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2017 Adult & General Care Protocols

INDEX

ACLS-Bradycardia

Note:
Criteria for characterizing a patient as "unstable"*

- Hemodynamic Criteria
  - SBP < 80 mmHg AND Heart Rate <50 beats/min
- Clinical Criteria
  - Signs of shock (poor perfusion) are present, including
    - ALOC including syncope, weakness, lightheadedness, fatigue
    - Absent radial pulses
    - Pallor and diaphoresis
  - Signs of pulmonary edema are present, including
    - Labored breathing
    - Rales (wet lungs)
    - Hypoxia (SpO_2 <90%)
  - The patient complains of angina

Priorities	***Assessment Findings***
Chief Complaint	Syncope, weakness, diaphoresis, unresponsiveness, chest pain
OPQRST	Identify location and radiation, onset, duration, progression, and severity, presence of intermittent or fluctuating symptoms, factors that provoke (exertion) or palliate (rest) the pain.
Associated Symptoms/ Pertinent Negatives	Chest pain, dyspnea, nausea/vomiting. Pain that is aggravated by breathing and coughing (pleuritic). Cough and fever/chills.
SAMPLE	History of coronary artery disease or risk factors for it. Use of cardiac medications, including aspirin.
Initial Exam	Check ABCs and correct any immediate life threatening problems.
Detailed Focused Exam	**General Appearance:** Anxious? **Skin:** Cool, pale diaphoretic? **Neck:** JVD? **Chest:** Labored breathing? **Lungs:** Wheezes, rales, rhonchi? Decreased breath sounds? **Heart:** Rate, regularity? **Legs:** Pedal Edema? **Neuro:** ALOC?
Goals of Therapy	Increase heart rate, reduce chest pain, reduce risk of lethal arrhythmias, early identification of myocardial infarction.
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR) / EMERGENCY MEDICAL TECHNICIAN (EMT)

- Routine Medical Care.
- Titrate oxygen therapy to the lowest level required to maintain an oxygen saturation greater than 93%
- If the patient is having chest pain – refer to the *Chest Pain Guidelines*
- Obtain rhythm strip and/or 12 lead EKG

ADVANCED EMT (AEMT)

- IV/IO NS @ TKO
- If the SPB < 100 mmHg and lungs are clear, administer 500ml bolus.

Contact Medical Control for the following:

- Additional fluid boluses

INTERMEDIATE

- If the patient remains hemodynamically and clinically stable, observe and monitor. Prepare for transport.
- Obtain a rhythm strip and/or 12-Lead EKG
- If the patient is (becomes) hemodynamically or clinically unstable,
  - Give **Atropine** 0.5mg IV/IO.
    - May repeat to a maximum of 3 mg
  - If the patient fails to respond to **Atropine**
    - Initiate transcutaneous pacing (TCP) immediately
    - Set the HR at 70 – 80 beats/min
    - Set the voltage at 40 mA initially and watch for the pacer spikes on the monitor
    - Increase voltage by 20 mA every 3-5 seconds until there is 100% capture:
      - a wide QRS complex appears on the monitor after every pacer spike
      - a pulse can be felt in the femoral or carotid artery after every QRS complex
    - Then increase the voltage by 10%
    - Monitor pulse and blood pressure
    - Consider pain control
  - If the patient fails to respond to pacing, contact Medical Control

Contact Medical Control for the following:

- Consider Epinephrine 0.5 – 1 mg IV/IO/ and repeat every 3-5 minutes, if the patient fails to respond to Atropine and/or pacing.
- Early notification if an acute myocardial infarction is apparent on the 12-lead EKG

PARAMEDIC

- If the patient failed to respond to Atropine, consider administering an adrenergic infusion which may be preferred to pacing
  - Dopamine infusion: 2-10mcg/kg/minute
  - Epinephrine infusion: 2-10mcg/minute

Contact Medical Control for the following:

- Additional orders

ACLS-Rapid Atrial Fibrillation

Priorities	***Assessment Findings***
Chief Complaint	Palpitations, fast heart rate, shortness of breath, chest pain, weakness
OPQRST	Onset and duration, precipitating factors and circumstances, associated symptoms, stroke symptoms, nausea, vomiting
Associated Symptoms/ Pertinent Negative	Chest pain, shortness of breath, weakness, anxiety, leg swelling
SAMPLE	Previous history, history of thyroid disease, CAD, cardiac medications
Initial Exam	Check ABCs and correct any immediate life threatening problems.
Detailed Focused Exam	**Skin:** Cool, pale diaphoretic **Neck:** JVD? **Chest:** Labored breathing **Lungs:** Wheezes, rales, rhonchi? Decreased breath sounds? **Heart:** Irregular, fast, murmur **Legs:** Edema? Signs of an acute arterial occlusion (embolism)? **Neuro:** ALOC? Signs of stroke?
Goals of Therapy	Decrease Rate, treat chest pain, treat CHF
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR)

- Routine Medical Care
- Titrate oxygen therapy to the lowest level required to maintain an oxygen saturation greater than 93%
- If the patient is having difficulty breathing allow them to sit in position of comfort

EMERGENCY MEDICAL TECHNICIAN (EMT)

- If the patient experiences shortness of breath, follow the *Congestive Heart Failure Guidelines*
- If the patient has suffered a stroke, follow the *Stroke Guidelines*.
- ECG monitor or 12 lead acquisition

ADVANCED EMT (AEMT)

- IV/IO NS @ TKO
- If SPB < 100 mmHg give 500cc fluid bolus, and then reassess
    - Consider Trendelenberg position, if there is no dyspnea

Contact Medical Control for the following:

- Additional fluid orders

INTERMEDIATE

- Obtain a 12-Lead EKG if not already performed
- If the patient does not have a history of atrial fibrillation, consider the potential causes that may have a bearing on prehospital care, including:
    - Acute coronary syndromes (e.g. AMI)
    - Pulmonary embolism
    - Alcohol use
    - Stimulant drug abuse (e.g. cocaine and amphetamines)
- If the patient has a history of atrial fibrillation, consider possible causes of tachycardia, including pain, dehydration, hypotension, shock, hypoglycemia, hypoxemia, anxiety, fever, sepsis, drug induced, recent heavy exertion, hyperthyroidism and anemia.
- If the patient is hemodynamically and clinically stable, observe and monitor.

Contact Medical Control for the following:
- If the patient is unstable, consider cardioversion under direction of Medical Control.

PARAMEDIC

- If the patient is hemodynamically and clinically stable, transport, observe and monitor. Efforts to reduce the heart rate will add little benefit in the absence of adverse effects from RAF.
- If the patient is hemodynamically or clinically unstable
    - Prepare to perform synchronized cardioversion, consider pain management or sedation
    - Perform first synchronized cardioversion @ 120-200 J biphasic (200 J monophasic)
    - If synchronization is unsuccessful, turn sync off and attempt cardioversion

Contact Medical Control for the following:
- Additional orders to potentially include Cardizem.

FOOTNOTES:

Criteria for characterizing a patient as "unstable"
- Hemodynamic Criteria
    - SBP < 80 mmHg AND Heart Rate > 150 beats/min
- Clinical Criteria
    - Signs of shock (poor perfusion) are present, including
        - ALOC
        - Absent radial pulses
        - Pallor and diaphoresis
    - Signs of pulmonary edema are present, including
        - Labored breathing
        - Rales (wet lungs)
        - Hypoxia (SpO_2 <90%)
    - The patient complains of angina

ACLS-Wide Complex Tachycardia

Note:

- Wide complex rhythms have a QRS duration greater than 0.12 sec
- Clinically significant tachycardias will typically have a rate greater than 150/minute
- Although some wide complex tachycardias develop from supraventricular tachycardias, prehospital providers should always assume that wide complex rhythms are ventricular tachycardia (VT), particularly if the patient is unstable.
- Treating wide complex tachycardias with medications used to treat supraventricular tachycardias is fraught with danger and must be avoided in the prehospital setting.

Priorities	***Assessment Findings***
Chief Complaint	Palpitations, fast heart rate, shortness of breath, chest pain, weakness, syncope, cardiac arrest/pulseless non-breather
OPQRST	Onset and duration, precipitating factors and circumstances, associated symptoms, stroke symptoms, nausea vomiting
Associated Symptoms/ Pertinent Negatives	Chest pain, shortness of breath, weakness, anxiety, leg swelling
SAMPLE	• Previous history, history of thyroid disease, CAD, Cardiac Medications • Obtain history of previous episodes of tachycardia, including diagnoses if known. Pay particular attention to whether there is an underlying history of pre-excitation, including the Wolff-Parkinson-White (WPW) Syndrome. • Obtain history of what medications have been used to treat previous arrhythmias, if known. • Obtain history of any previous complications from previous arrhythmia treatments, if known. • Obtain history of the duration of the current episode of tachycardia, if known.
Initial Exam	Check ABCs and correct any immediate life threatening problems.
Detailed Focused Exam	**Skin:** Cool, pale diaphoretic **Neck:** JVD? **Chest:** Labored breathing **Lungs:** Wheezes, rales, rhonchi? Decreased breath sounds? **Heart:** Regular, rate fast or slow, murmur **Legs:** Edema **Neuro:** ALOC?
Goals of Therapy	Decrease Rate, treat chest pain, treat CHF
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR) / EMERGENCY MEDICAL TECHNICIAN (EMT)

- Routine Medical Care
- Titrate oxygen therapy to the lowest level required to maintain an oxygen saturation greater than 93%
- If the patient is having difficulty breathing, allow them to find a position of comfort.
- If the patient becomes unresponsive, pulseless and non-breathing, follow the *Cardiac Arrest Guidelines*.
- Cardiac Monitor or 12 Lead EKG

ADVANCED EMT (AEMT)

- IV/IO NS @ TKO
- 12 Lead EKG if not already obtained.
- If SPB < 100 mmHg give 500cc fluid bolus and reassess

INTERMEDIATE / PARAMEDIC

- Monitor the heart rhythm
- If the patient is hemodynamically or clinically unstable with monomorphic VT
  - Prepare to perform synchronized cardioversion.
  - Perform first synchronized cardioversion @ 50 Joules.
  - If unsuccessful, increase by 50 – 100 joules for each subsequent attempt.
- If the patient is hemodynamically or clinically unstable with polymorphic VT, or if the patient develops pulseless VT
  - Defibrillate (i.e. unsynchronized cardioversion) at 360 Joules using a monophasic defibrillator (or at the device-specified dose in a biphasic defibrillator)
- If the patient is hemodynamically and clinically stable,
  - Perform a 12-Lead EKG
  - Differentiate between monomorphic and polymorphic ventricular tachycardia
  - Differentiate between regular and irregular rhythms
    - Regular rhythms are monomorphic VT until proven otherwise
    - Irregular rhythms are polymorphic VT (including *Torsades de Pointes*) until proven otherwise
- For stable patients with monomorphic VT
  - **Amiodarone 150mg IV over 10 minutes**
  - **Lidocaine is a second-line choice: 1-1.5 mg/kg IV bolus, followed by 1-4mg/min.**
- For all other stable wide-complex tachycardias, prepare the patient for transport and contact Medical Control.
  - Provide supportive care and monitor the patient closely during transport.

Contact Medical Control for the following:

- Consultation about rhythm analysis
- If the patient remains hemodynamically and clinically stable, further treatment can be safely delayed until the patient arrives in the emergency department.

Asthma & COPD

(Includes Reactive Airways Disease, Bronchospasm, Emphysema and Chronic Bronchitis)

Note:

- All hypoxic patients should be given enough oxygen therapy to reverse their hypoxia even if they have COPD, but all COPD patients must be closely monitored for signs of respiratory depression due to oxygen therapy. Look for: somnolence, lethargy, decreased rate or depth of breaths. If these appear, back off on the rate of flow and prepare to assist ventilations.
- Patients with COPD are usually older adults with a long and heavy smoking history or long term exposure to poor air quality condition. Exacerbations are often triggered by infections.
- Asthma is usually a disease of childhood, but may occur or re-occur later in life. There is usually an identifiable trigger, like infection, weather changes or exposure to certain allergens (e.g., dogs, pollen, etc.). The so-called classic triad of dyspnea, cough and wheezing may not always be present.
- Patients with a history of near fatal asthma or have been previously intubated, are at increased risk of recurrent severe attacks and asthma-related death.
- Remember: *"All that wheezes is not asthma!"* Always consider the possibility of Congestive Heart Failure or acute coronary syndrome in older adults with wheezing.
- The absence of wheezing may be indicative of extreme airflow obstruction.

Priorities	***Assessment Findings***
Chief Complaint	Difficulty breathing or shortness of breath
OPQRST	Determine onset, duration and progression, triggering events, response to treatment at home, and subjective severity
Associated Symptoms/ Pertinent Negatives	Chest pain (angina or pleuritic), fever/chills, cough/productive of what, recent changes in sputum color
SAMPLE	Exposure to a known allergen, history of asthma, emphysema, chronic bronchitis, COPD or previous bronchospasm. Current or past medications for these problems (e.g., albuterol, Atrovent, Advair, prednisone, antibiotics). Compliance with these mediations recently.
Initial Exam	Check ABCs and correct immediately life-threatening problems.
Detailed Focused Exam	**General Appearance**: Tripod positioning, purse-lipped breathing? Severity of distress? **Skin:** Cool, moist and pale? Warm, dry and flushed? Urticaria? Cyanosis? **Respiratory Effort:** Using accessory muscles, signs of fatigue; two-word sentences? **Lung Sounds:** Wheezes, rales, rhonchi or stridor? Decreased lung sounds? Prolonged expiratory phase? Absence of wheezing? **Heart Sounds:** Rate, regularity? **Lower Extremities:** Pitting edema? **Neuro:** ALOC, lethargy, somnolence?
Goals of Therapy	Improve oxygenation and ventilation; reduce distress and the work of breathing.
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR)

- Routine Medical Care
- Allow/assist the patient to assume a position of comfort (usually upright).
- Administer oxygen as needed. Assist ventilation with BVM if apnea or hypopnea occurs.
- Airway Adjuncts: If there is loss of consciousness and no gag reflex, insert an oropharyngeal or advanced airway, if approved. Use a nasopharyngeal airway with gag reflex.

EMERGENCY MEDICAL TECHNICIAN (EMT)

- Assist with patient-prescribed medications
  - **Albuterol** and/or **Atrovent** MDI 2 Puffs, if approved.
- Nebulizer Therapy:
  - **Albuterol** Unit Dose (2.5 mg in 3 ml) administer per hand held nebulizer or mask; May repeat X 2 additional doses
  - Consider **Atrovent** unit dose (0.5mg in 3ml) with history of COPD/emphysema, if approved.

ADVANCED EMT (AEMT)

- IV/IO NS @ TKO, if approved.
- If signs of dehydration or hypovolemia are present, consider 500 ml bolus.
- Consider continuous dose of Albuterol

Contact Medical Control for the following:

- Additional orders
- Additional dose of Atrovent
- Consider **Epinephrine** 1:1,000 0.3 – 0.5 ml Sub-Q

INTERMEDIATE

- For severe asthma, consider **Epinephrine** 1:1,000 0.3 – 0.5 ml Sub-Q

Contact Medical Control for the following:

- Repeat doses of Epinephrine if signs and symptoms of respiratory distress persist after 20 minutes.

PARAMEDIC

- As above
- For severe asthma or COPD consider **Solu-Medrol** 125 mg IV

Contact Medical Control for the following:

- Epinephrine 1: 10,000 IV Push (caution in patients with potential cardiac disease)
- Magnesium Sulfate 2 gm IV slowly (over 10 minutes) for severe asthma

Agitated & Combative Patients

Note:

- Ensuring the safety of EMS personnel is of paramount importance. Always summon law enforcement to secure the scene and patient before attempting to provide medical care.
- Physical restraints are only permitted when the patient is potentially dangerous to self or others.
- Never apply physical restraints for punitive reasons, or in a manner that restricts breathing and circulation, or in places that restrict access for monitoring the patient.
- Behavioral disturbances are often the result of underlying medical conditions that require immediate medical attention, including head trauma, alcohol or drug intoxication, metabolic disease, and psychiatric disorders. Patients in need of medical attention must be transported in an ambulance, not a police vehicle.
- If law enforcement restrains the patient with handcuffs, an officer with a key must accompany the patient during transport.
- Patients most at-risk of dying in police custody are those who violently resist and struggle against restraints.

Priorities	***Assessment Findings***
Chief Complaint	"Behavioral Disturbance"; "Violent behavior";
OPQRST	Determine onset, duration and progression, triggering events
Associated Symptoms/ Pertinent Negative	Alcohol or drug intoxication, head trauma, suicidal/homicidal ideation, hallucinations
SAMPLE	Psychiatric medications? Noncompliance? History of schizophrenia or bipolar disorder? History of drug or alcohol abuse?
Initial Exam	Check ABCs and correct immediately life-threatening problems.
Detailed Focused Exam	**General Appearance**: Bizarre behavior, violent, aggressive, combative, loud, obnoxious, agitated; partial or complete undressing? Uncooperative (Does not respond to verbal commands to desist)? **Skin:** Diaphoresis? Cool, moist and pale? Warm, dry and flushed? **Respiratory Effort:** Labored breathing? Heavy breathing? **Lung Sounds:** Wheezes, rales, rhonchi or stridor? Decreased lung sounds? **Cardiovascular:** Hypertensive and tachycardic? **Extremities:** Trauma? **Neuro:** Excited, agitated, increased activity and increased intensity of activity **Psych:** Bizarre thoughts and actions; Paranoia, delusional, confused, clouded consciousness?
Goals of Therapy	Physically or chemically restrain the patient to reduce the threat to self and others.
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR)

- Scene size-up, never allow the patient to get between you and your exit.
- Do not approach an agitated and combative patient before law enforcement has gained control of the situation.
- It is reasonable to attempt verbal de-escalation, but do not persist if it appears to be futile or making the situation worse.
- Initiate Routine Medical Care once it is safe and practical.

EMERGENCY MEDICAL TECHNICIAN (EMT)

- Consider physical restraints when verbal control is ineffective
- Soft restraints or padded hard restraints are preferred for use by EMS personnel.
- No hog-tying or hobble restraints allowed. No "sandwiching" with long boards or scoop stretchers.
- Once restrained, the patient must be brought to a semi-sitting or recovery (lateral recumbent) position.
- Do not keep the patient in a prone position once restrained
- If EMS or law enforcement personnel must "pile on" to gain control, they must get off the patient as quickly as possible to permit the patient to breathe.
- A spit net may be applied to the patient.

ADVANCED EMT (AEMT) / INTERMEDIATE

- Do not attempt to initiate an IV until the patient becomes cooperative.
- IV/IO NS @ TKO, if approved.
- If signs of hyperthermia or hypovolemia are present, administer 500ml bolus.
- Consider a second IV/IO

Contact Medical Control for the following:

- Additional fluid orders

PARAMEDIC

- **Valium** 5-10 mg IM/IV
- Consider smaller initial doses for sedation of
  - Small individuals
  - Patients with mild agitation or combativeness
- Monitor vital signs frequently

Contact Medical Control for the following:

- Additional Valium

NOTES:

Mandatory Physical Restraint Documentation

- Why the restraints were applied (including a description of the threat to self or others)
- The time the restraints were applied, and the time(s) of restraint removal (if done before hospital arrival)
- Who (which agency) applied the restraints
- What kind of restraints
- Vital signs and observations about patient status every five minutes
- Evidence that distal neurovascular function was not impaired by the restraints
- The position of the patient after restraints were applied.
- Medication(s) used and their effects, including adverse effects.

Allergy & Anaphylaxis

Note:

- Allergic reactions span a continuum from minor to life threatening.
- If due to a bee sting, remove stinger by scraping horizontally with tongue depressor or plastic card.
- Angioedema with significant swelling of the tongue increases the risk of obstructed airway.
- In patients with underlying coronary artery disease, or those at risk for it, epinephrine should be used with caution, because of the risk of inducing a myocardial ischemia. In severe anaphylaxis, there is no contraindication to epinephrine.

Priorities	***Assessment Findings***
Chief Complaint	"Allergic Reaction" "Hives" "Itching Rash"
OPQRST	What caused the reaction? Did the patient take diphenhydramine (Benadryl) or use an epinephrine auto-injector (EpiPen), and how did they respond?
Associated Symptoms/ Pertinent Negatives	Subjective swelling of facial, oral or pharyngeal structures, difficulty breathing, wheezing, or light headedness.
SAMPLE	Does the patient have any environmental, medication, food or other allergies? Is the patient taking an antibiotic? If the patient has angioedema, is he/she taking an ACE inhibitor? Is he/she taking a beta-blocker? If the patient is taking a beta-blocker, he/she might not respond to epinephrine.
Initial Exam	Check ABCs and correct immediately life-threatening problems.
Detailed Focused Exam	**General Appearance:** Identify degree of severity **Skin:** Urticaria (hives) **HEENT:** Swelling of the lips, tongue or pharynx (angioedema) **Chest:** Use of accessory muscles of respiration, labored breathing **Lungs:** Wheezing **Cardiovascular:** Hypotension, tachycardia (anaphylactic shock) **Neurological:** ALOC
Goals of Therapy	Reverse the allergic reaction, relieve bronchospasm, correct hypotension/shock
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR)

- Oxygen
- If authorized, administer **Epi Pen** 0.3mg IM for signs of shock and/or difficulty breathing, if approved.

EMERGENCY MEDICAL TECHNICIAN (EMT)

- Assist with patient-prescribed medications
  - **Albuterol**
- Nebulizer Therapy:
  - **Albuterol** Unit Dose (2.5 mg in 3 ml) administer per hand held nebulizer or mask, if approved. May repeat X 2 additional doses
- **Epinephrine** 1:1,000 Epi Pen or Draw up 0.3 mg (0.3 ml) and administer SubQ or IM for signs of shock and/or difficulty breathing

Contact medical control for the following:

- Additional doses of Epinephrine and Albuterol.

ADVANCED EMT (AEMT)

- Initiate IV/IO NS @TKO, if approved.
- If the patient is hypotensive, administer 500ml bolus.
- Additional doses of Albuterol.
- **Epinephrine** 1:1000 0.3 - 0.5 ml (0.3 – 0.5 mg) SQ/IM for moderate to severe reactions. Repeat every 10 – 15 minutes X3 if patient is not improving, or as ordered per Medical Control.

Contact Medical Control for the following:

- Additional orders
- Additional doses of Epinephrine 1:1000

INTERMEDIATE

- If loss of consciousness and no gag reflex, consider non-visualized airway or endotracheal intubation
- Consider **Epinephrine** 1:1000 0.3 - 0.5 ml (0.3 – 0.5 mg) SQ/IM for moderate to severe reactions. Repeat every 10 – 15 minutes X3 if patient is not improving, or as ordered per Medical Control.

Contact Medical Control for the following:

- Additional doses of Epinephrine 1:1000
- Epinephrine 1:10, 000 1.0 ml (0.1mg) IV every 5 – 10 minutes or as ordered by Medical Control.

PARAMEDIC

- **Benadryl** 50 mg IM/IV for mild, moderate or severe reactions
- **Solu-Medrol** 125 mg IV for moderate to severe reactions

Contact Medical Control for the following:

- Epinephrine 1:10, 000 1.0 ml (0.1mg) IV every 5 – 10 minutes or as ordered by Medical Control.
- Glucagon 1 mg IV if the patient is not responding to Epinephrine.

Altered Level of Consciousness (ALOC)

Note:

- Consider reversible causes of ALOC: hypoglycemia, hypoxia, narcotic overdose, hypovolemia, shock, sepsis, head injury, drug or alcohol intoxication, toxic exposures, syncope, seizures, arrhythmias

Priorities	***Assessment Findings***
Chief Complaint	"Confused" "Unresponsive" "Not acting themselves"
OPQRST	Determine onset and duration. Triggering events (e.g. Trauma)
Associated Symptoms/ Pertinent Negatives	Headache, Weakness, Slurred speech, Aphasia, Incontinent
SAMPLE	Medication consistent with possible causes. (i.e. Alzheimer's, CVA, Diabetes, Seizures,)
Initial Exam	Check ABCs and correct any immediate life threats
Detailed Focused Exam	**General Appearance:** Unresponsive, pale, diaphoretic? Signs of trauma? **HEENT:** PERRL? Pupils constricted or dilated? **Lungs:** Wheezes, rales or rhonchi? Signs of respiratory distress or hypoventilation? **Heart:** Rate and rhythm? Signs of hypoperfusion? **Neuro:** Unresponsive? Focal deficits (CVA)?
Goals of Therapy	Restore normal mental status, Maintain ABCs
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR)

- Routine Medical Care or Trauma Care
- Allow/assist the patient to assume a position of comfort (usually upright).
- Oxygen
- Airway Adjuncts: If there is loss of consciousness and no gag reflex, insert an oropharyngeal or advanced airway, if approved. Use a nasopharyngeal airway with gag reflex.

EMERGENCY MEDICAL TECHNICIAN (EMT)

- Check glucose level, if approved and follow *Hypoglycemia Guidelines or Hyperglycemia Guidelines as appropriate.*
- If a narcotic overdose is suspected, consider **Narcan** 0.4mg to 2mg.
- Follow overdoes protocol and guidelines if indicated.

ADVANCED EMT (AEMT) / INTERMEDIATE / PARAMEDIC

- IV/IO NS @ TKO
- If signs of dehydration or hypovolemia are present, administer 500ml bolus.
- If a narcotic overdose is suspected, consider **Narcan** 0.4mg to 2mg.
- Follow overdose protocol if indicated.

Contact Medical Control for the following:

- Additional orders

Cardiac Arrest

Priorities	***Assessment Findings***
Chief Complaint	Collapsed, unresponsive, no pulse, not breathing, not breathing normally
OPQRST	Witnessed? Estimated down time. Circumstances/trauma. Location of patient. Antecedent symptoms/signs (chest pain, difficulty breathing). Environmental factors, medication-related problems or overdose.
Associated Symptoms/ Pertinent Negatives	Bystander-initiated CPR. Pre-arrival CPR instructions from dispatch? Public access AED use.
SAMPLE	Does the patient have any allergies to medications? History of heart disease? Current cardiac medications?
Initial Exam	Establish Unresponsiveness. Look for absence of normal breathing
Detailed Focused Exam	**General:** Identify unresponsiveness. Look for rigor mortis, dependent lividity, or nonsurvivable trauma. Look for a valid Wisconsin Do-Not-Resuscitate bracelet. **Skin:** Warm/cold, dependent lividity, sings of trauma? **HEENT:** Airway patent, foreign bodies (e.g. dentures), neck swelling or trauma, trachea in midline? **Chest:** Spontaneous respirations, subcutaneous air or crepitation, or deformity? **Lungs:** Equal breath sounds, difficulty bagging or ventilating? **Cardiovascular:** Absence of heart sounds, carotid or femoral pulses? **Abdomen:** Distended? **Extremities:** Rigor mortis, edema, deformity? **Neurological:** Unresponsive to verbal and painful stimulation?
Goals of Therapy	Return of spontaneous circulation (ROSC)
Monitoring	BP, HR, RR, EKG, SpO_2, $ETCO_2$

EMERGENCY MEDICAL RESPONDER (EMR) / EMERGENCY MEDICAL TECHNICIAN (EMT)

- Establish that the patient is unresponsive, and not breathing normally
- Check for DNR bracelet, dependent lividity, rigor mortis
- **Initiate Resuscitation:**
  - Follow *American Heart Association Guidelines* for use of the AED.
- **Perform Effective Chest compressions**
  - Push hard and fast at least 100 compressions per minute
  - Compress the chest at least 2 inches
  - Allow for complete chest recoil
- **Manage the airway**
  - Head tilt/chin lift (jaw thrust if c-spine injury suspected)
  - Oropharyngeal airway or advanced airway, if approved.
  - Do not interrupt compressions to do this, unless absolutely necessary.
  - Ventilate per *American Heart Association Guidelines*
  - If there is ROSC, provide the following supportive interventions:
    - Support ventilation at 10-12 breaths/minute
    - Titrate oxygen therapy to the lowest level required to maintain an oxygen saturation greater than 93%

ADVANCED EMT (AEMT)

- Basic CPR and appropriate AED use is the most important
- Insert non-visualized airway without interrupting chest compressions
- Initiate IV/IO NS, if approved without interrupting CPR and run wide open

Contact Medical Control for the following:
- Additional orders

INTERMEDIATE / PARAMEDIC

- Direct EMRs and EMTs to continue CPR.
- If an advanced airway is not already in place, consider an endotracheal tube (if trained) without interrupting CPR.
- Initiate cardiac rhythm monitoring and analysis.
- Initiate IO if not able to initiate IV
    - Drug administration routes in order of preference: IV – IO – ET
    - Do not attempt to administer medications via a non-visualized airway
        - Lack of venous access is not an acceptable indication for converting a non-visualized airway that is functioning well for ventilations to an ET tube.
        - Rather, use IO access.
- Proceed to **ACLS resuscitation medications** according to the respective protocols for:
    - Asystole/Pulseless Electrical Activity
      Ventricular Fibrillation/Pulseless Ventricular Tachycardia (VF/PVT)
- Asystole/PEA
    - If Asystole appears on the monitor, confirm true asystole
        - Check on/off switches
        - Check leads
        - Check gain and sensitivity settings
        - Confirm asystole in 2 or 3 leads
    - Identify and correct reversible causes: The Six H's and the Five T's
        - This applies mostly to PEA, but to a lesser extent, asystole, as well.
        - The Six Hs (treatment orders are in parentheses)
            - Hypovolemia
                - (Infuse Normal Saline wide open)
            - Hypoxia
                - (Administer high-flow oxygen and perform ventilation: do not hyperventilate)
            - Hydrogen Ion, i.e. acidosis
                - (Perform ventilation, EMT-P: Consider **Sodium Bicarbonate**)
            - Hyperkalemia
                - (EMT-P: Consider 10 ml **Calcium Chloride** 10% IV over 2 – 5 minutes. May repeat X 1)
                - (EMT-P: Consider **Sodium Bicarbonate** 1 amp IV)
                - (EMT-I/P: **Albuterol** nebulizer treatment with 1 – 2 Unit Doses)
            - Hypokalemia
                - (Even if hypokalemia is suspected, it is not treated in the field.)
            - Hypothermia
                - (See *Hypothermia & Frostbite Guidelines*)
            - Hypoglycemia
                - (Administer 1 amp **D50** IV)

        - The Five Ts (treatment orders are in parentheses)
            - Tablets
                - (See *Toxic Exposure & Overdose Guidelines*)
            - Tamponade
                - (EMT-P: Pericardiocentesis if trained and approved)
            - Tension pneumothorax
                - (Perform needle decompression)
            - Thrombosis, cardiac i.e. myocardial infarction
                - (No specific prehospital treatment available)
            - Thrombosis, pulmonary i.e. pulmonary embolism
                - (No specific prehospital treatment available
    - **Epinephrine** (1:10000) 1 mg IV/IO every 3-5 minutes -or-
    - **Epinephrine** (1:10000) 2.0 – 2.5 mg ET in 10cc saline every 3 – 5 minutes
    - **Consider Atropine** only if there is a reason to suspect the patient has sustained significant vagal stimulation: 1.0 mg IV/IO. Repeat every 3 – 5 minutes to a maximum of 0.04 mg/kg (3 – 4 mg) (Atropine should not be given routinely)
- VFib/Pulseless VT
    - Defibrillate 360 J monophasic; 200 J biphasic
    - Resume CPR immediately for 2 minutes do not check for pulse
    - Defibrillate at 360 joules monophasic; 200 J biphasic
    - Resume CPR immediately for 2 minutes
    - Epinephrine 1.0 mg (10 cc of 1:10,000) IV/IO every 3-5 minutes or 2.0 mg ET -or-
    - Vasopressin 40 U IV may replace 1 dose of epinephrine
    - If VT/VF persists, defibrillate at 360 Joules monophasic; 200 J biphasic every 2 minutes with continuous CPR between defibrillation
    - Anti-arrhythmics
        - **Amiodarone** 300 mg IV bolus; may repeat 150 mg IV. -or-
        - **Lidocaine** 1.5 mg/kg repeat up to 3 mg/kg.
        - **Magnesium Sulfate** 2 g IV bolus for Torsades de Pointe
        - If chronic dialysis patient and suspected hyperkalemia
            - EMT-P: **Calcium Chloride** 2 mg/kg IV
            - EMT-P: **Sodium Bicarbonate** 1 mEq / kg
        - If patient is taking a calcium blocking agent such as **Verapamil**, **Nifedipine**, **Cardizem** or **Diltiazem**
            - EMT-P: **Calcium Chloride** 4.0 mg/kg IV

Contact Medical Control for the following:
- Additional orders

Chest Pain

Priorities	***Assessment Findings***
Chief Complaint	Heavy, vague, squeezing, pressure like, dull or achy, discomfort or pain
OPQRST	Identify location and radiation, onset, duration progression and severity, presence of intermittent or fluctuating symptoms, factors that provoke (exertion) or palliate (rest) the pain.
Associated Symptoms/ Pertinent Negatives	Radiation, dyspnea, nausea/vomiting. Pain that is aggravated by breathing and coughing (pleuritic). Cough and fever/chills.
SAMPLE	History of coronary artery disease or risk factors for it. Use of cardiac medications, including aspirin.
Initial Exam	Check ABCs and correct any immediate life threatening problems.
Detailed Focused Exam	**General Appearance:** Anxious? **Skin:** Cool, pale diaphoretic? **Neck:** JVD? **Chest:** Labored breathing? **Lungs:** Wheezes, rales, rhonchi? Decreased breath sounds? **Heart:** Rate, regularity? **Legs:** Pedal Edema? **Neuro:** ALOC?
Goals of Therapy	Reduce chest pain; reduce risk of lethal arrhythmias; early identification of myocardial infarction.
Monitoring	BP, HR, RR, EKG, SpO_2

EMERGENCY MEDICAL RESPONDER (EMR)

- Routine Medical Care.
- Administer oxygen.
- Allow/assist the patient to assume a position of comfort (usually upright).

EMERGENCY MEDICAL TECHNICIAN (EMT)

- If approved, administer **Aspirin** 2-4 tablets 81 mg each (162-324 mg total) chewed and swallowed, unless the patient is allergic.
- If patient experiences angina, assist the patient in administering the patient's prescribed **Nitroglycerin** sublingually, unless the Systolic BP < 100 mm Hg.
    - Note: No **Nitroglycerin** if pt has used erectile dysfunction medications in the last 24 hours.
- Repeat BP and **Nitroglycerin** dose every 5 minutes until pain is relieved up to 3 doses.
- Discontinue **Nitroglycerine** if the Systolic BP drops below 100 mm Hg.
- Document all BPs and the number of **Nitroglycerin** doses given.
- Obtain EKG strip or 12 lead as directed.

ADVANCED EMT (AEMT)

- Administer **Nitroglycerin** if not already performed
- IV/IO NS @ TKO, if approved.
- If the SPB < 100 mmHg, give a 500 ml bolus, and then reassess

Contact Medical Control for the following:

- Additional fluid boluses are needed for persistent hypotension

INTERMEDIATE

- Consider **Morphine** 2-4 mg IV

Contact Medical Control for the following:

- Additional orders

PARAMEDIC

- If 12-lead EKG shows an acute STEMI
  - Start **Metoprolol** 5 mg IV X 3, if no contraindications are present
  - Discontinue **Metoprolol** if SBP < 100 mmHg

Contact Medical Control for the following:

- Early notification if an acute myocardial infarction is apparent on the 12-lead EKG

FOOTNOTES:

Contraindications for **Metoprolol**

- SBP < 100 mmHg
- HR < 50
- Asthma/COPD
- Acute CHF
- Known allergy

Congestive Heart Failure

Note:

- Remember that acute myocardial infarction may present with shortness of breath (alone) and new onset acute congestive heart failure!

Priorities	***Assessment Findings***
Chief Complaint	"Difficulty breathing"; "Shortness of breath"
OPQRST	Assess onset, duration, progression, subjective severity, possible triggering events, and response to treatments before EMS arrival.
Associated Symptoms/ Pertinent Negatives	Cardiac chest pain, frothy sputum, blood tinged sputum
SAMPLE	Check past history of CHF or heart disease; medications for CHF (e.g., furosemide, digoxin, ACE inhibitors, long acting nitrates, etc.), and compliance with these medications.
Initial Exam	Check ABCs and correct immediately life-threatening problems.
Detailed Focused Exam	**General Appearance**: Tripod positioning; Severity of distress? **Skin:** Cool, moist and pale? Warm, dry and flushed? Cyanotic? **Neck:** JVD? **Respiratory Effort:** Using accessory muscles, signs of fatigue; two-word sentences? **Lung Sounds:** The presence of rales (wet lungs) is a strong indication of CHF. Wheezing is also common in CHF. **Heart Sounds:** Rate, regularity. **Peripheral Edema:** Pitting edema of the ankles is common in CHF, but its absence does not rule out CHF **Neuro:** ALOC? Lethargy? Somnolence?
Goals of Therapy	Differentiate CHF from other causes of dyspnea, reduce the work of breathing, improve pump function, and improve oxygenation and ventilation.
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR)

- Routine Medical Care
- Allow/assist the patient to assume a position of comfort (usually upright).
- Oxygen
- Assist ventilation with BVM if apnea or hypopnea occurs.
- Airway Adjuncts: If there is loss of consciousness and loss of gag reflex, insert an oropharyngeal or nasopharyngeal airway.

EMERGENCY MEDICAL TECHNICIAN (EMT)

- If the patient complains of chest pain (angina),
  - If approved, consider **Aspirin** 2-4 tablets 81 mg each (162-324 mg total) chewed and swallowed, unless the patient is allergic.
- Assist with patient-prescribed medications.
  - **Albuterol** and/or **Atrovent** MDI 2 Puffs, if approved.
  - Consider nitroglycerine 0.4mg SL every 5 minutes if systolic blood pressure >100mmHg
- Nebulizer Therapy:
  - **Albuterol** Unit Dose (2.5 mg in 3 ml) administer per hand held nebulizer or mask; May repeat X 2 additional doses
  - Consider **Atrovent** unit dose (0.5mg in 3ml), if approved.
- If authorized, initiate CPAP with 10 cm H_2O valve for moderate to severe CHF.

ADVANCED EMT (AEMT)

- IV/IO NS @ TKO, if approved.

Contact Medical Control for the following:

- *IV fluid orders, if the patient in congestive heart failure is also hypotensive (SPB < 100 mmHg).*

INTERMEDIATE/PARAMEDIC

- Consider **Nitroglycerine** 0.4 mg sublingual every 3-5 minutes. No maximum dose.
- Consider **Furosemide** 20 – 40 mg IV.
- Consider **Morphine** 2-5 mg IV, if chest pain (angina) is present, may repeat once.
- Consider endotracheal intubation if there is ALOC, or if respiratory failure is imminent.
- If SPB < 100 mmHg, do not give **Nitroglycerine**, **Furosemide** or **Morphine**.

Contact Medical Control for the following:

- *Additional doses of these medications appear to be needed.*

Delivery of Newborn

Priorities	***Assessment Findings***
Chief Complaint	Uterine contractions, "in labor"
OPQRST	Location of pain, radiation of pain, time of onset of contractions, interval between contractions, quality of contractions, severity of contractions, events surrounding onset of contractions, due date
Associated Symptoms/ Pertinent Negatives	Vaginal bleeding (presence, quantity, and character), "bloody show," leakage of fluid or discharge, need to "push," "bear down," or have a bowel movement, presence of fetal movement, RUQ pain, vomiting, visual changes
SAMPLE	• Allergies • Medications • Past medical history, past surgical history, number of previous pregnancies, previous Cesarean delivery, prenatal care, recent infectious diseases or infection • Previous pregnancy or delivery complications (eclampsia, precipitous delivery, etc.) • Complications of current pregnancy (i.e. preeclampsia, placenta previa, gestational diabetes, premature labor, ultrasound showing abnormal fetal position etc.) • Last meal
Initial Exam	ABCs
Detailed Focused Exam	**HEENT:** Cracked lips, sunken eyes or cheeks indicating dehydration **Skin:** Cool, pale diaphoretic **Chest:** Labored breathing **Heart:** Tachycardia **Abdomen:** Scars, Tenderness, masses, uterine size/location, distention, **Extremities:** Edema **Neuro:** Mental status **Gyn:** Vaginal bleeding, infant head crowning, prolapsed cord, presenting part, meconium staining
Goals of Therapy	Atraumatically deliver newborn with maintenance of normal vital signs for both mother and newborn
Monitoring	BP, HR, RR, frequency of contractions.

EMERGENCY MEDICAL RESPONDER (EMR)

- Routine Medical Care
- Administer oxygen as appropriate.
  - Maintain patient in position of comfort, preferably on left side, but typically delivery will require supine position with knees flexed and legs apart.
  - Check for crowning
- If delivery appears imminent, open OB pack, apply sterile gloves, and drape abdomen.
- If there is a breech presentation, coach the mother to perform shallow breathing and avoid pushing.
- If there is a prolapsed umbilical cord, place gloved fingers into the vagina to hold the vaginal wall away from the cord.
- If there is massive hemorrhage, hypotension, or shock, place the mother in the left lateral recumbent position
- In the absence of a breech presentation or prolapsed umbilical cord, do not attempt to prevent or delay delivery.
- Control rate of delivery of head using palm of your hand, applying gentle pressure to protect perineum
- When head is delivered, compress bulb suction device and place into mouth to suction mouth then repeat for nose.
- Limit suction to ten (10) seconds
- Check to see if cord is wrapped around baby's neck
  - If so, gently attempt to slip cord over the baby's head if cord is semi-loose
  - If cord cannot be slipped over head or cord is tight, clamp two sites on the cord and cut between clamps – Use of scissors is preferred over scalpel
- Gently guide head and neck down to allow delivery of upper shoulder.
- Then guide head and neck up to deliver lower shoulder and body
- As baby delivers, grasp ankles in one hand and hold head with the other.
- Prevent heat loss - Provide warm environment, dry baby, and wrap baby in clean dry blanket
- Slightly extend head to facilitate patent airway.
- Suction mouth then nose as needed
- Continue to maintain an open airway and assess breathing rate and effort.
- Provide tactile stimulation as needed to facilitate normal respiratory effort, continually reassessing airway patency.
- Assess circulation.
- If heart rate <100 beats per minute, provide artificial respirations at a rate of 40-60 breaths per minute and continue to monitor heart rate. The primary measurement of adequate initial ventilation is prompt improvement in heart rate.
- If heart rate <60 beats per minute, initiate CPR and refer to *Pediatric Bradycardia Guidelines*.
- Keep baby at level of placenta and assess cord pulsations.
- After pulsations have ceased, double clamp cord at approximately 7" and 10" from baby and cut **between** clamps.
- Assess baby for APGAR scoring at 1 and 5 minutes after recorded time of birth.
- If baby is premature (<36 weeks gestation), prepare for neonatal resuscitation .
- Allow for delivery of placenta if mother and baby are stable.
- If significant post delivery bleeding is present, massage fundus abdominally to stimulate uterine contraction and/or allow baby to breast-feed.
- If perineum is torn/bleeding, apply direct pressure with gauze.

EMERGENCY MEDICAL TECHNICIAN (EMT)

- Evaluate for imminent delivery
  - History of precipitous delivery
  - Contractions 2 or less minutes apart
  - Mother feels need to push or have bowel movement
  - Visually inspect perineum for crowning
- If signs of imminent delivery, prepare for delivery of baby on-site
- Notify ED early on to allow OB and ED to prepare for arrival.
- Transport in newborn carrier, rear-facing and securely attached to cot. Do not transport in mother's arms.

- If no signs of imminent delivery, transport mother on left side.
- Check for signs of complicated childbirth and initiate Emergent BLS Transport if any of the following are present:
  - Breech presentation (buttocks or extremities presenting first)
  - Prolapsed umbilical cord
  - Massive hemorrhage
  - Hypotension/Shock
  - Hypertension
  - Seizures
  - Altered Mental Status

ADVANCED EMT (AEMT) / INTERMEDIATE / PARAMEDIC

NOTE:
APGAR Scores are performed at one minute and 5 minutes after birth according to the following table:

SCORE	0	1	2
APPEARANCE	Blue/pale	Pink Body/Blue Extremities	Pink
PULSE	Absent	Slow (< 100/minute)	> 100/minute
GRIMACE	No response to suction	Grimace to suction	Cough or Sneeze to suction
ACTIVITY	Limp	Some Flexion	Active Motion
RESPIRATIONS	Absent	Slow/Irregular	Good/Crying

Eclampsia

Note:

- Eclampsia occurs in pregnant patients with "pre-eclampsia." Pre-eclampsia is a syndrome that involves hypertension and output of protein in the urine.
- Eclampsia occurs when seizures and/or coma develop between the 20th week of pregnancy and the 4th week **after** delivery
- There is a significant associated risk of death for the mother and the baby. Maternal complications of eclampsia include: placental abruption, hemorrhagic stroke, pulmonary edema, cardiac arrest, and postpartum hemorrhage.
- Magnesium sulfate is the drug of choice for treating seizures in eclampsia.
- If the fetus delivers after a benzodiazepine is given to the mother, monitor the newborn for signs of respiratory depression. Be prepared to assist ventilations and provide oxygen.

Priorities	***Assessment Findings***
Chief Complaint	ALOC/Seizures/coma in mid to late pregnancy or within a month after delivery
OPQRST	Generalized, tonic-clonic type seizures
Associated Symptoms/ Pertinent Negatives	High blood pressure during this pregnancy, protein in the urine and swelling of the ankles? Other symptoms of pre-eclampsia may be present.
SAMPLE	If the mother has had adequate prenatal care, she may already know that she has a diagnosis of "pre-eclampsia", or "pregnancy-induced hypertension", but not always.
Initial Exam	ABCs and correct any immediately life-threatening problems
Detailed Focused Exam	**Vital Signs:** **General Appearance:** Seizing or postictal? Incontinent (bowel, bladder)? **Skin:** Pale, cool, moist? Cyanotic? **Eyes:** Dilated pupils during the seizure? **Mouth:** Frothy salivation? Tongue biting? **Legs:** Pedal edema? **Neuro:** Focal deficits? ALOC?
Goals of Therapy	Protect the mother from injury during seizures, stop recurrences of the seizures. *Do not attempt to treat maternal hypertension in the field.*
Monitoring	BP, HR, RR, EKG, SpO_2, Neuro Status

EMERGENCY MEDICAL RESPONDER (EMR)

- Routine Medical Care
- If unconscious with a stable airway, pregnant patients should be placed in the recovery position on their left side
    - If the airway is compromised and there is no gag reflex present consider, oropharyngeal airway.
- Administer oxygen.
- Provide comfort and reassurance.

EMERGENCY MEDICAL TECHNICIAN (EMT)

- Check glucose and if <60, follow *Hypoglycemia Guidelines*

ADVANCED EMT (AEMT)

- IV/IO NS @ TKO, if approved
- Initiate a 500 ml bolus if there are signs of dehydration or hypotension

Contact Medical Control for the following:

- Additional orders

INTERMEDIATE

- Initiate IO if unable to access IV
- **Valium** 5 mg IV over 1 min if seizing
    - Monitor patient closely for hypotension, sedation and respiratory depression

Contact Medical Control for the following:

- Additional doses of Valium

PARAMEDIC

- **Magnesium Sulfate** 2 grams IV over 5 min X 2 (4 grams over 10 min)
    - If IV access unobtainable, give **Magnesium Sulfate** 5 grams IM in each buttock (10 gm total)
    - Monitor patient closely for hypotension, muscle weakness (including respiratory muscle paralysis), and heart rhythm disturbances

Contact Medical Control for the following:

- Additional doses of Magnesium, Valium, or Ativan

Female in Labor

Priorities	***Assessment Findings***
Chief Complaint	Uterine contractions, "in labor"
OPQRST	Location of pain, radiation of pain, time of onset of contractions, interval between contractions, quality of contractions, severity of contractions, events surrounding onset of contractions, due date
Associated Symptoms/ Pertinent Negatives	Vaginal bleeding (presence, quantity, and character), "bloody show," leakage of fluid or discharge, need to "push," "bear down" or have a bowel movement, presence of fetal movement, RUQ pain, vomiting, visual changes
SAMPLE	• Allergies • Medications • Past medical history, past surgical history, number of previous pregnancies, previous Cesarean delivery, prenatal care • Previous pregnancy or delivery complications (eclampsia, precipitous delivery, etc.) • Recent infectious diseases • Complications of current pregnancy (i.e. preeclampsia, placenta previa, gestational diabetes, premature labor, ultrasound showing abnormal fetal position etc.) • Last meal
Initial Exam	ABCs
Detailed Focused Exam	**HEENT:** Cracked lips, sunken eyes or cheeks indicating dehydration? **Skin:** Cool, pale diaphoretic? **Chest:** Labored breathing? **Heart:** Tachycardia? **Abdomen:** Scars, Tenderness, masses, uterine size/location, distention, deformity? **Legs:** Edema? **Neuro:** Mental status altered? **Gyn:** Vaginal bleeding, infant head crowning, prolapsed cord, presenting part, meconium staining?
Goals of Therapy	Atraumatically deliver newborn with maintenance of normal vital signs for both mother and newborn
Monitoring	BP, HR, RR, frequency of contractions

EMERGENCY MEDICAL RESPONDER (EMR) / EMERGENCY MEDICAL TECHNICIAN (EMT)

- Routine Medical Care
- Administer Oxygen as appropriate.
- Refer to *Delivery of Newborn Guidelines*, if delivery is imminent.
- Place patient in position of comfort, preferably on left side.

ADVANCED EMT (AEMT) / INTERMEDIATE / PARAMEDIC

- Establish IV/IO NS @ TKO if approved and time permits before delivery
- If patient seizes, refer to *Eclampsia Guidelines*

Contact Medical Control for the following:

- Additional fluid orders
- Concern for eclampsia

Heat Emergencies

Note:

- High temperatures, high humidity, and high exertion are often factors that lead to a heat emergency
- Heat emergencies are most common in elderly patients, infants and young children, morbidly obese patients, athletes, and other patients with underlying health problems
- Heat exhaustion is a circulatory system problem. It presents as hypovolemia. The patient has a normal or slightly elevated core temperature problem.
- Heat stroke is a life threatening neurological problem. The patient has an extremely high core temperature problem.
- Hyperthermia may be a result of illegal drug use
- Many medications and illnesses compromise bodies ability to thermoregulate

Problem	Cause	Core Temperature	Clinical Findings and History
Heat Cramps	Dehydration Electrolyte imbalances	99-101.3 F	Most common in children and athletes Severe localized cramps in abdomen or extremities Normal vital signs Usually occur suddenly during or after strenuous physical activity
Heat Exhaustion	Inadequate fluid intake and excessive fluid loss	99-104 F	Fatigue, weakness, anxiety, intense headaches, profuse sweating, nausea and vomiting, and decreased urine output
Heat Stroke	Dangerous Core Temperature	> 105 F	Altered mental status; decreased level of consciousness; skin color, temperature, and moisture are not reliable findings; increased pulse and respirations; hypotension,

Priorities	***Assessment Findings***
Chief Complaint	"Person hot, lethargic, acting funny"
OPQRST	What led up to this? Where was the patient found? How long was the person in this condition?
Associated Symptoms/ Pertinent Negatives	Consider other causes of altered mental status—i.e. drug use, hypoglycemia, head injury, toxin inhalation or ingestion.
SAMPLE	Check for medications that could be contributory (beta blockers, psychiatric medications, sedatives, narcotics or barbiturates). Inquire about fluid consumption and frequency of urination
Initial Exam	Check ABCs and correct immediately life-threatening problems.
Detailed Focused Exam	**General Appearance:** overdressed for environment, sweating, evidence of trauma? If possible, obtain an oral or rectal temperature in the field with a digital thermometer. **Skin:** pale, cool, clammy OR hot, red, dry OR hot, red, moist **Lungs:** breath sounds **Heart:** Rate and rhythm **Neuro:** Loss of coordination, impaired judgment, altered mental status, decreased level of consciousness
Goals of Therapy	End the heat challenge and increase heat loss from conduction, convection, radiation, and evaporation. Support ABCs
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR) / EMERGENCY MEDICAL TECHNICIAN (EMT)

- Remove the patient from the hot environment into an area with shade, air conditioning, air movement, etc.
- Remove excessive clothing
- Administer oxygen
- If heat stroke, begin rapid cooling, but avoid hypothermia
    - If possible, aggressively mist patient with tepid water and fan (Preferred method)
    - Apply ice packs in neck, armpits, and groin
    - As a last resort, cover patients with cool, wet sheets
    - Prepare for rapid transport

ADVANCED EMT (AEMT)

- IV/IO NS, if approved.
    - 500 – 1000 mL bolus for heat exhaustion or heat stroke patient
- Consider a second IV.

Contact Medical Control for the following:

- Additional fluid orders

INTERMEDIATE / PARAMEDIC

- Consider IO access if an IV can't be established.

Contact Medical Control for the following:

- Further orders

Hyperglycemia

Note:

- Some patients with hyperglycemia have diabetic ketoacidosis (DKA), which is a life-threatening complication of diabetes that includes severe dehydration and metabolic acidosis.

Priorities	***Assessment Findings***
Chief Complaint	"High blood sugar," "Diabetic Coma"
OPQRST	Check onset/duration. Identify possible contributing factors.
Associated Symptoms/ Pertinent Negatives	Fever/Chills. Signs/Symptoms of infection. Adequate food and water intake? Increasing thirst? Increasing urine output?
SAMPLE	Medications for diabetes.
Initial Exam	ABCs and correct any immediately life-threatening problems.
Detailed Focused Exam	**General Appearance:** Appears sick? Dehydrated? Kussmaul's Respirations? **Heart:** Tachycardia? Hypotension? **Skin:** Cool, pale, diaphoretic? Warm, dry, flushed? **Neuro:** ALOC? Focal deficits (CVA)?
Goals of Therapy	Use IV fluids to reduce glucose level, improve hydration, normalize acid-base balance
Monitoring	BP, HR, RR, EKG, SpO_2, Repeat blood glucose

EMERGENCY MEDICAL RESPONDER (EMR)

- Routine Medical Care.
- Oxygen as needed
- Support airway as needed
- Monitor vitals.

EMERGENCY MEDICAL TECHNICIAN (EMT)

- Check glucose level
- Rapid Transport

ADVANCED EMT (AEMT) / INTERMEDIATE / PARAMEDIC

- If blood glucose > 250 mg/dl initiate IV NS 1 L run wide open.
- Use IV fluid with caution in renal failure patients

Contact Medical Control for the following:

- If the patient appears very sick or dehydrated, consider a second IV NS and run wide open.

Hypoglycemia

Priorities	***Assessment Findings***
Chief Complaint	"Low blood sugar," "Altered Level of Consciousness"
OPQRST	Check onset/duration. Identify possible contributing factors. Recent history of frequent episodes.
Associated Symptoms/ Pertinent Negatives	Fever/Chills. Signs/Symptoms of infection.
SAMPLE	Medications for diabetes.
Initial Exam	ABCs and correct any immediately life-threatening problems.
Detailed Focused Exam	**General Appearance:** Unresponsive? Agitated and combative? **Skin:** Cool, pale, diaphoretic? **Neuro:** ALOC? Focal deficits (CVA)?
Goals of Therapy	Restore normal mental status
Monitoring	BP, HR, RR, EKG, SpO_2, Repeat blood glucose

EMERGENCY MEDICAL RESPONDER (EMR)

- Routine Medical Care.
- Oxygen as needed
- Airway support as needed
- If conscious, administer one dose (30 grams) of **Oral Glucose**, regular soda or juice if available
- Monitor vitals.

EMERGENCY MEDICAL TECHNICIAN (EMT)

- Check glucose level, if approved.
  - Blood Sugar < 60, <u>conscious</u>, administer oral sugar (30 grams oral glucose, regular soda or juice).
  - If signs or symptoms persist, recheck blood sugar level. Repeat **Oral Glucose**.
  - Blood Sugar < 60, <u>unconscious or unable to protect airway</u>, administer **Glucagon** 1 mg IM, if approved.

Contact Medical Control for the following:
- Additional orders

ADVANCED EMT (AEMT) / INTERMEDIATE / PARAMEDIC

- Blood Sugar < 60 and patient has ALOC or is unconscious: Initiate IV/IO NS at TKO, if approved and give 25 G **D50** 1 amp (50ml)
- If signs or symptoms persist, recheck blood sugar and repeat dose of **D50**.
- If the patient wants to refuse transport, ensure patient safety, get release signed and notify medical control.
- If IV cannot be established, administer **Glucagon** 1mg IM if not already performed

Contact Medical Control for the following:
- Additional orders.

Hypovolemia & Shock

Note:

- Potential causes of hypovolemia and shock include:
  - Infections/sepsis
  - Burns
  - Hemorrhage (Internal, External)
  - Spinal cord injury
  - Pump Failure
  - Heart Rhythm Disturbances
  - Dehydration
  - Drugs and Toxins
  - Metabolic Disturbances
  - Anaphylaxis
  - Pulmonary Embolism
- Shock is defined as inadequate perfusion of vital organs, not merely hypotension.

Priorities	***Assessment Findings***
Chief Complaint	"Altered Level of Consciousness"
OPQRST	Identify onset, duration, progression and provocation.
Associated Symptoms/ Pertinent Negatives	Fever/Chills, Chest Pain (Angina), Trauma
SAMPLE	Pertinent past history and medications may provide important clues.
Initial Exam	ABCs and correct immediately life-threatening problems.
Detailed Focused Exam	**General Appearance:** Does the patient appear ill? External Hemorrhage? **Skin:** Pale, cool, and moist? Flushed, warm and dry? **Chest:** Labored breathing? **Lungs:** Wheezes, rales or rhonchi? **Heart:** Rate and Rhythm? **Abdomen:** Internal hemorrhage? Tender? Distended? GI Blood loss? **Extremities:** Trauma? Edema? **Neuro:** ALOC?
Goals of Therapy	Restore volume and support blood pressure
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR) / EMERGENCY MEDICAL TECHNICIAN (EMT)

- Routine Medical -or- Trauma Care.
- Maintain airway.
- Administer oxygen per non-rebreather mask.
- Control external hemorrhage
- Keep patient flat with lower extremities elevated (if possible).
- Splint fractures
- Conserve body temperature, and reassure patient.

ADVANCED EMT (AEMT) / INTERMEDIATE

- IV/IO NS, if approved.
- Administer 500 - 1000 ml bolus

Contact Medical Control for the following:

- Need for additional fluid boluses

PARAMEDIC

- Identify underlying problem and refer to the appropriate protocol.
- Consider **Dopamine** in shock not responding to fluid administration or if there are signs of neurological compromise

Contact Medical Control for the following:

- Additional Orders

Hypothermia & Frostbite

Note:

- In severely hypothermic patient, rough handling can precipitate ventricular fibrillation.
- When checking pulses and respiratory rates, check for 60 seconds, because bradycardia and bradypnea are common in moderate to severe hypothermia.
- Look for signs of trauma in all patients with hypothermia.
- Hypothermia may be categorized by mild, moderate and severe. The following table may be used to estimate the degree of hypothermia based on clinical findings.

Severity	Temperature	Clinical Findings
Mild	> 93 ºF	Shivering, impaired judgment; Tachycardia and hypertension may be present
Moderate	86 – 93 ºF	Consciousness clouded to stuporous; Shivering stops. Blood pressure becomes difficult to obtain.
Severe	< 86 ºF	Bradycardia, hypotension and slow respirations; Arrhythmias may develop; Consciousness is lost.

Priorities	***Assessment Findings***
Chief Complaint	"Person found down in a cold environment"
OPQRST	What led up to this? Where was the patient found? How long has the patient been exposed to the environment?
Associated Symptoms/ Pertinent Negatives	Associated trauma and MOI? Drug or alcohol use?
SAMPLE	Check for medications that could be contributory (beta blockers, psychiatric medications, sedatives, narcotics or barbiturates).
Initial Exam	Check ABCs and correct immediately life-threatening problems.
Detailed Focused Exam	**General Appearance:** Shivering, paradoxical undressing, evidence of trauma? **Skin:** Signs of frostbite (pallor, blisters)? **Lungs:** pulmonary edema? **Heart:** Rate and rhythm? **Neuro:** Loss of coordination, impaired judgment, ALOC?
Goals of Therapy	Above all, avoid rough handling! Initiate active and passive external rewarming measures in the field. Support airway, breathing and circulation. Do not attempt to thaw frozen limbs in the field.
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR)

- Remove the patient from the cold environment. Rough handling must be avoided.
  - Do not attempt to rewarm frostbitten or frozen parts by rubbing them
- Remove wet clothing and gently dry the skin by patting, not rubbing, with dry towels
- Initiate passive rewarming with blankets on top of and underneath the patient; insulate the patient from the cold ground; shield them from the cold wind or helicopter rotor wash.
- Initiate active external rewarming with warm blankets and hot packs in the axillae and groin.
- Oxygen as needed
- If there is a pulse, no matter how slow, do not initiate chest compressions.
- If there is no pulse, beginning CPR; Continue CPR until directed by a physician to discontinue.

    - If the chest is frozen solid, or ice blocks the airway, CPR will be futile and should be discontinued (or not even started) in the field.
    - If the patient was submerged for more than an hour, do not initiate CPR.
- Apply an AED and analyze. If shocks are indicated, attempt defibrillation.
    - The first three shocks should be given no matter what the core temperature is.
    - Do not delay defibrillation to measure a core temperature.
    - Do not attempt to defibrillate more than 3 times until the core temperature is documented to be > 86 ºF.
- If frozen limbs are fractured and angulated, splint in the position found. Do not attempt to straighten until they are completely thawed.

EMERGENCY MEDICAL TECHNICIAN (EMT)

- Turn up the heat in the ambulance.
- Administer warmed oxygen by mask, if available.

ADVANCED EMT (AEMT)

- IV/IO NS @TKO, if approved.
- Warm saline if available, run 1 L wide open.
- Consider a second IV of warm saline.
- Do not delay transport to initiate an IV. Peripheral IVs may be quite difficult to start in a hypothermic patient.
- Consider IO access if an IV cannot be established.

Contact Medical Control for the following:

- Additional orders

INTERMEDIATE / PARAMEDIC

- Consider endotracheal intubation, if the patient is unresponsive without a gag reflex
    - There is no evidence that laryngoscopy or tracheal intubation increase the risk of ventricular fibrillation
    - Administer warm oxygen.
- If cardiac arrest is present, attempt defibrillation, if not already done
    - If the core temperature is < 86 ºF, no more than three shocks should be attempted in the field.
    - Obtain a rectal temperature before more shocks are given.
    - If the core temperature is > 86 ºF, additional shocks may be attempted in the field (see *Cardiac Arrest Guidelines*)
    - If the core temperature is unknown, continue CPR and transport emergently to the hospital.
- If ventricular fibrillation is detected, a single dose of **Lidocaine** 1 – 1.5 mg/kg (or 100 mg) IV is acceptable.
    - **Lidocaine** may be harmful in higher doses.
- All other resuscitation medications should be withheld until the core temperature is > 86 ºF.
    - If the core temperature is between 86 and 93 ºF, double or triple the dosing interval for all medications given, because hypothermia slows metabolism.
- If bradycardia is present,
    - Pacing will not be effective if the core temperature is < 86 ºF.
    - Pacing should be withheld until the core temperature is > 86 ºF.

Contact Medical Control for the following:

- Further orders

Nausea & Vomiting

Note:

- Think of potential causes
  - Head injury
  - Diabetic problems
  - Heart problems (angina, CHF)
  - Abdominal Problems (bowel obstruction, pancreatitis)
  - Vertigo/stroke

Priorities	***Assessment Findings***
Chief Complaint	Nausea and/or vomiting
OPQRST	Onset, number of episodes of vomiting
Associated Symptoms/ Pertinent Negative	Associated diarrhea? Bloody emesis or diarrhea?
SAMPLE	Recent travel, exposure to others with similar problem, contaminated food? Alcohol excess? Drugs or other toxins?
Initial Exam	ABCs and correct immediately life-threatening problems.
Detailed Focused Exam	**General:** Ill appearing? Dehydrated? **Abdomen:** Soft? Tender? Distended? **Neuro:** ALOC?
Goals of Therapy	Stop vomiting, relieve nausea, correct dehydration
Monitoring	BP, HR, RR, response to medications.

EMERGENCY MEDICAL RESPONDER (EMR) / EMERGENCY MEDICAL TECHNICIAN (EMT)

- Supportive Care
- Monitor airway

ADVANCED EMT (AEMT) / INTERMEDIATE

- IV/IO NS @ TKO, if approved
- Give a 500 ml bolus if signs of dehydration are present

Contact Medical Control for the following:

- Additional fluid orders

PARAMEDIC

- **Reglan** 10 mg IM or slow IV push
- If extrapyramidal side effects develop give **Benadryl** 25-50 mg IM or IV

Contact Medical Control for the following:

- Additional doses of Reglan or other medications

Pain Management

Priorities	***Assessment Findings***
Chief Complaint	"Pain"
OPQRST	Duration, location, onset, provocation, palliation, quality, radiation, severity (subjective pain score on a 0-10 scale for adults or faces pain scale for pediatric patients), time (intermittent or continuous; steady vs. improving or worsening)
Associated Symptoms/ Pertinent Negatives	Associated symptoms/pertinent negatives
SAMPLE	Allergies, medications, pertinent past history, last meal
Initial Exam	Check ABCs and correct immediately life-threatening problems.
Detailed Focused Exam	**General Appearance:** Writhing in pain, facial grimacing, moaning, screaming or crying? **Skin:** Pale, cool, diaphoretic? **Source of pain (chest, abdomen, back, extremities, etc.):** Swelling, ecchymosis or deformity? Tenderness on palpation? CMS?
Goals of Therapy	Reduce pain to a tolerable level.
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR) / EMERGENCY MEDICAL TECHNICIAN (EMT)

- Display a calm and compassionate attitude
- Acknowledge and assess the patient's pain by obtaining a thorough history
- Identify and treat the cause
  - Musculoskeletal injuries:
    - Consider Realign angulated fractures, if possible, being cautious not to aggravate the injury or pain
    - Reposition (not reduce) dislocated joints to improve comfort, circulation, sensation, and motion. Do not force an extremity
    - Apply a well padded splint that immobilizes the long bone above and below the injury or the joint above and below the injury
      - Do not compromise distal circulation
    - Immobilize joints in mid range position
    - Elevate the injured extremity if no fracture or dislocation is found
    - Apply ice or cold packs to the injured area
    - Apply a compression bandage or ace wrap if a splint is not needed
  - Consider spinal immobilization, if needed
    - Pad the backboard with a blanket(s)
    - Pad voids between the patient and backboard—behind knees, and small of back
    - Pad the straps
    - Keep the patient warm and protected from rain/snow, ambulance exhaust etc.

- Reassure and comfort the patient; Use a calm and soothing voice.
- Distract them or encourage them not to focus on their injury, but to think about something more pleasant
- Eliminate stress inducing distractions—i.e. family, police and bystanders
- Coach the patient's breathing—calm, deep full inhalations, and relaxed slow exhalations.
- Explain to the patient what is happening and what will happen next.
- Adjust the ambient temperature of the treatment area to a comfortable level for the patient
- Reassess pain after all interventions

ADVANCED EMT (AEMT)

- IV/IO NS @ TKO, if approved.
- Consider a bolus of 500 ml or 20 ml/kg in children if signs of hypovolemia are present

Contact Medical Control for the following:

- Additional fluid orders

INTERMEDIATE

- **Morphine** 2 – 4 mg IV/IM for adults and 0.1mg/kg up to 4mg IV/IM for pediatrics
- Reassess patient's pain 5 and 10 minutes after each medication administration with pain scale.
- Recheck blood pressure before each additional dose; withhold **Morphine**, if SBP < 100 mmHg for adults and <80 mmHg for children or if poor perfusion is present.
- Repeat **Morphine** every 5 minutes up to 10 mg, as needed to reduce pain to a tolerable level

Contact Medical Control for the following:

- Additional orders

PARAMEDIC

- May give additional dose of **Morphine**
- Reassess patient's pain and recheck blood pressure before each additional dose.

Contact Medical Control for the following:

- Additional orders

Respiratory Distress

Note:

- This protocol may apply to the following conditions:
  - Congestive Heart Failure (CHF)
  - Asthma/COPD
  - Allergy/Anaphylaxis
  - Pulmonary Infections
  - Spontaneous Pneumothorax
  - Upper Airway Obstruction
  - Anxiety and Hyperventilation Syndrome
  - Acute Coronary Syndromes

Priorities	***Assessment Findings***
Chief Complaint	"Difficulty breathing," "Shortness of breath"
OPQRST	Assess onset, duration, progression, subjective severity, possible triggering events, and response to treatments before EMS arrival.
Associated Symptoms/ Pertinent Negatives	Chest pain (what kind?), fever/chills, productive (of what?) cough
SAMPLE	Check for possible exposure to known allergens. Check past history, medications and compliance for clues to cause of present illness.
Initial Exam	Check ABCs and correct immediately life-threatening problems.
Detailed Focused Exam	**General Appearance**: Tripod positioning; Purse-lipped breathing. **Neck:** JVD? **Skin:** Cool, moist and pale? Warm, dry and flushed? Urticaria? Cyanosis? **Respiratory Effort:** Using accessory muscles, signs of fatigue; two-word sentences? **Lung Sounds:** Wheezes, rales, rhonchi or stridor? **Heart Sounds:** Rate, regularity. **Lower Extremities:** Pitting edema of the ankles? **Neuro:** ALOC, lethargy, somnolence?
Goals of Therapy	Improve oxygenation and ventilation, reduce the work of breathing, and treat underlying conditions.
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR)

- Routine Medical Care
- Allow/assist the patient to assume a position of comfort (usually upright).
- Oxygen as appropriate.
- Support ventilation with BVM if apnea or hypopnea occurs.
- Airway Adjuncts: If there is altered level of consciousness and loss of gag reflex, consider oropharyngeal or advanced airway, if approved.

EMERGENCY MEDICAL TECHNICIAN (EMT)

- **Albuterol** is indicated for Asthma and COPD, see *Asthma & COPD Guidelines*.
- If patient is unresponsive with no gag reflex consider advanced airway in not already in place.

ADVANCED EMT (AEMT)

- IV/IO NS @ TKO, if approved.
- Initiate a 500 ml bolus if hypotension or dehydration is present.
- Consider CPAP

INTERMEDIATE / PARAMEDIC

- If a spontaneous tension pneumothorax is suspected, perform a needle decompression on the affected side.
- Consider CPAP

Contact Medical Control for the following:

- Further orders

Routine Trauma Care (Adult / Peds)

Note:

- This protocol may be used as a general guide for trauma in both Adults and Pediatrics.

Priorities	***Assessment Findings***
Chief Complaint	Various depending on incident.
OPQRST	Identify specific cause of traumatic injury
Associated Symptoms/ Pertinent Negatives	Significant mechanism, loss or altered level of consciousness. Evidence of intoxicant use.
SAMPLE	Identify medical conditions that may have lead to the event (e.g. Alzheimer's, CVA, Diabetes, Seizures,)
Initial Exam – Rapid Trauma Assessment	Check ABCs and correct any immediate life threats. Manual C-spine stabilization. Perform rapid trauma assessment as appropriate.
Detailed Focused Exam	**General Appearance:** Unresponsive, pale, diaphoretic? Signs of trauma? **HEENT:** PERRL? Pupils constricted or dilated? Discharge from ears or nose? **Lungs:** Signs of respiratory distress, hypoventilation, diminished or absent lung sounds? **Heart:** Rate and rhythm? Signs of hypoperfusion? **Abdomen:** Tender to palpation? Firm? Distended? **Neuro:** Loss of movement and/or sensation in extremities, Unresponsive? Focal deficits? **Skin:** Bleeding?
Goals of Therapy	Maintain ABCs, restore adequate respiratory and circulatory conditions, reduce pain
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR)

- Ensure "Scene Safety" and Body Substance Isolation (BSI)
- Determine need for additional resources (e.g. helicopters, additional ambulances, heavy rescue).
- Airway: Relieve airway obstruction, if present
  - Open the airway with a jaw-thrust (No head tilt – Chin lift in trauma patients)
  - Remove foreign material, emesis and blood
  - Suction the airway
  - If no gag reflex consider oropharyngeal airway or nasopharyngeal airway (nasopharyngeal airway not recommended in facial trauma)
- Breathing:
  - Administer Oxygen
  - Assist ventilations with bag-valve-mask and high-flow oxygen, as needed
  - Cover sucking chest wounds with a three-sided flap valve

- Circulation:
    - Control external hemorrhage with direct pressure or pressure points.
    - If the patient arrests,
        - Re-assess the airway and oxygen delivery
        - Consider initiating the *Cardiac Arrest Guidelines*.
        - Prolonged efforts to restore spontaneous circulation in a traumatic arrest should not be made
        - CPR should not be attempted if:
            - Blunt trauma caused the arrest
            - There are other injured survivors with urgent needs for help
- C-Spine: Manual stabilization
- Splint obvious extremity fractures
- Refer to *Pain Management Guidelines*
- Begin other interventions as needed according to specific guidelines
- **CONSIDER TRAUMA CENTER ACTIVATION**
- **CONSIDER AIR TRANSPORT**

EMERGENCY MEDICAL TECHNICIAN (EMT)

- If there is ALOC
    - Check Blood Glucose
    - Follow *Hypoglycemia Guidelines* if < 60
- Spinal Immobilization, as indicated.
- Refer to the *Triage & Transport Guidelines to* consider possible transport to a Regional Trauma Center for the following:
    - Criteria List A (Definition of Major Trauma)
        1. Glasgow Coma Scale of 13 or less
        2. Clinical signs of shock: pale, cold, weak pulses, prolonged capillary refill
        3. Unstable blood pressure
            a. Adult: Systolic blood pressure <90 mmHg
            b. Pediatric: Infant<6 months: BP <60 mmHg
            Child 2 months-5 years: <70 mmHg
            Child 6-12 years: <80 mmHg
        4. Respiratory rate
            a. Adult: Less than 10 or greater than 30 breaths per minute
            b. Pediatrics under 12: Infants <6 months: <20 breaths per minute
            6 months-12 years: <16 breaths per minute
            All ages: >60 breaths per minute
        5. Penetrating injury to head, neck, torso or proximal extremity
        6. Flail chest
        7. Trauma in a patient with burns to face or airway or with burns of 15% or greater of the total body surface area
        8. Distended, rigid abdomen
        9. Two or more long-bone fractures (humerus, femur)
        10. Depressed or open skull fracture
        11. Unstable pelvic fracture
        12. New onset paralysis
        13. Amputation above the wrist or ankle

- Criteria List B (Indicators of possible major trauma)
  1. Crashes in which the patient was ejected from the vehicle
  2. Crashes in which another occupant of the vehicle was killed
  3. Extrication time in excess of 20 minutes
  4. Falls of 20 feet or greater for adults, 10 feet or greater for children
  5. Victim of a roll-over motor vehicle crash
  6. Estimated crash speed was 40 mph or greater for adults, <20 mph for children
  7. Passenger compartment intrusion >12 inches is present
  8. Auto vs pedestrian or bicycle
  9. Motorcycle crashes

- Criteria List C: Trauma patients whose injuries may be significantly impacted by other factors
  1. Whose age is <5 or >55
  2. Who have known cardiac or respiratory disease or
  3. Who are pregnant
  4. Who are immunosuppressed
  5. Who have a bleeding disorder

ADVANCED EMT (AEMT)

- Initiate IV/IO (18ga or larger) NS, if approved.
- Consider 2nd IV/IO where hypovolemia is suspected (Adult only)
- (Adult) If SBP < 100 mmHg or heart rate > 120, initiate a fluid bolus of Normal Saline: 500 ml
- (Peds) {if approved for peds IV}
  - Infant – 6 months : If SBP < 60 mmHg initiate 20cc/Kg bolus
  - 6 months – 5 years : If SBP < 70 mmHg initiate 20cc/Kg bolus
  - 6 years – 12 years : If SBP < 80 mmHg initiate 20cc/Kg bolus

Contact Medical Control for the following:
- Additional fluid orders

INTERMEDIATE

- Respiratory arrest or apnea
  - Consider endotracheal intubation
- If tension pneumothorax is suspected perform needle decompression.
- Consider external jugular (EJ) IV if one cannot be established in the extremities.
- Consider intraosseous (IO) access if an EJ cannot be established.

Contact Medical Control for the following:
- Pain control

PARAMEDIC

- If the airway is obstructed or obstruction is imminent and 3 attempts to intubate the trachea have failed, perform surgical or needle cricothyroidotomy.
- Consider gastric decompression with nasogastric tube, unless contraindicated by facial trauma or skull fracture

Contact Medical Control for the following:
- Additional orders

Seizure

Note:

- Seizures usually last from 1-3 minutes and involve a loss of consciousness and convulsions. Not uncommonly, the patient is incontinent and may bite his tongue or be injured in other ways.
- When the seizure is over, the patient enters a postictal state, characterized by confusion eventually giving way to normal alertness and orientation.
- Whenever seizures occur, look for an underlying cause and treat it. If the patient is more than 20 weeks pregnant, refer to the *Eclampsia Guidelines*.
- Status epilepticus is defined as a seizure lasting longer than 30minutes, or frequently recurring seizures without clearing of the postictal state between seizures. This is a life-threatening emergency!

Priorities	***Assessment Findings***
Chief Complaint	"Seizure" "Unresponsive" "Convulsions" "Passed out"
OPQRST	How long did it last? History of seizures? Possible contributing factors [1]
Associated Symptoms/ Pertinent Negatives	Unresponsive, Postictal, Incontinent
SAMPLE	History of seizures, Seizure medications?
Initial Exam	ABCs and correct any immediate life threats
Detailed Focused Exam	**Scene size-up:** Is there a significant mechanism of injury? **General Appearance:** Pt. currently seizing? Unresponsive? Postictal? **Resp:** Airway Patent? Breathing? **HEENT:** Neck Stiff **Skin:** Flushed, warm, rash **Neuro:** ALOC?, Focal deficits (CVA)
Goals of Therapy	Stop the seizure Treat the underline cause Monitor and maintain airway.
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR)

- Routine medical care
- Consider oropharyngeal if unable to maintain airway and no gag reflex is present. Avoid airway adjunct attempts during seizure
- Protect the patient with ongoing seizures from harming themselves by clearing away potential hazards and placing a pillow or padding under the head.
- Oxygen as necessary

EMERGENCY MEDICAL TECHNICIAN (EMT)

- Obtain blood glucose, if approved. If < 60 refer to *Hypoglycemia Guidelines*.

ADVANCED EMT (AEMT)

- IV/IO NS TKO

Contact Medical Control for the following:

- Additional orders

INTERMEDIATE

- If the patient is still seizing, give **Ativan** 1-2mg IV/IM or Valium 5mg IV**.**
- Continue to monitor airway since respiratory depression can result
- If IV unavailable, **Valium** 10mg rectally may be administered.

Contact Medical Control for the following:

- If pseudo seizures are suspected, withhold Ativan and Valium until you speak with Medical Control.
- If IV access unavailable consider IO administration of Ativan or Valium at the same doses.
- If seizures persist, repeat doses of Ativan or Valium every 5 min until seizures stop.

PARAMEDIC

- Alternative Medication:
  - **Versed** 2-5mg IV/IM (may repeat in 5 minutes times one) {Titrate IV dose to effect} {do not exceed 5 mg per dose} {Maximum total dose 10mg}
  - **Versed** 5mg Rectally (maximum single dose 5mg)

Contact Medical Control for the following:

- Persistent seizures

Stroke

Priorities	***Assessment Findings***
Chief Complaint	"Weakness," "Confusion," "Slurred Speech," "Unresponsive"
OPQRST	When did it start? Was it witnessed? What is normal baseline?
Associated Symptoms/ Pertinent Negatives	Headache, weakness, pupil dilation, slurred speech, aphasia, incontinent
SAMPLE	Medication or history consistent with stroke or TIA
Initial Exam	ABCs and correct any immediate life threats
Detailed Focused Exam	**Vital signs:** **General Appearance:** Unresponsive, noticeable facial droop, drooling, slouched posture **Neuro:** Cincinnati pre-hospital stroke scale (speech, facial symmetry, motor)
Goals of Therapy	Maintain ABCs and adequate vital signs
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR)

- Routine medical care
- Oxygen.
- Support airway as needed
- Ascertain time of onset or last known well
- Obtain cell phone# from witness and/or next-of-kin
- **OBTAIN LAST KNOWN WELL TIME (IF POSSIBLE)**

EMERGENCY MEDICAL TECHNICIAN (EMT)

- Obtain Blood Glucose, if approved. If < 60 mg/dl refer to *Hypoglycemic Guidelines*
- Do not delay transport to the closest facility with 24/7 CT and tPA availability (if known)
- Rapid transport is indicated if S/S onset less than 24 hours
- **CONSIDER STOKE CENTER ACTIVATION (CODE STROKE)**
- **RAPID TRANSPORT (Based on orders)**

ADVANCED EMT (AEMT) / INTERMEDIATE / PARAMEDIC

- Consider IV/IO NS @ TKO.

Contact Medical Control for the following:

- Additional Orders

Stroke-tPA Interfacility Transport*

Priorities	***Assessment Findings***
Chief Complaint	Dx of Ischemic Stroke; tPA infused or infusing; Transporting to definitive care facility
OPQRST	When did it start? Was it witnessed? What is normal baseline?
Associated Symptoms/ Pertinent Negatives	Headache, weakness, pupil dilation, slurred speech, aphasia, incontinent
SAMPLE	Medications; history consistent with stroke or TIA
Initial Exam	ABCs and correct any immediate life threats
Detailed Focused Exam	**Vital signs:** Initial Blood Glucose, BP q 15" and adjust to maintain within parameters <180/105 **General Appearance:** LOC, noticeable facial droop, drooling, arm drift **Neuro:** Cincinnati pre-hospital stroke scale (speech, facial symmetry, motor)
Goals of Therapy	Maintain ABCs and adequate vital signs; Maintain BP within parameters
Monitoring	BP, HR, RR, EKG, SpO_2 q 15". Initial Blood Glucose noted

PARAMEDIC

- Document current VS; BP parameters stabilized prior to transport
- tPA: Verify total dose given or to be infused. Document total tPA dose to be administered, start and stop times; if tubing change required for EMS IV Pump, assure correct dose of tPA is included. Following tPA administration, begin 0.9% NS infusion at existing rate. No other medications may be administered through tPA infusion line
- Oxygen to maintain SpO2 > 93%
- Strict NPO, including oral medications
- Perform and document Prehospital stroke scale (Cincinnati Stroke Scale recommended) q 15" or anytime a change in mentation is noted.
- Document GCS, pupil exam
- Head of bed at 30 degrees

- **BP Guidelines**: If SBP > 180 or DBP > 105, or BP management medications started at sending facility: *(Examples)*
    - **Labetalol drip**: may increase 1-2mg/min every 10 minutes to max dose of 8mg/min, with a maximum total dose of 300 mg, until SBP<180 and/or DBP<105. If SBP<140 or DBP<80 or HR<60, discontinue infusion and contact medical control for further orders
    - **Nicardipine drip**: may increase dose by 2.5mg/hour every 5 min to max dose of 15mg/hour until SBP < 180 and DBP < 105, and then decrease maintenance infusion to 3mg/hr. If SBP < 140 or DBP < 80 or HR < 60, discontinue infusion and contact medical control for further orders
    - **Other**: Discuss with Medical Control and sending facility to assure understanding of all medications to be infused enroute.
- **BP Guidelines:** If SBP > 180 or DBP > 105, BP management medications not started at sending facility: *(Examples)*
    - Metoprolol Bolus: 5mg IV bolus, repeat q 5 min to max of 20mg. Hold if SBP<140 or DBP<80 HR<60
    - Hydralazine Bolus: 10mg IV bolus over 2 min; May repeat in 10 min if no response; max does 20 mg

    - Labetalol 10 mg IV x1 over 2 min; If no response after 10 minutes, may repeat x1with 10-20mg.

- **Changes in neurological condition***: (Develops severe headache, acute hypertension and/or bradycardia, nausea, or vomiting)*
    - Discontinue tPA
    - Contact Medical Control for further orders; adjustment in BP medications, antiemetics, or including diversion to closest facility.
    - Monitor VS, prehospital stroke scale neuro exam q 15"

- **Oropharyngeal edema**: if signs of angioedema are present: *(Note- occurs more commonly in pts taking ACE Inhibitors)*
    - Stop tPA
    - Treat according to appropriate protocol for allergic reaction/anaphylaxis
    - Monitor airway; consider intubation if persistent swelling
    - Notify Medical Control and Receiving facility of changes

Contact receiving facility with update, changes, concerns and ETA

Contact Medical Control for the following:
- Additional Orders
- Acute changes in condition

Note: *For interfacility transport only. Requires approval from DHS; knowledge of tPA administration required; use and understanding of IV pump operations required; Critical Care level preferred. Sending facility may send a Critical Care RN, if this process is in place, with other EMS levels and wait time for Critical Care service is excessive. Timely, rapid transport is essential to a definitive level of care for stroke patients.

Cincinnati Prehospital Stroke Scale
    - Adapted from Kothari RU, et al. Ann Emerg Med. 1999;33:373-378.
- Facial Droop (have patient smile)
    - Normal: Both sides of face move equally
    - Abnormal: One side of face does not move as well
- Arm Drift (have patient hold arms out for 10 seconds)
    - Normal: Both arms move equally or not at all
    - Abnormal: One arm drifts compared to the other, or does not move at all
- Speech (have patient speak a simple sentence)
    - Normal: Patient uses correct words with no slurring
    - Abnormal: Slurred or inappropriate words, or mute

Submersion

Notes:

- RESCUER SAFETY IS #1. Many well-intentioned volunteer and professional rescuers have been injured or killed attempting to save a drowning victim.
- If the victim is still in the water dispatch local water rescue resources
- Submersion is a loss of consciousness under water
- Submersion is primarily a respiratory problem
- When delivering ventilations and chest compressions assume the patient will vomit. Be prepared to suction. Secure the patient's airway as soon as possible.
- Any patient successfully resuscitated after a loss of consciousness underwater needs transport to the hospital and physician evaluation

Priorities	***Assessment Findings***
Chief Complaint	"Drowning," "Near Drowning"
OPQRST	Onset. Duration of time under water. Water temperature, if known. Bystander CPR performed? AED Used?
Associated Symptoms/ Pertinent Negative	Alcohol involved? Trauma involved?
SAMPLE	Allergies? Medications?
Initial Exam	Check ABCs and correct immediately life-threatening problems.
Detailed Focused Exam	**General Appearance:** lifeless? Apparent trauma? **Skin:** pale, cool, mottled? **Lungs:** wet or clear? **Heart:** Rate and regularity? Absent heart sounds? **Neuro:** Unresponsive?
Goals of Therapy	Return of spontaneous circulation (ROSC)
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR)

- Routine C-spine stabilization of all submersion patients is not indicated.
- When a mechanism of injury (e.g. diving accidents), or obvious signs of trauma, is present:
  - C-spine stabilization is indicated.
  - Open the airway with a jaw-thrust maneuver, use airway adjuncts as appropriate.
  - Ventilate the patient while maintaining C-spine stabilization.
  - Remove the patient from the water on a long-spine board.
- Do NOT start CPR if the patient has been submerged for more than 1 hour
- If the patient is pulseless and not breathing, follow the *Cardiac Arrest Guidelines*.
  - Remove the patient from standing water
  - Dry the chest with towels
  - Attach an AED and defibrillate if shocks are indicated.
  - If hypothermia is suspected, follow the resuscitation procedure outline in the *Hypothermia Guidelines*.

EMERGENCY MEDICAL TECHNICIAN (EMT)

- Check blood glucose, if approved and hypoglycemia is suspected
  - Follow *Hypoglycemia Guidelines* if the blood glucose is < 60
  - Consider advanced airway if no gag-reflex.
  - Consider 12 lead EKG or Cardiac Monitor

ADVANCED EMT (AEMT)

- IV/IO NS @ TKO
- If hypotensive, administer bolus of 500 ml
- Warm the IV fluids if available.
- Obtain 12 Lead EKG
- If a narcotic overdose is suspected, follow the *Toxic Exposure & Overdose Guidelines*.

Contact Medical Control for the following:

- Additional orders

INTERMEDIATE / PARAMEDIC

- Consider endotracheal intubation

Contact Medical Control for the following:

- Additional orders

Syncope

Note:

- Common causes of syncope include dehydration and vasovagal reflexes; more serious causes of syncope result from arrhythmias and stroke
- Syncope and seizures both result in loss of consciousness. Both may occur with or without convulsions. In syncope, the convulsions are brief. Unlike seizures, in syncope the patient regains consciousness quickly and without the usual postictal confusion.

Priorities	***Assessment Findings***
Chief Complaint	"Passed Out," "Fainted," "Fell Out"
OPQRST	Determine onset, duration and triggering events (e.g., fright, defecation, urination)
Associated Symptoms/ Pertinent Negatives	Headache, dizziness, confusion, vomiting, diarrhea, dehydration, incontinence, seizure, lack of food or water
SAMPLE	Exposure to known allergen. History of heart disease or stroke. Current or past medication for these problems. Compliance with these medications recently.
Initial Exam	Check ABCs and correct any immediately life threatening problems.
Detailed Focused Exam	**General Appearance:** may be normal or ill appearing **Skin:** Pale, cool, diaphoretic **Heart:** Hypotension, tachycardia, weak pulses, poor capillary refill? **Neuro:** May be A&OX3; ALOC? Focal deficits, signs of trauma due to falling?
Goals of Therapy	Treat symptomatic bradycardia/hypotension.
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR)

- Routine Medical Care
- Gently lower the patient to a supine position or Trendelenburg position if hypotensive.
- Oxygen as appropriate

EMERGENCY MEDICAL TECHNICIAN (EMT)

- Obtain blood glucose, if approved. If < 60 refer to *Hypoglycemia Guidelines*.
- Consider possible overdose, follow overdose protocol.
- Consider advanced airway if needed.
- Consider Cardiac monitor.

ADVANCED EMT (AEMT)

- Initiate IV/IO NS @ TKO
- Acquire 12 lead EKG
- If patient is hypotensive or shows signs of dehydration administer 500ml fluid bolus

Contact Medical Control for the following:

- Additional fluid orders

INTERMEDIATE

- If bradycardic, *see Bradycardia Guidelines*

Contact Medical Control for the following:

- Additional Atropine orders

PARAMEDIC

- Consider transcutaneous pacing if unresponsive to atropine
- Consider **Dopamine** if persistently hypotensive

Contact Medical Control for the following:

- Persistent hypotension or bradycardia

Toxic Exposure & Overdose

Note:

- Perform scene size-up and ensure crew safety. In a hazardous materials incident, stage up wind of the incident, and do not attempt to treat any patients who have not been decontaminated. Be especially suspicious of scenes in which many people or animals appear to be affected.
- Beware of the potential for the patient to vomit spontaneously. Following any form of cyanide ingestion, emesis may off-gas toxic hydrogen cyanide, placing rescuers and health care workers at risk.
- Beware of the potential for seizures or altered level of consciousness due to toxic exposures.
- Beware of the potential for cardiovascular collapse and respiratory compromise due to toxic exposures.

Priorities	***Assessment Findings***
Chief Complaint	"Overdose" "Ingestion" "Exposure to chemicals" "Unresponsive"
LOPQRST	Determine type and kind of ingestion. Determine time of exposure/ingestion, Determine amount/length of exposure.
Associated Symptoms/ Pertinent Negatives	Dyspnea, nausea/vomiting, abdominal pain, unresponsive; Suicidal ideation or suicide attempt. Accidental or intentional exposure.
SAMPLE	Psychiatric history and medications, exposure to chemicals
Initial Exam	Check ABCs, and correct any immediate life threats
Detailed Focused Exam	**General Appearance:** level of alertness, signs of agitation, willingness to cooperate with authorities **Skin:** Cool, pale and diaphoretic? Warm, dry and flushed? **HEENT:** Are the pupils constricted or dilated? Nystagmus? **Lungs:** Wheezes, rales or rhonchi? **Heart:** Rate, regularity, peripheral perfusion? **GI:** Abdominal Distention **Neuro:** Signs of intoxication? Ataxia? Slurred speech? **Psych:** Depressed affect? Bizarre thoughts? Signs of suicidal ideation or intent?
Goals of Therapy	Reduce amount of substance absorbed into the body; Treat with antidotes if possible; Correct toxic effects on the CNS, cardiovascular and respiratory systems.
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR)

- Routine medical care
- Oxygen as appropriate.
- If the patient is unconscious, place him/her in the recovery position. Follow the *Altered Level Of Consciousness Guidelines*.
- If airway is compromised with no gag reflex, consider use of oropharyngeal advanced airway, if approved.

EMERGENCY MEDICAL TECHNICIAN (EMT)

- If the patient is unconscious, check blood glucose, if approved. If < 60, follow the *Hypoglycemia Guidelines*.
- If the patient has an altered level of consciousness and a narcotic overdose is suspected, consider **Narcan** 0.4-2 mg IV/IM/SubQ and repeat every 5 minutes X 3 total doses. If there is no response to **Narcan**, consider an alternative explanation or contact medical control.
- Consider Cardiac Monitor
- **Consider Contacting Poison Control 1-888-222-1222**

ADVANCED EMT (AEMT) / INTERMEDIATE

- IV/IO NS @ TKO
- Obtain a 12 lead EKG
- Initiate a bolus of 500 ml Normal Saline if the patient is hypotensive or tachycardic.

Contact Medical Control for the following:

- Additional fluid orders
- Consider for toxic ingestions (except those listed below), if the patient is conscious with an intact gag reflex, consider administration of **Activated Charcoal** 50G

PARAMEDIC

- Specific overdose therapies are contained in the table below
    - If you do not recognize what class the drug or toxin belongs to, contact Medical Control.

Class of drugs	***Treatment Indications***	***Specific Treatment(s)***
Narcotics	Narcan may be used in cases of oversedation due to narcotic administration, or in suspected narcotics overdoses in patients without a history of long-term use, chronic abuse or addiction. Signs of narcotic overdose or oversedation include: decreased level of consciousness, pinpoint pupils (except Demerol), and respiratory depression. Caveat: Giving Narcan to a long-term narcotic user, chronic abuser or addict can induce narcotic withdrawal, which creates a new set of difficult problems. Airway management and supportive care is the preferred approach.	For patients with narcotic overdose or oversedation give: **Narcan** per dosing as above. If no response, reconsider diagnosis. Contact medial control.
Benzodiazepines (BZD)	Benzodiazepine abuse or overdose can lead to decreased level of consciousness, respiratory depression and hypotension.	Treatment consists primarily of aggressive airway support.
Tricyclic Antidepressants (TCA)	Decreased level of consciousness; hypotension, seizures, malignant arrhythmias (e.g. *Torsades de Pointes*, VT), prolongation of the QT or QRS intervals. Caveat: Patients with TCA overdoses are prone to deteriorating very quickly. Note: Sodium containing solutions act like antidotes, because they protect the heart against the toxic effects of the TCA. Induced alkalosis from bicarbonate and hyperventilation also protect against the toxic effects of TCAs.	Run 1 or 2 IVs of Normal Saline wide open. Treat arrhythmias according to the appropriate protocol. Treat seizures according to the *Seizure Guidelines* EMT-P (only): **Sodium Bicarbonate** 1-2 Amps IV bolus. Repeat as directed by medical control. For long transports, consider a **Sodium Bicarbonate** drip with 3 amps in a liter of D5W @ 250 ml/hr after the initial boluses are in.
Beta Blockers	Profound bradycardia, hypotension or conduction defects	Contact medical control. EMT-P: Consider **Glucagon** 1 mg slow IVP. May repeat up to 3 mg total.
Calcium Channel Blockers	Profound bradycardia, hypotension or conduction defects	Contact medial control. EMT-P (only): Consider **Calcium Chloride** 10 ml of 10% solution IV over 20 minutes.

Amphetamines	Agitation, psychosis, or ventricular arrhythmias	EMT-I may treat with **Ativan** or **Valium**, if seizures develop (see doses below). EMT-P may consider the following mediations for sedation or seizures: **Valium** 5mg IVP or **Ativan** 1-2 mg IV or IM. May repeat once. Contact Medical control.
Cocaine	Agitation, seizures, or ventricular arrhythmias Caveat: For patients with Excited Delirium, refer to the *Agitated & Combative Patients Guideline.*	EMT-I may treat with **Ativan** or **Valium**, if seizures develop (see doses below). EMT-P may consider the following medication: **Valium** 5mg IVP or **Ativan** 1-2 mg IV or IM. May repeat once. Contact Medical control.
Organophosphate Poisoning (Pesticides and Nerve Agents)	Profound bradycardia, seizures, abnormal (wet) lung sounds The organophosphate toxidrome: **S** – Salivation, Seizures **L** – Lacrimation **U** – Urination **G** – GI vomiting and diarrhea **B** – Bradycardia*, bronchorrhea, bronchospasm **A** – Arrhythmias **M** – Miosis (small pupils)* * Tachycardia and mydriasis (dilated pupils) are also possible Caveat: Organophosphates are highly toxic in very small quantities and pose a significant risk to EMS and health care workers through secondary contamination.	**Atropine** 2mg IV or IM every 3-5 min until lung sounds clear to auscultation. Use **atropine** in the initial treatment of bradycardia and seizures. Contact Medical Control. EMT-I and EMT-P may treat with **Ativan** or **Valium**, if seizures develop. **Valium** 5mg IVP or **Ativan** 1-2 mg IV or IM. May repeat once. For rescuers who inadvertently enter a vapor cloud of organophosphate (e.g. nerve agents), self administer 1 – 2 **Mark I Auto Injector Kits** and evacuate yourselves from the scene immediately.

Contact Medical Control for the following:

- Additional orders

Vaginal Bleeding After Delivery

Priorities	***Assessment Findings***
Chief Complaint	"Vaginal bleeding after delivery"
OPQRST	Onset. Attempt to quantify the amount of blood lost
Associated Symptoms/ Pertinent Negative	Is the patient having severe crampy pains? Has any fetal tissue passed?
SAMPLE	Has there been any prenatal care? An ultrasound? Was it normal?
Initial Exam	ABCs and correct any immediately life-threatening problems.
Detailed Focused Exam	**General Appearance:** Pain or anxiety-related distress? External Hemorrhage? **Skin:** Pale, cool, and moist? **Chest:** Labored breathing? **Heart:** Rate and Rhythm? **Abdomen:** Internal hemorrhage? Tender? Distended? GU Blood loss? **Neuro:** ALOC?
Goals of Therapy	Identify potentially life-threatening hemorrhage. Treat for shock. Display sensitivity to the emotional needs of the parents. Reduce pain to the "comfortable" range.
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR) / EMERGENCY MEDICAL TECHNICIAN (EMT)

- Oxygen.
- Massage fundus vigorously. Note: This will cause significant discomfort to the mother.
- Place baby to breast (allow to nurse) or chest level (make sure to perform neonatal care and assessment/resuscitation)
- Treat for shock.
- Loose bulky dressings (do not pack).

ADVANCED EMT (AEMT) / INTERMEDIATE / PARAMEDIC

- IV/IO NS @ TKO
- 500 ml fluid bolus if patient hypotensive
- Treat for shock as needed, *see Hypovolemia & Shock Guidelines*

Contact Medical Control for the following:

- Additional fluid orders are needed

Vaginal Bleeding Before Delivery

Note:

- Vaginal bleeding and severe lower abdominal pain in the first trimester of pregnancy should be considered a ruptured ectopic pregnancy until proven otherwise. This is a true medical emergency!
- Bleeding at any point in pregnancy can be associated with loss of the fetus. You must be sensitive to their sense of potential loss.
- After about 20 weeks of pregnancy, when the mother is in a supine position, the gravid uterus can compress the inferior vena cava, which decreases preload and causes hypotension.
- Pregnancy usually lowers a woman's blood pressure. If you get systolic readings between 80 – 100 mmHg, ask the mother what her most recent blood pressure was in her doctor's office.

Priorities	***Assessment Findings***
Chief Complaint	"Vaginal bleeding and pregnant"
OPQRST	Onset. Attempt to quantify the amount of blood lost
Associated Symptoms/ Pertinent Negative	Is the patient having severe crampy pains? Has any fetal tissue passed?
SAMPLE	Has there been any prenatal care? An ultrasound? Was it normal?
Initial Exam	ABCs and correct any immediately life-threatening problems.
Detailed Focused Exam	**General Appearance:** Pain or anxiety-related distress? External Hemorrhage? **Skin:** Pale, cool, and moist? **Chest:** Labored breathing? **Heart:** Rate and Rhythm? **Abdomen:** Internal hemorrhage? Tender? Distended? GU Blood loss? **Neuro:** ALOC?
Goals of Therapy	Identify potentially life-threatening hemorrhage. Treat for shock. Display sensitivity to the emotional needs of the parents. Reduce pain to the "comfortable" range.
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR) / EMERGENCY MEDICAL TECHNICIAN (EMT)

- Oxygen.
- Place in supine position with legs elevated.
- If > 20 weeks pregnant, place in left lateral recumbent, for transport.
- Keep the mother warm and offer comfort measures.

ADVANCED EMT (AEMT)

- IV/IO NS @ TKO
- Give 500 ml bolus if SBP < 100 mmHg

Contact Medical Control for the following:

- Additional fluid boluses are needed.

INTERMEDIATE

- If pain, **Morphine** 2-4 mg IV every 10 minutes X 3.
- Carefully monitor blood pressure response to **Morphine**
- Do not give **Morphine**, if SBP < 90 mm Hg
- May place the patient in left lateral Trendelenberg position, if possible

Contact Medical Control for the following:
- Additional fluid or Morphine orders.

PARAMEDIC

- Attempt to preserve any products of conception that pass and take them to the ED.
- Transport in left lateral Trendelenberg position if there is ongoing hypotension.

Contact Medical Control for the following:
- Additional orders for pain medications or fluids

Vertigo

Note:

- Vertigo ranges from mild to severe – severe enough to become incapacitating and require EMS help.
- Most patients complain about "dizziness". The provider must differentiate the spinning or falling feeling associated with vertigo from lightheadedness, which is another common reason for patients to complain of "dizziness", but should not be treated according to this protocol.
- Vertigo can occasionally be a symptom of stroke, but is most commonly a disturbance of spatial orientation and motion sense in the inner ear.
- Vertigo is commonly associated with nausea and vomiting

Priorities	***Assessment Findings***
Chief Complaint	"Dizziness," "Spinning or falling sensation"
OPQRST	Determine onset and duration. Provoked by changing position or turning head.
Associated Symptoms/ Pertinent Negative	Dizziness, nausea, vomiting, ataxia, and falls (with or without injury)
SAMPLE	Exposure to known allergen. History of CVA/TIA.
Initial Exam	ABCs and correct any life threats
Detailed Focused Exam	**General Appearance:** Eyes closed, Pale **Neuro:** ALOC?, Focal deficits, Pupils **Eyes:** Nystagmus with lateral gaze
Goals of Therapy	Maintain ABCs and vitals
Monitoring	BP, HR, RR, EKG, SpO_2.

EMERGENCY MEDICAL RESPONDER (EMR) / EMERGENCY MEDICAL TECHNICIAN (EMT)

- Routine medical care
- Allow the patient to assume the position that minimizes or eliminates the symptoms – usually the supine position.
- Beware that asking the patient to turn their head or sit up, or testing the movement of their extraocular muscles can trigger vertigo and result in vomiting. Try to avoid these unnecessary movements.
- Provide oxygen as necessary

ADVANCED EMT (AEMT) / INTERMEDIATE

- Consider IV/IO NS @ TKO
- If the patient appears to be dehydrated, consider a 500 ml bolus of Normal Saline

Contact Medical Control for the following:

- Additional fluid orders

PARAMEDIC

- Use the following medication for treatment of nausea and vomiting associated with vertigo:
  - **Reglan** 10 mg IV over 1-2 minutes or 10 – 20 mg IM
- Use the following medication to reduce vertigo:
  - **Valium** 5 mg IV

Contact Medical Control for the following:

- Further orders
- Notify medical control if extrapyramidal side effects develop from the Reglan. These include:
  a) Akathisia
  b) Torticollis
  c) Opisthotonus
  d) Occulogyric crisis
  e) Buccolingual crisis
- Consider Benadryl 25 mg IM or IV to correct extrapyramidal side effects