

**Basic Life Support  
TREATMENT PROTOCOLS**

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## Part I. General Operations

### B. Introduction

1. The purpose of protocols in the Lincoln Fire & Rescue Emergency Medical Services is to establish guidelines between EMS administration, the EMS provider and medical direction for the management, treatment, and transport of specific medical emergencies.
2. The protocols set forth are neither designed nor intended to limit the EMS provider in the exercise of good judgment or initiative in taking reasonable action in extraordinary circumstances. These protocols are intended to assist in achieving excellent, consistent pre-hospital care for patients. The following protocols are not intended to provide a solution to every problem that may arise.
3. Pre-hospital care is a shared responsibility between the physician and the EMS provider. The services which EMS providers are authorized to perform pursuant to the Nebraska Emergency Medical Services Rules and Regulations shall be performed by the EMS provider only pursuant to the written or verbal authorization of the Physician Medical Director (PMD) or medical control. The National Education Standards and the National EMS Scope of Practice Model shall be the reference for standard of care. In the Lincoln Fire & Rescue Emergency Medical Services, in all cases where written protocols, directives and policies do not address patient care or disposition, the National Education Standards and the National EMS Scope of Practice Model shall be the standard.
4. The following treatment guidelines are for use by field personnel and the Medical Control physician. They have been developed to help assure standardized, quality medical care and promote rapid and appropriate quality treatment of all patients regardless of economic or social status in the quickest and most efficient manner possible. The protocols contained in this document detail Basic Life Support (BLS) treatment modalities and are intended for use by all BLS providers operating within the Lincoln Fire & Rescue EMS System.
5. Without actual On-Line Medical Direction, the field provider should not deviate from these guidelines relating to treatment. If extenuating circumstances necessitate deviation from these guidelines, they must be explicitly detailed in the patient care report. Under no circumstances should providers deviate beyond their Physician Medical Director approved scope of practice.
6. Although these guidelines attempt to cover most situations the field provider will encounter, it is impossible to delineate all possible situations the field provider will face. When faced with occurrences that are not specifically addressed in these guidelines, the provider shall seek the input of On-Line Medical Direction for advice and direction. It

must be emphasized when presented with a situation which is not covered by these guidelines; the most appropriate decision is the one which best serves the interests of the patient and the patient's family.

C. **Definitions**

1. The Lincoln Emergency Medical Services System:

- a. The Lincoln Fire & Rescue Emergency Medical Services System is comprised of those agencies and personnel who facilitate the delivery of pre-hospital health services to the citizens of Lincoln, Nebraska and selected surrounding communities. From the access of emergency medical services, through the actual field treatment and/or transportation, to the evaluation and continuous improvement of medical providers and functions, the EMS system is a chain, with each link dependent upon the others to provide emergency medical care to the victims of illness or injury. Specifically, the EMS system includes: the public, the 911 Emergency Dispatch Center, Lincoln Fire and Rescue, and the Lincoln Police Department.

2. Medical Control:

- a. Conceptually, Medical Control is the authority granted to field providers enabling them to perform out-of-facility assessments and treatments. Actual Medical Control is comprised of the Physician Medical Director, the Quality Improvement staff, and the licensed physicians and advanced level providers designated and authorized to provide Medical Direction.

3. Medical Direction:

- a. Medical Direction is the actual medical advice and guidance afforded field providers for various types of medical or traumatic emergencies. Medical Direction can be provided either "off-line" or "on-line". Off-line Medical Direction is the written standards of care prescribed by Medical Control. These standards take the form of medical guidelines to be followed when presented with field interventions. These guidelines establish interventions which may be initiated without the actual consultation with a physician. On-Line Medical Direction is the actual verbal authority and advice given to a field provider for certain treatment modalities. For the purposes of uniformity, the written guidelines may include treatment options available only after consultation with On-Line Medical Direction.

#### 4. Basic Life Support (BLS):

- a. Basic Life Support is defined as care and treatment modalities which can be performed without the use of invasive therapies. Examples include patient and scene assessment, cervical spine stabilization, oxygen administration, splinting, bleeding control, and blood sugar assessment. An EMT may function within their scope of practice pursuant to Nebraska Health and Human Services 172 NAC 11 section 11-009.02 Emergency Medical Technician Practices and Procedures in accordance with the medical treatment protocols with the following exceptions invoked by the physician medical director for the Lincoln EMS System;
  - i. Oral glucose must be self-administered by the patient.
  - ii. Starting IV's is not approved for the EMT.
  - iii. Utilizing advanced airway management devices, **except for an IGEL**, is not approved for the EMT.
  - iv. The administration of activated charcoal, albuterol and nitroglycerin are not approved for the EMT.
- b. It is the responsibility of each individual provider to assure they function within their scope of practice, in accordance with State regulations, and in accordance to the medical treatment protocols. Any deviation from scope of practice, State regulations or the medical treatment protocols must be reported to the on-duty EMS Supervisor, and the Battalion Chief assigned to EMS.

#### D. Physician on Scene

1. When a physician is present on the scene and desires to direct patient care, EMS personnel should:
  - a. Inform the physician that if the physician directs patient care, the physician must accompany the patient to the hospital.
  - b. Inform the physician at the onset of the incident that EMS personnel have strict legal guidelines, established protocols, and they may not exceed those guidelines or protocols.
  - c. Inform the physician that any procedure outside of these legal guidelines must be carried out by the physician.
2. EMS personnel have the right and obligation at any time there is gross deviation from the accepted protocol to contact the receiving hospital for further instruction. The physician on the scene should be informed if contact with the hospital is being made.
3. If possible, it may be advisable to contact the receiving hospital via landline or cellular phone and have the receiving hospital physician speak directly to the physician at the scene.

**E. “Do Not Resuscitate” (DNR) Orders and Identification of CPR Only**

1. A DNR is a written order by a physician stating that a patient should not be resuscitated or have CPR performed. A DNR must be signed by a patient, or the patient’s medical POA, dated, and must identify the patient by name. If a physician’s signature is not present, the check box regarding telephone order must be checked.
2. EMS providers will not initiate or continue cardiopulmonary resuscitation on a patient in cardiac arrest once a valid DNR order is confirmed. In the event of uncertainty, resuscitative measures should be initiated.
3. DNR does not mean that emergency medical care for any other medical condition will be changed or limited. Patients should receive emergency medical treatment up until the point of cardiac arrest.
4. A written DNR order must contain the patient’s name and be signed by the physician or by the RN who received the order from the physician. Verbal confirmation of a DNR by a family member or friend without verification of a written DNR is not sufficient.
5. In the skilled care facility (nursing home) or Long-Term Acute Care (LTAC), DNR orders documented in the patient’s medical record are considered valid if signed by the physician or by the RN per verbal order of the physician. A DNR form may be used but is not required in the nursing home setting.
6. An EMS provider can honor an effective Living Will or Health Care Power of Attorney. This applies only to adults. EMS providers can presume the validity of either of these documents if signed in Nebraska. Documents from other states in compliance with that state’s laws are also valid in Nebraska.
7. Observation of an original or a photocopy of a living will, or health care power of attorney must be documented in the patient care report. The patient care report must also contain information that the patient is an adult (is 19 or older or has been married).
8. If a telephone consult with the patient’s physician or the physician’s designee verifies a DNR, the EMT can honor the order. Authorization shall be documented on the patient care report and include the physician’s or physician designee’s name, telephone number and time of the telephone call from the EMT to the physician.
9. Once CPR has been initiated, resuscitative measures may be discontinued when any one of the following occurs:
  - a. A DNR or no code order is confirmed.

- b. A physician physically present at the scene or medical control for the service, based on information from the out-of-hospital providers on scene, determines that CPR is futile or should be discontinued.
  - c. The out of hospital provider is following termination of CPR protocols that have been authorized by the Physician Medical Director.
  - d. Any time the scene becomes unsafe for rescuers.
10. In the event there is a question regarding a DNR or Advanced Directive, initiate resuscitation and contact the Base Physician.
11. For purposes of resuscitation, an IGEL is considered an invasive airway and is contraindicated by a DNI order.

#### **F. Discontinue or No Initiation of CPR**

1. Situations may occur where CPR has been initiated on an obviously deceased patient prior to the arrival of EMS. If the patient meets the following criteria, the EMS provider may discontinue CPR or may choose not to initiate CPR.
  - a. No pulse, AND
  - b. No spontaneous respirations, AND
  - c. Pupils fixed and dilated, AND
  - d. One or more of the following:
    - i. Patient with obvious lethal injury – trauma cardiac arrest with injuries incompatible with life. (I.E., massive blood loss, displacement of brain tissue, decapitation)
    - ii. Wrinkled cornea.
    - iii. Rigor mortis.
    - iv. Postmortem lividity.
    - v. Decomposition.
    - vi. Valid DNR form.
  - e. Physician authorization

**NOTE: Care should be taken to rule out hypothermia, acute alcoholic intoxication and drug overdose.**

#### **G. Refusal of Care**

1. Adults
  - a. An adult is an individual 19 years old or older or who is or has been married (NEB REV STAT §43-2101). A competent adult (as determined by the Informed Decision-Making Form) can refuse medical services and/or transportation to a health care facility.



- b. A legal guardian can consent to or refuse medical services and/or transportation to a health care facility for an incompetent adult.
  - c. A person appointed as a Health Care Power of Attorney can consent or refuse consent for medical services and/or transportation to a health care facility for the incompetent adult named in the power of attorney.
2. Minors
- a. A minor is an individual under 19 years of age that has never been married. In the absence of suspected abuse and/or neglect, a parent or legal guardian can consent or refuse consent on behalf of a minor, for medical services and/or transportation to a health care facility.

### 3. Documentation

- a. All consents or refusals of consents for medical treatment and/or transportation must be documented on the "Patient Refusal Form" and in the patient care report. When possible, all refusal forms should be signed and dated by the patient or other individual authorized to give or refuse consent. All refusals to sign a consent or refusal of consent must be documented in the patient care report or other appropriate record(s).

## Part II. Patient Assessment

### A. General

1. The AED and the suction device will be brought to the patient's side of every medical emergency where it is safe to do so.
2. The patient examination should focus on rapid assessment and interventions. On-scene management of high priority patients should be limited to stabilization of life-threatening problems. Other procedures should always be performed while en route to the hospital.
3. Scene time should not exceed 10 minutes for high priority trauma patients and 20 minutes for medical patients. Shorter scene times are desirable for trauma patients. Rescue efforts for patients that are entrapped or have access/egress problems should be coordinated to minimize scene time.
4. The receiving hospital should be notified as soon as possible to prepare for the patient.
5. At any time, a provider is uncertain of how to best manage a patient, on-line medical direction must be contacted for instruction.
6. Rarely are emergent transports (red lights and sirens) required once the patient has been evaluated and treated. It is important that the provider in charge carefully evaluate the risks and benefits of an emergency transport to the hospital.

### B. Scene Size-Up

1. Body Substance Isolation
  - a. Standard practice in EMS is to use body substance isolation when caring for ALL patients. Gloves and eye protection are required on every patient contact.
  - b. The use of masks, aprons or gowns shall be used during procedures likely to generate splashes of blood, droplets of blood or body fluid.
  - c. Hands shall be washed after each patient care incident, even if gloves were worn or waterless soap was used.
  - d. This policy also applies to immediate disposal of needles and sharps in disposable impervious containers.
  - e. The practice of not recapping needles is highly encouraged.
  - f. All personnel should don surgical or N-95 masks when in contact with patients whom an airborne communicable disease is suspected or confirmed by history (e.g., tuberculosis, influenza, COVID-19).

2. Assess scene safety
  - a. Ensure personal protection on all scenes, especially those that involve motor vehicle collisions, toxic substances, potential for violence and unstable surfaces (e.g., slope, ice, water).
  - b. Protect the patient and bystanders (e.g., environmental considerations)
3. Assess mechanism of injury and/or nature of illness.
  - a. Medical – determine nature of the illness from the patient, family, or bystanders. Why was EMS activated?
  - b. Trauma – determine the mechanism of injury from the patient, family, or bystanders, and inspection of the scene.
  - c. Determine total number of patients. Initiate a mass casualty plan if necessary and initiate triage.
  - d. Summon additional resources as necessary to manage the incident.

### C. Primary Assessment

1. Form a general impression of the patient.
  - a. If a life-threatening condition is found, treat immediately.
2. Assess patient's mental status (maintain spinal immobilization if needed).
  - a. **Alert**
  - b. Responds to **V**erbal stimuli
  - c. Responds to **P**ainful stimuli
  - d. **U**nresponsive to verbal and painful stimuli (no gag or cough)
3. Assess the patient's airway status.
  - a. Use head-tilt, chin lift or jaw thrust (with suspected trauma patients) to open airway. Note: Do not hyperextend the neck in infants and small children.
  - b. Suction the airway with a rigid suction catheter as necessary.
  - c. Consider maintenance of the airway with an oropharyngeal or nasopharyngeal airway as indicated.
  - d. Consider the use of the i-Gel if indicated.
4. Assess the patient's breathing.
  - a. If respirations are absent or agonal (inadequate) and,
    - i. Chest compressions are being performed
      1. Adult - Follow Adult General Guidelines.
      2. Infant or child - deliver 1 ventilation every 10<sup>th</sup> compression, no pauses.
    - ii. Chest compressions are not being performed.
      1. Adult – deliver 10-12 ventilations/min.

- a. Infant or child – deliver 12-20 ventilations/min.
  - b. If respirations are present.
    - i. Consider oxygen at
      1. 12-15 L/min. via non-rebreather mask
      2. 2 to 6 L/min. via nasal cannula
  - c. Evaluate SpCO if indicated.
  - d. Monitor SpO<sub>2</sub>.
1. Assess the patient's circulation:
    - a. Check pulse for more than 5 seconds but less than 10 seconds.
      - i. Adult/child – carotid
      - ii. Infant – brachial/femoral
        1. If no pulse present, initiate CPR. Consult Adult Cardiac Arrest Guidelines
        2. In infants and children, if despite oxygenation and ventilation the pulse is less than 60bpm and there are signs of poor perfusion, begin chest compressions.
    - b. Check for and control major bleeding.
    - c. Check perfusion by evaluating skin color, temperature, moisture, and capillary refill.
  2. Determine patient disposition. Expedite transport for high priority patients.

#### **D. History Taking**

1. Conduct neurological assessment including Glasgow Coma Scale.
2. Obtain vital signs, including, at minimum.
  - a. Respirations.
  - b. Pulse.
  - c. Blood pressure.
  - d. Skin color, temperature, and moisture.
  - e. SpCO, and SpO<sub>2</sub>
3. Obtain history of present illness by obtaining a SAMPLE history and OPQRST.
4. Identify pertinent negatives.

**E. Secondary Assessment**

1. Systematically assess the patient using a full-body scan or focused assessment.

**F. Reassessment**

1. Repeat the primary assessment.
  - a. For a stable patient, repeat and record every 10 minutes.
  - b. For an unstable patient, repeat and record at a minimum every 5 minutes.
2. Re-establish patient priority.
3. Reassess and record vital signs.
4. Repeat focused assessment regarding patient complaint or injuries.
5. Assess interventions.
6. Assess response to management.
7. Maintain or modify management plan.

**G. Documentation**

1. General Guidelines
  - a. Any time a patient is transported by ambulance to a receiving medical facility, the EMS provider must complete an electronic patient care report (ePCR). The EMS provider is required to give a complete verbal report and any available documentation such as EKG strips, medications, transfer papers, etc., to the hospital provider who is assuming patient care before leaving the facility. All ePCR's should be completed as soon as possible and must be completed by the end of the EMS providers working shift.
  - b. Medical Control realizes that there will be times when a deviation from the established medical treatment guidelines is necessary and perhaps even in the best interest of patient care. In these circumstances, the ePCR should clearly reflect the reasons for the guideline deviation and the name of the authorizing physician. The "EMS Self-Report" form is also required to be completed. Accurate documentation of field medical care is essential to ensure the consistency of continued medical care in the hospital setting. The minimum documentation standards for all ePCR's shall include all the information required

by State EMS regulations and any additional information required by the Physician Medical Director.

- c. In addition to the State requirements, the following is required by the Physician Medical Director:
  - i. Comprehensive vital signs should be taken every 5-10 minutes and at least two minutes prior and as appropriate after medication administration. Every patient should have at least two sets of vital signs recorded.
  - ii. SpCO assessment findings must be clearly documented.
  - iii. A detailed response to all treatment shall be documented.
  - iv. Document the time when the transfer of care to another pre-hospital provider occurred.
  - v. Condition upon arrival at destination.
  - vi. Mode of travel in route to the hospital. Code 3, lights and sirens, Code 1, standard transport.
  - vii. The time(s) medical direction was contacted.
  - viii. The name or ID of the nurse or physician who assumes care at the receiving facility.

### **Part III. General Treatment Principles**

#### **A. Airway and Oxygen**

1. An intact airway and adequate oxygenation and ventilation are essential for all patients with medical or traumatic conditions. Throughout this protocol it is assumed that the EMT will maintain a patent airway and provide appropriate supplemental oxygenation.
2. Maintain patent airway with head-tilt/chin-lift or modified jaw thrust maneuver and consider oral or nasal airway adjunct and/or iGel.
3. If ventilating adequately, consider applying a nasal cannula at 2-6 L/min or non-rebreather mask at 12-15 L/min.
4. High flow oxygen shall be avoided in medical patients unless signs of severe hypoxia are present. High flow oxygen remains the standard of care in trauma patients.
5. If patient is NOT ventilating adequately, assist ventilations with BVM and 100% oxygen.
6. Anytime a patient is manually ventilated, including the use of BVM only, ETCO<sub>2</sub> shall be monitored.

7. Consider assisting ventilations in those patients whose respiratory status does not improve after receiving oxygen by non-rebreather mask.
8. Supplemental oxygen should be withheld for people with oxygen saturations of 94% and higher. When utilizing supplemental oxygen for medical patients the goal should be 94% to 99% saturation.
9. When pulse oximetry is used, adjust oxygen delivery devices to achieve an oxygen saturation of 94% or above in medical patients and 100% in trauma patients.
10. Position the patient in a way that will support ABC's. I.E., in a respiratory distress patient, transport in a sitting position.

## **B. Cardiac Monitor**

1. An EMT may apply the cardiac monitor prior to ALS arrival. This shall be done after the completion of patient assessment, obtaining vitals, and BLS interventions.

## **C. Restraints**

1. Physical restraints are a last resort. All possible means of de-escalation should be attempted first.
2. Indications:
  - a. A patient who needs to be transported for medical care, who is refusing transport of care, and who is incompetent to refuse.
  - b. A person, who appears to be confused and who because of such confusion, appears to be an imminent danger to others or to himself.
3. Precautions / Considerations:
  - a. Any attempt at restraint involves risk to the patient and to the out-of-hospital provider. The rescuer's safety must come before patient considerations. Do not attempt to restrain the patient without adequate assistance. Ideally law enforcement should be on scene when restraining a patient.
  - b. Any restrained patient may vomit, be prepared to suction, and reposition as needed. Once restrained, the patient is never to be left alone. Aspiration can occur if the patient is restrained on his/her back and cannot protect their airway.
  - c. Check restraints as soon as applied and every 10 minutes thereafter to ensure no injury to extremities.
  - d. Do not restrain a patient in the prone position.

- e. Do not restrain a patient sandwiched between backboards, scoop stretchers or other immobilization devices.
- f. Do not “hog tie” patients (hands restrained behind back, feet restrained together and the two restrained attached together)
- g. Remove restraints only with sufficient personnel available to control the patient, generally only in the hospital setting.
- h. Other than primary psychiatric disorders, medical causes of combativeness include hypoglycemia, hypoxia, head injury and drug ingestion.
- i. Written and verbal reports must completely document the necessity for the use of physical restraints. Record the condition of limbs before applying restraints, during transport and upon arrival at the hospital.
- j. If law enforcement has applied handcuffs, an officer is required to ride in the patient compartment of the ambulance to the hospital.

#### **D. Pain Management**

1. Determine patient’s pain score assessment using the standard pain scale.
2. Consider initial use of non-pharmaceutical pain management techniques.
  - a. Placement of the patient in a position of comfort.
  - b. Application of ice packs and/or splints for pain secondary to trauma.
  - c. Verbal reassurance or distraction to minimize anxiety.
  - d. For children, caregiver presence to the degree allowed by required clinical care and caregiver comfort.
3. If non-pharmaceutical techniques are not sufficient to relieve pain, then consider use of non-IV analgesics (adult only).
  - a. Acetaminophen 1000 mg PO, do not repeat.

#### **E. Physician Orders**

1. This protocol, in its entirety, is considered a standing order. Radio communications are not required prior to performing any protocol action. However, EMS providers may call in for further direction or confirmation of orders whenever the patient's condition or the situation warrants.

### **Part IV. Medical Management**

#### **A. Altered Mental Status**

1. Determine glucose level by glucometer.
  - a. If glucose less than 60 mg/dL or clinical signs and symptoms indicate hypoglycemia.



- b. If the patient can protect airway, give oral glucose 15 grams. The patient must be able to self-administer without assistance. Repeat in 15 minutes if necessary.
2. If narcotic overdose is suspected administer intranasal Naloxone by **one of the following methods**.
  - a. Narcan® Nasal Spray Device.
    - i. Administer 4 mg into a single nostril. Do not repeat.
  - b. Pre-filled syringe with mucosal atomization device (M.A.D.).
    - i. Consider Naloxone 2mg. Divide between nostrils. Do not repeat.

**B. General Adult Cardiac Arrest Guidelines (Anyone showing signs of puberty)**

1. If patient is in cardiac arrest, initiate High Performance-CPR (HP-CPR) and begin chest compressions immediately.
2. Attach cardiac monitor and analyze the rhythm.
3. Initiate continuous chest compressions, insert an I-gel airway, and begin active ventilations on all patients.
4. If the patient presents in a shockable rhythm (ventricular fibrillation or pulseless ventricular tachycardia), perform 30 compressions while the AED is charging, and deliver a defibrillation at 360 J. Resume continuous chest compressions.
5. LP 15 Metronome must be used on every cardiac arrest patient.

**C. All patients found in cardiac arrest:**

1. Perform continuous chest compressions at a rate of 100-120 compressions per minute while ventilating at a rate of 10 ventilations per minute. (One ventilation every six seconds). Do not stop compressions to ventilate.
2. If the patient presents in a shockable rhythm (ventricular fibrillation or pulseless ventricular tachycardia), perform 30 compressions while the AED is charging, deliver a defibrillation at 360 J. Resume continuous chest compressions.
3. Rotate person-performing compressions every 2 minutes.

4. Insert an I-gel airway. Do not delay initiation of chest compressions and defibrillation to insert the I-gel.
5. If the patient regains a pulse, acquire, and transmit a 12 lead EKG. Transport to a hospital with PCI capabilities.
6. If patient is hypothermic from exposure, follow *Hypothermia Protocol* for cardiac arrest guidelines.

**D. High Quality Chest compressions:**

1. Provide adequate rate: 100-120 compressions per minute.
2. Provide adequate depth: at least 2 inches.
3. Allow full chest recoil between compressions.
4. Provide uninterrupted or minimal interruptions in chest compressions. (Less than 10 seconds)
5. Ensure correct hand placement on the chest.
6. Chest compressions are centered around two (2) minute cycles of 200 compressions.
7. The person providing chest compressions should be rotated every 2 minutes.

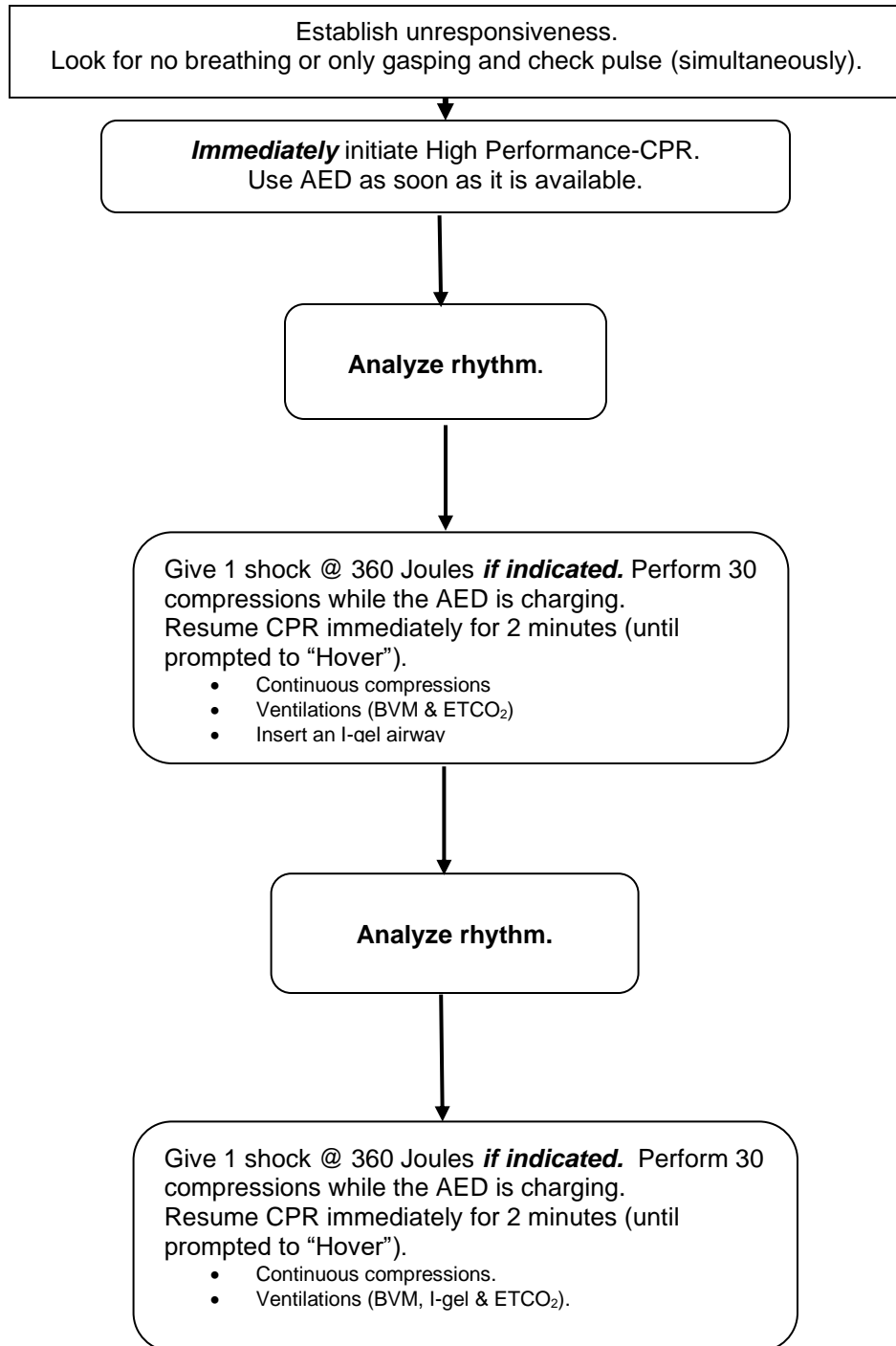
**E. Analyze rhythm and pulse checks:**

1. Utilize the AED to analyze the cardiac rhythm. Perform 30 compressions while the AED is charging if a shock is indicated.
2. Only perform pulse checks during rhythm checks if signs of life are present, which indicates a potentially perfusing rhythm.

**F. Airway and ventilations:**

1. Evaluate the airway for complete or partial airway obstruction and treat accordingly.
2. Provide jaw thrust and suction as necessary.
3. Active ventilations are defined as:
  - a. Positive pressure ventilations utilizing a BVM

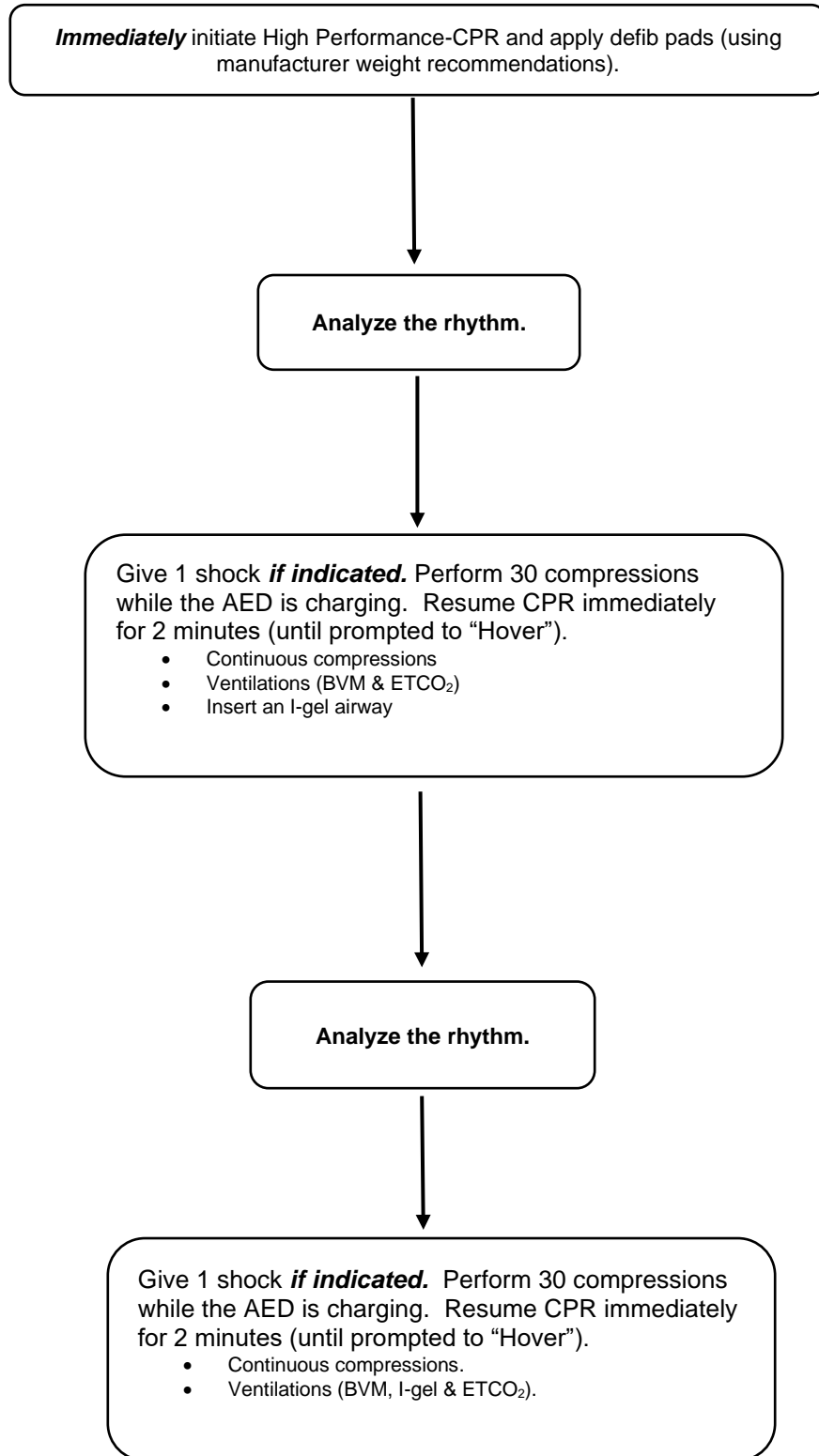
**G. Adult Cardiac Arrest Algorithm (Puberty and older)**



**H. Cardiac Arrest (AED) – Pediatric/Infant**

1. Assess the victim for a response and look for normal or abnormal breathing.
2. Check pulse if no respirations or abnormal respirations present.
3. If pulse present:
  - a. Give 1 breath every 3 seconds, consider insertion of an I-gel airway.
  - b. Recheck pulse every 2 minutes.
4. If pulse absent, initiate High Performance-CPR (HP-CPR). Provide continuous compressions, insert an I-gel airway, ventilate with a BVM, 10 times per minute.
5. Apply AED as soon as it is available.
  - a. Analyze rhythm.
  - b. If shock advised:
    - i. Administer 1 shock. Perform 30 compressions while the AED is charging.
    - ii. Resume CPR immediately for 2 minutes.
  - c. If no shock advised:
    - i. Resume CPR immediately for 2 minutes.
    - ii. Analyze rhythm every 2 minutes.
6. LP 15 Metronome shall be used on every cardiac arrest patient.
7. If patient is hypothermic from exposure, follow Hypothermia Protocol for cardiac arrest guidelines.
8. Key points:
  - a. When a rhythm check advises to shock, perform 30 compressions while the monitor is charging. Give the shock as quickly as possible. Immediately after shock delivery, resume CPR without delay and continue for 5 cycles (or about 2 minutes) and then check the rhythm.

I. Pediatric Cardiac Arrest Algorithm (Infant - Puberty)



**J. Chest Pain (Non-Traumatic)**

1. Administer aspirin 324 mg PO and have the patient chew them (four (4) 81 mg baby aspirin).
2. Hyper-oxygenation of chest pain patients should be avoided. Use pulse oximetry and only apply oxygen to patients who have oxygen saturations below 94% or those who are exhibiting signs of hypoxia.

**K. Allergic Reaction or Anaphylaxis**

1. Apply an ice pack to sting or injection site if applicable.
2. Consider applying venous constricting band proximal to the sting or injection site, if applicable.
3. For a severe reaction (severe respiratory distress or shock):
  - a. Epinephrine via an EPI Auto Injector (adult only)  
OR
  - b. Epinephrine 1 mg/mL vial:
    - i. Adult (>66 pounds or ≥ 10 years old): 0.3 mg IM (lateral thigh), may repeat one time after 5 minutes.
    - ii. Pediatric (33-66 pounds or 3-9 years old): 0.15 mg IM (lateral thigh), may repeat one time after 5 minutes.

**L. Asthma or Toxic Exposure**

1. Assist patient with prescribed metered dose inhaler (MDI).
2. Consider:
  - a. Epinephrine via an EPI Auto Injector (adult only)  
OR
  - b. Epinephrine 1 mg/mL vial:
    - i. Adult (>66 pounds or ≥ 10 years old): 0.3 mg IM (lateral thigh). May repeat one time after 5 minutes.
    - ii. Pediatric (33-66 pounds or 3-9 years old): 0.15 mg IM (lateral thigh). May repeat one time after 5 minutes.

**M. Emphysema or Chronic Bronchitis**

1. Assist patient with prescribed metered dose inhaler (MDI).

**N. Croup**

1. Do not attempt to visualize the airway or place anything in the patient's mouth.
2. Keep the child as calm and comfortable as possible.

**O. FBAO – Conscious Patient Greater Than One Year of Age**

1. If the patient has a mild obstruction and is coughing forcefully, do not interfere with the patient's spontaneous coughing and breathing efforts.
2. If the FBAO is severe, administer abdominal thrusts (Heimlich maneuver) in rapid sequence until the obstruction is relieved.
  - a. If the choking patient is obese and the rescuer cannot encircle the patient's abdomen, use chest thrusts instead of abdominal thrusts.
  - b. If the choking patient is in the late stages of pregnancy, use chest thrusts instead of abdominal thrusts.
3. If the patient becomes unresponsive, carefully support the patient to the ground and follow the FBAO – UNCONSCIOUS PATIENT greater than 1 YEAR OF AGE guideline.

**P. FBAO – Conscious Patient Less Than One Year of Age**

1. If FBAO is mild, do not interfere. Allow the victim to clear the airway by coughing while you observe for signs of severe FBAO.
2. If the FBAO is severe (i.e., the victim is unable to make a sound), deliver five back blows (slaps) followed by five chest thrusts.

**Q. FBAO – Unconscious Patient Greater Than One Year of Age**

1. If the patient was previously conscious with an airway obstruction, carefully support the patient to the ground.
2. Use head-tilt, chin lift or jaw thrust (suspected trauma) to open airway. Look for an object in the patient's mouth. Use a finger sweep only when you can see solid material obstructing the airway.
3. Assess the patient's breathing:
  - a. If respirations are absent, deliver 2 breaths. If chest rise is not detected, reposition the airway, make a better mask seal and try again.
  - b. If unable to deliver rescue breaths, start CPR.

- c. Each time the airway is opened during CPR, look for an object and remove it if found with a finger sweep.

**R. FBAO - Unconscious Patient Less Than One Year of Age**

1. If the patient was previously conscious with an airway obstruction, carefully support the patient to the ground.
2. Use head-tilt, chin lift or jaw thrust (suspected trauma) to open airway. Look for an object in the patient's mouth. Use a finger sweep only when you can see solid material obstructing the airway.
3. Assess the patient's breathing:
  - a. If respirations are absent, deliver two breaths. If chest rise is not detected, reposition the airway, make a better mask seal and try again.
  - b. If unable to deliver rescue breaths, start CPR.
  - c. Each time the airway is opened during CPR, look for an object and remove it if found with a finger sweep.

**S. Environmental Hyperthermia**

1. Remove the patient from the hot environment to a cool environment.
2. Heat Cramps: Signs and symptoms include muscle twitching, followed by painful spasms, especially in the lower extremities and abdomen, nausea and vomiting, weakness, and diaphoresis.
  - a. May give Gatorade™, All-Sport™, or similar electrolyte drink. If nausea develops, discontinue oral administration.
  - b. Consider applying steady and slow manual pressure to extend contracted and cramped muscle.
2. Heat Exhaustion: Signs and symptoms include pallor, profuse sweating, orthostatic hypotension, headache, weakness, fatigue, and thirst.
  - a. If patient is alert and can maintain open airway, give salt-containing or rehydration solution as for heat cramps.
3. Heat Stroke: Signs and symptoms include altered mental status, increased body temperature, minimal or no sweating, collapse, shock, shortness of breath, nausea, and vomiting.
  - a. Remove the patient's clothing.
  - b. Do not give anything by mouth.



- c. Spray the patient's skin with cool mist and fan the patient. Consider ice packs at the neck, axillae, and ankles. Continue misting and fanning during transport.
- d. Wrap the patient with wet sheets.
- e. Avoid cooling to the point of shivering as shivering will increase core temperature.
- f. If the patient is hypotensive, place patient supine and elevate the legs (if not contraindicated).

## T. Environmental Hypothermia

1. Hypothermia with a perfusing rhythm (pulse).
  - a. Prevent additional evaporative heat loss by removing garments and insulating the victim from further environmental exposures.
  - b. Initiate passive warming with warmed blankets and a warm environment.
  - c. Perform procedures gently; these patients are prone to develop ventricular fibrillation.
2. Hypothermia without a perfusing rhythm (pulse).
  - a. Initiate re-warming procedures as noted in step #1 above.
  - b. Assess the pulse for a period of 30-45 seconds.
  - c. If pulseless with no detectable signs of circulation, start chest compressions immediately. If there is any doubt about whether a pulse is present, begin compressions.
  - d. Ventilate the patient at normal rates, avoid hyperventilation (potentiates V-fib).
  - e. Attach AED and analyze the rhythm.
    - i. Shock at 360 J if indicated.
    - ii. If the patient does not respond to one shock at 360 J, further defibrillation attempts should be deferred.

## U. Hypotension

Shock is present when pulse greater than 120 and systolic BP less than 100 mmHg in a previously normotensive patient or systolic drops 40-50 mmHg in a previously hypertensive patient, especially if accompanied by pale, clammy skin, and decreased level of consciousness.

1. Control any external bleeding.
2. Position the patient supine with legs elevated (unless contraindicated by trauma).
3. Prevent loss of body heat by keeping the patient covered.

**V. Obstetrics – Normal Delivery**

1. Don gloves, mask, gown, eye protection for infection control precautions.
2. Have mother lie with knees drawn up and spread apart. Elevate buttocks with blankets or pillows.
3. Create sterile field around vaginal opening.
4. Monitor fetal heart rate (using stethoscope).
5. Coach the mother in breathing techniques. Panting through each contraction helps prevent bearing down and tearing of the perineum by the baby's head. Deep breathing between contractions promotes rest.
6. Encourage mother to push with contractions.
7. When the head appears during crowning, place fingers on bony part of skull (not fontanel or face) and exert very gentle pressure to prevent explosive delivery.
8. If the amniotic sac has not broken, tear the sac and push it away from the head and mouth as they appear.
9. As the head is being delivered, determine if the umbilical cord is around the neck; slip over the head or shoulder. If this is not possible, clamp the cord in 2 places and cut between the clamps. Avoid excessive tension on the cord.
10. After the head is delivered, support the head; suction the mouth two or three times, then the nostrils using a bulb syringe (squeezing the bulb prior to inserting it in the mouth and nose). Use caution to avoid contact with the back of the mouth.
11. Provide support as the head rotates and the shoulders deliver. Gently guide the head downward to help the upper shoulder deliver. Gently guide the head upward to help the lower shoulder deliver.
12. As the torso and full body are delivered, support the newborn with both hands. As the feet are delivered, grasp the feet.
13. Wipe blood and mucus from mouth and nose with sterile gauze, suction mouth and nose again.
14. Wrap newborn in a warm blanket and place on its side, head slightly lower than trunk.

15. Do not lower the baby to the level of the vagina.
16. Assign partner to monitor newborn and complete initial care of the newborn.
17. Record the time of birth.
18. Clamp and cut umbilical cord (between the clamps) as pulsations cease. Apply the first clamp approximately 4 inches from newborn and the second clamp approximately 6 inches from the newborn.
19. Observe for delivery of placenta while preparing mother and newborn for transport. Do not delay transport waiting for the placenta to deliver.
20. When delivered, wrap placenta in towel and put in plastic bag; transport placenta to hospital with mother.
21. Place sterile pad over vaginal opening, lower mother's legs, help her hold them together. If excessive bleeding is present, start fundal massage of the uterus to stimulate contraction.
22. Manage perineal tears with direct pressure, if applicable.
23. Transport the mother, newborn and placenta to hospital.

**W. Obstetrics – Care of the Newborn**

1. If the newborn does not cry, rub the back, and begin drying.
2. Ensure preservation of newborn warmth.
3. Give oxygen by blow-by if the newborn not centrally pink and vigorous.
4. If newborn does not cry, has central cyanosis or heart rate less than 100, see obstetrics – newborn/neonatal resuscitation.
5. Complete drying of the newborn, wrap in a dry towel and apply head cover. Keep the newborn warm.
6. Record the newborn's APGAR scores at one and five minutes after delivery.
7. Check the umbilical cord for bleeding. If necessary, place an additional clamp.

**X. APGAR Scoring System**

|   | Clinical Sign      | 0 points    | 1 point                        | 2 points        |
|---|--------------------|-------------|--------------------------------|-----------------|
| A | Appearance         | Blue/pale   | Body pink,<br>Extremities blue | Completely pink |
| P | Pulse              | Absent      | Below 100                      | Over 100        |
| G | Grimace            | No response | Grimaces                       | Prompt Response |
| A | Activity           | Limp        | Some flexion of<br>extremities | Active motion   |
| R | Respiratory Effort | Absent      | Slow and irregular             | Strong cry      |

**Y. Obstetrics – Newborn/Neonatal Resuscitation**

1. Gently suction the newborn’s mouth, then nostrils, with a bulb syringe for three to five seconds.
2. If the newborn is vigorous (strong respiratory effort, good muscle tone, and a heart rate greater than 100 bpm), follow standard suctioning practices.
3. Rub the newborns back vigorously. Simultaneously begin drying and warming measures. **KEEP THE NEWBORN WARM AND DRY.**
4. Evaluate respirations, heart rate (apical pulse or pulse at the base of the umbilical cord), and skin color.
5. **If respirations are inadequate, HR greater than 100 bpm, but newborn is centrally cyanotic:**
  - a. Properly position newborn; do not hyperextend the neck. Quickly provide blow-by oxygen near the newborn’s mouth and nose.
  - b. If there is no response in 30 seconds, initiate positive-pressure ventilation with a BVM attached to oxygen. Deliver 40 to 60 breaths per minute. Use only enough volume to make the newborn’s chest rise.
  - c. Continue positive-pressure ventilation until the newborn is centrally pink.
6. **If respirations are inadequate or HR less than 100 bpm:**
  - a. Initiate positive-pressure ventilation with a BVM.
  - b. Continue positive-pressure ventilation until HR greater than 100 bpm.
7. **If HR less than 60 bpm after 30 seconds of positive-pressure ventilation:**
  - a. Initiate chest compressions at a rate of 120/min and a compression to ventilation ratio of 3:1.

- b. Continue chest compressions until HR greater than 60 bpm.

## **Z. Obstetrics – Childbirth Complications**

### 1. Breech Presentation

- a. Never attempt to deliver the newborn by pulling on the legs.
- b. Position the mother with hips elevated, either in head and torso down position (on hands and knees with knees to chest) or the Trendelenburg position.
- c. Allow the buttocks and the trunk of the body to deliver spontaneously, supporting gently. As the newborn's body is delivered, support it and prevent an explosive delivery. Dry the torso and wrap it in a towel if the delivery is incomplete. Avoid pressure on the cord.
- d. With traction of the torso, rotate the body right or left to deliver the shoulders.
- e. If the newborn completely delivers, follow care of the newborn.
- f. If the newborn head does not deliver, establish an airway for the baby to prevent suffocation by inserting a gloved hand into the vagina with palm toward baby's face form a "V" with your fingers on either side of baby's nose and push vaginal wall away from baby's face.
- g. Do not allow an explosive delivery or attempt to pull the baby out.
- h. Begin immediate transport, positioning the mother with hips elevated, either in head and torso down position (on hands and knees with knees to chest) or the Trendelenburg position.

### 2. Prolapsed Umbilical Cord

- a. Position the mother with hips elevated, either in head and torso down position (on hands and knees with knees to chest) or the Trendelenburg position.
- b. Elevate the newborn off the cord by inserting a gloved hand in the vagina and pushing up on the newborn's head.
- c. Cover the exposed cord with a warm, moist gauze or cloth pad.
- d. Monitor for pulsations in the cord. A pulsating cord indicates a viable newborn.
- e. Ask the mother to pant during contractions and to NOT bear down.
- f. Do not push the umbilical cord back in under any circumstance.
- g. Transport rapidly, but carefully, with continual pressure on the baby's head.

### 3. Limb or Compound Presentation

- a. Position the mother with hips elevated, either in head and torso down position (on hands and knees with knees to chest) or the Trendelenburg position.
- b. Initiate rapid transport upon recognition of a limb presentation.

### 4. Shoulder Dystocia – if delivery fails to progress after head delivers, quickly attempt the following:

- a. Hyperflex mother's hips to severe supine knee-chest position (McRobert's maneuver)

- b. Apply suprapubic pressure to attempt to dislodge shoulder.
- c. Attempt to angle baby's head as posteriorly as possible but never pull.
- d. Continue with normal delivery once the anterior shoulder is delivered.

#### 5. Multiple Births

- a. Clamp the cord of the first baby to prevent hemorrhaging from the second baby via the umbilical cord.
- b. Care for the delivery of the second baby and placenta(s) as per care of the newborn protocol.

#### 6. Postpartum Hemorrhage

- a. Place sterile pad over vaginal opening, lower mother's legs, help her hold them together. If excessive bleeding is present, start fundal massage of the uterus to stimulate contraction.

### AA. Obstetrics – Pregnancy Complications

1. Eclampsia - Characterized by hypertension, peripheral edema, and seizures.
  - a. Move the patient quietly and gently. Transport patient on left side without lights and sirens.

### BB. Overdose

1. The typical presentation of a patient experiencing an opioid overdose may include any of the following: altered mental status, respiratory depression (slow, shallow, or no breathing), small or pinpoint pupils, slow or fast heart rate and/or extreme drowsiness (lethargy).
2. Determine glucose level by glucometer. If glucose less than 60 mg/dL or clinical signs and symptoms indicate hypoglycemia:
  - a. If the patient can protect airway, give oral glucose 15 grams. The patient must be able to self-administer without assistance. Repeat in 15 minutes if necessary.
3. If opioid overdose is suspected and patient presents with altered mental status and respiratory depression:
  - a. If narcotic overdose is suspected administer intranasal Naloxone by **one of the following methods.**
    - i. Narcan® Nasal Spray Device.
      1. Administer 4 mg into a single nostril. Do not repeat.
    - ii. Pre-filled syringe with mucosal atomization device (M.A.D.).

1. Consider Naloxone 2mg. Divide between nostrils. Do not repeat.
- b. Naloxone administration precautions
    - i. A complete body check shall be performed prior to the administration of Naloxone. Carefully inspect inside the pockets of patients clothing prior to palpating the patient for needles and syringes.
    - ii. Oxygen therapy and positive pressure ventilations should be initiated early and continued while the medication is being prepared.
    - iii. Withhold IGEL insertion until patient response to Naloxone is determined.
    - iv. If Naloxone was administered by law enforcement or bystander PTA, do not administer additional Naloxone.
    - v. Prepare for violent behavior since the administration of Naloxone is known to cause symptoms of acute withdrawal.
    - vi. Observe respirations closely as Naloxone may wear off before the opioid.
    - vii. Administration of naloxone is for supportive therapy only and is not a substitute for emergency medical care (ABC's management)
    - viii. It is possible for patients who have regained consciousness after the administration on Naloxone to refuse transportation to the ED. When this occurs, you must inform the patient of the following:
  - c. The risks and consequences of refusing transport includes:
    - i. The possibility that Naloxone may wear off before the narcotic effect wears off and the patient will stop breathing, leading to death.

## CC. Seizures

1. Do not restrain the patient. Let the seizure take its course. Place a pillow, rolled blanket or other padding material beneath the patient's head to prevent injury.
2. Determine glucose level by glucometer. If glucose less than 60 mg/dL or clinical signs and symptoms indicate hypoglycemia:
  - a. If the patient can protect airway, give oral glucose 15 grams. The patient must be able to self-administer without assistance. Repeat in 15 minutes if necessary.

## DD. **Stroke/CVA/TIA**

1. Determine glucose level by glucometer. If glucose less than 60 mg/dL or clinical signs and symptoms indicate hypoglycemia:

- a. If the patient can protect airway, give oral glucose 15 grams. The patient must be able to self-administer without assistance. Repeat in 15 minutes if necessary.
2. Perform BEFAST stroke scale evaluation.
  - a. Assess for neurological deficit such as facial droop, localized weakness, gait or balance disturbances, slurred speech, or altered mentation.
  - b. Hemiparesis or hemiplegia.
  - c. Disconjugate gaze, forced or crossed gaze. (If patient is unable to voluntarily respond to exam, makes no discernable effort to respond or is unresponsive)
  - d. Severe headache, neck pain and/or stiffness or difficulty seeing.
3. Obtain history, determine time of signs and symptoms onset, if less than 24 hours, declare a stroke alert as soon as possible, do not wait until you are in the medic unit!
4. The radio or phone report to the hospital shall include.
  - a. BEFAST Stroke Scale results.
  - b. Time of onset and last time patient was seen "normal". (Last known well)
  - c. Stated patient weight.
  - d. Blood sugar.
  - e. History of CVA/TIA, seizures and/or migraine headaches.
5. Transport rapidly, but carefully. Notify the receiving hospital as early as possible. Scene time should be less than 10 minutes.
6. Hyper-oxygenation of stroke patients should be avoided. Use pulse oximetry and only apply oxygen to patients who have oxygen saturations below 94% or those who are exhibiting signs of hypoxia.



## Part V. Trauma Management

### A. Scene Assessment

1. Determine scene safety and position apparatus accordingly.
2. The first unit on location must give a brief approach report of their observations at the scene and indicate the number of potential patients.
3. Assess the scene and triage patients using the SALT triage method. Initiate Multiple Casualty Incident (MCI) Plan if incident casualty numbers require deviation from the normal course of EMS operations.
4. Establish the Incident Command Structure (ICS).
5. Conduct a medical size-up and report the following information to the dispatch center on the assigned tac:
  - a. Extent (number of casualties).
  - b. Nature (mechanism of injuries).
  - c. Severity (by color – RED, YELLOW, GREEN, BLACK/WHITE, BLACK).
  - d. Size / Extent (geographic area covered).
6. Determine MCI level (if applicable).
  - a. Level 1 – More than 20 patients requiring more than 10 ambulances.
    - i. Activates the entire MCI plan, including possible recall of off-duty personnel.
  - b. Level 2 – 7-20 patients, requiring no more than 10 ambulances.
  - c. Level 3 – 4-6 patients requiring 4-6 ambulances, due to environmental adversity, or the risk of additional patients.

Note: If the number of casualties exceeds the threshold but few, if any, appear to be seriously injured, consideration should be given to NOT declare the incident an MCI.

7. Categorize patients into one of the following:
  - a. RED: First Priority (Immediate transport) – These patients have life-threatening injuries who need immediate care and transport. Treat these patients first and transport as soon as possible.
  - b. YELLOW: Second Priority (Delayed transport) – These patients whose injuries do not pose an immediate life threat, allowing treatment and transportation to be temporarily delayed (30-45 min).
  - c. GREEN: Third Priority (Walking wounded) – patients who do not require treatment or whose treatment and transportation can be delayed until last.

- d. BLACK/WHITE: Fourth Priority (Expectant) – These patients have a very poor prognosis / survivability even with maximal care. These patients shall receive treatment/transport only when resources permit.
- e. BLACK: Fifth Priority (DOA) – Patients who are already dead upon EMS arrival. If resources are limited, treat salvageable patients before attempting treatment on these patients.

## B. Patient Assessment & Care

1. Assess patient for “load-and-go” criteria.
  - a. Airway compromise and/or severe respiratory distress.
  - b. Uncontrolled bleeding.
  - c. Unresponsiveness.
  - d. Trauma center candidates.
2. Alert responding ambulance if patient is a “load-and-go”.
3. Control the cervical spine. Assume cervical spine injury is present in any patient with:
  - a. Evidence of high impact with a distracting injury
  - b. Any head or neck injury
  - c. Neck pain following trauma
  - d. Altered mental status
  - e. Presence of any neurological deficit

REMINDER: Loss of sensation or motor activity MAY NOT be present initially with cervical spine fractures

1. Provide airway management while maintaining inline cervical spine immobilization.
2. Refer to “EMS spinal precautions and the use of the long backboard” paper located in the appendix for use of the long backboard with trauma patients.
3. Assess the patient for chest wounds.
  - a. Apply occlusive dressing to open or sucking chest wounds.
4. If severe bleeding is present, control via the use of.
  - a. Direct pressure.
  - b. Pressure dressing.
  - c. A BP cuff can be utilized proximal to an extremity wound by inflating it to a pressure between the systolic and diastolic pressure.
  - d. CAT Tourniquet (See EMS Procedures Guidelines)

5. Hypovolemic shock (assume shock is present when the pulse is greater than 120 and/or systolic BP less than 100 mmHg in a previously normotensive patient; or systolic drops 40-50 mmHg in a previously hypertensive patient, especially if accompanied by pale clammy skin and decreased level of consciousness).
  - a. Place patient in shock position with feet elevated 6"-12" with head and torso in horizontal position. Avoid Trendelenburg position.
6. Impaled objects should be stabilized in place.
  - a. Remove impaled object if;
    - i. The impaled object compromises the airway and/or airway management.
    - ii. The impaled object would risk greater injury resulting from chest compressions during CPR.

### C. **TRAUMA Category Alerts**

1. Category red trauma patients should be transported to the Bryan West Trauma Center.
2. Category yellow trauma patients may be transported to CHI Health St. Elizabeth or Bryan West.
3. All Category red and Category yellow trauma alerts made from the field must be clearly documented on the patient care report.
4. Immediate transport to the nearest facility is indicated when trauma related patients meet the following criteria:
  - a. Patients with obstructed airway.
  - b. Uncontrolled respiratory distress, or
  - c. Life threatening, uncontrolled hemorrhage.
5. Patients with trauma that do not meet these guidelines, and are stable, may be taken to any hospital.
6. **ANY HOSPITAL OR EMS PROVIDER HAS THE OPTION TO BYPASS TO THE TRAUMA CENTER IF IT IS FELT IT IS IN THE BEST INTEREST OF THE PATIENT.**

**Guideline for Field Triage of Injured Patients**

**RED CRITERIA**

**High Risk for Serious Injury**

*(Red Criteria transported to Bryan West)*

| Injury Patterns   | Mental Status and Vital Signs   |
|---|---|
| Penetrating injuries to head, neck, torso, and proximal extremities           | <b>All pts</b> <ul style="list-style-type: none"> <li>• Unable to follow commands (motor GCS 6)</li> <li>• RR &lt; 10 or &gt; 29 breaths/min</li> <li>• Respiratory distress or need for resp support</li> <li>• SpO2, 90% on RA</li> </ul> |
| Skull deformity, suspected skull fx   |   |
| Suspected spinal injury w/new motor or sensory loss                           |   |
| Chest wall instability, deformity, or suspected flail chest                   | <b>Age 0-9 yrs</b> <ul style="list-style-type: none"> <li>• SBP &lt; 70 mm Hg + (2 x age in years)</li> </ul>   |
| Suspected pelvic fracture   | <b>Age 10-64 yrs</b> <ul style="list-style-type: none"> <li>• SBP &lt; 90 mmHg or</li> <li>• HR &gt; SBP</li> </ul>   |
| Suspected fracture of two or more proximal long bones                         |   |
| Crushed, degloved, mangled or pulseless extremity                             | <b>Age ≥ 65</b> <ul style="list-style-type: none"> <li>• SBP &lt; 110 mmHg or</li> <li>• HR &gt; SBP</li> </ul>   |
| Amputation proximal to wrist or ankle   |   |
| Active bleeding requiring a tourniquet or wound packing w/continuous pressure | Trauma in presence of hypothermia < 90°F  |
| Hanging or suspected hanging  |   |
| Drowning  |   |

**YELLOW CRITERIA**

**Moderate Risk for Serious Injury**

*(Yellow Criteria transported to either St. Elizabeth's or Bryan West)*

| Mechanism of Injury  | EMS Judgment  |
|--|---|
| <b>High-Risk Auto Crash</b> <ul style="list-style-type: none"> <li>• Partial or complete ejection</li> <li>• Significant intrusion                             <ul style="list-style-type: none"> <li>○ 12 inches occupant site OR</li> <li>○ &gt; 18 inches any site OR</li> <li>○ Need for extrication for entrapped pt</li> </ul> </li> <li>• Death in passenger compartment</li> <li>• Child (age 0-9) unrestrained or in unsecured child safety seat</li> <li>• Vehicle telemetry data consistent with severe injury</li> </ul> | <b>Consider risk factors, including:</b> <ul style="list-style-type: none"> <li>• Low-level falls in young children (age ≤ 5 yrs) or older adults (age ≥ 65 yrs) with significant head impact</li> <li>• Anticoagulant use</li> <li>• Suspicion of child abuse</li> <li>• Special, high-resource healthcare needs</li> <li>• Pregnancy &gt; 20 weeks</li> <li>• Burns in conjunction with trauma</li> <li>• Children should be triaged preferentially to pediatric capable centers</li> </ul> |
| Rider separated from transport vehicle with significant impact (MCC, ATV, horse, etc.)   |   |
| Pedestrian/bicycle rider thrown, run over, or with significant impact  | <b>If concerned, take to trauma center</b>  |
| Fall from height > 10 feet (all ages)  |   |

**D. Abdominal Injuries**

1. Dress any penetrating wound with a dry sterile dressing.
2. For evisceration: DO NOT REPLACE eviscerated tissue. Cover with a moist sterile dressing. Place a dry sterile dressing over moist dressing to maintain warmth.

**E. Burns**

1. Stop the burning process.
  - a. Thermal burns: Lavage the burned area with tepid water (sterile, if possible) to cool the skin. Do not attempt to wipe off semi-solids (grease, tar, wax, etc.) Do not apply ice. Dry the body when the burn area is greater than 10% BSA to prevent hypothermia.
  - b. Dry chemical burns: Brush off dry powder, then lavage with copious amounts of tepid water (sterile, if possible) for 20 minutes. Continue en route to the hospital.
  - c. Liquid chemical burns: Lavage the burned area with copious amounts of tepid water (sterile, if possible) for 20 minutes. Continue en route to the hospital.
  - d. Electrical burns: Apply clean, dry dressings to entrance and exit wounds.
2. Remove clothing around the burned area, but do not remove/peel off skin or tissue. Remove and secure all jewelry and tight-fitting clothing.
3. Assess the extent of the burn using the Rule of Nines and the degree of burn severity.
4. Cover the burned area with a clean, dry dressing/linen.

**F. Chest Injuries**

1. Cover sucking chest wounds with occlusive dressing; remove if patient's condition deteriorates.

**G. Extremity Injuries**

1. Assess CMS prior to and after splinting. Reassess CMS every 10 minutes after splinting.
2. Cover any open wound with a sterile dressing.
3. If transport time is greater than 30 minutes, cover with a moist, sterile dressing.
4. For amputated parts, keep them cool and cover any exposed end with a moist, sterile dressing.

5. Angulated fracture
  - a. If distal circulation is compromised, attempt to reduce the fracture to restore circulation.
  - b. In general, fractures with angulations that are overriding in the mid-shaft may be straightened. This can be done for fractures in the lower extremities with the traction splint if not contraindicated.
6. Open fracture
  - a. Remove gross contamination from the wound, control hemorrhage, and apply appropriate splints if necessary. If distal circulation is compromised, attempt to reduce the fracture to restore circulation.
7. Joint injury
  - a. If distal pulses are present, immobilize the joint in its present position.
  - b. If no distal pulse is present, carefully straighten the joint to regain the distal pulse before immobilizing.
8. For suspected femur fracture (open or closed), consider traction splint.
9. For suspected pelvic fractures associated with category red trauma patients, apply the SAM Pelvic Sling II.
10. For life threatening uncontrolled extremity hemorrhage that cannot be controlled by other means consider application of tourniquet.

## H. Eye Injuries

1. Assess visual acuity by have the patient count fingers from 1-2 arm lengths.
2. If vision is altered or absent, test for perception with a flashlight.
3. Chemical burns.
  - a. Flush eyes continuously with sterile H<sub>2</sub>O or Normal Saline Solution until arrival at hospital.
4. Ultraviolet & welder's flash burns.
  - a. Cover both eyes with dark patches.
5. Simple foreign object.

- a. If tears do not wash the object away, use sterile H<sub>2</sub>O or normal saline solution to wash the eye letting the fluid drain down and away from the eye. Inversion of the eyelid may be necessary to extract the object.
6. Lacerations and contusions.
    - a. Assess the globe for injuries. If the globe appears lacerated, DO NOT APPLY PRESSURE—even to stop profuse bleeding.
    - b. Cover bleeding lids with loose sterile dressings.
    - c. Attempt to recover any torn eyelids, and transport wrapped in a sterile moist dressing.
  7. Avulsion.
    - a. Eyelid tissues should not be immersed in saline; avulsed eyelid tissues should be stored in a cold moist environment.

## I. **Head Injuries**

1. For adult patients receiving assisted ventilations, hyperventilation (a ventilation rate of 20 breaths per minute) should only be utilized if neurological signs of impending brain stem herniation are recognized (i.e., bilateral fixed and dilated pupils, asymmetrical pupils, decerebrate posturing, or total body flaccidity).
2. Apply gentle pressure to bleeding wounds if possibility of skull fracture exists.
3. Any patient experiencing loss of consciousness should be transported to a medical facility.
4. Impaled objects.
  - a. Remove an impaled object only if it impedes the ability to administer CPR or sustain a patent airway for the patient.
  - b. Control any associated hemorrhage.
  - c. Secure the object in place with dressings and bandages or other appropriate material.
  - d. If the size or shape of the impaled object prevents the patient from being loaded into the ambulance, contact the base physician for direction [Medical Direction].
5. Dislodged teeth.
  - a. Place the permanent tooth or teeth into a bag with milk or normal saline solution. Make sure to transport the tooth or teeth with the patient.

## Part VI. Appendix

### A. Infectious Diseases:

#### **EBOLA:**

The risk of contracting Ebola in the United States is very minimal.

The following are the suggested steps for providing care to a person suspected of having Ebola or any other extremely infectious disease.

1. Screen the patient for Ebola by asking the appropriate questions if: <sup>1 2</sup>
  - a. Do they have flu like symptoms, fever greater than 101.4° F, fatigue, headache, weakness, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage, and
  - b. Has the patient has lived in or traveled to a country with widespread Ebola Virus transmission or had contact with an individual with confirmed Ebola Virus Disease within the previous 21 days.
2. If the patient meets the above criteria, EVERYONE should retreat from the environment and: <sup>3</sup>
  - a. Someone from the original crew should don contents of the LF&R Infectious disease kit and return to the patient's side. This will more than likely be someone from the Engine or Truck Company since they will probably arrive on location before the medic unit. Provide patient comfort care only.
    - i. Place a mask on the patient or ask them to don a mask.
3. Contact 911 dispatch immediately and request an Infectious Disease transport ambulance.
4. Request that dispatch send the closest HazMat apparatus.
  - a. The closest HazMat apparatus will determine if they have enough people on their crew trained to deal with donning and doffing and request additional support if needed.
5. Request the appropriate Battalion Chief and EMS-1 to the scene.
  - a. EMS-1 will be responsible for immediately contacting the LLCHD and the Chief of EMS.

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<sup>1</sup> <http://emergency.cdc.gov/han/han00371.asp>

<sup>2</sup> <http://www.cdc.gov/vhf/ebola/pdf/ambulatory-care-evaluation-of-patients-with-possible-ebola.pdf>

<sup>3</sup> <http://www.cdc.gov/vhf/ebola/hcp/ed-management-patients-possible-ebola.html>



6. The receiving hospital should be notified as soon as possible that we are transporting a patient potentially infected with Ebola.
7. Once a transport ambulance arrives on scene, two members from the HazMat apparatus should don the appropriately sized brown Tyvek suits, SCBA's, and gowns from the Infectious disease kit, and double glove.
  - a. The required SCBA's can be removed from the medic unit on location.
8. A trained observer should be designated and should ensure that PPE is donned properly.<sup>4</sup>
9. The two providers wearing the Tyvek suits and SCBA's should contact the patient and place them on the ambulance cot. Cot should be covered by the appropriate absorbent drapes before the patient is placed on the cot.
  - a. The absorbent cot drape should be used to "cocoon" the patient and the "cocoon" should be secured with tape.
  - b. Only BLS care will be provided to the patient.
10. Once the providers have properly donned their PPE the other members of the HazMat station apparatus should immediately proceed to the hospital and prepare for decontamination of the two providers in the Tyvek suits.
11. Members from the originally dispatched engine crew shall provide a driver for the Infectious Disease ambulance and accompany the ambulance to the hospital. Drivers should don the contents of the Infectious disease kit, being especially conscious of wearing clean gloves, eye protection and a face mask.
12. The two members of the transport team wearing Tyvek suits and SCBA's shall accompany the patient in the back of the ambulance to the hospital where they will move them to the designated areas as specified by hospital providers.
13. Someone will be assigned to drive the ambulance and should don the contents of the Infectious Disease kit.
14. The members of the transport team will be de-contaminated using the best judgment of the HazMat captain in conjunction with EMS-1. All personnel that provided patient care will doff their PPE under the auspices of a "trained observer". (EMS-1 can be used as a reference source but will not be donning PPE).
  - a. Providers should shower at the hospital and don hospital scrubs until they can return to their station. Clothing should be double bagged and can be laundered using hot water and regular laundry soap.

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<sup>4</sup> <http://www.cdc.gov/vhf/ebola/hcp/ppe-training/index.html>

- b. Contact the emergency room Charge Nurse for directions to the showers and surgical scrubs.
15. The providers will return to work and will be screened using the CDC recommendations for someone who has potentially been exposed to Ebola. The LLCHD will be involved in this screening process to ensure the safety of the providers; <sup>5</sup>
  - a. Providers are not considered infectious until they develop symptoms 2-21 days later. Since they are considered asymptomatic, these individuals are in the low (but not zero) risk category. <sup>6</sup>
16. The transport ambulance will be parked until a determination has been made if the patient does have Ebola. This will usually take between four (4) and six (6) hours.
  - a. All PPE, SCBA's, and the cot should be placed in the back of the transport ambulance.
17. If the patient is found to have Ebola or another extremely infectious disease a private contractor suggested by LLCHD will be hired to decontaminate the interior of the ambulance. <sup>7</sup>
18. If the patient does not have Ebola or another extremely infectious disease the ambulance will be cleaned following the appropriate MP.
19. The vehicle can then be placed back into service.

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<sup>5</sup> <http://www.cdc.gov/hai/settings/outpatient/outpatient-care-guidelines.html>

<sup>6</sup> <http://www.cdc.gov/vhf/ebola/exposure/monitoring-and-movement-of-persons-with-exposure.html>

<sup>7</sup> <http://www.cdc.gov/vhf/ebola/hcp/medical-waste-management.html>

Approved by:

\_\_\_\_\_ Medical Director (Print)

\_\_\_\_\_ Medical Director Signature

\_\_\_\_\_ Date

(A signed copy is available at the EMS Division)

Edited 6/27/24