EMR, EMT, EMT IV, AND AEMT
PREHOSPITAL PATIENT CARE

PROTOCOLS

Russell M Smith, MD
Medical Program Director
DECEMBER, 2024

Acknowledgements

These Pre-hospital Protocols are the result of extensive input and review, drawing on the best practices and resources from several EMS systems in Washington State. We extend our appreciation to the collaborative works of dedicated professionals from which we drew, including SW Region Patient Care Protocols - Clark County EMS, Washington State 2024 BLS/ILS Protocol Guidance Document, Adam, Franklin, Benton, and Yakima Counties Pre-Hospital Patient Care Guidelines. We would also like to thank those that collaborated on past versions of Klickitat County EMS Patient Care Guidelines from which we derived much knowledge.

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INTRODUCTION

The following PREHOSPITAL PATIENT CARE PROTOCOLS are intended as treatment protocols for basic and advanced life support technicians working under the advice of the Medical Program Director for Klickitat County. They represent a consolidation of recommendations for patient care from many local and national sources.

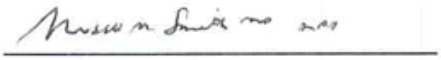
PURPOSE:

1. Standardize prehospital care for Klickitat County
2. Provide the EMR, EMT, EMT IV and the AEMT with a framework for prehospital care and an anticipation of supportive orders from OLMC
3. Provide hospital physicians and nurses with an understanding of what aspects of patient care have been stressed to the EMRs, EMTs, EMT IVs and AEMTs and what their treatment capabilities may be
4. Provide the basic framework on which the Medical Program Director can audit the performance of both basic and advanced life support personnel
5. Differentiate between EMR, EMT, EMT IV and AEMT life support procedures
6. Identify pediatric specific treatment, procedures and medications. EMRs, EMTs, EMT IVs and AEMTs should consult pediatric guides to ensure appropriate dosing of medications
7. Expedite patient delivery to institutions best equipped to handle their specific problems

PROTOCOLS ARE NOT INTENDED TO:

1. Be absolute treatment doctrines, but rather guidelines with sufficient flexibility to meet the needs of complex cases
2. Be a teaching manual; it is assumed that each EMR, EMT, EMT IV and AEMT is trained to his/her level of certification and understands the Scope of Practice appropriate to their certification, and that she/he will continue to meet the requirements of the State of Washington for continuing education for recertification. The Medical Program Director will provide continuing education based on the results of patient care audit and review
3. Interfere with the wishes of the patient or family, or the wishes of the patient's physicians
4. Dictate details of care to advising physicians
5. Warrant the EMS Provider as an independent field practitioner

It is expected that all EMRs, EMTs, EMT IVs and AEMTs working and volunteering within Klickitat County will be familiar with the portion of the PREHOSPITAL PATIENT CARE PROTOCOLS appropriate to their certification level and Scope of Practice. Written acknowledgement of the receipt of this document will be required.



Russell M. Smith, MD, MPD

12/16/24

Date

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GENERAL - Scope of Practice

SCOPE OF PRACTICE

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

    a. When performing:
        i. In a prehospital emergency setting; or
        ii. During interfacility ambulance transport; or
        iii. When participating in a community assistance education and referral (CARES) program authorized under RCW **35.21.930**;
        iii. 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

    b. When performing for a licensed EMS service or an emergency services supervisory organization (ESSO) recognized by the secretary; and
    c. 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
    d. When following department approved county MPD protocols

2. 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 OLMC as soon as possible. Medical control can only authorize a certified person to perform within their scope of practice

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

Level of Certification	Skills and Procedures	Medication Administration
EMR	glucometry*, patient assessment, CPR, AED, upper airway suctioning, pulse oximetry, oxygen administration via NC, NRB and BVM, OPA, trauma including bandaging, extremity splinting, cervical collar, tourniquets, hemostatic gauze, splinting, traction splint*, spinal motion restriction, eye irrigation, medical, pediatrics, and OB/GYN – normal delivery, taser barb removal	oxygen, naloxone IN, epinephrine auto-injector, aspirin*, oral glucose*, assist patient with their own prescribed aerosolized/nebulized bronchodilator - MDI
EMT	In addition to EMR skills & procedures – adjust rate and tidal volume of automatic transport ventilators*, CPAP, carbon monoxide monitoring*, end tidal carbon dioxide (EtC02) monitoring*, suctioning tracheostomy and tracheal bronchial tube of an intubated patient*, supraglottic airway placement **, 12-lead EKG placement & acquisition w/computerized analysis and transmission, transport patient w/ventricular assist device (VAD)*, peripheral IV/IO insertion**, OB/GYN – assist with complicated delivery	In addition to EMR medications – activated charcoal, beta agonists/bronchodilators via nebulizer, D10 IV**, antihistamine (diphenhydramine) PO*, epinephrine IM, glucagon IM/IN*, ondansetron PO*, OTC medications (acetaminophen PO/PR* and ibuprofen PO*), oxymetazoline IN*, vaccination during a public health emergency *, assist patient w/ their prescribed nitroglycerin
AEMT		In addition to EMR medications - Epinephrine 1:10,000 IV in cardiac arrest*, antihistamine (diphenhydramine) IV*, naloxone IM/IV, dextrose D50 IV, nitroglycerin SL, ondansetron IM/IV

Updated March 20, 2025

* *Requires MPD approved specialized training*

** *Requires Washington State endorsement to EMT certification*

AUTHORIZED BLS MEDICATION LIST

Acetaminophen	*EMT, *AEMT	a) 650 - 975 mg PO *Peds 15 mg/kg PO, if old enough to swallow* *b) Peds 20 mg/kg* PR *Follow manufacturer's guidelines for OTC liquid/powder packets*	a) Mild to Moderate pain b) Fever >38°C (100.4°F)
Activated Charcoal	EMT, AEMT	50 g PO *Peds 1g/kg Max 50 g*	- Ingestion only with Medical Control or Poison Control concurrence
Albuterol (Proventil)	EMR (assist pt with prescribed MDI) *EMT, AEMT	2.5 mg/3 ml Nebulized *Peds same as adult*	- Bronchospasm/wheezing
Aspirin	*EMR, EMT, AEMT	324 mg (4-81 mg baby Aspirin) PO Contraindicated in Peds	- Chest Pain

Dextrose D10	**EMT IV, *AEMT	Titrated to improved CBG up to 25 g IV ONLY Repeat PRN Peds Infants < 10 kg (birth to 1 yr) with CBG < 40 and children 10 kg - 35 kg with CBG < 60, give 5 ml/kg (0.5 g/kg)	- Hypoglycemia - Altered Mental Status (when CBG unknown)
Alternate - Dextrose D50	AEMT	25 g IV, repeat PRN - Child D50% - 0.5 gm/kg (1 mL/kg) - Infant D25%kg - 0.5 gm/kg (1 ml/kg) - Neonate D10% - 0.5 gm/kg (1 ml/kg)	

Diphenhydramine (Benadryl)	*EMT AEMT	25 - 50 mg PO *Peds 1 mg/kg PO Max 50 mg if old enough to swallow* - 25 kg = 1 25 mg tab - 12.5 kg = ½ 25 mg tab - 6.25 kg = ¼ 25 mg tab *Follow manufacturer's guidelines for OTC liquid and/or chewables *25 - 50 mg IV, IM, IO* *Peds 1 mg/kg*	- Allergy, Anaphylaxis
Epinephrine 1:1,000	EMT, AEMT	0.3 mg IM (1:1,000) Peds under 30 kg .15 mg	- Anaphylaxis
Epinephrine 1:10,000	AEMT	1 mg q 3 - 5 mins IV, IO Peds 0.01 mg/kg	- Cardiac Arrest
Glucagon	*EMT, AEMT	1 mg IM *Peds 0.03 mg/kg*	- Hypoglycemia
Ibuprofen	*EMT, *AEMT	600 MG PO *Peds 10 mg/kg max of 600 mg if able to swallow* *Follow manufacturer's guidelines for OTC liquid/chewables*	- mild to moderate pain and fever
Ipratropium Bromide (Atrovent)	*EMT, AEMT	Adolescent - adult - 0.5 mg/2.5 mL nebulized *Peds 2-12 yrs - 0.25 mg/1.25 ml* *<2 yrs contact OLMC*	- Bronchospasm/wheezing nebulized treatment one dose only. Do not repeat

Naloxone (Narcan)	EMR, EMT AEMT	1 mg IN repeat q 3- 5 min PRN *- Peds 8 yrs to adult - same as adult* *- 28 days to 8 yrs - ½ mg IN q 3 -5 mins* *- Contraindicated under 28 days old* 0.4 - 2 mg IV, IM, IO Peds under 40 kg 0.1 mg/kg	- Narcotic OD w/ respiratory depression - altered mental status of unknown origin

Nitroglycerine	EMT assist with patient's prescribed, AEMT	0.4 mg SL Peds contact OLMC	- Chest pain
Ondansetron (Zofran	*EMT AEMT	4 - 8 mg ODT *Peds - if old enough to dissolve tablet in mouth - 0.1 mg/kg* *20 kg = 2 mg (½ 4 mg tab)* *40 kg = 4 mg (1 4 mg tab)* 4 - 8 mg IV slow, IM, IO *Peds > 2 y/o 0.1 mg/kg, not to exceed 4 mg each dose. Contact OLMC peds < 2 y/o*	- Nausea/Vomiting
Oral Glucose	EMR, EMT, AEMT	15 g PO, repeat PRN	- Hypoglycemia
Oxymetazoline (Afrin)	*EMT, *AEMT	2-3 sprays in ea nostril	- Nose bleeds

* *Requires MPD approved specialized training*

** *Requires Washington State endorsement to EMT certification*

GENERAL GUIDELINES - Patient Treatment Rights

CONSENT:

It is necessary to obtain patient consent before rendering emergency medical care. Expressed/informed consent must be received from competent adult patients. Implied consent is assumed in the case of life threatening injury or illness when the patient is unconscious, disoriented, a mentally incompetent adult, or a minor whose parent or legal guardian is unavailable

RIGHT TO MAKE DECISION REGARDING CARE:

1. A conscious patient who is rational has the right to refuse treatment
2. If a conscious patient who is irrational or impaired refuses treatment that EMS personnel deems necessary, the EMT could contact OLMC and/or LE and/or county mental health professional for assistance. See Patient Refusals (AMA)
3. If a patient's family, patient's physician, or nursing home refuses treatment for a patient, protocols are contained herein to deal with those situations
4. A rational patient has the right to select a hospital within the local area to be transported to in a non-emergent situation
5. If a patient is a minor (under age 18) and no consenting adult is available and the minor refuses treatment, the EMS provider should contact OLMC

RELEASE OF RESPONSIBILITY:

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 911 activation was unnecessary and/or signs and symptoms do not meet treatment/transport necessity. OLMC contact is not necessary by the treating EMS personnel and a patient may be released under ROR if all of 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 Decision Making Capacity Checklist and scores 5 or 6 on the Cognitive Screening Procedure
    f. The patient or his/her caregiver will ideally agree to sign the Klickitat County Refusal Form. If refused to sign form, document why the form was not signed
    g. If it is clearly evident that the individual was not in need of EMS services, a signature on the Klickitat County Refusal is not necessary

2. A patient with diminished decision-making capacity does not meet all the elements of the Decision Making Capacity Checklist and the Cognitive Screening Procedure. Non-transport of the patient with diminished decision-making capacity can only be done at the direction of OLMC

GENERAL GUIDELINES - Patient Treatment Rights, *cont*

PUBIC ASSIST CALLS:

1. When called for public assist, such as non-medical/non-trauma related situations, i.e. moving patients from vehicle to wheelchair, vehicle to house, lifting a non-injured patient who frequently falls, etc, it's important to rule out illness or injury as underlying cause or effect
2. Patient Care Report is still required, but a signed Klickitat County Refusal form may not be necessary if reasonable judgement deems it is not necessary
3. If suspicion of illness or injury, the call is no longer a public assist call and requires a signed Klickitat County Refusal Form if patient will not agree to treatment/evaluation and or transported to hospital

GENERAL GUIDELINES - Patient Refusals (AMA)

REFUSAL OF CARE:

Patients suffering illness or injury have the right to refuse emergency treatment and/or transport if ALL of the following factors are present in the Decision Making Capacity Checklist and patient scores 5 or 6 on the Cognitive Screening Tool:

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 by drugs		
4.	Not suspected of brain trauma or stroke		
5.	Absence of impairment due to dementia, mental illness (that impairs decision making process) or other diseases and does not appear to be a threat to self and/or others (see Cognitive Screening Tool)		
6.	No evident impairment from hemodynamic instability, such as hypoxia, hypotension, hypertension, cardiac dysrhythmias, hypoglycemia		

GENERAL GUIDELINES - Cognitive Screening Tool - Patient Refusals (AMA) *cont.*

COGNITIVE SCREENING TOOL

Confirm decisional capacity as appropriate, with score of 5 or 6

I'm going to ask you some questions and ask that you remember three words. After I say all three words, please repeat them out loud; remember them, because I will ask you to repeat them again in a few minutes. Repeat these words: APPLE, TABLE, PENNY	**SCORE**	
What year is it?	0	1
What month is it?	0	1
What day of the week is it?	0	1
Apple	0	1
Table	0	1
Penny	0	1
	TOTAL	**6**

CRITERIA FOR INFORMED REFUSAL/CONSENT

1. Patient is given accurate information about possible medical problems and risk/benefits of treatment or refusal
2. Patient is able to understand and verbalize these risks and benefits
3. Patient is able to make a decision consistent with his/her beliefs and life goals

REFUSAL (AMA)

1. If a patient (or someone authorized to speak on patient's behalf) needs medical treatment and/or ambulance transport and refuses to be treated/transported AMA, while able to understand the situation and consequences, and is able to weigh risk/benefit options and rationally/logically process information before making a decision:

    A. A Refusal Form is necessary
    B. Every effort must be made to convince patients to accept necessary pre-hospital intervention and transport to definitive care. Options available are:
        i. solicit assistance from family, friends, clergy and/or other close associates to help persuade
        ii. solicit assistance from law enforcement and/or OLMC, as the situation directs

2. **CONSULTATION WITH MEDICAL CONTROL IS MANDATORY**

GENERAL GUIDELINES - Patient Refusals (AMA) *cont*

3. The following statements should be read to the patient who is signing a Refusal Form AMA:

   "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:

   A. 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

   B. 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

   C. 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."

DOCUMENTATION OF A PATIENT REFUSAL (AMA)

1. PCR must be written for all refusals and must include:
   a. Reason(s) for the 911 call and who made the 911 call
   b. Description of events
   c. Patient's medical history and current assessment findings
   d. Quotes made by the patient, to include reasons for the refusal of treatment/transport
   e. Signs of injury/illness (why treatment/transport is recommended)
   f. The name of the OLMC physician report was given to
   g. Time of OLMC contact and any orders given
   h. Disposition of the patient (i.e. left at scene and with whom; by what mode of transportation and by whom)
   i. Name and agency of LE officer when appropriate

DOCUMENTATION FOR UNSECURED SCENES AND UNCOOPERATIVE PATIENTS, INCLUDING RESTRAINED PATIENTS
(see Behavioral Emergencies - Documentation)

GENERAL GUIDELINES - Communication (Verbal)

Radio/telephone communications with receiving facility should include the minimum:

HEAR REPORT or OLMC for request for medications or procedures

1. Unit identification and level of service
2. Age and sex of patient
3. Chief complaint and reason for transport, may say “possible UTI,” etc
4. Very brief pertinent medical history (one sentence if possible)
5. LOC, vital signs, physical assessment finding
6. Pertinent treatment rendered and patient response to treatment
7. Estimated time of arrival (ETA)
8. Ask if there are any questions or concerns
9. If report given over telephone, patient name and date of birth may be provided

If requesting medications or procedures, start conversation by telling OLMC what it is that you are calling for and then provide 1 - 6

* As early as possible notify receiving facility if patient is a Full or Modified Trauma Alert, Stroke Alert, Sepsis Alert or STEMI Alert patient

HAND OFF REPORT at receiving facility

Face to face reports should include more detailed information than the HEAR report. It should include thorough details of the scene, complete assessment of patient, complete report on patient care and result of your efforts

GENERAL GUIDELINES - 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. It is unacceptable to move or transport a deceased person, even though some scenes, especially those involving pediatrics, can be extremely emotionally distressing. 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 due to extenuating circumstances, EMS shall document the reason why and what actions were taken. Coordinate with LE or Coroner

4. EMS will assist LE with investigations by providing contact and medical information, as needed

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, 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 life saving 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 necessary

10. EMS shall not take anything from a crime scene that can be left; they will give clothes, blankets, and sheets to LE

GENERAL GUIDELINES - Crime Scene Preservation, *cont*

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. If a child is involved, 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

GENERAL GUIDELINES - Death in The Field

1. EMT's MAY WITHHOLD RESUSCITATION IF ANY OF THE FOLLOWING ARE PRESENT:
    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. NON-recent death
    I. Situations when attempts to do CPR would place the rescuer at risk of serious injury or mortal peril

2. FETAL DEMISE:
    A. Contact OLMC for advice, consider pediatric OLMC, if available
    B. If the fetus has no signs of life and is >20 weeks of gestational age or age unknown, consider it a still birth
        i) Contact LE if the situation warrants
        ii) Transport mother to the hospital
    C. If the fetus has no signs of life and is <20 weeks
        i) Transport the mother and fetus to the hospital
    D. If the mother refuses transport, follow the Patient Refusals (AMA) protocol

3. TRAUMATIC DEATH IN THE FIELD:
    A. In blunt or penetrating trauma, resuscitation efforts may be withheld if the patient is pulseless, apneic, and without witnessed signs of life upon EMS arrival. For pediatric patients consider contacting OLMC
    B. EMS witnessed arrest due to severe hypovolemia, hypoxia, or tension pneumothorax may respond to resuscitation:

        HAT RESUSCITATION: Treatable causes of witnessed traumatic arrest
        i. **Hypovolemia**: Control external bleeding, apply pelvic binder/wrap if pelvic trauma. Administer 1000 mL of NS *(EMT IV)*
        ii. **Airway**/Oxygenation: Ensure airway patency and effective oxygenation
        iii. **Tension** Pneumothorax: Perform bilateral needle chest decompression, if indicated *(ALS)*

    C. For trauma patients found in VF or Pulseless VT on EMS arrival, suspect a medical event and treat per the VF/pulseless VT protocol
    D. For patients who deteriorate to PEA or asystole on scene, begin CPR while instituting **HAT** resuscitation (CPR should not interfere with HAT procedures):
        i. If ROSC is obtained, transport to trauma center
        ii. If ROSC is not achieved, declare the patient dead or contact OLMC for guidance
    E. If the mechanism of injury appears inconsistent with the patient's condition and not severe enough to induce traumatic arrest, consider a primary medical cause for the patient's cardiac arrest and treat accordingly

GENERAL GUIDELINES - Death in The Field, *cont*

4. MEDICAL CARDIAC ARREST:
   - A. Resuscitation efforts may be terminated after providing > 60 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 > 30 minutes of high-quality CPR for the unwitnessed cardiac arrest patient, and those with non-shockable rhythms
   - C. Resuscitation efforts of cardiac arrest patients with ETC02 < 10 mmHg for > 20 minutes may be terminated
   - D. Consider transporting the medical patient with CPR in progress if at least one of the following is suspected:
     - i) Drug overdose
     - ii) Drowning
     - iii) Hypothermia
     - iv) Refractory shockable rhythm
     - v) Age ≤ 30 years old
     - vi) Circumstances require that the patient be transported
     - vii) Lightning strike

5. DO NOT RESUSCITATE (DNR) or ADVANCE DIRECTIVES:
   - A. Patients on HOSPICE in cardiac arrest is considered DNR
   - B. Washington State POLST Form (Portable Orders for Life Sustaining Treatment)
     - i) Communicates patient's wishes to EMS for CPR or No CPR
     - ii) Communicates amount of care and interventions allowed to EMS if patient is not in cardiac arrest
   - C. A Living Will should be honored, if present
   - D. BLS resuscitation must be started if unable to find the DNR documents and terminated if found. If resuscitation has been started and the existence of a DNR is discovered, resuscitation should be terminated as soon as it is determined that the form is valid

6. OTHER:
   - A. Compelling reasons permit EMS personnel to withhold resuscitation of a patient in cardiac arrest when the following two criteria are both present:
     - i) The patient is at the end stage of a terminal condition
     - ii) There is written or verbal information from family, caregivers, or the patient stating that the patient did not want resuscitation

7. IN ADDITION:
   - A. Providers should contact OLMC for consultation for termination of resuscitation efforts
   - B. EMS must notify Law Enforcement (LE)
   - C. All documentation must be made on a Patient Care Report (PCR). A copy should be provided to the Coroner's office, if requested

GENERAL GUIDELINES - 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, DOA's and all patient contacts

2. A brief written report must be left with receiving facility staff (WAC 246-976-455). At minimum, the brief care report must include, in addition to agency name and personnel, and any cardiac monitor EKG strips and code summary, if available

   i. date/time of the emergency
   ii. time of onset
   iii. vital signs, including serial vital signs when indicated
   iv. patient assessment findings
   v. procedures and therapies provided by EMS
   vi. any changes in patient condition while in the care of EMS
   vii. mechanism of injury or nature of illness

3. All ALS and BLS prehospital providers that do not accompany the patient to the hospital shall provide a brief care report containing the same components of their patient care to the transporting agency

4. In addition to a brief written report at hand off, 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

5. The MPD approved format for PCR's is the SOAP format

   [S] - SUBJECTIVE The information includes what you were dispatched to. It includes what the patient, family, bystanders or other witnesses tell you. Age of the patient, gender, estimated weight in Kg, chief complaint, history of event, pertinent medical history of the patient, medications, allergies, other extenuating circumstances

GENERAL GUIDELINES - Documentation, *cont*

[O] - OBJECTIVE This information includes what you observe, including a scene description, what you find on your rapid, detailed and/or focused head-to-toe physical exam, level of consciousness/psychiatric status, skin, vital signs (including CBG, temp, 12-lead results, if appropriate), rapid, detailed and/or focused physical exam. Note placement of medical alert tags. Document changes in patients' condition. In addition to writing out objective findings, report the following in outline form:

SKIN:
HEENT:
NECK:
BACK:
CHEST:
ABDOMEN:
PELVIS:
EXTREMITIES:
NEUROLOGICAL:
VITAL SIGNS:

[A] - ASSESSMENT The patient diagnosis. May include more than one
[P] - PLAN - Procedures and treatments performed. Document results of interventions, i.e. did patient's condition improve, decline, or remain the same

6. 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

GENERAL GUIDELINES - 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

GENERAL GUIDELINES - Physician on Scene

PRIVATE PHYSICIAN AND/OR MEDICAL PROFESSIONALS AT SCENE

1. Physicians and/or medical professionals at the scene of an emergency may provide assistance and should be treated with professional courtesy
2. When the patient's private physician is in attendance and has identified himself/herself upon the arrival of EMS, all EMS responders will comply with the private physician's instructions for the patient
3. Medical professionals who offer their assistance on a scene must identify themselves
4. Physicians must provide proof of their identity if they wish to assume or retain responsibility for the care given to the patient after the arrival of EMS
5. Physicians on scene must understand that EMS personnel are operating under MPD Protocols and if they want to perform interventions/procedures that are inconsistent with established protocols, clearance must be obtained through OLMC

THE PHYSICIAN ON SCENE MAY:

A. Request to talk directly to the OLMC Physician to offer advice and assistance;
B. Offer assistance to EMS with another pair of eyes, hands, or suggestions, leaving the EMS team under their Standing Orders;
C. Take total responsibility for the patient with the concurrence of the OLMC Physician and must accompany the patient to the hospital in the ambulance

TRANSPORT:

If during transport, the patient's condition should warrant treatment other than that requested by the physician, OLMC will be contacted for information and concurrence with any treatment, except in cases of cardiopulmonary arrest

GENERAL GUIDELINES - POLST - (Portable Orders for Life-Sustaining Treatment)

POLST forms, Living Wills, and other types of DNR's are advanced directives that help health care providers honor an individual's treatment wishes. They are actual medical orders from a medical provider that are portable from one care setting to another.

1. Washington State POLST forms must be signed by either a physician (MD/DO), an advanced registered nurse practitioner (ARNP), or a physician assistant - certified (PA-C)
2. POLST forms are meant for individuals who have a serious medical condition and they should be transported between care settings, including home, with the individual
3. POLST forms do not have to be the original bright lime green in order to be honored. They can be photocopied, digital images or a fax. Bracelets and necklaces are honored as well.
4. The POLST form should be found on the refrigerator or, if at a care facility, in the patient's chart
5. If patient is in cardiac arrest, first check that the patient's name and birthdate are filled out and that form is signed and dated by a medical provider, then look at Section A. The choices in Section A are either **Attempt Resuscitation** or **Do Not Attempt Resuscitation (DNAR**). If the DNAR is checked, do not start CPR, unless suicide or homicide is suspected. If Attempt Resuscitation is checked, follow the instructions on the form in Section B. The choices are usually "Selective Treatment" or "Comfort-Focused Treatment." There may be more specific orders in the "Additional Order" section.

REVOCATION OF A POLST:

1. A POLST form may be revoked by:
    a. The individual verbally revoking the order
    b. The individual destroying the form
    c. The medical providers by expressing the patient's revocation of the order
    d. The legal medical decision maker
    e. By drawing a diagonal line or the word VOID across the front of the form

SPECIAL SITUATION:

1. An individual's wish to withhold resuscitation should always be respected. Sometimes, however, the family may vigorously and persistently insist on CPR even if a valid POLST order is located. These verbal requests are not consistent with the individual's directive. However, in such circumstances:
    a. Attempt to convince family to honor the individual's decision to withhold CPR. If family persists, then;
    b. Initiate resuscitation efforts until relieved by advanced level provider (AEMT and/or paramedic) [for EMRs and EMTs])
    c. EMS personnel should continue treatment and consult OLMC

HIPAA PERMITS DISCLOSURE OF POLST TO OTHER HEALTH CARE PROVIDERS AS NECESSARY

Washington POLST
Portable Orders for Life-Sustaining Treatment
A Participating Program of National POLST

LAST NAME / FIRST NAME / MIDDLE NAME/INITIAL		
DATE OF BIRTH / /	GENDER (optional)	PRONOUNS (optional)

This is a medical order. It must be completed with a medical professional. Completing a POLST is always voluntary.
IMPORTANT: See page 2 for complete instructions.

MEDICAL CONDITIONS / INDIVIDUAL GOALS:	AGENCY INFO / PHONE (if applicable)

A CHECK ONE

Use of Cardiopulmonary Resuscitation (CPR): **When the individual has NO pulse and is not breathing.**

☐ **YES – Attempt Resuscitation / CPR** *(choose FULL TREATMENT in Section B)*

☐ **NO – Do Not Attempt Resuscitation (DNAR) / Allow Natural Death**

When not in cardiopulmonary arrest, go to Section B.

B CHECK ONE

Level of Medical Interventions: **When the individual has a pulse and/or is breathing.**

Any of these treatment levels may be paired with DNAR / Allow Natural Death above.

☐ **FULL TREATMENT – Primary goal is prolonging life by all medically effective means.** Use intubation, advanced airway interventions, mechanical ventilation, and cardioversion as indicated. Includes care described below.
Transfer to hospital if indicated. Includes intensive care.

☐ **SELECTIVE TREATMENT – Primary goal is treating medical conditions while avoiding invasive measures whenever possible.** Use medical treatment, IV fluids and medications, and cardiac monitor as indicated. ***Do not intubate.*** May use less invasive airway support (e.g., CPAP, BiPAP, high-flow oxygen). Includes care described below.
Transfer to hospital if indicated. Avoid intensive care if possible.

☐ **COMFORT-FOCUSED TREATMENT – Primary goal is maximizing comfort.** Relieve pain and suffering with medication by any route as needed. Use oxygen, oral suction, and manual treatment of airway obstruction as needed for comfort.
Individual prefers no transfer to hospital. EMS: consider contacting medical control to determine if transport is indicated to provide adequate comfort.

Additional orders (e.g., blood products, dialysis): _____

C

Signatures: A legal medical decision maker *(see page 2)* may sign on behalf of an adult who is not able to make a choice. An individual who makes their own choice can ask a trusted adult to sign on their behalf, or clinician signature(s) can suffice as witnesses to verbal consent. A guardian or parent must sign for a person under the age of 18. Multiple parent/decision maker signatures are allowed but not required. Virtual, remote, and verbal consents and orders are addressed on page 2.

Discussed with: ☐ Individual ☐ Parent(s) of minor ☐ Guardian with health care authority ☐ Legal health care agent(s) by DPOA-HC ☐ Other medical decision maker by 7.70.065 RCW	X **SIGNATURE** – MD/DO/ARNP/PA-C **(mandatory)**		DATE **(mandatory)**
	PRINT – NAME OF MD/DO/ARNP/PA-C **(mandatory)**		PHONE
	X **SIGNATURE(S)** – INDIVIDUAL OR LEGAL MEDICAL DECISION MAKER(S) **(mandatory)**	RELATIONSHIP	DATE **(mandatory)**
	PRINT – NAME OF INDIVIDUAL OR LEGAL MEDICAL DECISION MAKER(S) **(mandatory)**		PHONE

Individual has: ☐ Durable Power of Attorney for Health Care ☐ Health Care Directive (Living Will)
Encourage all advance care planning documents to accompany POLST.

SEND ORIGINAL FORM WITH INDIVIDUAL WHENEVER TRANSFERRED OR DISCHARGED

WSMA Washington State Medical Association
Physician Driven, Patient Focused

Washington State Department of Health

All copies, digital images, faxes of signed POLST forms are valid.
See page 2 for preferences regarding medically assisted nutrition.
For more information on POLST, visit **www.wsma.org/POLST**.

Revision Date _____

HIPAA PERMITS DISCLOSURE OF POLST TO OTHER HEALTH CARE PROVIDERS AS NECESSARY

LAST NAME / FIRST NAME / MIDDLE NAME/INITIAL	DATE OF BIRTH / /

Additional Contact Information (if any)

LEGAL MEDICAL DECISION MAKER(S) (by DPOA-HC or 7.70.065 RCW)	RELATIONSHIP	PHONE
OTHER CONTACT PERSON	RELATIONSHIP	PHONE
HEALTH CARE PROFESSIONAL COMPLETING FORM	ROLE / CREDENTIALS	PHONE

Preference: Medically Assisted Nutrition (i.e., Artificial Nutrition)

☐ **Check here if not discussed**

This section is NOT required. This section, whether completed or not, does not affect orders on page 1 of form.
Preferences for medically assisted nutrition, and other health care decisions, can also be indicated in advance directives which are advised for all adults. The POLST does not replace an advance directive. When an individual is no longer able to make their own decisions, consult with the legal medical decision maker(s) regarding their plan of care, including medically assisted nutrition. Base decisions on prior known wishes, best interests of the individual, preferences noted here or elsewhere, and current medical condition. Document specific decisions and/or orders in the medical record.

Food and liquids to be offered by mouth if feasible and consistent with the individual's known preferences.

☐ Preference is to avoid medically assisted nutrition.
☐ Preference is to discuss medically assisted nutrition options, as indicated.*
Discuss short- versus long-term medically assisted nutrition (long-term requires surgical placement of tube).

* Medically assisted nutrition is proven to have no effect on length of life in moderate- to late-stage dementia, and it is associated with complications. People may have documents or known wishes to not have oral feeding continued; the directions for oral feeding may be subject to these known wishes.

Discussed with: ____ Individual ____ Health Care Professional ____ Legal Medical Decision Maker

Directions for Health Care Professionals

NOTE: An individual with capacity may always consent to or refuse medical care or interventions, regardless of information represented on any document, including this one.

Any incomplete section of POLST implies full treatment for that section. This POLST is valid in all care settings. It is primarily intended for out of hospital care, but valid within health care facilities per specific policy. The POLST is a set of medical orders. The most recent POLST replaces all previous orders.

Completing POLST

- Completing POLST is voluntary for the individual; it should be offered as appropriate but not required.
- Treatment choices documented on this form should be the result of shared decision making by an individual or their health care agent and health care professional based on the individual's preferences and medical condition.
- POLST must be signed by an MD/DO/ARNP/PA-C and the individual or their legal medical decision maker as determined by guardianship, DPOA-HC, or other relationship per 7.70.065 RCW, to be valid. Multiple decision maker signatures are allowed, but not required.
- Virtual, remote, and verbal orders and consents are acceptable in accordance with the policies of the health care facility. For examples, see FAQ at www.wsma.org/POLST.
- POLST may be used to indicate orders regarding medical care for children under the age of 18 with serious illness. Guardian(s)/parent(s) sign the form along with the health care professionals. See FAQ at www.wsma.org/POLST.

NOTE: This form is not adequate to designate someone as a health care agent. A separate DPOA-HC is required to designate a health care agent.

Honoring POLST

Everyone shall be treated with dignity and respect.

SECTIONS A AND B:

- No defibrillator should be used on an individual who has chosen "Do Not Attempt Resuscitation."
- When comfort cannot be achieved in the current setting, the individual should be transferred to a setting able to provide comfort (e.g., treatment of a hip fracture). This may include medication by IV route for comfort.
- Treatment of dehydration is a measure which may prolong life. An individual who desires IV fluids should indicate "Selective" or "Full Treatment."

Reviewing POLST

This POLST should be reviewed whenever:

- The individual is transferred from one care setting or care level to another.
- There is a substantial change in the individual's health status.
- The individual's treatment preferences change.

To void this form, draw a line across the page and write "VOID" in large letters. Notify all care facilities, clinical settings, and anyone who has a copy of the current POLST. Any changes require a new POLST.

Review of this POLST form: Use this section to update and confirm order and preferences.

This meets the requirement of establishing code status and basic medical guidance for admission to nursing and other facilities.

REVIEW DATE	REVIEWER	LOCATION OF REVIEW	REVIEW OUTCOME
			☐ No Change ☐ Form Voided ☐ New Form Completed

SEND ORIGINAL FORM WITH INDIVIDUAL WHENEVER TRANSFERRED OR DISCHARGED

Copies, digital images, and faxes of signed POLST forms are legal and valid. May make copies for records.
For more information on POLST, visit **www.wsma.org/POLST**.

GENERAL GUIDELINES - 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. Patients with evidence of an acute cerebrovascular accident (CVA) shall be transported in accordance with the Prehospital Stroke Triage Destination Procedure

4. All patients with acute STEMI (EKG verified) should be transported in accordance with the Prehospital Cardiac Triage Destination Procedure

5. 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

6. If a hospital declares an Internal Disaster, that facility should be bypassed for EMS transports

7. Unstable patients will be taken to the nearest appropriate facility for stabilization

UNIVERSAL PATIENT CARE PROTOCOL

TREATMENT:

1. Assess scene safety; hazards; PPE; number of patients; mechanism of injury/nature of illness
   A. Request additional resources as needed
   B. Consider declaration of Mass Casualty Incident if needed
2. Primary patient assessment, determine responsiveness and initial chief complaint
   A. Consider C-Spine precautions
   B. Control major external bleeding per Hemorrhage Control protocol
   C. Determine responsiveness/AVPU
   D. ABC or CAB if cardiac arrest (see Cardiac Arrest Guidelines)
   E. Assess and assure patent airway. Use head tilt - chin lift if no cervical spine injury suspected, use jaw thrust if evidence of potential cervical spine injury. Suction if needed
   F. Assess breathing rate, rhythm, quality, depth. Oxygenate and/or ventilate, as needed
   G. Assess pulse rate, rhythm, quality, control bleeding, assess skin color, temp & moisture. Treat for Shock as indicated
   H. CMS in all extremities
   I. Expose patient as appropriate to complaint and to scene conditions
3. Secondary patient assessment
   A. Monitor vital signs, SpO2, ETCO2, and obtain CBG readings as appropriate
   B. Monitor ECG if appropriate
   C. Physical exam/rapid trauma exam as appropriate
   D. SAMPLE/OPQRST history from patient of caregiver, if possible
   E. Establish vascular access as appropriate
4. Reassessment
   A. Reassess stable patients every 15 minutes
   B. Reassess unstable patients every 5 minutes
5. Call report to hospital
6. Transport via appropriate mode to appropriate facility, per protocols
7. Follow appropriate Protocol if chief complaint or assessment findings change

KEY CONSIDERATIONS:

1. If patient is unable to provide medical history, check for medical alert bracelets and necklaces, or other means of documenting medical history. Check for POLST
2. Pediatrics:
   A. Use a length/weight-based assessment tool to estimate patient weight and guide medication. **Do not exceed maximum adult dosing criteria.**
   B. Use Pediatric Assessment Triangle to assist when assessing a critical child
3. Geriatrics (>65) –medications should be at the low end of dosing scale
4. Patients with chronic renal or liver disease should receive medication at the low end of dosing scale

CARDIAC - Cardiac Arrest w/AED GENERAL GUIDELINES

NOTE – For Infants and Children see Pediatrics - Cardiac Arrest

- ALL INTERRUPTIONS SHOULD BE LIMITED TO ≤ 10 SECONDS
- If cardiac arrest is witnessed by EMS personnel, proceed as quickly as possible to rhythm analysis and defibrillation, if indicated
- If unwitnessed arrest, perform 2 minutes of high quality CPR prior to initial rhythm analysis and defibrillation
- To perform high quality CPR, compress to a depth of 2 – 2.5 inches, with full recoil at a rate of 100-120/minute using a metronome. Switch compressor at each rhythm check, with replacement hovering to minimize interruption time
- If there is a history to suggest a different etiology such as trauma, drowning or respiratory arrest, initiate ventilatory support early
- Ventilate with 2 people - 1 on the mask and 1 on the BVM with oxygen @ 15 LPM as soon as possible
- Consider early use of a supraglottic airway to minimize CPR interruptions. Airway interventions should not interrupt chest compressions
- DO NOT OVER-INFLATE
- Consider placing a CCD (chest compression device)

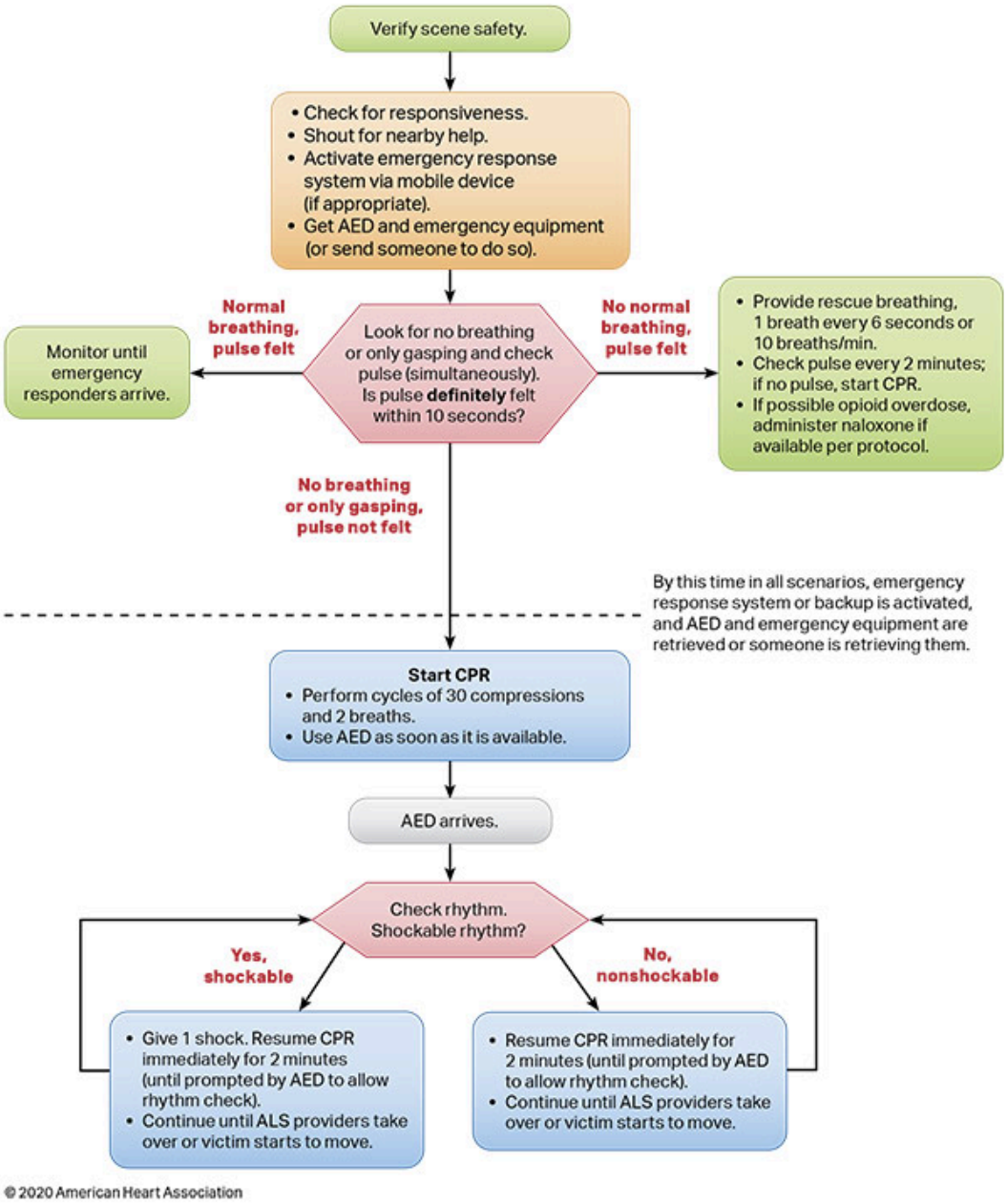
OBTAIN HISTORY WHEN POSSIBLE, BUT DO NOT DELAY CPR to obtain:

a. Witnessed or unwitnessed
b. Patient down time
c. Bystander CPR
d. DNR status
e. Previous medical history, medications and allergies
f. Potential causes:
    i. Airway Obstruction
    ii. Trauma
    iii. MI
    iv. CVA
    v. Electrocution
    vi. Diabetes

- Adult AED pads should be placed on individuals over 8 years old
- Be sure patient is dry, not in a puddle of water
- Remove medication patches
- Do not place pads over pacemakers and automatic implanted defibrillators

CARDIAC - Cardiac Arrest w/AED AHA Algorithm

Adult Basic Life Support Algorithm for Healthcare Providers



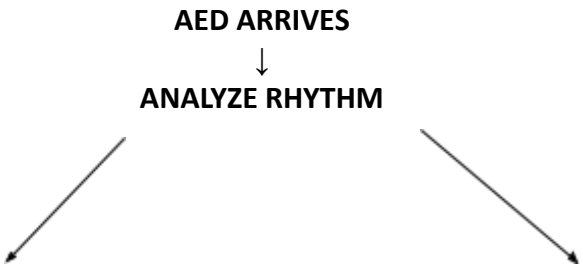
CARDIAC - Cardiac Arrest w/AED, *cont*

~~~~~~ **EMR** ~~~~~~

1. Establish unresponsiveness
2. If no breathing or only gasping

   →And no compelling reason to withhold CPR (see Death in the field and POLST)

3. Check pulse for no more than 10 seconds
4. If pulse present
   a. give 1 breath q 5 – 6 seconds and recheck pulse q 2 minutes
5. If no pulse
   a. Begin CAB, immediately starting chest compressions
   b. If down time estimated at > 5 minutes perform continuous CPR for 2 minutes, then analyze rhythm
   c. If down time < 5 minutes or if bystander CPR, do CPR until AED/Monitor applied
   d. If cardiac arrest witnessed by EMS personnel, proceed as quickly as possible to rhythm analysis and defibrillation



SHOCKABLE

- Give 1 shock. Resume CPR immediately for 2 minutes (until prompted by AED to allow rhythm check)
- Continue until ALS providers take over or patient starts to move

NON-SHOCKABLE

- Resume CPR immediately for 2 minutes (until prompted by AED to allow rhythm check)
- Continue until ALS providers take over or patient starts to move

6. Be prepared to suction airway as needed
7. Apply oxygen at 15 LPM via NC when 2nd rescuer arrives or during rhythm analysis, if possible
8. Secure airway with OPA and ventilate with BVM and 100% oxygen
9. Compression to Ventilation ratio 30:2 until SGA placed
10. If patient has return of spontaneous circulation, follow CARDIAC ARREST - Return of Spontaneous Circulation (ROSC) protocol
~~~~~~

CARDIAC - Cardiac Arrest w/AED, *cont*

~~~~~~ **EMT** ~~~~~~

11. Place SGA per Airway Management - Supraglottic Airway procedure. Once airway placed give 1 breath every 6 seconds with **100% oxygen**
12. Monitor $EtCO_2$ throughout

~~~~~~ **EMT IV** ~~~~~~

13. **Establish IV or IO with NS 125 - 250 ml/hr** for med line

~~~~~~ **AEMT** ~~~~~~

14. For both shockable and non-shockable rhythms, administer
    a. **Epinephrine (1:10,000) 1 mg IV, IO q 3-5 mins**

Consider H's and T's

○ Hypovolemia ○ Hypoxia ○ Hyper/hypoglycemia ○ Hyper/hypokalemia ○ Hydrogen Ion (Acidosis) ○ Hypothermia	○ Tension Pneumothorax ○ Tamponade, Cardiac ○ Toxins (overdose) ○ Thrombosis, pulmonary or coronary ○ Trauma (including ICP)
~~~~~~

CARDIAC ARREST – Return of Spontaneous Circulation (ROSC)

NOTE: If patient has ROSC, observe briefly to ensure sustained stability prior to transport. A 5-10 minute time while packaging and loading will be adequate

~~~~~~ **EMR** ~~~~~~

1. Manage and support ABC's as necessary
2. Titrate oxygen to maintain Sp02 ≥ 94%. Do not hyperinflate
3. Obtain blood pressure, CBG, consider narcan
4. Prepare patient for transport

~~~~~~ **EMT** ~~~~~~

5. Maintain $EtC0_2$ 35 - 45 mmHg
6. Obtain 12-LEAD EKG
7. Consider placing SGA if not already placed and no gag reflex present, per Airway Management - Supraglottic Airway Procedure
8. If 12-LEAD reads **STEMI**, advise incoming ALS unit
9. If possible, attempt to complete the Pre-Hospital Thrombolytic Checklist

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT IV** ~~~~~~

10. If hypotensive (SBP < 90), administer
    a. **NS 250 - 300 ml IV, IO**, repeat as needed, monitoring for jugular vein distention and/or pulmonary edema. Goal is MAP > 65
    b. **D10,** if hypoglycemic

~~~~~~ **AEMT** ~~~~~~

11. Alternatively**, D50**, if hypoglycemic

MAP (Mean Arterial Pressure) = $\mathbf{\frac{2\,(DP) + SP}{3}}$

The Washington State Cardiac Triage Destination Tool states that patients presenting with symptoms and EKG consistent with ACUTE ST-ELEVATION MYOCARDIAL INFARCTION (STEMI) should ultimately be transported emergently to the highest level facility within 60 minutes. On scene times should be less than 15 minutes, if possible. Consider air ambulance early. Transport to the closest facility if air ambulance unavailable.

Dr. Russell Smith, MD, MPD
Approval Date: December 31, 2024
Revision Date ________________

CARDIAC - Cardiogenic Shock

POSSIBLE CAUSES OF CARDIOGENIC SHOCK:

- Myocardial infarction, myocarditis, cardiomyopathy, myocardial contusion (trauma), dysrhythmias, drug overdose or poisoning

SIGNS & SYMPTOMS OF CARDIOGENIC SHOCK:

- Sudden onset of rapid heart rate
- Shortness of breath
- Hypotension
- Pale, cool, diaphoretic skin
- Altered mental status
- Weak pulse
- Chest pain with or without radiation

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Secure airway with OPA and ventilate with BVM, if needed
3. Suction airway as needed
4. If Sp02 < 94% administer
    a. **Oxygen** to keep Sp02 ≥ 94%
5. Consider placing defibrillation pads in the anteroposterior position

~~~~~~ **EMT** ~~~~~~

6. Secure airway per Airway Management - Supraglottic Procedure , as needed
7. Obtain 12-LEAD EKG, if possible
8. Read Lifepack interpretation of 12-LEAD to incoming ALS crew

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

9. **Establish IV, IO**
10. Administer **NS 200 - 300 m**l fluid challenge, repeat as needed to max of **2 L.** Monitor for jugular vein distention, pulmonary edema and/or new or increased rales

*** The Washington State Cardiac Triage Destination Tool states that patients presenting with symptoms and EKG consistent with ACUTE ST-ELEVATION MYOCARDIAL INFARCTION (STEMI) should ultimately be transported emergently to the highest level facility within 60 minutes. On scene times should be less than 15 minutes, if possible. Consider air ambulance early. Transport to the closest facility if air ambulance unavailable*

Dr. Russell Smith, MD, MPD
Approval Date: December 31, 2024
Revision Date _____
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CARDIAC - Chest Pain/Acute Coronary Syndrome

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. If Sp02 < 94% administer
    a. **Oxygen** to keep Sp02 ≥ 94%. Do not routinely administer oxygen if Sp02 is ≥ 94%

~~~~~~ **EMT** ~~~~~~

3. Administer
    a. **Aspirin 324 mg (4 - 81 mg chewable tablets) PO**
        i. Contraindicated if known allergy or active bleeding ulcer, severe liver failure or severe systemic disease (ALS, MS, etc)
        ii. May be withheld if patient has taken 324 mg aspirin in past 24 hrs

    Pediatrics contraindicated
4. If possible, obtain
    a. **12-LEAD EKG**
        i. Do not delay transport in order to obtain
        ii. Read results to incoming ALS unit
        iii. EKG results, in combination with patient history and signs and symptoms, may warrant air ambulance transport
        iv. If 12-LEAD printout reads "INFERIOR MYOCARDIAL INFARCTION," do not give nitroglycerin before consulting with incoming ALS unit
5. If BP > 110 and patient has their own physician prescribed nitroglycerin, administer
    a. **Nitroglycerin 0.4 mg SL tablets or spray**
        i. Contraindicated if patient has taken erectile dysfunction medications, i.e. Viagra within 24 hrs or Cialis, Levitra or Stendra within past 48 hours
        ii. May repeat 2x q 5 mins if BP remains > 110 systolic after each dose

    Pediatrics contraindicated
6. If nauseous
    a. **Ondansetron 4 - 8 mg ODT**

7. If time allows, complete the PreHospital Thrombolytic Checklist with patient, family or caregivers

~~~~~~ **EMT IV** ~~~~~~

8. Establish IV **prior** to administering Nitroglycerin

~~~~~~ **AEMT** ~~~~~~

9. Consider
    a. **Ondansetron 4 - 8 mg SLOW IV push**

See Washington State Cardiac Triage Destination Tool for transport destination guidance

CARDIAC - Dysrhythmia – Bradycardia

NOTE - For Infants and Children see Pediatrics - Dysrhythmia - Bradycardia

SIGNS & SYMPTOMS OF SYMPTOMATIC BRADYCARDIA
- HR below 60 with chest pain, dyspnea, altered mental status, hypotension, shock, acute MI, syncope or dizziness
- If HR below 60 with no symptoms, no treatment is required

~~~~~~ **EMR** ~~~~~~

1. If HR < 60 and signs and symptoms of bradycardia are present
   a. Initiate Universal Patient Care Protocol
   b. Place pt in semi-fowler's or supine position
   c. Consider C-spine if patient fell
   d. Administer oxygen if Spo2 < 94%
   e. Treat Altered Mental Status, if necessary
   f. Consider placing defibrillation pads in the anteroposterior position

~~~~~~ **EMT** ~~~~~~

2. Obtain 12-LEAD EKG**,** repeat frequently, if possible
3. If nausea/vomiting
   a. **Ondansetron 4 - 8 mg ODT**

~~~~~~ **EMT IV** ~~~~~~

4. **Establish IV access**
5. If hypotensive
   a. **NS 250 ml bolus**, repeat as needed, monitoring for pulmonary edema, JVD and/or new or increased rales

~~~~~~ **AEMT** ~~~~~~

6. If nauseous or prophylactically, consider
   a. **Ondansetron 4 - 8 mg SLOW IV push**

The Washington State Cardiac Triage Destination Tool states that patients presenting with symptoms and EKG consistent with ACUTE ST-ELEVATION MYOCARDIAL INFARCTION (STEMI) should ultimately be transported emergently to the highest level facility within 60 minutes. On scene times should be less than 15 minutes, if possible. Consider air ambulance early. Transport to the closest facility if air ambulance unavailable

CARDIAC - Dysrhythmia – Tachycardia

NOTE - For Infants and Children see Pediatrics - Dysrhythmia - Tachycardia

CONSIDERATION -

- SIGNS & SYMPTOMS OF SYMPTOMATIC TACHYCARDIA
  - HR over 100 with chest pain, dyspnea, altered mental status, hypotension, shock, acute pulmonary edema/CHF, acute MI, syncope, dizziness or nausea/vomiting
  - Patient may c/o feeling their heart racing
- Fever, pain, anxiety, stress, exercise, and drugs can cause tachycardia and may not require treatment

~~~~~~ **EMR** ~~~~~~

1. If HR > 100 and signs and symptoms of tachycardia are caused by the tachycardia
   a. Initiate Universal Patient Care Protocol
   b. Consider placing pt in semi-fowler's or supine position
   c. Consider C-spine if patient has fallen
   d. Secure airway with OPA and use suction, if needed
   e. Start oxygen if Spo2 < 94%, ventilate with BVM if needed
   f. Treat Altered Mental Status, if necessary
   g. Consider placing defibrillation pads in the anteroposterior position

~~~~~~ **EMT** ~~~~~~

2 Obtain 12-LEAD EKG**,** repeat frequently, if possible
3. If HR > 150 and patient stable, consider Vagal Maneuvers
4. If nausea/vomiting
   a. **Ondansetron 4 - 8 mg ODT**

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT IV** ~~~~~~

5. Establish **IV, IO access**
6. If symptomatic hypotension
   a. **NS 250 - 300 ml bolus**, repeat as needed, monitoring for pulmonary edema, JVD, and/or new or increased rales

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **AEMT** ~~~~~~

7. Consider
   a. Ondansetron 4 - 8 mg SLOW IV push

The Washington State Cardiac Triage Destination Tool states that patients presenting with symptoms and EKG consistent with ACUTE ST-ELEVATION MYOCARDIAL INFARCTION (STEMI) should ultimately be transported emergently to the highest level facility within 60 minutes. On scene times should be less than 15 minutes, if possible. Consider air ambulance early. Transport to the closest facility if air ambulance unavailable

Dr. Russell Smith, MD, MPD
Approval Date: December 31, 2024
Revision Date ________________

ABDOMINAL PAIN/ACUTE ABDOMEN

POSSIBLE PATHOLOGIES THAT WOULD CREATE ACUTE ABDOMEN:

- Upper abdomen: GI bleeding, cholecystitis, peritonitis, acute hepatitis, acute pancreatitis, GERD/ulcers
- Lower abdomen: GI bleeding, appendicitis, diverticulitis, ectopic pregnancy ruptures, ovarian cysts
- Other sites: AMI, abdominal aortic aneurysm (AAA), kidney stones, aortic dissection

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Protect airway - anticipate vomiting
3. Oxygen administration if < 94% Sp02, high flow if shock present
4. Allow patient to lie in a position of comfort, place patient in supine position if signs of shock are present
5. Nothing by mouth
6. Focused History and Physical Exam - carefully evaluate the abdomen, check CMS in lower extremities

~~~~~~ **EMT** ~~~~~~

7. If associated chest pain, capture 12-LEAD for ALS
8. Pain Management
    a. **Acetaminophen 650-975 mg PO with OLMC approval**
    Pediatric 15 mg/kg PO if old enough to swallow tablets with OLMC approval, **OR**
    liquid/powder packet per manufacturer's guidelines with OLMC approval, **OR**
    20 mg/kg suppository PR
9. If nausea/vomiting
    a. **Ondansetron 4 - 8 mg ODT**
    Pediatric 0.1 mg/kg (20 kg = 2 mg or half 4 mg tablet, 40 kg = 4 mg or 1 4 mg tablet). May repeat 1x

~~~~~~ **EMT IV** ~~~~~~

10. **Establish IV** with normal saline @ TKO if vital signs are normal
11. If shock present, administer an
    a. **Initial fluid challenge of 250 ml NS**. Administer additional challenges as needed, to maintain cerebral perfusion, not to exceed **2 L**. Monitor patient for pulmonary edema, JVD and/or new or increased rales
    Pediatric 20 cc/kg NS IV, contact OLMC for additional doses

~~~~~~ **AEMT** ~~~~~~

12. If nausea/vomiting present, consider
    a. **Ondansetron 4 - 8 mg IV, IM, IO**
    Pediatric > 2 y/o 0.1 mg/kg max single dose 4 mg, max total 8 mg
    Contact OLMC for pediatrics < 2 y/o

ABUSE and MALTREATMENT

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMR, EMT, EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

PEDIATRIC/ADULT ABUSE:

A. Be alert to findings suspicious of abuse:
   1. Explanations of mechanisms of injury conflicting with actual injury
   2. Suspicious injuries - cigarette burns, multiple bruises of varied age, belt marks, etc.
   3. History of repeated injuries
   4. Blame placed upon others
   5. Procrastination by caretaker(s) in seeking aid
   6. Sexual abuse may accompany physical abuse or may be present without signs of apparent physical abuse
   7. Evidence of medical neglect for injuries or infections
   8. Unexplained trauma to genitourinary systems or frequent infections to this system
   9. Evidence of malnourishment and/or serious dental problems

B. Treat any injuries per protocols
   1. Transport without delay for critical cases

C. Document and Report as carefully as possible caretaker's descriptions of the event(s):
   1. Note the environment carefully including temperature
   2. Note the reaction of all individuals on scene (include all caretakers)
   3. Note clothing, stains, conditions, bring clothing in with patient. See Sexual Assault/Rape Protocol for further guidelines
   4. Encourage the caretaker(s) to allow transport to the hospital for medical evaluation and/or treatment. If refusing, consult OLMC for further instruction
   5. Should caretaker(s) not allow recommended transport, notify Law Enforcement

D. Support and reassure:
   1. Be non-judgmental; be supportive to family concerns

E. If human trafficking is suspected:
   1. 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
   2. Assess patient's safety. If patient refuses care and there is risk of continued harm, notify law enforcement

F. Notify receiving physician of abuse, neglect, or potential of same
   1. EMS providers are required by law to report suspected abuse of children and vulnerable adults:
      a. Child Protective Services: Report by telephone to the Department of Children, Youth and Families (DCYF) 1-866-363-4276 (866-END-HARM)
      b. Adult Protective Services: Report by telephone or online to Department of Social and Health Services (DSHS) 1-877-734-6277. Reports can be made online at www.dshs.wa.gov/altsa/adult-protective-services-aps
      c. If an adult is living in a licensed facility (e.g. nursing home, boarding home or adult family home) and abuse or neglect is suspected, contact: WA State Complaint Resolution Unit toll free hotline, 24 hours, 800-562-6078
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ANAPHYLAXIS AND ALLERGIC REACTIONS

- Allergic reactions may be caused by a variety of agents
- The intensity of the reaction can range from minimal swelling to anaphylaxis and cardiovascular collapse
- Management should be based upon the rapidity of the appearance and the severity of the reaction

SIGNS/SYMPTOMS of ALLERGIC REACTIONS

May include: hives, dyspnea, swelling around mouth, face and/or tongue, hypotension, weak rapid pulse, flushed skin, angioedema, tightness in the chest, wheezes and abdominal cramping. Not all signs and symptoms are present in every case

~~~~~~ **EMR** ~~~~~~

Note: life threatening airway/respiratory compromise may develop as the reaction progresses

1. Initiate Universal Patient Care Protocol
2. Remove offending agent (i.e. stinger)
3. Continuously monitor for airway compromise (swelling, stridor)
4. Oxygen administration as needed
5. Provide ventilatory assistance, if needed
6. If moderate to severe anaphylaxis (swelling of tongue, face, wheezing, stridor or evidence of shock)
    a. **Epi Pen Autoinjector 0.3 mg IM** (Patient's physician prescribed or carried by agency)
    Pediatrics (under 30 kg) **Epi Pen Jr.** 0.15 mg IM
    b. Ensure Epi Pen is not expired, cloudy, discolored and/or crystallized
    c. Record time of injection and reassess in two minutes

~~~~~~ **EMT** ~~~~~~

7. If mild reaction - generalized itching, hives and NO dyspnea/wheezes
    a. **Diphenhydramine (Benadryl) 25-50 mg PO**
    Pediatric 1 mg/kg PO, if old enough to swallow, not to exceed adult dose
        i. 25 kg = 1 25 mg tab
        ii. 12.5 kg = ½ 25 mg tab
        iii. 6.25 kg = ¼ 25 mg tab
    OR liquid/chewables per manufacturer's guidelines

ANAPHYLAXIS AND ALLERGIC REACTIONS, *cont*

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT, cont** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

8. If severe reaction - dyspnea, wheezes, poor air movement, laryngospasm, shock
    a. **Epinephrine 1:1,000 0.3 mg IM**
    Pediatric < 30 kg 0.15 mg
        i. Monitor closely, may repeat in 5 minutes x1
        ii. Be cautious with adults over 50 y/o or with cardiac history

    b. **DuoNeb Albuturol/Ipratropium via nebulizer**
        i. Albuterol 2.5 mg/3ml add Ipratropium 0.5 mg/2.5 ml (one time only)
        ii. One subsequent dose of albuterol may be administered
        iii. Set 02 flow at 6 - 10 LPM for proper misting
        iv. Contact OLMC after administration of 2 doses of nebulized albuterol (including DuoNeb) for additional albuterol dosing

    Pediatric - Albuterol same as adult
    Ipratropium 2 - 12 yrs - 0.25 mg/1.25 ml (half dose)
    < 2 yrs contact OLMC

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT IV** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

9. Establish **IV with NS @ TKO** if vital signs are normal
10. If shock present, administer an
    a. **Initial fluid challenge of 250 ml NS**. Administer additional challenges as needed, to maintain cerebral perfusion, not to exceed **2 L**
    b. Monitor patient for pulmonary edema, JVD and/or new or increased rales

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

11. Consider **diphenhydramine 25-50 mg IV, IM, IO**
    Pediatric 1 mg/kg not to exceed adult dose
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

ALTERED MENTAL STATUS and COMA

Differential Diagnosis - * Remember AEIOU-TIPS ● cardiac event, stroke, postictal, shock ● hyperglycemia, hypoglycemia	● trauma ● ETOH, drug overdose, poisoning ● hyperthermia, hypothermia

Note - this protocol defines the management of the emergency medical patient who has an altered mental status, i.e. decreased LOC, confusion, disorientation, or coma. All patients with altered mental status should receive oxygen

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Ensure airway is patent- anticipate vomiting. Have suction immediately available. Insert OPA, if indicated and ventilate patient with 100% oxygen
3. If patient has an adequate respiratory drive, administer supplemental oxygen at 10 -15 LPM via NRB to maintain SP02 ≥ 94%
4. Consider cervical spine immobilization
5. Attempt to determine underlying cause
6. Always check blood glucose on patients with altered mental status
7. If **HYPOGLYCEMIC** (CBG < 60 mg/dL or < 80 mg/dL if a known diabetic patient) and able to protect airway
    a. **Oral Glucose 15 g PO**, repeat CBG after 5 minutes, repeat oral glucose or other carbohydrates as needed
8. If **HYPERGLYCEMIC** (CBG > 250 with symptoms of dehydration, vomiting, abdominal pain, or altered level of consciousness)
    a. protect airway and consider traumatic injuries
9. If **SUSPECTED OPIOID OVERDOSE** w/ respiratory depression
    a. Naloxone 1 mg/1 ml in nare IN
        i. Continue ventilating patient and monitoring respirations
        ii. If no arousal occurs after 3 - 5 minutes deliver remaining 1 mg in the other nare so that all 2 mg of medication are administered
        iii. Attempt to determine how many mg naloxone were administered in addition to the timeline of the administration, prior to EMS arrival
        iv. If no response, may repeat process with increases of 2 mg increments to each nare. 8 mg max dose. Contact OLMC for additional doses over 8 mg

    Pediatric
    a) Child 8 years of age to adult: same as adult
    b) Children between 28 days to 8 years of age: administer ½ mg IN per nare; if no arousal occurs after 3 - 5 minutes deliver ½ mg in the other nare so that 1 mg of medication is administered. May repeat entire process with 1 mg increments. 4 mg max dose. Contact OLMC for additional doses over 4 mg
    c) Child less than 28 days: Not indicated
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ALTERED MENTAL STATUS, *cont*

~~~~~~ EMR, cont ~~~~~~

10. If unable to determine cause of altered mental status
    a. Administer naloxone whether patient has respiratory depression or not
    b. If unable to obtain CBG, administer **oral glucose** if patient able to protect airway

~~~~~~ EMT ~~~~~~

11. If patient is unable to protect airway, secure airway per Airway Management - Supraglottic Procedure
12. Monitor waveform EtC02, if available
13. If **HYPOGLYCEMIC** (CBG < 60 mg/dL or < 80 mg/dL if a known diabetic patient) and unable to protect airway, and no personnel available to establish an IV
    a. **Glucagon 1 mg (Unit) IM -** continue to recheck CBG q 5 minutes
    Pediatric 0.03 mg/kg max 1 mg
14. If nausea/vomiting
    a. **Ondansetron 4 - 8 mg ODT**
    Pediatric 0.1 mg/kg (20 kg = 2 mg or half 4 mg tablet, 40 kg = 4 mg or 1- 4 mg tablet). May repeat 1x

~~~~~~ EMT IV ~~~~~~

15. **Establish IV with NS** @ TKO if vital signs are normal
16. If shock present, administer
    a. **Initial fluid challenge of 250 ml NS**. Administer additional challenges as needed, to maintain cerebral perfusion, not to exceed **2 L**. Monitor patient for pulmonary edema, JVD and/or new or increased rales
    Pediatric 20 cc/kg NS IV, contact OLMC for additional doses

17. If **HYPOGLYCEMIC** (CBG < 60 mg/dL or < 80 mg/dL if a known diabetic patient) and unable to protect airway
    a. **10% Dextrose titrated to effect, up to 25 g IV only**. May repeat as needed. Continue to recheck CBG q 5 minutes
    Pediatric - Infants < 10 kg (birth to 1 yr) with CBG < 40 and children 10 kg - 35 kg with CBG < 60, give 5 ml/kg (0.5g/kg)

18. If **HYPERGLYCEMIC** (CBG > 250 with symptoms of dehydration, vomiting, abdominal pain, or altered level of consciousness)
    a. **Initial fluid challenge of 250 ml NS IV, IO** Administer additional challenges as needed, to maintain cerebral perfusion, not to exceed **2 L**. Monitor patient for pulmonary edema, JVD and/new or increased rales. Contact OLMC for additional doses
    Pediatric 20 cc/kg NS IV, IO contact OLMC for additional doses

ALTERED MENTAL STATUS, *cont*

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT IV, cont** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

19. If unable to determine cause of altered mental status
    a. Administer **Naloxone** per protocol whether patient has respiratory depression or not
    b. Administer **D10** per protocol, even if unable to determine CBG

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

20. If **SUSPECTED OPIOID OVERDOSE** w Respiratory Depression
    a. Consider **Naloxone 0.4 mg - 2 mg IV, IM,IO** if cause of altered mental status unknown or opiates suspected
    Pediatric < 40 kg 0.1 mg/kg

21. If nausea/vomiting present, consider
    a. **Ondansetron 4 - 8 mg SLOW IV, IM, IO**
    Pediatric > 2 y/o 0.1 mg/kg, not to exceed single dose of 4 mg, max total 8 mg.
    Contact OLMC for peds < 2 y/o

22. If unable to determine cause of altered mental status
    a. Administer **Naloxone** per protocol whether patient has respiratory depression or not
    b. Administer **D10,** or alternatively**, D50** per protocol, even if unable to determine CBG

NOTE: To make D10% out of D50%, remove 50 ml NS from a 250 ml bag NS and replace with 50 ml (25 G) 50% Dextrose. (0.1 mg/ml)

BEHAVIORAL EMERGENCIES

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMR, EMT, EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

SCENE SAFETY

1. Your safety is paramount. Request to stage for LE while enroute to any situation that seems scene safety could be questionable
2. When requested by LE to stage, position vehicle out of sight until LE advises that the scene is safe to enter. Ensure dispatch knows your location when staging
3. Techniques to ensure your safety on scenes:
    a. Have a means of communicating with dispatch at all times
    b. Ensure location changes are reported to dispatch
    c. Identify sources of cover or concealment
    d. Make a plan for egress with partner/team prior to patient contact
    e. Scan the scene for actual and potential improvised weapons, particularly those on or within reach of the patient
4. Retreat from any scene at any time if the situation becomes hostile. Retreat to a safe place until LE can establish a safe scene
5. If patient is violent and poses an immediate danger to themselves, EMS personnel or others, and it is deemed there are enough personnel and LE on scene to safely restrain patient, see Physical Restraints

INITIAL APPROACH

1. If scene safety assessed (even if LE has cleared EMS to approach) and no evidence of immediate danger:
    a. Utilize the “come to us” approach if the individual is in a building or enclosed area
    b. Approach the individual in a calm, slow, reassuring and honest manner
    c. Have 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
    d. Use the RASS (or similar scale) to rate level of agitation as well as changes in level of agitation

Richmond Agitation Sedation Scale (RASS) *

Score	Term	Description	
+4	Combative	Overtly combative, violent, immediate danger to staff	
+3	Very agitated	Pulls or removes tube(s) or catheter(s); aggressive	
+2	Agitated	Frequent non-purposeful movement, fights ventilator	
+1	Restless	Anxious but movements not aggressive vigorous	
0	Alert and calm		
-1	Drowsy	Not fully alert, but has sustained awakening (eye-opening/eye contact) to *voice* **(≥10 seconds)**	Verbal Stimulation
-2	Light sedation	Briefly awakens with eye contact to *voice* **(<10 seconds)**	Verbal Stimulation
-3	Moderate sedation	Movement or eye opening to *voice* **(but no eye contact)**	Verbal Stimulation
-4	Deep sedation	No response to voice, but movement or eye opening to *physical* stimulation	Physical Stimulation
-5	Unarousable	No response to *voice or physical* stimulation	Physical Stimulation
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

BEHAVIORAL EMERGENCIES, *cont*

DE ESCALATION TECHNIQUES

SIGNS OF IMPENDING VIOLENCE	**DE-ESCALATION**
Display/threat of a weapon Clenched fists Wild/staring eyes Threatening posture Threatening gestures Muscle tension around jaw Gritted teeth Reddened face Bulging neck veins	Remove irritating stimuli Discuss situation calmly/establish rapport Express understanding of situation Reinforce positive aspects of situation Explore patient's feelings Convey respect, don't judge Listen Develop a solution, ask: What helped with the last crisis? What would help now?

ASSESS BEHAVIOR

1. Mentally ill and/or emotionally distressed persons may show signs of:
    a. Strong and unrelenting fear of persons, places, or things. The fear of people or crowds (agoraphobia), for example, may make the individual extremely reclusive or aggressive without apparent provocation
    b. Extreme inappropriate behavior(s) for a given context, i.e., yelling to themselves in a public place
    c. Becoming easily frustrated in new or unforeseen circumstances and the demonstration of inappropriate or aggressive behavior(s) in dealing with the situation
    d. Memory loss related to such common facts as name, home address, or phone number. Consider these also may be signs of other conditions such as brain injury, acute delirium, or dementia
    e. Delusions: such as delusions of grandeur ("I am God"), paranoid delusions ("Everyone is out to get me"), or somatic delusions (the belief that one suffers from extraordinary physical maladies that are not possible)
    f. Somatic delusions (e.g., believing their heart was stolen), does not mean that there are not serious physical symptoms worthy of assessment, such as cardiac dysrhythmia
    g. Hallucinations of any of the five senses (auditory, visual, tactile, olfactory, gustatory)

RULE OUT MEDICAL CAUSES

- Hypoxia - Hypoglycemia/DKA - Stroke - Postictal (seizure) - Traumatic Brain Injury	- Hypertensive Crisis - Sepsis/Meningitis - Withdrawal symptoms - Medication change - Stopped taking prescribed meds	- Alcohol intoxication - Substance abuse - Electrolyte imbalance - Alzheimers/dementia

BEHAVIORAL EMERGENCIES, *cont*

SPECIFIC PRECAUTIONS:

1. First psychotic episode over the age of 30
2. Acute onset over hours/days (consider substance abuse)
3. Do not assume the patient's condition is purely psychiatric
4. Suicidal patients should be considered to be potentially homicidal
5. Do not overlook the possibility of abuse/neglect

TREATMENT:

Patients who lack decision making capacity are assessed and treated with implied consent

EMR

1. Initiate Universal Patient Care Protocol
2. Treat any underlying medical conditions per protocol
3. Check blood glucose
4. Attempt to obtain history, including:
    a. if patient has failed to take prescribed medication
    b. whether there have been prior incidents, suicide attempts/threats
    c. contact information of mental health professional
5. Determine Decision Making Capacity and use the Cognitive Screening Tool

EMT

6. Consider 12-LEAD and Etc02, if available

EMT IV

7. Consider vascular access, if possible
8. If systolic BP < 90 mmHgm, treat per Shock Protocol

VOLUNTARY TRANSPORT:

1. If a patient with a mental health emergency wishes to voluntarily go to the hospital:
    a. A patient may be transported to the hospital voluntarily and request a psychiatric evaluation. He/she can revoke their decision to go to the hospital at any time during the transport
    b. Patients who are already receiving behavioral health services should be transported to a hospital in the same state in which they are receiving services (OR vs WA), if possible
    c. If the patient changes his/her mind and cannot be convinced to continue to the hospital, the crew is obligated to allow the patient out of the ambulance as soon as it is safe to do so. Notify LE of your location so that a determination can be made as to the disposition and safety of the patient. At no time is the crew to attempt to restrain the patient who is not in LE custody except in circumstances where doing so is to prevent the death or serious injury to the patient

BEHAVIORAL EMERGENCIES, *cont*

INVOLUNTARY TRANSPORT:

1. If patient does not meet decision making criteria and refuses to be transported for behavioral health evaluation, and does not require medical treatment/interventions, request LE, if they are not already on scene. LE may take patient into custody, under the Involuntary Treatment Act, "If there is reasonable cause to believe that a person is suffering from a behavioral health disorder (i.e. mental disorder, substance abuse disorder) and presents an imminent likelihood of serious harm, or is in imminent danger because of being gravely disabled" (RCW 71.05.150; RCW 71.05.153; RCW 71.05.201; RCW 71.34.710; RCW 71.34.351)
2. Either law enforcement or EMS can transport patient to the closest appropriate ED. Work closely with LE. If patient requires EMS interventions/treatment of medical/traumatic emergencies in addition to evaluation for a behavioral emergency, the patient must be transported by EMS
3. Transport patient in 4 point restraints and/or chemical restraint if aggressive/violent
4. Consult OLMC for guidance, if needed

MANAGEMENT OF AGGRESSIVE/VIOLENT PATIENT:

1. See Physical Restraints Procedure
2. CHEMICAL RESTRAINT
    a. Consider ALS backup for chemical restraint. Sedatives may be used in conjunction with physical restraints to prevent violently combative patients from injuring themselves or others

MONITORING THE PATIENT DURING RESTRAINT USE

1. Once restraints are applied, the EMS Practitioner must:
    a. Reassess vital signs, to include respiratory rate and quality at least q 15 minutes
    b. Regularly assess restrained extremities for circulatory, motor, and sensory status distal to the restraint (after restraint monitor q 15 minutes, or more often, as needed)
    c. Continually monitor the patient's overall medical status
    d. If sedation has been used, when safe and feasible, the paramedic is expected to continuously monitor capnography and oxygen saturation, at a minimum
    e. The patient may never be left alone

BEHAVIORAL EMERGENCIES, *cont*

LAW ENFORCEMENT ACCOMPANYING EMS

1. If the patient is restrained using the accepted restraint guideline (above) and the EMS practitioner feels comfortable with transporting the patient, the responsible law enforcement officer may follow the ambulance to the hospital
2. If the EMS practitioner is not comfortable transporting the patient alone, a law enforcement officer should be requested to ride along in the patient compartment
3. In situations where the patient is under arrest and handcuffs are applied by Law Enforcement:
    a. The patient will not be cuffed to the stretcher or handcuffed behind their back
    b. An Officer shall accompany the patient in the ambulance if the handcuffs remain applied
    c. An Officer may elect to follow the ambulance in the patrol car if the patient has been restrained with restraints other than handcuffs

DOCUMENTATION - minimum requirements for such an encounter should include:

1. Disposition: Patient Refused Service
2. Include the following elements in the narrative of the Patient Care Report:
    a. Descriptive overview of physical characteristics of the scene (e.g., “Responded to an unconscious person in a vehicle at intersection or street name”)
    b. A complete description of the danger or safety elements involved
    c. Patient behavior
    d. List and describe the measures used to attempt to engage the patient
    e. Level of cooperation
    f. Glasgow Coma Score
    g. Medical History and current medications
    h. List and describe measures used to attempt to create safety
    i. Describe the reasons why safety could not be established
    j. Describe specifics of the exposure to violence or threats of violence to EMS response personnel. Whenever possible include specific quotes from the individual
    k. If OLMC was contacted, name of the OLMC physician and time of contact
    l. 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.)

DIABETIC EMERGENCIES

Hyperglycemia

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Ensure airway is patent - anticipate vomiting. Have suction immediately available. Insert OPA, if indicated, and ventilate patient with 100 % oxygen
3. If patient has adequate respiratory drive, administer supplemental oxygen if SPO2 is < 94%
4. Check blood glucose level

~~~~~~ **EMT** ~~~~~~

5. If patient is unable to protect airway and has no gag reflex, consider placing a Supraglottic Airway Device such as a King LTD or I-Gel per Airway Management - Supraglottic Airway Procedure Procedure
6. Monitor $EtCO_2$ if available, if $EtCO_2$ is <25, notify receiving hospital for potential of patient in DKA
7. If signs and symptoms of shock are present, treat for Shock

~~~~~~ **EMT IV, AEMT** ~~~~~~

8. If CBG is > 250 with signs and symptoms of dehydration, abdominal pain, altered mental status, or vomiting
    a. **Establish IV or IO**
    b. Administer **250 mL bolus NS**, repeat as needed, not to exceed **2 L**, watching for pulmonary edema, JVD and/or new or increased rales. Contact OLMC for additional doses
    Pediatric 20 cc/kg NS IV, IO contact OLMC for additional doses

Hypoglycemia

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Protect airway - anticipate vomiting. If no gag reflex, have suction immediately available, insert an OPA and assist ventilation with BVM and supplemental oxygen at 10-15 LPM
3. If patient has a gag reflex, and adequate respiratory drive, administer supplemental oxygen at 10-15 LPM via NRB to maintain SPO2 ≥ 94%
4. Check blood glucose level
5. If CBG < 60 mg/dL or < 80 mg/dL if a known diabetic, and patient is able to protect airway
    a. **Oral Glucose**, repeat CBG after 5 minutes, repeat oral glucose or other carbohydrates as needed

DIABETIC EMERGENCIES, *cont*

~~~~~~ **EMT** ~~~~~~

6. If patient is unable to protect airway and has no gag reflex, treat per Airway Management - Supraglottic Airway Procedure

7. If CBG < 60 mg/dL or < 80 mg/dL if a known diabetic, and patient unable to protect airway, administer
    a. **Glucagon 1 mg (Unit) IM**
    Pediatric 0.03 mg/kg max 1 mg

~~~~~~ **EMT IV** ~~~~~~

8. Establish **IV with NS @ TKO** if vital signs are normal
9. If CBG < 60 mg/dL or < 80 mg/dL if a known diabetic, and patient unable to protect airway
    a. **10% Dextrose titrated to effect, up to 25 g IV only**. Continue to recheck CBG q 5 mins. May repeat as needed
    Pediatric - Infants < 10 kg (birth to 1 yr) with CBG < 40 and children 10 kg - 35 kg with CBG <60, give 5 mL/kg (0.5g/kg)

~~~~~~ **AEMT** ~~~~~~

10. Consider administering **D50**, alternatively
~~~~~~

DROWNING / NEAR DROWNING

- Attempt to determine how long patient was submerged
- Attempt to estimate water temperature
- All near-drowning patients should be transported to the hospital for evaluation

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Ensure safety of rescue personnel
3. Protect cervical spine if possible head or neck injury prior to removing pt from water
4. If conscious administer high flow oxygen
5. If unconscious OR respiratory distress perform positive pressure ventilation and prepare to aggressively suction. If no gag reflex, place an OPA and ventilate with BVM with oxygen @ 10 - 15 LPM
6. If in Cardiac Arrest, start CPR
7. Monitor lung sounds
8. Obtain temperature and protect against and/or treat per Hypothermia/Cold Exposure per protocol
9. Treat altered mental status per Altered Mental Status protocol

~~~~~~ **EMT** ~~~~~~

10. If unconscious, and no gag reflex, secure airway per Airway Management - Supraglottic Procedure
11. If alert and oriented, respiratory distress and/or pulmonary edema
    a. CPAP

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT IV, AEMT** ~~~~~~

12. Establish **IV with NS @ TKO**

Dr. Russell Smith, MD, MPD
Approval Date: December 31, 2024
Revision Date ________________
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

EPISTAXIS

HISTORY
- Prior history of epistaxis, severity, frequency and duration of current event

POTENTIAL CAUSES
1. Trauma
2. Medications (e.g. anticoagulation, currently on chemotherapy)
3. Underlying diseases such as hematological malignancy (e.g. leukemia, liver disease)
4. Bleeding disorder (e.g. hemophilia, Von Willebrand Disease)
5. Hypertension
6. Mucosal membrane dryness (e.g. environmental, non humidified 02, allergies)

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMR** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

1. Initiate Universal Patient Care Protocol
2. Place patient in a sitting position, leaning forward. Advise patient to avoid swallowing blood
3. Compress patient's nose, or have patient compress his/her own nose by pinching flesh with direct pressure. May use an approved nose clamp device
4. Alternative Method - apply pressure with a rolled gauze bandage between upper lip and gum
5. Apply ice over nose
6. Treat Shock per protocol, if necessary

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

7. Administer **Oxymetazoline (Afrin) 2-3 sprays in each nostril**

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

8. Establish **IV,** if indicated

NOTES/PRECAUTIONS:

A. Bleeding may also occur posteriorly. A posterior nasal bleed will continue to bleed despite direct pressure. In many cases, examining the back of the throat or asking the patient if bleeding "has slowed or stopped" is also helpful
B. Posterior epistaxis is a true emergency and may require advanced ED techniques such as balloon tamponade or interventional radiology. Do not delay transport. Be prepared for potential airway issues
C. Detailed medication history should be obtained to include coumadin, apixaban, rivaroxaban, dabigatran, aspirin, NSAIDS and/or antiplatelet agents that may contribute to bleeding
D. For patients on home oxygen via nasal cannula, place the cannula in the patient's mouth while the nares are compressed for active bleeding
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

HEAT SYNDROMES

HEAT CRAMPS, HEAT EXHAUSTION

~~~~~~ **EMR, EMT** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Move patient to a cooler environment, remove excess clothing
3. Tepid compresses to forehead, neck, extremities
4. Oxygen, as necessary
5. Obtain temperature
6. Oral fluids, if fully alert
7. Do not cool patient to the point of shivering

~~~~~~ **EMT IV, AEMT** ~~~~~~

8. **Establish IV**, if patient unable to take oral fluids, or if hypotensive, administer
    a. **Initial fluid challenge 250 - 500 ml NS IV**
    b. Contact OLMC for additional fluids

HEAT STROKE

~~~~~~ **EMR, EMT** ~~~~~~

1. If temp > 101°
    a. **Aggressive cooling measures**
        1. Apply wet sheets, cool packs in axilla and groin, evaporative air flow - cautious for shivering
    b. **Oxygen 15 LPM via NRB**
2. Altered Mental Status Protocol, as indicated

~~~~~~ **EMT IV, AEMT** ~~~~~~

3. **Initial fluid challenge of 250 ml NS over 20 minutes**, monitoring for pulmonary edema, JVD, and/or new or increased rales

    Pediatric 20 cc/kg NS IV, contact OLMC for additional doses

4. Rapid Transport, consider ALS rendezvous

HYPERTENSIVE CRISIS

DEFINITION:

- Hypertensive emergency is defined as systolic > 180, diastolic > 120 with: acute pulmonary edema, chest pain, headache, nausea and vomiting, blurred vision, or confusion

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Administer oxygen if SPO2 is < 94%
3. If respiratory distress, follow RESPIRATORY DISTRESS - General protocol
4. If chest pain, follow CARDIAC - Chest Pain/Acute Coronary Syndrome protocol
5. If neurological deficits, follow STROKE – CVA protocol

~~~~~~ **EMT, EMT IV, AEMT** ~~~~~~

6. If nausea/vomiting
    a. **4 - 8 mg ondansetron ODT**

7. **Establish IV** with saline lock

HYPOTHERMIA/COLD EXPOSURE

- 93° F - 96° F - Mild Hypothermia
- 86° F - 93° F - Moderate Hypothermia
- < 86° F - Severe Hypothermia

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMR, EMT** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Gently remove wet clothes, avoid rough movement, and protect patient from further environmental exposure
3. Assess ABC's. Allow up to 60 seconds to confirm respiratory arrest, pulseless cardiac arrest or bradycardia that is profound enough to require CPR
4. Determine core temperature as soon as possible

IF PATIENT PERFUSING:

5. With mild hypothermia, institute passive rewarming procedures:
    a. heated blankets, warmed ambulance, etc

6. With Moderate hypothermia
    a. **Oxygen**, warm packs in axilla and groin, in addition to heated blankets, warmed ambulance, etc.
    b. Administer warm humidified oxygen, if available. (May use neb mask or pipes)

IF PT IN CARDIAC ARREST and temperature > 86° F:

7. Follow AHA Cardiac Arrest guidelines
    a. The hypothermic heart may be unresponsive to cardiovascular drugs and/or defibrillation

IF PT IN CARDIAC ARREST and temperature < 86° F:

8. Consider no more than 3 defibrillation attempts prior to rewarming. **Rewarming is paramount**
9. Continue procedures during transport

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT IV** ~~~~~~

10. Warmed fluids
    a. **Normal Saline 250 ML IV, IO**, monitoring for pulmonary edema and/or JVD, or new or increased rales

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **AEMT** ~~~~~~

IF PT IN CARDIAC ARREST and temperature < 86° F:

11. The interval for epinephrine administration should be doubled until normothermic
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

HYPOTHERMIA/COLD EXPOSURE, *cont*

OTHER TREATMENT CONSIDERATIONS:

A. Unconscious patient:
   1. Altered Mental Status Protocol
B. Frostbite:
   1. Protect with dry dressings, do not rub frostbitten areas, and permit only gradual warming by room temperature out of hospital
C. At-risk groups for hypothermia include trauma victims, alcohol and drug abuse patients, homeless persons, elderly, low-income families, infants and small children, and entrapped patients
D. Hypothermia may be preceded by other disorders (alcohol, trauma, OD) look for and treat any underlying conditions while treating the hypothermia
E. If death in the field is suspected, consult OLMC

NAUSEA/VOMITING

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol

~~~~~~ **EMT** ~~~~~~

2. **Ondansetron 4 - 8 mg ODT**

   Pediatric 0.1 mg/kg (20 kg = 2 mg or half 4 mg tablet, 40 kg = 4 mg or 1- 4 mg tablet). May repeat 1x

~~~~~~ **EMT IV** ~~~~~~

3. **Establish IV**
4. If dehydration and/or hypovolemic shock present, administer
   a. **Initial fluid challenge of 500 - 1,000 NS.** Repeat boluses of 500 ml NS. Max 2,000 ml. Contact OLMC if additional doses are deemed necessary
      i. The goal is signs and symptoms of adequate tissue perfusion
      ii. Monitor patient for pulmonary edema, JVD and/or new or increased rales
      iii. Withhold fluids if intracranial hemorrhage is suspected

   Pediatric 20 cc/kg NS IV PRN to appropriate Blood Pressure for Age and/or s/s of adequate tissue perfusion return. Contact OLMC if additional boluses are deemed necessary

~~~~~~ **AEMT** ~~~~~~

5. Consider
   a. **Ondansetron 4 - 8 mg SLOW IV, IM, IO**

      Pediatric > 2 y/o 0.1 mg/kg max single dose 4 mg, max total 8 mg

      Contact OLMC for pediatrics < 2 y/o

SPECIAL CONSIDERATIONS:

A. Obtain history and consider underlying cause
   1. Head injury/Increased intracranial pressure
   2. Shock/hypotension
   3. Stroke
   4. Communicable disease, e.g., Norovirus
   5. Other disease process
2. Ondansetron may be administered prophylactically if nausea/vomiting anticipated

PAIN MANAGEMENT (ACUTE)

This protocol
- is intended for the treatment of non-cardiac pain
- to facilitate packaging and transport, prevent exacerbation of symptoms, and alleviate discomfort

NOTE - Patients with possibility of surgery should be NPO

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Determine location of pain and severity using numeric scale 1-10
3. Consider and treat underlying causes of pain
4. Use non-pharmacological pain management techniques
   a. Placement of the patient in a position of comfort
   b. Application of hot/cold packs, splinting, elevation, and/or padding
   c. Verbal reassurance or distraction to minimize anxiety
   d. For children, caregiver presence

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT, EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

5. OTC ANALGESICS
   a. **Acetaminophen** (Tylenol) **650 - 975 mg PO**
      Pediatric 15 mg/kg if old enough to swallow capsules. Follow manufacturer's guidelines for liquid/powder packets

   b. **Ibuprofen** (Advil or Motrin) **600 mg PO**
      Pediatric 10 mg/kg if old enough to swallow capsules. Follow manufacturer's guidelines for OTC liquid/chewables

PEDIATRIC PAIN SCALE:

POISONING and OVERDOSE

INTERNAL CONTAMINATION	EXTERNAL CONTAMINATION
● What was ingested? ● Time of consumption? ● Amount consumed? ● Past medical history?	● Protect self and crew ● Remove contaminated clothing ● Flush contaminated skin and eyes with copious amounts of water

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Personnel safety is of the utmost importance!
3. Manage airway per the Airway Management - Supraglottic Procedure Procedure
4. If patient has decreased mentation, treat per Altered Mental Status protocol
5. Contact OLMC and/or Washington Poison Control (800) 709-0911 for advice. Document OLMC/PC instructions in your narrative

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT, EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

6. Treat for Shock per protocol, as needed

SPECIFIC POISONING/OVERDOSE TREATMENTS:

A. Aspirin or Acetaminophen: (EMT, EMT IV, AEMT)
   1. **Activated Charcoal (Actidose) 50 g PO** only if recommended by Poison Control or Medical Control
      Pediatric 1 g/kg if recommended by Poison Control or Medical Control

B. Beta Blocker/Calcium Channel Blocker: (EMT IV, AEMT)
   1. Treat Bradycardia and/or Shock per protocol

C. Carbon Monoxide:
   1. CO poisoning suspected (e.g., AMS w/ multiple patients and/or sick pets at same location):
      a. **100% O2 NRB** or **CPAP** if possible
      b. Determine CO level w/ commercial device
      c. SpCO between 3% and 25% with neurologic symptoms (HA, dizziness, nausea, syncope, LOC, seizures, coma) – treat and transport to ED
      d. Treat symptoms per protocol

D. Cyanide:
   1. Signs of poisoning: AMS, seizures/coma, tachypnea/apnea, shock, vomiting

E. Hyperadrenergic (Cocaine, Methamphetamine, MDMA, etc.):
   1. Hyperadrenergic induced arrhythmias
      a. V-fib: AEMT - treat per protocol, limit Epi to 1 mg every 5 min

POISONING and OVERDOSE, *cont*

F. Organophospates/Nerve Agent (Salivation/Lacrimation/Urination/Defecation/GI/Emesis = SLUDGE):
1. Prepare to handle copious secretions
2. Request ALS to administer **Atropine** 1 – 2 mg IV/IO every 5 mins until symptoms improve

G. Opioid Toxidrome with Respiratory Depression
1. EMR, EMT, EMT IV
   a. Naloxone 1 mg/1 ml in nare IN
      i. Continue ventilating patient and monitoring respirations while waiting 3 minutes
      ii. If no arousal occurs after 3 - 5 minutes deliver remaining 1 mg in the other nare so that all 2 mg of medication are administered
      iii. Attempt to determine how many mg of naloxone were administered, as well as timeline, prior to EMS arrival
      iv. If no response, may repeat process with increases of 2 mg increments to each nare
      v. Contact OLMC for additional doses over 8 mg total

   Pediatric
      a) Child 8 years of age to adult: same as adult
      b) Children between 28 days to 8 years of age: administer ½ mg IN per nare; if no arousal occurs after 3 - 5 minutes, deliver ½ mg in the other nare so that 1 mg of medication is administered. May repeat entire process with increases of 1 mg increments to each nare.
      c) Contact OLMC for additional doses over 4 mg total
      d) Child less than 28 days: Not indicated
2. AEMT
   a. Consider **Naloxone 0.4 mg - 2 mg IV, IM, IO,** repeat every 3 minutes PRN

      Pediatric < 40 kg 0.1 mg/kg

H. Tricyclic Antidepressant and/or Benadryl:
1. Request ALS and capture serial 12-LEADS to note tachycardia >110, dysrhythmia, widening QRS, or if seizures

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

POISONING AND OVERDOSE TOXIDROME TABLE

Toxidrome	Examples	Clinical Features	Antidotes
Sympathomimetic	Cocaine Methamphetamine	Agitation Diaphoresis Hypertension Hyperthermia Dilated pupils Tachycardia	**ALS** - Midazolam
Opioid	Heroin Hydromorphone Methadone Oxycodone	Depressed mental status Hypoventilation Constricted pupils	BLS - Naloxone
Cholinergic (Anti-cholinesterase)	Pesticides • Carbamates • Organophosphates Nerve Agents	Muscarinic* Nicotinic** Central***	**ALS** - Atropine Pralidoxime (2-PAM) (Hazmat)
Sedative-Hypnotic	Barbiturates Benzodiazepines	Depressed mental status Hypotension Hypothermia	**ALS** - Supportive treatment
Cardiotoxic Drugs	Beta-blockers Calcium channel blockers	Bradycardia Conduction issues Hypotension	**ALS** - Calcium
Anticholinergic	Atropine Jimson Weed Scopolamine Benadryl	Delirium Hyperthermia Tachycardia Warm, dry skin	Supportive treatment
Sodium channel blockade	Tricyclic antidepressants, Benadryl Antiarrhythmics • Type IA – quinidine, procainamide • Type IC – flecainide, propafenone	Altered mental status Hypotension Seizures Wide complex tachycardia	**ALS** -Sodium Bicarbonate Magnesium Midazolam (Seizures)

RESPIRATORY DISTRESS - General

- Initial assessment of respiratory distress patient should include lung sounds
- Excessive oxygen administration is not helpful and may be harmful to the patient. In general, titrate oxygen to SpO2 ≥94%
- Wear PPE (surgical mask, gloves and eye protection) when caring for any patient with fever and/or respiratory infection symptoms
- If patient feels short of breath, and has SpO2 ≥94%, you may administer oxygen to improve patient comfort, but at no more than 2 LPM via NC

GENERAL

A. Support the head and neck as appropriate to patient's condition. Perform head and or jaw maneuvers as required and appropriate to patient's condition to secure and maintain a patent airway
B. Supply supplemental oxygen at concentrations appropriate to the patient's condition. Use mouth-to-mask or bag-valve-mask with supplemental oxygen to ventilate patients who are apneic or have inadequate respirations
C. Use oral or nasal airways to facilitate airway maintenance. Nasal airways should be lubricated with water soluble lube
D. Suction the oropharynx as needed to remove secretions, blood and / or vomitus
E. Elevate head of stretcher 45 - 90 degrees to allow patient position of comfort

SEVERITY ASSESSMENT

	Mild	Moderate	Severe
Short of breath when	walking	talking	at rest
Able to speak	full sentences	phrases	few words
Heart rate	< 100	100 - 120	> 120
Respiratory rate	increased	increased	> 30
Lung sounds	end expiratory wheezes	full expiratory wheezes	wheezes both phases or diminished throughout
Accessory muscle use	not usual	common	usually
Alertness	possibly agitated	usually agitated	usually agitated

RESPIRATORY EMERGENCIES - Asthma

Metered Dose Inhalers for emergency use contain albuterol. Common trade names are Ventolin, Proventil, ProAir HFA, Salbutamol. Physicians prescribe inhalers that contain other medications that are not considered rescue inhalers. Ensure that patients are using an albuterol inhaler if having an emergency

ASTHMA

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Establish and maintain airway
3. Administer oxygen, titrate to ≥94%
4. If mild, moderate or severe wheezes
    a. **Metered Dose Inhaler** - assist patient with their physician prescribed albuterol inhaler, if available

~~~~~~ **EMT** ~~~~~~

5. Monitor $EtCO_2$ with waveform capnography, if available
6. If mild, moderate or severe
    a. **DuoNeb Albuturol/Ipratropium via nebulizer**
        i. Albuterol 2.5 mg/3ml add Ipratropium 0.5 mg/2.5 ml (1 dose Ipratropium only)
        ii. One subsequent dose of albuterol may be administered
        iii. Set 02 flow at 6 - 10 LPM for proper misting
        iv. Contact OLMC for additional albuterol dosing

    Pediatric - Albuterol same as adult
    Ipratropium 2 - 12 yrs - 0.25 mg/1.25 ml (half dose)
    < 2 yrs contact OLMC

7. If moderate to severe
    a. Consider **CPAP** with in-line **DuoNeb**

~~~~~~ **EMT IV, AEMT** ~~~~~~

8. Administer **500 - 1,000 ml NS.** Contact OLMC if additional doses are deemed necessary
~~~~~~

RESPIRATORY EMERGENCIES - COPD

COPD (Chronic Obstructive Pulmonary Disease)

COPD patients may be sensitive to oxygen flows greater than 2 - 4 LPM. Do not withhold oxygen from any patient in respiratory distress, but if more O2 is given to the COPD patient be prepared to manage respiratory depression or respiratory arrest

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Monitor Sp02 and oxygenate enough to reach 90%, or to patient's normal Sp02, unless severe respiratory distress
3. If mild, moderate or severe wheezes
    a. **Metered Dose Inhaler** - assist patient with their physician prescribed albuterol inhaler, if available

~~~~~~ **EMT** ~~~~~~

4. Monitor $EtCO_2$ with waveform capnography, if available
5. If mild, moderate or severe
    a. **DuoNeb Albuturol/Ipratropium via nebulizer**
        i. Albuterol 2.5 mg/3ml add Ipratropium 0.5 mg/2.5 ml (1 dose Ipratropium only)
        ii. One subsequent dose of albuterol may be administered
        iii. Set 02 flow at 6 - 10 LPM for proper misting
        iv. Contact OLMC for additional albuterol dosing

    Pediatric - Albuterol same as adult
    Ipratropium 2 - 12 yrs - 0.25 mg/1.25 ml (half dose)
    < 2 yrs contact OLMC

6. If moderate to severe
    a. Consider **CPAP** with in-line **DuoNeb**

~~~~~~ **EMT IV, AEMT** ~~~~~~

7. **Establish IV, IO**
8. Administer **500 - 1,000 ml NS.** Contact OLMC if additional doses are deemed necessary
~~~~~~

RESPIRATORY EMERGENCIES - CHF w/Pulmonary Edema

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Sit patient up, if possible dangle legs
3. Provide oxygen as needed to maintain Sp02 ≥ 94%
4. If severe respiratory distress with auscultated rales/crackles
    a. **Synchronize patient's ventilations with BVM and oxygen @ 15 LPM**

~~~~~~ **EMT** ~~~~~~

5. If moderate to severe respiratory distress
    a. Initiate CPAP
6. Monitor $EtCO_2$ with waveform capnography, if available
7. 12-LEAD EKG**,** if time allows

~~~~~~ **EMT IV, AEMT** ~~~~~~

8. **Establish IV with NS @ TKO**

- - For ALS patient care protocol, see Cardiac - Congestive Heart Failure (CHF)
~~~~~~

RESPIRATORY EMERGENCIES - Respiratory Depression or Arrest

RESPIRATORY DEPRESSION or ARREST

POSSIBLE CAUSES

head trauma COPD pneumonia pulmonary embolism	hypoxia airway obstruction other drug OD alcohol OD	CO poisoning spinal cord injury sepsis myocardial infarction

- Naloxone may induce opiate withdrawal in patients who are physically dependent on opiods
- Certain drugs may require much higher doses of naloxone for reversal. In these instances the 4 mg packaged Naloxone is acceptable
- Should be administered and titrated so respiratory effort return, but not intended to restore full consciousness
- Naloxone has a duration of action of 40 minutes; the effect of the opioid/narcotic may last longer than naloxone and patients should be encouraged to be transported

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Secure and protect airway per Airway Management- Supraglottic Airway
3. Ventilate with BVM and oxygen at 15 LPM
4. Monitor Sp02 and provide oxygen to maintain Sp02 ≥ 94%
5. If suspected opiate overdose, administer
    a. **Naloxone 1 mg/1 ml in nare IN**
        i. Continue ventilating patient and monitoring respirations while waiting 3-5 minutes
        ii. If no arousal occurs after 3 - 5 minutes deliver remaining 1 mg in the other nare so that all 2 mg of medication are administered
        iii. Attempt to determine how many mg of naloxone were administered, as well as timeline, prior to EMS arrival
        iv. If no response, may repeat process with increases of 2 mg increments to each nare
        v. Contact OLMC for additional doses over 8 mg total

        Pediatric

        a) Child 8 years of age to adult: same as adult
        b) Children between 28 days to 8 years of age: administer ½ mg IN per nare; if no arousal occurs after 3 - 5 minutes, deliver ½ mg in the other nare so that 1 mg of medication is administered.
        c) May repeat entire process with increases of 1 mg increments to each nare
        d) Contact OLMC for additional doses over 4 mg total
        e) Child less than 28 days: Not indicated

6. Treat discoverable causes per protocol
~~~~~~

RESPIRATORY EMERGENCIES - Respiratory Depression or Arrest

~~~~~~ **EMT** ~~~~~~

7. Consider securing airway with NPA and/or Airway Management- Supraglottic Airway
8. Monitor $EtCO_2$ with waveform capnography

~~~~~~ **EMT IV** ~~~~~~

9. **Administer fluids as indicated per discoverable cause**

~~~~~~ **AEMT** ~~~~~~

10. Consider **Naloxone 0.4 mg - 2 mg IV, IM**, **IO** if cause of arrest unknown or opiates suspected
    Pediatric < 40 kg 0.1 mg/kg
~~~~~~

RESPIRATORY EMERGENCIES - Upper Airway Obstruction

UPPER AIRWAY OBSTRUCTION

~~~~~~ **EMR, EMT** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. If partial obstruction
    a. **Oxygen** to maintain Sp02 of at least 94%
    b. Sit patient up and have him/her cough
    c. Transport if obstruction is not cleared or if suspicious of aspiration

3. If complete obstruction
    a. Follow AHA guidelines for Foreign Body Obstruction (below)
    b. For pediatrics, see Pediatric - Airway Obstructions - FBO

	ADULT **signs of puberty and older**
a.	Ask “are you choking?”
b.	Give abdominal thrusts/Heimlich maneuver or chest thrusts for pregnant or obese patients
c.	Repeat thrusts until effective or patient becomes unresponsive

4. If patient becomes unresponsive

d.	Call for ALS backup
e.	Lower patient to floor if unresponsive with no normal breathing, begin CPR
f.	Before delivering breaths, if you see a foreign body that can be easily removed, remove it
~~~~~~

SEIZURE

For pediatric seizure patients, see Pediatrics - Seizure
For pediatric patients with febrile seizure, see Pediatrics - Fever

The goal of seizure management is to identify and treat any immediate reversible causes, to prevent injury from seizure activity and to stop status epilepticus. Initial history and physical assessment should identify potential reversible causes, such as:

- Fever (Pediatric seizures commonly occur between ages 6 mo - 6 yrs of age)
- Hypoxia
- Hypoglycemia
- Poisoning, toxin
- Cardiac dysrhythmias
- Toxemia in pregnancy
- Intracranial mass/bleed
- Consider AEIOU-TIPS

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Secure airway, anticipate need for suction
3. Maintain Sp02 > 94%
4. Ventilatory assistance may be required, yet most postictal patients do not require assistance
5. Protect patient from injury
6. Check blood glucose and treat per Altered Mental Status protocol
7. Consider Eclampsia
8. Important care for patients with prolonged seizures (> 5 minutes) or two or more seizures without a period of consciousness in between (status epilepticus) includes ventilation/oxygenation and rapid transport. Request ALS backup or ALS rendezvous

~~~~~~ **EMT** ~~~~~~

9. Consider use of **NPA** if status seizure
10. Consider $EtCO_2$, if available

~~~~~~ **EMT IV, AEMT** ~~~~~~

11. Consider **IV or IO NS @ TKO** or **500 - 1,000 ml bolus PRN**

CONSIDERATIONS:
All first time seizure patients require medical evaluation by a physician
Document the type of seizure activity, the duration of seizure activity, and details of postictal phase
Document time between seizures, if multiple

Dr. Russell Smith, MD, MPD
Approval Date: December 31, 2024
Revision Date _____
~~~~~~

SEPSIS

RISK FACTORS:
- Recent infection/treatment with antibiotics
- Recent hospitalization/surgery
- Hx of immunosuppressive treatment

POSSIBLE SIGNS & SYMPTOMS:
- Shaking and chills (*Temperature can fluctuate frequently and rapidly. Shaking may mean fever has spiked and patient needs to be cooled rather than warmed)*
- Respiratory symptoms including coarse breath sounds
- Abdominal pain/urinary symptoms
- Severe vomiting/diarrhea
- Unusual headache, neck/back pain
- Unusual rashes/bruising/mottling, including cellulitis

NOTE - Early identification and aggressive fluid resuscitation can increase chance of survival

~~~~~~ **EMR, EMT** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Secure airway, if necessary
3. Maintain Sp02 above 94%
4. Obtain vital signs, temperature and $EtCO_2$ early
5. **If known or suspected infection with TWO or MORE of the following:**
    a. Temperature > 100.4° F OR < 96.8° F
    b. Respiratory rate > 20 breaths/min
    c. Heart rate > 100 beats/min
    d. $EtCO_2$ ≤ 25 mmHg

    AND:
    - SBP < 100 (MAP < 65)

    OR
    - Altered Mental Status

6. Notify receiving facility or incoming ALS unit of **SEPTIC SHOCK ALERT**
7. Check blood glucose and treat per Altered Mental Status protocol
8. Rapid transport or ALS rendezvous

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

9. **Establish IV or IO**, and administer
    a. **Up to 2 L NS IV, IO as rapidly as possible**, or until
        i. maintain a systolic BP of > 100 mm/Hg or MAP ≥ 65
        ii. monitor for pulmonary edema, JVD and/or new or increased rales

Pediatric 20 ml/kg NS PRN to appropriate Blood Pressure for Age **OR** S/S of adequate tissue perfusion

SHOCK

SIGNS & SYMPTOMS	
• pale, clammy, cool skin • tachycardia • agitation	• marked thirst • syncope or orthostatic hypotension • altered mental status • hypotension is a late sign

PEDIATRICS, in addition to the above:
- mottled skin * decreased wet diapers
- sunken fontanelles * Capillary Refill > 2

Tachycardia may be the only early stage sign (see Normal Pediatric Vital Signs)

NOTE: may be hx of nausea/vomiting, fever, dark stools or trauma

NOTE FOR IV TECHS: *Shock should be recognized as a state of inadequate tissue perfusion, as opposed to a specific systolic value. Treatment should be geared towards improving physiological state, i.e. level of consciousness, skin color, respiratory rate and heart rate*

- ***Peds compensate well until they can no longer compensate. They decompensate quickly and hypotension means the pediatric patient is in a pre-arrest state***

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Secure and maintain airway
3. Place patient supine
4. Administer **Oxygen @ 10 - 15 LPM NRB**
5. Keep patient warm

~~~~~~ **EMT** ~~~~~~

6. Monitor $EtC0_2$ with waveform capnography
7. Prepare to secure airway per Airway Management - Supraglottic Airway, if indicated
8. Observe for downward trend in $EtC0_2$

HYPOVOLEMIA

~~~~~~ **EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

9. Begin **500 - 1000 ml warmed NS** as rapidly as possible. Repeat boluses of 500 ml at a time until:
   a. Maintained permissive hypotension with systolic BP of approximately 100 mm/Hg and/or MAP approximately 65
   b. Achieved normal physiological state, i.e. level of consciousness, skin color, respiratory rate and HR
   c. Avoid pulmonary edema, JVD, and/or new or increased rales
   d. Contact OLMC if additional boluses are deemed to be necessary

   Pediatric 20 ml/kg NS PRN to appropriate Blood Pressure for Age **OR** S/S of adequate tissue perfusion (including cap refill < 2)
~~~~~~

SHOCK, *cont*

DISTRIBUTIVE SHOCK (SEPSIS, NEUROGENIC, PSYCHOGENIC)

~~~~~~ EMT IV, AEMT ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

6. If septic, see Sepsis protocol
7. **Establish IV or IO**, and administer
    a. **Up to 2 L NS IV, IO as rapidly as possible**, or until:
        i. maintain a systolic BP of > 100 mm/Hg or MAP ≥ 65
        ii. monitor for pulmonary edema, JVD and/or new or increased rales

Pediatric 20 ml/kg NS PRN to appropriate Blood Pressure for Age **OR** S/S of adequate tissue perfusion (including cap refill < 2)

MAP (Mean Arterial Pressure) = $\mathbf{\dfrac{2\,(DP) + SP}{3}}$

Dr. Russell Smith, MD, MPD
Approval Date: December 31, 2024
Revision Date ________________

SICKLE CELL PAIN CRISIS

In sickle cell disease, red blood cells are misshapen, typically crescent- or "sickle"-shaped due to a gene mutation that affects the hemoglobin molecule. When red blood cells sickle, they do not bend or move easily and can block blood flow to the rest of the body. When blood flow becomes blocked, it is called a sickle cell crisis or a vaso-occlusive crisis. These episodes are extremely painful and can also cause serious health problems

- Potential serious complications other than pain crisis:
  - Acute Chest Syndrome
  - Stroke
  - Meningitis
  - Septic arthritis
  - Splenic Sequestration Crisis
  - Pain due to traumatic injury
  - Abdominal pain related to pregnancy

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Provide evaluation and management of Altered Mental Status, if necessary
3. Assess for life-threatening complications of the disease
4. Consider ALS to provide evaluation and management of pain

~~~~~~ **EMT** ~~~~~~

5. Treat pain per Pain Management Protocol
6. Treat nausea/vomiting per Nausea/Vomiting Protocol

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT IV/AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

7. **Establish IV** and administer
   a. **NS 500 - 1000 ml.** Avoid pulmonary edema, JVD, and/or new or increased rales
      Pediatrics 10-20 ml/kg NS

CONSIDERATIONS:

A. Comfort measures:
   1. Keep patient warm and dry
   2. Transport in a position of comfort unless clinical condition requires otherwise
B. Provide appropriate treatment for pain, respiratory distress and shock
C. These patients may have a higher tolerance to narcotic pain medications if they are taking them on a regular basis
D. These patients will tolerate acute blood loss poorly due to baseline anemia
E. Patients with sickle cell trait can have acute pain crises in extreme conditions (i.e. heat exhaustion, dehydration). Several college athlete deaths have been linked to sickle cell trait
F. Fever should be considered an emergency in this population and transported because of the risk of bacteremia
G. Sickle Cell is most likely to occur in patients of Sub-Saharan African descent
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

STROKE – CVA

STROKE WARNING SIGNS
- Sudden numbness or weakness of the face, arm or leg, especially on one side of the body
- Sudden confusion, trouble speaking or understanding
- Sudden trouble seeing in one eye or both eyes
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden, severe headache with no known cause

NOTE: Minimize Scene Time

~~~~~~ **EMR, EMT** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. For suspected stroke, CBG indicated as soon as practical and no later than 10 minutes after patient contact. If CBG is low, treat per Diabetic Emergencies Protocol
3. Conduct Stroke evaluation as per the following:

BE-FAST ASSESSMENT – Positive Findings:	
BALANCE	Sudden loss of balance or coordination
EYES	Loss of vision in one or both eyes
FACE	Lack of facial symmetry when smiling
ARMS	Arm drift or falling when holding arms outstretched
SPEECH	Not able to repeat simple phrase without slurring or memory loss
TIME	Note time last known normal; time awoken; time of symptom onset.

LOS ANGELES MOTOR SCALE (LAMS)			
Facial droop	Absent 0	Present 1	
Arm drift	Absent 0	Drifts down 1	Falls rapidly 2
Grip strength	Normal 0	Weak grip 1	No grip 2

Possible score 0 - 5

4. Titrate oxygen at lowest level to achieve **Sp02 94% - 98%**
5. Reassure patient if conscious; patient may understand and hear all conversation even though he/she appears comatose or confused
~~~~~~

STROKE – CVA, *cont*

6. Make transport decision using Time Last Known Well (LKW) + Stroke Severity Score (LAMS) per Washington State Prehospital Stroke Triage Destination Procedure

    a) Time since LKW < 6 hours and LAMS Score 4 or 5: This group benefits from preferential transport to a thrombectomy stroke center. The patient should be taken directly to the nearest thrombectomy stroke center provided it is no more than 15 extra minutes travel compared to the nearest stroke center.

    b) Time since LKW is > 24 hours (regardless of LAMS score): These patients should be taken to nearest Level I or II stroke center provided it is no more than 15 minutes greater than to a nearer Level III stroke center.

    c) Time since LKW 6-24 hours but LAMS Score 1,2 or 3: These patients should be taken directly to the nearest Level I or Level II stroke center provided it is no more than 15 extra minutes travel compared to a nearer Level 3 stroke center.

    d) Time since LKW 6-24 hours AND LAMS Score of 4 or 5: Transport to nearest Level I or II Stroke Center with endovascular capability provided transport time is no more than 30-60 min greater than to a nearer Level II or Level III Stroke Center.

7. Notify receiving facility of **STROKE ALERT**
8. Obtain key medical history, medication list and next of kin phone contacts
9. Without delaying transport, attempt to complete the Prehospital Thrombolytic Checklist
10. Transport with head elevation at 30 °
11. Transport TIA patients with resolving symptoms code 3 to nearest hospital

~~~~~~ **EMT** ~~~~~~

12. Monitor $EtCO_2$. If ischemic stroke suspected, $EtCO_2$ of 35-40 mmHg is desirable. If hemorrhagic stroke suspected, target ETCO2 of 35 mmHg

~~~~~~ **EMT IV** ~~~~~~

13. **Establish IV, IO** with saline lock on unaffected side

For strokes caused by a blocked blood vessel in the brain (ischemic, the majority of strokes), clot-busting medication (tPA) must be administered within 4.5 hours from the time the patient was last known well, a treatment that can be given at WA DOH Level 1, 2 or 3 stroke centers (Klickitat County and Columbia River Gorge Hospitals are Level 3 Stroke Centers) . If a patient presents to EMS with a severe stroke, they are more likely to have blockage of a large vessel and can benefit from mechanical clot retrieval (thrombectomy). Thrombectomy must begin by 24 hours since last known well, and is a more complex intervention, only available in Level I and a small number of Level II stroke centers.

SYNCOPE

DEFINITION:

- A loss of consciousness and postural tone resolving spontaneously without medical interventions Laypersons describe as “fainting.” Typically, syncope is abrupt in onset and resolves quickly. May find the patient awake and alert on initial evaluation
- Near-syncope is the prodromal symptoms of syncope, described by the patient as “nearly blacking out” or “nearly fainting”

POSSIBLE CAUSES:

- Medications, vasovagal response, hypovolemia, vasodilation, arrhythmias, fatigue, heat stroke, heart disease, OD, hypoglycemia, PE, AAA, thoracic aneurysm, seizures, stroke, MI, TIA

NOTE - All patients suffering near-syncope or syncope deserve hospital level evaluation, even if they appear normal with few complaints on scene

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. C-Spine precautions as needed
3. Attempt to determine the underlying cause for syncope and treat per specific protocol
    a. If ongoing mental status changes or coma, treat per Altered Mental Status protocol
    b. Continued neurologic derangement consider Stroke guideline
    c. Place patient in supine position to reduce chance of syncope recurrence
    d. Check orthostatic vital signs, if tolerated

~~~~~~ **EMT** ~~~~~~

4. Capture 12-LEAD EKG

~~~~~~ **EMT IV, AEMT** ~~~~~~

5. **Establish IV**. If shock present, administer
    a. Initial bolus of **250 - 500 mL NS fluid.** Repeat boluses of 500 ml at a time. Max 2,000 ml. Repeat until normal physiological state is achieved, i.e. level of consciousness, skin color, respiratory rate and HR. Monitor for pulmonary edema, JVD, new or increased rales
~~~~~~

TRAUMA - General Trauma Guidelines

NOTE:

- This protocol is designed to give the EMR, EMT EMT IV, AEMT and Paramedics guidance in treating the trauma patient and in making the most appropriate transport destination
- The seriously injured patient should receive spinal and airway stabilization before transport, but transport of the multi-system patient should not be delayed for full assessments, IV's, limb splinting, etc.
- On-scene time with the multi-system trauma patient should be less than 10 minutes and treatment on scene should be limited to hemorrhage control, spinal and airway stabilization

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMR, EMT, EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

1. Assess scene safety; hazards; PPE; number of patients; mechanism of injury/nature of illness
   a. Request additional resources as needed, including necessity of ALS rendezvous
   b. Consider declaration of Mass Casualty Incident if needed

PRIMARY PATIENT ASSESSMENT

2. Control any major bleeding per Hemorrhage Control Protocol
3. Consider manual stabilization of the cervical spine
4. Determine level of consciousness/responsiveness AVPU
5. Determine chief complaints/apparent life threats and address each before moving to the next
6. Assess airway and secure per Airway Management - Supraglottic Procedure, if necessary
7. Assess breathing and ventilation. Initiate appropriate oxygen therapy. Trauma patients with the possibility of shock should receive oxygen @ 10 - 15 LPM via NRB. Examine and treat open chest wounds, flail chest, and significant rib fractures as indicated. Auscultate lungs sounds
8. Assess circulation. Check for a radial pulse and the quality, if present. Assess skin color, temperature, condition. Control any additional major bleeding
9. Disrobe patient to determine extent of injuries
10. Conserve patient's body heat, if in shock
11. Use Trauma Triage Destination Tool to make a transport decision
12. If there is significant MOI, or patient has ALOC or unconscious, perform a Rapid Trauma Assessment, taking no more than 90 seconds, to check for life threatening injuries that weren't obvious during the Primary Survey. Check for DCAP-BTLS while inspecting -

RAPID TRAUMA ASSESSMENT and BASELINE VITAL SIGNS

- HEAD - scalp and ears, assess eyes, mouth, nose and facial area. Treat per Traumatic Brain Injury protocol, if applicable
- NECK - check position of trachea, check for jugular vein distention, palpate cervical spine- place cervical collar, if indicated
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

TRAUMA GENERAL GUIDELINES, *cont*

- CHEST - Inspect, palpate and auscultate lung sounds if not already done
- ABDOMEN, PELVIS, GENITALIA/PERINEUM - Place Pelvic Immobilization Device, if indicated
- LOWER EXTREMITIES - Inspect, palpate and assess motor, sensory & circulatory function. Place Traction Splint, if indicated
- UPPER EXTREMITIES - Inspect, palpate and assess motor, sensory & circulatory function
- POSTERIOR THORAX, LUMBAR & BUTTOCKS inspect and palpate
- SKIN - Inspect turgor, lacerations, abrasions, burns, contusions, paresthesia, swelling, petechiae, mottling, cyanosis

13. Make Spinal Motion Restriction decision and place patient on LBB, if indicated
14. Attempt to obtain SAMPLE history

SECONDARY (or Detailed) PATIENT ASSESSMENT

15. Monitor vital signs, blood sugar and temperature
16. Determine GCS Score
17. Consider **IV/IO** and $EtCO_2$, if EMT IV or AEMT. Treat for Shock per protocol, if indicated
18. Reassess stable patients every 15 minutes
19. Reassess unstable patients every 5 minutes

MAP (Mean Arterial Pressure) = $\frac{2\,(DP) + SBP}{3}$

DCAP-BTLS
-Deformities -Contusions -Abrasions -Punctures -Burns -Tenderness -Lacerations -Swelling

GLASCOW COMA SCALE

ADULT & CHILDREN

NEURO ASSESS	RESPONSE	SCORE
BEST EYE OPENING	Spontaneous Verbal Pain No Response	4 3 2 1
BEST VERBAL RESPONSE	Oriented Confused Inappropriate words Incomprehensible words No response	5 4 3 2 1
BEST MOTOR RESPONSE	Spontaneous Localizes pain Withdraws from pain Flexion (decorticate) Extension (decerebrate) No Response	6 5 4 3 2 1

INFANT & TODDLER

BEST EYE OPENING	Spontaneous To Voice To Pain None	4 3 2 1
BEST VERBAL RESPONSE	Smiles, Interacts Consolable Cries to Pain Moans to Pain None	5 4 3 2 1
BEST MOTOR RESPONSE	Normal movement Localizes pain Withdraws from pain Flexion Extension None	6 5 4 3 2 1

13 - 14 - mild head injury
9 - 12 - moderate TBI
3 - 8 - Severe TBI

SPINAL MOTION RESTRICTION ALGORITHM

For trauma patients who meet [Serious Injury (Red) Triage] or [Moderate Injury (Yellow)Triage] criteria, maintain manual C-spine during assessment. For all other trauma patients, perform standard patient assessment

Patient Mentation:

Decreased Level of Consciousness or Loss of Consciousness?

☐ No ☐ Yes →→→→→→→→→→→→→→→→→→→ I

↓

ETOH/Drug Impairment?

☐ No ☐ Yes →→→→→→→→→→→→→→→→→→→ M

↓

Inability to Communicate?

☐ ☐ Yes →→→→→→→→→→→→→→→→→→→ M

↓

Subjective Assessment: O

Spinal Tenderness/Deformity?

☐ No ☐ Yes →→→→→→→→→→→→→→→→→→→ B

↓

Numbness/Tingling/Burning/Weakness?

☐ No ☐ Yes →→→→→→→→→→→→→→→→→→→ I

↓

Objective Assessment: L

High Energy Mechanism of Injury?

☐ No ☐ Yes →→→→→→→→→→→→→→→→→→→ I

↓

Other Severe Distracting Injury?

↓

☐ No ☐ Yes →→→→→→→→→→→→→→→→→→→ Z

Pain w/Cervical Range of Motion?

↓

☐ No ☐ Yes →→→→→→→→→→→→→→→→→→→ E

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MAY TREAT/TRANSPORT WITHOUT SPINAL IMMOBILIZATION

* For patients whom immobilization is indicated, spinal precautions may be maintained by rigid C-Collar and carefully securing to gurney with seatbelts while keeping inline stabilization at all times
* Patients should not be on a LBB for transports that are longer than 20 minutes

Dr. Russell Smith, MD, MPD
Approval Date: December 31, 2024
Revision Date ___________________

TRAUMA - Amputation

- Obtain the key history: Time of amputation, mechanism of injury, current medications, bleeding tendencies, problems with any prior surgery and last oral intake
- Key Physical Findings: Excessive bleeding, partial amputation, attachment, neurovascular status

~~~~~~ EMR, EMT ~~~~~~

1. Initiate General Trauma Guidelines
2. Treat hemorrhage with direct pressure, tourniquet, or hemostatic agent via Hemorrhage Control Protocol
3. Stump
   a. Cover with sterile dressing, saturate with sterile saline
   b. Cover the saturated dressing with dry dressing
4. Severed Part
   a. Rinse gently with sterile saline to remove debris
   b. Wrap severed part with moistened gauze; place in airtight bag
   c. Place bag in ice water
5. Partial Amputation
   a. Cover with sterile dressing, saturate with sterile saline
   b. Cover the saturated dressing with dry dressing
   c. Splint in anatomical position, avoid torsion and angulation (reduce torsion into anatomical position)
6. Treat pain per Pain Management Protocol

~~~~~~ EMT IV, AEMT ~~~~~~

7. If patient exhibits S/S of shock, administer
   b. **Initial fluid challenge of 500 - 1,000 ml NS IV, IO**. Repeat boluses of 500 ml until:
      i. Maintained permissive hypotension with systolic BP of approximately 100 mm/Hg and/ or MAP ≥ 65
      ii. Normal physiological state, i.e. level of consciousness, skin color, respiratory rate and HR
      iii. Contact OLMC if additional boluses are deemed to be necessary
      iv. Avoid pulmonary edema, JVD, and/or new or increased rales

   Pediatric 20 cc/kg NS IV, IO to appropriate Blood Pressure for Age and or S/S of adequate tissue perfusion. Contact OLMC for additional boluses

GENERAL CONSIDERATIONS:

A. Do not use dry ice or put severed part in direct contact with ice
B. Do not neglect total patient care in favor of caring for the amputation
C. Time is of the greatest importance to assure viability
D. Amputation above wrist or ankle meets Red Trauma Triage System Entry criteria
E. Consider air ambulance

TRAUMA - Blast Injuries

INJURY PATTERN:

A. Primary:
   1. Injury from over-pressurization force impacting the body surface
   2. Tympanic membrane (TM) rupture, pulmonary damage and air embolization, hollow viscus injury (GI tract)

B. Secondary:
   1. Injury from projectiles (bomb fragments, flying debris)
   2. Penetrating trauma, fragmentation injuries, blunt trauma

C. Tertiary:
   1. Injuries from displacement of victim by the blast wind
   2. Blunt/penetrating trauma, fractures, and traumatic amputations

D. Quaternary:
   1. All other injuries from the blast
   2. Crush injuries, burns, asphyxia, toxic exposures, exacerbations of chronic illness

~~~~~~ **EMR, EMT** ~~~~~~

1. Consider declaring an MCI
2. Initiate General Trauma Guidelines
3. Manage Hemorrhage per protocol
4. Secure airway, consider holding manual C-spine
   a. If thermal or chemical burn to airway is suspected, early airway control is vital
5. Breathing:
   a. Administer oxygen as appropriate to achieve Sp02 ≥ 94%
   b. Assist respirations as needed
   c. Cover any open chest wounds with semi-occlusive dressing or chest seal
   d. If patient has evidence of tension pneumothorax, call for ALS backup
   e. Treat Shock per protocol
6. Treat injuries per protocol, including
   a. Treat Traumatic Brain Injury per protocol, Spinal Immobilization, if necessary
   b. Manage Amputation per protocol
   c. Manage Burns per protocol
~~~~~~

TRAUMA - Blast Injuries

~~~~~~ **EMT IV, AEMT** ~~~~~~

7. **Establish IV, IO** access
8. If patient exhibits S/S of shock, administer
    a. **Initial fluid challenge of 500 - 1,000 ml NS IV, IO**. Repeat boluses of 500 ml until:
        i. Maintained permissive hypotension with SBP of approximately 100 mm/Hg and/ or MAP ≥ 65
        ii. Normal physiological state, i.e. level of consciousness, skin color, respiratory rate and HR
        iii. Contact OLMC if additional boluses are deemed to be necessary
        iv Avoid pulmonary edema, and/or JVD, new or increased rales
        Pediatric 20 cc/kg NS IV, IO to appropriate Blood Pressure for Age and or S/S of adequate tissue perfusion (including Cap refill < 2). Contact OLMC for additional boluses

NOTES/KEY CONSIDERATIONS:

A. Scene safety is of paramount importance when responding to an explosion or blast injury. Consider the risk of additional explosions, unstable buildings and infrastructure
B. Patients sustaining blast injury may sustain complex, multi-system injuries including: blunt and penetrating trauma, shrapnel, barotrauma, burns, and toxic chemical exposure
C. Keep in mind that most critical patients may be discovered later than the less critical patients, therefore medical treatment supplies may need to be used judiciously
~~~~~~

TRAUMA - Burns

CLASSIFICATION OF BURNS

- **Superficial thickness**: Epidermis only and looks like a sunburn; skin is erythematous and moderately painful
- **Partial thickness:** Beyond the epidermis to include the dermis. Appears red, blistered and may be swollen and painful. May appear wet or shiny or white and discolored in an irregular pattern
- **Full Thickness:** involves all layers of the skin and subcutaneous tissue, with involvement of underlying fascia. May appear white or charred. There is no pain.

~~~~~~ **EMR, EMT** ~~~~~~

1. Initiate General Trauma Guidelines

2. **STOP THE BURNING!**
    a. Remove patient from the source of the burn
    b. Remove smoldering or hot clothing, bedding and restricting jewelry if it can be done without removing burned skin
    c. In the case of an acid or chemical burn, brush any powder material from burn, then flush with water or normal saline. Note: Alkali burns (cement, anhydrous ammonia, lye) requires flushing with large volumes of water until all the feeling of "soapiness" is gone. Beware of hypothermia
    d. Apply carbon monoxide monitor, if available
    e. Wrap the disrobed patient in clean, dry sheets and/or dressings. Remember to wrap burned limbs and digits separately so that tissue does not become adherent

3. **Evaluate risk factors for airway compromise**
    a. Closed space fire
    b. Burns to face or singed nasal hairs/blackened rim of nares
    c. Hoarseness/inspiratory stridor
    d. Carbon deposits on tongue/oropharynx

4. **If possibility of airway compromise or closed space start oxygen 10 - 12 LPM via NRB**
    a. Assume carbon monoxide involved - Sp02 readings may be false

5. **If any indicators for early intubation (below), advise ALS early and follow** Airway Management - Supraglottic
    a. Signs of respiratory distress, stridor, accessory muscle use
    b. New onset of hoarseness
    c. Blisters or edema of oropharynx
    d. Deep burns to lower face or neck
~~~~~~

TRAUMA - Burns, *cont*

6. Reassess airway frequently
7. If systolic BP < 100 mmHg (MAP <65) follow Shock Protocol
8. Obtain vital signs, treat other injuries per appropriate protocol

9. **Classify the degree of burn and determine Total Body Surface Area (TBSA) involved using either Rule of Nines or the Palm Method. Do not include superficial thickness burns in TBSA**

10. **Consider burns CRITICAL if any of the following are present. These patients need air ambulance or immediate ground ambulance**

- Inhalation injuries
- Partial thickness (2nd degree) burns > 20% of body surface area
- Full thickness (3rd degree) burns > 10% of body surface area
- Burns to hands, feet, face or genitalia
- Electrical burns, including lightning
- Deep acid or caustic burns
- Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality
- Burns in patients with coexisting medical conditions, as diabetes, asthma, COPD, extremes of age ≤ 5 y/o or ≥ 60 y/o
- Any patient with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. Transport to the closest appropriate trauma center if the underlying trauma poses the greater immediate risk. The patient may be initially stabilized at the trauma center before being transferred to the burn unit at the Oregon Burn Center

11. **TREAT BURNS**
    a. Cool burned areas (5 mins max) then cover with sterile dressing
    b. Discontinue cooling if patient begins to shiver
    c. Leave unbroken blisters intact
    d. Do not use ice
    e. Cover full thickness (third degree) burns with dry sterile sheet
    f. Do not use ointments, creams or sprays on any burn that will require medical treatment

12. Treat pain per Pain Management protocol

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

13. Establish **IV, IO** access. May establish through burned area if necessary
    a. If shock present, treat per Shock protocol

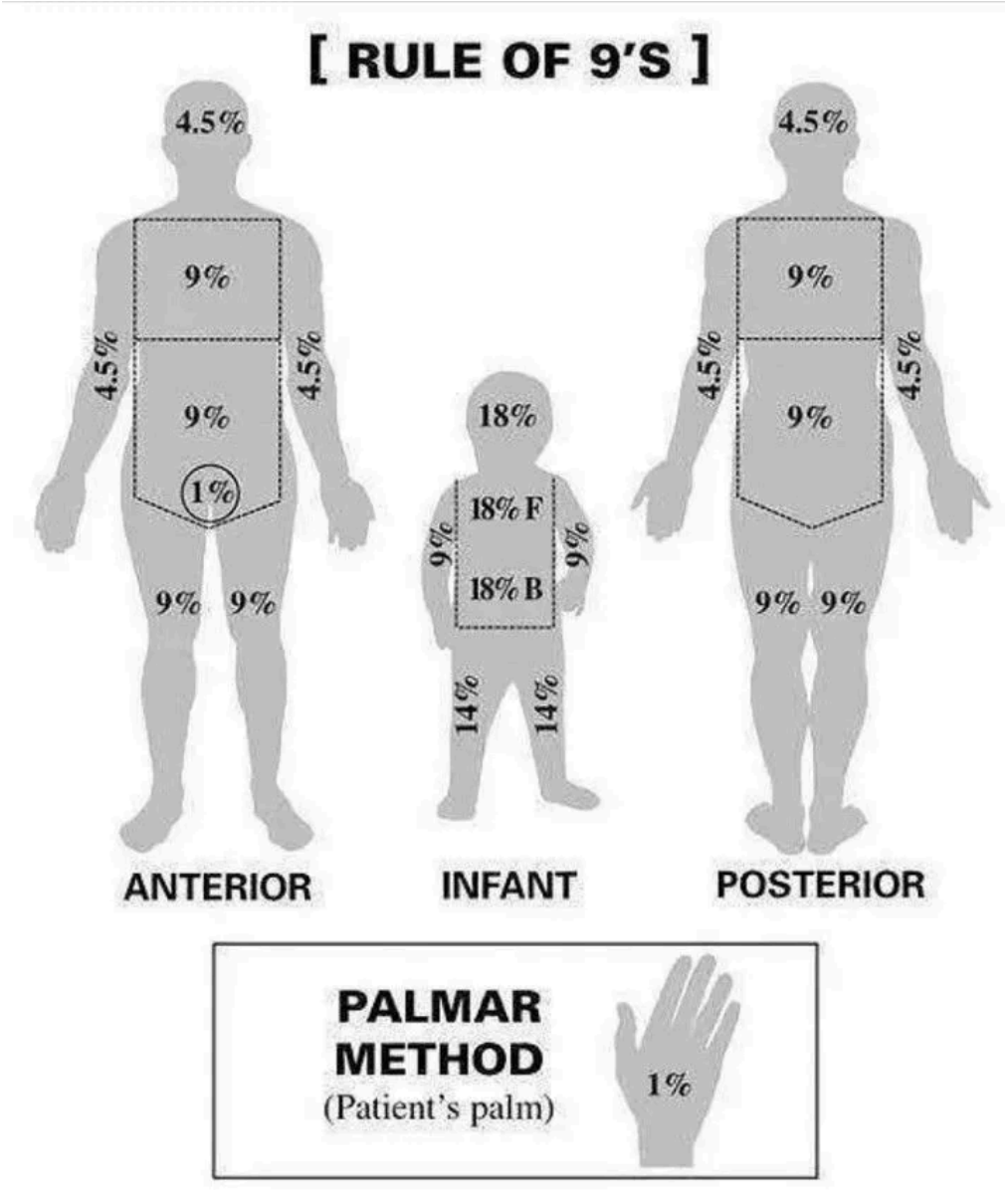
14. If patient does not exhibit signs of shock and total TBSA > 15 - 20 %, treat per the 1 Hour Parkland Formula:
    a. 0.25 X (body weight in kg) X (% TBSA burned) = NS to be infused first hour
    Pediatrics same as adult
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

TRAUMA - Burns, *cont*

15. If chemical burn:
    1. Consider Haz-Mat response; protect yourself from contamination
    2. Flush contaminated areas with copious amounts of water
    3. If chemical is dry, carefully brush off prior to flushing. Do not use a neutralizer

16. If electrical burn:
    1. Apply sterile dressings to entry and exit wounds
    2. Treat any dysrhythmias per appropriate Cardiac Dysrhythmia protocol
    3. Risk for rhabdomyolysis, provide adequate fluids, as above
    4. Report arc flash or contact, and voltage if known

TRAUMA – Rule of Nines/Palms



TRAUMA - Crush Injury/Entrapment

NOTE: Crush injury occurs when patients are entrapped by a crushing mechanism for a prolonged period of time. Compression of muscles leads to ischemic damage. Upon release, crush substances can be released into the blood resulting in hemodynamic collapse. Be prepared for rapid decline and even cardiac arrest upon release

~~~~~~ EMR, EMT ~~~~~~

1. Initiate General Trauma Guidelines
2. Consider manual C-Spine
3. Administer oxygen via NRB @ 10 - 15 LPM
4. Consider Pain Management per protocol
5. Evaluate degree of entrapment and viability of extremities (absent pulse, blanched skin, capillary refill, diminished sensation, extremely cold to the touch)
6. Wound care: if indicated and feasible
   a. Remove all restrictive dressings (clothing, jewelry, etc.)
   b. Monitor distal pulse, motor and sensation in involved extremity
   c. Bandage all open wounds (irrigate if needed)
   d. Stabilize all protruding foreign bodies (impaled objects)
   e. Splint/immobilize injured areas
   f. For suspected pelvic crushing injuries, follow the Pelvic Immobilization procedure
7. DO NOT EXTRICATE PATIENT WITHOUT ALS PRESENT
8. Consider Spinal Motion Restriction per protocol

~~~~~~ EMT IV, AEMT ~~~~~~

9. **Establish multiple IV's or IO's**
10. During extrication, administer **500 mL NS bolus and consult ALS or OLMC for amount of additional fluid to administer**

TRAUMA - Electrical Injuries/Lightning Strike

~~~~~~ **EMR** ~~~~~~

1. Initiate General Trauma Guidelines
2. Assure patent airway - if in respiratory arrest only, manage appropriately
3. If in cardiopulmonary arrest, start CPR
4. Apply Spinal Motion Restriction if associated spinal trauma suspected
5. Apply dry dressing to any wounds
6. Remove constricting clothing and jewelry since additional swelling is possible
7. If systolic blood pressure is <90 mmHg, treat per Shock Protocol
8. Do not allow patient to eat or drink
9. Treat Nausea/Vomiting per protocol
10. Treat pain per Pain Management Protocol

~~~~~~ **EMT** ~~~~~~

11. Consider **12-LEAD EKG**, if available

~~~~~~ **EMT IV** ~~~~~~

12. **Establish IV, IO.** Treat per Shock Protocol

GENERAL CONSIDERATIONS:

- Lightning strike cardiopulmonary arrest patients have a high rate of successful resuscitation, if initiated early
- 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 proceed resolution of respiratory arrest
- 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 the patient as a victim of lightning strike (Look for entry and, if present, exit wound)
~~~~~~

TRAUMA - Hemorrhage Control

NOTE: A. Tourniquets may be used to control potentially fatal extremity hemorrhage from arterial bleeds or venous bleeds of the extremities
B. For junctional wounds or bleeds where tourniquets don't apply, see wound packing protocol, both procedures are described here

TOURNIQUET

~~~~~~ **EMR, EMT** ~~~~~~

THINGS TO CONSIDER WHEN APPLYING A TOURNIQUET:

A. A tourniquet applied incorrectly can increase blood loss
B. Never apply a tourniquet over a joint. The tourniquet can cause nerve and tissue damage whether applied correctly or incorrectly
C. Injury due to a tourniquet is unlikely if it is removed within 1 hour. In cases of life-threatening bleeding, the benefits outweigh the theoretical risk
D. Do not apply tourniquet over impaled objects
E. A commercially made tourniquet is the preferred tourniquet. If none is available, a blood pressure cuff inflated to a pressure sufficient to stop bleeding, triangular bandages, or belts as long as it's 2 inches wide so as not to do nerve damage

TREATMENT:

1. Initiate General Trauma Guidelines
2. Attempt to control venous bleeding using direct pressure and pressure dressings - if unable to control bleeding, apply commercially available tourniquet
3. If bleeding is arterial, immediately apply **tourniquet, following these steps**:
    a. Remove clothing so that the tourniquet will be clearly visible. NEVER obscure a tourniquet with clothing or bandages
    b. Apply tourniquet at least 2 inches proximal to the wound and not across any joints
    c. Tighten the tourniquet until the bleeding stops
    d. Note date and time on the tourniquet label (or on the patient's skin next to the tourniquet if no tag is attached)
    e. If needed, a second tourniquet should be applied above/below the first tourniquet. This is particularly common with arterial injuries associated with the thigh
    f. Do not remove tourniquet prior to arriving at definitive care
4. If bleeding was significant, administer oxygen 10 - 15 LPM via NRB

~~~~~~ **EMT IV, AEMT** ~~~~~~

5. **Establish multiple IV's, IO's**
6. If shock present, follow Shock Protocol

TRAUMA - Hemorrhage Control, *cont*

HEMOSTATIC AGENTS - WOUND PACKING

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMR, EMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

INDICATIONS:

- When conventional methods for hemorrhage control have failed, i.e. direct pressure, pressure dressing and/or tourniquet
- It may be the most effective method for controlling junctional bleeding (groin, axilla)

CONTRAINDICATIONS:

- Minor bleeding
- Bleeding that can be controlled by direct pressure
- Bleeding that can be controlled by a tourniquet
- Wound packing should never be packed into open abdominal, chest or head wounds with penetrating brain injuries

NOTE - Record the number of gauze rolls used for wound packing and inform the receiving facility

TREATMENT:

1. Initiate General Trauma Guidelines
2. Use direct pressure to stop bleeding:
   a. Remove clothing away from the area, remove any large debris, and clean the wound
   b. Apply weighted pressure with hand, elbow or knee on rolled gauze, such as kerlix
   c. Insert gloved hand into wound to tamponade bleeding source, if necessary
   d. Be cautious in head or extremity injuries if bony fragments possible
3. Begin packing wound with hemostatic roll or Z-fold gauze (Combat gauze preferred)
   a. Pack gauze around finger and exert force to tightly fill the wound
   b. Continue packing gauze into wound until wound is filled or bleeding stopped
   c. Be sure to leave at least 2 inches of gauze out of the wound
   d. More than 1 package may be required
4. Apply direct pressure to wound:
   a. Use the remainder of the roll gauze as a bolster to localize pressure to the wound
5. Bleeding controlled?
   a. Yes: place pressure wrap and continue transport to trauma center
   b. No: continue packing or apply greater pressure with hand, elbow or knee; continue transport to surgical intervention
6. If bleeding was significant, administer oxygen 10 - 15 LPM via NRB

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

7. **Establish multiple IV's, IO's**
8. If shock present, follow Shock Protocol

TRAUMA - Sexual Assault/Rape

1. Work closely with law enforcement
2. Sexual assault victims need to be evaluated by a "Sexual Assault Nurse Examiner" RN (SANE). This is a type of RN who received specialized training on how to collect evidence and prepare it for a lab, in addition to proper procedures for legal documentation
3. An NIJ study performed in 2013 found that for these types of cases, when a SANE RN was involved, the case was 80% more likely to be successfully prosecuted
4. Pediatric patients need to be evaluated by Pediatric SANE RN's

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ EMR, EMT, EMT IV, AEMT ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

1. Request Law Enforcement respond to the scene if they have not already been dispatched
2. LE prefers to accommodate sexual assault victims and it is reasonable to assume that EMS will be only be on scene if
    a) the patient has injuries
    b) the patient hasn't reported the assault
    c) LE requested EMS because patient is uncomfortable being transported by law enforcement
3. Initiate General Trauma Guidelines and treat any injuries per protocol
4. Provide emotional support to the patient. Ask the patient if they would be more comfortable with a same sex provider or opposite sex provider, based on the crew's available responders
5. Do not allow patient to bathe, explain to the patient why this is important. If the patient has already bathed or cleaned themselves, note how long ago and the process used
6. Inquire if the patient is still wearing the same clothing from the incident or if they have changed
    a. If patient has changed, ensure clothing remains undisturbed until LE can process it
    b. If patient has not changed clothing, and their injuries require pieces of clothing to be removed for proper evaluation or if patient is a multisystem trauma patient requiring all clothing to be removed, package clothing individually in separate **paper bags,** if available. Securely seal bag with tape. Document on the bag, date, time, print and sign your name. Also include CAD #. Be careful not to contaminate or destroy evidence in the process
    c. Ensure clothing and any other evidence is handed off to LE or a SANE RN. Do not send bagged evidence with air ambulance
7. Attempt to obtain a focused history. If the patient is unwilling to answer questions regarding the incident, do not press any inquiries
    a. If the patient is willing and LE is present, allow LE to complete any needed questioning for their investigation
8. Continue to provide emotional support and reassurance to the patient as needed. See "Emotional Support" section of this protocol

TRAUMA - Sexual Assault/Rape, *cont*

MAKE A DESTINATION DECISION

Contact nearest appropriate hospital and ask if there is a SANE RN on duty. If there is not, transport to PHRMH, which has SANE RN's on-call 24/7

Medically stable minors 15 y/o and under should be transported directly to a hospital with Pediatric Sane RN's, preferably Randall Children's Hospital, Doernbecher's Children's or Legacy Salmon Creek

For both adults and pediatrics, notify destination hospital of patient arrival so that appropriate SANE RN will be available/prepared

EMOTIONAL SUPPORT NOTES

1. Remember this is an extremely traumatic time for the patient
2. The patient may be in a state of emotional shock. It may not be easy for them to converse
3. It is likely that you as a provider will also be uncomfortable in this situation. Be mindful of your own discomfort and how it may be projecting onto your patient. Such as attempting to fill a silence by talking
4. Remain patient focused, watch for any signs that conversation may be increasing their stress. Do not be overly caring either. Simply affirm to your patient that they are safe with you, that they are in a safe place and that you will take care of them. There is no need to take this any further.
5. Do not state that you understand or that you know what they are going through. Even if that may be true, this typically is not helpful while these incidents are recent

TRAUMA - Traumatic Brain Injury

- Early signs of TBI are headache, nausea, altered LOC, GCS < 15
- Signs of brain herniation are unilateral or bilateral pupil dilation, GCS < 8, Cushing's Triad (hypertension, irregular respirations and bradycardia) and abnormal posturing (decorticate, decerebrate)

~~~~~~ EMR, EMT ~~~~~~

1. Initiate General Trauma Guidelines
2. Maintain C-spine while performing assessment
3. Use jaw thrust maneuver to open compromised airway, if necessary
4. Oxygenate to keep Sp02 between 94% and 98%
5. The primary assessment should include a brief neurological exam and include GCS, evaluation of pupillary size, equality and reaction to light, posturing and early vitals

    - Mild injury GCS of 13-15
    - Moderate GCS 9-12
    - Severe GCS 8 or less

6. Initial GCS will serve as a baseline for trending of GCS and vital signs, which should be reevaluated frequently
7. Consider obtaining medical history early, especially use of anticoagulation medications
8. **AVOID SECONDARY INJURY**
    a. Avoid Hypoxia. Goal is SPO2 94%-98%
    b. Avoid Hypotension. Goal SBP > 100 [MAP >65])
    c. Avoid Hypercarbia. Goal $EtCO_2$ 30- 35 mmHg. If advanced airway placed, avoid hyperventilation and carefully manage ventilations to achieve ideal $EtCO_2$ values
    d. Avoid increased ICP - maintain head elevated at 30 degree, do not fluid overload, prevent agitation, relieve pain
    e. Avoid hypothermia

~~~~~~ EMT IV, AEMT ~~~~~~

9. Establish 2 large bore **IV's, IO**
10. Treat hypovolemia with NS @ **250 ml - 500 ml fluid challenges**, rechecking vitals after each, in order to keep systolic BP between 100 and 110. Do not increase ICP

OBGYN - General Guidelines

Labor and delivery is rarely an event requiring active intervention by EMS personnel
Calm, supportive care is usually all that is required
When patient is crowning prepare to deliver in the field
All pregnant patients experiencing trauma or MVC should be transported to be evaluated in the ED
Request additional resources if transporting patient with possibility of delivering in the field

CARDIAC ARREST with PREGNANCY > 22 WEEKS

CPR with continuous manual left uterine displacement using the two handed method shown below

NOTE:

- Early transport prior to achieving ROSC, especially if a mechanical CPR device is available
- Immediately following defibrillation, resume the left lateral uterine displacement
- If mechanical CPR is in place, continue the left lateral uterine displacement by tilting the backboard 30° to the left or by continuing manual displacement

OBGYN - Normal Childbirth

HISTORY TAKING:
Gestational age, estimated due date, previous births (gravida, para), prenatal care, complications with this pregnancy, complications with previous deliveries, edema, multiple births, previous C-section, frequency of contractions, fetal heart rate

~~~~~~ **EMR, EMT** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Delivery may be considered imminent if contractions are consistently < 2 minutes apart, if mother says the baby is coming, if mother feels the need to move her bowels, or if baby is crowning
3. If childbirth not imminent, transport patient in position of comfort or left lateral recumbent
4. Prepare for delivery on scene if delivery is imminent
5. Place sterile sheet under the patient's buttocks with patient in semi-fowler's position
6. Encourage mother to breath deeply between contractions and push during contractions
7. Prepare OB equipment and don PPE (gloves, gown and eye protection)
8. As baby crowns, support head with gentle pressure to avoid explosive birth
9. If membrane is still intact, rupture with your fingers to allow amniotic fluid to leak out
10. If cord is around the baby's neck, gently slip it over the head. DO NOT FORCE IT! If the cord it too tight to slip over the head, apply clamps and cut
11. Allow mother to push and support the head as it rotates
12. After delivery of the head, provide gentle downward traction to facilitate delivery of the anterior shoulder. When the anterior shoulder appears, apply gentle upward traction to facilitate the delivery of the posterior shoulder, after which the rest of the body should deliver. **BABIES ARE SLIPPERY!!**
13. Suction the baby's mouth and nose **ONLY IF baby is NOT** breathing or is having respiratory distress
14. Dry the newborn
15. Assess need for Neonatal Resuscitation. If no resuscitation is needed (term infant, breathing or crying, good muscle tone), proceed as below
16. Place on mother's chest, in skin-to-skin contact. Cover both with a clean, dry blanket
17. Assess infant using APGAR at one minute after birth and again five minutes later
18. Record sex and time of birth
19. After delivery, wait for cord pulsation to cease, then place 2 clamps on the cord 2 inches apart and six inches from baby. Cut the cord between the clamps. If resuscitation is needed, cord may be clamped and cut as soon as necessary
~~~~~~

OBGYN - Normal Childbirth, *cont*

POST DELIVERY INSTRUCTIONS

1. Observe perineum for bleeding
2. Normally there should be a small to moderate amount of bloody material that will ooze from the vagina
3. Apply oxygen if mother appears to be experiencing respiratory distress
4. Do not delay transport to deliver the placenta
5. Do not pull on cord
6. The placenta should deliver within 20 minutes. Inspect placenta for missing pieces. After it has delivered, place it in the plastic bag supplied in the OB kit, or a red biohazard bag and send it to hospital with mother and baby
7. **MASSAGE UTERUS** with moderate firmness on the lower abdomen to encourage contraction and prevent bleeding. This could be life saving if patient is experiencing heavy bleeding!
8. Monitor vital signs of both mother and infant
9. Unless infant needs treatment, keep on mother's chest for transport
10. Keep them warm!

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

11. If mother has significant postpartum hemorrhage (> 500 mL), treat for Shock, and update receiving facility

OBGYN - APGAR Scoring Table

SCORE	0	1	2
A - COLOR	Blue/pale	Extremities blue	Completely pink
P - HEART RATE	Absent	< 100	> 100
G - IRRITABILITY	No Response	Grimace	Coughs, sneezes
A - ACTIVITY	Limp	Some flexion of extremities	Active motion
R - RESP EFFORT	Absent	Slow, irregular	Good, crying
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

OBGYN - Abnormal Childbirth

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMR, EMT, EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

1. Initiate Universal Patient Care Protocol - eye protection recommended
2. Transport immediately - consider ALS rendezvous
3. Administer **Oxygen 10 - 15 LPM via NRB**
4. Contact OLMC for advice

PROLAPSED CORD

5. Place mother in a position that gets uterus lower than the pelvis, such as steep Trendelenberg position (as close to 30 degrees as possible) or knee-chest so that weight is off of the umbilical cord
6. If the cord is visible, with a sterile gloved hand, gently manually elevate the presenting part of baby, which is usually the head, typically requiring placement of hand into vagina. Elevate the fetal head until it is not compressing the cord. Maintain displacement. DO NOT pull or over-handle cord
7. Monitor cord for pulsation. Adjust mother's position if needed
8. Cover exposed cord with a moist dressing

CORD WRAPPED AROUND NECK

5. With two fingers behind baby's neck, try to slip cord forward over baby's head. Continue slipping loops over head if there is more than one loop. If infant continues to deliver, do not delay to reduce nuchal cord unless it is impeding delivery
6. If unsuccessful, clamp cord with two clamps, cut between clamps and carefully unwrap cord from around neck. Baby must be delivered immediately!

BREECH and LIMB PRESENTATION

5. If only buttocks is presented, try to prevent mother from pushing
6. Do not attempt delivery in the field
7. Transport immediately knee chest position with hips elevated
8. Contact OLMC for guidance
9. Notify receiving facility so that OR can be prepared
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

OBGYN - Postpartum Hemorrhage

~~~~~~ EMR, EMT ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Transport immediately - consider ALS rendezvous
3. Administer **Oxygen 10 - 15 LPM via NRB**
4. **Fundal massage** is important
5. Contact OLMC for advice

~~~~~~ EMT IV, AEMT ~~~~~~

6. Establish IV
7. If hemorrhage (> 500 mL), treat for Shock, and update receiving facility

OBGYN - Pregnancy Complications

ABRUPTIO PLACENTA

DEFINITION: The placenta tears away from the wall of the uterus. May or may not be caused by trauma
PRESENTATION: Abdominal pain and may cause severe vaginal bleeding. The blood may be contained inside the uterus

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMR, EMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

1. Initiate Universal Patient Care Protocol
2. Transport third trimester females in left lateral recumbent position
3. Administer **Oxygen 10 - 15 LPM via NRB**
4. Rapid transport or rendezvous with ALS. Contact OLMC for destination determination. Advise receiving facility so that OR can be prepped
5. Use trauma pads to absorb bleeding, but do not place anything inside the vagina

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

6. Establish IV and treat for Shock per protocol

PLACENTA PREVIA

DEFINITION: The placenta is implanted on the uterine wall near or covering the opening of the uterus
PRESENTATION: May not be painful. May cause severe vaginal bleeding. The blood may be contained inside the uterus

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMR, EMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

1. Initiate Universal Patient Care Protocol
2. Transport third trimester females in left lateral recumbent position
3. Administer **Oxygen 10 - 15 LPM via NRB**
4. Rapid transport or rendezvous with ALS. Contact OLMC for destination determination. Advise receiving facility so that OR can be prepped
5. Use trauma pads to absorb bleeding, but do not place anything inside the vagina

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

6. Establish IV and treat for Shock per protocol

OBGYN - Pregnancy Complications, *cont*

PRE-ECLAMPSIA/ECLAMPSIA

DEFINITION: Hypertension that may result in seizures which may occur second half of pregnancy and up to 6 weeks postpartum

Moderate to Severe - Systolic BP > 140 mmHg and/or diastolic BP > 90 mmHg
Severe - Systolic BP > 160 mmHg and/or diastolic > 110 mmHg
Critical - Seizure

PRESENTATION: May include any of the following:

Hypertension Edema Headache Visual disturbances	Confusion Seizures Hyperreflexia RUQ abdominal pain

~~~~~~ **EMR, EMT** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Call for ALS backup or transport to rendezvous
3. Administer **Oxygen 10 - 15 LPM via NRB**

If seizing (eclampsia) -

4. Protect patient from injury
5. Ventilatory assistance may be required
6. Prepare to secure airway
7. Check blood glucose and treat per Altered Mental Status protocol

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

8. **Establish IV** and saline lock

OBGYN - Pregnancy Complications, *cont*

ECTOPIC PREGNANCY

DEFINITION: Attachment of the fertilized egg is outside of the uterus. May be in the fallopian tubes, the ovaries or pelvic cavity

PRESENTATION: May include any of the following:

Abdominal pain Vaginal bleeding (may or may not) 1st trimester (patient may not be aware of pregnancy)	Syncope Shock

~~~~~~ **EMR, EMT** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Attempt to establish last menstrual period
3. Administer **Oxygen 10 - 15 LPM via NRB**

~~~~~~ **EMT IV, AEMT** ~~~~~~

4. Establish IV and treat for Shock per protocol

SPONTANEOUS ABORTION

DEFINITION: Expulsion of the products of conception from the uterus before the fetus is viable

PRESENTATION: May include any of the following:

Abdominal pain Vaginal bleeding	Syncope Shock

~~~~~~ **EMR, EMT** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. Attempt to establish last menstrual period
3. Apply loose perineal pads
4. Collect any tissue passed and bring to the hospital

~~~~~~ **EMT IV, AEMT** ~~~~~~

5. Establish IV and treat for Shock per protocol

PEDIATRICS - General

A systematic and comprehensive approach to the initial assessment of pediatric patients is important

- Consider using the Pediatric Assessment Triangle (appearance, work of breathing, circulation) from across the room when first approaching a pediatric patient in order to determine sick/not sick
- For critically ill or injured patients use a color coded, length based resuscitation tape (less than 70 lbs/34 kg)
- The pediatric population is generally defined by those patients who weigh up to 50 kg or less than 15 years of age, whichever comes first
- Never exceed the adult dose of a medication when calculating pediatric dosages

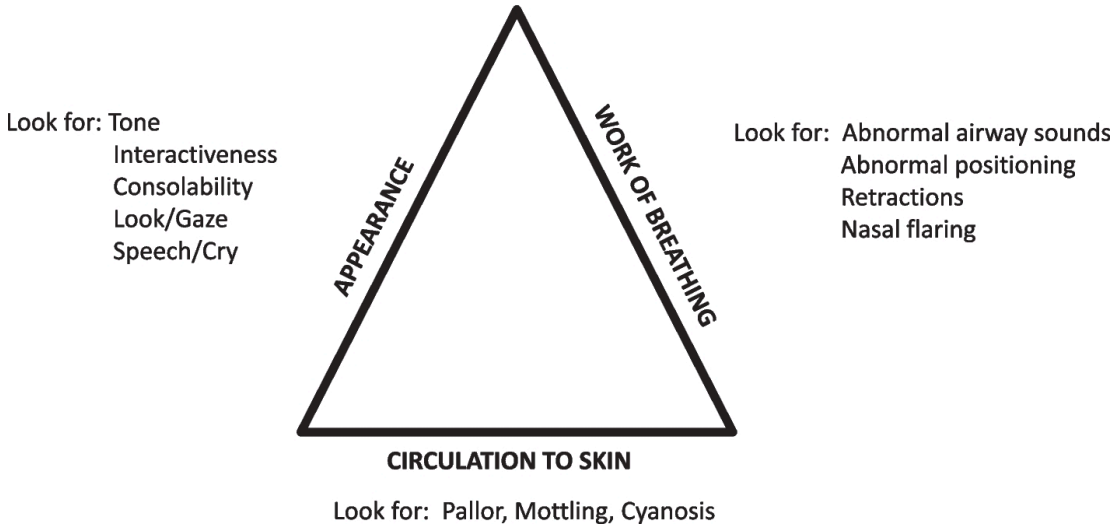
General Approach to a Stable Pediatric Patient

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
- Adaptations may need to be made for patients with special needs, such as autism, downs syndrome, or other developmental delays
- When appropriate, transport the caregiver with the child

PEDIATRICS - General, *cont*

PEDIATRIC ASSESSMENT TRIANGLE



The following are signs of a SICK pediatric patient. Observe for the following as you approach

APPEARANCE

Tone - Limp, rigid, or absent muscle tone

Irritability - Crying is absent, or abnormal. The child cannot be stimulated to cry

Consolability - Can not be consoled or comforted by usual caregivers. Does not respond normally to environmental stimuli, like preferred toys

Look (gaze) - Vacant stare with lack of eye contact. May not seem to recognize normal caregivers

Speech - The child is unable to express himself or herself age-appropriately. Speech (or crying for babies) is absent or abnormal

WORK OF BREATHING

Noisy breathing (including grunting in infants), retractions, accessory muscle use, nasal flaring, seesaw breathing in infants, bradypnea

CIRCULATION

Abnormal skin signs - pallor, cyanosis, mottling, cap refill > 2

PEDIATRICS - General - Age groups, Normal Vital Signs & GCS

PEDIATRICS AGE GROUPS

Neonate/newborn	birth to 28 days
Infant	1 - 12 months
Toddler	1 - 2 years
Preschooler	3 - 5 years
School-age	6 - 12 years
Adolescent	13 - 18 years

AVERAGE VITAL SIGNS FOR AGE

	PULSE	**SYSTOLIC BP**	**RR**	**WEIGHT (KG)**
Premature	140	50-60	< 60	1-2
Newborn	110-150	60-90	30-60	3-4
1 year	100-140	75-100	25-40	10
2 years	90-100	75-100	25-40	16
6 years	80-100	85-100	20-30	20
10 years	70-100	90-100	14-22	40
Adolescent	60-100	100-120	12-20	50-70

INFANT & TODDLER GLASCOW COMA SCORE

BEST EYE OPENING	Spontaneous To Voice To Pain None	4 3 2 1
BEST VERBAL RESPONSE	Smiles, Interacts Consolable Cries to Pain Moans to Pain None	5 4 3 2 1
BEST MOTOR RESPONSE	Normal movement Localizes pain Withdraws from pain Flexion Extension None	6 5 4 3 2 1

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PEDIATRICS - Airway Obstructions - FBO

~~~~~~ **EMR, EMT** ~~~~~~

1. Initiate Universal Patient Care Protocol
2. If partial obstruction
    a. **Oxygen** to maintain Sp02 of at least 94%
    b. Sit patient up and have him/her cough
    c. Transport if obstruction is not cleared or if suspicion of aspiration

3. If complete obstruction
    a. Follow AHA guidelines for Foreign Body Obstruction (below)

	CHILD **1 yr to adolescent**	**INFANT** **under 1 yr**
a.	Ask “are you choking?”	Confirm severe airway obstruction. Check for sudden onset of severe breathing difficulty, ineffective or silent cough, weak or silent cry
b.	Give abdominal thrusts/Heimlich maneuver	Give up to 5 back slaps and up to 5 chest thrusts
c.	Repeat thrusts until effective or child becomes unresponsive	Repeat step b. until effective or infant becomes unresponsive

4. If patient becomes unresponsive

d.	Call for ALS backup and/or consider ALS rendezvous
e.	Lower patient to floor. If unresponsive with no normal breathing, begin CPR
f.	Before delivering breaths, look into mouth. If you see a foreign body that can easily be removed, remove it

*Transport any patient who receives back blows and/or chest thrusts * Support respirations as needed
~~~~~~

PEDIATRICS - Airway Obstructions - Epiglottitis

EPIGLOTTITIS: Age usually > 2 years
Onset rapid
Fever, often look sick
Air hunger, nasal flaring, restlessness, drooling, retractions
Wants to sit upright

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMR** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

1. Initiate Universal Patient Care Protocol utilizing the Pediatric Assessment Triangle upon approach
2. Consider blow-by **Oxygen**
3. Call for ALS backup and/or consider ALS rendezvous
4. Approach patient in a calm, reassuring fashion. Anxiety is likely to exacerbate these conditions
5. Assess rate and quality of respirations; note retractions - do NOT attempt to visualize pharynx
6. Allow patient to adopt a position of comfort (generally patients do better in a sitting position)

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT, EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

7. Administer **MedNeb** of **NS** for **humidified oxygen** by blow by, if tolerated by child

Be prepared for possibility of respiratory arrest or cyanosis with loss of consciousness - Attempt to ventilate with BVM and **100% oxygen. Do not attempt a supraglottic airway**

PEDIATRICS - Brief Resolved Unexplained Event - BRUE

- 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

Event lasting <1 minute in an infant <1 year of age associated with at least one of the following:

- Cyanosis or pallor
- Absent, decreased, or irregular breathing
- Marked change in muscle tone (hypertonia or hypotonia)
- Altered level of responsiveness

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMR, EMT, EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

1. Initiate Universal Patient Care Protocol utilizing the Pediatric Assessment Triangle upon approach
2. Follow Airway Management - Supraglottic Airway and/or Respiratory Distress Protocol as needed
3. Obtain and document any complications of pregnancy, birth date and gestational age at birth, fever or recent infection, prior BRUE episodes, underlying medical conditions
4. Obtain and document description of event including symptoms, inciting event, any resuscitation attempts before EMS arrival
5. Transport via ALS to an emergency department **even if the infant currently appears in no distress**
6. Follow Dysrhythmia protocol as needed
7. Assess blood glucose
8. OLMC contact is mandatory for any patient with a suspected BRUE where parent or guardian wishes to refuse
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

PEDIATRICS - Cardiac Arrest

~~~~~~ EMR ~~~~~~

Infant - up to 1 year, Child - 1 year to signs of puberty
For infants, a pulse rate of less than 60 is considered an indication to perform CPR
Pad shoulders
Initiate ventilatory support early because etiology will most likely be due to respiratory failure
Pediatric AED pads if less than 8 years old
Allow full chest recoil
Limit interruptions to less than 10 seconds
Give breaths over 1 second to just allow for chest rise
DO NOT OVER INFLATE
Make sure patient is dry
Use a Broselow Tape, or equivalent to assist with equipment sizes and medication dosages

INFANT	CHILD
Check brachial artery	Check carotid artery
If pulse present, give rescue breaths 1 q 2 - 3 seconds	If pulse present, give rescue breaths 1 q 3 - 5 seconds
1 Rescuer 30 Compressions : 2 breaths **2 Rescuer** 15 Compressions : 2 breaths	**1 Rescuer** 30 Compressions : 2 breaths **2 Rescuer** 15 Compressions : 2 breaths
Compression rate: 120	Compression rate: 100-120
1 Rescuer - 2 fingers just below nipple line 2 Rescuer - 2 thumbs on chest just below nipple line	1 hand or 2 hands on lower half of breast bone
Compression depth ⅓ depth of chest, approx 1.5 inches Rotate compressor q 2 mins	Compression depth ⅓ depth of chest, approx 2 inches Rotate compressor q 2 mins

Obtain history when possible, but do not delay CPR to obtain:

a. witnessed or unwitnessed
b. patient down time
c. bystander CPR
d. medical history, medications and allergies, congenital disease
e. Approximate weight
f. Possible foreign body

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PEDIATRICS - Cardiac Arrest, *cont*

~~~~~~ **EMT** ~~~~~~

- Place SGA per Airway Management - Supraglottic Airway Procedure
- Monitor $EtCO_2$ with waveform capnography throughout

~~~~~~ **EMT IV** ~~~~~~

- **Establish IV or IO with NS 125 - 250 ml/hr** for med line

~~~~~~ **AEMT** ~~~~~~

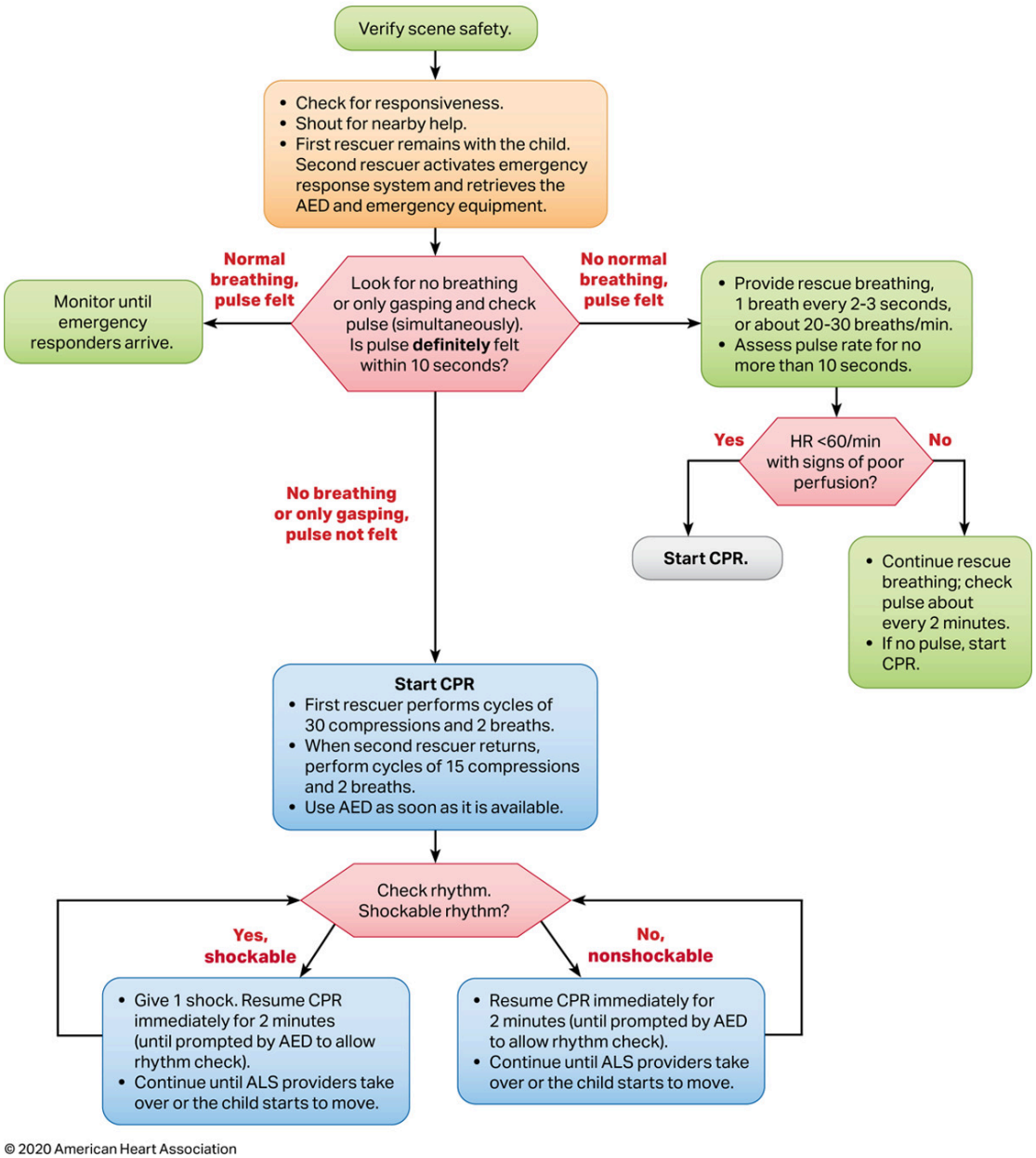
- For both shockable and non-shockable rhythms, administer
    - **Epinephrine (1:10,000) 0.01 mg/kg (0.1 ml/kg)**

Rule out H's and T's

- Hypovolemia
- Hyper/hypoglycemia
- Hyper/Hypokalemia (history of renal failure)
- Hypoxia
- Hypothermia
- Hydrogen ions (acidosis)
- Toxins (overdose)
- Tamponade (cardiac)
- Thrombosis (coronary or pulmonary)
- Trauma (hypovolemia, increased ICP)
- Tension Pneumothorax
~~~~~~

PEDIATRICS - Cardiac Arrest - AHA Algorithm

Pediatric Basic Life Support Algorithm for Healthcare Providers—2 or More Rescuers



PEDIATRICS - Sudden Infant Death Syndrome (SIDS)

SUDDEN INFANT DEATH SYNDROME:

1. General Considerations
   a. Infants usually < six (6) months of age
   b. Sudden, without apparent cause, during sleep
   c. It may be impossible to differentiate SIDS from suspected child abuse
   d. Ensure Law Enforcement is enroute (see #3 in Crime Scene Preservation)

2. Interventions
   a. CPR, follow protocol for cardiac arrest unless there are obvious signs of death (rigor, lividity, etc.).
   b. Resuscitation may be terminated only by order of OLMC

3. Support the parents. Avoid questions or comments suggesting blame

4. Observe carefully and note:
   a. Location and position of child when originally found
   b. Objects immediately surrounding the child
   c. Position of face and was it covered by blankets/bedding, etc
   d. Was infant/child sleeping alone
   e. Any secretions noted on child's bedding (purge)
   f. Behavior of all adults present
   g. The explanations provided
   h. Vomitus in mouth or foreign body present in airway
   i. Treatments rendered PTA including CPR

5. Report all observations to OLMC and Law Enforcement

PEDIATRICS - Newborn Resuscitation

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMR, EMT, EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

WITHIN FIRST 30 SECONDS AFTER BIRTH:

If neonate is NOT term gestation
does NOT have good muscle tone
is NOT breathing or crying

1. Bulb suction mouth then nose - only if airway is occluded
2. Dry, stimulate to breath by gently flicking heels and rubbing back
3. Oxygen blow-by or NRB, if needed. Discontinue if Sp02 > 90%

REEVALUATE AT 30 SECONDS:

A. breathing, pink and HR >100?	**YES**	→	Maintain warmth, place on mother, supportive care

NO ↓

B. apnea or gasping breaths? APGAR score 5 or less? or HR < 100?	**YES**	→	Assist ventilations via BVM with room air reassess after 30 seconds - GO BACK TO A.

OR ↓

C. If HR < 80?	**YES**	→	Begin CPR at ratio 3:1 compressions to ventilations with 100% 02 for 2 minutes. GO BACK TO A.

- At 30 to 60 seconds after delivery, clamp and cut the umbilical cord at 6 inches and 8 inches from infant. If resuscitation is needed, cord may be clamped and cut as soon as necessary. Assess APGAR at 1 and 5 minutes

- Neonatal fluid resuscitation: 10 ml/kg NS
  ALS intubation is indicated for persistent apnea or APGAR < 5 after 10 minutes

POST RESUSCITATION CARE:

1. Continue to provide assisted ventilation as needed
2. Closely monitor respiratory effort, heart rate, blood glucose and pulse oximetry
3. Keep newborn normothermic. Hypothermia significantly increases risk of morbidity

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PEDIATRICS - Dysrhythmias - Bradycardia

SIGNS AND SYMPTOMS OF SYMPTOMATIC BRADYCARDIA

- Difficulty breathing, altered mental status, hypotension, shock, acute MI, syncope or dizziness, delayed cap refill

~~~~~~ **EMR** ~~~~~~

1. If HR < 60 with poor perfusion, start CPR
2. If S/S symptomatic bradycardia are present - airway, oxygenation and ventilation are a priority
   a. Place pt in semi-fowler's or supine position
   b. Secure airway per Airway Management - Supraglottic Airway Procedure, if necessary
   c. Oxygenate and monitor Sp02 and vital signs
   d. Treat Altered Mental Status, if necessary
   e. Consider placing defibrillation pads in the anteroposterior position
3. Consider OLMC, transport to ALS rendezvous or consider air ambulance

~~~~~~ **EMT** ~~~~~~

4. Monitor $EtCO_2$ with waveform capnography
5. Obtain 12-LEAD EKG, repeat frequently, if possible
6. If nausea/vomiting
   a. **Ondansetron 4 - 8 mg ODT**
      Pediatric 0.1 mg/kg (20 kg = 2 mg or half 4 mg tablet, 40 kg = 4 mg or 1- 4 mg tablet). May repeat 1x

~~~~~~ **EMT IV** ~~~~~~

7. **Establish IV, IO access**
8. If hypotensive, administer
   a. Pediatric 20 ml/kg NS PRN to appropriate Blood Pressure for Age **OR** S/S of adequate tissue perfusion (including Cap Refill < 2)

~~~~~~ **AEMT** ~~~~~~

9. Consider
   a. Ondansetron 4 8 mg SLOW IV push
      Pediatric > 2 y/o 0.1 mg/kg max single dose 4 mg, max total 8 mg
      Contact OLMC for pediatrics < 2 y/o

PEDIATRICS - Dysrhythmia - Tachycardia

CONSIDERATION -

- SIGNS & SYMPTOMS OF SYMPTOMATIC TACHYCARDIA
  - HR > 220 children less than 2 yrs old **OR**
  - HR > 180 children 2 - 10 yrs old
    - with S/S of chest pain, dyspnea, altered mental status, hypotension, shock, acute pulmonary edema/CHF, acute MI, syncope, dizziness or nausea/vomiting
  - Patient may c/o feeling their heart racing

NOTE -

- Fever, pain, anxiety, stress, exercise, and drugs can cause tachycardia and may not require treatment

~~~~~~ **EMR** ~~~~~~

1. If S/S of symptomatic tachycardia are present -
   a. Place pt in semi-fowler's or supine position
   b. Secure airway per Airway Management - Supraglottic Airway, if necessary
   c. Oxygenate and monitor Sp02 and vital signs
   d. Treat Altered Mental Status, if necessary
   e. Consider placing defibrillation pads in the anteroposterior position
2. Consider OLMC and transport to ALS rendezvous

~~~~~~ **EMT** ~~~~~~

3. Monitor $EtCO_2$ with waveform capnography
4. Obtain 12-LEAD EKG, repeat frequently, if possible
5. Consider Vagal Maneuvers
6. If nausea/vomiting
   a. **Ondansetron 4 - 8 mg ODT**

   Pediatric 0.1 mg/kg (20 kg = 2 mg or half 4 mg tablet, 40 kg = 4 mg or 1- 4 mg tablet). May repeat 1x

~~~~~~ **EMT IV** ~~~~~~

7. Establish **IV, IO access**
8. If hypotension, administer
   a. Pediatric 20 ml/kg NS PRN to appropriate Blood Pressure for Age **OR** S/S of adequate tissue perfusion (including cap refill <2)

~~~~~~ **AEMT** ~~~~~~

9. Consider
   a. Ondansetron 4 - 8 mg SLOW IV push

   Pediatric > 2 y/o 0.1 mg/kg max single dose 4 mg, max total 8 mg

   Contact OLMC for pediatrics < 2 y/o

PEDIATRICS - Croup

COMMON CHARACTERISTICS:

CROUP: Age 6 months - 3 years
Onset gradual
Usually preceded by an upper respiratory infection
May or may not have a fever
Condition varies from mild to severe
Seal-like cough
May have stridor

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol, utilizing the Pediatric Assessment Triangle
2. Consider blow-by **Oxygen**
3. Approach patient in a calm, reassuring fashion
4. Assess rate and quality of respirations; note retractions - do NOT attempt to visualize pharynx
5. Allow patient to adopt a position of comfort

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **EMT, EMT IV, AEMT** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

6. Administer **MedNeb** of **NS** for **humidified oxygen**

7. If fever > 100.4° F, and airway is patent. (See Pediatrics - Fever Protocol)
   a. Acetaminophen 15 mg/kg PO if old enough to swallow, OR
   b. Acetaminophen rectal suppository 20 mg/kg PR, OR
   c. Follow manufacturer's guidelines for Acetaminophen OTC liquid or powder packets

   OR

   a. Ibuprofen 10 mg/kg - max of 600 mg if able to swallow, OR
   b. Follow manufacturer's guidelines for OTC Ibuprofen liquid or chewables

PEDIATRICS - Fever

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol, utilizing the Pediatric Assessment Triangle
2. Consider blow-by **Oxygen**
3. Allow patient to adopt a position of comfort
4. Obtain temperature - if it is greater than 100.4 F
    a. Remove heavy clothing

~~~~~~ **EMT** ~~~~~~

5. Determine patient's last dose of antipyretic. If antipyretic administered over 6 hours prior:
    a. Acetaminophen 15 mg/kg PO if old enough to swallow, **OR**
    b. Acetaminophen rectal suppository 20 mg/kg PR, **OR**
    c. Follow manufacturer's guidelines for Acetaminophen OTC liquid or powder packets

6. If acetaminophen was administered within last 6 hours, administer:
    a. Ibuprofen 10 mg/kg - max of 600 mg if able to swallow, **OR**
    b. Follow manufacturer's guidelines for OTC Ibuprofen liquid or chewables

7. If ibuprofen was administered within last 6 hours, administer acetaminophen (see dosage above)
8. If patient seizing, follow Pediatric Seizure Protocol

~~~~~~ **EMT IV, AEMT** ~~~~~~

9. **Establish IV, IO** if patient appears dehydrated
    a. **Administer 20 ml/kg** NS bolus

NOTE: *The most effective way to treat a pediatric fever is to alternate acetaminophen and ibuprofen every four hours*
~~~~~~

PEDIATRICS - Seizure

The goal of seizure management is to identify and treat any immediate reversible causes, to prevent injury from seizure activity and to stop status epilepticus. Initial history and physical assessment should identify potential reversible causes, such as:

- Fever (Pediatric seizures commonly occur between ages 6 mo - 6 yrs of age)
- Hypoxia
- Hypoglycemia
- Poisoning, toxin
- Cardiac dysrhythmias
- Intracranial mass/bleed - Trauma
- Consider child abuse
- Consider AEIOU-TIPS

~~~~~~ **EMR** ~~~~~~

1. Initiate Universal Patient Care Protocol, utilizing the Pediatric Assessment Triangle
2. Secure airway, anticipate need for suction
3. Maintain Sp02 > 94%
4. Ventilatory assistance may be required
5. Protect patient from injury
6. Check blood glucose and treat per Altered Mental Status protocol
7. Important care for patients with prolonged seizures (> 5 minutes) or two or more seizures without a period of consciousness in between (status epilepticus) includes ventilation/oxygenation and rapid transport
8. Request ALS backup or rendezvous with ALS

~~~~~~ **EMT** ~~~~~~

9. Consider use of **NPA** if status seizure
10. Consider $EtCO_2$, if available

~~~~~~ **EMT IV, AEMT** ~~~~~~

11. Establish **IV or IO NS @ TKO**

CONSIDERATIONS:
All first time seizure patients require medical evaluation by a physician
Document the type of seizure activity, the duration of seizure activity, and details of postictal phase
Document time between seizures, if multiple

Dr. Russell Smith, MD, MPD
Approval Date: December 31, 2024
Revision Date _____
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PROCEDURE – 12-LEAD Placement

EMT / AEMT

PURPOSE

A. To identify ST-elevation myocardial infarction (STEMI) in the field, with the goal of reducing the time to open the occluded artery in a cardiac catheterization lab
B. To record a graphic image of cardiac activity to assist healthcare providers in investigating the cause of symptoms and/or complaints that could be of cardiac origin

INDICATIONS

A. Adults with a complaint of non-traumatic chest pain
B. Patients complaining of weakness, nausea/vomiting, diaphoresis
C. Syncope or near syncope
D. Patient with upper abdominal pain > 35 years of age
E. Patients whom the EMT suspects AMI for any reason

PROCEDURE

A. Place limb leads first (avoid bony prominences)

Table 2. Limb electrode positions

Limb electrodes	Standard electrode position
Right arm (RA)	Right forearm proximal to the wrist
Left arm (LA)	Left forearm proximal to the wrist
Right leg (RL)	Right lower leg proximal to the ankle
Left leg (LL)	Left lower leg proximal to the ankle

Adapted from: Society of Cardiological Science and Technology (2006)

– *It is important to clean the skin prior to electrode placement in order to reduce artifact*
-- *Modify lead placement based on clinical presentation (limb amputation, or other extenuating circumstances)*

B. Place precordial leads

1. V1, fourth intercostal space just to the right of the sternum. Locating the V1 position is critically important because it is the reference point for locating the placement of the remaining 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

PROCEDURE – 12-LEAD Placement, *cont*

B. Place precordial leads, *continued*

2. Place V2, fourth intercostal space just to the left of the sternum
3. Place V4 at the midclavicular line in the fifth intercostal space
4. Place V3 in the line midway between V2 and V4
5. Place V5 at the anterior mid-axillary line "on the same horizontal plane" with V4
6. Place V6 at the mid-axillary line "on the same horizontal plane" with V4 and V5

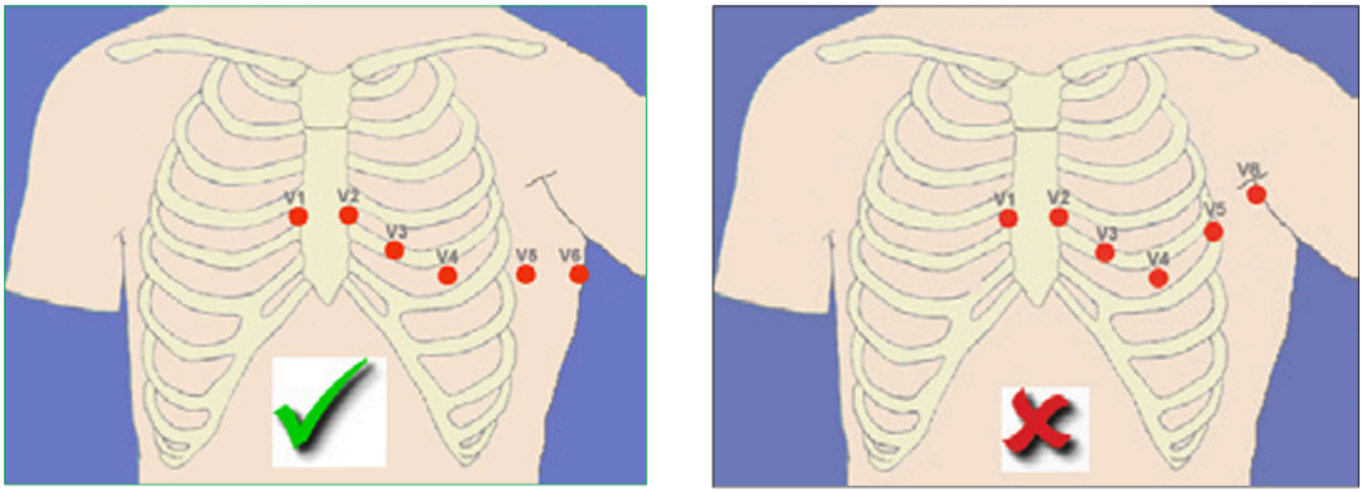

Figure 1. Correct placement of precordial electrodes. (a) Schematic diagram of the thoracic skeleton indicating V4, V5 and V6 placed on the same horizontal plane. (b) Typical incorrect schematic giving the impression that V4, V5 and V6 should be placed tracking up the chest in the fifth intercostal space.

IMPORTANT - If breast tissue is in the way, the operator may use the back of hand to lift tissue up so that leads V4, V5 and V6 are placed correctly along the fifth intercostal space. Bras with wires may need to be removed and excessive chest hair may need to be shaved in order to capture an accurate and clear EKG

https://www.paramedicpractice.com/content/features/recording-a-standard-12-lead-ecg-filling-in-gaps-in-knowledge-3/

PROCEDURE - Airway Management - Supraglottic Airway (SGA)

*EMT** (Washington State endorsement for EMT certification is required) / AEMT*

INDICATIONS:

A. Cardiac arrest patient
B. Respiratory arrest patient, or patient with inadequate respirations and no gag reflex
C. Alternative airway control when ALS endotracheal intubation is not available or endotracheal intubation was not successful

CONTRAINDICATIONS:

A. Responsive patient with intact gag reflex
B. Patient has a tracheostomy or laryngectomy

USE CAUTION:

A. Patient who has ingested caustic substances
B. Patient with known esophageal disease

PROCEDURE:

A. Position airway with head tilt chin lift maneuver or jaw thrust for trauma patients
B. Insert OPA if EMR and/or NPA if EMT
C. Prepare to suction the upper airway as needed
D. Ventilate with BVM with oxygen at 10 - 15 LPM while preparing the supraglottic airway device
E. Additional oxygen via NC at a rate of 10 - 15 LPM can be added underneath the BVM
F. Monitor in line $EtCO_2$
G. Place an SGA (King LTS-D or I gel)
H. After placement of SGA, reassess placement frequently, especially after moving patient

KING LTS-D

A. Select the proper tube size based on height of patient per the chart below

Table 2. Recommended Sizing for the King LTS-D™, Based on Patient Weight and/or Height[66]

Tube Size	Connector Color	Patient Criteria	Recommended Cuff Volume (mL)
0	Clear	< 5 kg	10
1	White	5-12 kg	20
2	Green	12-25 kg	25-35
2.5	Orange	25-35 kg	30-40
3	Yellow	4-5 ft	40-55
4	Red	5-6 ft	50-70
5	Purple	> 6 ft	60-80

Information available from the Ambu® King LTS-D™ disposable laryngeal tube product sheet.

Dr. Russell Smith, MD, MPD
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PROCEDURE - Airway Management - Supraglottic Airway (SGA), *cont*

B. Test cuff inflation system and deflate prior to insertion
C. Lubricate the distal end of the King LTS-D airway with a water soluble lubricant
D. Place patient's head in a neutral position and apply jaw thrust maneuver
E. Introduce King LTS-D into mouth with blue orientation line facing chin of patient
F. Advance tube until base of connector is aligned with teeth and gums
G. Inflate cuffs to appropriate volume and remove inflation syringe
H. Begin ventilation via BVM, 1 breath every 6 seconds
I. Confirm proper placement by auscultation of lungs and epigastrium, chest movement, oxygen saturation, and $EtCO_2$ capnography
J. Stabilize airway device and adjust as needed to ensure proper ventilation

i-GEL

A. Select the proper tube size based on height of patient per the chart below

I-Gel Size	Patient Size	Patient Weight (Kg)	Patient Weight (lbs)
Pink - 1	Neonate	2-5	4-11
Blue - 1.5	Infant	5-12	11-26
Gray - 2	Small Pediatric	10-25	22-55
White - 2.5	Large Pediatric	25-35	55-77
Yellow - 3	Small Adult	30-60	66-132
Green - 4	Medium Adult	50-90	110-198
Orange - 5	Large Adult	90+	198+

B. Lightly lubricate the tip, sides, and back of the distal end of the I-Gel with a water soluble lubricant
C. Place patient's head in a sniffing position or neutral if suspected neck injury and apply jaw thrust maneuver
D. Introduce distal end of device along hard palate until resistance is felt, cuff is seated on glottic opening, and the patient's teeth are resting on the bite block
E. Begin ventilation via BVM, 1 breath every 6 seconds
F. Confirm proper placement by auscultation of lungs and epigastrium, chest movement, oxygen saturation, and capnography
G. Stabilize airway device and adjust as needed to ensure proper ventilation

POST PLACEMENT OF BOTH KING LTS-D and i-GEL

A. Auscultate breath sounds, watch for chest rise and confirm placement with waveform $EtCO_2$ monitoring
B. Secure SGA with approved holder, strap or tape
C. Monitor waveform capnography and other vital signs until patient care is transferred

PROCEDURE - Airway Management - Supraglottic Airway (SGA), *cont*

SUCTIONING THE SUPRAGLOTTIC AIRWAY

A. If liquid, sputum or blood becomes present in the main (buccal) airway channel of the I-Gel or King LTS-D, a soft suction catheter can be used to clear the airway
B. Disconnect the yankauer from the end of the suction unit tubing and connect a size 12f - 18f soft suction catheter
C. Insert suction tubing into airway channel 4 - 6 inches and initiate suctioning as you withdraw the tubing
D. Do not suction for more than 10 - 15 seconds, repeat as needed. Remember to ventilate in between repeated suctioning

PROCEDURE – Chest Compression Device

EMT /EMT / AEMT

INDICATION:

Adult patients who have suffered non-traumatic cardiac arrest, where manual CPR would otherwise be used

CONTRAINDICATIONS:

1. Pectus deformity
2. Traumatic cardiopulmonary arrest
3. Delay in manual compressions in order to use the device
4. VAD patients
5. Patient size not suitable for the device

PROTOCOL FOR PLACEMENT:

1. All therapies related to the management of cardiopulmonary arrest should be continued as currently defined
2. Initiate resuscitative measures:
   a. Manual chest compression should be initiated immediately while the chest compression device is being placed on the patient
   b. Limit interruptions to chest compressions to 5 seconds or less
   c. Do not delay manual CPR for the chest compression device. Continue manual CPR until the device can be placed

POSITION DEVICE PER MANUFACTURER's INSTRUCTIONS

1. Placement should occur during a scheduled discontinuation of compressions (e.g. after five cycles of 30:2 or two minutes of uninterrupted compressions)

USING THE CHEST COMPRESSION DEVICE DURING RESUSCITATION

1. Defibrillation
   a. Defibrillation can and should be performed with the Chest Compression Device in place and in operation. There is no need to stop the device to deliver a shock
   b. One may apply the defibrillation electrodes either before or after the Chest Compression Device has been put in position
2. Rhythm Analysis
   a. For rhythm analysis, stop the compressions by pushing the PAUSE button (or equivalent button on device used). **There is no need to interrupt chest compressions other than to analyze the rhythm**
   b. Once the rhythm is determined to require defibrillation, the continuous ACTIVE BUTTON (or equivalent button on the device used) should be pushed to resume compressions while the defibrillator is charging. After charging the shock should be delivered

PROCEDURE – Continuous Positive Airway Pressure (CPAP)

EMT / AEMT

- CPAP with nebulizer attachment is recommended
- CPAP is a non-invasive procedure that is easily applied and can be easily discontinued without untoward patient discomfort
- CPAP may prove to be a viable alternative in many patients previously requiring endotracheal intubation

INDICATIONS:

1. Congestive heart failure/pulmonary edema
2. Moderate to severe respiratory distress; e.g., asthma/COPD/pneumonia/CO poisoning
3. Submersion injury with hypoxia, shortness of breath, respiratory insufficiency
4. History of use of CPAP
5. May use in pediatric patients if able to tolerate procedure and gain proper seal (usually over 12 years old)

CONTRAINDICATIONS:

1. ***Absolute***: respiratory arrest, agonal respirations, unconscious, pneumothorax, facial anomalies (e.g., burns, fractures, etc.), facial trauma, active vomiting
2. ***Relative***: decreased LOC, claustrophobia, patient intolerance to equipment, tracheostomy (if lacking the adaptor)
3. Systolic BP < 100

HAZARDS:

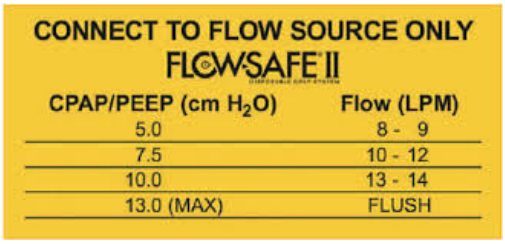
1. Gastric distension, corneal drying, hypotension, pneumothorax
2. COPD and asthmatic patients do not respond predictably to CPAP;
   a. Higher risk of pneumothorax – frequently assess lung sounds
   b. Increased intrathoracic pressure with resultant hypotension

SETTING UP THE SYSTEM

1. Select proper mask size for patient per manufacturer's recommendations and availability
2. Ensure adequate oxygen supply
3. Connect oxygen source to device
4. Attach mask to device via tubing
5. Start with oxygen flow at the manufacturer’s recommended rate

PROCEDURE – Continuous Positive Airway Pressure (CPAP), *cont*

6. To adjust PEEP on the FLOWSAFE II disposable CPAP:



PROCEDURE:

1. Place patient on Sp02 and $EtC0_2$ monitoring
2. With oxygen flowing, place facemask on patient's face while explaining procedure and reassuring the patient. May place over the top of a cannula or Etc02 cannula
3. Adjust the head strap and mask accordingly (usually takes 2 people)
4. Check for air leaks
5. Set initial PEEP at 5 cm H2O, and gradually increase PEEP as needed to assist alveolar expansion and improve gas exchange. PEEP should not be increased to the point it causes C02 retention or the patient cannot overcome the resistance during exhalation
6. Do not exceed PEEP of 10 cm H2O
7. Assess patient for improvement as evidenced by the following:
    1. Increased Sp02
    2. Appropriate EtC02 values and waveforms
    3. Increased tidal volume
8. Observe for signs of deterioration or failure of response to CPAP:
    1. Decrease in level of consciousness
    2. Sustained or increased heart rate, respiratory rate or decreased blood pressure
    3. Sustained low or decreasing Sp02 readings
    4. Rising EtC02 levels or other EtC02 evidence of respiratory failure
    5. Diminished or no improvement in tidal volume
9. Remove face mask for suctioning and/or nitroglycerine administration
10 May use with med-neb attachment for bronchodilator administration
11. IF RESPIRATORY STATUS DETERIORATES, REMOVE DEVICE AND CONSIDER BVM VENTILATION AND/OR SGA per Airway Management- Suprglottic Airway Procedure Procedure
12. If unable to maintain Sp02 > 90%, a nasal cannula can be applied underneath the CPAP mask. Flow rate can be set as high as 15 LPM on the cannula. If still unable to maintain Sp02 > 90%, remove device and ventilate with a BVM

ADDITIONAL NOTES:

1. Have backup portable D cylinder tanks available on scene
2. To ensure continuous treatment, notify receiving facility enroute of CPAP use so necessary equipment is available at time of arrival

PROCEDURE – End Tidal $C0_2$ Monitoring

EMT (MPD approved specialized training required), AEMT*

Capnography ($EtC0_2$ monitoring) is a non-invasive method that measures $C0_2$ in exhaled gasses, thus providing an evaluation of ventilatory status. Capnography is an early indicator of the body's physiological response to hemodynamic changes and thereby serves as another assessment tool

- **Normal $EtC0_2$ values are 35 - 45 mmHg**

INDICATIONS:

1. Respiratory distress or failure (i.e. CHF, COPD, asthma)
2. Shock due to trauma (i.e. hypovolemic shock)
3. Shock due to medical emergencies (i.e. cardiogenic, anaphylaxis)
4. Cardiac arrest
5. Patients in which an SGA has been placed in order to confirm correct placement
6. Any other medical condition where protocol indicates

CONTRAINDICATIONS:

There are no contraindications to the use of capnography

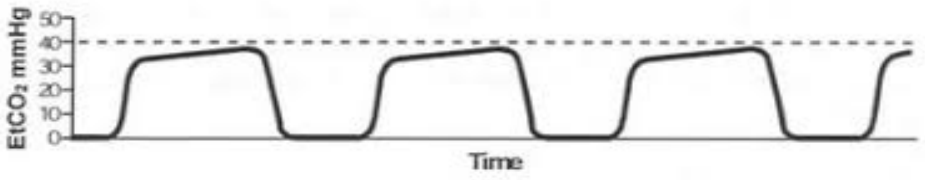
PROCEDURE:

Twist the orange connector on the filter line clockwise into the LifePack 15 cardiac monitor $EtC0_2$ port. The message "$C0_2$ Initializing" appears at the bottom of the screen. Turn the speed dial to channel 2 or 3 and choose $C0_2$ to monitor waveform capnography. The dashed line across the screen becomes a solid line while the LifePack 15 is calibrating. Allow this process to finalize while attaching the $EtC0_2$ sensor to either the proximal connector of the SGA or while applying an $EtC0_2$ Nasal/Oral Dual $C0_2$ Sampling Cannula. Hit the print button on the LifePack 15 as soon as data and waveforms appear in order to capture this data for documentation

FOR PATIENTS WITH SUPRAGLOTTIC AIRWAY IN PLACE

A. Management of patients with supraglottic airway in place

1. Manage airway according to protocol
2. Ensure appropriate normal capnographic waveform to confirm patency (see figure below)

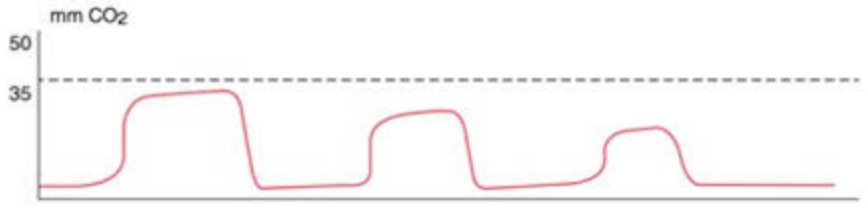


3. Failure to obtain numerical reading and/or waveform requires the following immediate action:
   i. Reposition the SGA
   ii. If proper placement of the SGA is not confirmed, immediately remove the airway and use another method of airway management (i.e. King LTS, I-gel or BVM with an OPA)

PROCEDURE – End Tidal CO_2 Monitoring, *cont*

B. Continuous assessment of patients with supraglottic airway in place

1. A sudden drop in $EtCO_2$ output and an obvious change in the waveform (see figure below) is indicative of airway displacement or a cuff leak (i.e. underinflated balloon, balloon rupture, incorrect size King LTD or I-gel)



2. Reassess airway and take corrective actions

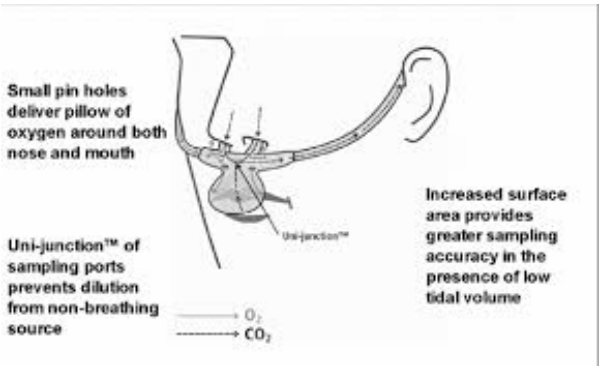
C. Cardiac Arrest

1. Manage patient according to Cardiac Arrest protocols
2. Apply waveform capnography device as soon as feasible
3. The trend of $EtCO_2$ values is the most important to guide a resuscitation
    a. Values that decline over time may indicate poor CPR quality (e.g. inadequate manual chest compressions, chest compression device has shifted)
4. Do NOT ventilate to $EtCO_2$ values during cardiac arrest, as hyperventilation or hypoventilation are harmful to the patient. During cardiac arrest, the $EtCO_2$ values are indicative of pulmonary blood flow (i.e. chest compression quality)
5. A sudden and sustained rise in $EtCO_2$ values may indicate ROSC
6. A gradual decline in $EtCO_2$ values may be the first sign of recurrent arrest in a patient who has achieved ROSC
7. Resuscitation efforts of cardiac arrest patients with ETC02 < 10 mmHg for > 20 minutes may be terminated

PROCEDURE – End Tidal $C0_2$ Monitoring, *cont*

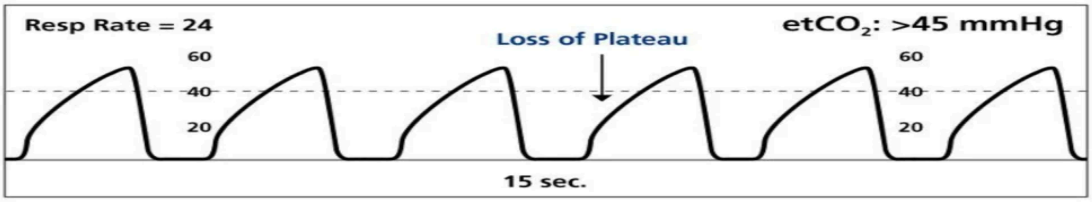
FOR PATIENTS WHO DO NOT HAVE SUPRAGLOTTIC AIRWAY IN PLACE

Place an $EtC0_2$ Nasal/Oral Cannula as you would a normal cannula. May be placed underneath NRB, BVM and CPAP in order to obtain $EtC0_2$ reading and respiratory rate. May be used with or without oxygen flowing. Be aware that inline EtC02 may produce lower EtC02 or altered EtC02 reading if EtC02 cannula is being used at the same time underneath the CPAP mask)



D. Respiratory Distress/Respiratory Failure

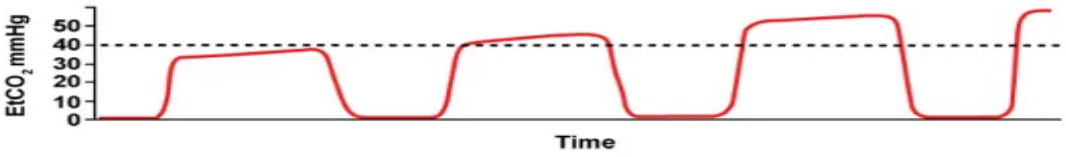
1. A "shark fin" waveform can be seen in Asthma and COPD (see figure below)



2. Consider use of capnography when initiating CPAP as it can assist with diagnosis (e.g. evaluating for "shark fin" waveform). It will aid in assessing response to treatment, as well as assisting in determining when a patient is decompensating

PROCEDURE – End Tidal CO_2 Monitoring, *cont*

3. Capnography should be used in patients who are experiencing respiratory depression or have received sedation medications (i.e. opiates, benzodiazepines, antipsychotics) to help detect hypoventilation (i.e. rise in $EtCO_2$ with progressively rising waveform). (See figure below)



E. Acidosis

1. Sepsis: In patients with concern for infection and ≥ 2 of the following: respiratory rate >20, heart rate > 100 BPM, and fever > 100.4° F OR < 96.8° F, an $EtCO_2 \leq$ 25 mmHg is suggestive of hypoperfusion and increased mortality. Treat per Sepsis protocol
2. DKA: In patients with elevated blood sugar, $EtCO_2$ < 25 may indicate DKA. Treat per Diabetic Emergencies Protocol

F. Hypoperfusion (low blood flow)

1. A low $EtCO_2$ can help determine cases of hypoperfusion (low blood flow) given the lack of blood flow to the lungs
2. In trauma patients, $EtCO_2$ < 25 mmHg may indicate presence of shock and is associated with the need for blood transfusion and increased mortality.

G. Traumatic Brain Injury

1. Maintain $EtCO_2$ output between 35 -40 mmHg. The following approximates the degree of ventilation:
   - >40 = Hypoventilation
   - 35-40 = Normal ventilation
   - 30-35 = Hyperventilation
   - < 30 = Aggressive hyperventilation

2. Patients with signs of increased intracranial pressure (unilateral dilated pupil, posturing, focal neurological findings) maintain $EtCO_2$ between 30 - 35 mmHg

PROCEDURE – Intraosseous (IO) Access

*EMT IV** (Washington State endorsement for EMT certification is required) /AEMT*

NOTE: 1 cm = 1 finger width

INDICATIONS:

A. Adult and pediatric patients who exhibit any of the following, consider IO placement over IV placement:

1. An altered mental status (GCS of 8 or less)
2. Respiratory failure, respiratory arrest
3. Cardiac arrest
4. Hemodynamic instability (shock)
5. Severe burns
6. Status epilepticus >10 minutes
7. Toxic conditions requiring immediate vascular access for the antidote

B. Critical patients after multiple unsuccessful IV attempts by 2 or more providers

CONTRAINDICATIONS:

A. Suspected or known fractures of the bone selected for IO insertion
B. Pre-existing conditions, such as prosthetic joint replacement, significant orthopedic procedures, tumors near site or peripheral vascular disease
C. Infection at the site of insertion
D. Previous IO attempt in the same bone within 48 hours
E. Inability to locate landmarks

PREFERRED SITES: *(* see references)*

* INFANTS & NEONATES: Distal femur, proximal tibia, distal tibia
** CHILDREN: Distal femur, proximal tibia, distal tibia
* ADULTS: Distal femur, Humeral head, proximal tibia

CHOOSE EQUIPMENT:

A. Determine patient's weight
B. Assemble all necessary equipment:
1. The 15mm Pink needle can be utilized for patients between 3-39 kg
2. The 25mm Blue needle can be utilized for patients who weigh over 39 kg
3. The 45mm Yellow needle can be utilized for adult insertions (larger patients) where the Blue needle is inadequate. Yellow needle must be used for all distal femur and humeral IO's in adults. The 25 mm Blue needle is to be used for pediatric distal femur and humeral IO's if at least one black line (5 mm) is visible outside the skin when the needle tip is against the bone

PROCEDURE – Intraosseous (IO) Access, *cont*

POSITION PATIENT & LOCATE THE SITE:

HUMERAL HEAD

- Caution should be exercised with the proximal humeral site in patients that may become awake/combative as dislodgement may occur
- Sites near total joint replacements should not be first choice
- Abduction of the humerus should be avoided and securing the extremity should be routine
- The yellow 45mm EZ-IO™ is the only needle approved for humeral IO's in adults

OPTION #1
Place the patient's hand over their abdomen, covering the umbilicus with arm tight to the body, this position rotates the humerus towards the body and moves the biceps tendon away from the insertion site

OPTION #2
Place the patient's arm alongside the body. Pronate the wrist so that the thumb is down and out, thus internally rotating the humerus

A. SITE
   1. Place the ulnar aspect of your hand vertically over the axilla
   2. Place the ulnar aspect of your other hand along the midline of the upper arm laterally
   3. Place your thumbs together over the arm (this identifies vertical line of insertion of the proximal humerus)

   4. Palpate deeply up the humerus to the surgical neck. It will feel like a golf ball on a tee - the spot where the "ball" meets the "tee" is the surgical neck
   5. The insertion site is 1 - 2 cm above the surgical neck on the most prominent aspect (Pediatrics 1 cm above the surgical neck)

B. Clean insertion site with iodine swab and stabilize arm
C. Point the needle at a 45-degree angle to the anterior plane and pointed posteromedially

PROCEDURE – Intraosseous (IO) Access, *cont*

PROXIMAL TIBIA

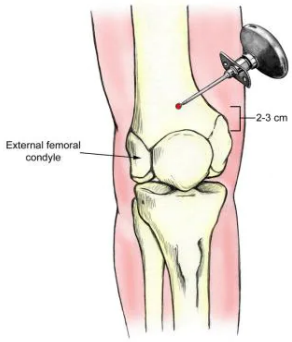
A. Locate the insertion site 1 cm to 2 cm inferior and medial to the tibial tuberosity in the flat portion of the tibia. (Pediatrics 1 cm inferior and 1 cm medial to the tibial tuberosity)
B. Clean insertion site with iodine swab and stabilize leg
C. Point the needle at a 90-degree angle

DISTAL TIBIA

A. Locate the insertion site 2 cm proximal to the medial malleolus on the flat portion of the tibia
B. Clean insertion site with iodine swab and stabilize leg
C. Point the needle at a 90-degree angle

DISTAL FEMUR

A. With leg straightened and exposed, 1 - 2 cm proximal and midline to the patella
B. Clean insertion site with iodine swab and stabilize leg
C. Point the needle at a 90-degree angle and posteriorly



PROCEDURE – Intraosseous (IO) Access, *cont*

PROCEDURE:

D. Gently press needle through skin until the tip touches the bone. The (5 mm) black mark must be visible above the skin prior to insertion to ensure needle will penetrate far enough into the bone
E. Squeeze the trigger and apply gentle steady pressure to advance the needle into the bone
F. Immediately release the trigger when loss of resistance is felt or when the flange touches the skin
G. Stabilize hub and remove driver and stylet
H Place stylet in an appropriate sharps container
I. Place the stabilizer dressing over the catheter hub
J. Connect the tubing, primed with saline, to the IO hub. Attempt to aspirate blood and marrow, then flush the catheter with 5 - 10 ml of NS. (Flush pediatrics with 2 - 5 ml NS) It may require several attempts
K. For optimal flow infuse with pressure

* National Institutes of Health
"Intraosseous Vascular Access" Peter Dornhofer; Jesse Z. Kellar. June 5, 2023
https://www.ncbi.nlm.nih.gov/books/NBK554373/
**https://emedicine.medscape.com/article/940993-overview#showall

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PROCEDURE - Pelvic Immobilization

EMR/EMT/AEMT

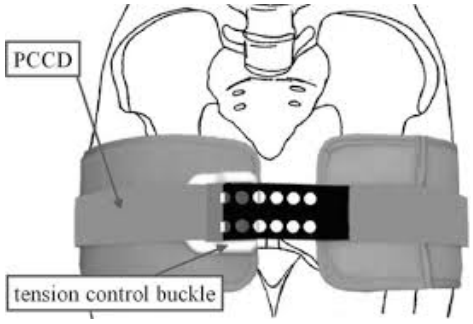
PURPOSE:
The initial reduction of an unstable pelvic fracture (to lessen ongoing internal bleeding and to ease the pain by splinting the fracture) using either a flat bed sheet or an approved device such as Sam Pelvic Sling

INDICATIONS:

1. To be applied in trauma patients who have appropriate mechanism(s) of injury and who present with pelvic instability

PELVIC SLING PROCEDURE (SAM Pelvic Sling):

1. Remove objects from patient's pocket or pelvic area. Place SAM Pelvic Sling gray side up beneath patient at level of trochanters (hips)
2. Place BLACK STRAP through buckle and pull completely through
3. Hold ORANGE STRAP and pull BLACK STRAP in opposite direction until you hear and feel the buckle click. Maintain tension and immediately press BLACK STRAP onto surface of SAM Pelvic Sling to secure



PELVIC WRAP PROCEDURE (sheet):

1. Fold the sheet smoothly lengthwise to about 9 inches wide (do not roll) and apply underneath the pelvis, centered on the greater trochanters.
2. Tighten the sheet around the pelvis and secure using a knot or clamps, if available

NOTES & PRECAUTIONS:

A. Always re-check the position of the sheet (in terms of up and down). You should still be able to feel the anterior superior iliac spines after placement. If not, the sheet may be too high on the pelvis and must be repositioned
B. If the pelvis is unstable on initial exam, do not repeat the exam
C. Blood loss in a pelvic fracture can be significant. Monitor closely and treat per Shock Protocol
D. Consider placing prior to extrication from a vehicle if feasible
E. **The pelvic sling/wrap is contraindicated for suspected isolated hip or lateral pelvic fractures**

PROCEDURE - Physical Restraints

EMR/EMT/AEMT

INDICATION:

1. Violent/aggressive, agitated or excited delirium patients whose behavior requires immediate physical restraint for provider safety and to prevent patient from injuring themselves or others
2. Restraint of mildly agitated/confused patients who are hindering their medical care

CONTRAINDICATION:

Traumatic injury to the extremity requiring a restraint device

PRECAUTIONS:

- If the scene becomes unsecure back out. Do not endanger yourself or crewmembers
- Consider ALS for chemical restraint if patient is exhibiting signs of excited delirium
- Ensure there is adequate manpower available and that LE is on scene prior to attempting restraint
- Use the minimum level of physical restraints required to accomplish patient care and ensure safe transport

PROCEDURE:

A. FULL (4 point) RESTRAINT:
   1. Coordinate efforts with multiple responders to improve overall safety and efficiency
   2. Deploy restraints as quickly as possible
   3. Place patient face up on backboard or gurney, NOT PRONE, not between devices
      a. Backboard should only be used briefly to extract patient to gurney
   4. Continuously monitor patient's airway and respiratory status
   5. Secure all extremities to backboard or gurney frame using commercially made padded restraints. Try to secure lower extremities first using restraints around both ankles. Next, restrain the patient's arms, one at his/her side, the other above his/her head
   6. Patients must not be restrained in a position with hands or feet tied or cuffed behind their back or restrained with techniques that compromise the airway or constrict the chest
   7. If necessary, utilize cervical spine precautions (tape, blankets, etc) to control violent head or body movements. A spit sock/hood or surgical mask can be placed on patient that is spitting or biting
   8. Do not tighten chest straps to the point that they restrict breathing
   9. If needed, a sheet could be wrapped around patient's chest, under arm pits and tied around the back of the gurney. Consider spider straps for additional restraint on the gurney, as well.
   10. Once applied, physical restraints should be left in place unless removal is necessary for patient treatment

PROCEDURE - Physical Restraints, *cont*

ADDITIONAL PROCEDURES:

1. Kravats or Kerlix can be used to secure limbs if soft restraints are not available. They also work well for mildly agitated/confused patients for whom providing care is difficult

TRANSPORT CONSIDERATIONS:

A. Restrained extremities should be evaluated for pulse quality, capillary refill, color, nerve and motor function every 15 minutes
B. In situations where the patient is under arrest and handcuffs are applied by Law Enforcement:
    a. The patient will not be cuffed to the stretcher
    b. An Officer shall accompany the patient in the ambulance if the handcuffs remain applied
    c. An Officer may elect to follow the ambulance in the patrol car if the patient has been restrained with restraints other than handcuffs
C. Advise receiving facility that patient is in restraints

PROCEDURE – Taser Dart Removal

EMR / EMT / AEMT

DEFINITION:

A. A non-lethal neuromuscular interruption weapon deployed by law enforcement officers designed to create temporary motor skill dysfunction to a violent, combative subject
   1. Each electric discharge can last a total of 5 seconds or more and is controlled by the officer who fires the device

INDICATION:

A. Patients who have been tased by law enforcement. Unlike other forms of penetrating foreign bodies, taser barbed darts are approximately ¼ " long and safe to be removed by EMS personnel when requested by law enforcement

CONTRAINDICATIONS TO FIELD REMOVAL:

A. Patients who are NOT under control
B. 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

PROCEDURE:

A. Consider scene safety to protect yourself and other rescuers from a potentially violent patient when a TASER has been used. Only to be done upon request by law enforcement officers:
   1. The patient must be in the custody of law enforcement and adequately restrained
   2. Consider eye protection, mask, and gown if blood is present
   3. Assess patient to determine if there are any other medical problems or traumatic injuries present
   4. Ensure the cartridge has been removed from the weapon or wires are cut
   5. Push firmly on the body part in which the barbed dart is embedded and simultaneously pull the dart straight out with the other hand
   6. Check probe to make sure entire probe was removed and repeat procedure with remaining probes
   7. Darts are a sharps hazard – treat them as contaminated needles and dispose in a sharps container or taser cartridge. Follow law enforcement guidance as well, as the darts may have to be used as evidence
   8. Clean and dress puncture area as needed

SPECIAL CONSIDERATIONS:

A. Transport patients demonstrating any of the following:
   1. Evidence of severe agitation. Request ALS for management/treatment
   2. Persistent, abnormal vital signs, elevated temperature, hallucinations
   3. Abnormal subjective complaints, including chest pain, shortness of breath, nausea or headaches
B. Burn Hazard -- When a Taser is used in the presence of flammable liquid or vapor (e.g., pepper spray), there is a burn hazard. Electrical arcing from imperfect (but effective) dart contact can ignite the propellant
C. All actions taken include preservation of evidence and coordination with law enforcement
D. If patient needs to be transported to the hospital, follow the Physical Restraint Procedure

PROCEDURE – Thrombolytic Checklist

PREHOSPITAL THROMBOLYTIC CHECKLIST		
YES	**NO**	
		Hemorrhagic stroke (other type of CVA within 1 year)
		Intracranial pathology (tumor, recent head trauma, etc)
		Active internal bleeding within 10 days (except menses)
		Suspected aortic dissection
		Uncontrolled hypertension (BP > 180/110)
		Current use of anticoagulants (not including aspirin)
		Recent trauma (2-4 weeks)
		Prolonged CPR (> 10 minutes)
		Major surgery (< 3 weeks prior)
		Recent (2 -4 weeks) internal bleeding
		Known allergy to thrombolytic and/or prior use
		Terminal illness
		Recent or current pregnancy

PROCEDURE – Traction Splint

EMR(MPD approved specialized training required)/ EMT / AEMT*

PURPOSE:
Temporary stabilization, pain reduction and possibly reduction of femoral shaft fractures. Traction splints are designed to apply traction to the lower portion of the leg, distal to the fracture, usually by pulling the ankle away from the stabilized pelvis

INDICATIONS:
Mid shaft femoral shaft fractures

CONTRAINDICATIONS:
1. Pelvic Fracture
2. Fracture(s) of the ankle, foot and/or lower leg
3. Knee injury

PROCEDURE:
1. Follow the instructions and recommendations for the specific product being used
2. Check for distal neurovascular status (circulation, motor, sensory)
3. If no distal pulses are present, consider reducing the fracture prior to placement of splint
4. Apply manual traction
5. Prepare/adjust splint to the proper length
6. Stabilize the device against the pelvis and the ankle as directed by the product instructions, including the proper sequence of these steps
7. Lock the ankle attachment
8. Position any leg support straps as directed (i.e. 2 above the knee and 2 below)
9. Apply longitudinal traction on the ankle to straighten and lengthen the shortened leg to the length of the contralateral leg. Use about 10% of the patient's body weight or up to about 15 lbs OR until the patient expresses relief of pain
10. Lock the device in place as directed
11. Check for distal neurovascular status (circulation, motor, sensory)

PROCEDURE – Vagal Maneuvers

EMT/ AEMT* (Medical Director Protocol - MPD approved specialized training required)*

WHAT ARE VAGAL MANEUVERS?

Vagal maneuvers are a first-line treatment for supraventricular tachycardia (SVT) (fast heart rate) because they're a low-risk, low-cost way to slow down a heart rate that's too fast. They can have a 20% to 40% success rate for getting certain fast heart rhythms (more than 100 beats a minute) back to normal rhythms

CONTRAINDICATION:

Do not perform vagal maneuvers on unstable patients with heart rates over 150, such as patients with:

- SBP < 90
- Chest pain
- Shortness of breath
- Altered mentation

PROCEDURE #1
VALSALVA MANEUVER

Have patient take a deep breath and act like they're exhaling but with nose and mouth closed for 10 to 30 seconds. It should feel like trying to breathe air out into a blocked straw

PROCEDURE #2
MODIFIED VALSALVA MANEUVER

Have patient sit on the gurney, or similar type of chair, in which upper body can quickly be dropped backwards. Have patient hold their breath during this procedure. As soon as the back of the chair or bed is lowered, quickly bring the patient's knees to his/her chest or put their legs in the air. Keep legs in that position for 30 to 45 seconds after they stop holding their breath

PROCEDURE #3
BEARING DOWN

1. Have patient take a deep breath and bear down for 10 - 30 seconds, as if they are taking a bowel movement, **OR**
2. Have patient blow a 10 cc syringe plunger out the end of the syringe body
3. Have pediatric patients blow on their thumb without letting any air escape

PROCEDURE – Ventricular Assist Device (VAD) Troubleshooting

EMT/ AEMT* (MPD approved specialized training required)*

LVAD's are designed to assist the pumping function of the patient's left ventricle. The Heartware HVAD®, Heartmate II®, and the Heartmate III® devices attach to the apex of the left ventricle (pump inflow) and propel blood to the ascending aorta (pump outflow). All devices utilize an external wearable system that includes a small controller connected to the internal pump by an external driveline and is powered by two batteries. Devices may also be plugged in to 110 or 12V power, depending on the device

RVADs and BIVAD's exist as well (for the right ventricle and both right and left ventricles)

VAD's constantly flow blood, therefore these patient's do not have a palpable pulse or easily obtained blood pressure

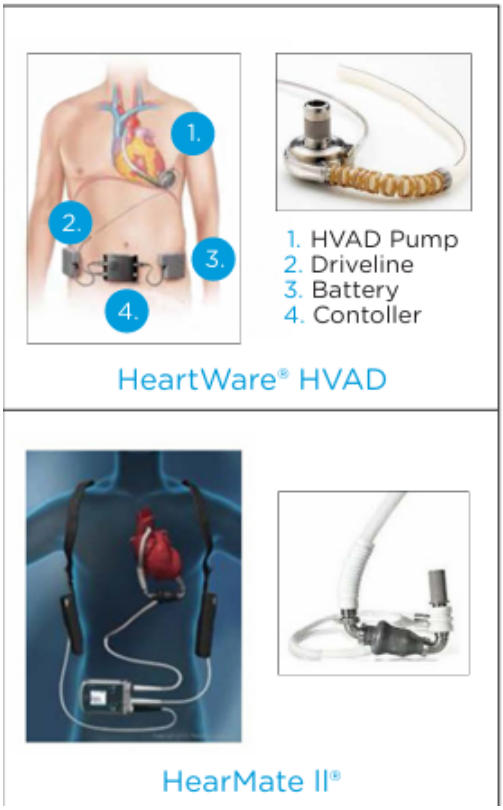
VAD patients have a coordinator who is on their physician's team. A VAD coordinator's phone number will be with the patient at all times, most likely on the controller. If a VAD patient has called 911, they most likely called their coordinator first

A. Treat patients who are experiencing medical problems or trauma related injuries per appropriate protocol

B. Contact incoming ALS or OLMC prior to administering medications related to cardiovascular emergencies

C. If patient presents with signs of cardiac compromise, such as pallor, hypoperfusion or altered mental status:

    1. Manage airway as indicated
    2. Assess for possible pump malfunction
        a. Listen for alarms
        b. Auscultate for the pump's hum



IF THE LVAD IS MALFUNCTIONING:

- 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 the system controller
- Change VAD batteries (one at a time), and/or change system controller, if indicated
- Plug in to a power source, if needed and possible

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PROCEDURE – Left Ventricular Assist Device (LVAD), *cont*

IF PATIENT IS IN CARDIAC ARREST

- **o** 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)
- **o** It is highly likely that CPR will break or dislodge the VAD
- **o** CPR may be initiated ONLY when:
  - You have confirmed the pump has stopped working
  - Troubleshooting efforts to restart it have failed
  - The patient is unresponsive and has no detectable signs of life
  - Normal AHA guidelines should be followed if above 3 criteria are met

GENERAL CONSIDERATIONS:

- You do not need to disconnect the controller or batteries to:
  - **o** Defibrillate or cardiovert (ALS)
  - **o** 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
- EtC02 is most accurate tool for evaluating perfusion
- Flow through 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:
  - **o** Infection
  - **o** Stroke/Transient ischemic attack (TIA)
  - **o** Bleeding
  - **o** Arrhythmias
  - **o** Cardiac tamponade

- **ALS** - VAD patients are heavily anticoagulated. Do not administer heparin without VAD coordinator's approval

MEDICATION - Acetaminophen (Tylenol)

EMT*/AEMT* *(MPD approved specialized training required*)

Action	Antipyretic Analgesic Blocks pain impulses Inhibits prostaglandin in CNS to reduce fever
Onset of Action	PO and PR: 10-30 minutes
Duration of Action	PO and PR: 3-4 hours
Indication	Fever > 38° C (100.4°F) Mild pain relief
Contraindication	Hypersensitivity Severe liver disease
Use with Caution/ Precautions	Anemia Liver disease Renal disease
EMT/AEMT Dosage	
Adult:	650 - 975 mg PO
Pediatric:	15 mg/kg PO or 20 mg/kg PR OR OTC Liquid/chewables/powder packets
Adverse reaction	Hypoglycemia Allergic reaction
Reference in protocols	Pain Management Poisoning and Overdose Pediatric - Fever Pediatric - Seizures Pediatric - Croup

MEDICATION – Activated Charcoal

EMT/AEMT

Classification	Chemical absorbent
Action	Specially prepared charcoal with a surface that will a absorb and bind toxins
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 OLMC
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

Adverse Reaction	Vomiting Aspiration
Reference in Protocols	Poisoning and Overdose

MEDICATION - Albuterol (Proventil/Ventolin)

EMR*/EMT*/AEMT *(*MPD approved specialized training required)*

Classification	Bronchodilator, beta-2 selective, sympathetic agonist
Action	Relaxes bronchial smooth muscle by acting on beta adrenergic receptors
Onset of Action	5-15 minutes
Duration of Action	3-6 hours
Indication	Wheezing, allergic reactions, anaphylaxis, asthma, COPD Crush injury (ALS), Hyperkalemia (ALS)
Contraindication	Hypersensitivity Tachycardia (relative)
Use with Caution/Precautions	Cardiovascular disease Elderly patients generally require a lower dose Beta blockers may blunt effect

EMR*

Dosage and Administration

Adult:	EMR's may only assist with pt's physician prescribed inhaler 1-2 puffs MDI (with or without spacer)
Pediatric	Same

EMT*/AEMT

Dosage and Administration

Adult:	2.5 mg in 3cc NS via nebulizer
Pediatric:	Same

Adverse Reaction	Tremor, anxiety, Dizziness, Headache, Tachycardia, Palpitations, Hypertension, Nausea and vomiting, Ventricular arrhythmia
Reference in Protocols	Anaphylaxi/Allergic Reaction Respiratory Emergencies - Asthma Respiratory Emergencies - COPD

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MEDICATION - Aspirin (Acetylsalicylic Acid)

EMR*/EMT/AEMT *(*MPD approved specialized training required)*

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 (allergy) Active Gastric bleeding Aspirin induced asthma Pediatric patients
Use with	Gastric irritation
Caution/precautions	Should be used during pregnancy only if clearly indicated Recent Surgeries

EMR*/EMT/AEMT
Dosage and Administration

Adult:	324 mg chewable
Pediatric:	Contraindicated

Reference in Protocols — Chest pain/ACS

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MEDICATION - Dextrose 10% (D10W) & Dextrose 50% (D50W)

EMT IV*/AEMT* *(*MPD approved specialized training required)*

Classification	Simple carbohydrate
Action	Provides glucose required for metabolic needs
Onset of Action	Immediate
Duration of Action	Varies
Indication	Suspected hypoglycemia Coma of unknown origin Crush Injury Syndrome (ALS) Hyperkalemia (ALS)
Contraindication	None
Use with Caution/ Precautions	Extravasation causes tissue necrosis
EMT IV*/AEMT* Dosage and Administration	EMT IV limited to D10
Adult	250 mL of D10 (25 gm) IV/IO Titrate and/or repeat until patient at baseline and blood glucose remains > 80
Pediatric	Infants < 10 kg (birth to 1 yr) with CBG < 40 and children 10 kg - 35 kg with CBG <60, give 5 mL/kg (0.5g/kg) Titrate and/or repeat until patient at baseline
AEMT Dosage and Administration	D50, alternatively
Adult	50 mL of D50 (25 gm) IV/IO
Pediatric	Child D50% - 0.5 gm/kg (1 mL/kg) Infant D25% - 0.5 gm/kg (1 mL/kg)) Neonate D10% - 0.5 gm/kg (1 ml/kg)
Reference in Protocols	Diabetic Emergencies Altered Mental Status

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MEDICATION - Diphenhydramine (Benadryl)

EMT*/AEMT* *(*MPD approved specialized training required)*

Classification	Antihistamine, sedative
Action	Inhibits the release of histamine, thereby reducing bronchoconstriction and vasodilation
Onset of Action	IV/IO: Immediate IM: 15-30 minutes PO: 30 minutes
Duration of Action	IV/IO and IM: 6-8 hours PO: 4 - 6 hours
Indication	Anaphylaxis, use as an adjunct to epinephrine Uncomplicated allergic conditions Dystonic or extrapyramidal reactions (ALS)
Contraindications	Known allergy Pregnant or lactating females
Precautions/side effects	
May induce	hypotension headache sedation drowsiness blurred vision
EMT*	
Dosage and Administration	
Adult	25-50 mg PO
Pediatric	1 mg/kg PO, max dose 50 mg
AEMT*	
Dosage and Administration	
Adult	25-50 mg IV/IO/PO
Pediatric	1 mg/kg IV/IO/PO, max dose 50 mg
Reference in Protocols	Anaphylaxis/Allergy

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MEDICATION - DuoNeb (Ipratropium-albuterol)

EMT*/AEMT *(*MPD approved specialized training required)*

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 Tachycardia (relative)
Use with Caution/Precautions		Cardiovascular disease Elderly patients generally require a lower dose Beta blockers may blunt effect
EMT*/AEMT Dosage		
Adult/Ped-		3ml vial of DuoNeb nebulized, do not repeat
Adverse Reaction		Palpitations, tachycardia, arrhythmia, nervousness, headache, tremor, dizziness, hypertension, nausea
Reference in Protocols		Anaphylaxi/Allergic Reaction Respiratory Emergencies - Asthma Respiratory Emergencies - COPD

MEDICATION - Epinephrine (Adrenaline)

EMR/EMT/AEMT*
(MPD approved specialized training required for AEMT for EPI 1:10,000 in cardiac arrest)

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
IM: Variable

Duration of Action
IV/IO: 1-4 hours
IM: 6 hours

Indication
Cardiac arrest
Anaphylaxis/Allergic reactions
Status asthmaticus (ALS)

Contraindication
Chest pain accompanied by ectopic beats or tachycardia

EMR
Dosage and Administration
Anaphylaxis Adult EPI-PEN 0.3 mg IM
Pediatric- EpiPen Jr 0.15mg IM

EMT /AEMT
Dosage and Administration
Anaphylaxis Adult: 0.3 mg of 1:1,000 IM
Pediatric 0.01 mg/kg of 1:1,000 IM, max dose 0.3 mg

AEMT *
Dosage and Administration
Cardiac Arrest Adult 1 mg (10 mL of 1:10,000) IV/IO every 3-5 min
Pediatric 0.01 mg/kg 1:10,000 IV/IO (max dose 1 mg) every 3-5 minutes

Reference in Protocols
Anaphylaxis/Allergy
Cardiac Arrest- Adult
Cardiac Arrest- Pediatric

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MEDICATION – Glucagon

EMT*/AEMT* *(*MPD approved specialized training required)*

Action	Triggers glycogenolysis which causes the liver glycogen to convert to glucose. Also produces Also produces relaxation of smooth muscle of stomach, duodenum, small bowel and colon
Onset of Action	IM: 20 minutes
Duration of Action	IM: 60 - 90 minutes
Indication	Hypoglycemia Beta blocker overdose (ALS) Calcium channel overdose (ALS)
Contraindications	
Precautions/side effects May induce	Occasional nausea/vomiting

EMT*/AEMT*

Dosage and Administration

Adult	1 mg IM
Pediatric	0.03 mg/kg IM, max dose 1 mg

Reference in Protocols

Altered Mental Status
Diabetic Emergencies

MEDICATION - Ibuprofen (Advil, Motrin)

EMT*/AEMT* *(*MPD approved specialized training required)*

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*/AEMT*

Dosage	Adult-	600 mg PO
	Pediatric	Pediatric 10 mg/kg if old enough to swallow capsules Follow manufacturer's guidelines for OTC liquid/chewables
Adverse Reaction		Nausea Vomiting Rash
Reference in Protocols		Pain Management Pediatrics - Fever Pediatrics- Seizure Pediatrics - Croup

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MEDICATION – Ipratropium Bromide (Atrovent)

EMT*/AEMT *(*MPD approved specialized training required)*

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/ Precautions	Known hypersensitivity Should be used with caution in patients with narrow narrow-angle glaucoma

EMT*/ AEMT

Dosage and Administration

Adult	0.5 mg via nebulizer q 6-8 hours
Pediatric	2 - 12 yrs - 0.25 mg/1.25 ml (half dose) < 2 yrs contact OLMC
Adverse Reaction	Anxiety Nausea/Vomiting Palpitations
Reference in Protocols	Anaphylaxi/Allergic Reaction Respiratory Emergencies - Asthma Respiratory Emergencies - COPD

MEDICATION - Naloxone (Narcan)

EMR/EMT/AEMT

Classification	Narcotic antagonist
Action	- Binds up opiate receptor sites, displaces narcotic molecules - Reverses respiratory depression secondary to narcotic overdose
Onset of Action	IM 2-5 minutes IV/IO 1-2 minutes
Duration of Action	Approximately 45 minutes
Indication	- Respiratory depression secondary to narcotics - Treatment of coma of unknown origin with apnea/hypoventilation or in neonatal resuscitation
Contraindication	Known hypersensitivity
Use with Caution/ Precautions	May precipitate withdrawal symptomsIn patients known to be physically dependent on narcotics - Be prepared to restrain potentially violent patients

MEDICATION - Naloxone (Narcan)

EMR/EMT/AEMT

EMR/EMT

Dosage and Administration

Adult	1 mg IN; dose may be repeated every 3-5 minutes, up to 8 mg or until patient begins to maintain airway and breathe adequately
Pediatric	a) Child 8 years of age to adult: same as adult b) Children between 28 days to 8 years of age: administer ½ mg IN per nare; if no arousal occurs after 3 - 5 minutes, deliver ½ mg in the other nare so that 1 mg of medication is administered c) May repeat entire process with increases of 1 mg increments to each nare d) Contact OLMC for additional doses over 4 mg total e) Child less than 28 days: Not indicated

AEMT

Dosage and Administration

Adult	0.4-2.0 mg IV/IO, may repeat every 2-3 minutes to a max dose of 8 mg
Pediatric	Pediatric < 40 kg 0.1 mg/kg
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	Altered Mental Status Poisoning and Overdose Respiratory Distress - Depression or Arrest

MEDICATION – Nitroglycerin

EMT/AEMT

Classification	Vasodilator
Action	Reduced resistance to blood flow Decreased blood pressure Decreased workload on heart Dilates coronary arteries
Onset of Action	1-3 minutes
Duration of Action	30-60 minutes
Indication	Chest pain
Contraindication	Known hypersensitivity Hypotension Use of erectile dysfunction drugs or pulmonary hypertension drugs, such as sildenafil or tadalafil, within 48 hours
Use with Caution/ Precautions	May cause headache

EMT

Dosage and Administration	Assist with patient's own prescribed nitro 0.4 mg SL tablet or L/SL spray; may be given 3x every 5 minutes until chest pain free as long as BP remains > 100/Systolic

AEMT

Dosage and Administration	0.4 mg SL tablet or L/SL spray; may be given 3x every 5 minutes until chest pain free as long as BP remains > 100/Systolic
Adverse Reaction	Hypotension, throbbing headache, skin flushing
Reference in Protocols	Chest pain/Acute Coronary Syndrome

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MEDICATION - Ondansetron (Zofran)

EMT*/AEMT *(*MPD approved specialized training required)*

Classification		Antiemetic
Action		Selective serotonin receptor agonist. It's exact action is unknown
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
Use with Caution/Precautions		Patients with impaired liver function
EMT*		
Dosage		
	Adult-	4-8 mg PO
	Pediatric-	0.1 mg/kg PO (maximum dose of 4 mg) Contact OLMC for Peds < 2 y/o
AEMT		
Dosage	Adult-	4-8 mg IM/slow IV push
	Pediatric	> 2 y/o 0.1 mg/kg max single dose 4 mg, max total 8 mg Contact OLMC for pediatrics < 2 y/o
Adverse Reaction		Headache, constipation, diarrhea, QT Prolongation, Torsades De Pointes
Reference in Protocols		Nausea/Vomiting Pediatrics - Dysrhythmia - Bradycardia Pediatrics - Dysrhythmia - Tachycardia

MEDICATION - Oxymetazoline (Afrin)

EMT*/AEMT* *(*MPD approved specialized training required)*

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	Known hypersensitivity
Use with Caution/Precautions	Blood pressure greater than 110 diastolic Sign and symptoms of MI/chest pain

EMT*/AEMT*

Dosage	Adult/Pediatric- 2-3 sprays each nostril IN
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	• Epistaxis

WASHINGTON STATE DESTINATION TRIAGE TOOLS
Prehospital Trauma Triage Destination Procedure (wa.gov)

PREHOSPITAL TRAUMA TRIAGE DESTINATION PROCEDURE

FIGURE 1: TRAUMA TRIAGE CRITERIA & CATEGORIES

High Risk for Serious Injury

Red Criteria / High Risk for Serious Injury Assess Injury Patterns, Mental Status & Vital Signs Assessment of injury patterns, mental status, and vital signs meeting red criteria should require alerting and rapidly transporting to the closest level I or II trauma service within 30 minutes transport time. If the transport time is greater than 30 minutes, transfer should be to the nearest most appropriate trauma service. If unable to maintain a patent airway, consider rendezvous with an Advanced Life Support (ALS) unit or transporting to the nearest facility capable of definitive airway management. The presence of specific injury patterns with normal vital signs, lack of pain, or normal levels of consciousness; requires calling medical control and alerting the receiving hospital. Pediatric patients meeting the red criteria should be preferentially triaged to designated pediatric trauma service.

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 to proximal wrist or ankle * Active bleeding requiring a tourniquet or wound packing with continuous pressure	All patient * Unable to follow commands (Motor GCS < 6) * RR <10 or > 29 breaths/min * Respiratory distress or need for respiratory support * Room air pulse oximetry < 90 % Age 0 - 9 years * SBP < 70 mmHg + (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

WASHINGTON STATE DEPARTMENT OF HEALTH Prehospital Trauma Triage

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FIGURE 1: TRAUMA TRIAGE CRITERIA & CATEGORIES, cont

Moderate Risk for Serious Injury

An assessment of the mechanism of injury meeting yellow criteria should require alerting and rapidly transporting to the closest appropriate trauma service within 30 minutes (air or ground). The destination trauma service need not be the highest-level trauma service. Risk factors coupled with "provider judgment" are reasons for the provider to contact Medical Control and discuss appropriate destinations for these patients. In some cases, the decision may be to transport to the nearest trauma service or a resource hospital. Patients with combined burns and trauma should be preferentially transported to a trauma center with burn care capability. Pediatric patients should be preferentially transported to a designated pediatric trauma service. PCPs and local COPs provide additional details about the appropriate hospital destination. They are intended to further define how the system operates. The Prehospital Trauma Triage Destination Procedure and PCPs work in "hand in glove" fashion to address trauma patient care needs.

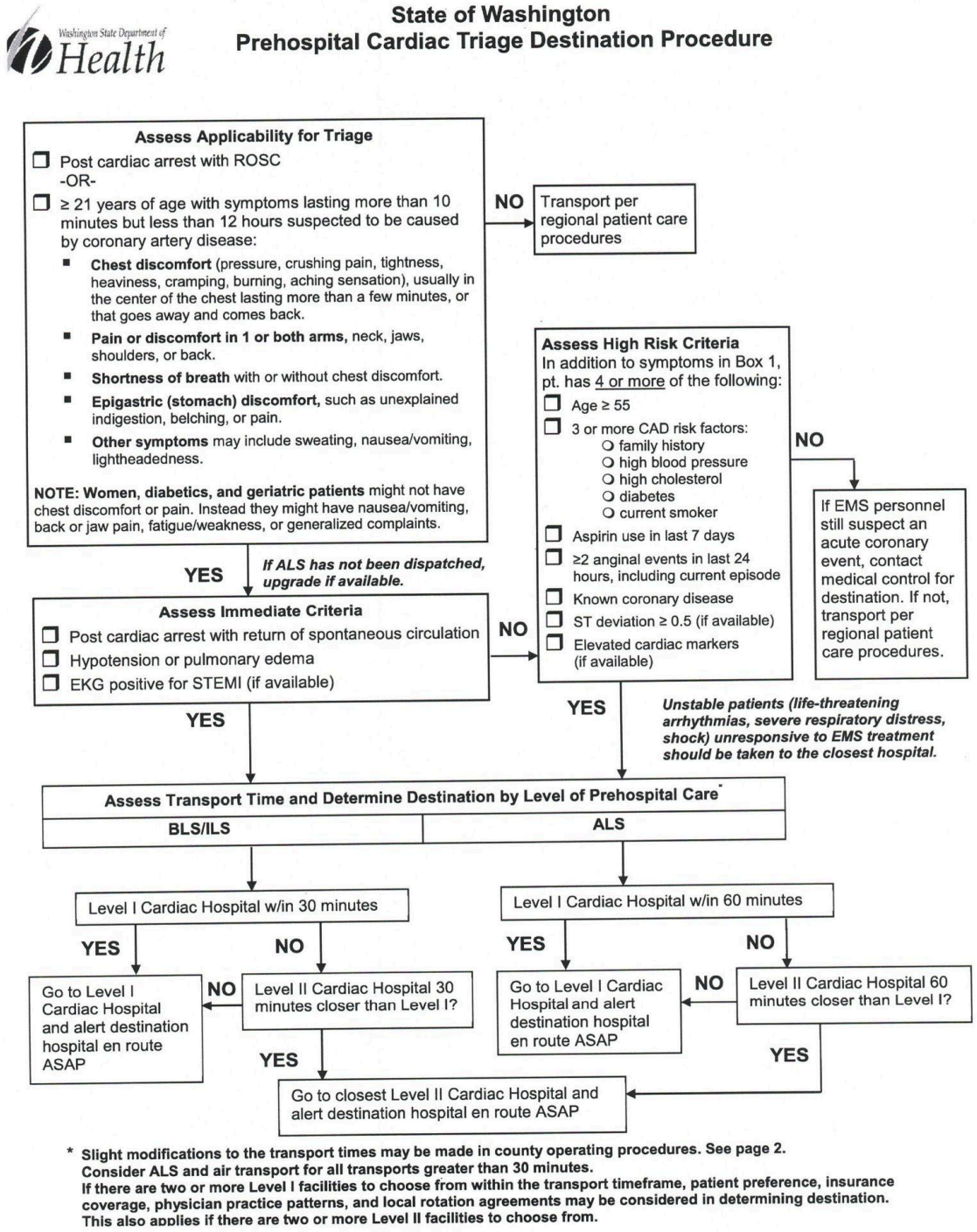
Mechanism of Injury	EMS Judgement

* 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 entrapment
- Death in passenger compartment
- Child (age 0 - 9 yrs) unrestrained or in unsecured child safety seat
- vehicle telemetry data consistent with severe injury
 	
* Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc)
 	
*Pedestrian/bicycle rider thrown, run over, or with significant impact
 	
*Fall from height > 10 feet (all ages)
	Consider risk factors, including:
	
	*Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact
	
	* Anticoagulant use
	* Suspicion of child abuse
	* Special, high-resource healthcare needs
	* Pregnancy > 20 weeks
	* Burns in conjunction with trauma
	* Children should be triaged preferentially to pediatric capable centers
	
	If concerned, take to a Trauma Center

Patients meeting 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

https://doh.wa.gov/sites/default/files/legacy/Documents/Pubs//346050.pdf



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PREHOSPITAL STROKE TRIAGE DESTINATION PROCEDURE

https://doh.wa.gov/sites/default/files/legacy/Documents/Pubs//346049.pdf

Health

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)

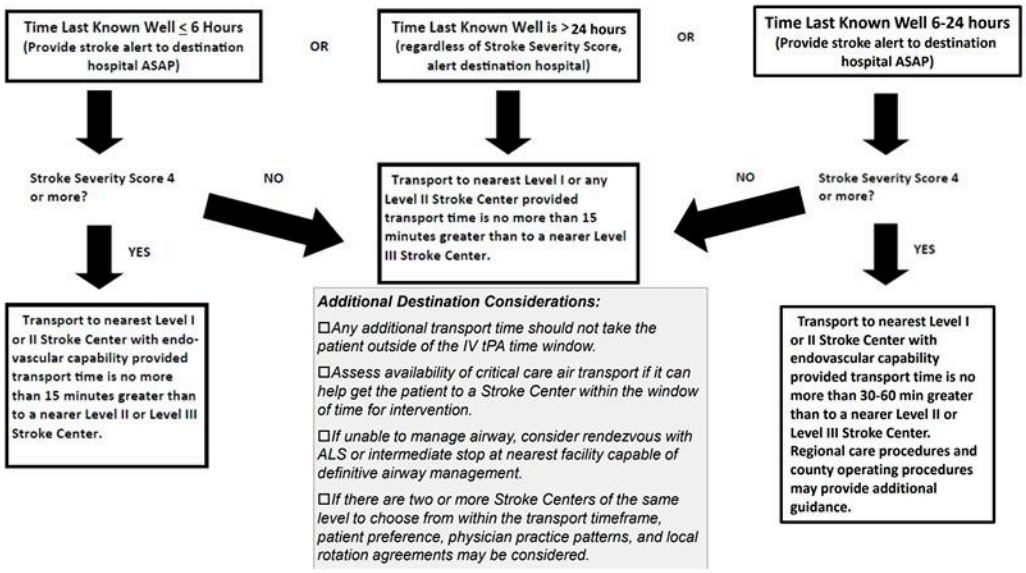
Facial Droop:	Absent	0	Present	1		
Arm Drift:	Absent	0	Drifts	1	Falls Rapidly	2
Grip Strength:	Normal	0	Weak	1	No Grip	2

Total Stroke Severity Score = **(max. 5 points)**

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

30-182 February 2019

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



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REFERENCE – Abbreviations

AED	Automated External Defibrillator
AFib	Atrial fibrillation
ALS	Advanced life support
AMA	Against medical advice
AMI	Acute myocardial infarction
ASA	Aspirin
BLS	Basic life support
BP	Blood pressure
BVM	Bag-valve-mask
c/o	Complaining of
CAOx4	Conscious, Awake, Oriented x 4 (Person, place, time, event)
CBG	Capillary Blood Glucose
CHF	Congestive heart failure
CO	Carbon monoxide
CO2	Carbon dioxide
COPD	Chronic obstructive pulmonary disease (emphysema, chronic bronchitis)
CP	Chest pain
CPAP	Continuous positive airway pressure
CPR	Cardiopulmonary resuscitation
CSF	Cerebrospinal fluid
CVA	Cerebrovascular accident
DNR	Do not resuscitate
DOA	Dead on arrival
EKG	Electrocardiogram
ETA	Estimated time of arrival
ETCO2	End-tidal carbon dioxide
FAST	Stroke findings: Facial, Arm, Speech, Time
GCS	Glasgow Coma Score
g	Gram
GYN	Gynecologic
H/A	Headache
HEENT	Head, ears, eyes, nose, throat
Hg	Mercury
ICP	Intracranial pressure
IM	Intramuscular
IN	Intranasal
IO	Intraosseous

IV	Intravenous
JVD	Jugular venous distension
kg	Kilogram
L	Left or Liter
LAMS	Los Angeles Motor Score
lbs	Pounds
LBB	Long back board
LE	Law enforcement
LOC	Level of consciousness
LS	Lung sounds
LZ	Landing zone
OLMC	Online Medical Control
mg	milligram
MI	Myocardial infarction
mL	milliliter
NC	Nasal cannula
NKDA	No known drug allergies
NPO	Nothing by mouth
NRB	Non-rebreather mask
NS	Normal saline
NSAID	Non Steroidal Anti-inflammatory Drug
NTG	Nitroglycerin
N/V	Nausea / vomiting
O2	Oxygen
OB	Obstetrics
OD	Overdose
ODT	Oral dissolvable tablets
OPA	Oropharyngeal airway
OTC	Over the counter
PEEP	Positive end expiratory pressure
PMHx	Past medical history
PO	Per os (by mouth)
PRN	As needed
PTA	Prior to arrival
ROSC	Return of Spontaneous Circulation
SpO2	Pulse Oximetry
SIDS	Sudden Infant Death Syndrome
SL	Sublingual
SOB	Shortness of breath
TIA	Transient ischemic attack
TKO	To keep open

RECEIPT OF PROTOCOLS

I have received and reviewed the following:

_____ Klickitat County EMR, EMT, EMT IV, and AEMT Prehospital Patient Care Protocols

_____ I know which skills, procedures, and medications are within my Scope of Practice and agree to practice within my scope

_____ I understand that I may not perform skills, procedures or administer medications marked with an asterisks (*) without attending the MPD approved training course on these topics.

_____
Signature

_____
Printed Name

_____
Agency

_____
Date