Adult Prehospital Treatment Manual

March 2017
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Patient Assessment Process & Goals of Patient Care

The goal of the patient assessment process is to measure the status of the patient's perfusion, identify life-threatening conditions, determine the patient's chief complaint and/or mechanism of injury, evaluate the complaint (OPQRST) and obtain a (SAMPLE) history.

The components of the patient assessment process include the scene survey, initial assessment (ABCs) and rapid trauma assessment or detailed physical exam. A focused physical exam may be conducted if the general impression of the patient's condition appears to be of a specific nature.

The EMS provider must constantly monitor the patient's perfusion status. Perfusion is defined as the adequate flow of blood through the body's tissues. For perfusion to be adequate the patient must have an adequate blood volume (with adequate supplies of oxygen and glucose), a properly functioning cardiovascular system and an intact neurological system for regulation of vascular dilation. Failure of the body to maintain adequate perfusion will result in signs and symptoms of shock.

Signs and symptoms of shock vary depending on the degree and cause of shock. Level of consciousness is an important assessment of the patient's vital organ perfusion status. A patient with an altered level of consciousness must be considered at risk of shock. Peripheral tissue condition is another important indicator of perfusion status. A patient with cool, clammy, pale or cyanotic skin should be considered at risk for shock.

If the patient is found to be in shock, the assessment process should be directed at finding the cause of shock, immediate interventions to support perfusion and prompt transport. Conversely, if the mechanism of injury or assessment findings suggests that the patient may have a condition that could result in shock, EMS personnel should carefully assess the patient's perfusion status and prepare to treat shock.

The goal of patient care is to identify patients in shock or at risk of shock, initiating care that will directly assist maintaining the patient's perfusion and safely transporting the patient to an emergency department or trauma center in a timely manner.

The EMS provider must maintain a constant awareness as to what would be the best course of action for optimum and compassionate patient care. The benefit of remaining on scene to establish specific treatments verses prompt transport to a definitive care facility should be a consideration of each patient contact.
General Patient Assessment & Initial Care Procedure

Scene Size-Up

1. Initiate body substance isolation (BSI) precautions prior to arrival at the scene for all patient contacts. Apply appropriate personal protective equipment (PPE). Use special care in the handling of sharps, contaminated objects, linens, etc.

2. Assure the well-being of the EMS crew by assessing scene safety. If the scene is not safe, do not enter until appropriate authorities have secured the area (i.e. violent crime calls, domestic violence calls, hazardous materials, etc.).

3. Determine the mechanism of injury, number of patients and need for additional resources.

General Patient Assessment

1. Initial Assessment (Primary Survey)
   a) Airway: Assess airway patency and assess for possible spinal injury.
   b) Breathing: Assess for respiratory distress, bilateral chest expansion, rate, pattern & depth of ventilations, adequacy of gas exchange, use of accessory muscles and lung sounds.
   c) Circulation: Assess rate, quality & regularity of pulses, skin condition, hemodynamic status, and neck veins. Evaluate and record cardiac rhythm if indicated.
   d) Disability: Mini-neuro exam to include brief pupil check and assessment of mental status:
      • A - Alert
      • V - Not alert but responds to verbal stimuli
      • P - Not alert but responds to painful stimuli
      • U - Unresponsive to all stimuli
   e) Expose: Examine patient as indicated.

2. Focused History and Physical Exam (Secondary Survey) or Detailed Physical Exam
   a) Vital signs and Glasgow Coma Score
   b) Chief complaint and history of present illness
   c) Past medical history, current medications and allergies
   d) Systematic head-to-toe assessment (detailed exam/secondary survey)
Initial Medical Care

1. **Airway**: Establish and maintain a patient's airway by using appropriate patient positioning, airway adjuncts, suctioning and advanced airway control (intubation).

2. **Breathing**: Evaluate adequacy of respirations by assessing chest movement, lung sounds and skin condition. Initiate oxygen therapy if indicated and provide or assist ventilations as necessary.

3. **Circulation**: Evaluate perfusion status by assessing carotid and peripheral pulses and skin condition. Initiate CPR and early defibrillation if indicated. Control any external hemorrhage and establish IV access of 0.9% Normal Saline if indicated. No more than two (2) attempts should be made to establish an IV on scene unless requested by Medical Control.

4. Loosen tight clothing and reassure patient; keep NPO (nothing by mouth) unless specified by SOP or Medical Control.

5. BLS/ILS Units: Initiate ALS intercept if indicated (Refer to *Intercept Policy* for optimal patient care).

6. Place the patient in a semi-Fowler's (45°) position of comfort unless contraindicated. Patients with altered mental status should be placed on their side. The backboard should be tilted for immobilized patients with altered mental status to prevent aspiration.

7. Evaluate pain. Ask the patient to rate any pain on a scale of "0-10" with "0" indicating a pain-free state and "10" being the worst pain imaginable.

8. Recheck and record vital signs and patient responses at least every 15 minutes for stable patients, every 5 minutes for critical patients and after each intervention. Be sure to accurately document the times the vitals were obtained.

9. Establish Medical Control contact as indicated.

10. Transport to the closest appropriate hospital. NOTE: Follow System-specific policies regarding patient destination and bypass procedures.
Routine (Initial) Patient Treatment Protocol

First Responder Treatment

First Responder Treatment should be focused on assessing the situation and establishing initial care to treat and prevent shock:

1. Open and/or maintain an open airway.
2. Loosen all tight clothing and be prepared to expose vital body regions if necessary.
3. Reassure patient by identifying yourself, explaining how you will help them and inform the patient that additional help is en route.
4. Place patient in a position of comfort. Sit patient upright unless the patient is hypotensive (BP<100mmHg systolic) or has a potential for cervical spine injury.
5. Administer Oxygen, preferably 15 L/min via non-rebreather mask. If the patient does not tolerate a mask, then administer 6 L/min by nasal cannula.
6. Ensure that EMS has been activated for further care and transport. Provide responding units with pertinent patient information.
7. Monitor the patient's level of consciousness, vital signs, etc. for any acute changes.

BLS Treatment

BLS Treatment should be directed at conducting a thorough patient assessment, providing care to treat for shock and preparing or providing patient transportation.

1. BLS Treatment includes all components of First Responder Treatment.
2. Attach pulse oximeter and obtain analysis, if indicated.
3. Attach cardiac monitor and print rhythm strip for documentation, if indicated.
4. Initiate ALS intercept, if indicated (or ILS intercept if ALS is unavailable).
5. Simultaneously with above, perform physical exam/assessment, obtain baseline vital signs and obtain patient history.
6. Continue to reassess patient en route to the hospital.
7. Transport should be initiated at the earliest possible opportunity.

ILS Treatment

ILS Treatment should be directed at conducting a thorough patient assessment, providing care to treat for shock and preparing or providing patient transportation. The necessity of establishing IV access is determined by the patient's condition and chief complaint. Consideration should also be given to the proximity of the receiving facility.

1. ILS Treatment includes all of the components of BLS Treatment.
2. If indicated, establish IV access using a 1000mL solution of .9% Normal Saline with macro drip or...
blood tubing. No more than two (2) attempts should be made on scene. Infuse at a rate to keep the vein open (TKO) -approximately 8 to 15 drops (gtts) per minute.
3. Dependent upon patient condition, consider initiating IV access en route to the hospital.

ALS Treatment

ALS Treatment should be directed at conducting a thorough patient assessment, providing care to treat for shock and preparing or providing patient transportation. The necessity of establishing IV access is determined by the patient's condition and chief complaint. Consideration should also be given to the proximity of the receiving facility.

1. ALS Treatment includes all of the components of ILS Treatment.
2. Obtain a 12-Lead EKG, if indicated and transmit to Medical Control. Provide the receiving nurse/physician with a copy of the 12-Lead upon arrival in the ED with request for physician review of the EKG as soon as possible.

Critical Thinking Elements

- When determining the extent of care needed to stabilize the patient, the EMS provider should take into consideration the patient's presentation, chief complaint, risk of shock and proximity to the receiving facility.

- Saline locks may be used as a drug administration route if fluid replacement is not indicated.

- IV access should not be attempted on scene with a trauma patient.

- Obtain a 12-Lead EKG as soon as possible if indicated. See 12-Lead EKG Procedure for indications.
Intravenous Cannulation Procedure (ILS & ALS Only)

Intravenous cannulation is used in the Prehospital setting to establish a route for drug administration and/or to provide fluid replacement. Intravenous cannulation should not significantly delay scene times or be attempted while on scene with a trauma patient who meets load-and-go criteria.

1. Explain to the patient the need for and a brief description of the procedure.
2. Observe the universal precautions for body substance exposure.
3. Obtain an appropriately sized catheter: a) 14 or 16 gauge for trauma patients. b) 14, 16 or 18 gauge for fluid replacement. c) 20 gauge for elderly patients, pediatric patients or for difficult IV cannulations.
4. Check the fluid (1000mL 0.9% Normal Saline): a) Is it the right fluid? b) Check the expiration date. c) Check for color and clarity (NS should be clear with no particles).
5. Connect the administration set to the IV fluid. Make sure that air bubbles are expelled from the tubing and that all chambers have the appropriate fluid levels.
6. Maintain a clean environment and protect the administration set from contamination.
7. Apply a venous tourniquet just proximal to the antecubital area.
8. Select (by palpation) a prominent vein. Choose a distal vein on the forearm or back of the hand. The antecubital space may be used if needed for drug administration, fluid replacement, the patient condition requires a more proximal site, or in cases where no other vein is accessible.
9. Cleanse the site with an alcohol prep pad using a circular motion moving outward from the site.
10. Stabilize the vein by applying traction below the puncture site.
11. Inform the patient of your intent to puncture the site.
12. Enter the vein directly from above or from the side of the site. With the bevel of the needle upward, puncture the skin at a 30 to 45 degree angle.

13. If blood returns through the catheter, proceed with insertion. If you do not see blood return, release the tourniquet and discontinue the attempt. If time and patient condition allows, you may attempt another site with a new catheter (do not exceed more than two (2) attempts).
14. Insert the catheter. Carefully lower the catheter and advance the needle and catheter just enough to stabilize the needle in the vein. Slide the catheter off of the needle into the vein.
15. Slightly occlude the vein proximal to the catheter with gentle finger pressure. Remove the needle and immediately dispose of it in an approved sharps container.
16. Release the tourniquet and connect the administration set to the catheter.
17. Open the flow regulator on the administration set and briefly allow IV fluid to run freely to assure a patent line (less than 20mL). If the line is patent, adjust flow rate as indicated by protocol or Medical Control order.
18. Secure the catheter and tubing using a veniguard or tape. Loop the IV tubing and secure to the patient's arm. Do not apply tape circumferentially to the extremity.

Saline Locks

Saline locks may be used if fluid replacement is not indicated:
1. Assemble the pre-filled saline and tubex syringe or draw up 2-3mL of sterile saline.
2. Obtain and inspect an injection site link. Inject saline and expel air from the injection site chamber leaving the syringe attached.
3. After successful venipuncture, connect the saline lock to the catheter.
4. Pull back (aspirate) on the syringe to confirm placement by observing for blood return. If blood is aspirated, continue by injecting 3mL of saline into the chamber. If no blood is aspirated, discontinue the attempt and prepare to repeat the procedure at a new site.
5. If fluid replacement becomes necessary, attach an administration set to the injection port by needleless device or Luer adapter.
6. Secure the catheter and link using a veniguard or tape.

**External Jugular Vein Cannulation (ALS Only)**

External Jugular (EJ) access can be utilized only if traditional extremity cannulation cannot be established and the patient requires immediate stabilizing fluid replacement and/or drug administration route.

1. Position the patient supine with feet elevated.
2. Turn the patient's head in the direction away from the side to be cannulated.
3. Cleanse the site with a prep pad using a circular motion moving away from the site.
4. Stabilize the vein by applying traction just above the clavicle.
5. Attach a 10mL syringe to the IV catheter. Align the catheter and point the tip of it toward the patient's feet.
6. Enter the vein midway between the angle of the jaw and the clavicle. With the bevel of the needle upward, puncture the skin using a 30 degree angle and aim toward the shoulder on the same side.
7. As you enter the vein, apply gentle aspiration by pulling on the syringe plunger. If blood returns through the flash chamber and syringe, proceed with insertion. Slightly occlude the vein proximal to the catheter with gentle finger pressure. Connect the administration set to the catheter and secure the site.

If you do not see blood return through the flash chamber and syringe, discontinue the attempt. **Only one (1) attempt at EJ vein cannulation may be made in the Prehospital setting.**

**Critical Thinking Elements**

- If blood begins to back-flow in the IV tubing, check the location of the bag to assure it is in a gravity flow position and check to assure all valves are properly set. If the IV equipment is properly set and blood continues to back-flow, re-examine the vessel to assure arterial cannulation has not occurred.
- Edema, pain and lack of fluid flow at the site indicates infiltration and the IV must be discontinued.
- Do not partially withdraw a needle and reinsert into the catheter. This can cause catheter shear.
- Do not substitute a saline lock for IV fluids in trauma patients, patients who are in shock, patients with unstable vital signs or patients requiring multiple drug administrations.
• External jugular vein cannulation is contraindicated in patients with suspected cervical spine injury.
**Adult Intraosseous Cannulation Procedure (ILS & ALS Only)**

In patients presenting with conditions such as shock from any cause, cardiac arrest, overdose with airway compromise, impairment in mentation or hemodynamic parameters, severe dehydration associated with unresponsiveness or shock, and multi-system trauma, it may be impossible to find an accessible vein. This is a challenge commonly faced by prehospital providers, which hinders optimal patient care by limiting treatment options and increasing scene time trying to obtain vascular access.

The intraosseous space may be viewed as a non-collapsible, easily accessed space for any fluid or medication. Intraosseous infusion is preferred over endotracheal routes of medication administration and is a viable alternative when IV therapy is not available or not accessible. Intraosseous infusion is immediately available, safe and effective.

**Indications**

1. Intravenous fluids and medications are emergently needed, a peripheral IV cannot be established in two (2) attempts **AND** the patient demonstrates one of the following criteria:
   - An altered mental status (GCS of 8 or less) with loss of protective airway reflexes (with notable exception of known diabetic with symptomatic hypoglycemia).
   - Clinical signs of shock from any cause (hypovolemia from severe dehydration or trauma, cardiogenic, anaphylactic, septic, or neurogenic) with a systolic BP less than 80 mm Hg.
   - Patients in extremis (at immediate risk of death or disability) with immediate need for delivery of medications and fluids (examples include: multi-system trauma, anaphylaxis, status asthmaticus, status epilepticus, life-threatening dysrhythmia or bradycardia, severe respiratory distress with hypoxia and/or alteration in consciousness, respiratory arrest, and overdose associated with alteration in vital signs, mental status, and/or dysrhythmia).
   - If a patient is assessed to be in need of Intraosseous access and does not fit any of the above, or if the situation is unclear, call Medical Control for further guidance and orders.

2. EZ-IO insertion may be considered **PRIOR** to peripheral IV attempts if the patient is in cardiac arrest (medical or traumatic).

**Contraindications**

1. Fracture of the bone selected for IO infusion (consider another approved site of insertion)

2. Excessive tissue at insertion site with absence of anatomical landmarks (consider another approved site of insertion)

3. Previous significant orthopedic procedures (i.e. prosthesis or hardware placement) (consider
another approved site of insertion)

4. Infection at the site selected for insertion (consider another approved site of insertion)

Considerations

- Drip rates will be slower than achieved with intravenous (IV) access. To improve continuous infusion rates, use a pressure infusion bag (or BP cuff).

- Insertion of the EZ-IO in conscious patients or patients responsive to pain has been noted to cause mild to moderate discomfort comparable to the insertion of a large bore IV catheter. IO infusion, however, has been noted to cause severe discomfort.

EZ-IO procedure

1. Observe universal precautions.
2. Prepare the EZ-IO driver and needle set:
   a) 15ga, 15mm long needle for patients weighing between 3kg and 39kg
   b) 15ga, 25mm long needle for patients weighing greater than 40kg.
3. Locate an appropriate insertion site. Approved sites include:
   - Proximal Tibia
   - Distal Tibia
   - Proximal Humerus
4. Prep the site with Betadine or chlorhexidine and set up infusion solution as for regular IV.
5. Stabilize site and insert appropriate needle set.
6. Remove EZ-IO driver from needle set while stabilizing catheter hub.
7. Remove stylet from the catheter; place stylet in EZ-IO shuttle or approved sharps container.
8. Attach 5-10mL syringe and aspirate bone marrow (0.5 mL) to confirm placement.
   a) 10 catheter should be at a 90 degree angle and firmly seated in the tibial bone.
   b) Blood may be visible at the tip of the stylet.
   c) The 10 catheter should flush freely without difficulty or evidence of extravasation.
9. Connect the luer-lock equipped IV administration set.
10. For "patients responsive to pain" (or for previously unresponsive patients who become conscious or aware of pain): Lidocaine: 30mg IO (slowly) to reduce discomfort from infusion.
11. Flush the 10 catheter with 10mL of normal saline.
12. Utilize a pressure bag for continuous infusions where applicable. If a pressure bag is not available, wrap a BP cuff around the bag of normal saline and inflate the cuff until desired flow rate is achieved.
13. Dress site, secure tubing and apply wristband as directed. Can be accomplished with tape or commercial wristband.
14. Closely monitor EZ-IO site en route.
Critical Thinking Elements

- Do not use an area previously used for IO attempts.
- Sometimes marrow cannot be aspirated and does not necessarily indicate improper placement.
- Excessive movement of the IO needle may result in leakage.
- Do not place more than one IO unless absolutely necessary.
- Cease use of device immediately if extravasation is evident.
Medication Administration Procedure

Medication administration is accomplished by specific routes as indicated by the protocols. This procedure describes the traditional medication routes for use in the prehospital setting.

Preparation Steps

1. Observe universal precautions for body substance exposures.
2. Confirm the drug order, amount to be given and route.
3. Confirm that the patient is not allergic to the medication.
4. Check the medication:
   • Is it the right medication?
   • Expiration date?
   • Color and clarity?
5. Explain to the patient what medication you are giving them and why you are giving it.
6. Assemble the necessary equipment.
7. Calculate and draw up the desired volume of the drug or confirm the concentration of the drug if administering from a pre-filled syringe.
8. Eject any air from the syringe.
9. Confirm the medication again:
   • Is it the right medication?
   • Is it the right patient?
   • Is it the right dose?
   • Is it the right route?
   • Is it the right time?
   • Is it the right documentation in the chart?

Intravenous Medication Administration

This procedure utilizes an IV that has previously been established and patency has been confirmed.

1. Cleanse the injection port or luer port with an alcohol prep pad.
2. Insert the needle into the inlet port or attach the syringe to the luer port.
3. Stop the flow of the IV by pinching off the IV tubing above the port.
4. Inject the desired amount of drug at the rate indicated by protocol.
5. Release the IV tubing and flush with approximately 20mL of fluid to assure delivery of the drug.
6. Properly dispose of the contaminated equipment.
7. Document the name of the medication, the dose, the route of administration and the time that the drug was administered.
8. Monitor and document the patient's response to the medication.
**EZ-IO Medication Administration**

Refer to *Intravenous Medication Administration* steps.

**Endotracheal Medication Administration**

This procedure utilizes an ETT which has previously been established and proper placement has been confirmed. Only certain medications may be given via the ETT as specified by protocol.

1. Hyperventilate the patient.
2. Disconnect the BVM if needed.
3. If CPR is being performed, stop chest compressions.
4. Dilute the medication and/or double the dose of the medication.
5. Place the needle or syringe into the lumen of the ETT (or attach to MADett™) and forcefully inject the desired amount of the drug into the lumen.
6. If it was disconnected, re-connect the BVM and resume ventilations (while withholding chest compressions for 5 seconds) and then resume chest compressions if indicated.
7. Document the name of the medication, the dose of the medication, the route of administration and the time that the drug was administered.
8. Properly dispose of the contaminated equipment.

**Subcutaneous Medication Administration**

Subcutaneous injections are administered into the subcutaneous tissue (not the superficial dermis or the muscle).

1. Identify an injection site (the subcutaneous tissue over the tricep muscle of the upper arm is commonly used).
2. Clean the injection site with an alcohol prep.
3. Pull the skin away from the underlying muscle by "tenting" or pinching the site.
4. Advise the patient to expect a "stick" and to try to relax the deltoid muscle.
5. Insert the needle at a 45-90 degree angle into the subcutaneous tissue and administer the medication.
6. Withdraw the needle and apply pressure to the site with a gauze pad.
7. Document the name of the medication, the dose of the medication, the route of administration and the time that the drug was administered.
8. Properly dispose of the contaminated equipment.
Intramuscular Medication Administration

Intramuscular (IM) injections in the prehospital setting are relatively uncommon. IM injections are administered into the muscle tissue and require adequate perfusion for absorption.

1. Identify an injection site (the deltoid muscle of the upper arm and the upper outside quadrant of the gluteus muscle are commonly used). Note: The only approved site for the EMT-Basic & Intermediate level agencies is the left or right deltoid.
   a. If medication comes in an ampule, utilize a filter needle to draw up the medication. Change to the injection needle prior to administration.
2. Clean the injection site with an alcohol prep.
3. Stretch or "flatten" the skin overlying the site with your fingers.
4. Advise the patient to expect a "stick" and to try to relax.
5. Insert the needle (preferably a 2-inch, 22g needle) at a 90 degree angle into the muscle tissue.
6. Pull back (aspirate) on the syringe to confirm that the needle is not in a vessel by observing for blood return.
   • If blood is aspirated into the syringe, discontinue the injection and start the procedure over.
   • If blood is not aspirated into the syringe, slowly inject the drug into the muscle tissue
7. Withdraw the needle and apply pressure to the site with a gauze pad.
8. Document the name of the medication, the dose of the medication, the route of administration and the time that the drug was administered.
9. Properly dispose of the contaminated equipment.
10. Monitor and document the patient's response to the medication.

Intranasal Medication Administration

Introduction and Indications

The intranasal route of medication administration offers another option when intravenous access is either unavailable, or when a parenteral delivery system is impracticable or contraindicated. Examples would include agitated or combative patients, contamination of a patient where an adequate site cannot be cleansed, or when, because of extenuating circumstances, clothing cannot be removed to access an IM administration site. Intranasal administration is safe, effective, and decreases risk of inadvertent needle stick injuries.

Contraindications

- Nasal trauma or recent sinus or nasal surgery
- Epistaxis, nasal congestion, or significant nasal discharge
Equipment

- Medication to be delivered
  - Approved medications (Narcan, Fentanyl, Versed, and Glucagon)
- 1 or 3 mL syringe with appropriate transfer device (vial access cannula or needle)
- Mucosal atomizer device

Procedure
1. Select desired medication and determine dose (See Medication Table).
2. Draw up appropriate dose (volume) of medication plus an additional 0.1 ml to account for dead space in the atomizer device.
3. Attach the Mucosal Atomizer Device to syringe.
4. Use one hand to support back of patient’s head as needed.
5. Place tip of atomizing device snugly against nostril aiming slightly upward and outward.
6. Rapidly administer one half of the dose of medication into one nostril, administering the other half into the other nostril.
7. Maximum volume per nostril is 1 mL (more than 1 mL will cause medication run off)
8. Monitor for medication effectiveness, and continue with treatment protocol.

Critical Thinking Elements
- Divide the total amount of fluid to be delivered equally between each nostril.
- Allow 15 minutes before administering subsequent intranasal doses.
- Patients who have abused inhaled stimulants such as cocaine may have decreased effectiveness of intranasal medications.
- Hypotension may decrease absorption.
Pain Control Protocol

Pain, and the lack of relief from the pain, is the most common complaint among patients. Pain control can reduce the patient's anxiety and discomfort, making patient care easier. The patient's severity of pain must be properly assessed in order to provide appropriate relief. Managing pain clinically in the prehospital setting will provide greater patient care.

First Responder Treatment

First Responder Treatment should focus on the reduction of the patient's anxiety due to the pain.

1. Render initial Treatment in accordance with the Routine Patient Treatment Protocol.
2. Assess level of pain using the Pain Assessment Scale (0-10) or the Wong-Baker Faces Pain Rating Scale.
3. Place patient in a position of comfort.
4. Reassure the patient.
5. Consider ice or splinting.
6. Reassess level of pain using the approved pain scale.

BLS Treatment

BLS Treatment should focus on the reduction of the patient's anxiety due to the pain.

1. BLS Treatment includes all of the components of First Responder Treatment.
2. Initiate ALS intercept, if indicated.

ILS Treatment

ILS Treatment should focus on the reduction of the patient's anxiety due to the pain.

1. ILS Treatment includes all of the components of BLS Treatment.
2. Initiate ALS intercept, if indicated.

ALS Treatment

ALS Treatment should focus on the pharmaceutical management of pain.

1. ALS Treatment includes all of the components of ILS Treatment.
2. In cases of isolated extremity fractures, chest pain, burns and discomfort from IO infusion, pain medication may be given without calling medical control if the systolic BP > 90mmHg. Any other situation involving pain medication administration requires Medical Control order prior to giving the medication.

a) **Morphine Sulfate**: 2-5mg IV every 5 minutes to reduce the patient's anxiety and severity of pain. If unable to establish IV access, may administer Morphine 2-5mg IM every 15 minutes. *If the patient is allergic to Morphine give Fentanyl.*

Or

b) **Fentanyl**: 50mcg IV over 2 minutes for pain. Fentanyl 50mcg IV may be repeated one time in 5 minutes to a total of 100mcg. If unable to establish IV access, may administer Fentanyl 50 mcg IM. May be repeated one time in 15 minutes to a total of 100mcg.

c) **Ondansetron** (Zofran): 4mg PO let dissolve on tongue for nausea and/or vomiting.

**Critical Thinking Elements**

- Monitor the patient for respiratory depression when administering narcotics.
- Blood pressure should be monitored closely -check 5 minutes after narcotic administration (and prior to administering repeat doses).
- Verify that the patient is not allergic to the pharmaceutical agent prior to administration.
- Patients with a head injury / ALOC or patients with unstable vital signs should not receive pain medications.
- 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.
- Pain medication may be given IO to conscious patients experiencing discomfort from IO infusion.

**Wong-Baker Faces Pain Rating Scale**

- **0 NO HURT**
- **1 HURTS LITTLE BIT**
- **2 HURTS LITTLE MORE**
- **3 HURTS EVEN MORE**
- **4 HURTS WHOLE LOT**
- **5 HURTS WORST**
Cardiac Care

March 2017
Routine Cardiac Care Protocol

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

- Substernal chest pain
- 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 care of the chest pain patient includes:

- Assessing and securing ABC’s
- 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 transport to the emergency department is an important factor in patient outcome.

FIRST RESPONDER TREATMENT

First responder Treatment should focus 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 routine assessment practice
2. Oxygen: 15 L/min. via non-rebreather mask. If patient does not tolerate a mask, then administer 6 L/min via nasal cannula.

BLS TREATMENT

1. Continue components of First Responder Treatment
2. Secure and maintain an airway, obtain baseline vital signs
3. Assist ventilation’s as necessary using supplemental oxygen.
4. Give Aspirin by mouth (4 tablets of 81 mg chewable or children’s aspirin). Have patient chew and swallow 4 tablets. Do not give to patients with active ulcer disease, or known hypersensitivity to aspirin. (Occasionally patients with asthma are sensitive).
5. Assist patient in taking nitroglycerin. Monitor blood pressure closely. This may be repeated every 5 minutes until pain is relieved, up to a maximum dose of three tablets. **DO NOT GIVE**
NITROGLYCERIN IF SYSTOLIC BLOOD PRESSURE IS LESS THAN 100. Nitroglycerin can be given without contacting medical control if the patient is 30 years of age or older and is displaying signs and symptoms of an MI. In other cases contact medical control.

7. Place patient supine or in position of comfort.
8. Reassess patient and monitor vital signs frequently. (at least every 5 minutes)
9. Monitor with pulse oximeter.

ILS TREATMENT

1. BLS treatment.
2. ILS and ALS may administer NTG when the patients systolic BP is between 90-100mmHg if IV access has been established.
3. Monitor ECG obtain a 12 lead and EKG and transmit to the receiving hospital.
4. Establish an IV / Lock.

ALS TREATMENT

1. BLS & ILS Treatment. Gain a second line if time permits.
2. If ST Elevation is confirmed:
3. Plavix 600 milligrams orally
4. Morphine Sulfate 2-5 mg IV slowly – May repeat every 5 minutes, titrate to effect. DO NOT GIVE MS IF SYSTOLIC BLOOD PRESSURE IS LESS THAN 100.
5. Ondansetron (Zofran); 4mg PO tab to melt on the tongue for nausea and/or vomiting. Fentanyl: 50mcg IV over 2 minutes for pain.

6. Transport to appropriate location (transport can be initiated at any time during this sequence)
7. Contact Receiving Hospital as soon as possible, regardless of EKG transmission.

Critical Thinking Elements

- 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 be actually 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-administered prior to EMS arrival should be reported to the receiving hospital. Subsequent doses should be provided by the EMS units stock.
• Medications should not be administered IM to a suspected AMI patient.
Cardiogenic Shock Protocol

Cardiogenic shock occurs when the heart loses its ability to effectively pump blood, resulting in hypoperfusion of organs. The signs and symptoms of cardiogenic shock include:

- Pain, heaviness, tightness or discomfort in the chest with the hypotension (systolic BP < 100 mmHg)
- Rales or crackles (lung sounds indicating pulmonary edema)
- Pedal edema (while not an acute finding, may be a clue to underlying cardiomyopathy)
- Dyspnea
- Diaphoresis
- Nausea/vomiting

Patients with a history of coronary artery disease, MI or previous CHF have an increased risk.

Priorities in the care of the cardiogenic shock patient include:

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

FIRST RESPONDER TREATMENT

1. Render initial Treatment in accordance with routine assessment practice.
2. Administer oxygen 15 LPM via non-rebreather mask or 6 LPM via nasal cannula.

BLS TREATMENT

1. Continue components of First Responder Treatment
2. Initiate ALS intercept and transport as soon as possible

ILS TREATMENT

1. Continue BLS Treatment.
2. Establish an IV to maintain a systolic blood pressure of 90 mmHg.
3. Obtain 12 lead EKG and transmit to the receiving hospital as soon as possible.
4. Initiate ALS intercept and transport as soon as possible
5. Contact the receiving hospital as soon as possible
ALS TREATMENT

1. ILS treatment.
2. Treat dysrhythmias according to protocol.
3. **Dopamine 400mg/250ml**
   - Titrate to maintain B/P at 100 systolic. Begin infusion at 24gtts/min. Increase by 12 gtts/min. every 2 minutes to achieve and maintain a systolic BP of at least 100mmHg. Closely monitor vital signs.
4. Transport to appropriate location (transport can be initiated at any time during this sequence)
Cardiac Arrest Pit Crew CPR Protocol

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 safe, timely and effective manner. The majority of adults who survive non-traumatic cardiac arrest are resuscitated from ventricular fibrillation with defibrillation but require high quality CPR, specifically chest compressions, for neurologically intact survival. The primary factor for successful defibrillation and resuscitation is decreasing the time interval from the onset of cardiac arrest to effective defibrillation and advanced life support. Uninterrupted CPR without pauses is the goal of Pit Crew CPR.

FIRST RESPONDER TREATMENT

First Responder Treatment should be focused on confirming that the patient is in full arrest and in need of CPR. Resuscitation efforts should be initiated immediately by beginning chest compressions, opening the airway and initiating ventilations while attaching a defibrillator.

1. Determine unresponsiveness. Confirm that a transporting unit (and ALS intercept) has been initiated.
2. Immediately initiate CPR.
   a. First rescuer at patients right side.
      i. Compressions at a rate of 120/minute. Consider use of a portable metronome to keep high quality pace of compressions.
      ii. Counting out every 20th compression.
      iii. First and second rescuer change roles NOT locations every two minutes/240 compressions while rhythm/pulse check occurs.
   b. Second rescuer patients left side.
      i. Place patient on AED or manual defibrillator.
      ii. Defibrillating, if indicated, after every two minute cycle.
   c. Third rescuer at patients head.
      i. Ensures seal of face mask of BVM with two hand seal.
      ii. Reminds rescuer to provide the ventilations after every 20th compression.
3. Continue based of Pit Crew CPR sequences and roles.

BLS TREATMENT

BLS Treatment should focus on maintaining good CPR and defibrillation, if indicated. Transporting BLS units should initiate an ALS intercept as soon as possible. The decision to initiate transport should be made based on distance to ALS, number of providers currently available and potential for rendezvous locations.

1. BLS Treatment care includes all of the components of the First Responder Treatment.
2. 2 minute cycles of CPR should be continued. Ventilations via BVM is an acceptable method while on scene so long as compliance is obtained.
   a. Consider placement of OA/NA.
   b. Consider use of a system approved mechanical CPR device can be implemented and any pulse check pause.
3. **Place a Combi Tube or KING LTS-D Airway (if possible) and continue ventilations (third or subsequent rescuer).**
4. Contact the receiving hospital as soon as possible.

### ILS Treatment

ILS Treatment should focus on maintaining the continuity of care by confirming the patient is in cardiac arrest and continuing resuscitation efforts initiated by the First Responders or BLS squad.

1. Include all aspects of FR and BLS treatment.
2. **Continue cycles of CPR.** Providers should be changed out at 2 minute interval or when not performing chest compressions.
   1. Initial three responder positions should continue to provide BLS Triangle care.
3. Transition from AED to ILS defibrillator.
4. Evaluate current resuscitation efforts and address any gaps.
5. Obtain **Vascular Access** via IO or IV. Utilize TKO infusion for easy flush of medications.
6. Treat based on appropriate cardiac protocol.
7. Prior to patient movement for transportation **Obtain Definitive Airway** based on King LST-D Airway Procedure or Advanced Airway Procedure if not already done.

### ALS Treatment

ALS Treatment should focus on maintaining the continuity of care by confirming the patient is in cardiac arrest and continuing resuscitation efforts initiated by the First Responders or BLS squad.

1. Include all aspects of ILS treatment.
2. Determine appropriateness for transport.
3. Exercise caution so to not detract from high quality CPR and interventions in an attempt to expedite transport. A medical cardiac arrest patient is receiving the same care from EMS as they would in the Emergency Department but has a greater potential for successful resuscitation if attention to quality supersedes perceived need to rush to the Emergency Department.
4. **Place an OG tube if time permits to relieve gastric distention** (if patient is intubated or KING LTS-D airway is in place).

### Critical Thinking Points

- If the cardiac arrest is witnessed EMS personnel, defibrillate as soon as possible.
- Do not touch, ventilate or move the patient while the AED is analyzing.
- Patients with implanted pacemakers or implanted defibrillators (AICD’s) are treated the same as any other patient; however do not place the electrodes, Quick Combo pads or Fast Patches or 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.
- A medical cardiac arrest patient will benefit from a controlled resuscitation rather than hasty resuscitation that result from the urge to transport immediately.
- 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. Until likely cause is identified, treatment on scene encompasses nearly everything Emergency Departments provide. Care on scene should focus on quality first before emergent transport.
Assumptions

- BLS CPR is a priority. ILS/ALS interventions begin when qualified personnel arrive and movement to ILS/ALS interventions will not detract from BLS CPR.
- Patient remains in cardiac arrest. If no shock indicated, may need to transition to other treatment guideline(s).
- Pulse check does not occur until monitor check at the end of every 2 minute CPR cycle.
- Pit Crew CPR Algorithm is designed based on AHS guidelines, but supersedes AHA ratios to improve upon quality of CPR given in the minutes after initial arrest.
- For agencies that have identified difficulties in number of responders, modifications may be needed. Those should be identified and developed early and in cooperation with local medical control and additional responding agencies.
- CPR should not be interrupted to switch out providers for advanced procedures (an ALS provider doing compressions should not stop compressions to move to another role) unless it is time for a pulse/rhythm check.

EMS Alert Patient Report- Arrest/Near Arrest
The following information and format necessitate expedited delivery of information for arrest and near arrest patient’s (cardiac and respiratory). Trauma follow trauma format.

1. Unit Identification
2. ETA & Destination if other than Medical Control Center being contacted.
   a. Agencies should use their approved local medical control.
   a. The above statement should be made within the first 5 seconds of the communication.
4. History of present illness
   a. Witnessed or not, and time without CPR
   b. Total time worked up till now.
5. Patient Status
   a. Current Rhythm
   b. Airway status
   c. If return of spontaneous circulation has returned at any time.
6. Acknowledge necessary treatment plan. (May not be complete at time of communication.)
7. Determine destination (facility and location)
<table>
<thead>
<tr>
<th>Position 1-Right</th>
<th>Position 2-Left</th>
<th>Position 3-Head</th>
<th>Position 4</th>
<th>Position 5-ALS</th>
<th>Position 6- Code Commander</th>
</tr>
</thead>
</table>
| **2 minute cycle (240 compressions)** | • Check LOC  
• Initiate Chest Compression (CC)  
• Rate of 120  
• Full Recoil | • Apply Defib  
• Situate defib at patient’s L shoulder  
• Assist with Respirations every 20 CC  
• After clear-pushes Defib button until moved to manual defib | • Count- every 20th announced  
• 2 hand seal on BVM  
• Insert Oral Airway  
• Remind 1/2 to ventilate during upstroke of CC | • Assist where needed | • May be ILS until ALS arrival | • Can be same person as #5 |

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<th>Defib</th>
<th>If</th>
<th>Indicated</th>
<th>CC</th>
<th>During</th>
<th>Charge</th>
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<tr>
<td><strong>Defib If Indicated CC During Charge</strong></td>
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</tbody>
</table>
| **2 minute cycle (240 compressions)** | • Situate airway bag at pt R shoulder  
• Hook up O2 to BVM  
• Assist with Respirations every 20 CC  
• Assemble King/ETT Insert if time | • CC  
• After clear-pushes Defib button until moved to manual defib | • Count- every 20th noted  
• 2 hand seal on BVM  
• Remind 1/2 to ventilate during upstroke of CC | • Obtain history  
• Obtain patient info | | |

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</table>
| **2 minute cycle (240 compressions)** | • CC | • Assist with Respirations  
• After clear-pushes Defib button until moved to manual defib | • Count- every 20th noted  
• 2 hand seal on BVM  
• Remind 1/2 to ventilate during upstroke of CC | • Develop plan for patient move | • Situate ALS equipment at pt’s feet.  
• Prep IO, fluids and pressure bag  
• Insert IO  
• Admin first Epi | • Oversee status of code  
• Complete any interventions not already completed |
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Adult Protocols
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</table>
| 2 minute cycle (240 compressions) | • If not already completed, plan for advanced airway  
• Assist with Respirations | • CC  
• After clear-pushes Defib button until moved to manual defib | • Count- every 20\(^{th}\) announced  
• 2 hand seal on BVM  
• Remind 1/2 to ventilate during upstroke of CC | • Transition to manual monitor/mode  
• Transition to CC during charge AND THEN monitor check & defib | • Review Hs & Ts  
• Correct and issues found |

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<th>Defib</th>
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<th>Indicated</th>
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<th>Charge</th>
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</thead>
</table>
| 2 minute cycle (240 compressions) | • CC  
• Assist with Respirations  
• After clear-pushes Defib button until moved to manual defib | • Count- every 20\(^{th}\) announced  
• 2 hand seal on BVM  
• Remind 1/2 to ventilate during | | • Administer anti-arrhythmic |
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<th>Defib</th>
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<tr>
<td>2 minute cycle (240 compressions)</td>
<td>• Assist with Respirations</td>
<td>• CC</td>
<td>• Count- every 20th counted</td>
<td>• Administer 2nd Epi</td>
<td>• If ROSC, completed 12 Lead ASAP</td>
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<tr>
<td></td>
<td>• After clear-pushes Defib button until moved to manual defib</td>
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<td>• 2 hand seal on BVM</td>
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<tr>
<td>Repeat</td>
<td>As</td>
<td>Needed</td>
<td>Repeat</td>
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Adult Protocols
Resuscitation of Pulseless Rhythm Protocol

The successful resuscitation of patients in cardiac arrest is dependent on a systemic approach to resuscitation. 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 RESPONDER TREATMENT

Not applicable. First Responders are not equipped with ACLS medications and shall treat the patient in accordance with the Cardiac Arrest Protocol.

BLS TREATMENT

Not applicable. BLS providers are not equipped with ACLS medications and shall treat the patient in accordance with the Cardiac Arrest Protocol.

VENTRICULAR FIBRILLATION (V-FIB) or PULSELESS VENTRICULAR TACHYCARDIA (V-TACH)

ILS TREATMENT

1. Initiate Cardiac Arrest Protocol.
2. Evaluate rhythm after 2 minutes of CPR. If V-fib or pulseless V-tach: Defibrillate per defibrillate per manufacturers recommendation for biophasic 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 or 2mg ETT if patient is pulseless and repeat every 3-5 minutes as needed.
5. If pulseless v-fib/v-tach persists: defibrillate per manufacturers recommendation for biophasic monitors (or 360j for monophasic defibrillators).
6. Immediately resume CPR for 2 minutes and re-evaluate the patient/rhythm.
7. Amiodarone: 300mg IV/IO push- (if no conversion) 150 mg IV/IO push
8. If pulseless V-fib/V-tach persists: defibrillate per manufacturers recommendation for biophasic monitors (or 360j for monophasic defibrillators).
9. Immediately resume CPR and re-evaluate patient/rhythm every 2 minutes.
10. D10W: 250 mL IV if blood sugar is < 60mg/dL.
11. Narcan: 2 mg IV or 4mg ETT is suspected narcotic overdose.
12. Initiate ALS intercept and transport as soon as possible.
13. Contact the receiving hospital as soon as possible.
ALS TREATMENT

1. ALS treatment includes all the components of ILS treatment.
2. Transport as soon as possible and contact the receiving hospital as soon as possible.
3. Be alert for changes in patient condition that require additional ALS treatment.

PULSELESS ELECTRICAL ACTIVITY (PEA)

ILS Treatment

1. Initiate Cardiac Arrest Protocol.
2. Evaluate rhythm after 2 minutes of CPR.
3. Epinephrine 1:10,000: 1mg IV or 2mg ETT every 3-5 minutes.
4. Continue CPR and re-evaluate patient/rhythm every 2 minutes.
5. IV Fluid Therapy: 500mL fluid bolus for suspected hypovolemia.
6. Dextrose 50%: 25g IV if blood sugar is <60mg/dl.
7. Narcan: 2 mg IV or 4mg ETT is suspected narcotic overdose.
8. Initiate ALS intercept and transport as soon as possible.
9. Contact the receiving hospital as soon as possible.

ALS Treatment

1. ALS treatment includes all the components of ILS treatment.
2. Sodium Bicarbonate: 50meq IV/IO if known tricyclic antidepressant (TCA) overdose, known aspirin (ASA) overdose or patient suffers from chronic renal failure.
3. Needle chest decompression for a patient in traumatic cardiac arrest to correct any suspected tension pneumothorax.
4. Transport as soon as possible and contact the receiving hospital as soon as possible.
5. Be alert for changes in patient condition that require additional ALS treatment.

ASYSTOLE

ILS TREATMENT

1. Initiate Cardiac Arrest Protocol.
2. Evaluate rhythm after 2 minutes of CPR.
3. Epinephrine 1:10,000: 1mg IV or 2mg ETT every 3-5 minutes.
4. Continue CPR and re-evaluate patient/rhythm every 2 minutes.
5. IV Fluid Therapy: 500mL fluid bolus for suspected hypovolemia.
6. **Dextrose 50%**: 25g IV if blood sugar is <60mg/dl.
7. **Narcan**: 2 mg IV or 4mg ETT is suspected narcotic overdose.
8. Consider “cease efforts” order (see *Resuscitation vs. Cease Efforts Policy*)
9. Initiate ALS intercept and transport as soon as possible.
10. Contact the receiving hospital as soon as possible.

**ALS Treatment**

1. ALS treatment includes all the components of **ILS treatment**.
2. **Sodium Bicarbonate**: 50meq IV/IO if known tricyclic antidepressant (TCA) overdose, known aspirin (ASA) overdose or patient suffers from chronic renal failure.
3. Consider “cease efforts” order (see *Resuscitation vs. Cease Efforts Policy*)
4. Transport as soon as possible and contact the receiving hospital as soon as possible.
5. Contact receiving hospital as soon as possible.
6. Be alert for changes in patient condition that require additional ALS treatment.

**Pulseless Electrical Activity (PEA) / Asystole**

Consider possible **causes**

- Hypovolemia (volume infusion)
- Hypoxia (ventilation)
- Tension Pneumothorax (chest decompression)
- Hypothermia
- Massive pulmonary embolism
- Drug overdose such as tricyclic, digitalis, beta blockers,
- Calcium channel blockers
- Hyperkalemia/Hyperkalemia
- Acidosis
- Massive acute myocardial infarction
- Trauma
- Pericardial tamponade
Unstable Bradycardia Protocol

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 includes the 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 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 TREATMENT

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

1. Render initial treatment in accordance with routine assessment practice
2. Oxygen: 15 L/min. via non-rebreather mask. If patient does not tolerate a mask, then administer 6 L/min via nasal cannula.

BLS TREATMENT

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

1. Continue components of First Responder Treatment
2. Initiate ALS intercept and transport as soon as possible.

ILS TREATMENT

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

1. ILS Treatment includes all the components of BLS Treatment.
2. Obtain **12-Lead EKG** and transmit to receiving hospital as soon as possible.
3. **IV Fluid Therapy**: 500mL fluid bolus for systolic BP less than 100mmHg.
4. Initiate ALS intercept and transport as soon as possible. (*Transport can be initiated at any time in this sequence*).
5. Contact receiving hospital (or Medical Control if needed) as soon as possible.
6. **Atropine**: 0.5mg IV (*with medical control order only*) if the patient’s perfusion does not improve after the fluid bolus, if the patient is thermodynamically 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 orders*) up to a total of 3mg

**ALS Treatment**

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

1. ALS Treatment should include all the components of ILS Treatment.
2. **Immediate Transcutaneous Pacing**: If the patient is in a 3rd degree AV block (or in a Type II 2nd degree AV block unresponsive to Atropine).
   - Target heart rate should be at 70 bpm.
   - Current should be set at a minimum to start and increased until capture is achieved.
   - Refer to *Transcutaneous Pacing Procedure* for additional information.
3. **Midazolam (Versed)**: 2mg IV/IO for patient comfort after pacing is initiated. (May give intranasal (see dosing sheet) if IV or IO cannot be established). Re-check vital signs every 5 minutes after administration. May repeat dose one time if systolic BP > 100mmHg and respiratory rate is >10rpm. Additional doses require Medical Control order.
4. **Dopamine**: If the patient remains hypotensive. Begin infusion at 24ggt/min. Increase by 12ggt/min every 2 minutes to achieve and maintain a systolic BP of at least 100mmHg. Closely monitor vital signs.
5. Transport as soon as possible (*Transport can be initiated at any time during this sequence*).
6. Contact receiving hospital as soon as possible.

**Critical Thinking Elements**

- Treat the patient-not the monitor. *Bradycardia does not necessarily mean that a patient is unstable or requires interventions.*
- 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 and physical condition, (e.g. and 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.
Narrow Complex Tachycardia Protocol

Tachycardia is defined as a heart rate >100 bpm. Once the heart 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 assessment of the patient with tachycardia includes evaluation for signs and symptoms of hypoperfusion.

The patient is considered stable if the patient is alert and oriented with warm & dry skin and has 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 is hypotensive.

FIRST RESPONDER TREATMENT

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

1. Render initial care in accordance with routine assessment practice.
2. Administer oxygen 15 LPM via non-rebreather mask or 6 LPM via nasal cannula.

BLS TREATMENT

BLS treatment should be directed at conducting a thorough patient assessment, initiating routine patient care for shock and preparing the patient for or providing transport.

1. Continue components of First Responder Treatment
2. Initiate ALS intercept and transport as soon as possible

ILS TREATMENT

ILS Treatment should be directed at conducting a thorough patient assessment initiating routine patient care for shock and preparing the patient for or providing transport.

1. ILS Treatment includes all components of BLS treatment.
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. Adenosine (Adenocard): 6mg IV {rapid IV push} (with Medical Control orders only) 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 2 minutes, administer 12 mg IV {rapid IV push} (with Medical Control orders only).
ALS TREATMENT

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

1. ALS Treatment includes all components of ILS Treatment.
2. **Adenosine (Adenocard):** 6mg IV \{rapid IV push\} (with Medical Control orders only) 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 12 mg IV \{rapid IV push\} (with Medical Control orders only).
3. **Midazolam (Versed):** 2mg IV/IO in preparation for synchronized cardioversion if the patient has a respiratory rate greater than 10rpm. (May give intranasal (see dosing sheet) if the IV or IO cannot be established). If the patient’s respiratory rate is less than 10rpm, proceed to immediate synchronized cardioversion without sedation.
4. **Synchronized Cardioversion:** \textbf{If} the patient has and altered level of consciousness, diaphoresis, dizziness, chest pain or discomfort, ventricular ectopy 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.
5. Contact the receiving hospital as soon as possible and initiate transport as soon as possible.

\begin{itemize}
  \item **Or biphasic equivalent.**
\end{itemize}

Critical Thinking Elements

- Treat the patient-not the monitor. **Tachycardia does not necessarily mean that a patient is unstable or requires interventions.**
- Factors to consider during the assessment of the patient who presents with Tachycardia include: patient health and physical condition, current medications, trauma or injury related to the event 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 \textless 150bpm** without consulting medical control.
Wide Complex Tachycardia Protocol

Tachycardia is defined as a heart rate >100 bpm. Once the heart 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 assessment of the patient with tachycardia includes evaluation for signs and symptoms of hypoperfusion.

The patient is considered stable if the patient is alert and oriented with warm & dry skin and has 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 is hypotensive.

**FIRST RESPONDER TREATMENT**

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

1. Render initial care in accordance with routine assessment practice.
2. Administer oxygen 15 LPM via non-rebreather mask or 6 LPM via nasal cannula.

**BLS TREATMENT**

BLS Treatment should be directed at conducting a thorough patient assessment, initiating routine patient care for shock and preparing the patient for or providing transport.

1. Continue components of First Responder Treatment
2. Initiate ALS intercept and transport as soon as possible

**ILS TREATMENT**

ILS Treatment should be directed at conducting a thorough patient assessment initiating routine patient care for shock and preparing the patient for or providing transport.

1. ILS Treatment includes all components of BLS Treatment.
2. Initiate ALS intercept and transport as soon as possible. *(Transport can be initiated at any time during this sequence).*
3. Obtain 12-Lead EKG, transmit EKG and Contact Medical Control as soon as possible.
4. If the patient becomes pulseless and any time, refer to the Resuscitation of Pulseless Rhythms Protocol *(V-fib or Pulseless V-tach).*
ALS TREATMENT

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

1. ALS Treatment includes all components of ILS Treatment.
2. **If stable, Amiodarone:** 150mg/10min IV. (Draw contents of 1 vial (150 mg) Amiodarone and inject into 100ml D5W. Do NOT over agitate when mixing. Hang bag and infuse at 618 mLs/hr or 5 gtt/3 seconds with 10 ggt tubing). (MEDICAL CONTROL ONLY)
3. **Midazolam (Versed):** 2mg IV/IO in preparation for synchronized cardioversion. (May give intranasal (see dosing sheet) if the IV or IO cannot be established). Re-check vital signs 5 minutes after administration. May repeat dose one time if systolic BP> 100mmHg and respiratory effort is >10 rpm. Additional doses require Medical Control order.
4. **Synchronized Cardioversion:** If the patient has an altered level of consciousness, diaphoresis, dizziness, chest pain or discomfort, ventricular ectopy and/or is hypotensive:
   5. Synchronized cardioversion at 100 Joules** if tachycardia persists.
   6. Synchronized cardioversion at 200 Joules** if tachycardia persists.
   7. Synchronized cardioversion at 300 Joules** if tachycardia persists.
   8. Synchronized cardioversion at 360 Joules** if tachycardia persists.
9. Contact the receiving hospital as soon as possible and initiate transport as soon as possible.

**Or biphasic equivalent.

Critical Thinking Elements

- 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. A patient may have a stable bundle branch block, and be tachyCARDic for other reasons, giving the appearance of a wide complex tachycardia.
- A 12 lead EKG is IMPERATIVE prior to initiating definitive treatment.
- Assess for underlying causes (e.g. hypovolemic shock) and treat according to protocol.
- If the patient becomes pulseless and any time, refer to the Resuscitation of Pulseless Rhythms Protocol (**V-fib or Pulseless V-tach**).
- Watch for signs of respiratory depression when giving sedatives.
Implanted Cardiac Defibrillator (AICD) Protocol

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.

FIRST RESPONDER TREATMENT
First Responder Treatment should be focused on assessing the situation and initiating routine patient care for shock.

1. Render initial care in accordance with routine assessment practice.
2. Administer oxygen 15 LPM via non-rebreather mask or 6 LPM via nasal cannula.

BLS TREATMENT
BLS treatment should be directed at conducting a thorough patient assessment, initiating routine patient care for shock and preparing the patient for or providing transport.

1. Continue components of First Responder Treatment
2. Initiate ALS intercept and transport as soon as possible

ILS TREATMENT
ILS Treatment should be directed at conducting a thorough patient assessment initiating routine patient care for shock and preparing the patient for or providing transport.

1. ILS Treatment includes all components of BLS Treatment.
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 and any time, refer to the Resuscitation of Pulseless Rhythms Protocol.

ALS TREATMENT
ALS Treatment should be directed at conducting a thorough patient assessment initiating routine patient care for shock and preparing the patient for or providing transport.

1. ALS Treatment includes all components of ILS Treatment
2. Treat arrhythmias per applicable protocol and transport as soon as possible.
3. Morphine Sulfate 2-5 mg IV slowly – May repeat every 5 minutes, (if needed) to reduce the patient’s anxiety and severity of pain.
4. Ondansetron (Zofran); 4mg PO let dissolve on tongue for nausea and/or vomiting.
5. If the patient is allergic to morphine or if morphine is not effective:
   Fentanyl: 50mcg IV over 2 minutes for pain. Fentanyl 50mcg may be repeated one time in 5 minutes to a total dose of 100mcg.
6. Contact Receiving Hospital as soon as possible.
7. If the patient becomes pulseless at any time, refer to the *Resuscitation of Pulseless Rhythms Protocol*.

**Critical Thinking Elements**

- Any patient who has been shocked by an AICD should be strongly encouraged to go seek medical attention and closely monitored enroute regardless of the patient’s condition.
- If the AICD is malfunctioning, alert Medical Control as early as possible so that a magnet can be available upon arrival to disarm the device.
- 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 pads 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 at the maximum dose of 50mcg.
Manual Defibrillation Procedure

Electrical defibrillation is recognized as the most effective method of terminating ventricular fibrillation. It is a vital link in the chain of survival in the case of sudden death. Defibrillation is accomplished by passage of an appropriate electrical current through the heart, sufficient to depolarize a critical mass of the left ventricle.

1. **Two (2) minutes of CPR** should be performed prior to defibrillation attempts.
2. Turn on the monitor/defibrillator.
3. Apply the Quick Combo pads or Fast Patches with cables as soon as possible. The pads must be attached to the defibrillator cables prior to the placement on the patient’s chest.
4. The negative electrode should be placed to the right of the upper sternum just below the right clavicle and the positive electrode should be placed laterally to the left nipple in the midaxillary line (approximately 2-3 inches below the left armpit).
5. For adults, **defibrillate per manufacturer’s recommendations** for biphasic monitors (or 360 joules for monophasic monitors). *If using paddles instead of pads, 25 pounds of pressure must be applied to each paddle when defibrillating.*
6. Make sure no personnel are directly or indirectly in contact with the patient. Emphasize your intention to defibrillate by loudly stating “CLEAR!” and then deliver the shock.
7. **Immediately perform 2 minutes of CPR** and re-evaluate patient/rhythm.
8. If patient remains in V-fib or pulseless V-tach, **defibrillate per manufacturer’s recommendations** for biphasic monitors (or 360 joules for monophasic monitors).
9. **Immediately perform 2 minutes of CPR** and re-evaluate patient/rhythm every 2 minutes.
10. Follow appropriate protocols for rhythm changes.

Critical Thinking Elements

- Patients with AICD’s or pacemakers are treated the same as any other patient. However, do not place the electrodes (defibrillation pads) over the AICD or pacemaker site.
- Adjust the pads as necessary. Anterior-posterior placement may be necessary. Position the positive pad on the anterior chest just to the left of the sternum and place the negative pad posteriorly just to the left of the spinal column.
- Shocks delivered to the patient prior to arrival should be taken into consideration during the transition of care. Crews may want to utilize the AED equipment and personnel for subsequent defibrillation.
- If the cardiac arrest is witnessed by EMS personnel, start CPR and defibrillate immediately after the Fast Patches or Quick Combo’s are placed.
Automated Defibrillation Procedure

Electrical defibrillation is recognized as the most effective method of terminating ventricular fibrillation. It is a vital link in the chain of survival in the case of sudden death. Defibrillation is accomplished by passage of an appropriate electrical current through the heart, sufficient to depolarize a critical mass of the left ventricle.

11. **Two (2) minutes of CPR** should be performed prior to defibrillation attempts.
12. The AED should be applied using adult pads if the patient has no pulse and is breathless. Pediatric pads should be used on children between the ages of 1-8 (or adult pads in the anterior/posterior position if pediatric pads are unavailable).
13. Turn the AED on.
14. Apply the Quick Combo pads or Fast Patches with cables as soon as possible. The pads must be attached to the defibrillator cables prior to the placement on the patient’s chest.
15. The negative electrode should be placed to the right of the upper sternum just below the right clavicle and the positive electrode should be placed laterally to the left nipple in the midaxillary line (approximately 2-3 inches below the left armpit).
16. Make sure no personnel are directly or indirectly in contact with the patient when the AED is analyzing. Emphasize your intention to analyze by loudly stating “CLEAR!” “ANALYZING!” and analyze in accordance with product specifications.
17. If the AED indicates “SHOCK ADVISED”, call our “CLEAR!” check for the safety of others and push the shock button.
18. **Immediately perform 2 minutes of CPR** and re-evaluate patient/rhythm.
19. If the patient remains in V-fib or pulseless V-tach, **defibrillate per manufacture’s recommendations** for a biphasic AED (360 joules for and monophasic AED).
20. **Immediately perform 2 minutes of CPR** and re-evaluate patient/rhythm every 2 minutes.
21. If the patient regains a pulse at any time during resuscitation, then maintain the airway and assist ventilations.
22. Re-analyze the patient’s rhythm with the AED if the patient returns to a pulseless state. Shock if indicated.
23. Immediately turn care over to the transporting providers or ALS intercept crew upon their arrival.

**Critical Thinking Elements:**

- If the cardiac arrest is witnessed by EMS personnel, start CPR and defibrillate immediately after the Fast Patches or Quick Combos are placed.
- **If a pulse is felt at any time, transport the patient without delay.**
- **Maintain frequent pulse checks.** If at any time you cannot find a pulse, push “ANALYZE” and/or repeat the AED procedure for analyzing.
- If only 1 rescuer is available with an AED: very unresponsiveness, open the airway, give 2 breaths and check pulse. If cardiac arrest is confirmed, attach the AED and proceed with the algorithm.
- **DO NOT analyze or shock in a moving ambulance!**
Transition of AED Care

It is recognized that the early defibrillation is a very important treatment for the cardiac arrest patient. A smooth transition of care between providers is both encouraged & expected and is essential for optimum patient care.

1. Arriving EMS personnel should ask for a quick report from the AED user and perform a rapid assessment.
2. AED personnel can be utilized to provide defibrillation during the arrest. However, if the manual mode is activated, ILS/ALS personnel must then operate the defibrillator. Arriving EMS personnel are encouraged to utilize the AED responders for efficiency in coordinating patient care.
3. Situations when the AED may need to be removed immediately (and ALS monitor applied) include: patients needing transcutaneous pacing, patients needing synchronized cardioversion or in the event a spontaneous pulse returns.
4. When changing to manual defibrillation, attach cables to the patient prior to disconnecting the AED.
Cardioversion Procedure

Electrical cardioversion is the therapy of choice for hemodynamically unstable ventricular or supraventricular tachydysrhythmias with a pulse. Synchronization of the delivered energy reduces the potential for induction of V-fib that can occur when the electrical energy impinges on the relative refractory period of the cardiac cycle.

1. Apply Quick Combo pads or Fast Patches according to protocol and apply regular limb leads.
2. Push the synchronize sensor on the defibrillator.
3. Confirm that the monitor is sensing the “R” waves on the monitor screen (this is denoted by the darker mark on the screen with each complex).
4. Select the appropriate energy setting: 100j, 200j, 300j, 360j, (or biphasic equivalent).
5. Press the charge button.
6. Depress the discharge buttons simultaneously and wait for the shock to be delivered.
7. Note the rhythm and treat according to the appropriate protocol.
8. If the patient becomes pulseless at any time, turn off the synchronizer circuit and refer to the Resuscitation of Pulseless Rhythms Protocol.

Critical Thinking Elements:

- The energy levels vary in accordance with protocol for the presenting rhythm.
- Administration of Versed IV/IO/IN may be necessary.
- The synchronized circuit MUST be activated.
- There may be a delay between pressing the discharge buttons and delivery of the countercheck due to the synchronization process.
- You must apply the limb leads so that the monitor can sense the rhythm and delivery the shock at the same time.
Transcutaneous Pacing (TCP) Procedure

Transcutaneous pacing (TCP) is used to deliver electrical stimulus to the heart that acts as a substitute for the heart’s conduction system and is intended to result in cardiac depolarization and myocardial contraction.

TCP should be utilized for patients with symptomatic Bradycardia, namely Type II 2nd Degree AV Block and 3rd Degree AV Block (Complete Heart Block).

1. Confirm the presence of the arrhythmia and the patient’s hypoperfusion status.
2. Initiate Routine ALS Treatment, including application of the cardiac monitor using the limb leads.
3. Apply the pacing pads to the patient using anterior-posterior placement. Place the negative electrode on the anterior chest between the sternum and the left nipple (upper edge of the pad should be below the nipple line). Place the positive electrode on the left posteriorly to the left of the spine beneath the scapula.
4. Activate the pacer mode and observe the marker on each QRS wave. If the marker is not present, adjust the EKG size.
5. Set the target rate at 70 bpm.
6. Set the current at a minimum to start.
7. Activate the pacer and observe pacer spikes.
8. Increase the current slowly until there is evidence of electrical and mechanical capture.
9. Palpate the patient’s pulse and check BP.
10. If the patient is conscious, you may administer Versed 2mg IV/IO for patient comfort. (Intranasal Versed may be administered if IV/IO not available—see dosing sheet).
11. Document the patient’s rhythm, vitals & tolerance of pacing and report the results to Medical Control.

Critical Thinking Elements

- Remember to evaluate the effectiveness of external pacing by assessing the electrical capture (presence of pacer spikes on the EKG) and mechanical capture (presence of a pulse).
- TCP may also be effective for a patient in asystole if performed EARLY.
12-Lead EKG Procedure

Early identification of cardiac infarction is crucial. The benefits of thrombolytic therapy or percutaneous intervention (cath lab) are time-dependent and the 12-Lead EKG may provide early recognition of acute myocardial infarction (AMI). *Remember time is muscle!*

1. As specific brands of monitor/defibrillators vary in function, personnel must be familiar with the operation of the equipment they utilize. This procedure applies to those agencies having 12 Lead monitoring capabilities.

2. Indications for a 12 Lead ECG include:
   - Chest pain/Discomfort
   - Syncope (or near-syncope)
   - Shortness of breath
   - Cardiogenic shock
   - Wide complex tachycardia
   - Symptomatic bradycardia
   - Pulmonary edema
   - Stroke
   - Epigastric pain
   - Altered level of consciousness
   - Vague symptoms in diabetic and elderly patients

3. Provide routine cardiac care.

4. Prepare the patient:
   a. Explain procedure
   b. Place patient in position of comfort
   c. Ensure patient does not chill, shivering may cause artifact
   d. Reassure patient as tense muscles may cause artifact
   e. Prepare the chest to ensure it is dry, free of debris and oil. Clip excessive hair with scissors, do not shave.

5. Place the 4 limb leads.

6. Place the 6 precordial leads:
   - V1 – 4th intercostal space to the right of the sternum
   - V2 – 4th intercostal space to the left of the sternum
   - V3 – Directly between leads V2 and V4
   - V4 – 5th intercostal space at midclavicular line
   - V5 – Level with V4 at left anterior axillary line
   - V6 – Level with V5 at left midaxillary line (directly under the midpoint of the armpit)
7. Obtain ECG tracing. The ECG should be done prior to transport if possible and transmitted to Medical Control at the receiving facility.

8. Contact Medical Control as soon as possible with patient report and to confirm ECG receipt.

9. Upon arrival at the receiving facility a copy of the 12 Lead ECG will be given to the accepting nurse for physician review if it has not been transmitted via Lifenet or fax.

10. Copies of the 12 Lead ECG must be attached to the EMS Patient Care Reports (PCR).

Note: There should not be a delay in the transport of a patient to perform a 12 Lead ECG. If the patient is in close proximity to the nearest hospital AND obtaining a 12 Lead ECG would take longer than the transport time, then routine cardiac care should be initiated and the patient transported as soon as possible.

Critical Thinking Elements

- Communicate ST elevation MI (STEMI) early in the report to the receiving hospital or Medical Control. (STEMI code =*80 at MMC and STAT HEART at SJH).
- Communicate acute stroke/suspected stroke early in the report to the receiving hospital or Medical Control (STAT STROKE).
Medical & Respiratory Protocols

March 2017
Basic Airway Control

Establishing and maintaining an open airway and assuring adequate ventilation is a treatment priority with all patients. Proper techniques must be used to assure treatment maneuvers do not inadvertently complicate the patient's condition.

Basic Airway Control

1. Assure an open airway by utilizing either the head tilt/chin lift maneuver; the modified jaw thrust maneuver or the tongue-jaw lift maneuver. The head tilt/chin lift maneuver is NOT to be used if there is any possibility of cervical spine injury.

2. Expose the chest and visualize for chest rise and movement, simultaneously listen and feel for air movement at the mouth and nose. This procedure will need to be done initially and after correcting an obstruction and securing the airway.

3. If the chest is not rising and air exchange cannot be heard or felt:
   a. Deliver two positive-pressure ventilations. If resistance continues, follow AHA sequences for obstructed airway rescue.
   b. Reassess breathing and check for a carotid pulse.
   c. If spontaneous respirations return and a pulse is present, provide supplemental oxygen by non-rebreather mask or assist respirations with bag-valve mask (BVM) at 15 L/min.
   d. If the patient remains breathless and a pulse is present, initiate ventilations with a BVM at 15 L/min at a rate of 12 breaths per minute.
   e. If the patient remains breathless and a pulse is not present, initiate CPR and institute the appropriate cardiac protocol.

4. If the patient presents with stridor, "noisy breathing" or snoring respirations, render treatment for partial airway obstruction in accordance with AHA guidelines.
   a. Reassess effectiveness of the airway maneuver.
   b. If initially unable to resolve partial airway obstruction, suction the airway and visualize the pharynx for any evidence of foreign objects. Perform a finger sweep if a foreign object can be seen.
   c. If partial airway obstruction persists, treat according to AHA guidelines for resolving a complete airway obstruction.
5. Once the obstruction has been corrected:
   a. Insert an oropharyngeal airway in the unconscious patient (without a gag reflex).
   b. Insert a nasopharyngeal airway in the conscious patient or an unconscious patient with a gag reflex. *Note:* Do not use if the possibility of head injury exists.

6. Establish the presence and adequacy of breathing by observing the frequency, depth and consistency of respirations. Also, observe the chest wall for any indications of injuries which may contribute to respiratory compromise.

7. Supplemental oxygen should be delivered to any patient who exhibits signs of difficulty breathing, sensation of shortness of breath, respiratory rate > 20 breaths per minute, use of accessory muscles, altered level of consciousness/altered mental status, cyanosis, cardiac symptoms, head injury or any indications of shock.
   a. Supplemental oxygen should be provided by a non-rebreather mask (NRM) at a rate of 15 L/min (assuring reservoir bag is inflated).
   b. If patient is unable to tolerate the NRM, administer oxygen via nasal cannula at a rate of 6 L/min.

8. Bag-valve mask ventilation with supplemental oxygen at 15 L/min should be initiated at the rate of 12/min if respirations are absent, there is evidence of inadequate ventilation, respiratory rate is < 8/min, absent or diminished breath sounds or wounds to the chest wall.

**Critical Thinking Elements**

- Inadequate maintenance of the patient's airway, inappropriate airway maneuvers, using inappropriately sized airway equipment and/or failure to recognize an obstructed airway will complicate the patient's condition.
- Do NOT use the head tilt/chin lift maneuver on a patient with a suspected cervical spine injury.
- Proper facemask seal during artificial ventilations is imperative to assure adequate ventilation.
Airway Obstruction Procedure

An airway obstruction is life threatening and must be corrected immediately upon discovery.

1. If the patient has an obstructed airway and is still conscious:
   a. Encourage the patient to cough.
   b. Perform 5 abdominal thrusts or chest thrusts if the cough is unsuccessful.
   c. Repeat until the obstruction is relieved or the patient becomes unconscious.
   d. Administer oxygen at 15 L/min if the patient has a partial airway obstruction and is still able to breathe.

2. If the patient is unconscious:
   a. Open the patient's airway and attempt to ventilate.
   b. Reposition the head and reattempt to ventilate if initial attempt is unsuccessful.
   c. Straddle the patient and perform 5 abdominal thrusts.
   d. Perform visualized finger sweep of the patient's mouth and reattempt to ventilate.
   e. Repeat steps (c) and (d) if obstruction persists.
   f. BLS & ILS immediately initiate ALS intercept.
   g. ILS & ALS attempt direct extraction via laryngoscope and Magill forceps.

      I. Use the laryngoscope and examine the upper airway for foreign matter and suction as needed.
      II. Remove any foreign objects with forceps and suction.
      III. Re-establish an open airway and attempt to ventilate.
      IV. If the obstruction is relieved, continue with airway control, ventilations, assessment and care.

   h. Continue abdominal thrust sequence if unable to relieve obstruction and expedite transport.

Critical Thinking Elements

- Maintain in-line c-spine stabilization using 2 EMTs in patients with suspected cervical spine injury.
- Poor abdominal thrust technique, inappropriate airway maneuvers, and/or failure to recognize an obstructed airway will complicate the patient's condition.
KING LTS-D Airway Procedure

The KING Airway is an effective airway adjunct when intubation is not available or difficult to perform. Insertion is rapid & easy and does not require specialized equipment or visualization of the larynx. It is latex-free and should be considered safe to use on latex-sensitive patients.

Indication

- The King LTS-D is an airway device designed for emergency or difficult intubation in the apneic or unresponsive patient without a gag reflex.

Contraindications

- Active gag reflex
- Patient under four (4) feet tall—see Pediatric Prehospital Care Manual: King LTD Airway Procedure
- Patient less than 16 years old
- Ingestion of a caustic substance (e.g. gasoline, drain cleaner, etc.)
- Known or suspected esophageal disease (e.g. esophageal varices)
- Tracheostomy (will be ineffective with esophageal placement)

KING Airway Insertion Procedure

1. Pre-oxygenate/ventilate utilizing a bag-valve mask (BVM) at 15 L/min according to the Basic Airway Control Procedure.

2. Choose the correct size
3. Test cuff inflation system by injecting the maximum recommended volume of air into the cuffs. Remove all air from both cuffs prior to insertion.

4. Apply a water-based lubricant (e.g. K-Y or Surgilube) to the beveled distal tip and posterior aspect of the tube. Avoid introducing lubricant in or near the ventilatory openings.

5. Position the head in the "sniffing position" if possible. It can also be inserted with the head in the neutral position if following c-spine precautions/c-collar in place.

<table>
<thead>
<tr>
<th>SIZE</th>
<th>Description</th>
<th>Connector Color</th>
<th>OD</th>
<th>ID*</th>
<th>Gastric Tube Size</th>
<th>Inflation Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>4-5 feet in height</td>
<td>Yellow</td>
<td>18mm</td>
<td>10mm</td>
<td>≤ 18Fr</td>
<td>40-60ml</td>
</tr>
<tr>
<td>4</td>
<td>5-6 feet in height</td>
<td>Red</td>
<td>18mm</td>
<td>10mm</td>
<td>≤ 18Fr</td>
<td>60-80 ml</td>
</tr>
<tr>
<td>5</td>
<td>Greater than 6 feet in height</td>
<td>Purple</td>
<td>18mm</td>
<td>10mm</td>
<td>≤ 18Fr</td>
<td>70-90 ml</td>
</tr>
</tbody>
</table>
6. Hold the KING LTS-D at the connector with the dominant hand. With the non-dominant hand, hold mouth open and apply chin lift.

7. With the KING LTS-D rotated laterally 45-90° (such that the blue orientation line is touching the corner of the mouth), introduce tip into the mouth and advance behind the base of the tongue. **Never force the tube into position** and do not take longer than **20 seconds** for the attempt.

8. As the tube tip passes over the tongue, rotate the tube back to midline (blue orientation line faces chin).

9. Without exerting excessive force, advance the KING LTS-D until the proximal opening of gastric access lumen is aligned with teeth or gums.

10. Inflate the cuffs with the minimum volume necessary to seal the airway (see chart).

11. Attach BVM. Gently bag the patient while assessing ventilations. Simultaneously withdraw the airway very slowly until ventilation is easy & free-flowing.

12. Use multiple confirmation techniques:
   - Confirm Presence of breath sounds
   - Visualize rise and fall of the chest
   - Monitor for clinical improvement
   - Colonnmetric ETC0₂ (e.g. EasyCap)**
   - Capnography (if available)

   **NOTE: Ventilate the patient at least six (6) times prior to attaching a colornetric device (EasyCap).

13. The gastric access lumen allows the insertion of up to an 18 Fr diameter gastric tube into the esophagus & stomach. Lubricate the gastric tube prior to insertion (ALS only).

**Critical Thinking Elements**

- If unsuccessful after 1 attempt, refer to the Basic Airway Control Procedure.
- ILS/ALS should consider the King LTS-D Airway if the pre-intubation assessment is GRADE 3 or GRADE 4 on the Cormack-Lehane scale (refer to the Advanced Airway Control Policy).
- Do NOT administer medications via the King LTS-D Airway. It is designed as an airway adjunct only and cannot be utilized as a medication route.
COMBITUBE Procedure
(Esophageal Tracheal Double-Lumen Airway)

1. The Combitube is contraindicated in patients:
   - Less than 16 years of age
   - Under five feet in height
   - Who have an intact gag reflex
   - With known esophageal disease
   - Who have ingested a caustic substance

2. Prior to inserting the Combitube the patient should be hyperventilated and hyperoxygenated to
   overcome any oxygen deficit that already exists and to establish a reserve against the brief apneic
   period that will occur during insertion. During this ventilation the patient's lungs should be auscultated for
   baseline breath sounds against which to compare the breath sounds after insertion. The EMT should be
   wearing protective latex gloves and should additionally consider
   the use of a face mask and eye shield.

3. Verify that the large blue-tipped 40ml syringe has at least 100ml of air drawn up in it, and connect it to
   the blue-colored one-way valve and pilot balloon attached to the tube marked "No.1."

4. Verify that the smaller white-tipped 20ml syringe has at least 15ml of air drawn up in it, and
   connect it to the white-colored one-way valve and pilot balloon attached to the tube marked "No.2."

5. Lubricate the distal end of the tube with a water-soluble lubricant such as k-Y jelly Since with the
   Combitube the patient may be ventilated through the hole at the end of the tube, take care to not occlude
   the openings with the lubricant.

6. The EMT who is to insert the Combitube should be positioned directly above the patient's head.
   This may necessitate changing the position of the EMT who has been ventilating the patient, or may
   involve changing duties among the EMTs present. Regardless, ventilation (and CPR when indicated)
   should be continued until insertion is imminent. Hold the Combitube in one hand so that the distal end
   curves down and out in front of you pointing toward the patient's feet, following the natural curvature of
   the patient's pharynx.

7. Discontinue ventilating and remove any oropharyngeal airway that was in place. Perform a tongue-jaw
   lift with the hand that is not holding the Combitube, lifting the tongue and mandible upward (anteriorly).
   Although the manufacturer's directions state that the patient's head can be in any position, it is
   recommended that the neck be at least slightly extended except in trauma patients. Remember unlike
   the EOA, EGTA, or ET tube, the Combitube is designed so that the ability to ventilate the patient occurs
   regardless of whether the tube ends up in the trachea or the esophagus.

8. Begin inserting the tube into the patient's mouth along the midline, with the curve of the tube following
   the curve of the patient's airway. This involves directing the tube caudally through the pharynx-NOT
inserting it at a 90 degree angle to the posterior pharyngeal wall. The importance of maintaining the tube in the midline cannot be overstated—it is key to successful placement.

9. Continue gently inserting the tube until the printed ring on the tube is at the level of the patient's teeth (or gum line in edentulous patients). Exercise caution especially in advancing the latex pharyngeal cuff past the patient's teeth. Do not use force, the tube should pass easily. If resistance or obstruction is encountered, withdraw the tube slightly, redirect it, or re-insert it. Be sure to observe for proper depth insertion—failure to match the printed rings on the tube with the appropriate landmark has been shown to be a major cause of placement failure.

10. With the printed ring at the level of the teeth, inject 100mL of air from the large blue-tipped syringe into the blue colored one-way valve. This inflates the large pharyngeal cuff and seals the patient's pharynx, limiting the flow of air that passes through the Combitube to the lungs without allowing any to escape through the mouth or nose. Remove the 140mL syringe from the blue colored valve, allowing it to close and seal. The blue pilot balloon should be somewhat distended.

11. After the pharyngeal cuff has been inflated, inject 1 5mL of air into the white valve using the smaller white-tipped 20mL syringe. This inflates the distal tube cuff and helps to hold the tube in position, whether it is in the trachea or esophagus. Remove the 20mL syringe from the white one-way valve, allowing it to close and seal. The white pilot balloon should be somewhat distended. Inflation of the distal cuff before the pharyngeal cuff has been shown to prevent the pharyngeal cuff from obtaining proper sealing placement in the lower pharynx.

12. Attach the bag-valve or demand valve device to the blue tube ("No.1") and begin ventilations. While observing the thorax for chest rise, auscultate over the epigastrium to confirm the absence of air sounds.

13. If chest rise is seen with each ventilation and no air sounds are heard over the epigastrium, the Combitube has been placed in the esophagus and the patient is being ventilated through the holes in the distal segment of the tube when ventilation is provided through the blue "No.1" tube.

14. If air sounds are heard over the stomach with each ventilation and apparent chest rise is not present, then the Combitube is in the trachea and ventilating through the blue "No.1" tube is causing air to flow through the esophagus to the stomach. In this situation the patient is in mortal danger as no oxygen is reaching the lungs. Immediately disconnect the ventilation device from the blue "No.1" tube, attach it to the clear tube ("No.2"), and continue ventilations.

15. Again observe for chest rise and auscultate for the air sounds over the epigastrium. If chest rise is seen and no air sounds are heard over the epigastrium, this signifies that the Combitube has been placed in the patient's trachea and that the air entering the clear "No.2" tube is continuing the full length of the tube and exiting into the trachea and then proceeding on to properly ventilate the lungs.

16. Regardless of whether ventilation of the lungs occurred when initially ventilating through the blue "No.1" or through the clear "No.2" tube, once it has been verified by witnessing the chest rise and the absence of air sounds over the epigastrium with each ventilation, it is necessary to confirm that proper
ventilation of the lungs has in fact been achieved. For confirmation, auscultate over the mid-lung fields for the presence of breath sounds with each ventilation. This should be done immediately after initial insertion, and then periodically to verify continued proper placement. Also re-check the status of the pilot balloons to verify continued inflation of the oral and distal cuffs.

17. When the patient is suspected of having cervical spine trauma, the procedure can be performed with the patient's head maintained in the neutral in-line position. If necessary a single EMT can immobilize the patient's head between his knees while inserting the device, however the procedure is more safely performed with a second EMT immobilizing the head throughout.

18. When effective ventilation is being provided through the blue ("No.1") tube, gastric fluids and air can be suctioned from the esophagus and stomach by passing the Combitub6s soft suction catheter through the clear ("No.2") tube. Due to the double-lumen design of the Combitube, this can be performed without concern for the oxygen ventilation process being carried out through the blue tube.

19. Warning: If the distal end is in the trachea as witnessed by the need to ventilate through the clear "No.2" tube, tracheal suctioning should only be attempted by an EMT trained in the use of the Combitube and in the proper techniques of suctioning an endotracheal tube.
Advanced Airway Control Policy
(ILS & ALS Only)

Endotracheal intubation is the only way to provide a true definitive airway. However, if endotracheal intubation is difficult or unsuccessful, intubation may be attempted utilizing the "bougie" or the King LTS-D Airway. Basic airway control techniques should always be maintained prior to and during any advanced airway procedure, and should always be your primary means of airway control should other methods fail.

Advanced Airway Control Procedure

1. Implement basic airway measures in accordance with Basic Airway Control.
2. Conduct a pre-intubation assessment using the Cormack-Lehane scale:

<table>
<thead>
<tr>
<th>GRADE 1</th>
<th>GRADE 2</th>
<th>GRADE 3</th>
<th>GRADE 4</th>
</tr>
</thead>
</table>
   • If the pre-intubation assessment is Grade 3 or Grade 4, consider KING LST-D as the first line device.
   • An airway bougie may also be considered for a Grade 2-4 airways.

3. Select the proper tube size (based on patient size) and attach a 10mL syringe. Inflate the cuff to be sure it does not leak (the cuff must be deflated prior to insertion).
4. Insert stylet and bend to the approximate configuration of the pharynx.
5. Lubricate the ETT with a water-soluble lubricant.
6. Have suction, BVM, stethoscope, colormetric end-tidal CO2 detector/capnography and commercial ETT holder readily available.
7. Pick up the laryngoscope handle with your left hand and the appropriate blade with your right hand.

8. Holding the blade parallel to the handle, attach the blade to the handle by inserting the U-shaped indentation of the blade into the small bar at the end of the handle. When the indentation is aligned with the bar, press the blade forward and snap into place.

9. Lower the blade until it is at a right angle to the handle. The light should come on. If it does not, see if the bulb is tight and/or the batteries need to be replaced (This should be done on a daily basis so you do not have to spend valuable time fixing it at the scene of a call).

10. Suction the pharynx as needed.

11. Pre-oxygenate the patient with high concentration oxygen prior to intubation attempt.

12. Insert the blade into the mouth on the right side, moving the tongue to the left. Follow the natural contour of the pharynx, lifting the tongue (not prying) until you can see the glottic opening.
   a) If you are using a **straight blade** (Miller), insert it until you can see the epiglottis. With the tip of the blade, lift up on the epiglottis so that you can visualize the vocal cords and glottic opening. If needed, have someone gently press down on the cricoid cartilage (Sellick Maneuver) and/or utilize the BURP procedure to aid in visualization of the vocal chords and to help compress the esophagus.
   b) If you are using a **curved blade** (Macintosh), insert the tip into the vallecula and lift up. This will lift the epiglottis and expose the vocal cords and glottic opening. If needed, have someone gently press down on the cricoid cartilage (Sellick Maneuver) so that you can see the cords well.

13. After visualizing the glottic opening, grasp the ETT with your right hand and advance the tube from the right corner of the mouth. Insert the tube into the glottic opening between the vocal cords, just far enough to pass the cuff of the tube past the opening.

14. Verify proper position by ventilating the patient through the tube with a bag-valve device while listening to each side of the chest with a stethoscope to be sure air is entering both lungs. Also, check for inadvertent esophageal intubation by listening for air movement in the epigastric area during ventilations.

15. Utilize a colormetric end-tidal CO2 (ETC02) detector or waveform capnography.

16. If breath sounds are heard on both sides of the chest, no epigastric sounds are heard colormetric ETC02 detector/capnography indicate proper placement, inflate the cuff with 10mL of air and
secure the tube with a commercial ETT holder.

a) If you have inserted the ETT too far, it will usually go into the right main stem bronchus. Therefore, if you hear breath sounds only on the right, you should pull the tube back ~ inch at a time until you hear bilateral breath sounds. Inflate the cuff with 10mL of air and secure the ETT with a commercial holder.

b) If you hear no breath sounds, you are in the esophagus and must remove the ETT immediately. Ventilate patient and proceed to King LTS-D Airway insertion or continue basic airway control measures.

17. Frequently reassess breath sounds to be sure that the ETT is still in place.

18. Ventilate the patient at a rate of 12 times per minute.

19. If intubation is unsuccessful after (2) attempts, refer to the KING LTS-D Airway Procedure or Basic Airway Control Procedure.

Endotracheal tube introducer, AKA "Bougie" procedure

Use of the endotracheal tube introducer (AKA "Bougie")

The endotracheal tube introducer, AKA "Bougie" is a useful tool to help facilitate difficult intubation. Unlike a stylet, a bougie is inserted independently of the ET tube and is used as a guide, over which an ET Tube may be placed into the trachea. It is used where a difficult intubation is anticipated, or a poor view of the glottic opening has been confirmed on laryngoscopy (Cormack-Lehane).

1. Prepare the endotracheal tube introducer for use: Curve the bougie and ensure the distal tip is formed into a J (coude’) shape.
2. Utilize the laryngoscope as you would do during intubation to obtain the best possible view of the glottic opening. You should always be able to view the tip of the epiglottis and, ideally, the arytenoid cartilages.
3. Advance the bougie, continually observing its distal tip, with the concavity facing anteriorly.
4. Visualize the tip of the bougie passing posteriorly to the epiglottis and (where possible) anterior to the arytenoid cartilages.
5. Once the tip of the bougie has passed the epiglottis, continue to advance it in the midline so that it passes behind the epiglottis but in an anterior direction.
6. As the tip of the bougie enters the glottic opening you may feel "clicks" as it passes over the tracheal rings or the tip may stop against the wall of the airways. This suggests correct
insertion, although this cannot be relied upon to indicate correct positioning.

7. Hold the bougie firmly in place and pass the endotracheal tube over the proximal end of the bougie.

8. As the proximal tip of the bougie is re-exposed, carefully grasp it, assuming control of the bougie.

9. The ET tube should then be carefully advanced along the bougie and hence through the glottic opening, taking care to avoid movement of the bougie.

10. Once the ET tube is fully in place hold it securely as you slowly withdraw the bougie.

Critical Thinking Elements

- SUCCESSFUL INTUBATION MAYBE CONSIDERABLY ENHANCED BY ROTATING THE ET TUBE 90° COUNTER CLOCKWISE, SO THAT THE BEVEL FACES POSTERIORLY.
- The bougie should never be allowed to move up and down during the procedure.

Airway Control in the Trauma Patient

Any type of airway manipulation may be dangerous during airway control of the suspected spinal injury patient. Maintain in-line stabilization while attempting airway control. Consider utilizing the KING LTS-D Airway in lieu of a/traditional intubation.

1. A minimum of two (2) trained rescuers is needed to assure special attention to spinal precautions.

2. One rescuer will apply manual in-line stabilization by placing the rescuers hands about the patient’s ears with the little fingers under the occipital skull and the thumbs on the face over the maxillary sinuses.

3. The rescuer performing airway placement should be at the head.

4. Maintain the patient’s head in a neutral position during intubation or insertion of the KING LTS-D, taking care to prevent cervical manipulation.

Prohibited Advanced Airway Procedures in the St. John’s Hospital EMS System

Attempting difficult and unfamiliar procedures poses a danger to the patients they are being performed on. Certain procedures that are used in the hospital setting are not approved for prehospital personnel in the St. John’s Hospital EMS System. These include:

- Extubation
- Nasotracheal Intubation
- Percutaneous Transtracheal Ventilation
- Cricothyrotomy/Surgical Airway

Critical Thinking Elements
- If intubation attempts fail (2 attempts), switch to the King LTS-D airway or Combitube or revert to basic airway control.
- Verification of proper ETT placement is of vital importance. Correct placement may be accurately confirmed utilizing:
  - Direct visualization of the chords during intubation
  - Equal breath sounds following intubation with no gastric sounds on ventilation
  - Colorimetric change on ETC02 detector (purple to yellow) on multiple ventilations.
  - Observing waveforms with ventilations on waveform capnography.
  - During an arrest, C02 levels in the lungs precipitously drop—there is no cardiac output, and no ventilation. In effective compressions and ventilations, C02 levels should rise—if they are not rising during CPR, compressions are not effective in providing cardiac output. There should always be a waveform if the tube is in the proper position.
Orogastric (OG) Tube Insertion Procedure (ALS Only)

Indication

Indication for orogastric (OG) tube placement in the St. John’s Hospital EMS System is:

- Gastric decompression of an adult cardiac arrest patient after endotracheal intubation has been performed and placement verified; OR with use of the KING L TS-D Airway.

Contraindications

- Known esophageal varices
- Esophageal stricture
- Esophageal or stomach cancer
- Esophagectomy or partial gastrectomy
- Gastric bypass surgery
- Penetrating neck trauma

OG Insertion procedure

1. Estimate the length of the tube needed to reach the stomach by measuring the tube from the corner of the mouth to the earlobe and down to the xiphoid process. Mark the length with tape.

2. Lubricate the Salem sump tube (18F) with a water soluble lubricant (e.g. KY Jelly).

3. Insert the tube through the oropharynx or through the gastric access lumen on the KING LTS-D Airway until the marked depth is reached.

4. If the tube coils in the posterior pharynx, direct laryngoscopy can be utilized to place the tube in the esophagus.

5. Verify placement (see OG Placement Verification).

OG Placement verification

1. Using a 60mL catheter tip syringe, instill 30mL of air into tube and auscultate over epigastrium for air sounds.
2. Aspirate for gastric contents and assess for cloudy, green, tan, brown, bloody or offwhite color contents consistent with gastric contents.

3. Secure tube with tape.

Gastric Decompression

Once placement of the Salem sump tube has been verified, begin gastric decompression in one of the following manners:

1. Attach the tube to portable suction (and suction intermittently as needed).

2. Attach the tube to the onboard suction (and suction intermittently as needed).

3. Attach the tube to continual low suction (approximately 60 mmHg) using the onboard suction.

4. If suction is not readily available, connect the 60mL syringe to the tube while keeping the (blue) air vent patent. This will allow the sump function of the tube to work until suction can be applied and will also prevent gastric contents from leaking from the tube.

Critical Thinking Elements

- If you cannot place the OG tube quickly (no more than 2 attempts), forego the procedure - do not delay transport.

- The blue air vent must remain patent to ensure proper sump function and to prevent damage to the gastric lining during suctioning.
Respiratory Distress Protocol

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. Sin 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 and symptoms of respiratory distress, patients may present with inspiratory and expiratory wheezing and/or “tight” lung sounds with decreased air movement.

FIRST RESPONDER TREATMENT

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

1. Render initial care in accordance with Routine Patient Treatment Protocol.
2. Administer oxygen 15 LPM via non-rebreather mask or 6 LPM via nasal cannula if the patient cannot tolerate a mask.

BLS TREATMENT

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

1. BLS Treatment includes all components or First Responder Treatment.
2. Be prepared to support with BVM if necessary.
3. Proventil (Albuterol): 2.5mg in 3mL of normal saline via nebulizer over 15 minutes. May repeat Albuterol 2.5 mg every 15 minutes as needed (with Medical Control order)
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.
**ILS TREATMENT**

ILS Treatment is directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing transport.

1. ILS Treatment should include all of the components of *BLS Treatment*.
2. Obtain a peripheral IV.
3. Proventil (Albuterol): 2.5mg in 3mL of normal saline via nebulizer over 15 minutes. May repeat Albuterol 2.5 mg every 15 minutes as needed (with Medical Control order).
4. Contact receiving hospital as soon as possible or Medical Control if necessary.

**ALS TREATMENT**

ALS Treatment is directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient’s perfusion and preparing for or providing transport.

1. Render initial care in accordance with *Routine Patient Treatment Protocol*.
2. Administer **oxygen 15 LPM** via **non-rebreather mask** or **6 LPM** via **nasal cannula** if the patient cannot tolerate a mask.
3. **Proventil (Albuterol):** 2.5mg in 3mL normal saline **mixed with Ipratropium (Atrovent):** 0.5 mg via nebulizer over 15 minutes. Repeat Albuterol 2.5 mg with Atrovent 0.5 every **15 minutes** as needed. In-line nebulizer may be utilized if patient is unresponsive or is in respiratory arrest.
   - **Do Not** administer Ipratropium (Atrovent) to patients with known allergy to Atropine, peanuts or soy.
4. **Epinephrine 1:1,000:** 0.3mg IM if the patient is suffering from status asthmaticus and does not improve with Albuterol/Atrovent treatment.
   - Special consideration should be given to administering Epinephrine if the patient is >40 year old, has an has an irregular heart rate, has a heart rate >150bpm or has a history of heart disease or hypertension. *Consult Medical prior to the administration if the patient meets any of these criteria.*
5. Transport as soon as possible
6. Contact the receiving hospital as soon as possible.

**CHF / PULMONARY EDEMA**

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

**FIRST RESPONDER TREATMENT**

First Responder Treatment should be focused on assessing the situation and initiating routine patient care for shock.
1. Render initial care in accordance with *Routine Patient Treatment Protocol*.
2. Administer **oxygen 15 LPM** via **non-rebreather mask** or **6 LPM** via **nasal cannula** if the patient cannot tolerate a mask.

**BLS TREATMENT**

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

1. BLS Treatment includes all components or *First Responder Treatment*.
2. Be prepared to support with BVM if necessary.
3. Initiate ALS intercept if needed and transport as soon as possible.

**ILS TREATMENT**

ILS Treatment is directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient’s perfusion and preparing for or providing transport.

1. ILS Treatment should include all of the components of *BLS Treatment*.
2. Obtain a peripheral IV.
3. Nitroglycerin (NTG): 0.4mg SL. May repeat every 3-5 minutes to a total of 3 doses (if systolic BP remains > 100mmHg).
4. Obtain 12-Lead EKG and transmit to the receiving hospital as soon as possible.
5. Contact the receiving hospital as soon as possible.

**ALS TREATMENT**

ALS Treatment is directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient’s perfusion and preparing for or providing transport.

1. Render initial care in accordance with *Routine Patient Treatment Protocol*.
2. CPAP: If systolic BP > 100mmHg.
3. If the systolic BP is between 90-100mmHg, *contact medical control* prior to initiating CPAP.
4. Do not initiate CPAP if the systolic BP is less than 90mmHg.
5. Transport as soon as possible.
6. Contact receiving hospital as soon as possible. *Communicate early if your patient is on CPAP so the appropriate equipment is ready upon patient arrival.*
**Critical Thinking:**

- Don’t overlook the possibility of the patient having an acute MI.
- 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 BP is between 90-100mmHg for the same reasons.
- Do Not delay CPAP application for the administration of NTG (i.e. you do not have to wait until all 3 doses of NTG SL had been administered before applying CPAP).
CPAP Procedure

CPAP (Continuous Positive Airway Pressure) can be applied to achieve PEEP (Peak End Expiratory Pressure) for patients presenting with signs & symptoms of pulmonary edema/CHF. The patient must be alert and able to adequately ventilate spontaneously in order for CPAP to be initiated.

1. Assess vital signs
2. If the systolic BP is between 90-100mmHg contact Medical Control prior to initiating.
3. Connect the generator to the 50 psi oxygen outlet.
4. Attach the mask.
5. Attach the PEEP valve package with the CPAP circuit.
6. Attach the filter to the air entrapment port.
7. Secure the mask on the patient’s face.
8. Treat continuously while en route to the receiving facility.
9. Obtain and record vital signs every 5 minutes.
10. In case of life-threatening complications:
   a) Stop CPAP treatment.
   b) Offer reassurance.
   c) Institute appropriate BLS & ALS support per protocol.
   d) Adverse reactions to CPAP are to be documented on an incident report and forwarded to the St. John’s Hospital EMS System Coordinator within 24 hours of the occurrence.
   e) On arrival at the receiving hospital, immediately communicate any adverse reactions to the ED staff.

11. Documentation in the patient care record should include:
   a) Detailed description of the initial assessment findings.
   b) Vitals, including pulse oximetry, prior to initiating CPAP.
   c) Vitals (& pulse oximetry) every 5 minutes.
   d) Patient response to treatment (positive effects, no change or adverse reaction).

CONTRAINDICATIONS FOR CPAP

- Systolic BP < 90mmHg
- Severe cardiorespiratory instability and impending arrest
- Respiratory or cardiac arrest
- Upper airway abnormalities or trauma
- Penetrating chest trauma
- Compromised thoracic organs
- Persistent nausea & vomiting
- Gastric distention
- Obtund patient/ Questionable ability to protect airway
- Asthma
- Emphysema/COPD
Capnography
Elective ILS/ALS
Mandatory by 2018

Capnography, specifically waveform capnography, provides assessment of the quality of respiratory efforts as well as patency of airway adjuncts. Capnography can identify changes sooner than waiting for signs and symptoms in a patient who is not able to communicate those changes. During transport, capnography is a more reliable and easily assessable tool for verification of airway patency and effects or respiratory support.

All patients with advanced airways and complaining of respiratory distress should be monitored based on their quantitative (waveform) capnography (CPAP may not fit properly with capnography.) Additional complaints such as sepsis and trauma may benefit from capnography.

Treatment and Intervention

1. Assemble all equipment prior to utilization.
   a. If required by unit model, zero out unit.
2. Apply ETCO2 adapter.
   a. If utilizing for monitoring of conscious patient, nasal cannula can be applied.
   b. If utilizing with ETT/King LT-S. placement location in circuit should be based on manufacturers recommendations.
3. Resume ventilations (continue spontaneous respirations)
4. Observe monitor for numeric value and waveform.
   a. Obtain documentation strip prior to and after patient move.
   b. If absent or low numeric value and/or absent or inappropriate waveform
      i. Immediately verify placement of advanced airway via
         • Colormetric device
         • Direct laryngoscopy
      ii. Assess Circulation for possible cause of low/absent/inappropriate readings
5. Unless directed otherwise by specific treatment protocol, seek to maintain ETCO2 range of 35-45mmHg.
   a. A sudden decrease in ETCO2 in any situation could signal a change in patient condition. Immediately assess patient and begin resuscitation as indicated.
   b. A sudden increase in ETCO2 during cardiac arrest may indicate ROSC. Assess patient.

Critical Thinking Elements
- Know your equipment. Providers must know the difference between no value detected and no signal detected.
- Reasons for no value detected must immediately assessed and include
  o Loss of airway, apnea, obstruction
  o Circulatory collapse, cardiac arrest
  o Equipment failure: BVM or oxygen
Altered Level of Consciousness (ALOC) Protocol

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 that may rapidly progress to unconsciousness.

A patient who has experienced syncope or LOC of any type should receive a thorough evaluation for secondary injuries (i.e. fall injuries associated with ALOC) and for possible underlying causes. Although a patient’s ALOC may be resolved in the field, the patient should be strongly encouraged to accept EMS care and ambulance transport to the hospital for further evaluation.

FIRST RESPONDER TREATMENT

First Responder Treatment 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 Routine Patient Treatment 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. Oral Glucose: 15g PO if the patient has a history of diabetes and has in possession tube of Oral Glucose, is alert to verbal stimuli, is able to sit in an upright position, has good airway control and an intact gag reflex.
   - This applies to non-transporting BLS agencies without field medications also. All other BLS agencies should refer to the BLS Treatment section.

BLS TREATMENT

BLS Treatment should be directed at conducting a thorough patient assessment, 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 and preparing the patient for or providing transport.

1. BLS Treatment should include all components of First Responder Treatment.
2. Oral Glucose: 15g PO if the patient’s blood sugar is < 60mg/dL, the patient is alert to verbal stimuli, is able to sit upright, has good airway control and has an intact gag reflex.
3. Perform a 2<sup>nd</sup> blood glucose level test to re-evaluate blood sugar 5 minutes after administration or Oral Glucose. If blood sugar remains <60mg/dL, administer a 2<sup>nd</sup> dose or Oral Glucose (15g).
4. Glucagon: 1mg IN if the blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control, or is absent gag reflex.
5. **Narcan** 2 mg intranasal (1 mg per nostril) using mucosal atomizer device if narcotic intoxication is considered.
6. Initiate ALS intercept if needed to transport and transport as soon as possible.
7. Contact the receiving hospital as soon as possible.

**ILS TREATMENT**

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

1. ILS Treatment includes all components of *BLS Treatment*.
2. Perform **blood glucose level test**.
3. **DW10**: 250 mL IV if blood sugar is < 60mg/dL. Continue infusion until patient is capable of eating a meal.
   a. Documentation should include approximate fluid administration of D10W.
4. **Glucagon**: 1mg IM if the blood sugar is less than 60mg/dL if unable to establish IV.
5. May give Glucagon 2mg intranasal if patient is combative or if it is unsafe to administer IM.
6. Perform a 2nd blood glucose level test to re-evaluate blood sugar 5 minutes after administration of D10W or Glucagon. Repeat Dextrose if BS is still <60mg/dL.
7. **Narcan**: 2mg IV or IM if no response to Dextrose or Glucagon within 2 minutes. May repeat 2mg IV or IM if no response in **5 minutes**. May administer Narcan (2mg) intranasal if IV not available, or IM not feasible.
8. Obtain 12-Lead EKG and transmit to receiving hospital in non-opiate overdose (or opiate overdose unresponsive to Narcan) or if cause of ALOC is uncertain.
9. Initiate ALS intercept if needed and transport as soon as possible.
10. Contact the receiving hospital as soon as possible or Medical Control if necessary.

**ALS TREATMENT**

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

1. ALS Treatment includes all components of *ILS Treatment*.
2. Transport and contact the receiving hospital as soon as possible.

**Critical Thinking Elements**

- Look for Medic Alert Tags.
- Consider possible C-spine injury and follow C-spine precautions as necessary.
- Be prepared for possible vomiting after administration of Glucagon.
- Vitals and GCS should be recorded every 5 minutes.
- After administration of D10W, allow 5 minutes before administration of Narcan.
- No intercept is required if the patient becomes alert/oriented after the administration of Oral Glucose or Glucagon **unless** the patient has a condition that warrants intercept.
• Sign/symptoms of hypoglycemia include: Weakness/shakiness, tachycardia, cold/clammy skin, headache, irritability, ALOC/bizarre behavior or loss of consciousness.
• No 12-lead EKG is necessary for etiologies such as hypoglycemia, opiate overdose responsive to Narcan or febrile illness.
• ILS/ALS: If a patient refuses transport after administration of D10W (& is Alert, and oriented to person, place, time, and situation), the call may be treated as a low risk refusal as long as the following criteria are met (and documented in the Patient Care Report):
  o The causes of the patient’s hypoglycemia can be easily explained (e.g. patient took insulin and did not eat).
  o The patient has no other complaints and no other issues as identified after a thorough evaluation (including a full assessment, vitals and repeated blood sugar).
  o EMS advises patient/family that the patient needs to consume foods containing complex carbohydrates & protein within the next 15 minutes (assist the patient if needed prior to departing the scene).
Suspected Stroke Protocol

A cerebrovascular accident (stroke) is a “Brain Attack” and is an emergent situation. Depending upon the type of CVA, patients may be a candidate for new therapies in the emergency department, however, time is critical. There should be minimal delay in transporting a patient with signs and symptoms of a CVA to the hospital. Notify the hospital as soon as possible.

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/rupture aneurysm).

Sign & Symptoms of a stroke include:
- Hemiplegia (paralysis on one side of the body)
- Hemiparesis (weakness on one side of the body)
- Decreased sensation or numbness without trauma
- Facial droop
- Unequal grips
- Dizziness, vertigo or syncope
- Aphasia or slurred speech
- ALOC or seizures
- Sudden, severe headache with no known cause
- Visual disturbances (e.g. blurred vision, double vision)
- Generalized weakness
- Frequent or unexplained falls

Risk factors that increase the likelihood of stroke are:
- Hypertension
- Atherosclerosis/coronary artery disease
- Atrial fibrillation
- Hyperlipidemia
- Diabetes
- Vasculitis
- Lupus

To facilitate accuracy in diagnosing stroke and to expedite transport an easy-to-use neurological examination tool is recommended. Although there are several different types available, the most “user friendly” is the Cincinnati Prehospital Stroke Scale.
The Cincinnati Prehospital Stroke Scale

Facial Droop (have patient show teeth or smile)
- Normal – both sides move equally.
- Abnormal – one side doesn’t move as well as the other side.

Arm Drift (eyes closed both arms held straight out in front for 10 seconds)
- Normal – both arms move the same or don’t move at all.
- Abnormal – one arm moves or one arm drifts.

Abnormal speech (have patient recite “you can’t teach an old dog new tricks”)
- Normal – no slurring
- Abnormal – patient slurs words or unable to speak

If the patient has a positive finding, then it’s considered abnormal.

FAST TEST
Facial Droop
Arm Drift
Speech Abnormalities
Time of Onset

<table>
<thead>
<tr>
<th>Los Angeles Motor Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facial Droop with Smile</td>
</tr>
<tr>
<td>0  Absent</td>
</tr>
<tr>
<td>1  Present</td>
</tr>
<tr>
<td>Arm Drift</td>
</tr>
<tr>
<td>0  Absent</td>
</tr>
<tr>
<td>1  Drifts down on one side</td>
</tr>
<tr>
<td>2  Falls rapidly on one side</td>
</tr>
<tr>
<td>Grip Strength Deficit</td>
</tr>
<tr>
<td>0  Normal</td>
</tr>
<tr>
<td>1  Weak grip on one side</td>
</tr>
<tr>
<td>2  No grip on one side</td>
</tr>
</tbody>
</table>

Total patient score
Score of 1-2 is positive for stroke symptoms
Score of 4 or higher indicates high probability of Emergency Large Vessel Occlusion
FIRST RESPONDER TREATMENT
First Responder Treatment 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 routine assessment practice.
2. Administer oxygen 15 LPM via non-rebreather mask or 6 LPM via nasal cannula. Be prepared to support the patient’s respirations with a BVM if necessary.
3. Check and record vital signs every 5 minutes until transporting unit arrives.

BLS TREATMENT
BLS treatment should be directed at conducting a thorough patient assessment, initiating routine patient care to assure the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock and preparing the patient for or providing transport.

1. BLS Treatment should include all components of First Responder Treatment.
2. Be prepared to support the patient’s respirations with BVM if necessary and have suction readily available.
3. Perform blood glucose level test to rule out low blood sugar as a reason for ALOC.
4. Glucagon: 1mg IN if blood sugar is <60mg/dL., the patient is unresponsive and/or has questionable airway control or absent gag reflex. May give Glucagon 2mg intranasal if patient is combative or if it is unsafe to administer IM.
5. Narcan 2 mg intranasal (1 mg per nostril) using mucosal atomizer device if narcotic intoxication is considered.
6. Initiate ALS intercept if needed and transport without delay.
7. Check and record vital signs and GCS every 5 minutes.
8. Contact the receiving hospital as soon as possible to notify of possible stroke if FAST exam is positive (based on 1 or more elements of the exam) and communicate the time of symptom onset.

ILS TREATMENT
ILS Treatment should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient’s perfusion and preparing for or providing patient transport.

1. ILS Treatment includes all components of BLS Treatment.
2. Obtain 12-Lead EKG and transmit to receiving hospital.
3. DW10: 250 mL IV if blood sugar is < 60mg/dL. Continue infusion until patient is capable of eating a meal.
   a. Documentation should include approximate fluid administration of D10W.
4. Glucagon: 1mg IM if blood sugar is <60mg/dL, and unable to establish an IV. May give Glucagon 2mg intranasal if patient is combative or if it is unsafe to administer IM.
5. Perform a 2nd blood glucose level test to re-evaluate blood sugar 5 minutes after administration of D10W or Glucagon. Repeat Dextrose if BS is < 60mg/dL.
6. **Narcan**: 2mg IV or IM if no response to Dextrose or Glucagon within 2 minutes and narcotic overdose is suspected. May repeat 2mg IV or IM if no response in 5 minutes. May administer Narcan (2mg) intranasal if IV is not available or IM not feasible or is unsafe.

7. **Midazolam (Versed)**: 5mg intranasal for seizure activity. May repeat in 5 minutes of no response to a total of 10mg (*Contact Medical Control*).

8. Initiate ALS intercept if needed and **transport without delay**.

9. Establish 2 IV’s at least one should be in the AC and no smaller than an 18ga.

10. Check and record vital signs and GCS every 5 minutes.

11. Contact the receiving hospital as soon as possible to notify of possible **STAT Stroke** if FAST exam is positive (based on 1 or more elements of the exam) and communicate the time of onset.

**ALS TREATMENT**

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

1. ALS Treatment incudes all components of *ILS Treatment*.

2. **Midazolam (Versed)**: 2mg over 1 minute for seizure activity. May repeat Midazolam (Versed) 2mg IV every 5 minutes as needed to a total of 10mg.

   OR:

   **Midazolam (Versed)**: 5mg IM *if the patient is seizing and attempts at IV access have been unsuccessful*.

3. Transport without delay.

4. Check and record vital signs and GCS every 5 minutes.

5. Contact the receiving hospital as soon as possible to notify of possible **STAT Stroke** if FAST exam is positive (based on 1 or more elements of the exam) and communicate the time of onset.

**Critical Thinking Elements**

- Stroke onset time (defined as the last time the person was known to be normal) is key in determining the eligibility of IV TPA. EMS personnel should ask family members or bystanders the stroke onset time if the patient is unable to provide that information.

- IV TPA must be given within 270 minutes of the onset of ischemic stroke so do not delay transport. **TIME IS BRAIN!!**

- Interventional angiography can be performed up to 6 hours after onset of symptoms.

- Placing the patient in trendelenberg position may actually improve blood flow to the ischemic area.

- Bradycardia may be present in a suspected stroke patient due to increase ICP. **Do not give Atropine if the patient’s BP is normal or elevated.** Contact Medical Control for consultation.

- Spinal immobilization should be provided if the patient sustained a fall or other trauma.

- Monitor and maintain the patient’s airway. Have suction readily available.
• Communicate acute stroke/suspected stroke early in the radio transmission to the hospital (STAT STROKE).
• Document in the PCR whether the FASAT exam is negative or positive. If positive, document “FAST exam positive” along with what components make it such (e.g. lef-sided facial droop, slurred speech, positive are drift, etc.).
• Do NOT administer Nitroglycerin (NTG) to a suspected stroke patient with elevated blood pressure in an attempt to lower blood pressure. NTG may lower cerebral perfusion pressure (CPP) too much and actually increase ischemia to the brain tissue.
Seizure Protocol

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 usually regains consciousness within 1-3 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 requires 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 seizures), eclampsia, and alcohol withdraw and overdose.

**First Responder Treatment**
First Responder Treatment 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 treatment in accordance with the *Routine Patient Treatment 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 Treatment**
BLS treatment should be directed at conducting a thorough patient assessment, initiating routine patient care to assure the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock and preparing the patient for or providing transport.

1. BLS Treatment should include all components of *First Responder Treatment*.
2. Be prepared to support the patient’s respirations with BVM if necessary and have suction readily available.
3. **Perform blood glucose level test**.
4. **Glucagon**: 1mg IM if blood sugar is <60mg/dL., the patient is unresponsive and/or has questionable airway control or absent gag reflex. May give Glucagon 2mg intranasal if patient is combative or if it is unsafe to administer IM.
5. **Narcan** 2 mg intranasal (1 mg per nostril) using mucosal atomizer device if narcotic intoxication is considered.
6. Initiate ALS intercept and transport without delay.

**ILS Treatment**
ILS Treatment should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient’s perfusion and preparing for or providing patient transport.

1. ILS Treatment includes all components of *BLS Treatment*.
2. **DW10**: 250 mL IV if blood sugar is < 60mg/dL. Continue infusion until patient is capable of eating a meal.
a. Documentation should include approximate fluid administration of D10W.

3. **Glucagon**: 1mg IM if blood sugar is <60mg/dL, and unable to establish an IV. May give Glucagon 2mg intranasal if patient is combative or if it is unsafe to administer IM.

4. Perform a 2nd blood glucose level test to re-evaluate blood sugar 5 minutes after administration of D10W or Glucagon. Repeat Dextrose if BS is < 60mg/dL.

5. **Narcan**: 2mg IV or IM if no response to Dextrose or Glucagon within 2 minutes and narcotic overdose is suspected. May repeat 2mg IV or IM if no response in 5 minutes. May administer Narcan (2mg) intranasal if IV is not available or IM not feasible or is unsafe.

6. **Midazolam (Versed)**: 5mg intranasal for seizure activity. May repeat in 5 minutes of no response to a total of 10mg (*Contact Medical Control*).

7. Initiate ALS intercept if needed and transport as soon as possible.

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

**ALS Treatment**

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

1. ALS Treatment includes all components of *ILS Treatment*.

2. **Midazolam (Versed)**: 2mg over 1 minute for seizure activity. May repeat Midazolam (Versed) 2mg IV every 5 minutes as needed to a total of 10mg.

   **OR:**

   **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. May give 10mg intranasal if parental route is not feasible or is unsafe.

3. Transport as soon as possible.

4. Contact the receiving hospital as soon as possible.
Hypertensive Crisis Protocol

A hypertensive emergency is an elevation of the BP that may result in organ danger or dysfunction. The organs most likely damaged by a hypotensive emergency are the brain, heart, and kidneys. Hypertension is also an indication that an underlying condition may exist which is causing the brain to demand more blood from the cardiovascular system. It can also be an indication of head injury with increased ICP, hypoxia or endocrine dysfunction. The goal of treatment is a slow, gradual reduction in BP rather than an abrupt lowering of BP that may cause further neurological complication.

First Responder Treatment
First Responder Treatment 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 *Routine Patient Treatment 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. Check and record vital signs every 5 minutes until the transporting unit arrives.

BLS Treatment
BLS treatment should be directed at conducting a thorough patient assessment, initiating routine patient care to assure the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock and preparing the patient for or providing transport.

1. BLS Treatment should include all components of *First Responder Treatment*.
2. **Oxygen**: 6L/min via nasal cannula if the patient has a patent airway is breathing and SpO2 is .95%. If SpO2 is <95%, administer oxygen at 15L/min via non-rebreather mask. Be prepared to support the patient’s respirations with BVM if necessary and have suction readily available.
3. Initiate ALS intercept if needed and **transport suspected stroke patients without delay**.
4. Check and record vital signs and GCS every 5 minutes.
5. Contact the receiving hospital as soon as possible.

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

1. ILS Treatment includes all components of *BLS Treatment*.
2. **Midazolam (Versed)**: 5mg intranasal for seizure activity. May repeat in 5 minutes of no response to a total of 10mg (*Contact Medical Control*).
3. Initiate ALS intercept if needed and **transport without delay**.
4. Check and record vital signs and GCS every 5 minutes.
5. Contact the receiving hospital as soon as possible.
ALS Treatment

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

1. ALS Treatment includes all components of ILS Treatment.
2. Oxygen: 6L/min via nasal cannula if the patient has a patent airway is breathing and SpO2 is >95%. If SpO2 is <95%, administer oxygen at 15L/min via non-rebreather mask. Be prepared to support the patient’s respirations with BVM if necessary and have suction readily available.

3. Midazolam (Versed): 2mg over 1 minute for seizure activity. May repeat Midazolam (Versed) 2mg IV every 5 minutes as needed to a total of 10mg.
   OR:
   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. May give 10mg intranasal if parental route is not feasible or is unsafe.

4. Transport suspected stroke patients without delay.
5. Check and record vital signs and GCS every 5 minutes.
6. Contact the receiving hospital as soon as possible.

Critical Thinking Elements

- A patient with a systolic BP > 150mmHg and/or diastolic BP > 90mmHg without neurological deficit should be considered stable.
- A patient with a diastolic BP > 130mmHg without traumatic neurological deficits (e.g. visual disturbances, seizure activity, paralysis, ALOC) and/or chest pain/discomfort and/or pulmonary edema should be considered an acute hypertensive crisis.
- Assess for chest pain/discomfort and/or pulmonary edema. If present, treat per appropriate protocol.
Acute Abdominal Pain Protocol

Abdominal pain may vary from minor discomfort to acute pain. Abdominal pain may indicate inflammation, hemorrhage, perforation, obstruction and/or ischemia of 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 Treatment**
First Responder Treatment 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 *Routine Patient Treatment 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.

**BLS Treatment**
BLS treatment should be directed at conducting a thorough patient assessment, initiating routine patient care to assure the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock and preparing the patient for or providing transport.

1. BLS Treatment should include all components of *First Responder Treatment*.
2. Initiate ALS intercept and transport as soon as possible.
3. **Ondansetron** (Zofran): 4mg PO let dissolve on tongue for nausea and/or vomiting. *BLS Transport Only With Medical Control Orders*

**ILS Treatment**
ILS Treatment should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient’s perfusion and preparing for or providing patient transport.

1. ILS Treatment includes all components of *BLS Treatment*.
2. **IV fluid therapy**: 500mL fluid bolus if the patient is hypotensive to achieve a systolic BP of at least 100mmHg.
3. **Ondansetron** (Zofran): 4mg PO let dissolve on tongue for nausea and/or vomiting.
4. Initiate ALS intercept if needed and transport as soon as possible.
5. Contact the receiving hospital as soon as possible.

**ALS Treatment**
ALS Treatment should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient’s perfusion and preparing for or providing patient transport.

1. ALS Treatment includes all components of *ILS Treatment*.
2. **Morphine Sulfate**: 2-5mg IV every 5 minutes *(with Medical Control orders only)* to reduce the patient’s anxiety and severity of pain. If unable to establish IV access, may give Morphine 2-5mg IM every 15 minutes *(with Medical Control Order only)*. If Patient is allergic to Morphine use Fentanyl.

**OR**

**Fentanyl**: 50mcg IV over 2 minutes for pain *(with Medical Control order only)*.

Fentanyl 50mcg may be repeated one time in 5 minutes to a total dose of 100mcg. If unable to establish IV access, may give Fentanyl 50mcg IM and repeat one time in 15 minutes to a total of 100mcg *(with Medical Control order only)*.

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**Critical Thinking Elements**

- Asses for thoracic aortic (aneurysm) rupture or trauma in addition to GI etiologies.
- Asses for leaking or ruptured abdominal aortic aneurysm (AAA). Common signs and symptoms may include previous history un-repaired AAA, abdominal distension, pulsating masses, lower extremity mottling, diaphoresis, anxiety/restlessness and/or sharp “tearing” pain between the shoulder blades or in the lower back.
- Giving special attention to female patients of childbearing years. Acute abdominal pain should be considered to be an ectopic pregnancy until proven otherwise.
- Consider possible etiologies and obtain a detailed history & physical exam:
  - Inflammation=slow onset of discomfort, malaise, anorexia, fever & chills.
  - Hemorrhage=steady pain, pain radiating to the shoulders, sign & symptoms of hypovolemia.
  - Perforation=acute onset of severe symptoms and steady pain with fever.
  - Obstruction=cramping pain, nausea, vomiting, decreased bowel activity and upper quadrant pain.
  - Ischemia=acute onset of steady pain (usually no fever noted).
- **Do not allow the patient to eat or drink.**
- **DO NOT give pain medication for acute abdominal pain without Medical Control orders.**
- Signs and symptoms of renal calculi (i.e. kidney stone) include: acute & severe flank pain that starts in the back and radiates to the groin, extreme restlessness, hematuria and previous history of kidney stones.
- In patients with known renal failure, the Fentanyl dose must be reduced to 25mcg. The dose may be repeated on time to maximum dose of 50mcg.
Acute Nausea & Vomiting Protocol

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

- Adverse medication effects
- Bowel obstruction
- Increased intracranial pressure
- Intra-abdominal emergencies
- Myocardial infarction
- Other cardiac events such as dysthymias

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

**First Responder Treatment**

First Responder Treatment 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 *Routine Patient Treatment Protocol*.
2. Place 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.

**BLS Treatment**

BLS treatment should be directed at conducting a thorough patient assessment, initiating routine patient care to assure the patient has a patent airway, is breathing and has a perfusing pulse as well as beginning treatment for shock and preparing the patient for or providing transport.

1. BLS Treatment should include all components of *First Responder Treatment*
2. **Perform blood glucose level test.**
3. **Oral Glucose**: 15g PO if the patient’s blood sugar is < 60mg/dL, the patient is alert to verbal stimuli, is able to sit upright, has good airway control and has an intact gag reflex.
4. Perform a 2\(^{nd}\) blood glucose level test to re-evaluate blood sugar 5 minutes after administration or Oral Glucose. If blood sugar remains <60mg/dL, administer a 2\(^{nd}\) dose or Oral Glucose (15g).
5. **Glucagon**: 1mg IM if the blood sugar is less than 60mg/dL, the patient is unresponsive and/or has questionable airway control, or is absent gag reflex. May give Glucagon 2mg intranasal if patient is combative or if it is unsafe to administer IM.
6. **Ondansetron** (Zofran): ODT 4mg PO let dissolve on tongue for nausea and/or vomiting. **BLS Transport Agencies Only. May repeat in 30 minutes.**
7. Initiate ALS intercept if needed to transport and transport as soon as possible.
8. Contact the receiving hospital as soon as possible.

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

1. ILS Treatment includes all components of *BLS Treatment*.
2. **IV fluid therapy**: 500mL fluid bolus if the patient is hypotensive to achieve a systolic BP of at least 100mmHg.
3. **Perform blood glucose level test.**
4. **DW10**: 250 mL IV if blood sugar is < 60mg/dL. Continue infusion until patient is capable of eating a meal.
   a. Documentation should include approximate fluid administration of D10W.
5. **Glucagon**: 1mg IM if the blood sugar is less than 60mg/dL if unable to establish IV. May give Glucagon 2mg intranasal if patient is combative or if it is unsafe to administer IM.
6. Perform a 2<sup>nd</sup> blood glucose level test to re-evaluate blood sugar 5 minutes after administration of D10W or Glucagon. Repeat Dextrose if BS is still <60mg/dL.
7. **Ondansetron** (Zofran): 4mg PO let dissolve on tongue for nausea and/or vomiting. May repeat in 30 minutes
8. Initiate ALS intercept if needed and transport as soon as possible.
9. Contact the receiving hospital as soon as possible.

**ALS Treatment**
ALS care should be directed at continuing or establishing a more advanced level of care, identifying potential serious conditions, stabilizing airway and circulation where appropriate and providing pharmacological relief from symptoms of nausea and vomiting.

1. ALS Treatment includes all components of *ILS Treatment*.
2. Contact the receiving hospital as soon as possible.
Allergic Reaction/Anaphylaxis Protocol

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

Signs & symptoms of a hypersensitivity reaction may range from isolated hives to wheezing, shock and 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 Treatment
First Responder Treatment 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 Routine Patient Treatment 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. Epi-Pen: if the patient has a history of allergic reactions and has in their possession a prescribed Epi-pen, is suffering from hives, wheezes, hoarseness, hypotension, ALOC or indicates a history of anaphylaxis, assist the patient with administering the Epi-pen or Contact Medical Control for orders to administer the Epi-pen.

BLS Treatment
BLS Treatment should be directed at conducting a thorough patient assessment, 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 and preparing the patient for transport.

1. BLS Treatment includes all the components of First Responder Treatment.
2. Initiate ALS intercept and transport as soon as possible.
3. Epinephrine 1:1,000: 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.
   a. Administer based on Medication Administration Procedure.
4. Proventil (Albuterol): 2.5mg in 3ml of normal saline via nebulizer or 15 minutes. May repeat Albuterol 2.5 mg every 15 minutes as needed (with Medical Control Order)
5. Contact Medical Control as a soon as possible.

ILS TREATMENT
ILS Treatment is directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient’s perfusion and preparing for or providing transport.

1. ILS Treatment should include all of the components of BLS Treatment.
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 (or intubate) if necessary.

3. **Proventil (Albuterol)**: 2.5mg in 3ml of normal saline via nebulizer or 15 minutes. May repeat Albuterol 2.5 mg every **15 minutes** as needed **(with Medical Control Order)**. In-line nebulizer may be utilized if patient is unresponsive t/in respiratory arrest.

4. **IV Fluid Therapy**: 500mL fluid bolus if the patient is hypotensive to achieve a systolic BP of at least 100mmHg.

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

**ALS TREATMENT**

ALS Treatment is directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient’s perfusion and preparing for or providing transport.

1. ILS Treatment includes all components of **ILS Care**.

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 (or intubate) if necessary.

3. Epinephrine 1:1000: 0.3mg IM if the patient has respiratory distress (inspiratory & expiratory wheezing, stridor, and/or laryngeal edema), hypotension and/or ALOC.

4. **Benadryl**: 50mg IV or IM for severe itching and/or hives.

5. **Proventil (Albuterol)**: 2.5 mg in 3mL of normal saline over 15 minutes. May repeat Albuterol 2.5 mg every 15 minutes as needed. In-line nebulizer may be utilized if patient is unresponsive t/in respiratory arrest.
   - **Do not** administer Ipratropium (Atrovent) to patients experiencing an allergic reaction/anaphylaxis.

6. **IV Fluid Therapy**: 500mL fluid bolus if the patient is hypotensive to achieve a systolic BP of at least 100mmHg.

7. Transport as soon as possible.

8. Contact the receiving hospital as soon as possible.
Drug Overdose and Poisoning Protocol

Poisoning may occur by ingesting, injecting, inhaling or absorbing a harmful substance or a substance in harmful quantities. Due to the magnitude and multiplicity of agents that are toxic or could be used as toxins, this protocol focuses on a general approach to the patient who has taken an overdose or has been exposed to a toxic agent. The substance container may have vital information for resuscitation of a poisoned patient. Communication with Medical Control is the best way to obtain rapid and accurate advice on treatment guidelines for specific substances.

First Responder Treatment

First Responder Treatment 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. Consider possible scene & patient contamination and follow agency safety procedures.
2. Render initial care in accordance with the Routine Patient Care Protocol.
3. **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.
4. **Narcan** 2 mg intranasal (1 mg per nostril) using mucosal atomizer device if narcotic intoxication is considered.

BLS Treatment

BLS Treatment should be directed at conducting a thorough patient assessment, 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 and preparing the patient for or providing transport.

1. BLS Treatment includes all components of First Responder Treatment.
2. **Narcan** 2 mg intranasal (1 mg per nostril) using mucosal atomizer device if narcotic intoxication is considered.

ILS Care

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

1. ILS Treatment includes all components of BLS Treatment.
2. **Narcan**: 2mg IV or IM if suspected narcotic overdose. May repeat 2mg IV or 1M if no response in 5 minutes (with Medical Control order). May give Narcan 2 mg IN if parenteral route is not feasible or is unsafe.
3. **IV Fluid Therapy**: 500mL fluid bolus if the patient is hypotensive to achieve a systolic BP of at
least 100mmHg.
4. Initiate ALS intercept if needed and transport as soon as possible.
5. Contact the receiving hospital as soon as possible or Medical Control if necessary.

ALS Treatment

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

1. ALS Treatment includes all components of ILS Care.
2. **Narcan**: 2mg IV or IM if suspected narcotic overdose. May repeat 2mg IV or 1M if no response in 5 minutes. May give Narcan 2 mg IN if parenteral route is not feasible or is unsafe.
3. **Sodium Bicarbonate**: 50meq IV/IO if known tricyclic antidepressant (TCA) or known Aspirin (ASA) overdose.
4. **IV Fluid Therapy**: 500mL fluid bolus if the patient is hypotensive to achieve a systolic BP of at least 100mmHg.
5. Transport as soon as possible and contact the receiving hospital as soon as possible.

Critical Thinking Elements

- Overdose patients should not be allowed to refuse treatment and transport.
- **DO NOT** give a suspected poisoning patient anything by mouth.
- Caustic substances are those which have strong acid or alkali properties and usually cause intra-oral burns, painful swallowing or burning/painful regurgitation.
  - **Common Acids**: Hydrochloric Acid (swimming pool and toilet bowl cleaners), Sulfuric Acid (battery acid), Acetic Acid and Phenol.
  - **Common Bases (Alkali)**: Lye (washing powders and paint removers), drain pipe cleaners (Drano), disk batteries, bleach, ammonia, polishes, dyes and jewelry cleaners.
- Patients who overdose on TCAs may initially appear well but may rapidly deteriorate. Monitor closely for ALOC and cardiovascular instability. Tachycardia and a widened QRS complex are generally signs of a life-threatening ingestion.
  - **Common TCAs**: Amitriptyline, Elavil, Doxepin, Impramine, Clomipramine, etc.
- Narcotic and benzodiazepine overdoses do not generally cause abrupt changes in consciousness except when combined with alcohol use.
  - **Common Benzodiazepines**: Valium, Diazepam, Ativan, Lorazepam, Xanax, etc.
Sepsis

Sepsis, or septic shock, refers to the massive immune response to an infection within the body. Often times the patient is suffering from a known infection (urinary tract infections and pneumonia being the most common). However the scale of the infection, and the body’s response to it, forces the body to focus on reacting to the infection at the risk of other body systems. Antibiotic resistance and the aging populations who are living longer have helped to gain recognition for this medical crisis. Sepsis ranks among the top ten causes of mortality, but also ranks as the most costly medical condition treated in the United States’ hospitals.

Septic shock is truly a life threatening emergency. However, when assessing a patient suffering from septic shock they present much more stable than the condition of most life threatening conditions to which EMS responds. The septic shock patient may not appear to be in shock, there was not a sudden change in the patients’ condition, nor was there a specific event that can be identified as the cause. Close examination will start to note a series of subtle changes that should be seen as key indicators of sepsis.

First Responder, BLS, ILS, ALS Treatment

1. Render initial care in accordance with the Routine 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. Focus should be given to a very thorough assessment.
4. Utilize the Miami Sepsis Scoring tool for initial indicators of shock.

<table>
<thead>
<tr>
<th>Miami Sepsis Score</th>
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<tbody>
<tr>
<td>1 Body temp ≥ 38°C (100.4°F) or ≤ 35.5°C (96.0°F)</td>
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<tr>
<td>1 Respiratory Rate &gt; 22/ minute</td>
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<tr>
<td>2 Shock Index ≥ 0.7 (Heart rate/ Systolic Blood Pressure)</td>
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<tr>
<td>Composite score</td>
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5. ILS and ALS Care: Obtain IV access for fluid administration.
6. ILS and ALS Care: 500mL fluid bolus of 0.9% Normal Saline. Assess for signs of pulmonary edema/CHF. If no signs of fluid overload, repeat until 2 L of fluid have been administered.
7. Capnography: Assess patient for end tidal CO2 value. A value of ≤ 25 with good waveform capnography should be noted.
8. If ETCO2 ≤ 25 OR SBP ≤ 90 give 0.9% Normal Saline in 500mL. Reassess vital signs and for signs of fluid overload after each 500 mL infused. If no signs of fluid overload may repeat until 2 L infused
9. If unable to complete 2L fluid boluses due to development of pulmonary edema it should be noted in the report for the reason for not giving total bolus.
Sepsis

EMS Alert Patient Report-Sepsis

If Miami Sepsis Score of 3-4 and ETCO2 ≤ 25, identify patient as EMS Alert Patient Report-Potential Sepsis.

OR

If Miami Sepsis Score of 3-4 and SBP ≤ 90 mmHg after 2 L of fluid boluses identify the patient as EMS Alert Patient Report- Potential Sepsis.

If unable to complete 2 L fluid boluses due to development of pulmonary edema, patient should not be made an EMS Alert Patient Report-Sepsis, but it should be noted in report that patient only failed to meet criteria based on development of pulmonary edema.

The following information and format necessitate expedited delivery of information for potential pre-hospital sepsis identification.

1. Unit identification
2. ETA & Destination if other than Medical Control Center being contacted.
3. Inbound EMS Alert Patient report- Sepsis
4. History in brief of current condition.
   a. Level of Consciousness
   b. Miami Sepsis Score and ETCO2
   c. Vital Signs
   d. Any additional chief complaint
5. Acknowledge necessary treatment plan. (Mat not be complete at the time of communication)
6. Determine destination. (facility and location)

Critical Thinking

- ETCO2 ≤ 25 correlates to a Lactic Acid ≥ 4.
- Sepsis survival is correlated with aggressive fluid resuscitation and early antibiotic
- Most patients present to the Emergency Department with severe sepsis or septic shock arrive via EMS
- A Miami Sepsis Score of 3 or 4 correlates with sepsis and severe sepsis.
- Other disease states that can mimic Sepsis include: cardiogenic shock, hypovolemic shock,
  Dehydration, hyperthyroidism, medication/drug interaction, lesser infection or allergic reaction.
## Shock Index

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*Note: The table continues with the same pattern.*
Central Lines and Fistulas Procedure & Protocol (ALS Only)

A pre-existing vascular access device is an indwelling catheter placed into a central vein to provide vascular access for those patients requiring long term intravenous therapy or hemodialysis.

Central Lines

A central line is an indwelling catheter that provides access to large central veins:

1. **May be used if unable to establish a peripheral IV in patients with a systolic BP < 80mmHg.**
2. **May be used if the patient is in cardiac arrest.**
3. **Do NOT administer benzodiazepines (i.e. Valium or Versed) via central line.**
4. A **10mL syringe** or larger must be used when accessing any central line to prevent excess infusion pressure that could damage the internal wall of the catheter.
5. Always aspirate 5mL of blood from the central line and discard prior to administration of medications or IV fluids to remove Heparin from the line.
6. Strictly adhere to aseptic technique when handling a central line:
   - Cleanse injection port twice with an alcohol prep (using a new alcohol prep each time) prior to accessing.
7. Do not remove the injection cap.
8. Do not allow IV fluids to run dry.
9. Always expel all air from syringes and IV tubing prior to administration.
10. Should damage occur to the external catheter, immediately clamp the catheter between the skin and the damaged area.

Fistulas ("Shunts")

A fistula ("shunt") is a surgically created subcutaneous arterio-venous vessel **anastomosis** used for patients requiring hemodialysis and should NOT be routinely accessed by prehospital personnel.

1. **May only be used if the patient is in cardiac arrest** and peripheral IV, IO or external jugular access cannot be established.
2. Access must be made using a **14g or 16g IV catheter**. Do not use anything smaller.
3. Do not use an arm with a fistula, shunt or arterio-venous (AV) graft to obtain a blood pressure.
4. Do not use an arm with a fistula, shunt or AV graft to establish peripheral IV access.
5. In the event the shunt tubing is pulled out of the entrance site: apply direct pressure, elevate the arm and transport immediately to the hospital.
Internal Medi-Ports
Access requires a specialized needle and cannot be used by prehospital personnel.

Critical Thinking Elements

- Patients with advanced renal disease requiring dialysis have special medical needs that may require specific attention in the prehospital setting. These patients are prone to complications such as fluid overload & electrolyte imbalances, especially if they miss a scheduled dialysis treatment.
- Fluid overload may lead to pulmonary edema.
- Hyperkalemia may lead to arrhythmias and cardiac arrest. Monitor dialysis patients closely.
- Anastomosis is the surgical connection of two tubular structures.
- Use of the EZ-IO is strongly encouraged over accessing a fistula / shunt.
Environmental Emergencies Protocols

March 2017
Hazardous Materials Exposure Protocol

Injuries from hazardous materials incidents vary depending on the manner of exposure (inhalation, ingestion, injection or absorption), the type of material involved (acids, ammonia, chlorine, hydrocarbon solvents, sulfides, organophosphates) and the amount of exposure (time & concentration).

Harmful products are widely used in home gardening and cleaning, commercial agriculture and cleaning & industrial operations. Civil defense agencies have indicated the increasing threat concerning the use of Weapons of Mass Destruction (WMD) as a foreign and domestic terrorist tool. WMD represent an intentional hazardous materials incident.

Due to the magnitude and multiplicity of hazardous materials, this protocol focuses on a general approach to the patient involved in a hazardous materials incident. The substance container may have vital information for resuscitation of an exposed patient. Communication with Medical Control is the best way to obtain rapid and accurate advice on treatment guidelines for specific materials.

First Responder Treatment

First Responder Treatment 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. Remain uphill, upwind, and upstream and upgrade of the incident. Stay out of the "Hot Zone" unless trained, equipped and authorized to enter.

1. Render initial care in accordance with the Routine Patient Treatment Protocol.
2. Look for possible scene and patient contamination. Follow agency safety procedures.
3. Notify IEMA if needed at 1-800-782-7860.
4. The patient's clothing should be completely removed to prevent continued exposure and the patient decontaminated prior to being placed in the ambulance for transport.
5. Oxygen: 15L/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.

BLS Treatment

BLS Care should be directed at conducting a thorough patient assessment, 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 and preparing the patient for or providing transport. Remain uphill, upwind, upstream and upgrade of the incident. Stay out of the "Hot Zone" unless trained, equipped and authorized to enter.
1. BLS Treatment includes all components of First Responder Treatment.

2. **Proventil (Albuterol):** 2.5mg in 3mL of normal saline via nebulizer over 15 minutes if the patient has been exposed to an irritant gas (acids, ammonia, chlorine, carbon monoxide). May repeat Albuterol 2.5mg every **15 minutes** as needed **(with Medical Control order).**

3. Initiate ALS intercept if needed and transport as soon as possible. Be alert for suspected organophosphate poisoning (OPP). Signs & symptoms include "SLUDGE" (salivation, lacrimation, urination, defecation, gastroenteritis & emesis). Early indications of OPP include: headache, dizziness, weakness & nausea.

4. **Contact Medical Control** and make sure the receiving hospital is aware of (prior to arrival at the facility) the patient's exposure to hazardous materials and what decontamination procedures were followed at the scene.

### ILS Treatment

ILS Treatment should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport. Remain uphill, upwind, upstream and upgrade of the incident. Stay out of the "Hot Zone" unless trained, equipped and authorized to enter.

1. ILS Treatment includes all components of BLS Treatment.

2. **Atropine:** 2mg IV or IM **(with Medical Control order only)** if suspected organophosphate poisoning (OPP) and signs & symptoms of "SLUDGE" are present (salivation, lacrimation, urination, defecation, gastroenteritis & emesis). Early indications of OPP include: headache, dizziness, weakness & nausea. Repeat Atropine 2mg IV or 1M every **5 minutes** **(with Medical Control order)** or until signs & symptoms of "SLUDGE" subside.

3. Initiate ALS intercept and transport as soon as possible.

4. **Contact Medical Control** and make sure the receiving hospital is aware of the patient's exposure to hazardous materials **(prior to arrival at the facility)** and what decontamination procedures were followed at the scene.

### ALS Treatment

ALS Treatment should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport. Remain uphill, upwind, upstream and upgrade of the incident. Stay out of the "Hot Zone" unless trained, equipped and authorized to enter.

1. ALS Treatment includes all components of ILS Treatment.

2. **Proventil (Albuterol):** 2.5mg in 3mL normal saline mixed with Ipratropium (Atrovent): 0.5mg via nebulizer over 15 minutes if the patient has been exposed to an irritant gas (acids,
ammonia, chlorine, carbon monoxide). Repeat Albuterol 2.5mg with Atrovent 0.5mg every 15 minutes as needed.

- Do not administer Ipratropium (Atrovent) to patients with known allergy to Atropine, peanuts or soy.

3. Atropine: 2mg IV or IM if suspected organophosphate poisoning (OPP) and signs & symptoms of "SLUDGE" are present (salivation, lacrimation, urination, defecation, gastroenteritis and emesis). Early indications of OPP include: headache, dizziness, weakness & nausea. Repeat Atropine 2mg IV or 1M every 5 minutes (with Medical Control Order) or until signs & symptoms of "SLUDGE" subside.

4. Transport as soon as possible.

5. **Contact Medical Control** if needed and make sure the receiving hospital is aware of the patient's exposure to hazardous materials (**prior to arrival at the facility**) and what decontamination procedures were followed at the scene.
Hypothermia Protocol

Injury and illness from environmental exposure varies depending on the manner of exposure (wet or dry) and the amount of exposure (time, temperature, wind chill factor, and ambient air). Cold weather emergencies range from localized frostbite to severe hypothermia with unresponsiveness and unconsciousness.

The patient's health and predisposing factors may increase the likelihood of environmental illness and injury. Patients suffering from trauma, shock, hypoglycemia and stroke are at greater risk of developing hypothermia. Newborns, infants, drug & alcohol abuse patients and the elderly have increased predisposition to hypothermia. The primary goal in the treatment of the patient at risk for hypothermia is to insulate the patient and prevent further heat loss.

First Responder Treatment

First Responder Treatment 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 treatment in accordance with the Routine Patient Treatment Protocol.
2. Handle the patient as gently as possible.
3. Create a warm environment for the patient. Remove wet or frozen clothing and cover the patient with warm blankets. Prevent re-exposure to cold. Warm packs may be utilized for the neck (posterior), armpits, groin and along the thorax.
4. 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.
5. Do not rub frostbitten or frozen body parts. Protect injured parts (e.g. blisters) with light, sterile dressings and avoid pressure to the area.

BLS Treatment

BLS Treatment should be directed at conducting a thorough patient assessment, 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 and preparing the patient for or providing transport.

1. BLS Treatment includes all components of First Responder Treatment.
2. Do not rub frostbitten or frozen body parts. Protect injured parts (e.g. blisters) with light, sterile dressings and avoid pressure to the area.
3. Treat other symptoms per the appropriate protocol.
4. Initiate ALS intercept if needed and transport as soon as possible.
ILS Treatment

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

1. ILS Care includes all components of BLS Treatment.
2. IV Fluid Therapy: 500mL fluid bolus of warmed .9% Normal Saline.
3. Do not rub frostbitten or frozen body parts. Protect injured parts (e.g. blisters) with light, sterile dressings and avoid pressure to the area.
4. Treat other symptoms per the appropriate protocol.
5. Initiate ALS intercept if needed and transport as soon as possible.

ALS Treatment

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

1. ALS Treatment includes all components of ILS Treatment.
2. Transport as soon as possible.

Critical Thinking Elements

- Do not thaw frozen parts in the field if there is a chance of refreezing. Protect frostbitten areas from refreezing.
- Patients with hypothermia should be considered at high risk for ventricular fibrillation. It is imperative that these patients be handled gently and not re-warmed aggressively.
- The presence of delirium, bradycardia, hypotension and/or cyanosis is usually indicative of severe hypothermia (core body temperature of less than 90 degrees Fahrenheit).
Heat-Related Emergencies Protocol

Injury and illness from heat exposure varies depending on the manner of exposure (sun, humidity, exertion) and the amount of exposure (time, temperature & ambient air). Heat exposure emergencies range from localized cramping to severe hyperthermia (heat stroke) with unresponsiveness and unconsciousness. The patient's health, predisposing factors and medications may increase the likelihood of heat-related illness. The primary goal in the treatment of the patient at risk for hyperthermia is to cool the patient and restore body fluids.

First Responder Treatment

First Responder Treatment 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 Routine Patient Treatment Protocol.
2. Move the patient to a cool environment. Remove clothing as necessary to make the patient comfortable. Cold packs may be utilized for the neck (posterior), armpits, groin and along the thorax. Do not cool the patient to a temperature that causes shivering.
3. 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.

BLS Treatment

BLS Treatment should be directed at conducting a thorough patient assessment, 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 and preparing the patient for or providing transport.

1. BLS Treatment includes all components of First Responder Treatment.
2. Treat other symptoms per the appropriate protocol.
3. Initiate ALS intercept if needed and transport as soon as possible.

ILS Treatment

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

1. ILS Treatment includes all components of BLS Treatment.
2. IV Fluid Therapy: 500mL fluid bolus if the patient is hypotensive to achieve a systolic BP of at least 100mmHg.
3. Treat other symptoms per the appropriate protocol.
4. Initiate ALS intercept if needed and transport as soon as possible.

ALS Treatment

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

1. ALS Treatment includes all components of ILS Treatment.
2. Treat other symptoms per the appropriate protocol.
3. Transport as soon as possible.

Heat Disorders

Heat (Muscle) Cramps- Heat cramps are muscle cramps caused by overexertion and dehydration in the presence of high temperatures. Signs & symptoms include: Normal or slightly elevated body temperature; generalized weakness; dizziness; warm, moist skin and cramps in the fingers, arms, legs, or abdominal muscles.

Heat Exhaustion- Heat exhaustion is an acute reaction to heat exposure and the most common heat-related illness a prehospital provider will encounter. Signs & symptoms include: increased body temperature, generalized weakness, cool, diaphoretic skin, rapid, shallow breathing; week pulse; diarrhea; anxiety; headache and possible loss of consciousness.

Heatstroke- Heatstroke occurs when the body’s hypothalamic temperature regulation is lost. Cell death and damage to the brain, liver, and kidneys can occur. Signs & symptoms include: Cessation of sweating; very high core body temperature; hot, usually dry skin; deep, rapid, shallow respirations (which later slow); rapid, full pulse (which later slows); hypotension; neurologic compromise (confusion, disorientation, or unconsciousness and possible seizures). Heat Stroke is a serious emergency associated with a high mortality rate.

Fever (Pyrexia)- A fever is the elevation of the body temperature above the normal temperature for that person (~98.6° F±/2 degrees). Fever is sometimes difficult to differentiate from heatstroke; however, there is usually a history of infection or illness with a fever.
Burn Protocol

Burn injuries vary depending on the type of burn (thermal, electrical, chemical) and the amount of exposure (time and depth). Burn injuries range from localized redness to deep tissue destruction and airway compromise. Signs of burn injury include: blisters, pain, tissue destruction, charred tissue and singed hair.

The primary goal in the treatment of the burn patient is to stop the acute burning process by removing the patient from direct contact with the source of the burn and maintaining the patient's body fluids. Special attention should be given to limit further pain and damage of the burn to the patient. However, burn care should not interfere with lifesaving measures.

First Responder Treatment

First Responder Treatment 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 Routine Patient Treatment Protocol.
2. Make sure the scene is safe to enter.
3. 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.
4. THERMAL BURN TREATMENT:
   a) If the burn occurred within the last 20 minutes, reverse the burning process and cool the area by flushing the area with 1. Liter of sterile saline (or sterile water if sterile saline is not available). The goal of cooling is to extinguish the burning process -not to systemically cool the patient. Fluid application should be held to a minimum and discontinued if the patient begins shivering.
   b) Remove jewelry and loose clothing. Do not pull away clothing that is stuck to the burn.
   c) Cover the wound with sterile dressings***
   d) Place a sterile burn sheet on the stretcher. If the patient's posterior is burned, place a sterile burn pad on top of the sheet with the absorbent side toward the patient.
   e) Place patient on the stretcher.
   f) Cover the patient with additional sterile burn sheets and blanket to conserve body heat.
5. ELECTRICAL BURN TREATMENT:
   a) Assure that the power service has been cut off and remove the patient from the source of electricity.
   b) Fully immobilize the patient due to forces of electrical current and possible trauma.
   c) Assess for entry and exit wounds. No cooling or flushing is necessary due to the type of burn.
d) Cover the burn with dry, sterile dressings. e) Closely monitor the patient.

6. **CHEMICAL BURN TREATMENT:**
   a) Consider possible scene and patient contamination and follow agency safety procedures.
   b) Note which chemical agent caused the burn and obtain the MSDS for that chemical (if possible).
   c) The patient's clothing should be completely removed to prevent continued exposure and the patient decontaminated **prior to** being placed in the ambulance for transport.
   d) **Dry chemical powder** should be brushed off **before** applying water.
   e) Irrigate the patient with sterile water and if the MSDS indicates use of water will not cause an adverse reaction. Body parts should be flushed for at least 1-2 minutes. Do not use sterile saline on chemical burns.
   f) Irrigate burns to the eye with sterile water for at least 20 minutes. Alkaline burns should receive continuous irrigation throughout transport.

**BLS Treatment**

BLS Treatment should be directed at conducting a thorough patient assessment, 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 and preparing the patient for or providing transport.

1. Includes all components of *First Responder Treatment*.  
2. Initiate ALS intercept and transport as soon as possible.  
3. Contact Medical Control as soon as possible for significant burns.

**ILS Treatment**

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

1. Includes all components of *BLS Treatment*.  
2. **IV Fluid Therapy:** 500mL fluid bolus. Repeat if necessary.  
3. Initiate ALS intercept and transport as soon as possible.  
4. **Contact Medical Control** as soon as possible for significant burns.

**ALS Treatment**

1. ALS Treatment should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.  
2. Includes all components of *ILS Treatment*.  
3. Be prepared to intubate if necessary.  
4. **Morphine Sulfate:** 2-5mg IV every 5 minutes to reduce the patient's anxiety and severity of
pain. If unable to establish IV access, may administer Morphine 2-5mg 1M every 15 minutes. If patient is allergic to morphine use Fentanyl.

OR

5. **Fentanyl: 50mcg** IV over 2 minutes for pain. Fentanyl 50mcg IV may be repeated one time in 5 minutes to a total of 100mcg. If unable to establish IV access, may administer Fentanyl 50 mcg IM. May be repeated one time in 15 minutes to a total of 100mcg.

6. **Ondansetron** (Zofran): 4mg PO let dissolve on tongue for nausea and/or vomiting

7. Transport and **Contact Medical Control** as soon as possible for significant burns.

**Critical Thinking Elements**

- ***WaterJel® may be used for THERMAL BURNS (after the burn has been irrigated according to protocol) if it is available:

  1. Open the foil package, unfold dressing and apply to burn. NOTE: Do not remove burned clothing - apply gel-soaked dressing directly on top.
  2. Pour excess gel from the foil package directly onto the burn dressing or surrounding skin.
  3. Loosely wrap sterile gauze over the dressing to hold it in place.

  WaterJel® helps reduce pain from burns, cools the skin to help prevent burn progression and helps protect the burn against airborne contamination. It is the only approved commercial burn care product in the Memorial EMS System.

- **BurnJel® contains Lidocaine and may NOT be used' in the St. John’s EMS System.
- Treat other symptoms or trauma per the appropriate protocol *(e.g. if someone suffers from smoke inhalation along with being burned, refer to the Smoke Inhalation Protocol).*
- IV access should not be obtained through burned tissue unless no other site is available.
- Closely monitor the patient's response to IV fluids and assess for pulmonary edema.
- Closely monitor the patient's airway - have BVM, suction and/or intubation equipment readily available.
- Do not delay transport of a "Load and Go" trauma patient to care for burns.
- For chemical/powder burns, be aware of inhalation hazards and closely monitor for changes in respiratory status.
- 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.
- Prompt notification and transport to the Burn Center (Memorial Medical Center) is extremely important!
Smoke Inhalation Protocol

Smoke inhalation injury 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.

First Responder Treatment

First Responder Treatment 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 Routine Patient Treatment 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.

BLS Treatment

BLS Treatment should be directed at conducting a thorough patient assessment, 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 and preparing the patient for or providing transport.

1. BLS Treatment includes all components of First Responder Treatment.
2. Initiate ALS intercept and transport as soon as possible.
3. Proventil (Albuterol): 2.5mg in 3mL of normal saline via nebulizer over 15 minutes. May repeat Albuterol2.5mg every 15 minutes as needed (with Medical Control order).
4. Contact the receiving hospital as soon as possible or Medical Control if necessary.

ILS Treatment

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

1. ILS Treatment includes all components of BLS Treatment.
2. **Proventil (Albuterol):** 2.5mg in 3mL of normal saline via nebulizer over 15 minutes. May repeat Albuterol 2.5mg every 15 minutes as needed (with Medical Control Order). In-line nebulizer may be utilized if patient is unresponsive/in respiratory arrest.

3. Initiate ALS intercept if needed and transport as soon as possible.

4. Contact the receiving hospital as soon as possible or Medical Control if necessary.

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**ALS Treatment**

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

1. ALS Care includes all components of ILS Treatment.
2. **Oxygen:** 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient does not tolerate a mask. Be prepared to support the patient's respirations with BVM (or intubate) if necessary.
3. **Proventil (Albuterol):** 2.5mg in 3mL normal saline mixed with
4. **Ipratropium (Atrovent):** 0.5mg via nebulizer over **15 minutes.** Repeat Albuterol 2.5mg with Atrovent 0.5mg every 15 minutes as needed. In-line nebulizer may be utilized if the patient is unresponsive or in respiratory arrest.
5. **Do not administer Ipratropium (Atrovent) to patients with known allergy to Atropine, peanuts or soy.**
6. Transport as soon as possible.
7. Contact the receiving hospital as soon as possible.
Near Drowning Protocol

Near drowning results from submersion in water or other liquid for a period of time that does not result in irreversible death. The time interval of submersion that causes irreversible death is dependent on several factors such as: temperature of the water, the health of the victim and any trauma suffered during the event. All persons submerged 1 hour or less should be vigorously resuscitated in spite of apparent death. Initial care of the near drowning victim should begin in the water.

First Responder Treatment

First Responder Treatment 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 Routine Patient Treatment Protocol and Routine Trauma Treatment Protocol.
2. Make sure the scene is safe. Use appropriate personnel and equipment for rescue.
3. Establish and maintain spinal immobilization.
4. 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 clear the airway and support the patient's respirations with BVM if necessary.
5. Initiate CPR if indicated.
6. Treat respiratory and/or cardiac symptoms per the appropriate protocol.

BLS Treatment

BLS Treatment should be directed at conducting a thorough patient assessment, 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 and preparing the patient for or providing transport.

1. Includes all components of First Responder Treatment.
2. Initiate ALS intercept and transport as soon as possible.
3. Contact the receiving hospital as soon as possible.
4. Treat respiratory and/or cardiac symptoms per the appropriate protocol.

ILS Care

ILS Treatment should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.
1. Includes all components of *BLS Treatment*.
2. Initiate ALS intercept and transport as soon as possible.
3. Contact the receiving hospital as soon as possible.
4. Treat respiratory and/or cardiac symptoms per the appropriate protocol.

**ALS Treatment**

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

1. Includes all components of *ILS Treatment*.
2. Transport as soon as possible.
3. Contact the receiving hospital as soon as possible.
4. Treat respiratory and/or cardiac symptoms per the appropriate protocol.
Routine Trauma Care Protocol

Assessment and management of patients with injury or suspected injury shall be conducted in accordance with ITLSI PHTLS guidelines. Time from injury to definitive trauma center care is a critical factor in the morbidity and mortality of the injured patient. Scene times should be kept to a minimum and the patient should be promptly transported to the trauma center. *Trauma notification should be made via telemetry as soon as possible.*

First Responder, BLS, ILS, ALS Treatment

1. **Scene Assessment (Scene Size-Up)**
   - Ensure scene safety -identify any hazards *(e.g. fire, downed power lines, unstable vehicle, leaking fuel, weapons)*.
   - Determine the number of patients.
   - Identify the mechanism of injury (gunshot wound, vehicle rollover, high speed crash, ejection from the vehicle).
   - Identify special extrication needs, if any.
   - Call for additional resources if needed.

2. **Primary Survey (Initial Assessment)**
   - **The purpose of the primary assessment is for the prehospital provider to rapidly identify and manage life-threatening conditions:**
     - Obtain a general impression of the patient's condition.
     - Assess, secure and maintain a patent airway while simultaneously using C-spine precautions.
     - Assess breathing and respiratory effort:
       - Approximate respiratory rate.
       - Assess quality of respiratory effort (depth of ventilation and movement of air).
       - **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 suction the airway and support the patient's respirations with BVM if necessary.
       - Needle Chest Decompression (ALS only): if patient is in severe respiratory distress or cardiac arrest with *s/s* of tension pneumothorax.
     - Assess circulation:
       - Evaluate carotid and radial pulses.
       - Evaluate skin color, temperature and condition.
       - Immediately control major external bleeding.
     - Critical Decision (based on mechanism of injury & initial exam):
       - Limit scene time to 10 minutes or less if the patient has a significant mechanism of injury or meets "Load & Go" criteria.
Determine disability (level of consciousness):
- A - Alert
- V - Responds to verbal stimuli
- P - Responds to painful stimuli
- U - Unresponsive

Expose the patient:
- Cut the patient's clothing away quickly to adequately assess for the presence (or absence) of injuries.

3. Secondary Survey (Focused History & Physical Exam)
The secondary survey is a head-to-toe evaluation of the patient. The objective of this survey is to identify injuries or problems that were not identified during the primary survey.

- Examine the head:
  - Search for any soft tissue injuries.
  - Palpate the bones of the face & skull to identify deformity, depression, crepitus or other injury.
  - Check pupils for size, reactivity to light, equality, accommodation, roundness and shape.
- Examine the neck:
  - Examine for contusions, abrasions, lacerations or other injury.
  - Check for JVD, tracheal deviation, deformity.
  - Palpate the c-spine for deformity & tenderness.
- Examine the chest:
  - Closely examine for deformity, contusions, redness, abrasions, lacerations, penetrating trauma or other injury.
  - Look for flail segments, paradoxical movement & crepitus.
  - Auscultate breath sounds.
  - Watch for supraclavicular and intercostals retractions.
- Examine the abdomen:
  - Examine for contusions, redness, abrasions, lacerations, penetrating trauma or other injury.
  - Palpate the abdomen and examine for tenderness, rigidity and distention.
- Examine the pelvis:
  - Examine for contusions, redness, abrasions, lacerations, deformity or other injury.
  - Palpate for instability and crepitus.
- Examine the back:
  - Log roll with a minimum of 2 rescuers protecting the spine.
  - Look for contusions, abrasions, lacerations, penetrating trauma, deformity or any other injury.
  - Log roll onto long spine board and immobilize if patient meet spinal immobilization criteria.
- Examine the extremities:
  - Examine for contusions, abrasions, lacerations, penetrating trauma, deformity or any other injury.
  - Manage injuries en route to the hospital.
- Neurological exam:
• Calculate Glasgow Coma Scale (GCS)
• Reassess pupils
• Assess grip strength & equality and sensation.
• Calculate Revised Trauma Score (RTS)

• Vital signs:
  • Blood pressure
  • Pulse
  • Respirations
  • Pulse Oximetry

• History:
  • Obtain a SAMPLE history if possible.
  • Signs & symptoms
  • Allergies
  • Medications
  • Past medical history
  • Last oral intake
  • Events of the incident

• Interventions (en route)
  • Cardiac monitor
  • Blood glucose level
  • IV access / fluid bolus
  • Wound care
  • Splinting

4. Monitoring and Reassessment (Ongoing Assessment)
   • Evaluate effectiveness of interventions
   • Vital signs every 5 minutes
   • Reassess mental status (GCS) every 5 minutes
   • Reassess Revised Trauma Score (RTS) every 5 minutes

5. CONTACT MEDICAL CONTROL VIA TELEMETRY AS SOON AS POSSIBLE

Critical Thinking Elements

• Prompt transport with early Medical Control contact & receiving hospital notification will expedite the care of the trauma patient.

• IVs should be established en route to the hospital thereby not delaying transport of critical trauma patients (unless scene time is extended due to prolonged extrication).
• Trauma patients should be transported to the closest most appropriate trauma center. Medical Control should be contacted immediately if there is ANY question as to which trauma center the patient should be transported to.

<table>
<thead>
<tr>
<th>Eye Opening (E)</th>
<th>Verbal Response (V)</th>
<th>Motor Response (M)</th>
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<tbody>
<tr>
<td>4=Spontaneous</td>
<td>5=Normal conversation</td>
<td>6=Normal</td>
</tr>
<tr>
<td>3=To voice</td>
<td>4=Disoriented conversation</td>
<td>5=Localizes to pain</td>
</tr>
<tr>
<td>2=To pain</td>
<td>3=Words, but not coherent</td>
<td>4=Withdraws to pain</td>
</tr>
<tr>
<td>1=None</td>
<td>2=No words......only sounds</td>
<td>3=Decorticate posture</td>
</tr>
<tr>
<td></td>
<td>1=None</td>
<td>2=Decerebrate</td>
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Total = E+V+M
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<tr>
<th>Items</th>
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<td>3</td>
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Shock Protocol

Common signs and symptoms of shock include:
- Confusion
- Restlessness
- Combativeness
- ALOC
- Pallor
- Diaphoresis
- Tachycardia
- Tachypnea
- Hypotension

Conditions that may indicate impending shock include:
- Significant mechanism of injury
- Tender and/or distended abdomen
- Pelvic instability
- Bilateral femur fractures

"Load & Go" with any trauma patient with signs and symptoms of shock - on scene treatment should be minimal. Conduct a Primary Survey, manage the airway, take C-spine precautions & immobilize and control any life-threatening hemorrhage. Contact Medical Control as early as possible.

First Responder Treatment

First Responder Treatment 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 treatment in accordance with the Routine Patient Treatment Protocol and Routine Trauma Treatment 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. Control bleeding using direct pressure, pressure dressings and pressure points.

BLS Treatment

BLS Treatment should be directed at conducting a thorough patient assessment, 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 and preparing the patient for or providing transport.

1. BLS Treatment includes all components of First Responder Treatment.
2. Initiate ALS intercept and transport as soon as possible.
3. Contact Medical Control as soon as possible.

**ILS Treatment**

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

1. ILS Treatment includes all components of *BLS Treatment*.
2. **IV Fluid Therapy**: 500mL fluid bolus if needed to obtain a systolic BP of at least 100mmHg.
3. Initiate ALS intercept if needed and transport as soon as possible.
4. **Contact Medical Control** as soon as possible.

**ALS Treatment**

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

1. ALS Treatment includes all components of *ILS Treatment*.
2. If advanced airway control becomes necessary, maintain inline cervical immobilization. Consider first line use of airway adjuncts such as the King airway if intubation appears difficult, or if unable to strictly maintain inline cervical immobilization.
3. Transport as soon as possible.
4. **Contact Medical Control** as soon as possible.

**Critical Thinking Elements**

- Hypotension may not occur in the early stages of shock. However, aggressive therapy is indicated if there is a significant mechanism of injury and/or shock is suspected.
- IV access should be obtained en route and should not delay transport time.
- IV fluid bolus/flow rate should be regulated and patient response to fluid monitored closely.

Head Trauma Protocol
Injuries to the head may cause underlying brain tissue damage. Increased intracranial pressure from bleeding or swelling tissue is a common threat after head trauma.

Common signs and symptoms of increased intracranial pressure include:

- Confusion
- ALOC
- Dilated or unequal pupils
- Markedly increased systolic blood pressure
- Decreased pulse (Bradycardia)
- Abnormal respiratory patterns

Priorities for the treatment of head injury patients include airway management, maintenance of adequate oxygenation & blood pressure as well as appropriate C-spine control & immobilization.

**First Responder Treatment**

First Responder Treatment 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 *Routine Patient Treatment Protocol*.
2. Be prepared for vomiting and have suction readily available.
3. **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.
4. Control bleeding using direct pressure, pressure dressings and pressure points.

**BLS Treatment**

BLS Treatment should be directed at conducting a thorough patient assessment, 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 and preparing the patient for or providing transport.

1. BLS Treatment includes all components of *First Responder Treatment*.
2. Repeat vital signs, GCS & RTS every 5 minutes.
3. If patient has an altered mental status, perform blood glucose level test.
4. **Glucagon**: 1mg IM if blood sugar is < 60mg/dL and unable to establish an IV. May give Glucagon 2mg Intranasal if patient is combative or if it is unsafe to administer IM.
5. Initiate ALS intercept and transport as soon as possible.
6. Contact Medical Control as soon as possible.

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

1. ILS Treatment includes all components of BLS Treatment.
2. IV Fluid Therapy: 500mL fluid bolus if needed to obtain a systolic BP of 100mmHg.

**If signs of increased ICP are not present and the patient has an altered mental status:**

3. Perform blood glucose level test.
   - Dextrose 50%: 2Sg IV if blood sugar is < 60mg/dL.
   - Glucagon: 1mg IM if blood sugar is < 60mg/dL and unable to establish an IV. May give Glucagon 2mg Intranasal if patient is combative or if it is unsafe to administer IM.

4. Narcan: 2mg IV, 1M or SQ if no response to Dextrose within 2 minutes and narcotic overdose is suspected. May repeat 2mg IV, 1M or SQ if no response in S minutes. May give Narcan 2 mg IN if parenteral route is not feasible or is unsafe.
5. Initiate ALS intercept if needed and transport as soon as possible.
6. Contact Medical Control as soon as possible.

ALS Treatment

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

1. ALS Treatment includes all components of ILS Treatment.
2. IV Fluid Therapy: 500mL fluid bolus if needed to obtain a systolic BP of 100mmHg.

**If signs of increased ICP are not present and the patient has an altered mental status:**

3. Contact Medical Control as soon as possible.

Critical Thinking Elements

- Head trauma patients should receive oxygen to keep Sp02 > 95%, preferably via NRM. Patients with poor respiratory effort may require ventilation with a BVM at 8-10 breaths/min.

- Cushing's response refers to the ominous combination of markedly increased arterial blood pressure and resultant bradycardia indicating cerebral herniation.

- Avoid prophylactic hyperventilation of a head trauma patient as this can cause cerebral vasoconstriction with resultant cerebral hypoxia. However, if S/S of increased ICP are present, then controlled hyperventilation may be needed (with Medical Control order) until s/s of increased ICP have subsided:
  - 20 breaths/min for adults
- 25 breaths/min for children
- 30 breaths/min for infants
- Deeply comatose patients may require advanced airway placement (GCS < 8).
- Treat for hemorrhagic shock if the patient's systolic BP is < 100mmHg. Hypotension decreases cerebral perfusion and worsens brain injury and must be corrected.
Spinal Trauma Protocol

Injuries to the spine commonly result from mechanism of injury involving high kinetic energy. Any neurovascular impairment or spinal deformities are indicative of possible spinal trauma.

Mechanisms of injury suggesting possible spinal injury include:
- Falls
- Motor vehicle crashes (MVCs)
- Gunshot wounds to the head, neck or back
- Forceful blows to the head and neck

First Responder Treatment

First Responder Treatment 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 Routine Patient Treatment 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. Frequently reassess the patient's airway & ventilatory status.
4. Assess and record any pain on palpation of the spine, any motor/sensory deficits of the extremities, abnormal arm position, ptosis and/or priapism.
5. Assess skin for temperature which will initially be warm, flushed and dry (below the point of injury). Cover the patient and keep him/her warm.
6. Assess for neurogenic shock: decreased BP, decreased pulse, & decreased respiratory rate.
7. Fully immobilize the patient and protect paralyzed limbs by securing the patient to the backboard.

BLS Treatment

BLS Treatment should be directed at conducting a thorough patient assessment, 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 and preparing the patient for or providing transport.

1. BLS Treatment includes all components of First Responder Treatment.
2. Repeat vital signs, GCS & RTS every 5 minutes.
3. Initiate ALS intercept and transport as soon as possible.
4. **Contact Medical Control** as soon as possible.

ILS Treatment

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

1. ILS Treatment includes all components of *BLS Treatment.*
2. IV Fluid Therapy: 500mL fluid bolus if needed to obtain a systolic BP of at least 100mmHg.
3. Initiate ALS intercept if needed and transport as soon as possible.
4. **Contact Medical Control** as soon as possible.

**ALS Treatment**

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

1. ALS Treatment includes all components of *ILS Treatment.*
2. **Dopamine:** If the patient remains hypotensive. Begin infusion at 24gtts/min. Increase by 12gtts/min every 2 minutes to achieve and maintain a systolic BP of at least 100mmHg. Closely monitor vital signs.
   - Dopamine is provided premixed (400mg in 250mL D5W). This yields a concentration of 1600mcg/mL. The initial rate of infusion is 1-10mcg/kg/min which can be achieved with a 24gtts/min infusion rate.
3. Transport as soon as possible.
4. **Contact Medical Control** as soon as possible.
Traumatic Arrest Protocol

Resuscitation success rates of trauma patients in cardiac arrest are extremely poor, usually due to prolonged hypoxia. Efforts to resuscitate are more likely to be successful if EMS arrives early in the arrest, understands the differences between traumatic cardiac arrest patients & medical cardiac arrest patients and treatment is directed at identifying & treating the underlying cause. Traumatic arrest is usually caused by airway problems (unmanaged airway during unconsciousness), breathing problems (from chest trauma) and/or circulatory problems (internal or external hemorrhaging).

Patients who are found in asystole after massive blunt trauma or penetrating trauma of a vital organ are dead and may be pronounced dead at scene with the concurrence of Medical Control.

First Responder, BLS, ILS & ALS Treatment

First Responder, BLS, ILS & ALS Treatment should be focused on rapid assessment confirming that the patient is in cardiac arrest and determine if resuscitation will be attempted. Medical Control must be consulted for death determination on scene. If resuscitative efforts are going to be attempted, begin resuscitation immediately and "Load & Go" with the patient.

1. Rapidly assess to determine possible causes of the arrest and determine if resuscitation will be attempted.
2. Initiate cardiac arrest protocols and procedures.
3. Rapidly extricate, fully immobilize and "Load & Go".
4. "Load & Go" with any type of penetrating trauma.
5. BLS Treatment: Place a KING LTS-D Airway using in-line stabilization of the cervical spine or utilize basic airway control techniques.
6. ILS and ALS Treatment: If advanced airway control is indicated: May attempt intubation x 1 maintaining strict inline cervical immobilization. If airway appears difficult, or if inline cervical immobilization is not feasible during airway control, utilize the KING LTS-D Airway or utilize basic airway control techniques.
7. ILS Care and ALS Care: Obtain IV access en route to the hospital with a 14g or 16g IV catheter (if possible). A 2nd line may be established if time permits.
8. ILS Care and ALS Care: IV Fluid Therapy: 500mL fluid bolus to achieve and maintain a systolic BP of at least 100mmHg.
9. ALS Only: Needle chest decompression if chest trauma is present and/or the patient is in PEA and tension pneumothorax is suspected.
Field Triage Scheme

**Step One**
- Measure vital signs and level of consciousness
  - Glasgow Coma Scale: < 9
  - Systolic blood pressure: < 90 mm Hg
  - Respiratory rate: > 20 or < 4 breaths per minute
  - Age: < 60 (in adults) or < 1 year

  **Yes**
  - Take to a trauma center. Steps 1 and 2 attempt to identify the most seriously injured patients. These patients should be transported preferentially to the highest level of care within the trauma system.

  **No**
  - Assess mechanism of injury and evidence of high-energy impact.

**Step Two**
- All penetrating injuries to head, neck, torso, and extremities proximal to allow into knee
  - Facial injury
  - Two or more proximal fractures, extremity
  - Crushed, depressed, or mangled extremity

  **Yes**
  - Take to a trauma center. Steps 1 and 2 attempt to identify the most seriously injured patients. These patients should be transported preferentially to the highest level of care within the trauma system.

  **No**
  - Assess mechanism of injury and evidence of high-energy impact.

**Step Three**
- Falls:
  - Adults > 20 feet (one story is equal to 10 feet)
  - Children > 10 feet or two or three times the height of the child
  - High-risk fall crash
  - Injuries to the head, neck, torso, extremities proximal to allow into knee
  - Ejection from vehicle or pedestrian struck
  - Death in same passenger compartment
  - Vehicle telemetry data consistent with high risk of injury
  - Air or pedestrian struck by vehicle, run over, or hit by vehicle (deadly weapon x 25 yds)

  **Yes**
  - Transport to closest appropriate trauma center, which, depending on the trauma system, need not be the highest level trauma center.

  **No**
  - Assess special patient or system considerations.

**Step Four**
- **Adults**
  - Older adults**: Risk of injury death increases after age 65 years
  - Children: Should be triaged preferentially to pediatric-capable trauma centers
  - **Anticoagulation and bleeding disorders**
  - **Burns**
    - Without other trauma mechanism: transfer to burn facility
  - With trauma mechanism: transfer to trauma center
  - **Time-sensitive extremity injury**
  - **End-stage renal disease requiring dialysis**
  - **Pregnancy > 20 weeks**
  - **EAM$$**

  **Yes**
  - Contact medical control and consider transport to a trauma center or a specific resource hospital.

  **No**
  - Transport according to protocol.

When in doubt, transport to a trauma center.
Extremity Injury Protocol

Attention should be given to extremity injuries to limit further damage and discomfort for the patient. However, extremity care should never interfere with lifesaving decisions or interventions and should not delay transport of trauma patients.

Signs of extremity injury include:
- Pain
- Deformity
- Contusion
- Tenderness
- Swelling
- Instability
- Crepitus
- Absence of distal pulses

First Responder, BLS, ILS, ALS Treatment

Care should be focused on assessing the situation and initiating care to assure the patient is maintaining an airway, is breathing, has a perfusing pulse and beginning treatment for shock.

1. Render initial care in accordance with the Routine 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. Control any external bleeding:
   a) Apply direct pressure and pressure dressing.
   b) Elevate the extremity if possible.
   c) Use pressure points.
   d) Assess distal pulse, motor & sensation.
4. Splint musculoskeletal injuries:
   a) Immobilize the joints with a rigid splint above and below the injury for long bone injuries.
   b) Immobilize the long bones with a rigid splint above and below the injured site for joint injuries.
   c) Assure the joints and bones are immobilized sufficiently to stabilize the injured structures (especially when using a soft splint or pillow).
   d) Assess distal pulse, motor & sensation.
5. If the extremity is angulated and no distal pulse is present, reduce by gently applying manual traction until the pulse returns.
   a) Reassess distal pulse, motor and sensation.
6. Amputation cases:
   a) Control external bleeding.
b) Dress, bandage and/or splint the injured extremity.
c) Attempt to recover the severed part:
   - Wrap in sterile gauze, towel or sheet.
   - Wet dressing with sterile water or .9% Normal Saline.
   - Place severed part in waterproof bag or container and seal.
   - Place the bag/container in another container filled with ice or cold water.
   - DO NOT immerse the amputated part in any solutions.
   - DO NOT allow the tissue to freeze.
   - Transport the container with the patient.

7. Initiate ALS intercept if needed and transport as soon as possible.
8. Contact the receiving hospital as soon as possible or Medical Control if necessary.

**ILS Treatment**

1. ILS Treatment includes all components of *BLS Treatment*.
2. **IV Fluid Therapy**: 500mL fluid bolus if the patient is hypotensive to obtain a systolic BP of at least 100mmHg.
3. Initiate ALS intercept if needed and transport as soon as possible.
4. Contact the receiving hospital as soon as possible or Medical Control if necessary.

**ALS Treatment**

1. ALS Treatment includes all components of *ILS Treatment*.
2. **Morphine Sulfate**: 2-5mg IV every 5 minutes to reduce the patient's anxiety and severity of pain. If unable to establish IV access, may administer Morphine 2-5mg 1M every 15 minutes. *If patient is allergic to morphine use Fentanyl.*

   **OR**

3. **Fentanyl**: 50mcg IV over 2 minutes for pain. Fentanyl 50mcg IV may be repeated one time in 5 minutes to a total of 100mcg. If unable to establish IV access, may administer Fentanyl 50 mcg IM. May be repeated one time in 15 minutes to a total of 100mcg.
4. **Ondansetron** *(Zofran)*: 4mg PO let dissolve on tongue for nausea and/or vomiting.
5. Contact the receiving hospital as soon as possible or Medical Control if necessary.

**Critical Thinking Elements**

- In patients with known renal failure, the Fentanyl dose must be reduced to 25mcg. The dose may be repeated one time to a maximum m dose of 50 mcg.
Tourniquet Protocol

Recent military campaigns have provided increased medical evidence as well as necessitated improved design of tourniquets that can be rapidly deployed in the prehospital setting. Increasing evidence shows that tourniquets can be useful tools in the prehospital treatment of some critically injured patients if applied for short periods of time without creating an absolute desolate outcome for the extremity where applied.

Contraindications for tourniquet use:
- Any bleeding that can be managed by direct pressure, elevation, and/or pressure points.
- Major bleeding to a non-extremity.

Indications for tourniquet use:
- Severe, ongoing hemorrhage from an extremity not responsive to pressure point, direct pressure and/or elevation.
- MVC with partial extremity amputation or extreme soft tissue injury.
- Bleeding from ruptured graft or fistula.

First Responder, BLS, ILS, ALS Treatment

The CAT (Combat Application Tourniquet) is the recommended tourniquet of choice.
1. Render care in accordance with Routine Trauma Protocol and Shock 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. Recognition that bleeding is uncontrollable with direct pressure, elevation and/or pressure points and begin application of CAT.
   a) Wrap CAT around extremity proximal to bleeding site, do not cover joints.
   b) Pass Self Adhering Band through inside slit of the Friction Adapter Buckle.
   c) Pass Self Adhering Band through outside slit of Buckle.
   d) Pull Self Adhering Band tight and Secure back against itself.
   e) Twist Tension Rod until bleeding stops.
   f) Lock Tension Rod in the Windlass Clip.
   g) Secure Tension Rod with the Windlass Clip Strap.
4. Make note of application time (on patient and/or on tourniquet).
5. Use great care when moving patient.
6. If symptoms indicate, CAT should be applied before any patient movement.
7. Continuously reassess for hemostasis.
Special Note:

If transport to trauma center will be greater than 30 minutes, reassess tourniquet for possible removal. Consult with Medical Control regarding use or removal. Removal must have Medical Control Order.

Critical Thinking Elements

- Following tourniquet application, never cover or hide the tourniquet from view.
- Place tourniquet in clear view e.g. chest, down arm, etc. label the patient.
- If applicable, label the medical or triage tag.
- If the patient is conscious, tell him/her to tell caregivers of the tourniquet.
- If patient is part of an MCI, patient should be triaged as a yellow at minimum.

Hemostatic Agent (QuickClot)
Elective Protocol for All EMS Levels

Description
QuickClot Combat Gauze is a standard roller or Z-fold gauze impregnated with a clotting agent such as kaolin (a clay containing the active ingredient aluminum silicate) which works on contact with blood to initiate the clotting process (intrinsic pathway) by activating factor XII. This reaction leads to the transformation of factor XII to its' activated form XIIa, which triggers the clotting cascade.

Used in conjunction with direct pressure and wound packing these products lead to hemostasis.

Onset and Duration

- Onset of action is 3-5 minutes after wound exposure and clotting action remains unless the dressing and/or the clot is disturbed.

Indications

- Active bleeding from open wounds with that cannot be controlled with direct pressure. Most often involving wounds to the scalp, face, neck, axilla, groin or buttocks.

Contraindications

- Not to be used to treat internal bleeding such as intra-abdominal, intra-thoracic or vaginal bleeding.
- Not to be used for minor bleeding that can be controlled by direct pressure.

Precautions

- Bleeding control is achieved via combination of direct pressure and hemostatic gauze packing for a minimum of 3-5 minutes.
- If bleeding soaks through the dressing, apply additional dressings while continuing direct pressure. **Do not remove dressings from the injured site.** This will disrupt any clots that have already formed.
- Stabilize patient per General Trauma Care Protocol.
- If a tourniquet is indicated (refer to Tourniquet Protocol), it should be applied first, before application of hemostatic agent.
- **DO NOT USE LOOSE GRANULAR OR POWDERED HEMOSTATIC AGENTS.** These are out of date and will produce exothermic reactions that may cause burns and additional tissue damage.

Procedure

1. Deploy the hemostatic agent via external application, or wound packing directly onto the wound and then apply direct consistent pressure for at least 3 minutes over the bleeding source. **DO NOT lift or remove the dressing** once it has been applied.
2. Wrap the hemostatic dressing with another suitable dressing such as Kerlex roller gauze, ace wraps, etc. in order to maintain direct pressure.
3. Place the empty hemostatic agent packaging into the outer dressing to notify the receiving facility of its presence.
Spinal Immobilization Procedure

Any type of patient manipulation may be dangerous during the care of a suspected spinal injury patient. Spinal injury should be suspected in all patients presenting with:

- Head, neck or facial trauma (i.e. injury above the clavicles)
- ALOC with unknown history of events
- Complaints of neck or back pain unrelated to the patient's medical history
- Complaint of head pain related to trauma
- Physical findings suggesting neck or back pain
- Unknown mechanism of injury
- High mechanism of injury despite complaints
- Suspected deceleration injuries

General Spinal Management

1. Render initial care according to Routine Trauma Care.
2. Immediately establish manual stabilization of the cervical spine.
   a. Approach the patient in a manner that prevents the patient from moving his/her head & neck to see you or answer your questions.
   b. Stabilize the patient's head & neck in a neutral in-line position by grasping the patient's head along the lateral aspects (and perform a modified jaw thrust if indicated).
3. Apply a rigid C-collar after airway, breathing and circulatory status have been assessed.
4. Log-roll the patient onto a long backboard. Assess and document neurovascular status before and after immobilization.
5. Secure the patient's torso and extremities to the backboard using spider straps or belts.

Spinal Management of Patients in a Sitting Position

1. Patients found in a sitting position that have a suspected spinal injury should be secured to an extrication device (i.e. KED) prior to being moved.
2. Patients who meet "Load & Go" criteria should be moved using the rapid extrication technique. Proper manual stabilization must be maintained throughout the extrication.
   a. Secure neutral, in-line stabilization of the head & neck (as per General Spinal Management).
   b. Keeping the patient's spine in a neutral position, pivot the patient in order to place a long backboard under the patient's buttocks and behind his/her back.
   c. Lower the patient to the long backboard and secure (as per General Spinal Management).
Spinal Precaution VS. Spinal Immobilization

Does patient meet Field Trauma Criteria?

Yes

Does patient have only burn (*not explosion/blast) injuries?

No

Does patient have only penetrating trauma without identified neuro deficits?

Yes

No immobilization required

No

Does patient have unreliable history of events (intoxicated/altered)?

Yes

Full spinal immobilization

No

Is patient in age-extreme group (≤6 or ≥65)?

Yes

No

Does patient have a distracting injury?

No

C-collar only; no back board required; move with spinal precautions

Yes

Does patient have cervical/spinal tenderness?

No

No immobilization

Yes

Does patient have an abnormal sensory or motor exam?

No

No immobilization

Yes

No immobilization required
Needle Thoracentesis (Needle Chest Decompression) Procedure ALS Only

Thoracic decompression involves placement of a needle through the chest wall of a critical patient who has a life-threatening tension pneumothorax and is rapidly deteriorating due to intrathoracic pressure.

Signs and symptoms of tension pneumothorax include:

- Restlessness and agitation
- Severe respiratory distress
- Increased airway resistance with ventilations
- JVD
- Tracheal deviation
- Subcutaneous emphysema
- Unequal breath sounds
- Absent lung sounds on the affected side
- Hyper resonance to percussion on the affected side
- Hypotension
- Cyanosis
- Respiratory arrest
- Traumatic cardiac arrest

Initiate Routine Trauma Care. If a tension pneumothorax is identified:

1. Locate the 2nd intercostal space in the midclavicular line on the side of the pneumothorax.
2. Cleanse the site with providone-iodine preps and maintain as much of a sterile field as possible.
3. Attach a 10-20mL syringe to a 2 inch, 14g IV catheter.
4. Puncture the skin perpendicularly, just superior to the 3rd rib (in the 2nd intercostal space). Direct the needle just over the 3 rib and into the thoracic cavity. A "pop" should be felt as well as a "rush of air" along with the plunger of the syringe moving outward.
5. Advance the catheter while removing the needle and syringe.
6. Attach extension tubing, gate valve and one way valve device from pneumothorax kit.
7. Secure the catheter in the chest wall with a dressing a tape.
8. Monitor the patient closely and continue to reassess.

Critical Thinking Elements

- Nerve bundles and blood vessels are located under the ribs and puncturing them could cause nerve damage and extensive bleeding. Ensure that the puncture is being made over the top of the 3 rib.
Unstable Pelvic Fracture Protocol

Pelvic fractures and more specifically unstable pelvic fractures have some of the highest morbidity rates of all traumas. Patients who have signs or symptoms of an unstable pelvic injury need that injury stabilized early in treatment to limit internal bleeding.

Signs of an unstable pelvic injury include:

- Pain in the abdomen and/ or pelvic region
- Pain to the super pubic region upon light palpation
- Inability to relax lower extremities straight out
- Uneven lower extremities
- Bruising over abdomen
- Distended abdomen

First Responder, BLS, ILS, ALS Treatment

Care should be focused on assessing the situation and initiating care to assure the patient is maintaining an airway, is breathing, has a perfusing pulse and beginning treatment for shock.

1. Render initial care in accordance with the Routine Patient Treatment 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. Use great care when moving patient.
4. If symptoms indicate Pelvic Sling can be applied before patient is moved from position found.
5. Apply Pelvic Sling
   a) Remove any objects from patient's pockets and pelvic area.
   b) Place Sling with white side closest to patient beneath the hips (trochanters). Do not apply over the Illiac Crest.
   c) Place black strap through buckle and pull completely through until snug.
   d) Hold orange strap and pull black strap in opposite direction until you hear and feel one buckle click. A second click after the device is secured is not uncommon.
   e) Must have MEDICAL CONTROL ORDER for Pediatrics and adolescents. The standard sized device should fit most of the adult population but there are three sizes of the device.
OB/GYN Protocols
Childbirth Protocol

Childbirth is a natural process. EMS providers called to a woman in labor should determine whether there is enough time to transport the expected mother to the hospital or if delivery is imminent. If childbirth appears imminent, immediately prepare to assist with the delivery.

Treatment should be focused on assessing the situation, initiating routine patient care and preparing for or providing patient transport. Special attention should be given to the privacy of the mother and concerns of immediate family members should be addressed.

1. Render initial care in accordance with the Routine 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. Obtain a history on the patient including:
   - Gravida (# of pregnancies)
   - PARA (# of live births)
   - Expected delivery date
   - Length of previous labor
   - Complications of previous pregnancies
   - Onset of contractions
   - Prenatal care (if any)
4. Allow the expectant mother to remain in a position that is most comfortable.
5. If delivery is not imminent, transport the patient on her left side.
6. Determine if there is adequate time to transport:
   a) Assess the nature, extent and time of contractions.
   b) Assess the patient for high-risk factors.
   c) Assess the status of the membranes and any discharge.
   d) Assess for pushing with contractions.
   e) Take into consideration the length of previous labor.
7. If delivery is imminent:
   a) DO NOT ATTEMPT TO RESTRAIN OR DELAY DELIVERY
   b) Position the mother supine on a flat surface if possible.
   c) Use full PPE - gloves, gown & goggles.
8. **(ILS & ALS) IV Fluid Therapy**: 500mL fluid bolus if the patient is hypotensive to obtain a systolic BP of at least 100mmHg.
9. Prepare for delivery:
   a) Control delivery of the head so that it does not emerge too quickly. Support the infant's head as it emerges and protect the perineum with gentle hand pressure.
   b) Puncture the amniotic membrane with gentle finger pressure if it is still intact and visible outside the vagina.
c) Assess for nuchal cord and, if present, gently remove the cord from around the newborn’s neck.

d) Suction the mouth, then nose of the newborn with a bulb syringe as soon as the head is delivered.

e) As the shoulders emerge, guide the head & neck downward to deliver the anterior shoulder. Support and lift the head & neck slightly to deliver the posterior shoulder.

f) Ensure a firm hold on the baby as the rest of the newborn's body delivers. g) Keep the newborn level with the mother’s vagina until the cord stops pulsating and is double clamped.

Infant Post-Partum Care

1. Begin the *Emergency Childbirth Record*.
2. Continue to suction the nose and mouth. Spontaneous respirations should begin within 15 seconds.
   - If spontaneous respirations are not present, begin artificial ventilations with BVM & 100% O2 at 30-40 vpm.
   - If no brachial pulse is present OR the pulse is less than 100 bpm, begin CPR.
3. Dry the newborn and wrap in a warm blanket, keeping the baby at the level of the mother's vagina until the cord is clamped and cut.
4. After the umbilical cord stops pulsating, clamp the cord at 3" & at 4" from the newborn's abdomen and cut between the clamps with the sterile scalpel found in the OB kit.
5. Assess the cord for bleeding and note the number of vessels present.
6. Obtain an APGAR score at 1 minute and again at 5 minutes after delivery.
7. Place ID tags on the mother and infant with the following information:
   - Name of the mother
   - Sex of the infant
   - Date and time of delivery
8. DO NOT separate the mother and infant unless both have ID tags.

Post-Partum Care of the Mother

1. The placenta should deliver within 5-20 minutes. Collect the placenta in a plastic bag and bring it to the hospital with the mother. DO NOT pull on the cord to facilitate delivery of the placenta.
2. Do not delay transport for delivery of the placenta.
3. If the perineum is torn and bleeding, apply direct pressure with a 5x9 dressing or trauma dressing and have the patient bring her legs together.
4. Massage the uterus until firm.
   *To massage the uterus, place one hand with fingers fully extended just above the mother's*
pubic bone and use the other hand to press down into the abdomen and gently massage the uterus approximately 3 to 5 minutes until it becomes firm.

Documentation Requirements
1. Completed *Emergency Childbirth Record*
2. Document the date, time and place of delivery
3. Presence or absence of a nuchal cord
   - If nuchal cord is present, document how many times the cord was wrapped around the baby’s neck.
4. Appearance of the amniotic fluid
5. Time the placenta was delivered and its condition
6. APGAR score at 1 minute and 5 minutes
7. Any resuscitation / treatment rendered and newborn response to treatment

High-Risk Pregnancy Factors
- Lack of prenatal care
- Drug abuse
- Teenage pregnancy
- Diabetes
- Hypertension
- Cardiac disease
- Previous breech or C-section delivery
- Pre-eclampsia / Toxemia / Eclampsia
- Twins / Multiple birth pregnancy
Emergency Childbirth Record
(Complete and attach to the newborn patient care record)

1. Presentation (head or feet): ________________________________________________________

2. Date of Birth:____________________________________________________________________

3. Time of Birth (military time): _____________________________________________________

4. Nuchal Cord: YES NO # of times cord wrapped around neck: __________________________

5. Time membranes ruptured (military time): __________________________________________

6. Appearance of amniotic fluid: CLEAR (Cloudy) MECONIUM BLOOD-TINGED

7. APGAR Score: Must be completed at 1 minute and again at 5 minutes.

<table>
<thead>
<tr>
<th>Element</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>1 minute Score</th>
<th>5 minute Score</th>
</tr>
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<tbody>
<tr>
<td>Appearance (Color)</td>
<td>Body and extremities blue, pale</td>
<td>Body Pink, extremities blue</td>
<td>Completely Pink</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulse rate</td>
<td>Absent</td>
<td>&lt; 100 bpm</td>
<td>&gt; 100 bpm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grimace (Irritability)</td>
<td>No response</td>
<td>Grimace</td>
<td>Cough, sneeze, cry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity (Muscle tone)</td>
<td>Limp</td>
<td>Some flexion of extremities</td>
<td>Active motion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respirations</td>
<td>Absent</td>
<td>Slow and irregular</td>
<td>Strong cry</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TOTAL SCORE:

8. Time placenta delivered (military time):________________________ INTACT NOT INTACT

9. Number of Vessels in cord:____________

10. Infant resuscitation: STIMULATION only Oxygen 02 with BVM

   • CPR  Time CPR Began:___________ Time CPR terminated_____________

11. Remarks:______________________________________________________________________
12. Signature or Paramedic/EMT 1. ______________________ 2. ______________________
Critical Thinking Elements

- Lower than normal blood pressure and higher than usual heart rate are normal vital sign changes with pregnancy.

- Signs & symptoms of shock in the pregnant patient include a systolic BP less than 90mmHg, lightheadedness and ALOC.

- Average labor lasts 8-12 hours but can be as short as 5 minutes.

- The desire to push during contractions is an indicator that delivery is imminent.

- Be respectful of the expected mother’s privacy.

- Assess the patient for peripheral edema. This may indicate Pre-eclampsia / Eclampsia. Monitor patient closely and watch for seizure activity.

- Tag the mother and baby with the same information by wrapping tape around their wrists.

- Green or brown amniotic fluid indicates the presence of Meconium (fetal stool) and should be reported immediately to the receiving facility staff.
Obstetrical Complications Protocol

Obstetrical complications can rapidly lead to hypovolemic shock and threaten the life of the mother and child. Care should be focused on assessing the situation, initiating routine patient care and beginning treatment for shock. Monitor vitals closely.

First Responder, BLS, ILS, ALS Treatment

General Guidelines

1. Render initial care in accordance with the Routine Patient Treatment 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. Frequently reassess the patient's airway & ventilatory status.

Placenta Previa

Placenta previa occurs as a result of abnormal implantation of the placenta on the lower half of the uterine wall. Bleeding occurs when the lower uterus begins to contract and dilate in preparation for labor and pulls the placenta away from the uterine wall. The hallmark of placenta previa is the onset of painless bright red vaginal bleeding, usually in the 3rd trimester of pregnancy.

1. Note the amount of bleeding.
2. Place the patient on her left side.
3. Load and transport as soon as possible.
4. (ILS & ALS) IV Fluid Therapy: 500mL fluid bolus if the patient is hypotensive to obtain a systolic BP of at least 100mmHg.
5. Contact Medical Control as soon as possible.

Abruptio Placentae

Abruptio placenta is the premature separation of a normally implanted placenta from the uterine wall. Signs and symptoms can vary depending on the extent and character of the abruption.

Central Abruptio (partial abruption): Characterized by a sudden sharp, tearing pain and development of a stiff, board like abdomen but no vaginal bleeding (blood is trapped between the placenta and the uterine wall).

Complete Abruptio Placentae: Characterized by massive vaginal bleeding and profound maternal
hypotension.
1. Note the amount of bleeding.
2. Place the patient on her left side.
3. Load and transport as soon as possible.
4. (BLS) Initiate ALS intercept.
5. (ILS & ALS) IV Fluid Therapy: 500mL fluid bolus if the patient is hypotensive to obtain a systolic BP of at least 100mmHg.
6. Establish a 2\textsuperscript{nd} IV en route if time permits.
7. Contact Medical Control as soon as possible.

Pre-Eclampsia and Eclampsia

\textit{Pre-eclampsia} is defined as an increase in systolic blood pressure by 30mmHg and/or a diastolic increase of 15mmHg over baseline on at least two occasions at least 6 hours apart. \textit{Pre-eclampsia} is most commonly seen in the last 10 weeks of gestation and is thought to be caused by abnormal vasospasm.

\textit{Pre-Eclampsia}: Characterized by hypertension and edema to the hands and face (and protein in the urine).

\textit{Severe Pre-Eclampsia}: Characterized by marked hypertension (160/100 or higher), generalized edema, headache, visual disturbances, pulmonary edema and a dramatic decrease in urine output (along with a significant increase of protein in the urine).

\textit{Eclampsia}: Characterized by generalized tonic-clonic seizure activity often preceded by flashing lights or spots before the eyes. The development of right upper quadrant pain or epigastric pain can also indicate impending seizure.

\textbf{Note}: The risk of fetal mortality increases by 10% with each maternal seizure.
1. Assure minimal CNS stimulation to prevent seizures (\textit{i.e.} do not check papillary light reflex).
2. Place the patient on her left side.
3. Load and transport as soon as possible.
4. (BLS) Initiate ALS intercept.
5. (ILS & ALS) IV Fluid Therapy: TKO.
6. (ILS) Midazolam (Versed): 5 mg intranasal for seizure activity. May repeat in 5 minutes if no response to a total of 10 mg (Contact Medical Control)
7. (ALS) 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.
8. OR
9. Midazolam (Versed): 2mg IV \textit{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. May give 10 mg
Intranasal if parenteral route not feasible or is unsafe.

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

**Ectopic pregnancy**

_Ectopic Pregnancy_ refers to the abnormal implantation of the fertilized egg outside of the uterus, usually in the fallopian tube. It can be a life-threatening condition and accounts for approximately 10% of maternal mortality.

**First Responder, BLS, ILS, ALS Treatment**

Ectopic pregnancy presents as abdominal pain which starts out as diffuse tenderness and then localizes as a sharp pain in the lower abdomen on the effected side. Assume that any female of childbearing age with lower abdominal pain is experiencing an ectopic pregnancy.

1. Place the patient on her left side and transport as soon as possible.
2. *(BLS)* Initiate ALS intercept.
3. *(ILS & ALS)* IV Fluid Therapy: 500mL fluid bolus if the patient is hypotensive to obtain a systolic BP of at least 100mmHg.
4. **Contact Medical Control** as soon as possible.
Abnormal Delivery Protocol

First Responder, BLS, ILS, ALS Treatment

Abnormal delivery situations can be especially challenging in the pre-hospital setting. Care should be focused on initiating Routine Patient Care to treat for shock and rapid transport to the hospital.

Breech Presentation

A breech presentation is the term used to describe a situation in which either the buttocks or both feet present first.

1. Render initial care in accordance with the Routine Patient Treatment 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. Be prepared to support the patient's respirations with BVM if necessary.
3. Load and transport as soon as possible.
4. (BLS) Initiate ALS intercept.
5. Never attempt to pull the baby from the vagina by the trunk or legs.
6. As soon as the legs are delivered, support the baby's body (wrapped in a towel).
7. After the shoulders are delivered, gently elevate the trunk and legs to aid in the delivery of the head.
8. The head should deliver in 30 seconds. If it does not -reach 2 fingers into the vagina to locate the infant's mouth. Press the vaginal wall away from the baby's mouth to provide unrestricted respirations.
9. Contact Medical Control as soon as possible.

Prolapsed cord

A prolapsed cord occurs when the umbilical cord precedes the fetal presenting part. This causes the cord to be compressed between the fetus and the pelvis and blocks fetal circulation. Fetal death will occur quickly without prompt intervention.

1. Render initial care in accordance with the Routine Patient Treatment 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. Be prepared to support the patient's respirations with BVM if necessary.
3. (BLS) Initiate ALS intercept.
4. Elevate the mother's hips.
5. Do not pull on the cord and do not attempt to push the cord back into the vagina.
6. Place a gloved finger/hand in the vagina between the pubic bone and the presenting part with the cord between the fingers and exert counter pressure against the presenting part.
7. Palpate the cord for pulsations.
8. Keep the exposed cord warm and moist.
9. Keep the hand in position and transport immediately.
10. Contact Medical Control as soon as possible.
Limb presentation

Although relatively uncommon, the baby may be lying transverse across the uterus. In these cases, an arm or leg is the presenting part protruding from the vagina and will require delivery by cesarean section. **Under no circumstances should you attempt a field delivery with a limb presentation.**

1. Render initial care in accordance with the *Routine Patient Treatment 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. Be prepared to support the patient's respirations with BVM if necessary.
3. (BLS) Initiate ALS intercept.
4. Elevate the mother's hips.
5. Avoid touching the limb (doing so may stimulate the infant to gasp). **Do not pull on the extremity and do not attempt to push the limb back into the vagina.**
6. **Contact Medical Control** as soon as possible.
Rape/Sexual Assault Protocol

Rape and sexual assault are acts of violence and may be associated with traumatic injuries, both external and internal. A thorough assessment of the patient's condition should be done and special attention should be given to the patient's mental health needs as well.

First Responder, BLS, ILS, ALS Treatment

Care should be directed at conducting a thorough patient assessment, 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 and preparing the patient for or providing transport.

1. Render initial care in accordance with the Routine Patient Treatment 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. Treat injuries according to the appropriate protocol.
4. Survey the scene and give special consideration to preserving any articles of evidence on or around the patient.
   - Strongly discourage the patient from urinating, washing/showering or changing clothes.
   - Collaborate with police to determine what articles (*i.e.* clothing) will be transported with the patient.
   - **Do not** physically examine the genital area unless there are obvious injuries that require treatment.
   - All linen used by the patient should be left with the patient in the Emergency Department.
5. Transport the patient and notify law enforcement of patient destination.
6. The following information / telephone numbers regarding services available to victims of abuse shall be offered to all victims of abuse, whether they are treated & transported or if they refuse treatment & transport to the hospital:
Crime Victims Compensation Program
(800)228-3368

Prairie Center Against Sexual Assault
(217) 753-8081/ (217) 744-2560
3 West Old State Capitol Springfield, IL 62701
Rape/Sexual Assault Protocol

The use of drugs to facilitate a sexual assault is occurring with increasing frequency. These drugs can render a person unconscious or weaken the person to the point that they cannot resist their attacker. Some of the drugs can also cause amnesia and the patient will have no memory of the assault. Date rape drugs have a rapid onset and varying duration of effect. It is important for prehospital personnel to be aware of these agents as well as their effects.

Date Rape Drugs

**Rohypnol** - A potent benzodiazepine that produces a sedative effect, amnesia, muscle relaxation and slowing or psychomotor response. It is colorless, odorless & tasteless and can be dissolved in a drink without being detected. Street names include: Ruffies, R2, Roofies, Forget-Pill and Roche.

**GHB** - An odorless, colorless liquid depressant with anesthetic-type qualities. It causes relaxation, tranquility, sensuality and loss or inhibitions. Street names include: Liquid Ecstasy, and Liquid X

**Ketamine** - A potent anesthetic agent that is chemically similar to LSD. It causes hallucinations, amnesia and dissociation. Street names include: K, Special K, Jet and Super Acid.

**Ecstasy** - Causes psychological difficulties including confusion, depression, sleep problems, severe anxiety and paranoia. It can also cause physical symptoms including muscle tension, involuntary teeth clenching, nausea, blurred vision, faintness, chills and sweating. Street names include: Beans. Adam, XTC, Roll. E, M and X.

Critical Thinking Elements

- Carefully and objectively document all of your findings including a thorough description of how & where the patient was found, all injuries/assessment findings and patient history.

- If a patient refuses treatment, refer to the Patient Right of Refusal Policy.

- Request local law enforcement if they have not already been called to the scene.
Aberrant Situations
Domestic Abuse and Elder Abuse/Neglect Protocol

Illinois law establishes requirements that any person licensed, certified or otherwise authorized to provide healthcare shall offer immediate and adequate information regarding services available to abuse and neglect victims.

Abuse is defined as physical, mental or sexual injury to (a child or) eligible adult. An eligible domestic partner is defined as a spouse or person who resides in a domestic living situation with another individual suspected of abuse. EMS personnel should not rely on another mandated reporter to file a report on the victim's behalf.

First Responder, BLS, ILS, ALS Treatment
Care should be directed at conducting a thorough patient assessment, 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 and preparing the patient for or providing transport.

1. Render initial care in accordance with the Routine Patient Treatment Protocol.
2. Maintain control of the scene and request law enforcement if they have not already been called.
3. Survey the scene for evidence of factors that could adversely affect the patient's welfare:
   - Environmental
   - Interaction with family members
   - Discrepancies in history of events
   - Injury patterns that do not correlate with the history of patient use and mobility
   - Signs of intentional injury or emotional harm
4. Treat injuries and/or illness according to protocol.
5. Initiate transport as soon as possible.

Reporting Methods
The following telephone numbers regarding services available to victims of abuse shall be offered to all victims of abuse whether they are treated & transported or if they refuse treatment & transportation to the hospital:

- Elderly Abuse Hotline: 1-800-559-7233
- Crime Victims Compensation Program: 1-800-228-3368
Behavioral Emergencies/Chemical Restraint Protocol

Behavioral episodes may range from despondent and withdrawn behavior to aggressive and violent behavior. Behavioral changes may be a symptom of a number of medical conditions including head injury, trauma, substance abuse, metabolic disorders, stress and psychiatric disorders. Patient assessment and evaluation of the situation is crucial in differentiating medical intervention needs from psychological support needs.

First Responder Treatment
First Responder Treatment 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 assuring personal safety.

1. Render initial care in accordance with the Routine Patient Treatment Protocol.
2. Maintain control of the scene and request law enforcement if needed.

BLS Treatment

BLS Treatment should be directed at conducting a thorough patient assessment, initiating routine patient care to assure that the patient has a patent airway, is breathing and has a perfusing pulse as well as assuring personal safety and preparing the patient for or providing transport.

1. BLS Treatment includes all components of First Responder Treatment.
2. Determine if the patient is a threat to self or others.
3. Contact Medical Control as early as possible if restraints are needed. An order for restraints is a must.
4. Initiate transport as soon as possible.

ILS Treatment

ILS Treatment should be directed at continuing or establishing care, conducting a thorough patient assessment, ensuring personal safety and preparing for or providing patient transport.
1. ILS Treatment includes all components of BLS Treatment.
2. Initiate transport as soon as possible.

**ALS Treatment**

ALS Treatment should be directed at continuing or establishing care, conducting a thorough patient assessment, ensuring personal safety and preparing for or providing patient transport.

1. ALS Care includes all components of ILS Treatment.
2. **Midazolam (Versed):** 2mg IV for sedation *if absolutely necessary.* Contact Medical Control for further orders.
   
   OR
   
   **Midazolam (Versed):** 5mg IM sedation *if absolutely necessary and attempts at IV access have been unsuccessful.* Contact Medical Control for further orders.
3. Initiate transport as soon as possible.

**Critical Thinking Elements**

- Document the patient's behavior, statements, actions and surroundings.
- Verbally attempt to calm and/or re-orient the patient to reality.
- If restraints are used, thoroughly document the reasons for applying restraints, time of application, condition of the patient before and after application, method of restraint and any law enforcement involvement, including any use of law enforcement equipment (e.g. handcuffs) and the time Medical Control was contacted.
- Consider medical etiologies of apparent behavioral disorders such as hypoxia, stroke/head bleed, substance abuse/overdose, and hypoglycemia.
Petitioning an Emotionally Disturbed Patient Policy

EMS providers should consider the mental health needs of a patient who appears emotionally or mentally incapacitated. This involves cases that the EMS provider has reasonable cause or evidence to suspect a patient may intentionally or unintentionally physically injure himself/herself or others, is unable to care for his/her own physical needs, or is in need of mental health treatment against his/her will.

This does not include a person whose mental processes have merely been weakened or impaired by reason of advanced years and the patient is under the supervision of family or another healthcare provider, unless the family or healthcare provider has activated EMS for a specific behavioral emergency.

1. Attempt to persuade the patient that there is a need for evaluation and compel him/her to be transported to the hospital.
2. If persuasion is unsuccessful, contact Medical Control and relay the history of the event. Clearly indicate your suspicions and/or evidence and have the base station physician discuss the patient’s needs with the parties involved in the situation.
3. The EMS crew will then follow the direction of the base station physician in determining the disposition of the patient or termination of patient contact. Another agency’s or party’s opinion should not influence the EMS provider’s assistance to a mental health need.
4. Under no circumstances does transport of the patient, whether voluntarily or against his/her will, commit the patient to a hospital admission. It simply enables the EMS providers to transport a person suspected to be in need of mental health treatment.
5. If a patient is combative or may harm self or others, call law enforcement for assistance and follow the Patient Restraint Policy.
Patient Restraint Policy

Patients will only be restrained if clinically justified. The use of restraints is only utilized if the patient is violent and may cause harm to themselves or others. Physical and/or chemical restraints are a last resort in caring for the emotionally disturbed patient.

1. To safely restrain the patient, use a minimum of 4 people.
2. **Contact Medical Control** as soon as possible for an order / guidance.
3. If available, may use police protective custody.
4. Explain the procedure to the patient (and family) if possible. The team leader should be the person communicating with the patient.
5. If attempts at verbally calming the patient have failed and the decision is made to use restraints, do not waste time bargaining with the patient.
6. Remember to remove any equipment from your person which can be used as a weapon against you (e.g. trauma shears).
7. Assess the patient and surroundings for potential weapons.
8. Approach the patient, keeping the team leader near the head to continue communications and at least one person on each side of the patient.
9. Move the patient to a backboard or the stretcher.
10. Place the patient supine and place **soft, disposable restraints** on 2-4 limbs and fasten to the backboard or stretcher. Avoid restraining the patient prone if at all possible.
11. Transport as soon as possible.
12. Document **circulation checks** every 15 minutes (of all restrained limbs) and **thoroughly document the reasons for applying restraints, time of application, condition of the patient before and after application, method of restraint and any law enforcement involvement, including any use of law enforcement equipment (e.g. handcuffs) and the time Medical Control was contacted.**
13. Do not remove restraints until released by medical personnel at the receiving hospital.
Less than Lethal Weapons Protocol

As law enforcement agencies look for alternative means of subduing dangerous subjects and bringing individuals into custody, they have begun using a set of devices known as "less than lethal" weapons. These include but are not limited to:

- Bean bag guns
- Teargas / Oleoresin capsicum sprays (i.e. pepper spray)
- Tasers

All levels of providers in the System should do the following when encountering these patients:

1. Ensure that the scene has been secured by law enforcement personnel and that the scene is safe to enter.
2. Ensure no cross contamination occurs to providers or equipment.
3. Ensure that the patient is subdued and is no longer a threat to EMS personnel.

Teargas / Oleoresin Capsicum (Pepper Spray) Exposure

First Responder Treatment

First Responder Treatment should be focused on assessing the airway and breathing.

1. Render initial care in accordance with the Routine Patient Treatment Protocol.
2. Oxygen: For agitation, shortness of breath or chest pain: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient cannot tolerate a mask.
3. Flush eyes (if affected) with sterile water to get rid of gross contamination and to aid in recovery.

BLS Treatment

BLS Treatment should be directed at conducting a thorough patient assessment and preparing the patient for or providing transport.

1. BLS Treatment includes all components of First Responder Treatment.
2. Proventil (Albuterol): 2.5mg in 3mL of normal saline via nebulizer over 15 minutes if the patient is short of breath and wheezing. May repeat Albuterol 2.5mg every 15 minutes as needed (with Medical Control Order).
3. Assess for secondary trauma that may be present and treat appropriately per trauma protocols.
4. Assess for any secondary causes of patient behavior which lead to law enforcement subduing the patient. These secondary causes include:
   - Alcohol intoxication
   - Drug abuse
• Hypoglycemia or other medical disorder
• Psychotic disorder

5. **Contact Medical Control** if restraints are needed. An order for restraint is a MUST.
6. If the patient has an altered mental status, then the patient must be assumed incompetent to refuse care. **Contact Medical Control** for ALL refusal issues.
7. Initiate ALS intercept if needed and transport as soon as possible.
8. Contact receiving hospital as soon as possible or Medical Control if necessary.

**ILS Treatment**

ILS Treatment should be directed at conducting a thorough patient assessment and preparing the patient for or providing transport.

1. ILS Treatment includes all components of **BLS Treatment**.
2. **Oxygen**: For agitation, shortness of breath or chest pain: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient does not tolerate a mask.
3. **IV Fluid Therapy**: 500mL fluid bolus if the patient is cooperative and if the vital signs reflect tachycardia or hypotension to achieve a systolic BP of at least 100mmHg.
4. Initiate cardiac monitoring per **Routine Cardiac Care Protocol** or if the patient appears agitated.
5. If the patient has an altered mental status, then the patient must be assumed incompetent to refuse care. **Contact Medical Control** for ALL refusal issues
6. Contact receiving hospital as soon as possible or Medical Control if necessary.

**ALS Treatment**

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

1. ALS Treatment includes all components of **ILS Treatment**.
2. **Proventil (Albuterol)**: 2.5mg in 3mL normal saline mixed with **Ipratropium (Atrovent)**: 0.5mg via nebulizer over **15 minutes if the patient is short of breath and wheezing**. Repeat Albuterol 2.5mg with Atrovent 0.5mg every 15 minutes as needed.

   • **Do not** administer Ipratropium (Atrovent) to patients with known allergy to Atropine, peanuts or soy.
3. If the patient has an altered mental status, then the patient must be assumed incompetent to refuse care. **Contact Medical Control** for ALL refusal issues.
4. Initiate transport as soon as possible and **contact Medical Control** if needed.

**Critical Thinking Elements**

- Chemical defense sprays such as oleoresin capsicum (pepper spray) leave residue that
may be contacted and transferred to providers. Care must be taken to ensure cross contamination does not occur. Avoid touching your own face, eyes or any other mucous membrane.

- Patients who have been subdued using less than lethal weapons are commonly agitated and may be combative. Safety of the EMS crew is of utmost importance.
- Many of these patients fit into a syndrome known as "excited delirium" that has been associated with adverse medical outcomes, including SUDDEN DEATH, especially when restraints are utilized. Careful monitoring should be exercised when dealing with these patients.
- Contaminated clothing should be removed and sealed in a plastic bag to prevent further irritation and to reduce cross contamination.

Taser-Related Injuries

A taser is an electrical device that is capable of shooting out two small barbed probes that are designed to pierce a subject's skin for the purpose of delivering a subduing pulse of electricity that causes the subject to lose voluntary muscular control. Anecdotal and theoretical consequences of taser use include cardiac arrhythmias and seizures (especially if the subject is under the influence of alcohol and/or illegal drugs).

First Responder Treatment

First Responder Treatment should be focused on assessing the airway, breathing and circulation.

1. Render initial care in accordance with the Routine Patient Treatment Protocol.
2. Oxygen: For agitation, shortness of breath or chest pain: 15 L/min via non-rebreather mask or 6 L/min via nasal cannula if the patient does not tolerate a mask.
3. Ask law enforcement to remove taser probes. EMS personnel are not to remove the probes unless specifically trained and are comfortable doing so.
4. If the probes are in a sensitive area such as the face, eye, neck, genitalia or a female’s breast, leave the probes in place and bandage.

BLS Treatment

BLS Treatment should be directed at conducting a thorough patient assessment and preparing the patient for or providing transport.

1. BLS Treatment includes all components of First Responder Treatment.
2. Assess for any secondary causes of patient behavior which lead to law enforcement subduing the patient. These secondary causes include:
Alcohol intoxication
Drug abuse
Hypoglycemia or other medical disorder
Psychotic disorder

3. **Contact Medical Control** if restraints are needed. An order for restraint is a MUST.

4. If the patient has an altered mental status, then the patient must be assumed incompetent to refuse care. **Contact Medical Control** for ALL refusal issues.

5. Initiate ALS intercept if needed and transport as soon as possible.

6. Contact receiving hospital as soon as possible or Medical Control if necessary.

**ILS Treatment**

ILS Treatment should be directed at conducting a thorough patient assessment and preparing the patient for or providing transport.

1. ILS Treatment includes all components of **BLS Treatment**.
2. Initiate cardiac monitoring.
3. **IV Fluid Therapy**: 500mL fluid bolus if the patient is cooperative and if the vital signs reflect tachycardia or hypotension to achieve a systolic BP of at least 100mmHg.
4. **Midazolam (Versed)**: 5 mg intranasal for seizure activity. May repeat in 5 minutes if no response to a total of 10 mg (**Contact Medical Control**).
5. If the patient has an altered mental status, then the patient must be assumed incompetent to refuse care. **Contact Medical Control** for ALL refusal issues.
6. Initiate ALS intercept if needed and transport as soon as possible.
7. Contact receiving hospital as soon as possible or Medical Control if necessary.

**ALS Treatment**

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

1. ALS Treatment includes all components of ILS Treatment.
2. Restrain the patient if needed and **contact Medical Control**. An order for restraint is a MUST.
3. **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.
   OR
4. **Midazolam (Versed)**: 5mg 1M *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. May give 10 mg Intranasal if parenteral route not feasible or is unsafe.
5. If the patient has an altered mental status, then the patient must be assumed incompetent to refuse care. **Contact Medical Control** for ALL refusal issues.
6. Initiate transport as soon as possible and contact Medical Control if needed.

Critical Thinking Elements

- If law enforcement has removed the probes, treat the probes as biohazards. Exercise caution to prevent accidental needlestick-like injuries.

- Ask law enforcement to eject the cartridge from the taser prior to patient contact.

- Patients who have been subdued using less than lethal weapons are commonly agitated and may be combative. If the patient is not yet subdued and/or is violent, do not initiate contact. Safety of the EMS crew is of utmost importance.

- Many of these patients fit into a syndrome known as "excited delirium" that has been associated with adverse medical outcomes, including SUDDEN DEATH, especially when restraints are utilized. Careful monitoring should be exercised when dealing with these patients.
Do Not Resuscitate (DNR) Policy

A Do Not Resuscitate (DNR) policy is a tool to be used in the prehospital setting to set forth guidelines for providing CPR or for withholding resuscitative efforts. The purpose of this policy is to specify requirements for valid DNR orders and to establish a procedure for field management of these situations.

A DNR policy shall be implemented only after it has been reviewed and approved by the Illinois Department of Public Health in accordance with the requirements of Section 515.380 of the Illinois Administrative Code.

1. Any FR-D, EMT-B, EMT-I, EMT-P or PHRN who is actively participating in a Department approved EMS system may honor, follow and respect a valid DNR. Medical Control will be contacted in all cases involving a DNR.

2. DNR refers to the withholding of life-sustaining treatment such as CPR, electrical therapy (e.g. pacing, cardioversion & defibrillation), endotracheal intubation and/or manually/mechanically assisted ventilation, unless otherwise stated on the DNR order.

3. By itself, a DNR order does not mean that any other life-prolonging therapy, hospitalization or use of EMS is to be withheld. DNR orders do not affect treatment of patients who are not in full arrest (pulseless and breathless).

4. On-line Medical Control must be consulted in cases involving DNR orders. A DNR order may be invalidated if the immediate cause of a respiratory or cardiac arrest is related to trauma or mechanical airway obstruction.

5. When EMS personnel arrive on scene and discover the patient is pulseless and breathless and CPR is not in progress, resuscitation (at minimum CPR) must be initiated unless one or more of the following conditions exist:
   - Obvious signs of biological death are present:
     - Decapitation
     - Rigor mortis without profound hypothermia
     - Dependent lividity
     - Obvious mortal wounds with no signs of life
     - Decomposition
   - Death has been declared by the patient's physician or the coroner.
   - A valid DNR order is present and the EMS provider has made reasonable effort to verify the identity of the patient named in the order (i.e. identification by another person, ID band, photo ID or facility, home-care or hospice nursing staff).
If the above signs of death are recognized, EMS personnel **must contact Medical Control** to confirm the decision not to attempt resuscitation prior to contacting the coroner.

The EMS provider should immediately institute BLS measures and contact Medical Control for further direction if he or she has concerns regarding the validity of the DNR orders, the degree of life-sustaining treatment to be withheld or the status of the patient's condition.

6. When EMS personnel arrive on scene and discover that CPR is in progress, the EMS provider should:

- Determine if signs of death are present or a valid DNR exists.
- If signs of death are present and/or the patient does not have a pulse, has no respirations and a valid DNR does exist, **contact Medical Control** for orders, including possible cease efforts order.
- If no valid DNR exists, continue CPR (refer to cardiac resuscitation policy).

7. If the patient's primary care physician is at the scene of (or on the phone) and requesting specific resuscitation or DNR procedures, EMS personnel should verify the physician's identity (if not known to the EMT) and notify Medical Control of the request of the on-scene physician. Follow Medical Control orders.

8. EMS providers are obligated to honor, follow & respect the standardized **State of Illinois Do Not Resuscitate (DNR) Order** which is upgrading to the **Illinois Department of Public Health Uniform Do-Not-Resuscitate (DNR) Advanced Directive Physician Orders (or Life-Sustaining Treatment (POLST) form which have the Seal of the State of Illinois in the upper left and right corners, respectively. All signature lines must be completed in order for the DNR to be valid.

9. Any other advance directives or "living will" cannot be honored, followed and respected by pre-hospital care providers. EMS personnel must contact Medical Control for direction regarding any other type of advanced directive. Resuscitation should not be withheld during the process of contacting or discussing the situation with the on-line Medical Control physician.

10. A **Durable Power of Attorney for Healthcare** is an agent who has been delegated by the patient to make any healthcare decisions (including the withholding or withdrawal of life-sustaining treatment) which the patient is unable to make. When a patient's surrogate decision-maker is present or has been contacted by prehospital personnel and they direct that resuscitative efforts not be instituted:

- Ask the **Durable Power of Attorney for Healthcare** agent to provide positive
identification (i.e. driver's license, photo ill, etc.), see the document and ask the agent to point out the language that confirms that the “power” is in effect and that it covers the situation at hand (i.e. assure the scope of authority the Durable Power of Attorney for Healthcare has and that the patient's medical or mental condition complies with the document designating the Durable Power of Attorney for Healthcare).

- The Durable Power of Attorney for Healthcare agent or a surrogate decision-maker can provide consent to a DNR order, but the order itself must be written by a physician.

- An EMS Provider cannot honor a verbal or written DNR request/order made directly by a Durable Power of Attorney for Healthcare agent, surrogate decision-maker or any person other than a physician. If such a situation is encountered, contact Medical Control for direction.

11. Revocation of a written DNR order is accomplished when the DNR order is physically destroyed or verbally rescinded by the physician who signed the order and/or the person who gave consent to the order.

12. Prehospital care providers have a duty to act and provide care in the best interest of the patient. This requires the provision of full medical and resuscitative interventions when medically indicated and not contraindicated by the wishes of the patient.

13. When managing a patient that is apparently non-viable, but desired and/or approved medical measures appear unclear (i.e. upset family members, disagreement regarding DNR order, etc.), EMS personnel should provide assessment, initiate resuscitative measures and contact Medical Control for further direction.

14. If EMS personnel encounter a patient with a valid DNR from a long-term care facility, hospice, during an inter-hospital transfer or when transporting to or from home and the patient arrests enroute, do not initiate resuscitative measures and contact Medical Control for orders.

15. If EMS personnel arrive at the scene and the family states that the patient is a hospice patient with a valid DNR order, do not initiate resuscitative measures and contact Medical Control for orders.

16. On occasion, EMS personnel may encounter an out-of-town patient with a valid DNR order visiting in the St. John’s Hospital EMS System area. If the DNR order appears to be valid (signed by the patient and physician), contact Medical Control for orders.

17. The coroner will be notified of any patient or family wishes that there is to be tissue donation in cases where the patient is not transported to the hospital.

18. The Medical Control physician’s responsibility is to make reasonable effort to confirm the DNR order
is valid and order resuscitative measures within the directives of the DNR order.

19. Appropriate patient care reports will be completed on all patients who are not resuscitated in the prehospital setting. A copy of the DNR form should be retained and attached as supporting documentation to the prehospital care report form.

20. All St. John’s Hospital EMS System personnel are to submit an incident report to the EMS Coordinator and the EMS Medical Director regarding any difficulties experienced with DNR situations. These cases will be evaluated on an individual basis.

21. Follow the System's Coroner Notification Policy.

Critical Thinking Elements

- Ask the patient's family to produce an actual copy of the DNR / Advanced Directives. Family members will often identify themselves as "Power of Attorney" when in fact, they are solely "Power of Attorney for Finance".

Resuscitation vs. Cease Efforts Policy

The EMS provider is responsible to make every effort to preserve life. In the absence of an advanced directive, resuscitative measures shall be attempted if there is any chance that life exists.

When EMS personnel arrive on scene and discover the patient is pulseless and breathless and CPR is not in progress, resuscitation (at minimum CPR) must be initiated unless one or more of the following conditions exist:

- Obvious signs of biological death are present:
  - Decapitation
  - Rigor mortis without profound hypothermia
  - Dependent lividity
  - Obvious mortal wounds with no signs of life
  - Decomposition
- Death has been declared by the patient's physician or the coroner.
- A valid DNR order is present and the EMS provider has made reasonable effort to verify the identity of the patient named in the order (i.e. identification by another person, ID band, photo ID or facility, home-care or hospice nursing staff).
- If the above signs of death are recognized, EMS personnel must contact Medical Control to confirm the decision not to attempt resuscitation prior to contacting the coroner.
- The EMS provider should immediately institute BLS measures and contact Medical Control for further direction if he or she has concerns regarding the validity of the DNR orders, the degree of life-sustaining treatment to be withheld or the status of the patient's condition.

When EMS personnel arrive on scene and discover that CPR is in progress, the EMS provider should:

- Assess breathing, pulse and analyze EKG activity.
- Determine if signs of death are present or a valid DNR exists. Continue resuscitation if signs of death are not obvious and a valid DNR is not available.
- Contact Medical Control for orders, including possible cease efforts order.
- A cease efforts order may be considered and the base station physician may order resuscitative efforts be discontinued (or not initiated at all) if the following conditions exist:
  - No signs of life are present (i.e. pulseless & apneic), patient "down time" is unknown, EKG is asystole or PEA, and on-site resuscitative efforts have been unsuccessful.
- The patient has injuries inconsistent with life (even if the patient's body temperature is warm).

- Triage or patient prioritization deems resuscitative resources would be more beneficial for use on other victims.

**Critical Thinking Elements**

- Pediatric patients and patient with hypothermia may have no signs of life but still be viable. Prolonged resuscitative efforts are indicated in these cases.