or Shock** • Evidence of infection • Pain, soft tissue swelling, redness • Rash, skin break, wound • **Shortness of breath, wheezing** • Snake Bite: Numbness/Paresthesia	• Animal bite • Human bite • Infection risk or cellulitis • Insect sting/bite (bee, wasp, ant, tick) • Rabies risk • Snake bite (poisonous) • Spider bite (poisonous) • Tetanus risk

Patient Management

EMR

- Initiate General Universal Patient Care protocol.
- For venomous snake bite, keep site at heart level or below, apply immobilization to the entire length of the involved extremity.
- Administer epinephrine for anaphylaxis; go to Allergic Reaction/Anaphylaxis protocol, Avoid Epi injection in affected extremity, when possible.

EMT

- W* Administer albuterol, Atrovent or DuoNeb for bronchospasm; go to Respiratory Distress/ Reactive Airway Disease protocol.
- Consider ECG/12 lead, if available

EMT with SGA endorsement

- If airway is not manageable by BLS methods, consider use of an SGA as indicated by patient condition.
- W* Consider End Tidal Co2, if available

EMT with IV endorsement / AEMT

- Consider Vascular Access.
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.

General Considerations

- Consider rapid transport to hospital that can provide antivenom, contract medical control for additional guidance.
- Provide early alert.

Cardiac Arrest – Adult

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available		
SAMPLE /OPQRST • Events leading up to arrest • Estimated downtime / bystander CPR • POLST, DNI/R or Living Will • *Hx: CP/SOB* (Thrombosis: Pulmonary/MI or Tamponade) • *Hx: HTN* (Thrombosis: Pulmonary/MI) • *Hx: Illicit Drug Use / Accidental OD* (Tablets) • *Hx: Dialysis / Renal Failure* (Hyperkalemia)	• Absent heart sounds on auscultation • **Apnea/Agonal Respirations** • **Pulseless** • **Unresponsive**	• Rule out Hs and Ts ○ Hypovolemia ○ Hypoxia ○ Hydrogen Ions (Acidosis) ○ Hyper/Hypokalemia ○ Hyper/hypoglycemia ○ Hypothermia ○ Toxins (overdose) ○ Tamponade, cardiac ○ Tension Pneumothorax, Thrombosis • AMS • Coma • Myxedema coma (Hypothyroidism)

Patient Management

EMR/EMT

- Initiate Universal Patient Care protocol.
- Establish unresponsiveness, identify absence of pulse and respiration.
- High-quality chest compressions/CPR with minimal interruption
  - 2min cycles w/ <10sec pause. Rotate compressor q2min, have person assigned to monitor CPR quality (rate, depth, no leaning)
- Apply AED/EKG Leads/Defib Pads.
- Analyze and follow AED/Monitor instructions.

EMT with SGA endorsement

- SGA with 100% O2.
- W* Consider End Tidal Co2, if available

EMT with IV endorsement

- Consider Vascular Access.
- If cardiac arrest is thought to be caused by hypovolemic shock, give volume resuscitation 20mL/kg of LR/NS.

AEMT

- Adult: Asystole / PEA (no shock advised) or V-Fib/Pulseless V-Tach (shock advised) W* Epinephrine 1 mg – 1mg/10mL IV/IO q 3-5 min.

General Considerations

- High Performance CPR All shocks Monophasic 360 J or the Biphasic device specific equivalent. If Biphasic equivalent unknown deliver shock at 200 J.
- If patient not responding to treatments as below, consider Withholding/Terminating Resuscitation.
- For spontaneous resuscitation refer to Cardiac Arrest-Adult ROSC protocol.

Cardiac Arrest –Adult Return of Spontaneous Circulation (ROSC)

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available		
SAMPLE /OPQRST • Events leading up to arrest • Estimated downtime / bystander CPR • POLST, DNI/R or Living Will • *Hx: CP/SOB* (Thrombosis: Pulmonary/MI or Tamponade) • *Hx: HTN* (Thrombosis: Pulmonary/MI) • *Hx: Illicit Drug Use / Accidental OD* (Tablets) • *Hx: Dialysis / Renal Failure* (Hyperkalemia)	• Sudden increase in ETCO2 • Return of pulse • Return of normal respirations • Patient has spontaneous movement	• Rule out Hs and Ts ○ Hypovolemia ○ Hypoxia ○ Hydrogen Ions (Acidosis) ○ Hyper/Hypokalemia ○ Hyper/hypoglycemia ○ Hypothermia ○ Toxins (overdose) ○ Tamponade, cardiac ○ Tension Pneumothorax, Thrombosis • AMS • Coma • Myxedema coma (Hypothyroidism)

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- Optimize ventilation and oxygenation.
- Titrate oxygen to the lowest level to achieve target SpO2 between 94 – 99%.

EMT

- Consider ECG/12 lead, if available

EMT with SGA endorsement

- SGA with 100% O2 to achieve target SpO2 between 94 – 99%.
- W* Consider End Tidal Co2, if available
  - ETCO2 (normal is 35-40 mmHg), do not hyperventilate (ideal rate is 10-12 breaths/minute).

EMT with IV endorsement /AEMT

- Consider Vascular Access.
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.

General Consideration:

- Transport all patients with ROSC to closest hospital with interventional capability per local criteria.
- If a patient has ROSC, observe briefly to ensure sustained stability prior to transport. A 5-10-minute time while packaging and loading will be adequate.

Cardiac Arrest – Pediatric

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available		
SAMPLE /OPQRST • Events leading up to arrest • Medical History • Possibility of foreign body • Respiratory distress or arrest • Possible toxic or poison exposure • Congenital disease • Estimated downtime / bystander CPR • Medication (maternal or child) • Hypothermia • Non-accidental trauma • SIDS • POLST, DNI/R or Living Will	• **Apnea/Agonal Respirations** • **Pulseless** • **Unresponsive** • Absent heart sounds on auscultation	• Respiratory effort • Foreign body obstructions • Rule out Hs and Ts ○ Hypovolemia ○ Hypoxia ○ Hydrogen Ions (Acidosis) ○ Hyper/Hypokalemia ○ Hyper/hypoglycemia ○ Hypothermia ○ Toxins (overdose) ○ Tamponade, cardiac ○ Tension Pneumothorax ○ Thrombosis (coronary or pulmonary) ○ Trauma (hypovolemia, increased ICP)

Patient Management

EMR/EMT

- Initiate Universal Patient Care protocol.
- Establish unresponsiveness, Identify absence of pulse and respirations.
- High-quality chest compressions/CPR with minimal interruption
  - 2 min cycles w/ <10sec pause. Rotate compressor q2min, have person assigned to monitor CPR quality (rate, depth, no leaning)
- Apply AED/EKG Leads/Defib Pads.
- Analyze and follow AED/Monitor instructions.

EMT with SGA endorsement

- SGA with 100% O2.
- W* Consider End Tidal Co2, if available

EMT with IV endorsement

- Consider Vascular Access.
- If cardiac arrest is thought to be caused by hypovolemic shock, give volume resuscitation 20mL/kg of LR/NS.

AEMT

- Epi DOSAGE W* Pediatric Asystole / PEA (no shock advised) or V-Fib/Pulseless V-Tach (shock advised) **Epi 1: 10,000**- 0.01 mg/kg IV/IO

Pediatric Consideration:

- Use a weight-based system for treatment of pediatric cardiac arrest, i.e. length-based tape.
- Pediatric defibrillation pads should be used when available, if not available use adult defibrillation pads.
- If patient not responding to treatments, consider Withholding/Terminating Resuscitation.
- For spontaneous resuscitation refer to Cardiac Arrest-Pediatric ROSC protocol.

Cardiac Arrest –Pediatric Return of Spontaneous Circulation (ROSC)

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available		
• Past Medical History • Event/complaints	• Sudden increase in ETCO2 • Return of pulse • Return of normal respirations • Patient has spontaneous movement	• Rule out Hs and Ts ○ Hypovolemia ○ Hypoxia ○ Hydrogen Ions (Acidosis) ○ Hyper/Hypokalemia ○ Hyper/hypoglycemia ○ Hypothermia ○ Toxins (overdose) ○ Tamponade, cardiac ○ Tension Pneumothorax, Thrombosis • Foreign body obstruction

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- Optimize ventilation and oxygenation.
- Titrate oxygen to the lowest level to achieve target SpO2 between 94 – 99%.

EMT

- Consider ECG/12 lead, if available.

EMT with SGA endorsement

- SGA with 100% O2 to achieve target SpO2 between 94 – 99%.
- W* Consider End Tidal Co2, if available.
  - ETCO2 (normal is 35-40 mmHg), do not hyperventilate.

EMT with IV endorsement /AEMT

- Consider Vascular Access.
- If hypotensive, treat per Shock/Hypotension protocol.
- Fluid bolus 20 ml/kg IV/IO as needed. May repeat up to 60 ml/kg.

General Consideration:

- Transport all patients with ROSC to closest hospital with interventional capability per local criteria.
- If a patient has ROSC, observe briefly to ensure sustained stability prior to transport. A 5-10-minute time while packaging and loading will be adequate.
- Avoid hypothermia.

Chest pain/Acute coronary syndrome (ACS) / MI / STEMI

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available		
• SAMPLE /OPQRST ○ Time of Onset ○ Palliation / Provocation ○ Quality (crampy, constant, sharp, dull, etc.) ○ Region / Radiation / Referred ○ Severity (1-10) ○ Time (duration/repetition) • Viagra, Cialis, Levitra (Male or Female)	• **Abnormal vital signs** • **CP (pain, pressure, aching, tightness**) • **Dizziness** • **Nausea, vomiting** • **Pale, diaphoresis** • **Radiation of pain** • **Shortness of breath**	• Aortic dissection or aneurysm • Asthma / COPD • Chest wall injury or pain • Esophageal spasm • GE reflux or Hiatal hernia • Pericarditis • Pleural pain • Pneumothorax • Pulmonary embolism • Trauma vs. Medical

Assess High Risk Criteria
In addition to symptoms in Box 1. Pt has 4 or more of the following: ☐ Age > or = 55 ☐ 3 or more CAD risk factors ○ Family history ○ Hypertension ○ High cholesterol ○ Diabetes ○ Current smoker ☐ Aspirin use in last 7 days ☐ 2 or more anginal events in past 24 hours, including current episode ☐ Known coronary disease ☐ ST deviation > or = 0.5 (if known) ☐ Elevated cardiac markers (if known) TOTAL SCORE:

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- Titrate oxygen to the lowest level to achieve target SpO2 between 94 – 99%.
- W* Aspirin 324 mg PO.
- Calculate High Risk Score based on Prehospital Cardiac Triage Destination Procedure.

EMT

- Consider ECG/12 lead, if available
- (W*) Consider End Tidal Co2, if available
- If systolic BP > 100
  - W* Nitroglycerine 0.4 mg SL. May repeat x 2 every 3-5 minutes. (Pt's Own NTG)

EMT with IV endorsement

- Consider vascular access; should be done prior to Nitro administration.
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.

AEMT

- Nitroglycerine 0.4 mg SL. May repeat x 2 every 3-5 minutes; or Nitro Paste 1 inch to chest wall.

General Consideration:

- Transport all patients to the closest hospital with interventional capability per local criteria.
- See State of Washington Prehospital Cardiac Triage and Destination Procedure.

Diabetic Emergency

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available		
SAMPLE /OPQRST • Medications (Oral vs. Insulin) • Presence of an Insulin Pump • Alterations or Missed doses • Last meal • Recent illness • Report of illicit drug use or toxicingestion • History of trauma • GI History • Syncope	• **Abnormal vital signs persist** • Decreased mental status • Change in baseline mental status • Bizarre behavior • **Hyperglycemia** (warm, dry skin fruity breath; Kussmaul respirations, signs of dehydration) • Hypoglycemia (cool, diaphoretic skin) • **Shortness of breath** • **Syncope**	Rule out Hs and Ts • Hypovolemia • Hypoxia • Hydrogen Ions (Acidosis) • Hyper/hypoglycemia • Hyper/hypokalemia • Hypothermia • Toxins (overdose) • Tamponade, cardiac • Tension Pneumothorax, • Thrombosis

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- W* Check blood glucose level.

HYPOGLYCEMIA

- If < 60 mg/dl, if patient can protect their own airway, give oral glucose –
  - Adult W* oral glucose: 25g (one tube)
  - Pediatric W* oral glucose: 0.5–1 g/kg, max dose 25g
- Check BGL after 5 minutes and repeat as above if blood sugar remains low and patient remains symptomatic.

EMT

- Check blood glucose level.

HYPOGLYCEMIA

- If < 60 mg/dl, if patient can protect their own airway, give oral glucose – one tube.
- Adult W* Glucagon**,** 1 mg (unit) IM/IN.
- Pediatric W* Glucagon 0.02 mg/kg IM to a maximum of 1 mg.

AEMT / EMT with IV endorsement

- Consider Vascular Access.
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.

HYPOGLYCEMIA

- Adult W* D10, titrate to effect, up to 25g.
- Pediatric D10, 5mL/kg by infusion not to exceed 250 mL total.
- Newborn D10 2 cc/kg

HYPERGLYCEMIA

- Adult- If glucose > 250 mg/dL with symptoms of dehydration, vomiting, abdominal pain, or altered level of consciousness: Fluid challenge: 1 L bolus IV; reassess and contact medical control before re-bolus 1 L, if indicated.
- Pediatric 10 cc/kg unless the patient is hypotensive than consider 20 cc/kg

Drowning / Submersion

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available		
SAMPLE /OPQRST • Aspiration of fluid • Submersion in water- regardless of depth • Possible history of trauma • Duration of immersion • Temperature of water • Salt vs. Fresh water	• **Changes in mental status** • Coughing • Vomiting • **Wheezing, rales, rhonchi** • **Respiratory compromise** • **Stridor** • **Unresponsive**	• Air Gas Embolism • Cardiac arrest • Nitrogen Narcosis • Pre-existing medical problem • Pulmonary barotrauma • Trauma

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- Spinal immobilization while still in water if indicated.
- Protect cervical spine if diving accident.
- If hypothermic, treat per Hypothermia/Cold Emergencies protocol.
- IF DECOMPRESSION SICKNESS/ barotrauma, give oxygen – no positive pressure ventilation unless NOT breathing.
- Keep patient in a supine position.

EMT

- Monitor lung sounds frequently.
  - Institute CPAP or PEEP for pulmonary edema, if available
- Consider ECG/12 lead, if available
- W* Consider End Tidal Co2, if available

EMT with SGA endorsement

- If airway is not manageable by BLS methods, consider use of a SGA as indicated by patient condition.
- If Decompression Sickness, no positive pressure ventilation unless not breathing.

EMT with IV endorsement / AEMT

- Consider Vascular Access.
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.

General Considerations

- Consider self-safety before rescue attempt, drowning is a leading cause of death among rescuers.
- All near-drowning patients should be transported to the hospital for evaluation.
- Protect against and/or treat hypothermia per protocol.
- Drowning due to suffocation from submersion in water.
  - 2 causes – breath holding which leads to aspiration of water and laryngospasm.
  - Both causes lead to profound hypoxia and death.
- With pressure injuries (decompression / barotrauma), consider transport for availability of a hyperbaric chamber.
- All hypothermic / near-drowning patients should have resuscitation performed until care is transferred to definitive care. Contact medical control for information on access to ECMO or advanced warming care.

General Illness

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available		
SAMPLE /OPQRST • Duration • Past medical history • Last oral intake • Medications • Immunocompromised • Bloody emesis/diarrhea • Menstrual history • Past surgical history • Environmental exposure/travel history • Age	• Abdominal distension • **Altered Level of Consciousness** • Chills/Rigors • Constipation • Diarrhea • Diaphoretic • Warm • Flushed • Pain, possible radiation • **Persistent abnormal vital signs** • **Shortness of Breath**	• Cancer / Tumors / Lymphomas • CNS disease/trauma • Diabetic ketoacidosis • Electrolyte abnormalities • Gynecologic disease (ovarian cyst, PID) • Heat Stroke • Hyperthyroid GI or Renal disorders • Infections • Medication or drug reaction • Myocardial infarction • Pregnancy • Psychologic • Sepsis

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- Place patient in a position of comfort.
- Cardiac High-Risk Score, go to Chest Pain/ACS/MI/STEMI protocol.
- Sepsis Screening Tool, go to Sepsis protocol.
- Stoke Assessment Tool – FAST / BEFAST / Stroke Severity Score (LAMS), go to Stroke/TIA/Neurological protocol.
- Check blood glucose level. (W* EMR)

EMT

- Consider ECG/12 lead, if available
- (W*) Consider End Tidal Co2, if available
- Treat pain per Pain Management protocol.
- Treat nausea/vomiting per Nausea/Vomiting protocol.

EMT with IV endorsement / AEMT

- Consider Vascular Access.
- If systolic blood pressure is < 90 mmHg systolic, treat Shock/Hypotension protocol.

Hyperthermia / Heat Injuries

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available.		
SAMPLE /OPQRST • Age • Exposure increased temperature and/or humidity • Time and duration of exposure • Extreme exertion • Medications (anticholinergics, anti-seizure • medications, etc.) • Toxic Ingestion/Substance Abuse • Time and length of exposure • Poor PO intake	**Mild Heat Related Illnesses:** • Heat rash, heat edema, heat cramps • Heat exhaustion (weakness, headache, dizziness, nausea, vomiting, syncope, abdominal pain) **Severe Heat Related Illness:** • **Heat stroke** (AMS, seizure, hyperthermia, dry skin or profuse sweating)	• CVA • Delirium tremens (DT's) • Dehydration • Head Trauma • Heat Cramps • Heat Exhaustion • Heat Stroke • Hyperthyroidism (Storm) • Hypoglycemia • Encephalopathy • Fever (Infection) / Sepsis • Meningitis/Sepsis • Poisoning/overdose • Substance Abuse

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- Altered Mental Status protocol, as indicated.
- Treat nausea/vomiting per Nausea/Vomiting Protocol
- Heat Cramps, Heat Exhaustion
  - Move to cooler environment, remove excess clothing. Tepid compresses to forehead neck, extremities.
  - Oral fluids, if possible (water, Gatorade, etc.).
- Heat Stroke
  - Move to cooler environment, remove clothing, and initiate aggressive cooling measures.
    - E.g., cold or ice packs to axilla/groin, evaporative airflow, or buckets of ice with fan to cool patient.
    - Ice bath immersion provides the most rapid cooling mechanism, if not available consider Tarp-assisted cooling with oscillation, rotating ice water-soaked towels or sheets

EMT

- Consider ECG/12 lead, if available
- (W*) Consider End Tidal Co2, if available

EMT with IV endorsement / AEMT

- Consider Vascular Access.
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.

General Considerations

- Patients at risk for heat emergencies include neonates, infants, geriatric patients, and patients with mental illness.
- Contributory risk factors may come from:
  - Prescription and over-the-counter herbal supplements
  - Cold medications

- Heart medications
- Diuretics
- Psychiatric medications
- Drug abuse
- Accidental or intentional drug overdose

- Heat exposure can occur either due to increased environmental temperatures or prolonged exercise or a combination of both.
  - Environments with temperature *greater than* 90°F and humidity *greater than* 60% present the most risk.
- Heat stroke is associated with cardiac arrhythmias independent of drug ingestion/overdose Heat stroke has also been associated with cerebral edema.
- For patients with signs and symptoms of heat stroke, rapid cooling takes priority over other interventions (e.g., cardiac monitoring, IV access)
- Do not forget to look for other causes of altered mental status such as low blood glucose level, or, in the proper circumstances (i.e., endurance exercise events), consider exercise associated hyponatremia (EAH), especially in the patient with altered mental status, normal blood glucose, and normal temperature.
- Controversy: shivering may occur while treating heat stroke
  - It is uncertain how harmful shivering is to heat stroke patients.
  - Cooling should be continued until the above temperature and mental status goals are met.

Hypothermia / Cold Emergencies

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available		
SAMPLE /OPQRST • Exposure Temperature / Wind Chill • Length of Exposure • Drowning/submersion victim • Toxic ingestion/Substance abuse • Hx Hypothyroidism	• **AMS or Coma** • **Stroke-like symptoms** (slurred speech, gait ataxia) • **Arrhythmias** • **Bradycardia and/or Hypotension** • Extremity pain, sensory abnormalities • White / Waxy skin	• CNS (stroke, head injury, • spinal cord injury) • Sepsis • Hypothyroidism • Hypoglycemia

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- Altered Mental Status protocol, as indicated.
- Treat nausea/vomiting per Nausea/Vomiting protocol.
- Handle patient gently to avoid VF.
- Gently remove wet clothes and protect the patient from further environmental exposure.
- Dry as soon as possible, warm patient by external means.
- Assess ABC's.
  - Allow up to 60 seconds to confirm respiratory arrest, pulseless cardiac arrest or bradycardia that is profound enough to require CPR.
- Institute rewarming procedures:
  - Warm packs, heated blankets, and warmed ambulances.
  - Heat packs to groin, axilla.

EMT

- Consider ECG/12 lead, if available
- (W*) Consider End Tidal Co2, if available
- Transport as necessary.

EMT with SGA endorsement

- If airway is not manageable by BLS methods, consider use of an SGA as indicated by patient condition.

EMT with IV endorsement / AEMT

- Consider Vascular Access.
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.

Considerations

- Hypothermic / drowning / near drowning patients that appear cold and dead are NOT dead until they are warm and dead or have other signs of obvious death (putrification, traumatic injury unsustainable to life).
- Defined as core temperature < 95° F (35° C).
- Extremes of age are most susceptible (i.e. young and old).

- Patients with low core temperatures will not respond to ALS druginterventions. Maintain warming procedure and supportive care. Warming procedures include removing wetclothing, limiting exposure, and covering the patient with warm blankets if available.
- Do not allow patients with frozen extremities to ambulate.
- Do not attempt to rewarm deep frostbite unless there is an extreme delay intransport, and there is a no risk that the affected body part will be refrozen. Contact medical direction prior to rewarming a deep frostbite injury.
- Protect with dry dressings, do not rub frostbitten areas, and permit only gradualwarming by room temperature out of hospital.
- With temperature less than 86° F (30° C) ventricular fibrillation is commoncause of death. Handling patients gently may prevent this.
- If the temperature is unable to be measured, treat the patient based on thesuspected temperature.
- Hypothermia may produce severe bradycardia, taking 45 seconds to palpate a pulse.
- Shivering stops below 90° F (32° C).
- Hot packs can be activated and placed in the armpit and groin area ifavailable.
- Care should be taken not to place the packs directly against the patient's skin.
- Consider withholding CPR if the patient has organized rhythm. Discuss withmedical control.
- Patients with low core temperatures may not respond to ALS drug interventions. Discuss ACLS drug use with medical control in severelyhypothermic patients.
- Maintain warming procedure and supportive care. Warming procedures include removing wet clothing, limiting exposure, and covering the patientwith warm blankets if available.
- The most common mechanism of death in hypothermia is ventricular fibrillation. If the hypothermia victim is in ventricular fibrillation, CPR should beinitiated. If V-FIB is not present, then all treatment and transport decisions should be tempered by the fact that V-FIB can be caused by rough handling, noxious stimuli, or even minor mechanical disturbances, this means that respiratory support with 100% oxygen should be done gently, including intubation, avoiding hyperventilation.
- The heart is most likely to fibrillate between 85 - 88° F (29 - 31° C.)Defibrillate VF / VT x1 if no change, perform CPR and defer repeatdefibrillation attempts until patient has been rewarmed.
- Do not allow patients with frozen extremities to ambulate.
- Superficial frostbite can be treated by using the patient’s own body heat.

Implantable Ventricular Assist Devices

History	Signs/Symptoms	Assessment
Bold – Consider Paramedic ALS evaluation and/or transport if available		
• Adult patients that have had an implantable ventricular assist device (VAD), including a left ventricular assist device (LVAD), right ventricular assist device (RVAD), or biventricular-assist device (BiVAD) and have symptoms of cardiovascular compromise.	• **Cardiac compromise** • **Patients with VADs that are in cardiac arrest.** • **VAD Malfunction** • **Signs of hypoperfusion including pallor, diaphoresis, altered mental status.** • Patients with VADs that are experiencing a medical or injury-related event not involving the cardiovascular system or VAD malfunction.	• Assess for possible pump malfunction. - ○ Assess for alarms. ○ Auscultate for pump sound "hum." ○ Signs of hypoperfusion including pallor, diaphoresis, altered mental status. • If the VAD pump has malfunctioned: ○ 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.

Patient Management
EMR

- Manage airway as indicated.
- If a patient is experiencing VAD-related complications or cardiovascular problems, expedite transport to the medical facility where VAD was placed if patient's clinical condition and time allows.
- If a 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 direct medical oversight if VAD coordinator unavailable)
- CPR may be initiated only where:
  - 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.

EMT

- Cardiac monitoring
- Consider ECG/12 lead, if available

EMT with SGA endorsement

- If airway is not manageable by BLS methods, consider use of an SGA as indicated by patient condition.

EMT with IV endorsement /AEMT

- Consider Vascular Access.
- If patient has a functioning VAD and is hypo perfused:
  - Administer IV fluids (30 mL/kg isotonic fluid; maximum of 1 liter) over less than 15 minutes, using a push-pull method of drawing up the fluid in a syringe and pushing it through the IV.
  - May repeat up to 3 times based on patient's condition and clinical impression for a total cumulative dose not to exceed 3 L.

General Consideration:

- You do not need to disconnect the controller or batteries to:
  - Defibrillate or cardiovert.
  - Acquire a 12-lead EKG.
- Automatic non-invasive cuff blood pressures may be difficult to obtain due to the narrow pulse pressure created by the continuous flow pump.
- Flow though many VAD devices is not pulsatile, and patients may not have a palpable pulse or accurate pulse oximetry.
- Blood pressure, if measurable, may not be 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 always accompany them with a back-up controller and spare batteries.
- If feasible, bring the patient's power module, cable, and display module to the hospital.
- All patients should carry a spare pump controller with them.
- The most common cause for VAD alarms is 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
  - Stroke/Transient ischemic attack (TIA)
  - Bleeding
  - Arrhythmias Cardiac tamponade

Nausea / Vomiting

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available		
• Gastrointestinal • Cardiovascular • Obstetric / gynecologic • Hypoglycemia • Hyperglycemia • Neurologic • Oncologic • Psychogenic • Toxidrome	• Emesis • Abdominal pain	• Pregnancy • Hypoglycemia • Hyperglycemia • Bowel obstruction • Myocardial Infarction

Patient Management

EMR

- Universal Patient Care protocol.
- W* Check blood glucose level.
- Treat nausea
  - Isopropyl alcohol: Allow patient to inhale vapor from isopropyl alcohol wipe 3 times 15 minutes as tolerated.

EMT

- Treat nausea
  - W*- Adult - Ondansetron 4 – 8 mg SL ODT
  - W*- Pediatric - Ondansetron 2 mg SL for ages 1–5 years old; age 6 and older use 4 mg of the ODT formulation

AEMT

- Treat nausea
  - Adult - Ondansetron 4 mg IM/IV
  - Pediatric - 2 mg SL for ages 1–5 years old; age 6 and older use 4 mg of the ODT formulation

Considerations

- Nausea and vomiting are symptoms of illness – in addition to treating the patient's nausea and vomiting a thorough history and physical are key to identifying what may be a disease in need of emergent treatment.

Newborn Resuscitation / Post Delivery Care

History	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available.	
SAMPLE /OPQRST • Due date/LMP • Congenital disease • Expected multiple births • Meconium • Medications • Maternal risk factors • Prenatal care and history	• Congenital heart disease • Hypovolemia • Hypoglycemia • Hypothermia • Infection • **Airway obstruction** • **Respiratory distress** • **Persistent Central Cyanosis**

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- Suction with bulb syringe PRN, Mouth then nose.
- Prevent heat loss from the infant.
  - Quickly dry the infant, remove wet linens from contact with the infant.
  - Maintain warm environment, place in mother's arms if condition warrants.
- APGAR
- Assess breathing and heart rate.
- Breathing control:
  - Stimulate respiration by gently flicking heels, rubbing spine.
  - Face mask with 6L O2 or Blow-by O2
- Positive pressure ventilation for:
  - Apnea or gasping respirations – APGAR score 5 or less – HR <100.
  - At 30 to 60 seconds after delivery, clamp and cut the umbilical cord about 6 inches from infant. If resuscitation is needed, the cord may be clamped and cut as soon as necessary.
- CPR if heart rate <60 bpm at ratio of 3:1 compression to ventilations.
- W* Consider Blood Glucose Check, if < 50mg/dL then see Diabetic Emergency protocol.

EMT

- Blood Glucose Check, if < 50mg/dL then see Diabetic Emergency protocol.
- W* Consider End Tidal Co2, if available

EMT with IV endorsement / AEMT

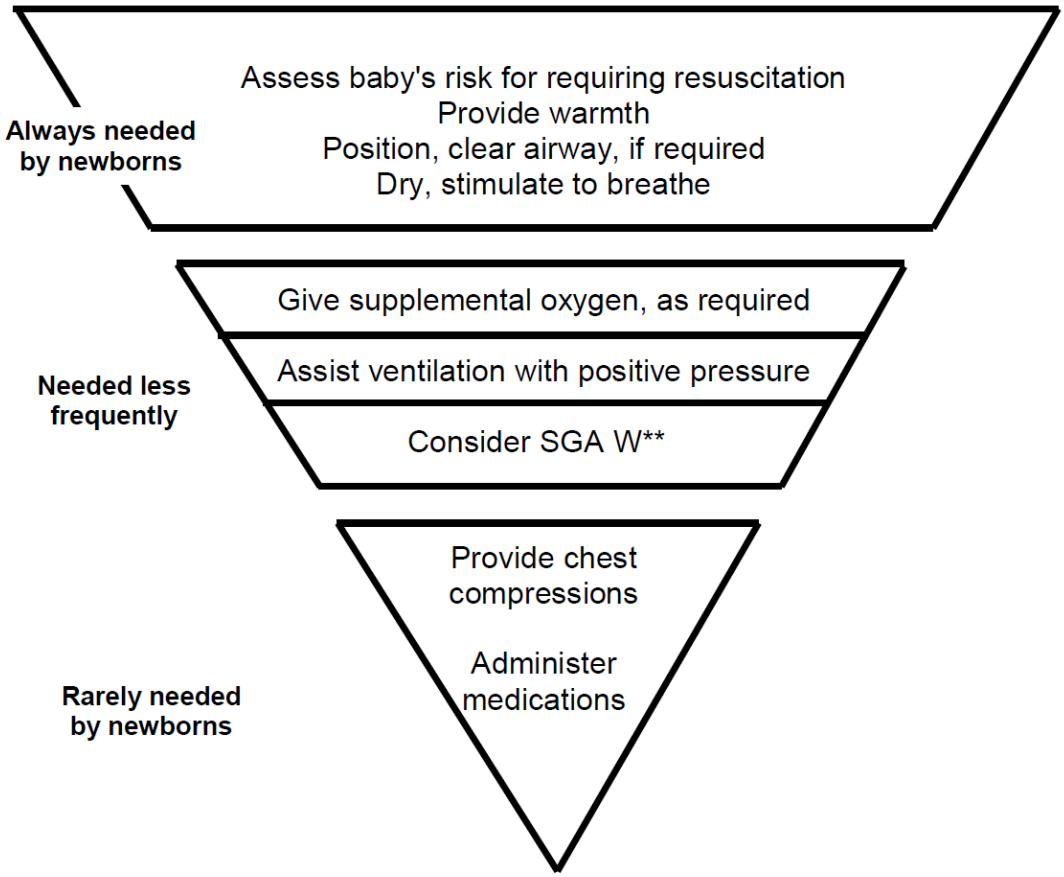
- Consider Vascular Access.
- Persistent bradycardia (rate < 60) despite PPV.
- Neonatal fluid resuscitation: 10 mL/kg normal saline.

Additional considerations:

- Continue to provide assisted ventilation as needed.
- Closely monitor respiratory effort, heart rate, blood glucose and pulse oximetry.
- Keep newborn normothermic. Hypothermia significantly increases the risk of morbidity.
- Encourage the mother to nurse the newborn baby.
- Allow the placenta to deliver naturally. Don't pull on umbilical cord. Transport all passed tissue to the hospital for further evaluation.
- Massage the fundus to help control any postpartum bleeding.

APGAR Scale			
	0 Points	**1 Point**	**2 Points**
A – Activity	Absent	Arms and Legs Flexed	Active Movement
P – Pulse	Absent	Below 100	Above 100
G – Grimace (Reflex Irritability)	No Response	Grimace/extension flexion	Sneeze, cough, pulls away
A – Appearance (Skin Color)	Blue / Pale	Normal, except for extremities	Normal over entire body
R – Respiration	Absent	Slow, irregular	Good, strong cry
0-3 Severely depressed; **4-6** Moderately depressed; **7-10** Excellent Condition			

Neonatal Resuscitation



Obstetrical / Gynecological Emergencies / Childbirth /Postpartum

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available.		
SAMPLE /OPQRST • Pregnancy/Date of LMP/Due date • Gravida/Para • Hx pregnancy complications • Prenatal care • Smoking, alcohol, substance abuse • Onset of bleeding • Bleeding painful or painless • Trauma • Medications (anticoagulants)	• Spasmodic abdominal pain • Urge to defecate • Vaginal discharge or bleeding • Vaginal crowning • Tachycardia • Hypotension • **AMS** • Abdominal pain • Visible vaginal bleeding • Signs of trauma/abuse	• Ectopic pregnancy • Placental abruption • Placenta previa • Uterine rupture • Spontaneous abortion • Postpartum hemorrhage • Abdominal/pelvic trauma • See additional considerations

Patient Management
EMR/EMT

- Initiate Universal Patient Care protocol.
- If a patient presents with vaginal bleeding, determine pregnancy status.
  - Any passed tissue or products of conception should be transported with the patient. In the case of fetal demise follow Withholding/Terminating Resuscitation protocol.
- Transport third-trimester females in left lateral decubitus (protect spine if indicated).
- If multiple or precipitous delivery request additional ambulance
- If a patient presents pregnant with contractions and/or pain, accompanied by bleeding or discharge, crowning during contraction, the feeling of an impendingbowel movement, and/or a rock-hard abdomen, prepare for imminent delivery.

  Normal (headfirst) presentation
  - Use sterile or clean technique. Guide/control but do not retard or hurry delivery.
  - Delivery:
    - Check for cord around neck and gently remove if found.
    - Apply gentle counterpressure to baby's head as it delivers.
    - Assist delivery of shoulders and rest of body.
  - After delivery, assess infant per Newborn Resuscitation protocol. If no resuscitation is needed (term infant, breathing or crying, good muscle tone), proceed as below.
  - Wipe nose and mouth if copious secretions.
  - Briefly dry infant and place on mother's chest, in skin-to-skin contact. Cover both with aclean, dry blanket.
  - Assess infant using APGAR at one minute after birth and five minutes later. (Documentation will describe infant using criteria rather than giving a numerical score).
  - At 30 to 60 seconds after delivery, clamp and cut the umbilical cord about 6 inches frominfant. If resuscitation is needed, the cord may be clamped and cut as soon as necessary.
  - Do not delay transport to deliver the placenta. After the placenta has been delivered, gently externally massage uterus to encourage contraction and prevent bleeding.
  - If mother has significant postpartum hemorrhage (> 500 mL), continue uterine massage (EMT and above), treat for shock, and update receiving facility.
  - Unless the infant needs treatment, keep on mother's chest for transport.
  - Monitor vital signs of mother and infant during transport.

Abnormal Childbirth:

- Breech Presentation:
  - Allow mother to push - do not pull the baby - gently extract.
  - Support delivered body and extremities on your hand and arm.
  - If the head is not delivered, place gloved hand in vagina to form a "V" around baby'smouth and nose should it begin to breathe.
- Prolapsed Cord:
  - Place mother in knee-chest position or extreme Trendelenburg.
  - Insert gloved hand into vagina and gently lift head/body off the cord.
  - Observe cord for pulsations and continue until it is relieved by hospital staff.
  - Rapid transport.
- Cord Wrapped Around Neck
  - With two fingers behind baby's neck, try to slip cord forward, over baby's upper (anterior) shoulder and head. If unsuccessful, attempt to slip under lower shoulderand over the head.
  - If unsuccessful, clamp cord with two clamps, cut between clamps, and carefullyunwrap cord from around neck.
- Abruptio Placentae
  - Occurs in the third trimester of pregnancy when the placenta prematurely separatesfrom the uterine wall leading to intrauterine bleeding.
  - The patient experiences lower abdominal pain and the uterus becomes rigid. Shockmay develop without significant vaginal bleeding.
- Placenta Previa
  - Occurs when the placenta covers the cervical opening, which can result in vaginal bleeding and prevents delivery of the infant through the vagina. The infant needs tobe delivered via caesarian section.

EMT with IV endorsement / AEMT

- Consider Vascular Access**.**
  If vital signs and patient's condition indicate hypoperfusion, administer initial fluid challenge of 500 mL NS/LR. If patient's condition does not improve, administer additional challenges as needed, not to exceed 2,000 mL.

Overdose / Toxicology /Poisoning

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available. **Contact Poison Control 1-800-709-0911**		
SAMPLE /OPQRST • Ingestion or suspected ingestion of a potentially toxic substance • Substance ingested, route, quantity • Time of ingestion • Reason (suicidal, accidental, criminal) • Available medications in home • Past medical history, medications • Home remedies given to patient prior to aid arrival	• **SLUDGE and DUMBBELS** • **Mental status changes** • **Hypotension / hypertension** • Decreased respiratory rate • **Tachycardia, dysrhythmias** • **Seizures**	• AEIOU-TIPS • Tricyclic antidepressants (TCAs) • Acetaminophen (Tylenol) • Depressants • Stimulants • Anticholinergic • Cardiac medications • Solvents, Alcohols, Cleaning agents • Insecticides (organophosphates)

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- If possible, identify the substance and amount ingested or otherwise exposed to.
- Collect any empty bottles/containers and transport them with the patient.
- W* Check blood glucose level.

SUSPECTED OPIOID OVERDOSE w Respiratory Depression

- Adult - Give Naloxone 0.4-4 mg IN; dose may be repeated every 2-3 minutes, up to 10 mg or until patient begins to maintain airway and breathe adequately.
- Pediatric- 0.1 mg/kg IN up to 2 mg/dose; dose may be repeated every 2-3 minutes, up to 10 mg. Do not give to newborns.

Carbon Monoxide:

- CO poisoning suspected (e.g., AMS w/ multiple patients, sick pets at same location):
  - 100% O2 NRB or CPAP if possible.
  - Determine CO level w/ commercial device, if available.
  - SpCO between 3% and 25% with neurologic symptoms (HA, dizziness, nausea,syncope, LOC, seizures, coma) – treat and transport to ED.
  - SpCO > 25% - contact MC for diversion to hyperbaric chamber.

Organophosphates (Salivation/Lacrimation/Urination/Defecation/GI/Emesis = SLUDGE):

- Prepare to handle copious secretions.
- Administer Atropine: nerve agent auto injector.
- Administer Pralidoxime Chloride (2Pam Chloride) Adult- 1 auto-injector (600 mg) IM into thigh; may be repeated depending on symptoms.

EMT

- Consider ECG/12 lead, if available
- W* Consider End Tidal Co2, if available
- W* If the ingestion occurred within ONE HOUR OF EMS ARRIVAL; Administer Activated Charcoal: Adult 50 gm PO. **Recommend contacting Poison Control prior to administration 1-800-709-0911.**

- Pediatric Charcoal dose is 1 gm/kg PO. Minimum dose is 10 gm. Maximum dose is 50 gm. **Recommend contacting Poison Control prior to administration 1-800-709-0911.**

SUSPECTED OPIOID OVERDOSE w Respiratory Depression

- Adult - Give Naloxone 0.4- 4 mg IM (W*) may be repeated every 2-3 minutes, up to 10 mg or until patient begins to maintain airway and breathe adequately.
- Pediatric- Give Naloxone 0.1 mg/kg IM (W*) every 2-3 minutes to a maximum of 2 mg per dose. Max total dose 10mg. Do not give to newborns.

EMT with SGA endorsement

- If airway is not manageable by BLS methods, consider use of an SGA as indicated by patient condition.

EMT with IV endorsement

- Consider Vascular Access
- If systolic blood pressure is < 90 mmHg, treat per Shock/Hypotension protocol.

Phenothiazine – Dystonic Reaction and/or Akathisia:

- Adult-Diphenhydramine 12.5-50 mg IV/IM
- Pediatric- Diphenhydramine 1mg/kg Max 25 mg for dystonia.

AEMT

SUSPECTED OPIOID OVERDOSE w Respiratory Depression

- Adult - Give Naloxone 0.4- 2 mg IV/IO, may repeat every 2-3 minutes to a max dose of 10 mg
- Pediatric- Give Naloxone 0.1 mg/kg IV every 2-3 minutes to a maximum of 2 mg per dose. Max total dose 10mg. Do not give to newborns.

General Considerations

- Scene safety
- If the ingested / exposed substance poses a hazard or potential risk of contaminating EMS personnel, vehicles, or the receiving facility DO NOT transport the material with the patient.
- If patient is suspected to have narcotic overdose/hypoglycemia administer Narcan/Glucose prior to Supraglottic Airway Device/intubation.
- Consider the possibility for neglect/abuse.
- Narcan is not recommended for the initial resuscitation of the newly born.

Specific Poisoning/Overdose Treatments

- Riot Control Agents – (Mace, pepper spray, tear gas, lacrimators):
  - Move affected individuals from contaminated environment into fresh air if possible.
  - Irrigation with water or saline may facilitate resolution of symptoms and isrecommended for decontamination of dermal and ocular exposure.
  - Treat for Respiratory Distress as appropriate.
  - Symptoms begin within seconds of exposure, are self-limited and are best treated byremoving patient from ongoing exposure. Symptoms frequently decrease over time (15-45 minutes) after exposure ends.
  - Exposed individuals who are persistently symptomatic warrant further transportfor further intervention

Pain Management

Inclusion Criteria:	Exclusion Criteria:
• Patients who are experiencing pain	• Pregnancy with active labor

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- Provide oxygen to maintain an oxygen saturation of 94-99% or as indicated by clinical presentation.
- Ice/cold pack and positioning as appropriate to manage pain.

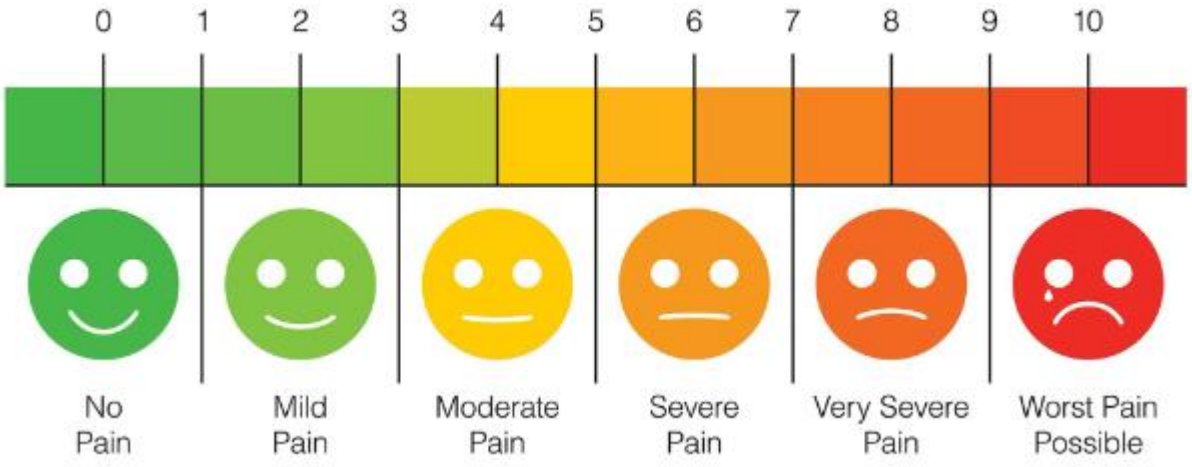
EMT

- W* Acetaminophen 15 mg/kg PO, max adult dose 1 gram.
- W* Ibuprofen 10 mg/kg PO for patients greater than 6 months of age (maximum dose 800 mg).
- W* Nitrous Oxide if available.

EMT with IV endorsement / AEMT

- Consider Vascular Access.

Pain Assessment Tool

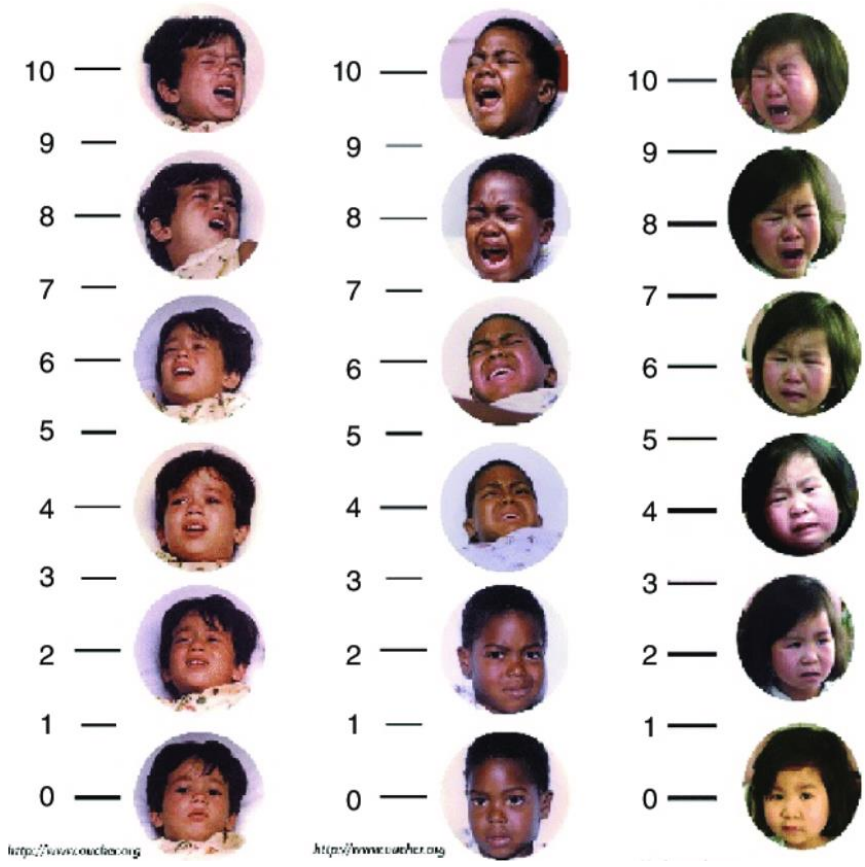


Pediatric Pain Assessment Considerations

Use Pediatric Pain Scale FLACC for ages 0-2 yrs.

Categories ▼	Score Zero ▼	Score One ▼	Score Two ▼
Face F	No particular expression or smile	Ocasional grimace or frown, withdrawn, disinterested	Frequent to constant quivering chin, clenched jaw
Legs L	Normal position or relaxed	Uneasy, restless, tense	Kicking or legs drawn up
Activity A	Lying quietly, normal position moves easily	Squirming, shifting back and forth, tense	Arched, rigid or jerking
Cry C	No crying (awake or asleep)	Moans or whimpers, occasional complaint	Crying steadily, screams or sobs, frequent complaints
Consolability C	Content, relaxed	Reassured by occasional touching, hugging or being talked to, distactable	Difficult to console or comfort

Use Pediatric Pain Scale Oucher for ages 3-7 yrs.



Pediatric - Brief Resolved Unexplained Event - BRUE

History	Differential	
Bold – Consider Paramedic ALS evaluation and/or transport if available.		
SAMPLE /OPQRST • Altered Mental Status • Cardiac • Respiratory Failure • Seizures • Syncope	• Child Maltreatment (abusive head trauma, suffocation, poisoning) • Neurologic (seizure, structural brain abnormality, neuromuscular disorder) • **Cardiac (cardiac arrythmia, congenital heart disease)** • Pulmonary (obstructive apnea, laryngomalacia, central apnea, apnea of prematurity)	• Infectious Disease (URI, bronchiolitis, pneumonia, pertussis) • GI (reflux, suck/swallow dysfunction) • **Drug effect/Withdrawal**
Inclusion:	**Exclusion Criteria:**	
Suspected BRUE: An event in an infant less than 1 year old reported by a bystander as sudden, brief (less than 1 min) event, completely resolved upon EMS arrival that includes one or more of the following: • Absent, decreased, or irregular breathing • Color change (central cyanosis or pallor) • Marked change in muscle tone (hyper- or hypotonia) • Altered level of responsiveness	• Any signs or symptoms suggestive of underlying or acute illness or injury present upon EMS evaluation, such as: ○ Abnormal vital signs for age (including fever) ○ Vomiting ○ Signs of trauma ○ Noisy or labored breathing • Identifiable cause for the event, such as: ○ Gastric reflux (spitting up) ○ Swallowing dysfunction ○ Nasal congestion or excessive secretions from the nose and/or mouth ○ Periodic breathing of the newborn ○ Breath-holding spell ○ Change in tone associated with choking, gagging, crying, feeding ○ Seizure (e.g., eye deviation, nystagmus, tonic-clonic activity) ○ Hypoglycemia ○ Significant past medical history (e.g., congenital heart disease, pulmonary disease, VP shunt, or seizure disorder) ○ Need for IV medication administration • History or exam concerning for child abuse or neglect • Color change that involved only redness (e.g., in the face) or isolated hands/feet cyanosis- not normal and should be transported and evaluated	

Patient Management

EMR/EMT/AEMT

- Initiate Universal Patient Care protocol.
- Support ABCs. Follow Respiratory Distress protocol as needed.
- Obtain and document any complications of pregnancy, birth date and gestational age at birth, fever or recent infection, prior BRUE episodes, underlying medical conditions.
- Obtain and document description of events including symptoms, inciting events, and resuscitation attempts before EMS arrival.
- Consider ECG/12 lead, if available (EMT and above)
- Assess blood glucose (EMR W*).

- Transport via ALS to an emergency department even if the infant currently appears in no distress, if available.
- OLMC contact is mandatory for any patient with a suspected BRUE where parent or guardian wishes to refuse.

Considerations:

- BRUE is a group of symptoms, not a specific disease. BRUEs are most common in infants under one year of age but may occur up to two years of age.
- Many infants appear normal by the time EMS arrives.
- Consider non-accidental trauma.
- Serious underlying causes can include pneumonia, bronchiolitis, seizure, sepsis,intracranial hemorrhage, and meningitis.
- BRUEs are more frequent in premature infants and infants with other health conditions such as cystic fibrosis, bronchiolitis, and congenital heart disease.

Respiratory Distress / Reactive Airway Disease

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available.		
SAMPLE /OPQRST • Asthma • COPD- emphysema, chronic bronchitis • Congestive heart failure • Home treatment (O_2, nebulizer) • Medications (theophylline, steroids,inhalers) • **No improvement with initial treatment** • Toxic exposure • Smoking	• **Decreased ability to speak** • Fever, cough • **Increased respiratory rate and effort** • **Pursed-lip breathing** • **Shortness of breath** • **Suspected PE** • Tachycardia • Wheezing, rhonchi, rales • **Use of accessory muscles**	• Anaphylaxis • Aspiration • Asthma • Cardiac (MI or CHF) • COPD (Emphysema, Bronchitis) • Hyperventilation • Inhaled Toxin (Carbon monoxide, etc.) • Pericardial Tamponade • Pleural effusion • Pneumonia • Pneumothorax • Pulmonary Embolus

Patient Management

EMR

- Treat per Universal Patient Care protocol.
- Treat patient's clinical impression.

Upper Airway Obstruction
- Sit patient up and have them cough.
- AHA protocol for complete obstruction.
- Transport if obstruction is not cleared or if suspicious of aspiration.

Insufficient Respiration or Arrest
- Rule out obstruction.
- Ventilate with bag-valve mask.
- Narcan 2.0 mg IN, if cause unknown or if narcotics possible.

Wheezing
- Assist MDI

EMT/AEMT

Wheezing (e.g. Asthma / COPD)

- If known asthmatic having recurrent attack:
  - Adult **-** Albuterol 2.5mg with Atrovent 0.5 mg via neb. May repeat Albuterol prn.
  - Pediatri**c –** Albuterol 2.5 mg with Atrovent 0.25 mg in 3.0 ml NS SVN. May repeat once. Additional doses of Albuterol 2.5 mg in 3 ml can be given continuously. Use blow by if less than 5 years old.
- Consider CPAP
- If cyanotic or suspected MI or severe respiratory distress: high flow O2 by mask. Beprepared to assist respiration.

Pulmonary Edema

- Sit patient up, if possible, dangle legs.
- If patient in extremis CPAP 100% FiO2.
- Use PEEP valve if assisting ventilation. (if available)
- If suspected MI- Chest pain/ACS/MI/STEMI protocol.
- NTG patient assist EMT W* AEMT.

Considerations:

- Aggressive airway management, such as SGA (W**) as appropriate for the patient who is unconscious unresponsive. Call ALS assist when available.
- In cases of tachypnea, it is essential to consider all causes such as pulmonary embolus, hypoxia, cardiac causes, infection, and trauma. Hyperventilation may be a response to an underlying medical problem and should only be considered after these other causes have been excluded. Do not treat hyperventilation by rebreathing CO2. Reassurance and oxygen via mask are appropriate.
- Considerations for all Patients:
    - EMT W*/AEMT- Capnography- combine with patient presentation to ascertain ventilatory status.
    - ETCO2 normal range is 35-45 mm/Hg.
    - Normal ETCO2 may be higher in COPD patients.

Sepsis (Adult)

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available.		
SAMPLE /OPQRST • Fever, known infection • Immunosuppression (HIV, chemotherapy) • Indwelling medical device • Recent surgery/hospital stay • Recent antibiotics or steroids • Hx of adrenal insufficiency	**Sepsis Guidelines** • **Suspected or known infection, EtCO2 < 26** • **And** 2 or more of the following: ○ **Temperature < 96.0F OR > 100.4ºF** ○ **HR > 90 AND RR > 22** ○ **SBP < 90 mmHg** ○ **Altered Mental Status (GCS < 15)**	• Stroke • Pulmonary embolism • Anaphylaxis • Hyperthermia/Heat-related Illness • Hypothermia/Cold-related Illness • Substance abuse/Toxic Exposure • Hypo-/Hyperthyroid • Hypoglycemia
Notify receiving hospital of "Sepsis Alert."		

SEPSIS CRITERIA

- Treat per Universal Patient Care protocol.
- Suspected or known infection, EtCO2 < 26.
- Meet two or more of the following.
  - Altered mentation.
  - Temperature < 96.0F **OR** > 100.4ºF
  - HR > 90 **AND** RR > 22
  - Hypotension (systolic BP < 90 mmHg, MAP < 65 mmHg)
    - Calculate MAP by doubling the diastolic blood pressure and add the sum to the systolic blood pressure and divide by 3.

Patient Management

EMR

- Initiate General Patient Care.
- Initiate O2 to maintain oxygen saturation above 95%.

EMT

- Consider ECG/12 lead, if available
- W* Consider End Tidal Co2, if available

EMT with IV / AEMT

- Consider Vascular Access.
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.

Seizures / Febrile Seizure

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available.		
SAMPLE /OPQRST • Number and duration of seizure(s) • Head Trauma • Hx Seizure or Status Epilepticus • Medication Compliance/Dosage • Anticoagulant Therapy • Substance Abuse/Toxic Ingestion • Fever • LMP, Pregnancy	• Altered Mental Status (Postictal) • **Fever / Rash / Nuchal Rigidity** • **Head Trauma** • Incontinence • Observed seizure activity • Tonic / Clonic activity • **Status epilepticus**	• Hypoxia • Medication / Toxin • Muscle spasm • Hypoglycemia • Syncope • Infection • Fever • Shunt malfunction • Intracranial mass/bleed

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- Protect from injury (Don't put anything in mouth and lower patient to ground when possible
- W* Check blood glucose level. If not <60 mg/dl, go to Altered Mental Status protocol.

EMT

- (W*) For temperature > 101.0 give acetaminophen 15 mg/kg PO if child is able to maintain airway and swallow without difficulty. May give acetaminophen 15 mg/kg per rectal suppository if child is unable to swallow or maintain airway, or
- If child > 6 months and has had maximum dose of acetaminophen less than 4 hours ago and still has temperature > 101.0 consider ibuprofen 10 mg/kg PO if child is able to maintain airway and swallow without difficulty.
- (W*) Consider End Tidal Co2, if available.

EMT with IV / AEMT

- Consider Vascular Access.
- Adult- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension.
- Pediatric- Below minimum acceptable BP for age, treat per Shock/Hypotension protocol.

Considerations

- Place pregnant patients on their left side for transport.
- All first-time seizure patients require medical evaluation by a physician.
- If, on arrival, the patient is not actively seizing (post-ictal) an IV is not required.
- All hypoglycemic or first-time pediatric seizure patients should be transported
- Seizures that self-terminate in known epileptic may not require treatment or transport.
- Seizures may be a sign of cerebral hypoxia from cardiac arrest.
- Seizures may be caused by dysrhythmias and indication of pending cardiac arrest.
- If there is evidence or suspicion of trauma, spine should be immobilized.
- Consider nasopharyngeal airway and elevate the head of bed to 30 degrees.

Sickle Cell Pain Crisis

History	Treatment and Intervention	Disease Complications
Bold – Consider Paramedic ALS evaluation and/or transport if available		
SAMPLE /OPQRST • Known sickle cell disease experiencing a pain crisis	• **Provide analgesia** per the Pain Management protocol. • Start oxygen by nasal cannula if hypoxic. • Provide transport to an appropriate receiving facility. • Reassess vital signs and response to therapeutic interventions throughout transport.	Assess for potentially serious complications other than pain crisis which may include- • Acute Chest syndrome • Stroke • Meningitis • Septic arthritis • Splenic sequestration crisis (usually young pediatric patients) • Pain due to traumatic injury • Abdominal pain related to pregnancy

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- Provide evaluation and management of altered mental status.
- Consider ALS to provide evaluation and management of pain.

EMT

- Treat pain per Pain Management protocol.
- Treat nausea/vomiting per Nausea/Vomiting protocol.

EMT with IV endorsement / AEMT

- Start an IV and provide saline 10 mL/kg normal saline bolus (up to 1 L).

Considerations

- Comfort measures:
  - Keep patient warm and dry.
  - Transport in a position of comfort unless clinical condition requires otherwise.
- Assess for life-threatening complications of sickle cell disease – these patients have significantly higher risk of numerous complications in addition to pain crises.
- Provide appropriate treatment for pain, respiratory distress, and shock.
- These patients may have a higher tolerance to narcotic pain medications if they are taking them on a regular basis.
- These patients will tolerate acute blood loss poorly due to baseline anemia.
- Patients with sickle cell trait can have acute pain crises in extreme conditions (e.g., heat exhaustion, dehydration) and several college athlete deaths have been linked to sickle cell trait.
- Fever should be considered an emergency in this population and transported because of the risk of bacteremia.

Shock (non-traumatic) / Hypotension

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available.		
SAMPLE /OPQRST • Allergic Reaction • Bleeding (GI or vaginal) • Cardiac ischemia (MI, CHF) • Hx of Adrenal Insufficiency Medications • Recent Illness (Sepsis)	• **Altered mental status confusion, agitation** • Black or Tarry stools • **Emesis (bright red or coffee-ground)** • **Hypotension** • **Pale, cool, clammy skin, diaphoresis** • **Rales and pulmonary edema** • **Respiratory Distress** • **Syncope** • **Tachycardia, delayed capillary refill** • **Weak, rapid pulse** • **Weakness, dizziness**	• Allergic reaction • Anaphylaxis • Cardiac-related illnesses • Dehydration • Dysrhythmias • Ectopic pregnancy • Infection / Sepsis • Neurogenic • Trauma • Toxic Ingestion • Vasovagal • Vomiting / Diarrhea

Patient Management

EMR/ EMT

- Initiate Universal Patient Care protocol.
- Control external bleeding.

EMT with SGA endorsement

- If airway is not manageable by BLS methods, consider use of an SGA if patient unresponsive.
- (W*) Consider End Tidal Co2, if available.

EMT with IV endorsement / AEMT

- Consider Vascular Access, preferably two access points.
- If lung fields are clear, administer initial fluid challenge of 500 mL NS. Administer additional challenges as needed, to maintain cerebral perfusion, not to exceed 2,000 mL.
  - Pediatric fluid bolus is 20 mL/kg NS. May repeat as clinically indicated to a maximum of 60 mL/kg.

General Considerations:

- Tachycardia may be an early sign of shock. Pulse pressure often narrows prior to fall in systolic BP.
- Changing level of consciousness important clue.
- Transport patient in the supine position as soon as possible.
- Keep patient warm by controlling the ambulance temperature (use heat packs and reflective blankets PRN).
- If Head Injury:
  - Fluid challenge as above. Target BP 100-110 systolic. (MAP > 65)
  - Maintain normal ventilation rate, Target ETCO2 35-40 mm/Hg.
  - Elevate the head if possible.
- For sepsis
  - Establish 2 large bore IVs (consider IO access if necessary).
- Adult Administer NS/LR.
  - Normotensive – 10 mL/kg IV/IO bolus in 250-500 mL increments(maximum 2 liters), reassess after each bolus.

- Hypotensive – 20 mL/kg IV/IO in 250-500 mL increments (maximum 2 liters), reassess after each bolus (PRESSURE INFUSION). Until:
    - MAP > 65.
    - Neck vein distention develops.
    - Pulmonary rales develop.
- Pediatric Administer NS
    - Push 20 mL/kg IV/IO over 5-20min or faster if needed, reassessfor signs of shock.
    - Repeat 20 mL/kg IV/IO bolus (maximum 60 mL/kg) until clinical symptoms improve or patient develops signs of fluid overload (rales,respiratory distress)

Stroke/Suspected Stroke / Transient Ischemic Attack (TIA) / Neurological

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available.		
SAMPLE /OPQRST • Previous CVA, TIA's • Previous cardiac / vascular surgery • Associated diseases: diabetes, • Hypertension, CAD • Atrial fibrillation • Medications (blood thinners) • History of trauma	• **Abnormal vital signs** • **Altered mental status** • **Aphasia / Dysarthria** • **Blindness or other sensory loss** • **Headache** • **Seizures** • **Syncope** • **Respiratory pattern change** • **Vertigo / Dizziness** • **Vomiting** • **Weakness / Paralysis**	• Atypical migraine • Bell's palsy • Hydrogen ions (acidosis) • Hypoglycemia • Hypo-/Hyperkalemia • Hypovolemia • Hypoxia • Hypothermia • Seizure, Postictal (Todd's) paralysis • Toxins • Tamponade, cardiac • Tension pneumothorax • Thrombosis, coronary or pulmonary

Patient Management / Treatment

EMR

- Initiate Universal Patient Care protocol.
- Preform FAST, BEFAST, or LAMS exam.
- Determine last known well time.
- Position patient with head and chest elevated or position of comfort.
- Check temperature and pulse oximetry (if possible).
- Administer oxygen to maintain oxygen saturation 94-95%.
- Obtain capillary glucose reading (W*): treat hypoglycemia per Altered Mental Status protocol.
- Give nothing by mouth unless hypoglycemic.
- Suction as necessary and be prepared to assist ventilations.

EMT

- Perform FAST exam, BEFAST, and LAMS Score.
- Make contact with the appropriate receiving medical facility.
- The patient shall be transported to the closest appropriate medical facility.
- Notify receiving facility of STOKE Activation as soon as possible.

EMT with SGA endorsement

- If the airway is not manageable by BLS methods, consider use of an SGA as indicated.

EMT with IV endorsement / AEMT

- Consider Vascular Access.
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.

Key Considerations:

- Scene time should be less than 10 minutes and it is imperative that EMS personnel attempt to document the contact information for someone who can provide a history of the illness.
- Position patient with head of bed elevated approximately 30 degrees.
- Transport according to Prehospital Stroke Triage Destination Procedure.

Syncope / Dizziness / Weakness

History	Signs/Symptoms	Differential
Bold – Consider Paramedic ALS evaluation and/or transport if available.		
SAMPLE /OPQRST • Activity prior to episode (exertion, urinating/defecating) • Blood loss (GI, spontaneous abortion) / LMP • Chest pain/SOB • Diabetes • Trauma • True LOC • Nausea, vomiting, diarrhea • New medications/recent dose change • Witnessed seizure / Seizure aura prior to the event	• **Bradycardia** • **Hypotension** • **Irregular heart rate** • Lightheaded/dizzy • LOC w/near immediate recovery • **Palpitations** • **Tachycardia**	• CHF/MI • CVA / Seizure • Cardiac arrhythmia/Pacemaker dysfunction • Hypoglycemia • Hypoxia • Medication side effect • Shock/hypotension/orthostatic • Toxic ingestion • Vasovagal Episode

Patient Management / Treatment

EMR

- Initiate Universal Patient Care protocol.
- Patient with identified underlying cause for syncope, treat per specific protocol.
- Continued neurologic derangement - consider Stroke/TIA/Neurological protocol.
- If ongoing mental status changes or coma should be treated per the Altered Mental Status protocol.
- Oxygen as appropriate.

EMT

- Cardiac monitor / 12-lead EKG, if available.

EMT with IV endorsement / AEMT

- Consider Vascular Access.
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.

Key Considerations:

- Syncope is loss of consciousness and postural tone, resolving spontaneously without medical interventions. Laypersons describe it as “fainting”.
- Typically, is abrupt in onset and resolves quickly. May find the patient awake and alert on initial evaluation.
- Presyncope is the prodromal symptoms of syncope, described by the patient as “nearlyblacking out” or “nearly fainting.”
- All patients suffering from syncope deserve hospital level evaluation, even if they appear normal with few complaints on scene.

Trauma Section

General Trauma Management

Inclusion Criteria	Pertinent Assessment Findings
Patients of all ages who have sustained an injury or are suspected to have had a mechanical trauma, including: • Blunt injury • Penetrating injury • Blast • Burns • Other	Primary survey (Use "**MARCHH**" algorithm) **M**assive Hemorrhage • Initial visual and body sweep to assess for penetrating wounds and severe life-threatening hemorrhage **A**irway • Assess airway patency by asking the patient basic questions to assess for stridor and ease of air movement • Look for injuries that may lead to airway obstruction including unstable facial fractures, expanding neck hematoma, blood or vomitus in the airway, facial burns/inhalation injury • Evaluate mental status for ability to protect airway **R**espiratory/Breathing • Assess respiratory rate and pattern • Assess for tension pneumothorax • Assess symmetry of chest wall movement • Listen bilaterally on lateral chest wall for breath sounds **C**irculation • Assess blood pressure and heart rate **H**ead injury • Perform initial neurologic status assessment of GCS/AVPU (Alert, Verbal, Painful, Unconscious) and pupillary size and responsiveness • Assess for gross motor movement of extremities • Evaluate for clinical signs of traumatic brain injury with herniation including: • Unequal pupils • Lateralizing motor signs • Posturing **H**ypothermia Prevention • Prevent further heat loss in effort to maintain normal body temperature

Patient Management

EMR

- Initiate Universal Patient Care protocol.
- Initiate MARCHH – Primary Algorithm.
- Massive Hemorrhage / exsanguinating hemorrhage control
  - Initial visual and body sweep to assess for penetrating wounds and severe life-threatening hemorrhage.
  - Stop severe external and extremity hemorrhage with extremity tourniquets or appropriate wound packing with hemostatic gauze. Be sure to roll patient and examine the back as well. See Extremity Trauma/External Hemorrhage Management protocol.
  - Impaled objects must be left in place and should be stabilized by building up around object with multi-trauma dressings, etc., taking care that the penetrating object is not allowed to do further damage.

- Immobilize suspected fractures and dislocations. In the case of severe deformity with distal cyanosis or pulselessness, apply gentle in-line traction before splinting. Document presence/absence of pulse before and after immobilization.

- Airway
  - Assess airway patency by asking the patient basic questions to assess for stridor and ease of air movement.
  - Look for injuries that may lead to airway obstruction including unstable facial fractures, expanding neck hematoma, blood or vomitus in the airway, facial burns/inhalation injury.
  - Evaluate mental status for ability to protect airway.
- Respiratory/Breathing
  - Assess respiratory rate and pattern.
  - Assess for tension pneumothorax.
  - Assess symmetry of chest wall movement.
  - Listen bilaterally on lateral chest wall for breath sounds.
  - Cover penetrating chest wound(s) with commercial chest seal, if unavailable apply occlusive dressing taped on all four sides. If the patient's breathing becomes worse, lift one corner of the dressing to release pressure, and then re-seal.
- Circulation
  - Assess blood pressure and heart rate.
- Adult- If blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.
- Pediatric- Below minimum acceptable blood pressure for age, treat per Shock/Hypotension protocol.
- Head injury
  - Perform initial neurologic status assessment of GCS/AVPU (Alert, Verbal, Painful, Unconscious) and pupillary size and responsiveness.
  - Assess for gross motor movement of extremities.
  - Evaluate for clinical signs of traumatic brain injury with herniation including:
    - Unequal pupils
    - Lateralizing motor signs
    - Posturing
  - Consider Spinal Motion Restriction protocol based on patient condition. If not necessary, place the patient in a position of comfort or position that best maintains airway.
  - Eye Injuries- Cover injured eye(s) with rigid shield and no pressure on the eye(s), cover non-injured eye to prevent ocular movement.
  - Head Injury- follow Facial/Dental/Head Trauma or Traumatic Brain Injury protocol.
- Hypothermia Prevention
  - Prevent further heat loss in effort to maintain normal body temperature.
- Other Considerations
  - Do not allow the patient to eat or drink.
  - Treat nausea/vomiting – per Nausea/Vomiting protocol
  - Treat pain per Pain Management protocol.

EMT

- Consider helmet removal:
  - Patients with helmets but no shoulder pads: remove helmet.
  - Patients with sports helmets and shoulder pads:
    - Players should be stabilized for transport with helmet and shoulder pads in place.
    - Following stabilization, the facemask should be removed before transport.
    - Helmet and pads should be removed if they interfere with proper immobilization (loose fit), or airway control cannot be achieved with facemask removal.

- For transport follow Prehospital Trauma Triage Destination Procedure

EMT with IV endorsement / AEMT

- Consider Vascular Access, if needed (large bore preferred)

Fluid resuscitation Guidance

Adults

- If SBP greater than 90 mmHg and heart rate less than 120 BPM, no IV fluids required.
- If SBP less than 90 mmHg or HR greater than 120 BPM, initiate resuscitation:
  - Administer 250 mL bolus of IV fluid to max of 1 liter or until SBP 90 mmHg or normal mental status.
  - Trauma resuscitation target SBP 90 mmHg or normal mental status
  - Reassess SBP after bolus given.
- Head injury: target SBP greater than 110 mmHg. Hypotension should be avoided to maintain cerebral perfusion.

Pediatrics

- If patient demonstrates tachycardia for age with signs of poor perfusion (low BP, greater than 2-second capillary refill, altered mental status, hypoxia, weak pulses, pallor, or mottled/cool skin), give 20 mL/kg crystalloid bolus and -reassess. Repeat as needed for persistent signs and symptoms of shock.
  - If signs and symptoms of shock persist after a total of 20 mL/kg crystalloid bolus, contact online medical direction.
- Target normal BP for age or improved signs of adequate perfusion.

Pediatric Considerations:

- Consider non-accidental trauma (NAT).

Blast Injuries

Inclusion Criteria	Pertinent Assessment Findings
Patients exposed to explosive force. Injuries may include any or all the following: • Blunt trauma • Penetrating trauma • Burns • Pressure-related injuries (barotrauma) • Toxic chemical contamination • Chemical, biological, radiological, nuclear, and explosive devices, or agents	Evidence of multi-system trauma, especially: • Airway injury/burn • Barotrauma to lungs • Toxic chemical contamination
INJURY PATTERN: Primary: • Tympanic membrane (TM) rupture, pulmonary damage and air embolization, hollow viscus injury. Secondary: • Penetrating trauma, fragmentation injuries, blunt trauma. Tertiary: • Injuries from displacement of victim by the blast wind. Blunt/penetrating trauma, fractures, and traumatic amputations. Quaternary: • All other injuries from the blast. • Crush injuries, burns, asphyxia, toxic exposures, exacerbations of chronic illness.	

Patient Management

EMR / EMT

- Initiate General Trauma Management protocol.
- Manage hemorrhage and extremity injuries per Extremity Trauma/External Hemorrhage Management protocol.
- Airway:
  - If thermal or chemical burn to airway is suspected, early airway control is vital.
- Respiratory:
  - Administer oxygen as appropriate with a target of achieving 94-98% saturation.
  - Assist respirations as needed.
  - Cover any open chest wounds with occlusive dressing.
  - Avoid CPAP.
- Head injury:
  - If evidence of head injury, treat per Facial/Dental/Head Trauma or Traumatic Brain Injury protocol.
  - Apply spinal precautions, per the Spinal Motion Restriction protocol and immobilize the spine, as needed.
- Hypothermia Prevention
  - Prevent further heat loss in effort to maintain normal body temperature.
- Other
  - Treat pain per Pain Management protocol.
  - Treat nausea/vomiting – per Nausea/Vomiting protocol
  - Do not allow the patient to eat or drink.

EMT with IV endorsement / AEMT

- Consider Vascular Access, if needed (large bore preferred).
- Follow fluid resuscitation in General Trauma Management.

General Considerations:

- Scene safety is of paramount importance when responding to an explosion or blast injury.
- Patients sustaining blast injury may sustain complex, multi-system injuries including blunt and penetrating trauma, shrapnel, barotrauma, burns, and toxic chemical exposure.
- Follow Prehospital Trauma Triage Destination Procedure.
- For threatened airway from burns, expedited rendezvous to closest advanced airway manager for prompt early and aggressive airway management.
- Consider the use of air transport and ALS upgrade for time advantage.
- Minimize IV fluid resuscitation in patients without signs of shock.
- Consider potential for barotrauma including tension pneumothorax and tympanic membrane perforation.
- Rapid transport to a trauma hospital is preferable, whenever possible.

Burns

Inclusion Criteria	Pertinent Assessment Findings
Patients sustaining: • Thermal burns • Chemical burns • Electrical burns	Patient may present with: • Airway – stridor, hoarse voice • Mouth and nares – redness, blisters, soot, singed hairs • Breathing – rapid, shallow, wheezes, rales • Skin – Estimate Total Burn Surface Area (TBSA) and depth (partial vs. full thickness) • Associated trauma – blast, fall, assault

Patient Management

EMR

- Initiate General Trauma Management protocol.
- Stop the burning process with water or saline.
  - Remove wet or smoldering clothing.
  - Remove jewelry.
  - If concerned of a Hazmat situation, brush off powdery substances before flushing wounds with tepid water, avoiding hypothermia.
  - Leave blisters intact.
- Continually monitor the airway for evidence of obstruction.
- Cover the burned area with a dry sterile dressing. DO NOT use any type of ointment, lotion or antiseptic.
- Estimate burn involved body surface area using the "Rule of Nines."
  - Superficial burns (1st degree burns) are not included in burn percentage of TBSA.
- Initiate Spinal Motion Restriction protocol as needed. If not necessary, place patient in a position of comfort.
- If systolic blood pressure is < 90 mmHg systolic, consider other causes and treat per Shock/Hypotension protocol.
- Do not allow the patient to eat or drink.
- Treat nausea/vomiting – per Nausea/Vomiting protocol
- Treat pain per Pain Management protocol.

If chemical burn:

- Consider Haz-Mat response.
- Protect yourself from contamination.
- Flush contaminated areas with copious amounts of water.
- If the chemical is dry, carefully brush off prior to flushing.

If electrical burn:

- Apply sterile dressings to entry and exit wounds.

Confined space / respiratory

- Remove patient from hazard.
- Administer high flow Oxygen.

EMT

- Consider ECG / 12 lead, if available

EMT with IV endorsement / AEMT

- Consider Vascular Access, if needed (large bore preferred)
- Follow fluid resuscitation.
- If large burn, or TBSA greater than 20%
    - Adults and children >14 years: LR 500ml/hour
    - Children 6-13 years: LR 250ml/hr
    - Children ≤5 years: LR 125 ml/hr

Pediatric Considerations:

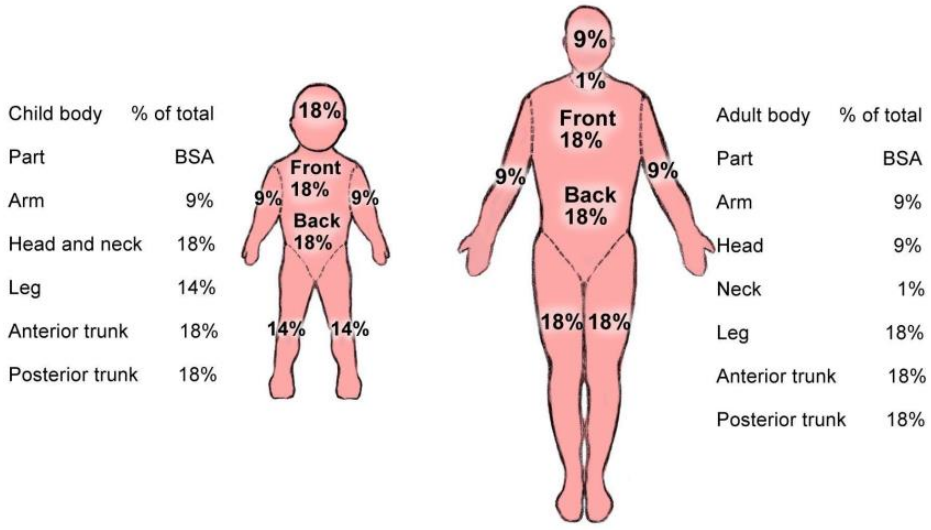
- Consider non-accidental trauma.
- Closely monitor vital signs; blood pressure may drop quickly. Treat per Shock/Hypotension protocol, as needed.

Transport Considerations:

If the patient has the following, contact medical control and request instructions for transport destinations.

- Partial thickness burns > 10% total body surface area (TBSA).
- Burns that involve the face, hands, feet, genitalia, perineum, or major joints.
- Third degree burns in any age group.
- Electrical burns, including lightning injury.
- Chemical burns.
- Inhalation injury.
- Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality.
- Any patient with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if the trauma poses the greater immediate risk, the patient may be initially stabilized in atrauma center before being transferred to a burn unit.
- Burned children to hospitals without capability for the care of children.
- Burn patients who require special social, emotional, or rehabilitative intervention.

RULE OF NINES



Conducted Electrical Weapon Injury (I.E., TASER®)

Inclusion Criteria	Patient Care Goals
• Patient received either a weapon's direct-contact discharge or struck by the barbed dart of a conducted electrical weapon. • Patient may have sustained fall or physical confrontation trauma. • Patient may be under the influence of toxic substances and or may have underlying medical or psychiatric disorder.	• Manage the condition that triggered the application of the conducted electrical weapon with special attention to patients meeting criterion for delirium with agitated behavior. • Ensure patient is appropriately secured or restrained with assistance of law enforcement to protect the patient and clinicians. • Perform comprehensive trauma and medical assessment for injuries (e.g., from falls or altercations or concomitant medical issues) • If discharged from a distance, up to two single barbed darts (13 mm length) should be located. • Do not remove barbed darts from sensitive areas (head, neck, hands, feet, or genitals). See Procedures Section- Taser Dart Removal

Key Considerations-

- Conducted electrical weapon can be discharged in three fashions:
  - Direct contact without the use of the darts
  - A single dart with addition contact by direct contact of weapon
  - From a distance up to 35 feet with two darts
- The device delivers 19 pulses per second with an average current per pulse of 2.1 milliamps which, in combination with toxins/drugs, patient's underlying diseases, excessive physical exertion, and trauma, may precipitate arrhythmias. Consider cardiac monitoring and 12-lead EKG assessment.
- Drive Stun is a direct weapon two-point contact which is designed to generate pain and not incapacitate the subject. Only local muscle groups are stimulated with the Drive Stun technique.

Patient Management
EMR

- Evaluate patient for evidence of delirium with agitated behavior manifested by varied combination of agitation, reduced pain sensitivity, elevated temperature, persistent struggling, or hallucinosis.
- Thoroughly assess the patient for trauma as the patient may have fallen from standing or higher.
- Ascertain if more than one TASER® cartridge was used (by one or more officers, in effort to identify total number of possible darts and contacts)
- Make sure the patient is appropriately secured with assistance of law enforcement to protect the patient and staff.
- Some EMS agencies treat all barbed darts as a foreign body and leave them for physician removal while others allow EMS or law enforcement to remove barbed darts except for sensitive areas (head, neck, hands, feet, or genitals). Follow local protocols, including those of law enforcement for evidence collection and retention.
- Treat medical and traumatic injury

EMT / AEMT

- Once patient has been appropriately secured or restrained with assistance of law enforcement, perform primary and secondary assessment including EKG, pulse oximeter, and consider 12-lead EKG.

General Considerations:

- Before removing the barbed dart, make sure the cartridge has been removed from the conducted electrical weapon.
- Patients should not be restrained in the prone, face down, or hog-tied position as respiratory compromise is a significant risk.
- The patient may have underlying pathology before being tased (refer to appropriate guidelines for managing the underlying medical/traumatic pathology)
- Perform a comprehensive assessment with special attention looking for signs and symptoms of active medical decompensation.
- Transport the patient to the hospital.
- EMS clinicians who respond to a conducted electrical weapon patient should not perform a "medical clearance" for law enforcement to then take the patient to a nonmedical facility.

Crush Injury / Crush Syndrome

Inclusion Criteria	Pertinent Assessment Findings
• Traumatic crush mechanism of injury • Non-traumatic injuries that may cause compartment syndrome include prolonged immobilization, prolonged compression of the torso/limbs, electrical injury, or burns	• Mental status/Glasgow Coma Scale (GCS) • Evaluation for fractures and potential compartment syndrome development (neurovascular status of injured extremity) • Examination of spine • Evidence of additional trauma, potentially masked by with other painful injuries

Patient Management

EMR

- Initiate General Trauma Management protocol.
- Evaluate degree of entrapment and viability of extremities (absent pulse, blanched skin,capillary refill, diminished sensation, extremely cold to the touch).
- Manage hemorrhage per Extremity Trauma/External Hemorrhage Management protocol.
- Initiate Spinal Motion Restriction protocol, as needed.
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.
- Do not allow the patient to eat or drink.
- Treat nausea/vomiting – per Nausea/Vomiting protocol.

Wound care:

- Remove all restrictive dressings (clothing, jewelry, etc.).
- Monitor distal pulse, motor, and sensation in involved extremity.
- Bandage all open wounds (irrigate if needed).
- Stabilize all protruding foreign bodies (impaled objects).
- Splint/immobilize injured areas.

EMT

- Consider ECG / 12 lead, if available.
- Treat pain per Pain Management protocol.
- For suspected pelvic crushing injuries, follow the Pelvic Wrap procedure if indicated.

EMT with IV endorsement / AEMT

- Consider Vascular Access, if needed (large bore preferred).
- Follow fluid resuscitation in General Trauma Management section.
- Prior to extrication begin to administer 1000 – 2000 mL fluid bolus then maintain 500 mL/hr, contact medical control for guidance on total fluid amount.

General Considerations:

- Rapid extrication and transportation to a definitive care facility (trauma center preferred)
- A patient with a crush injury may initially present with very few signs and symptoms. Maintain a high index of suspicion for any patient with a compressive mechanism of injury.

Electrical Injuries / Lightning Strike Injury

Inclusion Criteria	Pertinent Assessment Findings
• Patients of all ages who have been the victim of lightning strike injury • Exposure to electrical current (AC or DC).	• Presence of thermal or non-thermal burns • Evidence of trauma • Evidence of focal neurologic deficits • Identification of potential trauma concomitant with electrical injury • Presence of cardiac dysrhythmias

Patient Management

EMR

- Initiate General Trauma Management protocol.
- Assure patent airway — if in respiratory arrest only, manage airway as appropriate
- If in cardiopulmonary arrest, start CPR.
- Apply Spinal Motion Restriction protocol if associated trauma suspected.
- Apply dry dressing to any wounds.
- Remove constricting clothing and jewelry since additional swelling is possible.
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.
- Do not allow the patient to eat or drink.
- Treat nausea/vomiting – per Nausea/Vomiting protocol.
- Treat pain per Pain Management protocol.

EMT

- Consider ECG / 12 lead, if available.

EMT with IV endorsement / AEMT

- Establish vascular Access.
- Follow fluid resuscitation in General Trauma Management.

General Considerations:

- Lightning strike cardiopulmonary arrest patients have a high rate of successful resuscitation, if initiated early, in contrast to general cardiac arrest statistics
- If multiple victims, cardiac arrest patients whose injury was witnessed or thought to be recent should be treated first and aggressively (reverse from traditional triage practices)
  - Patients suffering cardiac arrest from lightning strike initially suffer a combined cardiac and respiratory arrest.
  - Return of spontaneous circulation may precede resolution of respiratory arrest.
  - Patients may be successfully resuscitated if provided proper cardiac and respiratory support, highlighting the value of “reverse triage.”
- Electrical current causes injury through three main mechanisms:
  - Direct tissue damage, altering cell membrane resting potential, and eliciting tetany in skeletal and/or cardiac muscles.
  - Conversion of electrical energy into thermal energy, causing massive tissue destruction and coagulative necrosis
  - Mechanical injury with direct trauma resulting from falls or violent muscle contraction.
- It may not be immediately apparent that the patient is a lightning strike victim.
- Injury pattern and secondary physical exam findings may be key in identifying patient as a victim of lightning strike.

Extremity Trauma / External Hemorrhage Management

Inclusion Criteria	Pertinent Assessment Findings
• Traumatic extremity hemorrhage (external hemorrhage) due to blunt or penetrating injury • Known or suspected extremity fractures or dislocations	• Assess degree of extremity/external bleeding/blood loss • Assess Vascular status of extremity (Pallor, Pulse, Capillary refill, and skin temperature) • Evaluate for obvious deformity, shortening, rotation, or instability • Neurologic status of extremity (Sensation to light touch, Distal movement of extremity) • Minimize blood loss from extremity hemorrhage • Avoid hemorrhagic shock due to extremity hemorrhage • Minimize pain and further injury due to fractures, dislocations, or soft-tissue injuries

Patient Management

EMR

- Initiate General Trauma Management protocol.
- Refer to Crush Injury / Crush Syndrome protocol if indicated.
- Manage External Bleeding
  - Expose the wound and apply direct pressure to bleeding site, followed by a pressure dressing.
  - If direct pressure/pressure dressing is ineffective or impractical:
  - If the bleeding site is amenable to tourniquet placement, apply a commercial tourniquet to extremity:
    - Tourniquet should be placed 2–3 inches proximal to the wound, not over a joint, and tightened until bleeding stops and distal pulse is eliminated.
    - If bleeding continues, place a second tourniquet proximal to the first.
    - For thigh wounds, consider placement of two tourniquets, side-by-side, and tighten sequentially.
- Wound Packing
  - Indications: Groin/axillary (“junctional”) injury or any limb wound with persistent bleeding despite direct pressure and/or application of commercial tourniquet(s)
  - Materials: hemostatic gauze, regular gauze, or any available material
  - Procedure: pack tightly and fully to the depth of the wound until bleeding stops (may require significant packing for deep, large wounds), then apply direct pressure and/or pressure dressing; do not remove packing to assess bleeding
  - Pack around (do not remove) bone fragments or foreign objects.
- Treat pain per Pain Management protocol.
  - Do not loosen tourniquet to relieve pain.
- Stabilize suspected fractures/dislocations:
  - Strongly consider pain management before attempting to move a suspected fracture.
  - If distal vascular function is compromised, gently attempt to restore normal anatomic position, and reassess perfusion status.
  - Use splints as appropriate to limit movement of suspected fracture.
  - Elevate extremity fractures above heart level whenever possible to limit swelling.
  - Apply ice/cool packs to limit swelling in suspected fractures or soft tissue injury, but do not apply ice directly to bare skin.
  - Reassess distal neurovascular status after any manipulation or splinting of fractures/dislocations.

    - Dress open wounds associated with fractures with saline-moistened gauze.
- Remove wet or blood-soaked clothing and use measures to prevent heat loss.
- Remove jewelry and potentially constricting clothing from the injured limb.
- Do not remove impaled foreign bodies.
- Initiate Spinal Motion Restriction protocol as needed.
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.
- Do not allow the patient to eat or drink.
- Treat nausea/vomiting – per Nausea/Vomiting protocol.

EMT

- Consider ECG / 12 lead, if available

EMT with IV endorsement / AEMT

- Establish Vascular Access, large bore preferred
- Follow fluid resuscitation in General Trauma Management.

General and Pediatric Considerations:

- Tourniquets should be applied to bare skin, 2–3 inches proximal to the wound.
- Tourniquet should be reassessed at every stage of patient movement to ensure ongoing hemorrhage control.
- Survival is markedly improved when a tourniquet is placed before shock develops.
- Properly-applied tourniquets in conscious patients are painful – treat pain with analgesics, but do not loosen a tourniquet to relieve discomfort.
- Arterial pressure points may not be effective in controlling hemorrhage; however, may help slow bleeding while tourniquet is applied.
- Amputated body parts should be transported with patients for possible re-implantation.
    - It should remain cool but dry.
    - Place the amputated part in a plastic bag.
    - Place the bag with the amputated part on ice in a second bag.
    - Do not let the amputated part come into direct contact with the ice.
- Pediatric considerations:
    - External hemorrhage control to prevent shock is critical in infants and young children, due to their relatively small blood volume.
    - Most commercial tourniquets can be used effectively on children over 2 years of age.
    - Stretch-wrap-tuck elastic-type tourniquets can be used on any age patient.
    - Direct pressure and wound packing may be more suitable for infants and young children.
    - Consult with local online medical direction regarding use of traction splints for femur fractures in young children, to avoid risk of possible nerve damage.

Facial/Dental/Head Trauma

Inclusion Criteria	Pertinent Assessment Findings
• Isolated facial injury, including trauma to the eyes, nose, ears, midface, mandible, dentition • Adult or pediatric patient with blunt or penetrating head injury – loss of consciousness or amnesia not required	• ABCs (Airway, Breathing, Circulation) with particular focus on ability to keep airway patent • Bleeding (which may be severe – epistaxis, oral trauma, facial lacerations) • Patient medications with focus on blood thinners/anti-platelet agents • Mental status assessment for possible traumatic brain injury • Gross vision assessment • Dental avulsions • Any tissue or teeth avulsed should be collected, if possible • Specific re-examination geared toward airway and ability to ventilate adequately • Unstable facial fractures that can abruptly compromise airway • Loose teeth and retro-pharynx bleeding

Patient Management

EMR / EMT

- Initiate General Trauma Management protocol.
- Initiate Spinal Motion Restriction protocol, as needed.
- If blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.
- Treat nausea/vomiting – per Nausea/Vomiting protocol.
- Do not allow the patient to eat or drink.
- Treat pain per Pain Management protocol.

- Avulsed tooth:
  - Avoid touching the root of the avulsed tooth. Do not wipe off tooth.
  - Pick up at crown end. If dirty, rinse off under cold water for 10 seconds.
  - Place in milk or saline as the storage medium. Alternatively, an alert and cooperative patient can hold tooth in mouth using own saliva as storage medium.
- Epistaxis: squeeze nose (or have patient do so) for 10–15 minutes continuously.
- Consider the use of Oxymetazoline (Afrin) EMT*/AEMT*.
  - Adult/Pediatric- 2-3 squirts each nostril IN (not recommended for children under 6 y/o).
- Eye trauma:
  - Place eye shield for any significant eye trauma.
  - If globe is avulsed or enucleated, do not put it back into socket. Cover eye socket with moist saline dressings and then place eye shield over it.
- Head wound care.
  - Control bleeding with direct pressure if no suspected open skull injury.
  - Moist sterile dressing to any potential open skull wound.
  - Cover an injured eye with moist saline dressing and place a cup over it.
- Mandible unstable:
  - Expect patient will not be able to spit/swallow effectively and have suction readily available.
  - Preferentially transport sitting up with emesis basin/suction available (in the absence of a suspected spinal injury).
- Nose/ear avulsion:

- Recover tissue, if possible.
- Transport with tissue wrapped in dry sterile gauze in a plastic bag placed on ice.
- Severe ear and nose lacerations can be addressed with a protective moist sterile dressing.

EMT with IV endorsement / AEMT

- Consider Vascular Access, if needed (large bore preferred).
- Follow fluid resuscitation in General Trauma Management section.
- Consider EtCo2, if available.

General Considerations:

- Consider non-accidental trauma / injury in pediatric patients.
- Airway may be compromised because of fractures or bleeding.
- Lost teeth not recovered on scene may be in the airway.
- After nasal fractures, epistaxis may be posterior and may not respond to direct pressure over the nares with bleeding running down posterior pharynx, potentially compromising airway.
- Protect avulsed tissue and teeth.
- Avulsed teeth may be successfully re-implanted if done so in a very short period after injury.
- Use moist sterile dressing for ear and nose cartilage.
- For penetrating eye injuries, do not remove foreign bodies. Splint in place. Cover uninjured eye or ask patient to close eye to prevent conjugated movement of injured eye.
- Consider administration of antiemetics to prevent increases in intraocular pressure due to nausea and vomiting in penetrating and blunt trauma to the eye.
- Head injury severity guideline:
    - Mild: GCS 14–15/AVPU = (A)
    - Moderate: GCS 9–13/AVPU = (V)
    - Severe: GCS 3–8/AVPU = (P) or (U)
- EtCO2 target 40 mmHg (range 35–45 mmHg). Meticulous prevention of hypocapnia in all patients
- EtCO2 monitored and documented for all traumatic brain injury (TBI) patients with advanced airway and strict avoidance of hyperventilation, overventilation, and hypocapnia).

Pelvis Trauma

Inclusion Criteria	Pertinent Assessment Findings
• Patients involved in any traumatic incident with a suspected pelvic fracture accompanied by hemodynamic instability and / or severe pain	• MOI - Mechanism of Injury • Blunt force trauma at the waist or lower back • Obvious signs and symptoms of pain and disability • Signs and symptoms of hypovolemic shock • Difficulty or inability to move legs • The feeling of lost rigidity and instability with palpation of hip joints • Abrasions, contusions or bleeding around the rectal, vaginal, urethral areas or hematuria • Limb length discrepancy, or deformity • Hematomas above the inguinal ligament, scrotum, and thigh • Presence of a symphysis gap on gentle palpation • Pelvic ring mobility with gentle compression of the anterior superior iliac crests (limit compressions to a single attempt)
Key Considerations- • Time pelvic binder applied. • Blood pressure changes before and after treatment • Care should be taken to stabilize, but not over-reduce the injury, especially with lateral compression injuries. • Reduction can be assessed by evaluating the patient's legs, greater trochanters, and patellae, which should be in an anatomically neutral position. • In males make certain the genitalia are elevated up out of the groin area and not entrapped by the device.	

Patient Management

EMR / EMT

- Initiate General Trauma Management protocol.
- Initiate Spinal Motion Restriction protocol, as needed.
- If blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension. protocol.
- Treat nausea/vomiting – per Nausea/Vomiting protocol.
- Do not allow the patient to eat or drink.
- Treat pain per Pain Management protocol.
- Pelvic Stabilization, consider one of the following applications:
  - Commercial Pelvic Binder
  - Any other MPD approved device.
  - Pelvic Sheet Wrap (if commercial device not available). Wrap sheet around pelvis and secure ends to maintain compression and stabilization during transport.

EMT with IV endorsement / AEMT

- Consider Vascular Access, if needed (large bore preferred).
- Follow fluid resuscitation in General Trauma Management section.

Spinal Motion Restriction (SMR) Guidelines

Inclusion Criteria	Pertinent Assessment Findings
• Traumatic mechanism of injury	• Mental status • Normal neurologic examination • Evidence of intoxication • Evidence of multiple traumas with other severe injuries

Patient Management
EMR/EMT/AEMT

- SMR can be achieved by use of an ambulance cot, scoop stretcher, vacuum splint, or other similar device upon which a patient is safely secured during EMS transport.
- Long backboard may still have a role in facilitating the safe extrication and rapid transfer of patients to the ambulance cot.
- Indications for SMR following blunt trauma include:
  - Acutely altered level of consciousness (e.g. GCS < 15, evidence of intoxication), or
  - Midline neck or back pain and/or tenderness, or
  - Focal neurologic signs and/or symptoms (e.g. numbness or motor weakness), or
  - Anatomic deformity of the spine, or
  - Distracting circumstances or injury (e.g. long bone fracture, degloving or crush injuries, large burns, emotional distress, communication barrier) or any similar injury that impairs the patient's ability to contribute to a reliable examination.
- There is no indication for SMR following penetrating trauma.
- SMR, when indicated, should be applied to the entire spine and includes the following best practices.
- Place an appropriately sized cervical collar to limit movement of the cervical spine whenever SMR is employed.
- Stabilize the spine by keeping the head, neck and torso in alignment as much as possible during extrication, transfer and transport.
- If patient is ambulatory on scene or can safely self-extricate:
  - Assist the patient in moving to the ambulance cot with minimal spinal motion into a seated position.
  - Once on the ambulance cot, lay the patient back gently into the supine position.
- If patient is not ambulatory or extrication is required:
  - Pay particular attention to minimizing spinal motion during patient transfer from one surface to another including, for example, ground to ambulance cot,
  - Utilize a scoop stretcher, a long backboard, or a vacuum mattress to assist with patient extrication and transfer to the ambulance cot to minimize movement of the possibly injured spine.
- Once a patient is safely positioned on an ambulance cot, the rigid transfer device (e.g., long backboard, scoop stretcher) should be removed unless removal interferes with critical patient treatments or interventions. Removal of the transfer device should occur in all but the rarest of situations.
- After removal of the transfer or extrication device, maintain SMR by ensuring that the patient remains secured in the supine position, directly on the ambulance cot, with a cervical collar in place.

- Consider extremes of age during assessment and utilize caution:
  - Age alone should not be a factor in decision-making for prehospital spine care.
  - Communication barriers with infants/toddlers or elderly patients with dementia may prevent accurate spinal assessment.
- Pediatric: Additional padding under the shoulders is often necessary to avoid excessive cervical spine flexion with SMR.
- If elevation of the head is clinically indicated (e.g., severe traumatic brain injury, respiratory distress):
  - The head of the ambulance cot may be elevated 30 degrees while maintaining alignment of the neck and torso.
  - SMR cannot be properly performed with a patient in an upright sitting position.
- EMS personnel shall notify the receiving facility that a patient is in SMR on the ambulance cot, as the use of a slider board or similar device is necessary to safely transfer the patient from the ambulance cot to the hospital cot.

Traumatic Brain Injury (TBI)

Inclusion Criteria	Pertinent Assessment Findings	Guidelines
• Adult or pediatric patient with blunt or penetrating head injury – loss of consciousness or amnesia not required	• ABCs (Airway, Breathing, Circulation) with particular focus on ability to keep airway patent • Bleeding (which may be severe – epistaxis, oral trauma, facial lacerations) • Patient medications with focus on blood thinners/anti-platelet agents • Neurologic status assessment findings • Pupils • Trauma findings on physical exam	**Head injury severity guideline:** • Mild: GCS 14–15/AVPU = (A) • Moderate: GCS 9–13/AVPU = (V) • Severe: GCS 3–8/AVPU = (P) or (U) **Target Ventilation Rates** • Pediatric Age 0-2 years: 1 breath every 2-3 seconds (25 breaths per minute) • Pediatric Age 3-14 years: 1 breath every 3 seconds (20 breaths per minute) • Adolescents/Adults Age 15+: 1 breath every 6 seconds (10 breaths per minute)

Patient Management

EMR / EMT

- Initiate General Trauma Management protocol.
- Initiate Spinal Motion Restriction protocol, as needed.
- If systolic blood pressure is < 90 mmHg systolic, treat per Shock/Hypotension protocol.
- Treat nausea/vomiting – per Nausea/Vomiting protocol.
- Do not allow the patient to eat or drink.
- Treat pain per Pain Management protocol.
- Perform and trend neurologic status assessment (GCS or AVPU scale). Early signs of deterioration:
  - Confusion
  - Agitation
  - Drowsiness
  - Vomiting
  - Severe headache
- Severe head injury – Elevate head of bed 30 degrees.

EMT with IV endorsement / AEMT

- Consider Vascular Access, if needed (large bore preferred)
- Follow fluid resuscitation in General Trauma Management section.
- W* Consider EtCo2, if available

Pediatric and General Considerations:

- Consider non-accidental trauma / injury.
- The airway may be compromised because of fractures or bleeding.
- EMT W*/ AEMT- continuous waveform capnography can help to assure proper ventilation rate and minute volume (preventing both hyperventilation [too fast] and overventilation [too much]).
- Herniation is difficult to diagnose in the prehospital setting. Hyperventilation results in vasoconstriction which further decreases blood flow to the brain and worsens secondary brain injury.
- Follow Prehospital Trauma Triage Destination Procedure.

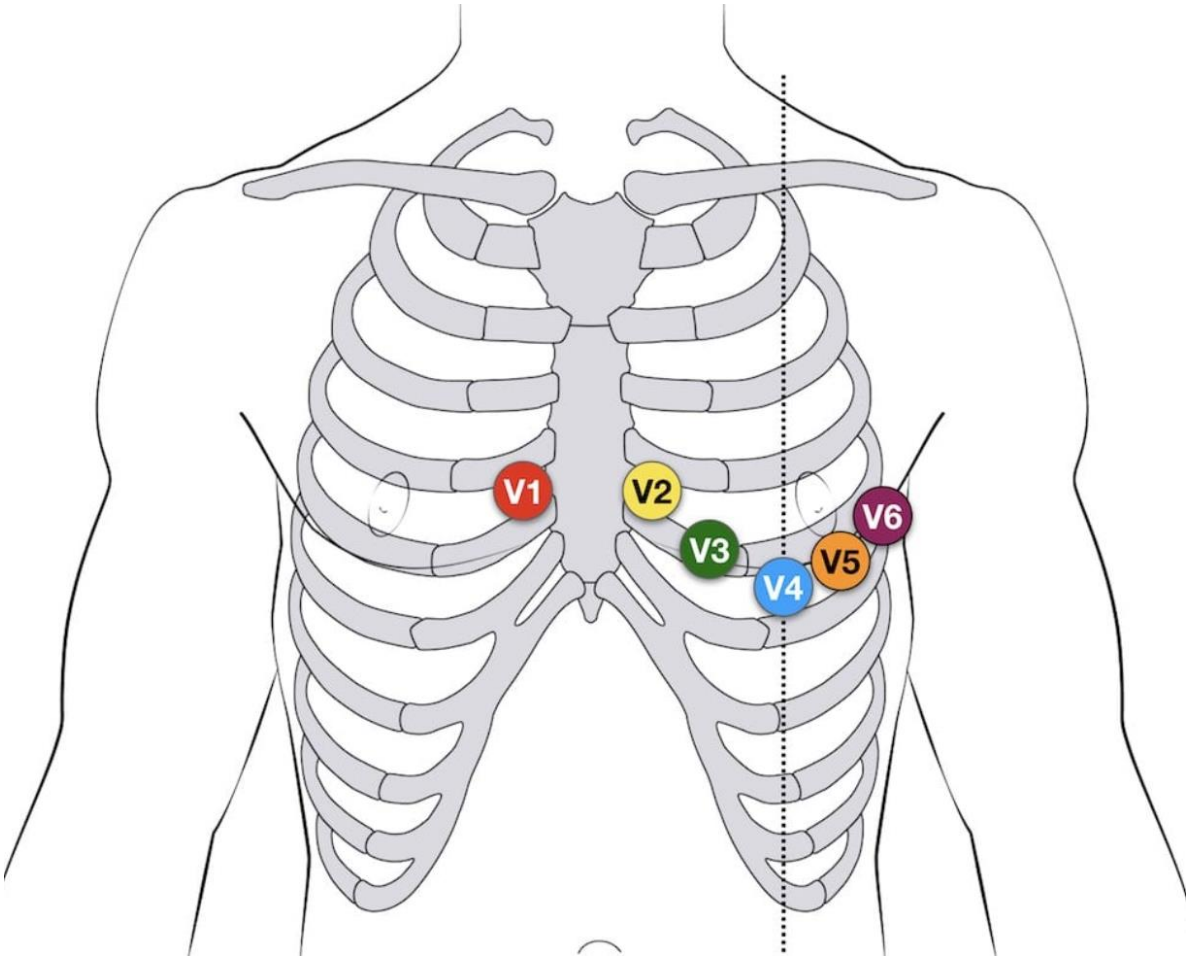
Procedures Section

12 Lead ECG Acquisition

EMT/AEMT

Indication	• The purpose of this procedure is to direct the use of the 12-lead ECG to identify ST-elevation myocardial infarction (STEMI) in the field, with the goal of reducing the time to open the occluded artery in an appropriate cardiac catheterization lab. • If agencies carry this equipment, their providers shall complete training for 12-lead ECG acquisition prior to utilizing this protocol and ECG machine. Chest pain suggestive of cardiac ischemia ○ Dull central chest pain with dyspnea ○ Radiation to arms / neck / jaw ○ Diaphoresis ○ Nausea / Vomiting ○ Unexplained syncope or near syncope ○ Do not delay prompt 12 lead acquisition to perform less critical interventions (i.e., establishing IV access)
Contraindications	Do **NOT** perform ECG on these patients- ○ Trauma unrelated to the cardiac origin ○ Cardiac or respiratory arrest ○ Any situation in which a delay would compromise patient care
Management	• Prepare all the equipment and prep the skin. • Place the four limb leads in accordance with the manufacturer's recommendations. Limb lead electrodes are typically placed on the deltoid area and the lower leg or thigh. Avoid placing limb leads over bony prominences. • Place the precordial leads (chest or V leads) in accordance with the manufacturer's recommendations. Leads locations are identified as V1 through V6. • Locating the V1 position is critically important because it is the reference point for locating the placement of the remaining V leads. To locate the V1 position: ○ Place your finger at the notch in the top of the sternum. ○ Move your finger slowly downward about 1.5 inches until you feel a slight horizontal ridge of elevation. This is the Angle of Louis where the manubrium joins the body of the sternum. ○ Locate the second intercostal space on the patient's right side, lateral to and just below the angle of Louis. ○ Move your finger down two more intercostal spaces to the fourth intercostal space which is the V1 position. ○ Place V2 by attaching the positive electrode to the left of the sternum at the further intercostal space. ○ Place V4 by attaching the positive electrode at the mid-clavicular line at the fifth intercostal space. V4 must be placed prior to V3. ○ Place V3 by attaching the positive electrode in the line midway between V2 and V4.

	○ Place V5 by attaching the positive electrode at the anterior axillary line at the same level as V4. ○ Place V6 by attaching the positive electrode to the mid-axillary line at a level as V4. ○ Ensure that all leads are attached. ○ Turn on the machine. ○ Record the tracing by following the machine-specific acquisition procedure and function. ○ Document on the tracing the patient's name and the date and the time the tracing was obtained.



Continuous Positive Airway Pressure (CPAP)

EMT/AEMT

Indication	• Severe respiratory distress and/or impending respiratory failure secondary to the following: o Heart failure with acute pulmonary edema o Acute hypoxic respiratory failure o Acute worsening of COPD (exacerbation with limited air exchange) o Status asthmaticus o Poor air exchange makes nebulizer treatments ineffective o Patient preference to avoid intubation • If agencies carry this equipment, their providers shall complete training for CPAP prior to utilizing this protocol and CPAP equipment.
Contraindications	• Facial deformity (mask leak) • Hemodynamic instability • Inability to clear secretions • Inability to tolerate mask • Inability to maintain airway or respiratory drive • Patients less than 8 years of age.
Management	• **Assessment** o Severe difficulty breathing o Retractions and accessory muscle use o Pursed lips and one to two-word sentences o Wet lung sounds o Evidence of pulmonary edema, including wet cough or spitting up frothy pink sputum. o Increased fatigue from labored breathing • **Intervention Sequence** o Explain therapy to patient o Request assistance from partner for proper placement of the mask o Start oxygen o Place CPAP mask on the patient or have the patient hold mask to their face finding a good seal o Tighten straps to stop leaks o Reassess the patient's status every 5 minutes o Contact Medical Control as needed o Consider rendezvous with ALS if it would significantly decrease the time for the patient to obtain a higher level of care

EZ-IO

EMT/AEMT**

Indication	AEMTs or EMT IV Technicians: vascular access is needed, and peripheral access has failed. IO access is indicated if the patient exhibits one or more of the following: • Altered mental status (GCS of 8 or less) • Respiratory compromise • Hemodynamic instability
Contraindications	• Fracture of the tibia or femur • Previous orthopedic procedures (IO within 24 hours, knee replacement) • Pre-existing medical condition (tumor near-site or peripheral vascular disease). • Infection at the insertion site • Inability to locate landmarks and find tibial plateau with needle
Management	**Intervention Sequence** ***SPECIAL DIRECTIVE:*** *The primary insertion site to be utilized is the proximal tibia; however, if providers are unable to utilize the primary insertion site and have received MPD-approved training, they may utilize the proximal humerus as an alternate insertion site.* 1. Locate insertion site and cleanse using aseptic techniques (anterior tibia 1-3 cm below the tibial tuberosity). 2. Prepare EZ-IO driver and needle set 3. Stabilize the leg, position the driver at the insertion site with the needle at a 90-degree angle to the surface of the bone 4. Power the needle set through the skin until you feel the needle tip encounter the bone, then continue to apply firm, steady pressure through the cortex. Stop when the needle flange touches the skin or a sudden decrease in resistance is felt. 5. Remove the driver from the needle set. 6. Confirm placement 7. Connect primed EZ-connect 8. Flush or bolus the EZ-IO catheter rapidly with 10 ml of NS 9. Administer the infusion or medications 10. Dress the site and secure the tubing, apply the EZ-IO wrist indicator 11. If unsuccessful or subcutaneous swelling occurs stop IV, remove needle and cover the wound. 12. Make a second attempt in the other leg. 13. Humeral head as an alternative site for access may be used if the provider has received appropriate training and all other attempts have failed.
Sizing	Follow manufacturer recommendations • Clinical judgement should be used to determine appropriate needle set selection based on patient weight, anatomy, and tissue depth overlying the insertion site.

Nasal Atomizer

EMR/EMT/AEMT

Indication	• If no IV access is available, certain medications may be considered for administration intra-nasally through a mucosal atomization device (MAD).
Management	• **Intervention Sequence** 1. Aspirate the proper volume of medication into the syringe plus 0.1 ml of medication should be drawn up to account for the dead space within the atomizer. 2. Twist off/remove the syringe from the needleless device. 3. Attach the atomizer tip via the Luer lock mechanism, twist it into place. 4. Using your free hand to hold the crown of the head stable, place the tip of the atomizer snugly against the nostril aiming slightly up and outward (toward the top of the ear on the same side) 5. Briskly compress the syringe plunger to deliver half the medication into the nostril. 6. Ideally, ½ml per nostril should be given, but up to 1 ml per nostril can be given. There will be some runoff. If you need more than 2 ml total, consider titration with the second dose given in 5 minutes or switch to IO administration. Additionally, it would be ideal to give half the dose of the medication per nostril.
Approved Pharmacology-Intra-Nasal	• Naloxone

Physical Restraint

EMT/AEMT

Indication	• Violent, combative, agitated, or excited delirium patients, whose behavior requires immediate physical restraint for provider and patient safety.
Management	• **Assessment** ○ Controlling the patient and provider safety takes precedence over any other intervention. ○ Continuously monitor airway. ○ Support ABC's as best as possible. ○ If the scene becomes unsecure and you can leave, back out and wait for law enforcement. If for some reason backing out is not an option or your way out of the scene is obstructed, restraints may be deployed. • **Intervention Sequence** ○ Deploy restraints as quickly as possible. ○ Coordinate efforts with multiple responders on scene to improve overall safety and efficiency of the restraint process. ○ Once control of the patient has been accomplished, switch over to soft restraints, especially if the patient is to be transported on the stretcher and if transport time is long. • **NEVER** place patient in a prone position or between devices.
Transportation Considerations	• Circulation must be checked every 15 minutes and documented. • In situations where the patient is under arrest and handcuffs are applied by law enforcement: • The patient will not be cuffed to the stretcher. • A law enforcement officer shall accompany the patient in the ambulance if the handcuffs are to remain applied. • A law enforcement officer may elect to follow the ambulance in the patrol car if the patient has been restrained with restrains other than handcuffs. • **NEVER** place patient in a prone position or between devices.

Supraglottic Device / I-Gel

EMT/AEMT**

<table>
<tr><td>Indication</td><td>

The patient is unconscious and unresponsive without a gag reflex. I-Gel Supraglottic airways are considered advanced airways.
To utilize this protocol, EMTs must have an endorsement on their credential allowing them to place supraglottic airways.

</td></tr>
<tr><td>Contraindications</td><td>

Spontaneous respirations, intact gag reflex, facial trauma, or distorted airway preventing glottic seal.

</td></tr>
<tr><td>Management</td><td>
Intervention Sequence

1. Select appropriate size I-Gel, reference chart below.
2. Place a small layer of water-based lubricant onto the I-Gel along the integral bite block, back, sides, and front of the cuff.
3. Inspect carefully and confirm there are no foreign bodies or large amounts of lubricant obstructing the distal opening.
4. Grasp the lubricated I-Gel firmly along the bite block (near the BVM adapter).
5. Position the device so that the I-Gel cuff outlet is facing toward the chin of the patient.
6. Place the patient in the sniffing position with head extended and neck slightly hyperextended.
7. Gently press down on the patient's chin to open the mouth. It is not necessary to insert fingers or thumbs into the patient’s mouth during the insertion process.
8. Introduce the leading tip into the mouth of the patient in a direction towards the hard palate.
9. Glide the device downwards and backward along the hard palate with a continuous but gentle push until resistance is felt. Sometimes a feeling of ‘give way’ is felt before the end point of 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 with insertion until definitive resistance is met. Do not repeatedly push the I-Gel down or apply excessive force.
10. The tip of the airway should now be in the upper esophageal opening, the cuff should be located against the laryngeal framework (over the glottic opening), and the patient’s teeth should be resting on the integral bite block (near the BVM adapter).
11. Apply BVM and ventilate, assess for proper placement.
</td></tr>
<tr><td>Size Chart</td><td>
<table>
<tr><th>I-Gel Size</th><th>Patient Size</th><th>Patient Weight (Kg)</th><th>Patient Weight (lbs)</th></tr>
<tr><td>Pink - 1</td><td>Neonate</td><td>2-5</td><td>4-11</td></tr>
<tr><td>Blue - 1.5</td><td>Infant</td><td>5-12</td><td>11-26</td></tr>
<tr><td>Gray - 2</td><td>Small Pediatric</td><td>10-25</td><td>22-55</td></tr>
<tr><td>White - 2.5</td><td>Large Pediatric</td><td>25-35</td><td>55-77</td></tr>
<tr><td>Yellow - 3</td><td>Small Adult</td><td>30-60</td><td>66-132</td></tr>
<tr><td>Green - 4</td><td>Medium Adult</td><td>50-90</td><td>110-198</td></tr>
<tr><td>Orange - 5</td><td>Large Adult</td><td>90+</td><td>198+</td></tr>
</table>
</td></tr>
</table>

Taser Dart Removal

***Level determined by MPD**

Indication	• Patients that have been tased by law enforcement. Unlike other forms of penetrating foreign bodies, taser barbed darts are approximately ¼" and safe to be removed by EMS personnel when requested by law enforcement.
Contraindications	• Do not remove barbs in the field if they involve the eye, face, neck, breast, or groin. Patients with darts in these areas should be transported to the hospital to have them removed by a physician.
Management	• **Assessment** ○ The patient must be in law enforcement custody and adequately restrained. ○ Assess the patient to determine if there are any other medical problems or injuries present. ○ Obtain vital signs. • **Intervention Sequence** ○ Explain the process to the patient. ○ Ensure the wires are disconnected from the gun, or the wires have been cut. ○ Push on the body part in which the barbed dart is imbedded and simultaneously pull the dart straight out. ○ Clean and dress the puncture area as needed. ○ Dispose of darts appropriately.
Special Considerations	• If the patient does not have any other presenting injuries or illness, the patient may be left in the custody/care of law enforcement. • If the patient needs to be transported to the hospital, follow the physical restraint protocol.
Documentation Considerations	• Detailed description of patient complaints, injuries, and vital signs. • All actions taken include preservation of evidence and coordination with law enforcement.

Tourniquet Application

EMR/EMT/AEMT

Indication	• To control bleeding when life-threatening limb hemorrhage is not controlled with direct pressure or other simple measures. Traumatic amputation has occurred.
Management	• **Assessment** Signs and symptoms for the use of a tourniquet may include: ○ Spurting/ steady flow or oozing blood ○ Bright red or dark red blood with uncontrolled bleeding ○ Separated or displacement of a body part or tissue. ○ Shock • **Intervention Sequence** 1. Expose the extremity by removing clothing in proximity to the injury. 2. Place the tourniquet directly over the exposed skin at least 2” proximal to the injury. 3. Twist tourniquet windlass rod until bleeding stops. 4. Secure tourniquet in place. 5. Record time and date of application on the patient where it can easily be seen.
Transportation Considerations	• Contact Medical Control without delay. • Position of comfort • Consider rendezvous with ALS if it would significantly decrease the time for the patient to obtain a higher level of care. • Consider the need for transport to a trauma center
Special Considerations	• The tourniquet is effectively applied when there is the cessation of bleeding from the injured extremity, indicating total occlusion of the vasculature. Any preexisting distal pulse should be absent after tourniquet application.

Uncooperative Patients / Unsecured Scenes Procedure

Procedure will need to be modified to meet the MPD to meet local and community needs.

1. Assess and ensure scene safety. Utilize the “come to us” approach if the individual is in a building or enclosed area.
2. Approach the individual in a calm, slow, reassuring, and honest manner. Having one direct point of contact with the individual, multiple people attempting to intervene may increase the patient’s confusion and agitation. Remaining responders should quietly stand back and be ready to intervene as necessary.
3. Protect the individual, bystanders, and rescuers from injury.
4. Obtain history, physical and mental status examination if safe to do so.
5. Assess and treat any medical conditions per EMS protocol.
6. Determine if individual is eligible for transport to alternative care destination per local availability.
    a. Contact the receiving facility and advise them you have an EMS patient for consideration and establish they can accept the patient. See Resource Phone List
    b. Contact medical control for confirmation of assessment findings and appropriateness of transport to a non-medical facility.
    c. Document inclusion criteria and provide to receiving facility.
7. All individuals will be assessed and evaluated by EMS, if safe to do so, regardless of transport status.
8. If transport to ED is necessary due to patient condition, request, or alternative facility not available/appropriate, transport to closest ED.

Specific Precautions:

Red Flags that this might not be a psychiatric condition:

1. Waxing and waning level of consciousness
2. Abnormal vital signs
3. Dilated or pinpoint pupils
4. First psychotic episode over the age of 30
5. Acute onset over hours/days (consider substance abuse)

Psychiatric signs/symptoms.

1. Mood disorder: depression, mania, suicide ideation, anxiety.
2. Thought disorder: hallucinations, pressured speech, racing thoughts, grandiose or paranoid ideation, delusions.

Medical illnesses including hypoglycemia, hypoxia, stroke, head injury, CNS infection may mimic psychiatric illness. Do not assume the patient’s condition is purely psychiatric.

Management Of Aggressive/Violent Patients

1. Law enforcement will intervene only when an individual poses a threat to others or themselves or has brought harm to others or has committed a criminal offense. LE will focus upon using the least force necessary to secure the situation and may elect to disengage from the scene. EMS responders need to treat these encounters with the understanding

that their and other responder's personal safety is paramount and cannot always rely on LE backup.
2. Use all means necessary to de-escalate the situation.
3. If at any time the individual becomes aggressive or violent and your and/or other responder's safety is at risk, remove yourself and fellow EMS/Fire responders from the scene. Notify LE that the individual is violent, and it is unsafe to continue evaluation and treatment. Request LE assistance prior to further contact. If none is forthcoming, see Unsecured Scene below.
4. **Your safety is paramount**. Document all encounters and reasons for leaving scene.

Unsecured Scene

1. If law enforcement does not respond or will not engage in the incident:
    a. Contact your supervisor or Battalion Chief (BC). Request additional resources (may include additional units, AMCI, DCR). A two-person crew should not attempt to manage incidents where safety is in doubt.
    b. The supervisor should review and confirm risk assessment and use this review to guide further actions.
2. If not already done, request a phone number from dispatch to call and ask the RP to come outside or meet EMS personnel at a location that provides a greater margin of safety. Any contact with the individual/RP (e.g., phone, verbal, etc.) will be documented as below.
3. Transport patient ONLY if safe to do so.
4. If the Supervisor/BC identifies you may not safely enter (or remain on) the scene or safely contact the individual, the Supervisor/BC will attempt to update the reporting party. Contact with the reporting party will be attempted prior to leaving the scene if no patient contact can be attempted. Notify dispatch upon implementation of the decision to leave the scene and terminate the call. It is not necessary to notify medical control of intent to leave the situation.
5. Any response that is terminated for crew safety shall be reported to the EMS Supervisor or EMS Chief/Captain with a copy of the PCR / documentation. EMS Chief/Captain/Supervisor will forward these to the MPDs office for review.

Documentation Requirements

1. In all cases of non-compliance with treatment and care, a complete and detailed health record will be written by the Lead EMS Provider. The minimum documentation requirements for such an encounter include:
    a. Disposition: Patient Refused Service
    b. Include the following elements in the narrative of the health care record:
2. Descriptive overview of physical characteristics of the scene (e.g., "Responded to an unconscious person in a vehicle at intersection or street name")
3. A complete description of the danger or safety elements involved.
4. List and describe the measures used to attempt to engage the patient.
5. List and describe measures used to attempt to create safety.

6. Describe the reasons why safety could not be established.
7. Describe specifics of the exposure to violence or threats of violence to EMS response personnel. Whenever possible include specific quotes from the individual.
8. Specify that Law Enforcement was requested to respond. Document that Law Enforcement did not respond or responded and chose not to engage with the individual.
9. If medical control was contacted, name of the medical control physician and time of contact.
10. When lack of capacity is identified, specific findings that contributed to that determination will be documented in the health care record (e.g., history of dementia confirmed by family, excessive exposure to heat conditions, slurred speech due to excessive alcohol intake, etc.).

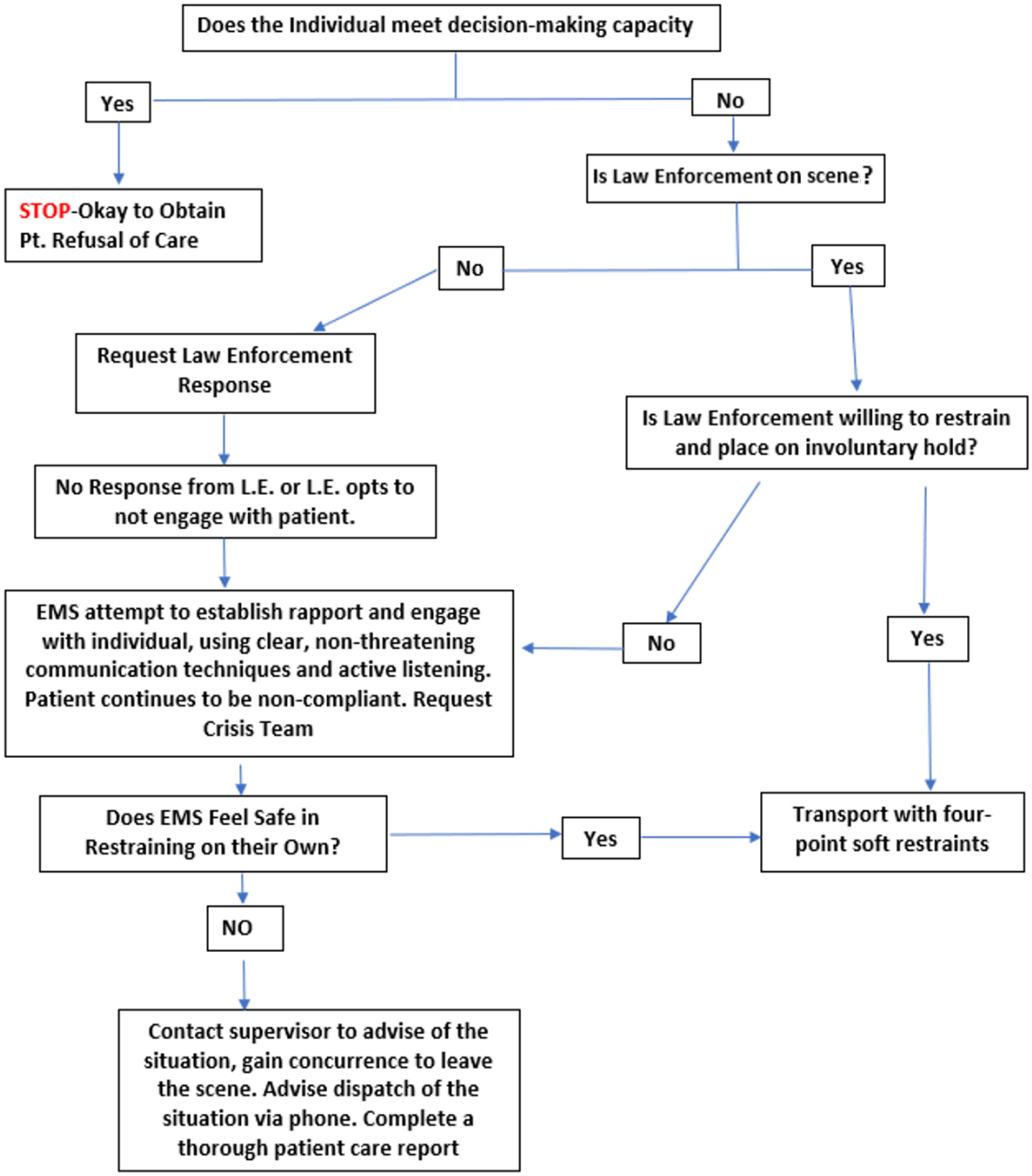
Situational Awareness and Mitigation/De-escalation Checklists

Signs of Impending Violence
☐ Clenched fists
☐ Display/threat of a weapon
☐ Wild/staring eyes
☐ Threatening posture
☐ Muscle tension around jaw
☐ Gritted teeth
☐ Threatening gestures
☐ Reddened face
☐ Bulging neck veins

General Mitigation/De-escalation Strategies (if needed to make safe withdrawal from the scene)
☐ Remove irritating stimuli
☐ Discuss situation calmly/establish rapport
☐ Express understanding of patient's situation
☐ Reinforce positive aspects of person/patient's situation
☐ Explore person/patient's feelings
☐ Convey respect
☐ Don't judge
☐ Develop an exit strategy from the situation
☐ Ask: What helped in the past? What will help now? Can I leave now?

EMS – Patient Refusing to Comply With Care and Transport Recommendation

(Restraints required or Involuntary Hold)



Medication Section

Activated Charcoal

EMT*/AEMT

Classification	• Chemical absorbent
Action	• Inhibits gastrointestinal absorption of drugs or chemicals
Onset of Action	• Immediate onset
Duration of Action	• 24-hour duration
Indication	• In poisoning where emesis is contraindicated, and administration has been recommended by Poison Control and/or Medical Control. • **Recommended to contact Poison Control prior to administration 1-800-709-0911**
Contraindication	• An airway that cannot be controlled. • ALOC. • Diminished or absent gag reflex. • Caustic, corrosive, or petroleum distillate ingestion.
Use with Caution/Precautions	• Administer only after emesis or in cases where emesis is contraindicated.
EMT*/AEMT Dosage and Administration	• Adult - 50 gm premix solution PO. • Pediatric - 1 gm/kg premix solution PO. Max dose of 50 gm. • **Recommended to contact Poison Control prior to administration 1-800-709-0911**
Adverse Reaction	• Vomiting. • Aspiration.
Reference in Protocols	• Overdose/Toxicology/Poisoning

Acetaminophen (Tylenol)

EMT/AEMT

Action	• Antipyretic • Analgesic
Onset of Action	• Inhibits prostaglandin in CNS to reduce fever. • Blocks pain impulses
Duration of Action	• PO and PR: 10-30 minutes.
Indication	• PO and PR: 3-4 hours.
Contraindication	• Fever • Pain management
Use with Caution/Precautions	• Hypersensitivity • Severe liver disease.
Action	• Anemia • Liver disease • Renal disease
EMT/AEMT Dosage and Administration	• Adult: 500-1000 mg orally. • Pediatric: 15 mg/kg orally or by rectal suppository.
Adverse reaction	• Hypoglycemia • Allergic reaction
Reference in protocols	• Overdose/Toxicology/Poisoning • Pain Management • Seizures/Febrile Seizure

Albuterol (Proventil/Ventolin)

EMR*/EMT/AEMT

Classification	• Bronchodilator, beta-2 selective, sympathetic agonist
Action	• Relaxes bronchial and uterine smooth muscle by acting on beta adrenergic receptors. • Causes potassium influx into the cell.
Onset of Action	• 5-15 minutes.
Duration of Action	• 3-6 hours.
Indication	• Wheezing, allergic reactions, asthma, COPD. • Crush Injury Syndrome.
Contraindication	• Hypersensitivity • Tachycardia (relative)
Use with Caution/Precautions	• Cardiovascular disease • Patients taking tricyclics. • Elderly patients generally require a lower dose. • Beta blockers may blunt effect.
EMR (W*) Dosage and Administration	• 1-2 puffs MDI (with or without spacer)
EMT/AEMT Dosage and Administration	• 2.5 mg in 3cc NS via nebulizer
Adverse Reaction	• Tremor, Nervousness, Dizziness, Headache, Tachycardia, Palpitations, Hypertension, Nausea and vomiting, Ventricular arrhythmias
Reference in Protocols	• Allergic Reaction/Anaphylaxis • Bites/Envenomation • Respiratory Distress/Reactive Airway Disease

Aspirin (Acetylsalicylic Acid)

EMR*/EMT/AEMT

Classification	• Antiplatelet, Analgesic, Antipyretic, Anti-inflammatory.
Action	• Inhibition of platelet aggregation and platelet synthesis
Onset of Action	• 5-30 minutes.
Duration of Action	• Decreasing by 1/7th over 7 days.
Indication	• Suspected ischemic chest pain. • Suspected acute coronary syndrome
Contraindication	• Hypersensitivity • Possible hemorrhagic stroke
Use with Caution/Precautions	• Patients taking anti-coagulants. • Patients with active ulcer disease. • Patients with asthma. • Toxic dose is 100-300 mg/kg.
EMR*/EMT/AEMT Dosage and Administration	• Adult: 162 mg, or if not already taking ASA then give 324 or 325 mg (chewing is preferable). Ensure aspirin is non-enteric coated. • Pediatric: Contact medical control.
Adverse Reaction	• None in the non-allergic patient with prescribed field dosage.
Reference in Protocols	• Chest pain/ACS/MI/STEMI

Atropine (Auto Injector)

EMR/EMT/AEMT

Classification	• Parasympathetic blocker, anticholinergic.
Action	• Reactivates cholinesterase so destruction of accumulated acetylcholine can occur.
Onset of Action	• IM: 1 minute
Duration of Action	• 4 hours
Indication	• Organophosphate poisoning • Nerve agent (GB or VX) poisoning
Contraindication	• No absolute contraindications for ACLS, documented hypersensitivity in non-ACLS/nerve agent/organophosphate scenarios
EMR / EMT/ AEMT Dosage and Administration	• Adult- 1 auto-injector (2 mg) IM into thigh; followed with 2-PAM chloride injection. May give up to three sets.
Adverse Reaction	• Cardiac: Tachycardia, Palpitations, Ventricular fibrillation. • Non-Cardiac: Dryness of mouth (common), Pain in eyes or blurred vision (precipitates glaucoma), Restlessness, Irritability, Change in mental state, Injection site pain.
Reference in Protocols	• Overdose/Toxicology/Poisoning

Cetirizine (Zyrtec)

EMT*/AEMT*

Classification	• Antihistamine
Action	• Competes with histamine for H_1-receptor sites on effector cells in the gastrointestinal tract, blood vessels, and respiratory tract
Onset of Action	• PO - 20 – 60 minutes
Duration of Action	• PO – 24 hours
Indication	• Urticaria • Anaphylaxis • Uncomplicated allergic conditions
Contraindication	• Hypersensitivity
Use with Caution/Precautions	• Breastfeeding
EMT / AEMT (W*) **Dosage and Administration**	• Adult - 10 mg PO • Pediatric - 2.5 mg PO 6 months to 5 years old, 6 years to 12 years 5 mg PO, 13 to 18 years 10 mg PO.
Adverse Reaction	• Drowsiness or fatigue • Dry mouth • Weakness • Dizziness • Sore throat
Reference in Protocols	• Allergic Reaction/Anaphylaxis

Dextrose - Oral Glucose

EMR*/EMT/AEMT

Classification	• Monosaccharide
Action	• When given orally, it is readily absorbed in the intestine • After absorption from the gastrointestinal tract, glucose is readily distributed in the tissues and provides a prompt increase in circulating blood glucose
Onset of Action	• Immediate
Duration of Action	• Varies
Indication	• Patients with altered mental status • Symptomatic hypoglycemia
Contraindication	• Unconsciousness • Unable to swallow
Use with Caution/Precautions	• Because changes in levels of consciousness can change rapidly in patients with hypoglycemia, it is important to ascertain the patient's ability to swallow an oral preparation of glucose without airway compromise
EMR*/EMT/AEMT **Dosage and Administration**	• Adult - Squeeze glucose from tube onto tongue depressor and insert tongue depressor into patient's mouth between cheek and gum. Alternatively, let patient squeeze the oral glucose into his/her own mouth to swallow • Adult W* oral glucose: 25g (one tube) • Pediatric W* oral glucose: 0.5–1 g/kg, max dose 25g
Adverse Reaction	• Possible aspiration by patient without a gag reflex • Nausea
Reference in Protocols	• Diabetic Emergency

Dextrose 5% (D5W), 10% (D10W), 25% (D25W), 50% (D50W)

EMT/AEMT**

Classification	• Simple carbohydrate
Action	• Provides glucose required for metabolic needs. • Spares body proteins.
Onset of Action	• Immediate
Duration of Action	• Varies
Indication	• Suspected hypoglycemia. • Coma of unknown origin. • Crush Injury Syndrome • Routine IV administration
Contraindication	• Hyperglycemia
Use with Caution/Precautions	• Increased intracranial pressure in constant infusion
EMT (W)** **Dosage and Administration**	• Limited to D10
AEMT **Dosage and Administration**	**Hypoglycemia:** Adult- Titrate and/or repeat until patient at baseline and blood glucose remains > 80. • 50 mL of D50W (25 gm) IV/IO push, or • 250 mL of D10W (25 gm) IV/IO. Pediatric- Titrate and/or repeat until patient at baseline and blood glucose remains > 60. • 50% dextrose (0.5 gm/mL) (≥ 8 years old); give 1 mL/kg IV/IO, or • 25% dextrose (0.25 gm/mL); give 2 mL/kg IV/IO, or • 10% dextrose (0.1 gm/mL); give 5 mL/kg IV/IO, or • 5% dextrose (0.05 gm/mL); give 10 mL/kg IV/IO if volume tolerated • Neonate specifically: give 2 mL/kg of D10W.
Adverse Reaction	• Extravasation causes tissue sloughing with D25W and D50W.
Reference in Protocols	• Diabetic Emergencies

Diphenhydramine (Benadryl)

EMT*/AEMT*

Classification	• Antihistamine, sedative.
Action	• Potent antihistamine agent, which possesses anticholinergic (antispasmodic), antiemetic, and sedative effects.
Onset of Action	• IV/IO: Immediate. • IM: 15-30 minutes • PO: Varies
Duration of Action	• IV/IO and IM: 6-8 hours.
Indication	• Antihistamine. • Anaphylaxis, use as an adjunct to epinephrine. • Uncomplicated allergic conditions. • Dystonic or extrapyramidal reactions.
Contraindication	• Hypersensitivity • Acute asthma • Relative: narrow angle glaucoma • Newborns • COPD exacerbation
Use with Caution/Precautions	• Reduce dose for elderly
EMT (W*) **Dosage and Administration**	• Adult - 25-50 mg PO • Pediatric - 1-2 mg/kg PO, max dose 50 mg
AEMT (W*) **Dosage and Administration**	• Adult - 25-50 mg IV/IO/PO • Pediatric - 1-2 mg/kg IV/IO/PO, max dose 50 mg
Adverse Reaction	• Seizures • Thickening of bronchial secretions • Sedation
Reference in Protocols	• Allergic Reaction/Anaphylaxis

DuoNeb (Ipratropium-albuterol)

EMT/AEMT

Classification	• Beta adrenergic-anticholinergic bronchodilator combination
Action	• Relaxes bronchial and uterine smooth muscle by acting on beta adrenergic receptors. • Causes potassium influx into the cell • Blocks acetylcholine receptors • Dries respiratory tract secretions • Reduces bronchospasm
Onset of Action	• 5-15 minutes.
Duration of Action	• 3-6 hours
Indication	• Bronchospasm associated with COPD, Asthma
Contraindication	• Known hypersensitivity to atropine or Atrovent • Hypersensitivity • Tachycardia (relative)
Use with Caution/Precautions	• Cardiovascular disease • Patients taking tricyclics. • Elderly patients generally require a lower dose. • Beta blockers may blunt effect
EMT/AEMT **Dosage and Administration**	• Adult/Ped- 3ml vial of DuoNeb nebulized, may repeat up to 3 times
Adverse Reaction	• Palpitations, tachycardia, arrhythmia, nervousness, headache • Tremor, dizziness, hypertension, nausea and vomiting
Reference in Protocols	• Allergic Reaction/Anaphylaxis • Bites/Envenomation • Respiratory Distress/Reactive Airway Disease

Epinephrine (Adrenaline)

EMR/EMT*/AEMT*

Classification	• Beta adrenergic and alpha stimulator • Sympathomimetic agent (catecholamine)
Action	• Alpha- and beta-adrenergic effects. • Increases force of myocardial contraction. • Increases pulse rate and systolic blood pressure. • Increases conduction velocity through the A-V node. • Increases irritability of ventricles. • Dilates bronchi and coronary arteries. • Increases cerebral blood flow (alpha effects).
Onset of Action	• IV/IO: Immediate. • Push-dose IV: 1 minute. • IM: Variable. • SQ: 6-15 minutes.
Duration of Action	• IV/IO: 1-4 hours. • Push-dose IV: 2-5 minutes. • IM: varies. • SQ: varies.
Indication	• Cardiac arrest: VF, pulseless VT, asystole, PEA. • Allergic reactions. • Status asthmaticus.
Contraindication	• Chest pain accompanied by ectopic beats or tachycardia.
Use with Caution/Precautions	• Bronchial asthma and significant emphysema, when patients may also have congestive heart disease. • Raising BP and P may cause myocardial ischemia, angina and increase O2 demand.
EMR **Dosage and Administration**	Anaphylaxis • Adult- EPI-PEN 0.3 mg • Pediatric- EpiPen Jr 0.15mg IM
EMR (W*) / EMT (W*) /AEMT **Dosage and Administration**	Anaphylaxis • Adult: 0.3 -0.5 mg of 1:1,000 IM • Pediatric: 0.01 mg/kg of 1:1,000 IM, max dose 0.3 mg
AEMT (W*) **Dosage and Administration**	Adult Cardiac Arrest: 1 mg (10 mL of 1:10) IV/IO every 3-5 min; follow with 20 mL NS flush elevate arm for 10-20 secs Pediatric Cardiac Arrest: 0.01 mg/kg 1:10,000 IV/IO (max dose 1 mg) every 3-5 minutes during resuscitation
Adverse Reaction	• Hypertension • Tachycardia • Increased myocardial oxygen demand
Reference in Protocols	• Allergic Reaction/Anaphylaxis • Bites/Envenomation • Cardiac Arrest- Adult • Cardiac Arrest- Pediatric

Ibuprofen

EMT/AEMT

Classification	• Non-Steroidal Anti-inflammatory Drug (NSAID)
Action	• The exact mechanism of action of ibuprofen is unknown. • Its pharmacological effects are believed to be due to inhibition of cyclooxygenase-2 (COX-2) which decreases the synthesis of prostaglandins involved in mediating inflammation, pain, fever, and swelling. • Antipyretic effects may be due to action on the hypothalamus, resulting in an increased peripheral blood flow, vasodilation, and subsequent heat dissipation.
Onset of Action	• PO: 30 minutes
Duration of Action	• PO: 3-4 hours
Indication	• Pain management • Fever
Contraindication	• Hypersensitivity • Severe liver disease
Use with Caution/Precautions	• Anemia • Renal disease • Hypertension
EMT (W*) / AEMT (W*) Dosage and Administration	• Adult- 400-800 mg PO • Pediatric (6 months-12 years old)- 10 mg/kg PO
Adverse Reaction	• Nausea • Vomiting • Rash
Reference in Protocols	• Pain Management • Seizures/Febrile Seizure

Ipratropium bromide (Atrovent)

EMT/AEMT

Classification	• Anticholinergic bronchodilator
Action	• Blocks acetylcholine receptors • Dries respiratory tract secretions • Reduces bronchospasm
Onset of Action	• 5-15 minutes
Duration of Action	• 4-5 hours
Indication	• Bronchospasm due to reactive airway diseases • Organophosphate poisoning
Contraindication	• Known hypersensitivity
Use with Caution/Precautions	• Should be used with caution in patients with narrow-angle glaucoma
EMT (W*) / AEMT (W*) Dosage and Administration	• Adult- 0.5 mg via nebulizer q 6-8 hours
Adverse Reaction	• Anxiety • Nausea/Vomiting • Palpitations
Reference in Protocols	• Allergic Reaction/Anaphylaxis • Bites/Envenomation • Respiratory Distress/Reactive Airway Disease

Naloxone (Narcan)

EMR/EMT/AEMT

Classification	• Narcotic antagonist
Action	• Binds up opiate receptor sites, displaces narcotic molecules from opiate receptors • May precipitate withdrawal symptoms in patients physically dependent on narcotics • Reverses respiratory depression secondary to narcotic overdose
Onset of Action	• IM 2-5 minutes • IN 3-4 minutes • IV/IO: 1-2 minutes
Duration of Action	• Approximately 45 minutes • Effects are variable with route and agent
Indication	• Respiratory depression secondary to narcotics, synthetic narcotic agents and related drugs • Opiate overdoses such as Codeine, Darvon, Demerol, Dilaudid, Fentanyl, Heroin, Hydrocodone, Methadone, Morphine, Nubain, Oxycodone, Percodan, Stadol, Talwin, • Treatment of coma of unknown origin with apnea/hypoventilation or in neonatal resuscitation
Contraindication	• Known hypersensitivity
Use with Caution/Precautions	• In patients known to be physically dependent on narcotics; may precipitate withdrawal symptoms • Be prepared to restrain potentially violent patients if necessary after naloxone has been administered
EMR/EMT/AEMT **Dosage and Administration**	• Adult: 0.4-4 mg IN; dose may be repeated every 2-3 minutes, up to 10 mg or until patient begins to maintain airway and breathe adequately • Pediatric: 0.1 mg/kg IN up to 2 mg/dose; dose may be repeated every 2-3 minutes, up to 10 mg
EMT* / AEMT **Dosage and Administration**	• EMT*/AEMT ○ Adult: 0.4-4 mg IM; dose may be repeated every 2-3 minutes, up to 10 mg or until patient begins to maintain airway and breathe adequately ○ Pediatric: 0.1 mg/kg IM up to 2 mg/dose; dose may be repeated every 2-3 minutes • AEMT ○ Adult:0.4-2.0 mg IV/IO, may repeat every 2-3 minutes to a max dose of 10 mg ○ Pediatric: 0.1 mg/kg IV/IO up to 2 mg/dose; dose may be repeated every 2-3 minutes, up to 10 mg
Adverse Reaction	• Withdrawal symptoms: Sweating, gooseflesh, tremor, nausea and vomiting, dilation of pupils, tearing of eyes, agitation, belligerence, convulsions, hyper or hypoventilation
Reference in Protocols	• Overdose/Toxicology/Poisoning • Respiratory Distress/Reactive Airway Disease

Nitroglycerin

EMT/AEMT

Classification	• Vasodilator
Action	• Dilates veins and arteries in peripheral circulation resulting in • Reduced resistance to blood flow • Decreased blood pressure • Decreased workload on heart • Dilates coronary arteries • Dilates blood vessels in smooth muscle; i.e. GI tract, gallbladder, bile ducts, uterus • Improves cardiac output in patient with congestive heart failure
Onset of Action	• 1-3 minutes
Duration of Action	• 30-60 minutes
Indication	• Chest pain
Contraindication	• Known hypersensitivity • Systolic BP < 100 • Use of erectile dysfunction drugs or pulmonary hypertension drugs, such as sildenafil or tadalafil, within 48 hours
Use with Caution/Precautions	• Do not shake metered dose spray • When HR < 50 or >100 • With evidence of AMI, limit systolic BP drop to 10% of baseline or 25% if hypertensive
EMT **Dosage and Administration**	• Assist with patient's own prescribed nitro
AEMT **Dosage and Administration**	• 0.4 mg SL tablet or L/SL spray; may be given every 5 minutes until chest pain free as long as BP remains > 100/Systolic • Pediatric- Contact medical control
Adverse Reaction	• Hypotension, throbbing headache, skin flushing
Reference in Protocols	• Chest pain/ACS/MI/STEMI

Nitrous Oxide

EMT*/AEMT

Classification	• Inhaled gaseous analgesic and general anesthetic
Action	• Nitronox is a blended mixture of 50% nitrous oxide and 50% oxygen • Effect quickly dissipates (within 2-5 minutes) after cessation of administration
Onset of Action	• 2-5 minutes
Duration of Action	• 2-5 minutes
Indication	• Musculoskeletal pain due to fractures • Burns • Severe pain with medical control approval
Contraindication	• Head injury • COPD, pneumothorax • Bowel obstruction, abdominal pain
Use with Caution/Precautions	• O2 saturation < 90% • Self-administered only • Must be used in well-ventilated area. If used in ambulance keep exhaust fan running, window open
EMT (W*) / AEMT (W*) Dosage and Administration	• Adult/Pediatric- Instruct the patient to inhale deeply through the demand valve and mask or mouthpiece
Adverse Reaction	• Drowsiness • Dizziness • Nausea/vomiting
Reference in Protocols	• Pain Management

Ondansetron (Zofran)

EMT*/AEMT

Classification	• Antiemetic
Action	• Selective serotonin blocking agent
Onset of Action	• ODT: 15-30 minutes • IM: 5-10 minutes • IV: Immediate
Duration of Action	• 4-6 hours
Indication	• Nausea and/or vomiting
Contraindication	• Known hypersensitivity to Zofran • Under the age of 1 y/o
Use with Caution/Precautions	• Patients with impaired liver function • Pregnancy
EMT (W*) **Dosage and Administration**	• Adult- 4-8 mg PO • Pediatric- 0.15 mg/kg PO (maximum dose of 4 mg) **OR** 2 mg SL for ages 1–5 years old; age 6 and older use 4 mg of the ODT formulation
AEMT (W*) **Dosage and Administration**	• Adult- 4-8 mg IM/slow IV push • Pediatric- 0.15 mg/kg (up to 4 mg) IM/slow IV push
Adverse Reaction	• Headache, Hypoxia, Pyrexia, Dizziness, Agitation, Pruritus, Anaphylaxis, Bronchospasm, Extrapyramidal reactions, Oculogyric crisis
Reference in Protocols	• Nausea/Vomiting

Oxygen

EMR/EMT/AEMT

Classification	• Naturally occurring atmospheric gas
Action	• Odorless, tasteless, colorless gas present in room air at approximation 21% • Used to reverse hypoxemia
Onset of Action	• Immediate
Duration of Action	• As long as it is on patient
Indication	• Hypoxia-confirmed or suspected • Ischemic chest pain and/or stroke if pulse oximetry ,94% • Respiratory insufficiency • Suspected carbon monoxide poisoning
Contraindication	• None
Use with Caution/Precautions	• Patients with COPD and chronic carbon dioxide retention
EMR/EMT/AEMT Dosage and Administration	• 1-25 lpm
Adverse Reaction	• High-concentration oxygen may cause decreased LOC and respiratory depression over time in patients with chronic carbon dioxide retention

Oxymetazoline (Afrin)

EMT*/AEMT*

Classification	• Vasoconstrictor • Adrenergic sympathomimetic
Action	• Vasoconstriction of arterioles causes reduction of blood flow and reduction of nasal congestion
Onset of Action	• Less than 5 minutes
Duration of Action	• Less than 12 hours
Indication	• Epistaxis
Contraindication	• Under the age of 6 y/o • Known hypersensitivity
Use with Caution/Precautions	• Blood pressure greater than 110 diastolic • Sign and symptoms of MI/chest pain
EMT (W*)/ AEMT (W*) Dosage and Administration	• Adult/Pediatric- 2-3 squirts each nostril IN (not recommended for children under 6 y/o)
Adverse Reaction	• Headache, drowsiness, insomnia, palpitations, hypertension, rebound nasal congestion or irritation • Burning, stinging or sneezing may occur if recommended dosage is exceeded • Use of the dispenser by more than one patient may spread infection
Reference in Protocols	• Facial/Dental/Head Trauma

Pralidoxime Chloride (2Pam Chloride)

EMR/EMT/AEMT

Classification	• Cholinesterase reactivator
Action	• Reactivates cholinesterase so destruction of accumulated acetylcholine can occur
Onset of Action	• 15 minutes
Duration of Action	• 3 hours
Indication	• Organophosphate poisoning • Nerve agent (GB or VX) poisoning
Contraindication	• Hypersensitivity to medication • Do not use morphine, theophylline, aminophylline, or succinylcholine with this medication • Avoid reserpine or phenothiazine-type tranquilizer use with this medication • This medication is not indicated as an antidote for intoxication by pesticides of the carbamate class • This medication is not effective in the treatment of poisoning due to phosphorus, inorganic phosphates, or organophosphates not having anticholinesterase
Use with Caution/Precautions	• Use great caution in treating organophosphate/nerve agent poisoning in cases of myasthenia gravis • Monitor the dosage in the presence of renal insufficiency
EMR / EMT/ AEMT Dosage and Administration	• Adult- 1 auto-injector (600 mg) IM into thigh; may be repeated depending on symptoms
Adverse Reaction	• 40-60 minutes after the IM injection, mild to moderate pain may be experienced at the site of injection • Blurred vision, diplopia, impaired accommodation, dizziness, headache, drowsiness, nausea, tachycardia, increased BP, hyperventilation, muscular weakness
Reference in Protocols	• Overdose/Toxicology/Poisoning

State Triage Tools

Prehospital Trauma Triage Destination Procedure

Prehospital Trauma Triage Destination Procedure (wa.gov)

November 2023

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 fracture • Suspected fracture of two or more proximal long bones • Crushed, degloved, mangled, or pulseless extremity • Amputation proximal to wrist or ankle • Active bleeding requiring a tourniquet or wound packing with continuous pressure	**All Patients** • 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 < 70mm Hg + (2 x age in years) **Age 10–64 years** • SBP < 90 mmHg or • HR > SBP **Age ≥ 65 years** • SBP < 110 mmHg or • HR > SBP

Patients meeting any RED criteria should be transported to the closest level I or II trauma service within 30 minutes transport time (air or ground). Transport times greater than 30 minutes, take to the closest most appropriate trauma service.

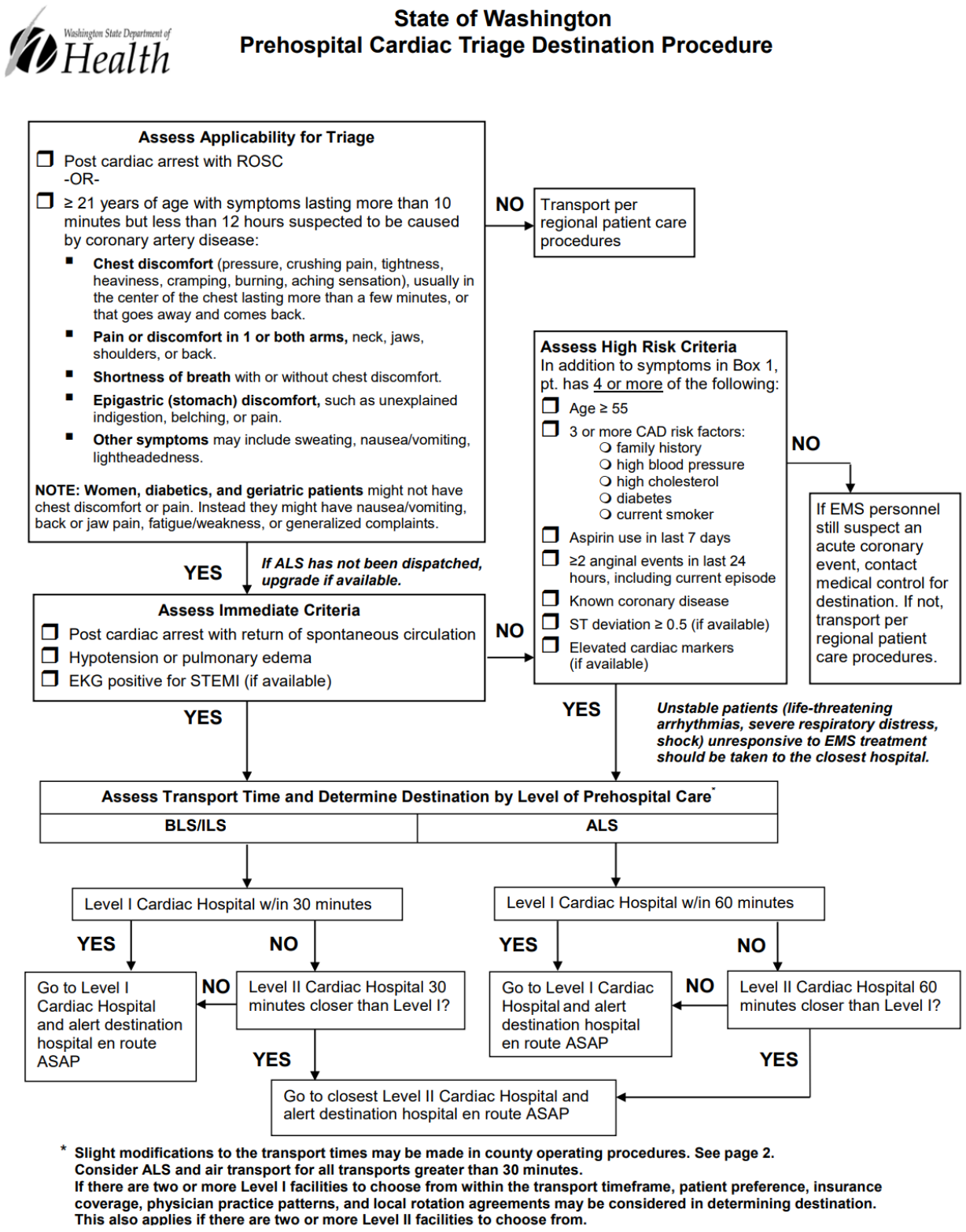
Yellow Criteria: Moderate Risk for Serious Injury

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 years) unrestrained or in unsecured child safety seat - Vehicle telemetry data consistent with severe injury • Rider separated from transport vehicle with significant impact (e.g., 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 service**

Patients meeting YELLOW criteria, WHO DO NOT MEET THE RED CRITERIA, should be transported to a designated trauma service, it need not be the highest level.

Prehospital Cardiac Triage Destination Procedure

[State of Washington Prehospital Cardiac Triage Destination Procedure]



Prehospital Stroke Triage Destination Procedure

[Prehospital Stroke Triage Destination Procedure (wa.gov)]

State of Washington
Prehospital Stroke Triage Destination Procedure

STEP 1: Assess Likelihood of Stroke

- Numbness or weakness of the face, arm, or leg, especially on one side of the body
- Confusion, trouble speaking, or understanding
- Trouble seeing in one or both eyes
- Trouble walking, dizziness, loss of balance, or coordination
- Severe headache with no known cause

If any of above, proceed to STEP 2, if none, transport per regional PCP/county operating procedures

STEP 2: Perform F.A.S.T. Assessment *(positive if any of Face/Arms/Speech abnormal)*

- **Face**: Unilateral facial droop
- **Arms**: Unilateral arm drift or weakness
- **Speech**: Abnormal or slurred
- **Time**: Best estimate of Time Last Known Well =_____

If FAST negative, transport per regional/county operating procedures

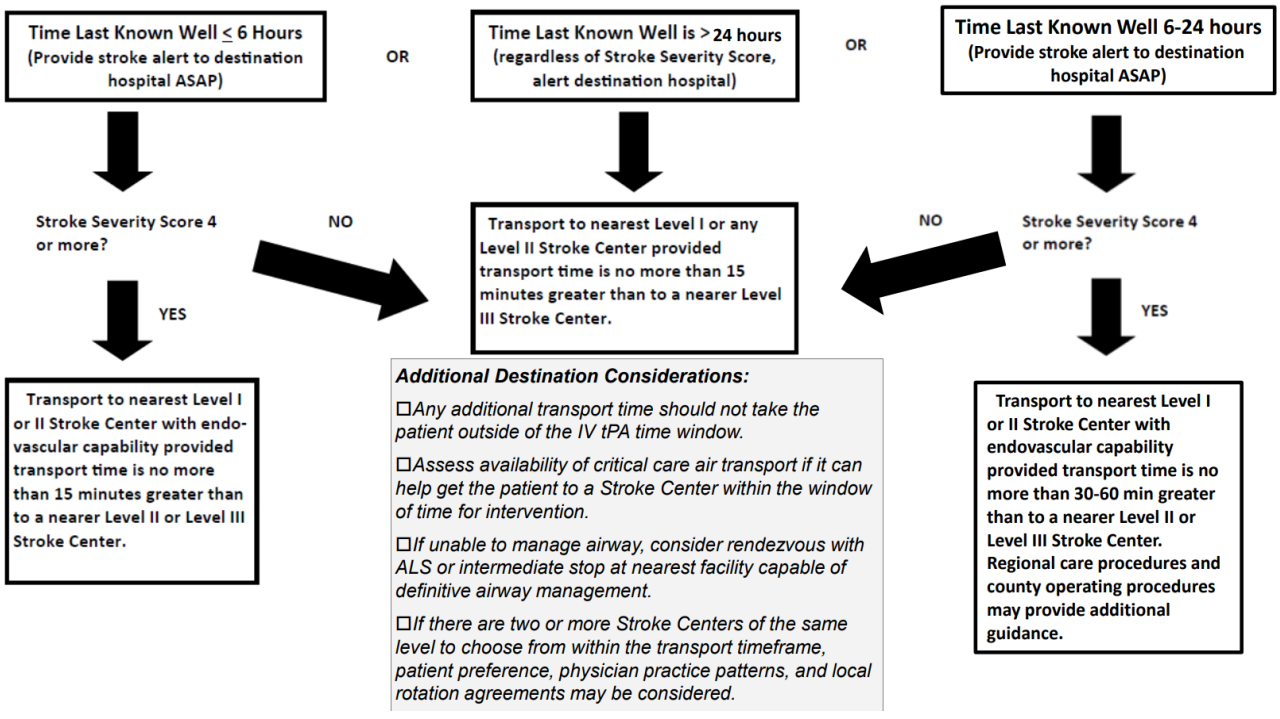
STEP 3: If F.A.S.T. Positive - Calculate Stroke Severity Score (LAMS)

Facial Droop:	Absent	0	Present	1		
Arm Drift:	Absent	0	Drifts	1	Falls Rapidly	2
Grip Strength:	Normal	0	Weak	1	No Grip	2
Total Stroke Severity Score =					**(max. 5 points)**	

STEP 4: Determine Destination: Time Last Known Well + Stroke Severity Score - ***See Back Page***

DOH 530-182 February 2019

STEP 4: Determine Destination: Time Last Known Well + Stroke Severity Score



Appendix

Common Abbreviations

1st degree, primary	1°	greater than or equal to	≥
2nd degree, secondary	2°	ground level fall	GLF
3rd degree	3°	gunshot wound	GSW
about, approximately	≈	headache	HA
abdomen	abd	head, eyes, ears, nose, throat	HEENT
acetaminophen/Tylenol	APAP	heart rate	HR
acute coronary syndrome	ACS	history	Hx
acute myocardial infarction	AMI	increased, elevated	↑
advanced cardiac life support	ACLS	inferior	inf.
Against medical advice	AMA	multiple sclerosis	MS
airway, breathing, circulation	ABC	intensive care unit	ICU
alcohol (ethanol)	ETOH	intramuscular	IM
alert and oriented	A&O	intranasal	IN
ambulate, ambulatory	amb	intraosseous	IO
antecubital	AC	intravenous	IV
anterior	ant	jugular venous distention	JVD
aspirin	ASA	keep vein open	KVO
atrial fibrillation	Afib	kilogram	kg
atrial flutter	Aflutter	laceration	LAC
automatic internal cardiac defibrillator	AICD	lactated Ringer's	LR
automated external defibrillator	AED	last menstrual period	LMP
awake, alert, oriented	AAO	left, liter	L
bag-valve-mask	BVM	left lower quadrant of abdomen	LLQ
beats per minute	BPM	left upper quadrant of abdomen	LUQ
bilateral	B/L	less than	<
blood glucose level	BGL	less than or equal to	≤
blood pressure	BP	level of / loss of consciousness	LOC
breath sounds	BS	liters per minute	LPM
bowel movement	BM	male	m or ♂
calcium chloride	CaCl	milliequivalent	mEq
carcinoma, cancer	Ca	microgram	mcg
cardiopulmonary resuscitation	CPR	milligram	mg
centigrade	C°	milligrams per deciliter	mg/dL
cerebrospinal fluid	CSF	milliliter	mL or ml
cerebrovascular accident	CVA	millimeters of mercury	mmHg
change	Δ	minute	min
chest pain	CP	motor vehicle collision	MVC
chief complaint	CC	moves all extremities	MAE
Chronic Obstructive Pulmonary Disease	COPD	myocardial infarction	MI
circulation, motor, sensation	CMS	nasal cannula	NC
clear to auscultation	CTA	nasogastric tube	NGT
complains of	c/o	nausea/vomiting	N/V
congestive heart failure	CHF	negative	–
coronary artery bypass graft	CABG	nebulized	Neb
coronary artery disease	CAD	Nitroglycerin	NTG
dead on arrival at hospital	DOA	none	Ø

dead on scene	DOS	no known drug allergies	NKDA
decreased, depressed	↓	Non-rebreather	NRB
delirium tremens	DTs	normal saline	NS
dextrose 25%	D25	normal sinus rhythm	NSR
dextrose 5% in water	D5W	overdose	OD
dextrose 50%	D50	oxygen	O2
diabetes mellitus	DM	patient	pt.
diagnosis	Dx	person, place, time, event	PPTE
diastolic blood pressure	DBP	physical exam	P.E.
discontinue	D/C	positive	+, c, or w/
drops	gtt(s)	posterior	post
ear, nose, and throat	ENT	privately owned vehicle	POV
electrocardiogram	ECG, EKG	pulseless electrical activity	PEA
emergency department	ED	pulse, motor, sensation	PMS
epinephrine	Epi	sublingual	SL
equals	=	supraventricular tachycardia	SVT
endotracheal tube	ETT	systolic blood pressure	SBP
every	q or Q	times 2, or times 3, etc	x 2, x 3
external jugular	EJ	to keep open	TKO
Fahrenheit	F°	transcutaneous pacing	TCP
female	f. or ♀	treatment	Tx
gastrointestinal	GI	ventricular fibrillation	VF
gauge	ga	ventricular tachycardia	VT
Glasgow Coma Scale	GCS	vital signs	V.S.
gram or grams	g or gm	wheelchair	w/c
gravida	G	weight	wt.
greater than	>	without	s or w/out
		year(s) old	y.o.

Drug Reference

Equivalents:

1kg = 2.2lb	1ml = 60 mcgtts (micro tubing)	1 gm = 1000 mg
1kg = 1000 gm	1 ml = 10,15,20 gtts (macro tubing)	1 mg = 1000 mcg
	1 L = 1000 ml	
	1 ml and 1 cc are interchangeable	

Conversions:

MULTIPLY to convert a larger unit into a smaller unit using the above table.
DIVIDE to convert a smaller unit into a larger unit using the above table.

Dosage Calculations:

To calculate the amount of drug to be drawn up or administered, use the following formula:

WHAT (type and amount of drug ordered) multiplied by the QUANTITY (volume of fluid in the container) divided by HAVE (amount of drug in the container) = the amount to be administered.

$$\frac{\text{WHAT} \times \text{QUANTITY}}{\text{HAVE}} = \text{Amount to be administered}$$

IV Rate:

To calculate an IV drip rate based on the volume of fluid to be infused over time. (Make sure the unit measurement of the concentration and the dosage are the same. [e.g. both in milligrams])

$$\text{Drops per minute} = \frac{\text{VOLUME to be infused in cc} \times \text{Drop factor of IV set}}{\text{Time in minutes}}$$

To calculate an IV drip rate for a medication that is administered based on a specified dosage to be infused per minute.

$$\text{Drops per minute} = \frac{\text{Dosage per minute to be administered} \times \text{Drop factor (60)}}{\text{Concentration of medication per ml}}$$

To calculate an IV drip rate for a medication that is administered based on a specified dosage per kilogram of body weight per minute.

$$\text{Drops per minute} = \frac{\text{Desired dosage per minute} \times \text{Weight in Kg} \times \text{Drop factor of IV set}}{\text{Concentration of medication per ml}}$$

MARCHH

Inclusion Criteria	Pertinent Assessment Findings
Patients of all ages who have sustained an injury or are suspected to have had a mechanical trauma, including: • Blunt injury • Penetrating injury • Blast • Burns • Other	Primary survey (Use "**MARCHH**" algorithm) **M**assive Hemorrhage • Initial visual and body sweep to assess for penetrating wounds and severe life-threatening hemorrhage **A**irway • Assess airway patency by asking the patient basic questions to assess for stridor and ease of air movement • Look for injuries that may lead to airway obstruction including unstable facial fractures, expanding neck hematoma, blood or vomitus in the airway, facial burns/inhalation injury • Evaluate mental status for ability to protect airway **R**espiratory/Breathing • Assess respiratory rate and pattern • Assess for tension pneumothorax • Assess symmetry of chest wall movement • Listen bilaterally on lateral chest wall for breath sounds **C**irculation • Assess blood pressure and heart rate **H**ead injury • Perform initial neurologic status assessment of GCS/AVPU (Alert, Verbal, Painful, Unconscious) and pupillary size and responsiveness • Assess for gross motor movement of extremities • Evaluate for clinical signs of traumatic brain injury with herniation including: • Unequal pupils • Lateralizing motor signs • Posturing **H**ypothermia Prevention • Prevent further heat loss in effort to maintain normal body temperature

MNEMONICs

Patient Assessment:	Newborn Assessment:	Medical:
A: Airway	A: Appearance	M: Morphine
B: Breathing	P: Pulse Rate	O: Oxygen
C: Circulation	G: Grimace (facial actions)	N: Nitrates
D: Disability	A: Activity	A: Aspirin
E: Expose	R: Respirations	

History:	
S: Signs and symptoms	P: Progression of symptoms
A: Allergies	A: Associated chest pain
M: Medications	S: Sputum productions, speech, word sentences
P: Pertinent past medical history	T: Temperature, tiredness
L: Last oral intake	M: Medications the patient is currently taking
E: Events leading to injury or illness	E: Exercise/Exertion normally tolerated
	D: Diagnosis (previous)

Trauma Assessment:	Trauma:	
Scene safety	V: Vitals	T: Tracks, Tags, Tattoos
Spinal Stabilization	O: Oxygen	I: Instability
LOC	M: Monitor	C: Crepitus
Airway	I: IV/Information	S: Scars
Breathing	T: Transport decision	
Oxygen	H: History	
Circulation	A: Allergies	
Arterial Bleeds	M: Medications	
Bare the Body		

Trauma or Pain Questions:	Trauma:
O: Onset	D: Deformities
P: Provocation, progression	C: Contusions
Q: Quality, pain type?	A: Abrasions
R: Radiation	P: Punctures
S: Severity	
T: Time, duration	B: Burns
	T: Tenderness
	L: Lacerations
	S: Swelling

Causes of Pulseless electrical Activity (PEA) – "5" H's and T's:	
H: Hypovolemia	**T:** Toxins
H: Hypoxia	**T:** Tamponade, cardiac
H: Hydrogen ion – acidosis	**T:** Tension Pneumothorax
H: Hypo- / Hypekalemia	**T:** Thrombosis, (Coronary or Pulmonary)
H: Hypoglycemia	
H: Hypothermia	**T:** Thrombosis, (hypovolemia increased ICP)

Altered Mental Status (ALOC):	
A: Alcohol, Drugs	**T:** Trauma
E: Endocrine (glands)	**I:** Infection
I: Insulin, Infection	**P:** Pyschiatric
O: Overdose	**S:** Shock
U: Uremia (2^0 kidney insufficiency)	

Triage:	Charting:
A: Alert	**S:** Subjective
P: Responsive to Verbal	**O:** Objective
V: Responsive to Pain	**A:** Assessment
U: Unresponsive	**P:** Plan

Medical Spanish

Initial questioning

Is there someone with you who speaks English?
¿Hay alguien con usted que hable ingles?
Ah-ee ahl-gee-ehn hohn oss-tehd keh ah-bleh enn-glehs?

I speak a little Spanish. Please answer yes or no to the following questions.
Hablo un poco de español. Por favor conteste si o no a las siguientes preguntas.
Ah-bloh oon pohr-fah-borg kokn-tehs-the see oh noh ah lahs see-gee-ehn-tehs preh-goon tahs.

Speak slowly, please.
Hable despacia, por favor.
Ah-bleh dehs-pah-see-oh, pohr fah-bohr.

What is your name?
¿Cómo se llama?
Koh-moh she yah-mah?

How old are you?
¿Cuántos años tiene?
Kwahn-tohs ah-nyohs tee-eh-neh?

When did the problem start?
¿Cuándo empezó el problema?
Kwahn-doh ehm-peh-soh ehl prog-bleh-mah?

What medicine do you take?
¿Qué medicina torna?
Keh meh-dee-see-nah toh-mah?

Numbers

1. uno
2. dos
3. tres
4. cuatro
5. cinco
6. seis
7. siete
8. ocho
9. neueve
10. diez
11. once
12. doce
13. trece
14. catorce
15. quince
16. dieciséis
17. diecisiete
18. dieciocho
19. diecinueve
20. viente
21. vientiuno
22. vientidós
23. veintritrés
24. veinticuatro
25. veinticinco
26. veintiséis
27. veintisiete
28. veintiocho
29. veintineuve
30. treinta

Days of the week

Lunes: Monday
Martes: Tuesday
Miércoles: Wednesday
Jueves: Thursday
Viernes: Friday
Sábado: Saturday
Domingo: Sunday

Common Medical Questions/Terms

How do you feel?
¿Cómo se siente?
Koh-moh she see-ehn-the?

What is the problem?
¿Cuál es el problema?
Kwahl ehs ehl proh-bleh-mah?

Have you had this problem before?
¿Ha tenido este problema antes?
Ah the-nee-doh ehs-the proh-bleh-mah ahn-tehs?

Do you have nausea or vomiting?
¿Tiene nausea o vómito?
Tee-eh-neh nah-oo-she-ah oh boh-meh-toh?

Don't move
No se meuva
Noh she mweh-bah

We are going to give you an IV
Vamos a ponerie suero intravenoso.
Bah-mohs ah poh-nehr-leg soo-eh-roh enn-trah-beh-noh-soh.

Do you have a fever?
¿Tiene fiebre?
Tee-eh-neh fee-eh-breh?

Calm down
Cálmese
Kahl-meh-sah

Common Medical Questions/Terms (continued)

Where does it hurt?
¿Donde le duele?
Dohn-deh leh dweh-leh?

Show me
Enséñeme
Ehn-she-nyeh-meh.

When?
¿Cuándo?
Kwahn-doh?

How?
¿Cómo?
Koh-moh?

For how long?
¿Por cuánto tiempo?
Pohr kwahn-toh tee-ehm-poh?

Why?
¿Por qué?
Pohr keh?

Relax, please
Por favor, relájese
Pohr fah-bohr, reh-lah-heh-she.

High Blood Pressure?
Alta presion de la sangre?
Ahl-tah preh-see-ohn deh lah sahn-greh?

Diabetes?
Diabetes?
Dee-ah-beh-tehs?

Asthma?
Asma?
Ahs-mah?

Epilepsy?
Epilepsia?
Eh-pee-lep-see-ah?

Heart disease?
Ehfermedad del corazón?
Ehn-fehr-meh-dad dehl koh-rah-sohn?

Stomach ulcers?
Ulceras del estomago?
Ool-she-rahs dehl ehs-toh-mah-goh?

Do you take medicine?
¿Tomas usted medicina?
Toh-mah oos-tehd lah meh-dee-see-nah?

Pain

When did the pain start?
¿Cuándo empezó el dolor?
Kwahn-doh ehm-peh-soh ehl doh-lohr?

Where did the pain start?
¿Donde empezó el dolor?
Dohn-deh ehm-peh-soh ehl doh-lohr?

Does the pain travel to another place?
¿Le viaja el dolor a otro lugar?
Leh vee-ah-hah ehl doh-lohr ah oh-troh loo-gahr?

How long does the pain last?
¿Cuánto tiempo le dura el dolor?
Kwahn-toh tee-ehm-poh leg doo-rah ehl doh-lohr?

Is it severe?
¿Es severo?
Ehs she-beh-roh?

Does it ache?
¿Es adolorido?
Ehs ah-doh-loh-ree-doh?

Is it like pressure?
¿Es opresivo?
Ehs oh-preh-see-boh?

Is the pain the same since it started?
¿Es el dolor igual desde que empezó?
Ehs ehl doh-lor ee-gwahl dehs-deh keh ehm-peh-soh?

Chest Pain

Pain in the chest?
¿Dolor del Pecho?
Doh=lohr dehl peh-choh?

Point to where the pain is, please.
Apunte dónde tiene el dolor, por favor.
Ah-poon-the dohn-deh tee-eh-neh ehl doh-lohr.

Does the pain travel to your left shoulder (arm)?
¿Le viaja el dolor al hombre (brazo) izquierdo?
Leh bee-ah-hah ehl doh-lohr ahl ohm-broh (brah-soh) ees-kee-her-doh?

Is it piercing?
¿Es punzante?
Ehs poon-sahn-the?

OB / GYN

Are you having contractions?
¿Tiene contracciones?
Tee-eh-neh kohn-track-see-ohn-ehs?

(Don't) push.
(No) Empuje.
(Noh) Ehm-poo-heh

How many minutes do the contractions last?
¿Cuántos minutes le duran las contracciones?
Kwahn-tohs mee-noo-tohs leh doo-rahn lahs kohn-trahk-see-ohn-ehs?

Neurological Status Assessment

AVPU Infant / Child		
Response	Infant	Child
A – Alert	Curious / Recognizes parents	Alert / Aware of surroundings
V – Responds to Voice	Irritable / Cries	Opens eyes
P – Responds to Pain	Cries in response to pain	Withdrawals from pain
U – Unresponsive	No response	No response

Glasgow Coma Score Pediatric			
EYE	**<1 y/o**	**> 1 y/o**	
1	None	None	
2	Opens to pain	Opens to pain	
3	Opens to shout	Opens to verbal command	
4	Opens spontaneously	Opens spontaneously	
VERBAL	**< 2 y/o**	**2-5 y/o**	**>5 y/o**
1	None	None	None
2	Moans to pain	Moans to pain	Incomprehensible sounds
3	Persistent cries to pain	Persistent cries to pain	Inappropriate words
4	Irritable but consoles	Inappropriate words	Confused
5	Coos, babbles	Appropriate words	Orientated
MOTOR	**<1 y/o**	**> 1 y/o**	
1	None	None	
2	Abnormal extension	Abnormal extension	
3	Abnormal flexion	Abnormal flexion	
4	Withdrawal from pain	Withdrawal from pain	
5	Withdrawal from touch	Localizes to pain	
6	Spontaneous movement	Obeys commands	

Glasgow Coma Score			
	EYES	**VOICE**	**MOTOR**
1	None	No speech	No Movement
2	Eyes to painful stimulus	Incoherent speech	Extension (decerebrate)
3	Opens eyes to voice	Inappropriate words	Flexion (decorticate)
4	Opens spontaneously	Confused	Withdrawal from pain
5		Orientated	Localizes to pain
6			Obeys commands

LAMS

STEP 1
FACIAL DROOP

Ask the person to smile. Is there any weakness or facial droop?

0 Absent
1 Facial droop present

STEP 2
Arm Drift

Bring the person's arm(s) up to a 90° angle and ask them to hold that position for 10 seconds. Is there any drift or drop of an arm?

0 Absent
1 Drifts Down
2 Falls Rapidly

STEP 3
Grip Strength

Ask the person to grip your hands. Does one hand have less power than the other?

0 Normal
1 Weak Grip
2 No Grip

STEP 4
Add the Score

Total possible score of 5

_____ + _____ + _____ = _____

Normal Vital Signs

Age	Pulse-Awake (beats/ minute)	Pulse-Sleeping (beats/ minute)	Respiratory Rate (breaths/ minute)	Systolic BP (mmHg)
Preterm less than 1 kg	120–160		30–60	39–59
Preterm 1–3 kg	120–160		30–60	60–76
Newborn	100–205	85–160	30–60	67–84
Up to 1 year	100–190	90–160	30–60	72–104
1–2 years	100–190	90–160	24–40	86–106
2–3 years	98–140	60–120	24–40	86–106
3–4 years	80–140	60–100	24–40	89–112
4–5 years	80–140	60–100	22–34	89–112
5–6 years	75–140	58–90	22–34	89–112
6–10 years	75–140	58–90	18–30	97–115
10–12 years	75–118	58–90	18–30	102–120
12–13 years	60–100	58–90	15–20	110–131
13–15 years	60–100	50–90	15–20	110–131
15 years or older	60–100	50–90	15–20	110–131

Source: Extrapolated from the 2020 American Heart Association Pediatric Advanced Life Support's tables from the Nursing Care of the Critically Ill Child, and from Web Box 1: Existing reference ranges for respiratory rate and heart rate in the appendix of the article by Fleming, et al, published in Lancet

Note: While many factors affect blood pressure (e.g., pain, activity, hydration), it is imperative to rapidly recognize hypotension, especially in children. For children of the ages 1–10, hypotension is present if the systolic blood pressure is less than 70 mmHg + (child's age in years x 2) mmHg.

Pediatric References

Weight	4 kg	6 kg	8 kg	10 kg	13 kg	16 kg	20 kg	26 kg	32 kg
Color	Grey	Pink	Red	Purple	Yellow	White	Blue	Orange	Green
Weight Pounds	9 lbs.	13 lbs.	17 lbs.	22 lbs.	29 lbs.	35 lbs.	44 lbs.	57 lbs.	70 lbs.
Age	Newborn – 3 months	4-6 mo.	7-12 mo.	1-2 years	2-3 years	3-5 years	5-6 years	7-8 years	9-10 years
Pulse	100-180	100-180	100-180	90-170	90-160	80-140	70-130	70-130	60-110
Respiratory Rate	30-60	30-60	30-60	24-40	24-40	22-34	20-30	18-30	18-30
Blood Pressure (minimum)	60 mmHg	70 mmHg	70 mmHg	72 mmHg	74 mmHg	78 mmHg	82 mmHg	86 mmHg	90 mmHg
BP Cuff	Infant	Infant	Infant Child	Child	Child	Child	Child	Child	Small Adult
Fluid Challenge	80 mL	130 mL	170 mL	210 mL	260 mL	340 mL	400 mL	520 mL	600 mL
BVM	Infant	Child	Child	Child	Child	Child	Child	Child	Adult
Suction Catheter	8 Fr	8 Fr	8Fr	8 Fr	8 Fr	8 Fr	8 Fr	14 Fr	14 Fr

Standard Reporting Example

Standard Reporting Format

This is_____ †with_____

Destination_____ † ETA_____

We have a _____ year old male/female, approximately _____lbs. who is an urgent/non-urgent medical (Identify a "Code Neuro" or "Code STEMI" or "Code Sepsis" patient) or a Red or Yellow trauma or an injured patient.

†CC _____

†If stroke patient, give BEFAST results with time last known well: _____And Stroke Severity Score_____.

†LOC_____ BP_____ HR_____ ECG_____

Lungs are _____ RR_____ Effort_____

Eyes Opening _____ Verbal Response_____ Motor response_____

Pupils are _____ Skin is _____

Pertinent history_____

Meds_____

Pertinent PE _____

†Pediatric-Peds Card/ Length based tape color _____

†Treatment done _____

Treatment requested_____

† Items for a short report for critical patients with a short ETA

Hospital/Facility/Agency Phone Numbers

This will need to be added by MPD.

- Hospitals
- Off-Campus Emergency Departments
- Mental Health Telephone numbers
- Other as appropriate by county