



OSF
HEALTHCARE

Peoria Area EMS System Prehospital Care Manual

Adult Medical
Section

Effective Oct 1, 2021

Adult Medical Protocols

PAEMS Adult Medical Protocols

Peoria Area EMS Medical Protocol Section

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Effective Oct 1, 2021	Universal Cardiac Care Protocol		3

Patients experiencing chest pain with a suspected cardiac origin may present with signs and symptoms which include:

- Substernal chest pain / pressure
- Heaviness, tightness or discomfort in the chest
- Radiation and/or pain/discomfort to the neck or jaw
- Pain/discomfort/weakness in the shoulders/arms
- Nausea/vomiting
- Diaphoresis
- Dyspnea

Priorities in the care of chest pain patients include:

- Assessing and securing ABCs.
- Determining the quality and severity of the patient's distress.
- Identifying contributing factors of the event.
- Obtaining a medical history (including medications & allergies).

Timely transportation to the emergency department is an important factor in patient outcome.

****Strongly encourage transport to a hospital with an interventional catheterization lab when STEMI is present on 12-Lead ECG.**

First Responder & BLS Care should be focused on assessing the situation and initiating care to reassure the patient, reducing the patient's discomfort and beginning treatment for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.
2. **Oxygen: 15 L/min** via non-rebreather mask. If the patient does not tolerate a mask, then administer 6 L/min via nasal cannula.
3. **Aspirin (ASA): 324mg** PO (4 tablets of 81mg chewable aspirin by mouth).
 - a. **Ask the patient specifically about any history of hypersensitivity to ASA.**
 - b. **Do not give ASA to patients with active ulcer disease, asthma or known allergy to ASA.**
4. BLS providers may administer **Nitroglycerin (NTG): 0.4mg** SL (1 metered spray dose sublingually). May repeat every **3-5 minutes** to a total of 3 doses (if systolic BP remains > 100mmHg).
 - a. NTG (& ASA) may be administered without contacting Medical Control if the patient is age 30 or older, has chest pain consistent with acute myocardial infarction (AMI) and has a systolic BP > 100mmHg. *If the patient does not meet criteria, consult Medical Control prior to administering NTG.*
5. BLS providers must obtain **12-Lead EKG** and transmit to Medical Control as soon as possible.

3-Lead monitoring is not within the scope of practice of the EMT-B
6. Initiate ALS (or ILS) intercept if necessary and transport as soon as possible.
7. **Contact Medical Control** as necessary.

ILS Care should be directed at conducting a thorough patient assessment, providing care to reassure the patient, reducing the patient's discomfort, beginning treatment for shock and preparing or providing patient transportation. ILS Care should include aspects of EMR and BLS Care.

1. **Ondansetron (Zofran):** 4mg PO orally disintegrating tablet for nausea and vomiting
2. **Fentanyl: 50mcg** IV, over 2 minutes for pain. Fentanyl 50mcg IV may be repeated every **5 minutes** to a total of 200mcg.
Fentanyl: 50mcg IM, if unable to initiate IV access. May be repeated as needed to a total of 200mcg.
Fentanyl: 50mcg IN (See Intranasal Fentanyl Dosing Chart)
3. **Contact Medical Control** as necessary, regardless of EKG transmission.

ALS Care should contain all aspects of EMR, BLS, and ILS Care—along with the consideration of the following:

1. **Nitropaste (Nitro-Bid):** 1 inch to anterior chest wall if patient's systolic BP is greater than 100mmHg.
2. **Fentanyl: 50mcg** IV, over 2 minutes for pain. Fentanyl 50mcg IV may be repeated every **5 minutes** to a total of 200mcg.
Fentanyl: 50mcg IM, if unable to initiate IV access. May be repeated as needed to a total of 200mcg.
Fentanyl: 50mcg IN (See Intranasal Fentanyl Dosing Chart in the Prehospital Care Manual)
3. Transport as soon as possible and contact medical control if necessary (transport can be initiated at any time during this sequence).

Critical Thinking Elements

- ILS & ALS may administer Nitroglycerin when the patient's systolic blood pressure is between 90-100mmHg **if IV access has been established.**
- Use caution with acute inferior wall MI (II, III, aVF) – Place IV and administer 20ml/kg Normal Saline as needed following Nitroglycerin
- Use caution with acute septal wall MI (V1, V2) – Watch for AV blocks and consider pacing.
- Initiate ALS intercept if the patient's chest pain is not eliminated with Oxygen or NTG.
- Consider the patient to be in cardiogenic shock if the patient has dyspnea, diaphoresis, a systolic BP < 100mmHg, and signs of congestive heart failure.
- Obtaining a 12-Lead EKG should not significantly delay initiation of transport.
- EKG limb leads should actually be placed on the patient's limbs!
- A pulse oximeter is a tool to aid in determining the degree of patient distress and the effectiveness of EMS interventions. A high pulse oximeter reading should not result in oxygen therapy being withheld.
- NTG that the patient self-administers prior to EMS arrival should be reported to Medical Control. Subsequent doses should be provided by the EMS unit's stock.
- **Medications should not be administered IM to a suspected AMI patient.**
- Nitro paste can be placed on the patient's upper back instead of the anterior chest if needed (*e.g.* if the patient has excessive chest hair).
- If the patient's systolic BP drops **below 90mmHg**, wipe the Nitropaste off.
- The goal of the EMT-B is to obtain a 12-Lead EKG and send it to the receiving hospital as soon as possible
- 10 minutes is the goal for EKG's to be performed at all levels.
- Avoid use of Zofran in patients with congenital long QT syndrome as these patients are at particular risk for Torsades de Pointes

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Cardiogenic shock occurs when the “pump” component of perfusion (the heart) begins to fail. The signs and symptoms of cardiogenic shock include:

- Pain, heaviness, tightness or discomfort in the chest with hypotension (systolic BP < 100mmHg)
- Rales or crackles (“wet” lung sounds), Dyspnea, Pedal edema, Diaphoresis, Nausea/vomiting

Patients with a history of AMI or CHF have increased risk factors. Priorities in the care of the Cardiogenic shock patient include:

- Assessing and securing ABCs.
- Determining the quality and severity of the patient’s distress.
- Identifying contributing factors of the event.
- Obtaining a medical history (including medications and allergies).

Timely transportation to the emergency department is an important factor in patient outcome.

First Responder & BLS Care should be focused on assessing the situation and initiating care to reassure the patient, reducing the patient’s discomfort and beginning treatment for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.
2. **Oxygen:** 15 L/min via non-rebreather mask. If the patient does not tolerate a mask, then administer 6 L/min via nasal cannula.
3. Initiate ALS (or ILS) intercept and or transport as soon as possible.

ILS & ALS Care should be directed at conducting a thorough patient assessment, providing care to reassure the patient, reducing the patient’s discomfort, beginning treatment for shock and preparing or providing patient transportation. ILS Care should include aspects of EMR and BLS Care.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.
2. **Oxygen:** 15 L/min via non-rebreather mask. If the patient does not tolerate a mask, then administer 6 L/min via nasal cannula.
3. **IV Fluid Therapy:** 20mL/kg fluid bolus to maintain Systolic pressure 80-90 mmHg..
4. Obtain **12-Lead EKG** and transmit to receiving hospital. Contact Medical Control if wide complex tachycardia or consultation is needed.
5. Initiate ALS intercept and transport as soon as possible.
6. **Contact Medical Control** as soon as possible.
7. **ALS only:** may administer 500 mL fluid bolus (avoid if signs of heart failure present, including dyspnea, JVD, orthopnea, rales).
8. **ALS only: Norepinephrine** infusion (this medication is system optional for prolonged scene times or transports): 1-20 mcg/min. Start at 5 mcg/min, titrate every 5-10 min to maintain SBP > 90.
 - a. Administer through a confirmed patent, large bore (>18 gauge) IV in a proximal vein. (Antecubital preferred), as this medication may cause limb necrosis if extravasation occurs.
 - b. If extravasation occurs, notify stop medication, and notify receiving facility immediately.
 - c. Monitor blood pressure every 5 minutes

9. **ALS only: Push-dose epinephrine** (10 mcg/mL) (for short transports)
- To make: Draw up 1 mL of 1:10,000 cardiac epinephrine into a 10 mL syringe, and then draw up 9 mL of normal saline.
 - The syringe should be mixed by rolling it between the palms prior to administration.
 - Administration: **Push-dose epinephrine 0.5-1 mL** slow IV infusion of every 1-5 minutes to maintain SBP > 90 (See the push-dose Epi procedure in the Prehospital Care Manual)

Caution must be taken in giving pressors in the setting of MI as they may worsen ischemia/infarct. If the patient has a cardiac dysrhythmia, treat the underlying rhythm disturbance according to the appropriate SMO. Transport as soon as possible (transport can be initiated at any time during this sequence) and **Contact Medical Control** as necessary.

Notes:

Use same sepsis protocol as previous, but insert above norepi and push-dose epi dosing/protocol. Push-dose epi should not be used in anaphylaxis- subcutaneous epi is sufficient and just as effective.

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The successful resuscitation of patients in cardiac arrest is dependent on a systematic approach of initiating life-saving CPR and early defibrillation and transferring care to advanced life support providers in a timely manner.

First Responder & BLS Care should be focused on confirming that the patient is in full arrest and in need of CPR. Resuscitative efforts should be initiated by opening the airway and initiating ventilations & chest compressions while attaching a defibrillator. It is important to assure that CPR is being performed correctly following AHA BLS guidelines.

1. Determine unresponsiveness. Confirm that a transporting unit (and ALS intercept) has been activated.
2. Check for pulse (10 seconds). If pulseless, **begin CPR**. CPR should start with compressions at a rate of 100-120/min with a ratio of 30 compressions to 2 ventilations for 5 cycles (2 minutes)
3. Apply an AED **after 2 minutes of CPR** to determine if defibrillation is needed.
4. Continue CPR until the AED is attached and turned on. Stop CPR when the AED is analyzing:
 - a) If the AED indicates "SHOCK ADVISED", call out "**CLEAR!**" check for the safety of others, and push the SHOCK button (or stand clear if the AED device does not require shock activation).
 - b) Immediately **resume CPR (starting with compressions) for 5 cycles or (2 minutes)**.
 - c) Reassess the patient and allow the AED to analyze.
 - d) If the AED indicates "SHOCK ADVISED", call out "**CLEAR!**" check for the safety of others, and push the SHOCK button (or stand clear if the AED device does not require shock activation).
 - e) Check for a pulse if the AED states "NO SHOCK ADVISED".
 - f) **Continue CPR if pulse is absent.**
 - g) **Reassess every 2 minutes.** Shock if indicated.
 - h) If the patient regains a pulse at any time during resuscitation, then maintain the airway and assist ventilations.
 - i) Re-analyze the patient's rhythm with the AED if the patient returns to a pulseless state. Shock if indicated.
5. **Narcan:** 2mg IN (1mg per nare) for suspected or known narcotic overdose.
6. ***Place BIAD Airway (if possible) and continue ventilations. * (Expanded Scope for the EMR level)**
7. Immediately turn patient care over to the transporting provider or ALS intercept crew upon their arrival.
8. Complete all necessary cardiac arrest documentation.

ILS and ALS Care should focus on maintaining the continuity of care by confirming that the patient is in cardiac arrest and beginning resuscitative efforts or continuing resuscitative efforts initiated by the First Responders and or EMT's and following recommended AHA guidelines for ACLS and/ or PALS.

1. Determine unresponsiveness.
2. Check for pulse (10 seconds). If pulseless, **begin CPR**. CPR should start with compressions at a rate of 100-120/min with a ratio of 10 compressions to 1 ventilation PAEMS "high performance" CPR or (AHA 30:2).
3. Apply Quick-Combo pads (or Fast Patches).
4. Evaluate the rhythm.

5. If V-fib or pulseless V-tach, immediately **defibrillate per manufacturer's recommendations for biphasic monitors (or 360J for monophasic defibrillators).**
6. **Immediately resume CPR (starting with compressions) for 2 minutes.**
7. Evaluate the patient/rhythm and defibrillate if needed. **Continue CPR and re-evaluate patient/rhythm every 2 minutes.**
7. **Intubate** the patient with appropriately sized ET tube and provide ventilation at 12 breaths/minute.
8. If intubation is unsuccessful, **place BIAD Airway (if possible) and continue ventilations.**
9. Establish **peripheral IV** access and administer **Epi 1:10,000** 1mg IV every 3-5 minutes as needed.
10. Identify and treat H's and T's along with cardiac dysrhythmias according to the appropriate protocol.
11. Place Orogastic Tube (OG) if time permits to relieve gastric distention if necessary.

Critical Thinking Elements

- **If the cardiac arrest is witnessed by EMS personnel, start CPR and defibrillate immediately after Fast Patches or Quick Combos are placed.**
- Do not touch, ventilate or move the patient while the AED is analyzing.
- Do not exceed three (3) shocks on scene without contacting Medical Control.
- Patients with implanted pacemakers or implanted defibrillators (AICDs) are treated the same way as any other patient; however do not place the electrodes, Quick Combo pads or Fast Patches over the top of the pacemaker or AICD site.
- Treat the patient – not the monitor. **A rhythm present on the monitor screen should NOT be used to determine pulse.** If the monitor shows a rhythm and the patient has no pulse, begin CPR (the patient is in PEA – *pulseless electrical activity*).
- Trauma patients in cardiac arrest should be evaluated for viability. If the patient is to be resuscitated, begin CPR and LOAD & GO.
- When changing to ALS monitoring equipment, attach defibrillation cables prior to disconnecting the AED.
- Resuscitation and treatment decisions are based on the duration of the arrest, physical exam and the patient's medical history. Consider cease-effort orders if indicated.
- Consider underlying etiologies and treat according to appropriate protocols.
- The 2015 American Heart Association (AHA) ACLS Guidelines **do not** recommend transcutaneous pacing for agonal rhythms or cardiac arrest

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ACLS medications are an important factor in successful resuscitation of the pulseless patient when the initial rhythm is not ventricular fibrillation (V-fib) or in cases where defibrillation has been unsuccessful. It is important that BLS providers understand the value of effective CPR and an ALS intercept in providing the patient with ACLS therapy.

First Responders and EMT's are not equipped with ACLS medications and shall treat the patient in accordance with the *Cardiac Arrest Protocol*.

VFib, VTach, Asystole, and/ or PEA

ILS & ALS Care

1. Initiate *Cardiac Arrest Protocol*.
2. Evaluate rhythm after 2 minutes of CPR. If V-fib or pulseless V-tach: **Defibrillate per manufacturer's recommendations for biphasic monitors (or 360J for monophasic defibrillators)**.
3. **Immediately resume CPR for 2 minutes** and re-evaluate the patient/rhythm.
4. **Epinephrine 1:10,000: 1mg IV** if patient is pulseless and repeat every **3-5 minutes** as needed.
5. If pulseless V-fib/V-tach persists: **Defibrillate per manufacturer's recommendations for biphasic monitors (or 360J for monophasic defibrillators)**.
6. **Immediately resume CPR for 2 minutes** and re-evaluate the patient/rhythm.
7. **Lidocaine: 1.5mg/kg IV or 3.0mg/kg ETT** for persistent V-fib or V-tach. Repeat bolus: **1.5mg/kg IV in 3-5 minutes** to a total of **3mg/kg** if patient remains in V-fib or V-tach.
8. If pulseless V-fib/V-tach persists: **Defibrillate per manufacturer's recommendations for biphasic monitors (or 360J for monophasic defibrillators)**.
9. **Immediately resume CPR** and re-evaluate patient/rhythm every 2 minutes.
10. **Dextrose 50%: 25g IV** if the patient's blood sugar is < 60mg/dL or **Dextrose D10: 250ml bolus WO**
11. **Narcan: 2mg IV/IN or 4mg ETT** if the patient is suspected for narcotic overdose.
12. Transport as soon as possible and contact medical control as necessary.

As an alternative to **Lidocaine** the **ALS provider** should consider **Amiodarone**: Initial dose 300mg bolus IV/IO for persistent V-fib or pulseless V-tach. Repeat dose: 150mg bolus IV/IO if patient remains in V-fib or pulseless V-tach following at least 2 minutes of CPR.

ALS Providers: Sodium Bicarbonate: 50meq IV/IO if known tricyclic antidepressant (TCA) overdose, known Aspirin (ASA) overdose or patient suffers from chronic renal failure.

For Torsades de Pointes or Refractory V-fib: Magnesium Sulfate: Rapid infusion 1-2 gm IV (mixed 50 ml D5W using macro drip, wide open), followed by a maintenance infusion of 1 gm (mixed 250 ml NS administer using micro drip, 30-60 gtts/min).

Possible Causes of Pulseless Electrical Activity (PEA) / Asystole-The H's and T's

- Hypovolemia
- Hypoxia
- Hydrogen Ions (Acidosis)
- Hypokalemia/Hyperkalemia
- Hypothermia
- Hypoglycemia
- Toxins / Tablets (Drug Overdose)
- Tamponade (Pericardial Tamponade)
- Tension Pneumothorax
- Thrombosis (Acute Coronary Syndrome or Pulmonary Embolism)
- Trauma

Critical Thinking Elements

- **If the cardiac arrest is witnessed by EMS personnel, start CPR and defibrillate immediately after Fast Patches or Quick Combos are placed for V-fib/pulseless V-tach.**
- Treat the patient – not the monitor. **A rhythm present on the monitor screen should NOT be used to determine pulse.** If the monitor shows a rhythm and the patient has no pulse, begin CPR (the patient is in PEA).
- Trauma patients in cardiac arrest should be evaluated for viability. If the patient is to be resuscitated, begin CPR and LOAD & GO.
- Consider underlying etiologies and treat according to appropriate protocols (e.g. airway obstruction, metabolic shock, hypovolemia, central nervous system injury, respiratory failure, anaphylaxis, drowning, overdose, poisoning, etc.).
- A 20mL fluid bolus should be given after each drug administration to flush the IV line.

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Bradycardia is defined as a heart rate less than sixty beats per minute (< 60 bpm). Determining the stability of the patient with bradycardia is an important factor in patient care decisions. The assessment of the patient with bradycardia should include evaluation for signs and symptoms of hypoperfusion.

The patient is considered **stable** if the patient is asymptomatic (i.e. alert and oriented with warm, dry skin and a systolic BP > 100mmHg)

The patient is considered **unstable** if he/she presents with:

- An altered level of consciousness (ALOC).
- Diaphoresis.
- Dizziness.
- Chest pain or discomfort.
- Ventricular ectopy.
- Hypotension (systolic BP < 100mmHg).

First Responder & BLS Care should be focused on assessing the situation and initiating Universal patient care to treat for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.
2. **Oxygen: 15 L/min** via non-rebreather mask or 6 L/min via nasal cannula if the patient does not tolerate a mask.
3. BLS providers should obtain **12-Lead EKG** and transmit to the receiving hospital as soon as possible
3-Lead monitoring is not in the scope of the EMT-B
4. Initiate ALS intercept and transport as soon as possible.

ILS & ALS Care should be directed at continuing or establishing care, continuing EMR and BLS care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. **IV Fluid Therapy: 20mL/kg** fluid bolus for systolic BP less than 100mmHg.
2. Initiate ALS intercept and transport as soon as possible. (*Transport can be initiated at any time during this sequence*).
3. **Atropine: 0.5mg** IV if the patient's perfusion does not improve after the fluid bolus, if the patient is hemodynamically unstable or if the cardiac rhythm is an AV block (other than a 3rd degree block). May repeat 0.5mg IV every **5 minutes (with Medical Control order)** up to a total of 3mg.
4. Contact receiving hospital (or Medical Control if needed).

ALS Care:

1. **Immediate Transcutaneous Pacing:** If the patient is in a **3rd degree AV blocks** (or in a **Type II 2nd degree AV block** unresponsive to Atropine).
 - Target heart rate should be set at **70 bpm**.
 - Current should be set at minimum to start and increased until capture is achieved.
 - Refer to the *Transcutaneous Pacing Procedure* for additional information.
2. **Midazolam (Versed): 2mg IV/IO** for patient comfort after pacing is initiated. Re-check vital signs 5 minutes after administration. May repeat dose one time if systolic BP > 100mmHg and respiratory rate is > 10 rpm. Additional doses require Medical Control order. **Midazolam (Versed):** Intranasal if unable to obtain IV access. (*See intranasal dosing sheet in the Prehospital Care Manual*).

3. Administer **500 mL fluid bolus** (avoid if signs of heart failure present, including dyspnea, JVD, orthopnea, rales).
4. **Norepinephrine** infusion (this medication is system optional for prolonged scene times or transports): 1-20 mcg/min. Start at 5 mcg/min, titrate every 5-10 min to maintain SBP > 90.
 - a. Administer through a confirmed patent, large bore (>18 gauge) IV in a proximal vein. (Antecubital preferred), as this medication may cause limb necrosis if extravasation occurs.
 - b. If extravasation occurs, notify stop medication, and notify receiving facility immediately.
 - c. Monitor blood pressure every 5 minutes
5. **Push-dose epinephrine (10 mcg/mL)** (for short transports)
 - d. To make: Draw up 1 mL of 1:10,000 cardiac epinephrine into a 10 mL syringe, and then draw up 9 mL of normal saline.
 - e. The syringe should be mixed by rolling it between the palms prior to administration. Administration: 0.5-1 mL slow IV infusion of **push-dose epinephrine** every 1-5 minutes to maintain SBP > 90 (See the push-dose Epi procedure in the Prehospital Care Manual)
6. Caution must be taken in giving pressors in the setting of MI as they may worsen ischemia/infarct.
7. If the patient has a cardiac dysrhythmia, treat the underlying rhythm disturbance according to the appropriate SMO.
8. Transport as soon as possible (transport can be initiated at any time during this sequence) and **Contact Medical Control** as necessary.

Critical Thinking Elements

- Monitor respiratory status, SPO2 and or Waveform Capnography if available if Versed or Ativan is given.
- Treat the patient – not the monitor. Bradycardia does not necessarily mean that the patient is unstable or requires intervention.
- Treat underlying etiologies according to protocol.
- Atropine is NOT to be given if the patient's blood pressure is normal or elevated.
- *Bradycardia may be present due to increased intracranial pressure from a stroke or head injury.* Contact Medical Control.
- Factors to consider during the assessment of the patient who presents with bradycardia include: patient health & physical condition (e.g. an athlete), current medications (e.g. beta blockers), trauma or injury related to the event (e.g. a head trauma patient exhibiting signs of herniation or *Cushing's response*), and other medical history.
- Assess for underlying causes (e.g. hypoxia, hypovolemic shock, cardiogenic shock, or overdose).
- Fluid bolus should not delay Atropine administration or TCP if the patient is unstable.
- If the patient's presenting rhythm is a 3rd degree block, immediately prepare to pace. If the patient is symptomatic, pacing should be started without delay.
- The goal of the EMT-B is to obtain a 12-Lead EKG and transmit it to the receiving hospital as soon as possible
- 10 minutes is the goal for EKG's to be performed at all levels.

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Tachycardia is defined as a heart rate > 100 bpm. Once the heart rate reaches 150 bpm, the patient is at risk for shock. A narrow QRS complex indicates that the rhythm may be originating in the atrium. Determining the stability of the patient with tachycardia is an important factor in patient care decisions.

The patient is considered **unstable** if the patient has an altered level of consciousness, diaphoresis, dizziness, chest pain or discomfort, ventricular ectopy and/or is hypotensive.

First Responder and BLS Care should be focused on assessing the situation and initiating routine patient care to treat for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*
2. **Oxygen: 15 L/min** via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask.
3. BLS providers should obtain **12-Lead EKG** and transmit to the receiving hospital as soon as possible.
3-Lead monitoring is not in the scope of the EMT-B
4. If patient is stable, regular or irregular attempt vagal maneuver (**Do not perform carotid massage**)
5. Initiate ALS intercept and transport as soon as possible.

ILS and ALS Care should be directed at continuing or establishing care, conducting a thorough patient assessment, continuing EMR and BLS Care, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. Consider 20mL/kg fluid bolus to rule out hypovolemia/dehydration as cause of tachycardia.
2. Initiate ALS intercept and transport as soon as possible. (*Transport can be initiated at any time during this sequence*).
3. Contact receiving hospital (or Medical Control if needed) as soon as possible.
4. **ALS only: For suspected SVT: Adenosine (Adenocard): 6mg IV {rapid IV push}** if the patient is alert and oriented, has a systolic BP greater than 100mmHg, has a HR greater than 150bpm and is *obviously* not in atrial fib or atrial flutter. If no response after **2 minutes**, administer **12mg IV {rapid IV push}** may repeat once if necessary.
5. **ALS only: For confirmed Atrial Fib/Flutter with rapid ventricular response ("irregularly irregular rhythm") with BP greater than 110 systolic**
Diltiazem (Cardizem) 0.25 mg/Kg (max 25 mg) mg slow IV push (over 2 minutes).
If BP remains greater than 110 systolic, and rate is still greater than 110 after 5 minutes, may administer second dose of 0.35 mg/Kg (max 25 mg) slow IV push.

If a pump is available, may initiate continuous infusion starting at 5 mg/Hr. Infusion may be titrated every 5 minutes by 5 mg/Hr to a max of 15 mg/Hr for Heart rate remaining greater than 110.

Discontinue if hemodynamic instability occurs (BP less than 100, HR less than 60)

6. **Midazolam (Versed): 2mg IV/IO** for patient comfort during synchronized cardioversion. Recheck vital signs 5 minutes after administration. May repeat dose one time if systolic BP > 100mmHg and respiratory rate is > 10 rpm. Additional doses require Medical Control order. Midazolam (Versed): Intranasal if unable to obtain IV access. (See intranasal dosing sheet in the Prehospital Care Manual).

7. **ALS only: Synchronized Cardioversion:** If the patient has an altered level of consciousness, diaphoresis, chest pain or discomfort, pulmonary edema and/or is hypotensive:
Synchronized cardioversion at **100 Joules**** if tachycardia persists.
Synchronized cardioversion at **200 Joules**** if tachycardia persists.
Synchronized cardioversion at **300 Joules**** if tachycardia persists.
Synchronized cardioversion at **360 Joules**** if tachycardia persists.
8. Contact the receiving hospital as soon as possible.

****Or biphasic equivalent**

Critical Thinking Elements

- Monitor the patient for respiratory depression when administering sedatives.
- Monitor respiratory status, SPO2 and or Waveform Capnography if available.
- Treat the patient – not the monitor. Tachycardia does not necessarily mean that the patient is unstable or requires intervention.
- Factors to consider during the assessment of the patient with tachycardia include: patient health & physical condition, trauma or injury related to the event, current medications and medical history.
- Assess for underlying causes (e.g. hypovolemic shock) and treat according to protocol.
- When administering Adenocard, be prepared for immediate defibrillation if the rhythm converts to v-fib.
- **DO NOT administer Adenocard if the heart rate is < 150 bpm** without consulting Medical Control.
- 20mL Normal Saline bolus following administration
- Adenosine not to be used for rapid Atrial Fibrillation or WPW
- Examples of vagal maneuvers include valsalva maneuver, or coughing. **DO NOT** perform carotid massage.
- The Goal of the EMT/B is to obtain a 12 lead EKG and send it to the receiving hospital as soon as possible.
- 10 minutes is the goal for EKG's to be performed at all levels.

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A patient with tachycardia is an important factor in patient care decisions. The assessment of the patient with tachycardia should include evaluation for signs and symptoms of hypoperfusion.

The patient is considered **stable** if they're alert & oriented with warm & dry skin & a systolic BP > 100mmHg. The patient is considered **unstable** if the patient has an altered level of consciousness, diaphoresis, dizziness, chest pain or discomfort, ventricular ectopy and/or hypotension.

First Responder & BLS Care should be focused on assessing the situation and initiating Universal patient care to treat for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.
2. **Oxygen: 15 L/min** via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask.
3. BLS provider should obtain **12-Lead EKG** and transmit to receiving hospital as soon as possible.
3-Lead monitoring is not in the scope of the EMT-B
4. Initiate ALS intercept and transport as soon as possible.

ILS & ALS Care should be directed at continuing or establishing care, continuing EMR and BLS care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. Consider **Normal Saline IV 20mL/kg** fluid bolus to rule out hypovolemia/dehydration as cause of tachycardia.
2. Initiate ALS intercept and transport as soon as possible. (*Transport can be initiated at any time during this sequence*).
3. If the patient becomes pulseless at any time, refer to the *Resuscitation of Pulseless Rhythms Protocol (V-fib or Pulseless V-tach)*.
4. **ALS providers only: Adenosine (Adenocard): Only for regular and monomorphic 6mg IV** {rapid IV push} if the patient is alert and oriented, has a systolic BP greater than 100mmHg, has a HR greater than 150bpm and is *obviously* not in atrial fibrillation or atrial flutter.
 - If no response after 1-2 **minutes**, administer **12mg IV** {rapid IV push}.
 - If no response after 1-2**additional minutes**, administer a repeat dose of **12mg IV** {rapid IV push}.
6. **ALS providers only: Amiodarone: 150mg IV administered over 10 minutes** if the rhythm is regular and monomorphic. Administration may be repeated as needed if rhythm recurs.
7. **ALS providers only: Midazolam (Versed): 2mg IV/IO** for patient comfort during synchronized cardioversion. Re-check vital signs 5 minutes after administration. May repeat dose one time if systolic BP > 100mmHg and respiratory rate is > 10 rpm. Additional doses require Medical Control order. **Midazolam (Versed):** Intranasal if unable to obtain IV access. (**See intranasal dosing sheet**).
8. **ALS Providers only: Synchronized Cardioversion:** If the patient has an altered level of consciousness, diaphoresis, chest pain or discomfort, pulmonary edema and/or is hypotensive:
 - a) Synchronized cardioversion at **100 Joules**** if tachycardia persists.
 - b) Synchronized cardioversion at **200 Joules**** if tachycardia persists.

c) Synchronized cardioversion at **300 Joules**** if tachycardia persists.

d) Synchronized cardioversion at **360 Joules**** if tachycardia persists.

9. **Contact Medical Control** as soon as possible.

10. If the patient becomes pulseless at any time, refer to the *Resuscitation of Pulseless Rhythms Protocol (V-fib or Pulseless V-tach)*.

**Or biphasic equivalent

Critical Thinking Elements

- Monitor the patient for respiratory depression when administering sedatives.
- Monitor respiratory status, SPO2 and or Waveform Capnography if available.
- Factors to consider during the assessment of the patient with tachycardia include: patient health & physical condition, trauma or injury related to the event, current medications and medical history.
- Assess for underlying causes (*e.g.* hypovolemic shock) and treat according to protocol.
- If the patient becomes pulseless at any time, refer to the “V-fib and Pulseless V-tach” section of the *Resuscitation of Pulseless Rhythms Protocol*.
- The goal of the EMT-B is to obtain a 12-Lead EKG and transmit it to the receiving hospital as soon as possible.
- 10 minutes is the goal for EKG to be performed at all levels.
- Monomorphic Ventricular Tachycardia means the appearance of all beats match each other.

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Effective Oct 1, 2021	AICD Automated Implanted Defibrillator		17

First Responder & BLS Care should be focused on assessing the situation and initiating routine patient care to treat for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.
2. **Oxygen:** 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask.
3. Initiate ALS intercept and transport as soon as possible.

ILS & ALS Care should be directed at continuing or establishing care, continuing EMR and BLS care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. **Ondansetron (Zofran):** 4mg PO orally disintegrating tablet for nausea and vomiting
2. **Fentanyl: 50mcg IV**, over 2 minutes for pain. Fentanyl 50mcg IV may be repeated every **5 minutes** to a total of 200mcg.
Fentanyl: 50mcg IM if unable to establish IV access- IN (See **Intranasal Fentanyl Dosing Chart in the Prehospital Care Manual**)
3. Initiate ALS intercept and transport as soon as possible (*transport can be initiated at any time during this sequence*) and contact the receiving hospital as soon as possible.

Critical Thinking Elements

- Any patient who has been shocked by an AICD should be strongly encouraged to seek medical attention and closely monitored en route regardless of patient condition.
- If the AICD is malfunctioning, alert Medical Control as early as possible so that a round magnet can be available upon arrival.
- If a patient is unresponsive and pulseless, CPR must be initiated. If the AED recognizes a shockable rhythm, the shock should be delivered (even though the patient has an AICD).
- Avoid placing the Quick Combo pad or Fast Patches directly over the AICD unit as this could damage the device and reduce the efficacy of external defibrillation.
- Slightly alter pad placement if initial defibrillation is unsuccessful.
- **In patients with known renal failure, the Fentanyl dose must be reduced to 25mcg. The dose may be repeated one time to a maximum dose of 50mcg.**
- An implanted cardiac defibrillator (AICD) is a device that delivers an internal defibrillation (shock) whenever the patient's heart rate exceeds defined limits for > 10 seconds. Persons in contact with the patient at the time the device delivers the defibrillation will receive a shock of approximately 3 Joules. This energy level constitutes **NO DANGER** to EMS personnel.
- Avoid use of Zofran in patients with congenital long QT syndrome as these patients are at particular risk for Torsades de Pointes

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Effective Oct 1, 2021	Suspected Stroke Protocol		18

A stroke or “brain attack” is a sudden interruption in blood flow to the brain resulting in neurological deficit. It affects 750,000 Americans each year, is the 3rd leading cause of death and is the leading cause of adult disability. All levels should perform a FAST exam as soon as possible and contact the receiving facility early. The most common causes of a stroke are:

- Cerebral thrombosis (a blood clot obstructing the artery).
- Cerebral embolus (a mass or air bubble obstructing the artery).
- Cerebral hemorrhage (ruptured artery / ruptured aneurysm).

First Responder & BLS Care should be focused on assessing the situation and initiating routine patient care.

4. Render initial care in accordance with the *Universal Patient Care Protocol*.
5. **Oxygen: 15 L/min** via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask to maintain SpO₂ <94%.
6. **BLS providers:** Obtain **12-Lead EKG** and transmit to receiving hospital as soon as possible.
3-Lead monitoring is not in the scope of the EMT-B
7. Perform **blood glucose test**.
8. **Oral Glucose: 15g PO** if the patient’s blood sugar is <60mg/dL, the patient is alert to verbal stimuli, is able to sit in an upright position, has good airway control and has an intact gag reflex.
9. **Glucagon: 1mg IM or 2mg IN** (1mg per nostril) if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.
10. **Narcan: 2mg IN** (1mg per nostril) if suspected narcotic overdose with respiratory depression (≤ 8 breaths per minute).
11. Initiate ALS intercept, contact the receiving facility, and transport as soon as possible.

ILS & ALS Care should be directed at continuing or establishing care, continuing EMR and BLS care, conducting a thorough patient assessment, stabilizing the patient’s perfusion and preparing for or providing patient transport.

- **Dextrose 50%: 25g IV or D10:** 250ml IV bolus WO if blood sugar is < 60mg/dL **or** 60-80mg/dL & patient is symptomatic.
- Perform a 2nd **blood glucose level test** to re-evaluate blood sugar 5 minutes after administration of Dextrose or Glucagon. Repeat Dextrose if BG is still < 60mg/dL.
- Initiate ALS intercept if needed and transport as soon as possible.
- Contact the receiving hospital as soon as possible or Medical Control if necessary.

Critical thinking:

- Determine and document the last time the patient was observed as presenting to their normal.
- IV tPA may be given at the hospital up to 360 minutes (6 hours) after symptoms present.
- Place the head of the cot at a 30 degree angle to facilitate better perfusion to the brain.
- Communicate to the receiving facility asap to declare a stroke alert.
- **Atropine** should not be given to possible stroke patients, contact medical control.

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Effective Oct 1, 2021	Respiratory Distress Protocol		19

Correct management of the patient in respiratory distress is dependent on identifying the etiology of the distress and recognizing the degree of the patient’s distress. Signs and symptoms of respiratory distress may include:

- Shortness of breath
- Difficulty speaking
- Altered mental status
- Diaphoresis
- Use of accessory muscles/ Retractions
- Respiratory rate less than 8 or greater than 24

If the etiology is questionable or your assessment does not provide a clear etiology, **consult Medical Control** for direction in patient care.

Asthma/ COPD: In addition to general signs & symptoms of respiratory distress, patients may present with inspiratory & expiratory wheezing and/or “tight” lung sounds with decreased air movement.

First Responder Care should be focused on assessing the situation and initiating routine patient care to treat for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.
2. **Oxygen: 15 L/min** via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask.
3. **Proventil (Albuterol): 2.5mg** in 3mL normal saline via nebulizer over 15 minutes.

BLS & ILS Care should be directed at conducting a thorough patient assessment, continuing EMR care, initiating routine patient care to treat for shock and preparing the patient for or providing transport.

1. **Proventil (Albuterol): 2.5mg** in 3mL normal saline **mixed with Ipratropium (Atrovent): 0.5mg** via nebulizer over 15 minutes. May repeat Albuterol 2.5mg with Atrovent 0.5mg every **15 minutes** as needed (**with Medical Control order**).
2. Initiate waveform capnography and confirm possible shark fin waves
3. **CPAP:** If the systolic BP > 100mmHg
 - If the systolic BP is between 90-100mmHg, **contact Medical Control** prior to initiating CPAP
 - **Do Not** initiate CPAP if the systolic BP is less than 90mmHg
4. Initiate ALS intercept if needed and transport as soon as possible.
5. Contact receiving hospital as soon as possible or Medical Control if necessary.

ALS Care should be directed at continuing or establishing care, continuing EMR, BLS, & ILS care, conducting a thorough patient assessment, stabilizing the patient’s perfusion and preparing for or providing patient transport.

1. Patients with persistent respiratory distress consider **Solu-Medrol: 125mg IV** push
2. **Epinephrine 1:1000: 0.3mg IM** if the patient is suffering status asthmaticus and does not improve with DuoNeb treatment.

- Special consideration should be given to administering Epinephrine if the patient is > 40 years old, has an irregular heart rate, has a heart rate > 150bpm or has a history of heart disease or hypertension. *Consult Medical Control prior to administration if the patient meets any of these criteria.*
3. **Magnesium Sulfate:** 2 grams in 50/100ml of D5W/NS over 10-20 min.
 4. Transport and contact the receiving hospital as soon as possible.

CHF/ Pulmonary Edema: In addition to general signs & symptoms of respiratory distress, patients may present with rales (or “crackles”), pedal edema, distended neck veins (JVD), orthopnea and tripod positioning.

First Responder Care should be focused on assessing the situation and initiating routine patient care to treat for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.
2. **Oxygen:** 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask.

BLS Care should be directed at conducting a thorough patient assessment, continuing EMR care, initiating routine patient care to treat for shock and preparing the patient for or providing transport.

1. **Nitroglycerin (NTG): 0.4mg SL.** May repeat every 3-5 minutes to a total of 3 doses (if systolic BP remains > 100mmHg).
2. Initiate waveform capnography
3. **CPAP:** If systolic BP > 100mmHg
 - If the systolic BP is between 90-100mmHg, **contact Medical Control** prior to initiating CPAP
 - **Do not** initiate CPAP if the systolic BP is < 90mmHg
6. Obtain **12-Lead EKG** and transmit to the receiving hospital as soon as possible.
7. Initiate ALS intercept and transport as soon as possible.

ILS & ALS Care should be directed at continuing or establishing care, continuing EMR and BLS care, conducting a thorough patient assessment, stabilizing the patient’s perfusion and preparing for or providing patient transport.

1. **Nitropaste (Nitro-Bid): 1 inch** to anterior chest wall if the patient’s systolic BP is > 100mmHg.

Critical Thinking Elements

- Solu-Medrol should **NOT** be administered to patients with fever, hyperglycemia, and who have the signs and symptoms of sepsis.
- Constant reassessment of the respiratory distress patient is imperative to assure that the patient has adequate ventilation and oxygenation. Closely monitor the patient’s response to treatment rendered.
- Patients in respiratory distress should be transported in an upright position to assist their respiratory effort.
- CPAP is very effective in the treatment of CHF / Pulmonary Edema and should be applied as soon as possible unless contraindicated.
- CPAP should not be initiated on patients with a systolic BP < 90mmHg. CPAP increases intrathoracic pressure and can decrease venous return to the heart (compromising the patient’s perfusion). Consult with Medical Control and use CPAP cautiously if the systolic BP is between 90-100mmHg for the same reason.
- Do not delay CPAP application for administration of Nitroglycerin (*i.e.* you do not need to wait until all three (3) doses of NTG SL have been administered before applying CPAP).

Smoke Inhalation: Is the result of various inhaled components of combustion and direct thermal injury to the airway. Signs and symptoms include: evidence of exposure to fire, stridor, wheezing, acute upper airway obstruction, chemical pneumonia and non-cardiac pulmonary edema. Effects of the exposure may be immediate or delayed several hours.

Carbon monoxide (CO) poisoning is a common secondary complication to smoke inhalation. Direct exposure to the gas is also common (especially in winter months). Signs and symptoms include: evidence of exposure to fire or natural gases produced by incomplete combustion, headache, dizziness, tinnitus, nausea, weakness, chest pain and ALOC.

Suspect cyanide toxicity in patients who were in enclosed spaces during a fire and have soot in the nares or oropharynx and exhibit altered mental status.

- Disorientation, confusion, and severe headache are potential indications of cyanide poisoning IN THE SETTING of smoke inhalation.
- Hypotension without other obvious cause IN THE SETTING of smoke inhalation increases the likelihood of cyanide poisoning.

First Responder, BLS, & ILS Care should be focused on assessing the situation and initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.
2. **Oxygen: 15 L/min** via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask. Be prepared to support the patient's respirations with BVM if necessary.
3. **EMR: Proventil (Albuterol): 2.5mg** in 3mL of normal saline via nebulizer over 15 minutes.
4. Initiate ALS intercept and transport as soon as possible.
5. **BLS & ILS only: Proventil (Albuterol): 2.5mg** in 3mL normal saline **mixed with Ipratropium (Atrovent): 0.5mg** via nebulizer over 15 minutes. May repeat Albuterol 2.5mg with **Atrovent 0.5mg** in **15 minutes (with Medical Control order)**. In-line nebulizer may be utilized if patient is unresponsive or in respiratory arrest.
6. Contact the receiving hospital as soon as possible or Medical Control if necessary and consider intercept.

ALS Care should be directed at continuing or establishing care, continuing EMR, BLS, & ILS Care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. **If cardiac or respiratory arrest, seizing, or SBP <80 with signs of hypoperfusion after exposure to smoke in an enclosed space:**
 - **CyanoKit (Hydroxycobalamin) 5g IV** over 15 minutes. If signs and symptoms persist, a repeat dose can be administered. The infusion rate for the second dose is usually 15 minutes to 2 hours. (Depending on clinical condition). See medication sheet for questions.
2. Transport as soon as possible.
3. Contact the receiving hospital as soon as possible.

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Effective Oct 1, 2021	Altered level of Consciousness Protocol		22

A patient with an altered level of consciousness (ALOC) may present with a variety of symptoms from minor thought disturbances & confusion to complete unresponsiveness. The causes of ALOC include cardiac emergencies, hypoxia, hypoglycemia/diabetic emergencies, epilepsy/seizures, alcohol/drug related emergencies, trauma, sepsis, stroke or any other condition which disrupts brain perfusion. ALOC can be the presenting symptom for many disease processes. Syncope is another type of ALOC and is characterized as an acute, temporary suspension of consciousness. Near-syncope (feeling faint) is a sensation of impending loss of consciousness that may rapidly progress to unconsciousness.

First Responder & BLS Care should be focused on assessing the situation and initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.
2. **Oxygen: 15 L/min** via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask.
3. Perform **blood glucose test**.
4. **Oral Glucose: 15g PO** if the patient's blood sugar is <60mg/dL, the patient is alert to verbal stimuli, is able to sit in an upright position, has good airway control and has an intact gag reflex.
5. **BLS only: Glucagon: 1mg IM or 2mg IN** (1mg per nostril) if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.
6. **Narcan: 2mg IN** (1mg per nare) if suspected narcotic overdose with respiratory depression (≤ 8 breaths per minute).
7. Obtain **12-Lead EKG** and transmit to receiving hospital if non-opiate overdose (or opiate overdose unresponsive to Narcan) or if cause of ALOC is uncertain.
8. Initiate ALS intercept if needed and transport as soon as possible & contact the receiving hospital as necessary.

ILS & ALS Care should be directed at continuing or establishing care, continuing EMR and BLS care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

- **Dextrose 50%: 25g IV or D10: 250ml IV bolus WO** if blood sugar is < 60mg/dL or 60-80mg/dL & patient is symptomatic.
- Perform a 2nd **blood glucose level test** to re-evaluate blood sugar 5 minutes after administration of Dextrose or Glucagon. Repeat Dextrose if BG remains < 60mg/dL.

Critical Thinking Elements

- Look for Medic Alert tags & consider possible C-spine injury and follow C-spine precautions.
- Be prepared for possible vomiting after administration of Glucagon.
- Vitals and GCS should be recorded every 5 minutes.
- After administration of Dextrose, allow 2 minutes before administration of Narcan.
- No 12-Lead EKG is necessary for known etiologies such as hypoglycemia, opiate overdose responsive to Narcan or febrile illness.
- **ILS / ALS:** If a patient refuses transport after administration of D₅₀ (& is CA+Ox4), the call may be treated as a low risk refusal as long as the following criteria are met (and documented in the PCR):
 - The cause of the patient's hypoglycemia can be easily explained (*e.g.* patient took insulin but did not eat).
 - The patient has no other complaints and no other issues are identified after a thorough evaluation (including a full assessment, vitals and repeat blood sugar) & EMS advises patient/family that the patient needs to consume foods containing complex carbohydrates & protein within the next 15 minutes (assist patient if needed prior to departing the scene).

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Effective Oct 1, 2021	Seizure Protocol		24

A seizure is a temporary, abnormal electrical activity of the brain that results in loss of consciousness, loss of organized muscle tone and presence of convulsions. The patient will usually regain consciousness within 1 to 3 minutes followed by a period of confusion and fatigue (*post-ictal state*). Multiple seizures in a brief time span or seizures lasting more than 5 minutes may constitute status epilepticus and require EMS intervention to stop the seizure. Causes of seizures include: epilepsy, stroke, head trauma, hypoglycemia, hypoxia, infection, a rapid change in core body temperature (*e.g.* febrile seizure), eclampsia, and alcohol withdrawal or overdose.

First Responder & BLS Care should be focused on assessing the situation and initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.
2. **Oxygen: 15 L/min** via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask.
3. Perform blood glucose level test.
4. **Oral Glucose: 15g PO** is the patient's blood sugar in <60mg/dL, the patient is alert to verbal stimuli, is able to sit in an upright position, has good airway control and has an intact gag reflex.
5. **BLS only: Glucagon: 1mg IM or 2mg IN** (1mg per nostril) if blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.
6. Initiate ALS intercept and **transport without delay.**

ILS & ALS Care should be directed at continuing or establishing care, continuing EMR and BLS Care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

2. If the patient is symptomatic, unresponsive with a questionable gag reflex and a blood sugar less than 60mg/dL consider one of the following. **Dextrose 50%:** 25g IV or **Dextrose 10%:** 250mL bolus administered at Wide Open Rate or **Glucagon:** 1mg IM or (if available) 2mg IN
3. **Narcan: 2mg IV/IM/IN** if no response to Dextrose or Glucagon within 2 and narcotic overdose is suspected. May repeat if no response in 5 minutes.
4. **Midazolam (Versed): 2mg IV** over 1 minute for seizure activity. May repeat Midazolam (Versed) 2mg IV every **5 minutes** as needed to a total of 10mg.
Midazolam (Versed): 5mg IM if the patient is seizing and attempts at IV access have been unsuccessful. May repeat dose one time in **15 minutes** if the patient is still seizing to a total of 10mg. **Midazolam (Versed):** Intranasal if unable to obtain IV access. (See **Versed Intranasal Dosing Sheet Pg. 45**).
5. Transport as soon as possible
6. Contact the receiving hospital as soon as possible

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Effective Oct 1, 2021	Acute Abdominal Pain Protocol		25

Abdominal pain may vary from minor discomfort to acute pain. Abdominal pain may indicate inflammation, hemorrhage, perforation, obstruction and/or ischemia of an internal organ. Correct management of the patient in abdominal pain depends on recognizing the degree of distress the patient is suffering and identifying the possible etiology of the distress.

First Responder & BLS Care should be focused on assessing the situation and initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.
2. Allow the patient to remain in a position that is most comfortable.
3. **Oxygen: 15 L/min** via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask.
4. **Ondansetron (Zofran): 4mg PO** orally disintegrating tablet for nausea and vomiting
5. Initiate ALS intercept if needed and transport as soon as possible.

ILS & ALS Care should be directed at continuing or establishing care, continuing EMR and BLS care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. **IV Fluid Therapy: 20mL/kg** fluid bolus if the patient is hypotensive to achieve a systolic BP of at least 100mmHg.
2. **Fentanyl: 50mcg IV**, over 2 minutes for pain. Fentanyl 50mcg IV may be repeated every **5 minutes** to a total of 200mcg.
Fentanyl: 50mcg IM, if unable to initiate IV access. May be repeated as needed to a total of 200mcg.
Fentanyl: IN (See [Intranasal Fentanyl Dosing Chart in the Prehospital Care Manual](#))
3. **Ondansetron (Zofran): 4mg IV** over 2 minutes for nausea and/or vomiting.
Ondansetron (Zofran): 4mg IM or **4mg PO** orally disintegrating tablet.

Initiate ALS intercept if needed, contact the receiving hospital, & transport as soon as possible.

Critical Thinking Elements

- Monitor respiratory status, SPO2 and or Waveform Capnography when administering Narcotics.
- Assess for leaking or ruptured abdominal aortic aneurysm (AAA). Common signs and symptoms may include previous history un-repaired AAA, abdominal distention, pulsating masses, lower extremity mottling, diaphoresis, anxiety/restlessness and/or sharp "tearing" pain between the shoulder blades or in the lower back.
- Give special attention to female patients of childbearing years. Acute abdominal pain should be considered to be an ectopic pregnancy until proven otherwise.
In patients with known renal failure, the Fentanyl dose must be reduced to 25mcg. The dose may be repeated one time to a maximum dose of 50mcg.
- Avoid use of Zofran in patients with congenital long QT syndrome as these patients are at particular risk for Torsades de Pointes

	Peoria Area EMS System Prehospital Care Manual	Medical Protocols	Page
Effective Oct 1, 2021	Acute Nausea & Vomiting Pain Protocol		26

Acute nausea and vomiting may occur from a variety of illness including, but not limited to:

- Adverse medication effects
- Bowel obstruction
- Increased intracranial pressure
- Intraabdominal emergencies
- Myocardial infarction
- Other cardiac events such as tachydysrhythmias

An attempt at determining potential causes of isolated nausea or vomiting must be made in order to identify potential life threatening conditions.

First Responder & BLS Care should be focused on assessing the situation and initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.
2. Place the patient in an upright or lateral recumbent position as tolerated.
3. Monitor airway status in vomiting patients as aspiration may occur. Reposition the patient as necessary to maintain a patent airway.
4. **Oxygen: 15 L/min** via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask. **Note:** Oxygen by mask may trap secretions and compromise the airway if the patient is actively vomiting.
5. Perform blood glucose test.
6. **Oral Glucose: 15g PO** if the patient's blood sugar is <60mg/dL, the patient is alert to verbal stimuli, is able to sit in an upright position, has good airway control and has an intact gag reflex.
7. Perform a 2nd blood glucose level test to re-evaluate blood sugar 5 minutes after administration of Oral Glucose. If blood sugar remains <60mg/dL, administer a 2nd dose of **Oral Glucose** (15g).
8. **BLS Only: Glucagon: 1mg IM or 2mg IN** (1mg per nostril) if blood sugar is < 60mg/dL, the patient is unresponsive and/or has questionable airway control or absent gag reflex.
9. **BLS Only: Ondansetron (Zofran): 4mg PO** orally disintegrating tablet for nausea and vomiting.
10. Initiate ALS intercept if needed, contact the receiving hospital, and transport as soon as possible.

ILS & ALS Care should be focused on continuing or initiating an advanced level of care, continuing EMR and BLS Care, identifying potential serious conditions and stabilizing airway and circulation where appropriate.

1. **IV Fluid Therapy: 20mL/kg** fluid bolus if the patient is hypotensive to achieve a systolic BP greater than 100mmHg.
2. Perform **blood glucose level test**.
3. **Dextrose 50%: 25g IV or D10 250ml IV bolus WO** if blood sugar is < 60mg/dL.
4. **Ondansetron (Zofran): 4mg PO** orally disintegrating tablet
5. **Ondansetron (Zofran): 4mg IV** over 2 minutes or **Ondansetron (Zofran): 4mg IM**
6. Perform a 2nd **blood glucose level test** to re-evaluate blood sugar 5 minutes after administration of Dextrose or Glucagon. Repeat Dextrose if BS is < 60mg/dL.
7. Initiate ALS intercept if needed, contact the receiving hospital, and transport as soon as possible.

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Effective Oct 1, 2021	Septic Shock Protocol		27

History

- Age: (Must be ≥ 18)
- Duration/Severity of Fever
- Past Medical History: (Pneumonia, Urinary Tract Infection, Meningitis, Cellulitis, Decubitus Ulcers, recent hospitalization/surgical procedures)
- Medications
- Immunocompromised: (transplant, HIV/AIDS, diabetes, cancer)

Differential Diagnosis

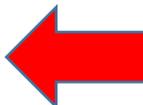
- Cancer/Tumors/Lymphomas
- Medication or Drug Reaction
- Hyperthyroid
- Meningitis
- Hyperglycemia

Signs & Symptoms

- Heart Rate > 90
- Respiratory Rate > 22
Or PaCO₂ < 32mmHG

Or Mechanical Ventilation
- Systolic Blood Pressure ≤ 90mmHg
- Hyperthermia or Hypothermia
Thermometer: > 100.4°F/38°C or < 96.8°F/36°C

No Thermometer: Is the skin Hot or Cold?
- Hyperglycemia / Hypoglycemia
- Altered Mental Status / Decreased Level of Consciousness
- Already treating infection



2 or more signs and symptoms in addition to positive history indicates likelihood of Septic Shock and must be treated aggressively to prevent poor organ perfusion. Early notification to the receiving facility is a must to declare a Sepsis alert.

Attempt to maintain a Systolic BP <90 mmHg or Mean Arterial Pressure (MAP) <65 mmHg.

ILS & ALS Care should be directed at continuing or establishing care, continuing EMR and BLS Universal Patient Care, conducting a thorough patient assessment, stabilizing the patient’s perfusion and preparing for or providing patient transport.

1. **IV Fluid Therapy: 20mL/kg** fluid bolus if the patient is hypotensive to achieve a systolic BP greater than 90mmHg. (Avoid if signs of heart failure present, including dyspnea, JVD, orthopnea, rales).
2. **Norepinephrine:** infusion (this medication is system optional for prolonged scene times or transports): 1-20 mcg/min. Start at 5 mcg/min, titrate every 5-10 min to maintain SBP > 90.
 - a. Administer through a confirmed patent, large bore (>18 gauge) IV in a proximal vein. (Antecubital preferred), as this medication may cause limb necrosis if extravasation occurs.
 - b. If extravasation occurs, notify stop medication, and notify receiving facility immediately.
 - c. Monitor blood pressure every 5 minutes
3. **Push-dose epinephrine (10 mcg/mL)** (for short transports see Push Dose Epi Procedure in the Prehospital Care Manual)

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Effective Oct 1, 2021	Anaphylaxis Protocol		28

Allergic reactions can be triggered by virtually any allergen. An allergen is a substance (usually protein-based) which produces a hypersensitive reaction. Drugs, blood products, foods and envenomation's are examples of substances which may produce hypersensitive reactions.

Signs & symptoms of a hypersensitive reaction may range from isolated hives, wheezing, shock, to cardiac arrest. Anaphylaxis is a life threatening reaction that requires prompt recognition and intervention. An anaphylactic reaction may result in airway compromise and circulatory collapse within minutes.

First Responder & BLS Care should be focused on assessing the situation and initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.
2. **Oxygen: 15 L/min** via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask. Be prepared to support the patient's respirations with BVM if necessary.
3. ***Epinephrine: 0.3mg IM** if the patient has a history of allergic reactions and/or is suffering from hives, wheezing, hoarseness, hypotension, ALOC or indicates a history of anaphylaxis. ***(Epi Pen is Expanded Scope for the EMR)**
4. **Proventil (Albuterol): 2.5mg** in 3mL normal saline via nebulizer over 15 minutes.
BLS only: Ipratropium (Atrovent): 0.5mg via nebulizer over 15 minutes. May repeat **Albuterol 2.5mg with Atrovent 0.5mg** every 15 minutes. In-line nebulizer may be utilized if patient is unresponsive or in respiratory arrest.
5. **BLS only: Benadryl: 50mg PO** for severe itching and/or hives.
6. **Contact Medical Control** as soon as possible.

ILS and ALS Care should be directed at continuing or establishing care, continuing EMR and BLS care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. Render initial care in accordance with the *Universal Patient Care Protocol*.
2. **Epi 1:1,000: 0.3mg IM** (adult dose) 0.15mg (pediatric dose)
3. **Benadryl: 50mg PO/ IV/ IM** for severe itching and hives.
4. **IV Fluid Therapy: 20mL/kg** fluid bolus if the patient is hypotensive to achieve a systolic BP of at least 100mmHg.
5. **ALS Only: Solu-Medrol: 125mg IV**
6. Transport as soon as possible.
7. Contact the receiving hospital as soon as possible.