

State of Alaska

Model Standing Orders
and
Treatment Protocols
for
EMT-3

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Field Manual

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INTRODUCTION

- This document is a subset of the Model Standing Orders and Treatment Protocols Reference Manual. It only contains the treatment sections from the reference manual. It is designed to be a Field Guide usable by the medic in the streets. It is intended that the two versions of the document be issued and taught together. This abbreviated version does not include information about assessment or criteria for following a particular protocol for a particular patient presentation. It is simply a listing of treatments usable as a memory aid.
- The advanced life support orders in this document must be reviewed and approved by a physician medical director before EMTs and MICPs may perform advanced life support.
- These protocols are fairly liberal. They do not require contacting medical control for many orders. This is in recognition of the communication difficulties in this state. As a general style within the text, the items prefaced by "consider" or "anticipate" should be interpreted as requiring on-line medical direction. It is recommended however that medical control be contacted by voice when possible for every patient contact.
- Treatments and procedures listed herein follow the State of Alaska curricula with few exceptions. You may perform the BLS portion of this protocol. ALS treatments/procedures may only be performed under the direction of a physician, either by direct verbal communications or through physician signed standing orders

DEATH IN THE FIELD (DNR/DOA)

I. WITHHOLDING RESUSCITATION:

- A. An EMT/MICP may withhold resuscitation efforts when the patient has injuries/illness incompatible with life. This includes cardiac arrest accompanied by:
1. Blunt trauma.
 2. Incineration.
 3. Decapitation.
 4. Open head injury with loss of brain matter.
 5. Detruncation.
 6. Rigor mortis.
 7. Post mortem lividity.
 8. 30 minutes of CPR performed on a patient who is NOT hypothermic before the EMT/MICP arrival without a return of spontaneous respiration or pulse, and ALS isn't available.
 9. Evidence of enrollment in Comfort One or other DNR program and confirmation of patient's identity.

II. TERMINATING RESUSCITATION:

- A. When unable to establish voice communications with a physician, an EMT/MICP with a certified EMS service may terminate efforts at resuscitation under the conditions listed below:
1. 30 minutes of CPR was performed by the EMT/MICP on a patient who is NOT hypothermic without a spontaneous return of respiration or pulse, and ALS isn't available.
 2. 30 minutes of ALS has been provided to a patient who is NOT hypothermic without spontaneous return of pulse or respiration.
 3. Hypothermic patient has received at least 60 minutes of CPR in conjunction with rewarming techniques (see Cold Emergencies guidelines) with no spontaneous return of pulse or respiration.
 4. Once evidence of enrollment in Comfort One or other DNR program is established and the identity of the patient confirmed.

III. PRONOUNCEMENT OF DEATH:

- A. Note and record time of pronouncement.
- B. If death was pronounced en route, reattempt communications with medical control. Transport the deceased according to local protocol. If no protocol exists, contact law enforcement in that jurisdiction for instructions.
- C. If death was pronounced at the scene, it is considered an unattended death:
1. Notify law enforcement and if appropriate, the State Medical Examiner's Office (1-888-DECEASE).

2. Treat the scene as if it were a crime scene. Do not move the body unless necessary to prevent further destruction of the scene.
3. Protect the scene and minimize the number of personnel at the scene.
 - a) If in a residence or building; remember what you've touched, avoid touching more objects and using the residence phone.
 - b) Personnel should exit the scene by the same route they took to enter if possible.
 - c) Once the scene is secured, one controlled checkpoint should be used for entering and exiting the scene.
4. Leave any tubes, IVs, EKG electrodes, and/or defibrillator patches in place.
5. Don't disturb clothing, jewelry, pocket contents, or personal effects.
6. Report to law enforcement before leaving the scene:
 - a) The condition of the scene and the placement of objects, etc.
 - b) Personnel involved at the scene and their roles.
 - c) Any statements made by the patient before death.

REPORTING REQUIREMENTS

- I. AS 47.17.010-REPORTING CHILD ABUSE AND NEGLECT
 - A. EMTs are required to report suspicions of child abuse or neglect.
 - B. The report must be made to the Office of Children’s Services (OCS) of the Department of Health and Social Services (1-800-478-4444) or, if the OCS cannot be reasonably contacted, the EMT may report his or her suspicions to the nearest peace officer.
 - C. Notification of your medical director or EMS supervisor is not sufficient to comply with the reporting requirements.

- II. AS 47.24.010-REPORTS OF HARM
 - A. Relates to abuse of persons 18 years of age or older who, because of physical or mental impairment, are unable to meet their own needs or to seek help without assistance.
 - B. Under this statute, EMTs and MICPs are required to report suspicions that a vulnerable adult suffers from abandonment, exploitation, abuse, neglect, or self-neglect.
 - C. The report must be made within 24 hours after first having cause for the belief. The number for submitting reports of harm is: 1-800-478-9996, or in Anchorage, 269-3666.
 - D. If an elderly person is in danger or has suffered harm, the local law enforcement agency should be contacted immediately and the report of harm made to the Division of Senior and Disability Services the next business day.

- III. AS 08.64.369-HEALTH CARE PROFESSIONALS TO REPORT CERTAIN INJURIES
 - A. EMTs and MICPs are required to report certain injuries. These injuries include:
 - 1. Second and/or third degree burns covering five percent, or more, of the patient's body;
 - 2. a burn to the patient's upper respiratory tract or laryngeal edema due to the inhalation of superheated air;
 - 3. a bullet wound, powder burn, or other injury apparently caused by the discharge of a firearm;
 - 4. an injury apparently caused by a knife, axe, or other sharp object, unless the injury was clearly accidental; and
 - 5. an injury that is likely to cause the death of the patient, unless the injury was clearly accidental.
 - B. An oral report must be made promptly to the Department of Public Safety (DPS). Written reports must be made within three days to DPS.

SHOCK

I. GENERAL TREATMENT

- A. Ensure neutral, in-line **spinal stabilization if indicated.**
- B. **Ensure a clear airway and adequate breathing.**
 - 1. **Consider suction, positioning, and airway adjuncts.**
 - 2. **Administer high flow O₂ by non rebreather mask.**
 - 3. **Assist ventilation** as needed.
 - 4. Perform **endotracheal intubation as indicated.**
- C. **Control hemorrhage.**
- D. Initiate **basic shock treatment** (supine, feet elevated, insulate).
- E. **Consider PASG** if shock is from controllable hemorrhage and patient does not have respiratory distress or injuries to chest or abdomen.
- F. **Monitor ECG lead II.**

II. HYPOVOLEMIC, SEPTIC, AND NEUROGENIC SHOCK

- A. Establish **one or two IVs** of normal saline or ringer's lactate.
- B. **Run the IV solution wide open, reassessing vital signs after every 250 ml.**
 - 1. For **children less than eight**, place an intraosseous catheter (**IO**) if IV access is not quick. Use **20ml/kg fluid boluses** in place of wide-open fluids.
 - 2. If the patient has **hemorrhagic shock**, start **IVs en route.**
 - 3. If the patient has an **uncontrollable hemorrhage** (e.g. internal bleeding), fluid resuscitate to and maintain a **systolic blood pressure of 90 mmHg.**
 - 4. If **non hemorrhagic** or hemorrhage is **controllable**, resuscitate to **normal vital signs.**

III. CARDIOGENIC SHOCK

- A. **IV normal saline at a keep open rate**
- B. **IF pulse < 60 bpm or > 150 bpm, refer to Dysrhythmia Protocol.**
- C. **Consult with medical control.**

IV. ANAPHYLACTIC SHOCK.

- A. Follow **Allergic Reactions/Anaphylaxis** protocol.

MEDICAL

ABDOMINAL PAIN - NONTRAUMATIC

I. MANAGEMENT

- A. **Administer** O₂ according to the patient's needs.
- B. **Perform airway management** as indicated by the **Advanced Airway Management** protocol.
- C. Allow patient to seek a **position of comfort** and treat for shock.
- D. **Monitor** and record vitals every 5-15 minutes.
- E. Give nothing by mouth.
- F. Establish one or two IVs **of normal saline or ringer's lactate**. Use a macrodrip administration set. Draw bloods.
- G. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml**. Follow the shock protocol.
- H. **Monitor ECG** lead II.

ALLERGIC REACTION/ANAPHYLAXIS

I. MANAGEMENT

- A. **Manage the airway and breathing and administer high flow O₂.** Positive pressure may be needed to assist respirations (see **Airway** protocols).
- B. Encourage patient to assume **position of comfort**.
- C. In cases of bee stings, examine the sting site. If the stinger is present, scrape along the skin to remove the venom sac.
- D. Administer **epinephrine (1:1,000) 0.3-0.5 mg, SQ** if:
 1. Wheezing or stridor is present;
 2. Edema of the pharynx, soft palate or tongue is observed;
 3. Signs of shock are observed (such as hypotension, confusion, weak pulse or tachycardia)
 - a) May be repeated in 5-10 minutes PRN.
- E. Establish **one or two IVs of normal saline** using a macrodrip administration set.
- F. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.**
 1. For **children less than eight**, place an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
- G. **Monitor ECG** lead II.
- H. **Contact medical control** and consider **epinephrine (1:10,000) 0.3-0.5 mg, IVP** if:
 1. SQ epinephrine is ineffective
 2. The patient is in decompensated shock

ALTERED MENTAL STATUS

I. MANAGEMENT

- A. **Immobilize** the entire **spine** if trauma is suspected.
- B. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- C. **Defer intubation** until hypoglycemia and narcotic overdose have been ruled out as causes.
- D. If patient is breathing adequately, **administer O₂**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- E. Place patient in a **semi-sitting position** (head elevated 30°).
- F. Ammonia inhalants are contraindicated.
- G. **Consider** administration of one tube of **instant glucose**, if the patient has a history of diabetes and is alert enough to swallow.
- H. Establish an **IV** of **normal saline TKO**.
- I. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.** Watch for signs of circulatory overload.
 - 1. Run the IV at TKO if signs and symptoms of shock resolve.
 - 2. For **children less than eight**, **place** an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
- J. **Draw bloods** and perform **glucometry**.
- K. **If** the patient has a blood sugar (**BG**) reading < **80 mg/dl**, administer **D50, 50 ml (25 grams), IVP**. If patient remains unconscious and BG < 80 mg/dl, repeat D50 25 gm once.
- L. If narcotic overdose is suspected, and the patient is unconscious and experiencing respiratory depression and/or hypotension, administer **naloxone, 0.4 to 2 mg, slow IVP or IM if no IV access**. Only administer enough naloxone to reverse respiratory depression and or hypotension.
- M. If the patient does not awaken after the above procedures, **consider** placement of **an advanced airway**.
- N. **Monitor ECG** lead II. If a dysrhythmia is seen refer to the dysrhythmia protocol.

ASTHMA/COPD

I. TREATMENT

- A. Position patient** to ensure an open airway and maintain a position of comfort
- B. Suction as needed.**
- C.** If the patient is **not breathing adequately**, insert an **NPA or OPA** and assist breathing with a **bag-valve-mask**, supplied with 15 liters of O₂ or a flow restricted, O₂ powered ventilation device. Perform **endotracheal intubation as indicated** by the **Advanced Airway Management** protocol.
- D.** If patient is **breathing adequately**, **administer O₂**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- E. Reassure patient.**
- F. Search for causes.**
- G.** Establish an **IV normal saline TKO** with a microdrip administration set. Draw bloods.
- H. Monitor ECG lead II.**
- I. Contact medical control and anticipate an order for 0.3-0.5 ml epinephrine 1:1,000 SQ. (use 0.01 mg/kg for pediatrics).**
 - 1. Consider epinephrine (1:10,000) 0.3-0.5 mg, IVP if SQ epinephrine is ineffective.

BEHAVIORAL EMERGENCIES

I. MANAGEMENT

- A. Allow patient to assume a **position of comfort**.
- B. **Treat hypoxia, shock, overdose and diabetes PRN.**
- C. Carefully assess the patient as tolerated for signs and symptoms of illness or injury.
- D. Uncooperative patients that are not competent to refuse treatment may be restrained. Contact law enforcement. Follow **Restraint** protocol as indicated.
- E. Treat injuries as patient allows.

CARDIAC ARREST

I. GENERAL MANAGEMENT

- A. Establish unresponsiveness.
- B. Determine lack of breathing AND pulse.
- C. Assure that the patient is supine on a firm surface.
- D. If not breathing, administer **positive pressure ventilation** at an age appropriate rate with 100% O₂. Ensure a clear airway. Use **airway adjuncts**, and, if needed, **suction**.
- E. If no pulse, **apply AED** (see **AED** guidelines) **and start CPR**.
- F. **Assess for VF** or Pulseless VT. Use AED or Manual Defibrillator. If found, give three stacked shocks and then establish Airway and IV.
- G. **Place an endotracheal tube, dual lumen airway or laryngeal mask airway** per the **Advanced Airway Management** protocol.

II. VENTRICULAR FIBRILLATION AND PULSELESS VENTRICULAR TACHYCARDIA

- A. One **precordial thump** may be delivered if the EMT witnessed the arrest and the defibrillator is not readily available.
- B. **Defibrillate at 200 joules**. If unsuccessful, immediately attempt a second defibrillation at **200-300 joules**. If unsuccessful, attempt a third immediate defibrillation at **360 joules**. Or use energy recommended by manufacturer of defibrillator.
- C. If not already in place, insert an **endotracheal tube and IV**.
- D. Administer **epinephrine, 1 mg IVP** (or 2.0-2.5 mg, ETT). Repeat every 3 minutes.
- E. **Defibrillate at 360 joules**, 30-60 seconds after every drug administration.
- F. Administer **lidocaine, 1-1.5 mg/kg, IVP** (or 2.0-3.75 mg/kg, ETT). Repeat in 3-5 minutes to a total of 3 mg/kg has been administered. If patient is older than 70 years old, has compromised liver function, decreased cardiac output, etc., administer a single loading dose of **1 mg/kg**.

III. PEDIATRIC VENTRICULAR FIBRILLATION AND PULSELESS VENTRICULAR TACHYCARDIA

- A. **Defibrillate at 2 joules/kg**. If unsuccessful, immediately attempt a second defibrillation at **4 joules/kg**. If unsuccessful, attempt a third immediate defibrillation at **4 joules/kg**.
- B. If not already in place, insert an **endotracheal tube and IV or IO**.
- C. Administer **epinephrine, 0.1 ml/kg IVP of 1:10,000 IV/IO** or **0.1ml/kg 1:1,000 ETT**. **Repeat IV/IO dose is 0.1ml/kg of 1:10,000** every 5 minutes.
- D. **Defibrillate at 4 joules/kg**, 30-60 seconds after every drug administration.

- E. Administer **lidocaine, 1mg/kg, IVP** (or 2.0-3.75 mg/kg, ETT). Repeat in 3-5 minutes to a total of 3 mg/kg. If child has compromised liver function or decreased cardiac output, administer a single loading dose of **1 mg/kg**.
- F. Transport

IV. PULSELESS ELECTRICAL ACTIVITY (PEA)

- A. Administer **epinephrine, 1 mg** (10 ml), **IVP** (or 2.0-2.5 mg, ETT). Repeat administration every 3 minutes.
 - 1. For pediatrics, administer epinephrine, 0.1 ml/kg IVP of 1:10,000 IV/IO or 0.1ml/kg 1:1,000 ETT. Repeat IV/IO dose is 0.1ml/kg of 1:10,000 every 5 minutes.
- B. If adult and heart rate is less than 60/min. administer **atropine, 1 mg, IVP** (or 2.0-2.5 mg, ETT). Repeat every 3-5 minutes to total 0.03-0.04 mg/kg.
- C. Consider **running the IV of normal saline wide open**, unless the PEA is clearly from primary cardiac causes. Give 20 ml/kg to children. Repeat PRN.
- D. Perform differential diagnosis of PEA to identify and **address treatable causes** of PEA.
 - 1. Mechanical Causes:
 - a) Poor CPR-**correct**
 - b) Tension pneumothorax-**transport**
 - c) Hypovolemia-**volume expansion**
 - d) Pericardial tamponade-**transport**
 - e) Massive Pulmonary embolism-**transport**
 - 2. Non-mechanical causes:
 - a) Hypoxia-**check interventions**
 - b) Acidosis, arrest generated-**ventilate** with 100% O₂
 - c) Hypothermia-transport, **active rewarming**
 - d) Drug overdose-**transport**
 - e) Electrolyte imbalance-**transport**
- E. Transport.

V. ASYSTOLE

- A. Administer **epinephrine, 1 mg IVP** (or 2.0-2.5 mg, ETT). Repeat administration every 3-5 minutes.
 - 1. For pediatrics, administer epinephrine, 0.1 ml/kg IVP of 1:10,000 IV/IO or 0.1ml/kg 1:1,000 ETT. Repeat IV/IO dose is 0.1ml/kg of 1:10,000 every 5 minutes.
- B. For adults, administer **atropine, 1 mg, IVP** (or 2.0-2.5 mg, ETT). Repeat this dose after 3-5 minutes if no result. Total dose of 0.03-0.04 mg/kg).
- C. Transport.

VI. POST-ARREST

- A. If the patient was in VT/VF or significant premature ventricular complexes are present, an IV infusion of lidocaine should be started.
1. Administer a **lidocaine** infusion at **2-4 mg/min**.
 - a) Following the bolus given to maintain therapeutic levels of the medication or;
 - b) alone if last bolus was given <15 minutes before termination of VF/VT.
 2. For pediatric post ventricular arrest administer lidocaine 20-50 µg/kg/minute infusion IV/IO.
 3. If **lidocaine** was not previously given during the resuscitation, administer a bolus of **1 mg/kg, IVP** (or 2.0-3.75 mg/kg, ETT).
 - a) Use lower doses (0.5-0.75 mg/kg) and longer intervals in patients 70 years of age or older, liver failure, heart failure, and/or smaller body size.
- B. Transport.

CHEST PAIN

I. MANAGEMENT

- A. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- B. If patient is breathing adequately, **administer O₂**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- C. Let patient maintain a **position of comfort** if no trauma suspected
- D. Give **aspirin 160-325 mg** by mouth
- E. Determine if patient has taken his or her prescribed nitroglycerin (see **Assisting with Medications** guidelines).
 - 1. Be prepared to **assist** with **administration of nitroglycerin-one 0.4 mg tablet** (or spray) SL every 5 minutes until pain is resolved or three doses have been given. Document time, dose, route, and effects.
- F. **Start an IV NS TKO**, use a macrodrip administration set. Draw bloods.
- G. **If the patient is hypotensive with dry lungs and JVD, administer a 250cc fluid bolus and reassess.** Repeat as needed to maintain BP >100 systolic. If pulmonary edema develops, do not administer additional fluid boluses.
- H. **Monitor ECG** lead II. Follow appropriate protocol if dysrhythmia is seen.
- I. Prophylactic lidocaine is not indicated for chest pain.
- J. Recheck the patient's blood pressure. If the chest pain persists and the patient is not hypotensive, administer **morphine sulfate, 2-4 mg**, slow **IVP**, repeated after 5 minutes titrated to pain relief.

DIABETES

I. MANAGEMENT

- A. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
 - 1. **Defer intubation** until hypoglycemia has been ruled out or corrected.
- B. If patient is breathing adequately, **administer O₂**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- C. Allow patient to assume a **position of comfort**.
- D. If hypoglycemia is suspected and the patient is alert enough to swallow, **administer one tube of oral glucose**.
- E. Establish an **IV of normal saline TKO**
 - 1. Suspect dehydration in hyperglycemic patients. Run the IV wide open, reassessing vital signs after each 250 ml.
- F. **Draw bloods** and perform **glucometry**. If the patient has a blood sugar (**BG**) reading < **80 mg/dl** **administer D₅₀W, 50 ml (25 grams), IVP**. If blood sugar remains low and signs and symptoms continue, repeat the above steps once.
 - 1. For **pediatric patients**, administer **25% dextrose, 2-4 ml/kg IV**. For the patient with high blood sugar and signs of shock, give a 20 ml/kg IV bolus of NS.
- G. If the patient does not awaken after the above procedures, **consider** placement of an **endotracheal tube** as indicated and tolerated by level of consciousness.
- H. **Monitor ECG** lead II. If a dysrhythmia is seen, refer to the appropriate **Dysrhythmia** protocol.

DYSRHYTHMIAS

I. GENERAL MANAGEMENT

- A. **Calm the patient** and provide continual reassurance.
- B. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- C. If patient is breathing adequately, **administer O₂**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- D. **Position patient** in the most comfortable position.
- E. Place an **IV NS TKO**. Use a microdrip administration set. Draw bloods.

II. BRADYCARDIA

- A. **If asymptomatic, observe and transport.**
- B. Administer **atropine, 0.5-1.0 mg, IVP**. Can repeat every 3-5 minutes to a maximum 0.03-0.04 mg/kg.
- C. Transport.

III. PEDIATRIC BRADYCARDIA

- A. Bradycardia in children up to age 8 is often a sign of **hypoxia**. **Ensure the child is well oxygenated** before any other treatment.
- B. **Administer epinephrine 0.1 ml/kg 1:10,000 IV/IO push**. Repeat every 3-5 min PRN.
- C. **Consider atropine 0.02 mg/kg IV/IO push** if epinephrine is not effective. Repeat once PRN. Max single dose 0.5 mg. Minimum dose 0.1 mg.
- D. Transport.

IV. PEDIATRIC TACHYCARDIA

- A. Narrow QRS (less than or equal to 0.08 sec)
 - 1. **If patient is asymptomatic, observe and transport.**
 - 2. Determine if the rhythm is sinus tachycardia (ST) or supraventricular tachycardia (SVT). **Treat ST by addressing the causes.**
- B. Wide QRS (>0.08 sec) assume Ventricular Tachycardia (VT)
 - 1. **If patient is asymptomatic, observe and transport.**
 - 2. **Consult medical control.**
 - 3. **Consider lidocaine 1mg/kg IV/IO push**. Repeat in 5 min. PRN up to max dose of 3 mg/kg.
 - a) If successful, start lidocaine infusion 20-50 µg/kg/min. To mix, multiply 60 x body weight in kg this is mg to add to 100 ml bag of NS and remove from bag to make total of 100 ml. 1 ml/hour gives 10 µg/min
 - 4. Transport.

- V. PREMATURE VENTRICULAR COMPLEXES (PVC'S)
 - A. **If patient is asymptomatic, observe and transport.**
 - B. **Ensure the patient is well oxygenated and that cardiac chest pain has been relieved.**
 - C. **Consult medical control.**
 - D. Transport.
- VI. SUPRAVENTRICULAR TACHYCARDIA (SVT)
 - A. Provide needed basic care, **observe and transport.**
- VII. WIDE COMPLEX TACHYCARDIA-UNCERTAIN TYPE (WCT)
 - A. **Contact medical control.**
 - 1. **Consider lidocaine, 1.0-1.5 mg/kg, IVP.** If WCT persists, **repeat lidocaine at half the initial dose (0.5-0.75 mg/kg)** every 2-10 minutes until **3 mg/kg total.** Following the successful lidocaine bolus, administer a **lidocaine** infusion at **1-4 mg/min.**
 - B. Transport.
- VIII. VENTRICULAR TACHYCARDIA WITH A PULSE-EMT-3
 - A. **Contact medical control.**
 - 1. **Consider lidocaine, 1.0-1.5 mg/kg, IVP.** If VT persists, **repeat lidocaine at half the initial dose (0.5-0.75 mg/kg)** every 2-10 minutes until **3 mg/kg total.** Following the successful lidocaine bolus, administer a **lidocaine** infusion at **1-4 mg/min.**
 - B. Transport

GASTROINTESTINAL BLEEDING

I. MANAGEMENT

- A. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- B. If patient is breathing adequately, **administer O₂**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- C. **Position patient** to satisfy physiological needs.
- D. **Treat shock.**
- E. Establish one or two IVs **of normal saline or ringer's lactate**. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.**
- F. **Monitor ECG** lead II.

HYPERTENSION

I. MANAGEMENT

- A. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- B. If patient is breathing adequately, **administer O₂**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- C. Position patient in **most comfortable position**. Elevate head 30° if the diastolic pressure is over 120 mm Hg or if there is evidence of neurologic deficit.
- D. Place an **IV NS TKO**. Use a microdrip administration set. Draw bloods.
- E. **Monitor ECG** lead II.

HYPERVENTILATION

I. MANAGEMENT

- A. The commonly used "**brown bag**" **treatment is not acceptable** for this condition as it may result in hypoxia.
- B. If patient is breathing adequately, **administer O₂**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
 - 1. **O₂ should not be withheld.**
- C. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- D. **Calm and reassure** the patient. Coached breathing may reduce the respiratory rate and reduce anxiety.
- E. Follow the **Asthma/COPD** protocol as needed.
- F. Check blood sugar and treat as indicated by the Diabetes protocol.

NEONATAL RESUSCITATION

I. MANAGEMENT

- A. Position the baby with head slightly down, **suction mouth then nose, dry and warm the baby**. If thick meconium was noted at delivery, suction mouth and airway prior to stimulation. Repeated suctioning may be necessary.
- B. **Reassess**
- C. **If centrally cyanotic, administer 100% oxygen by mask.**
- D. **Reassess.**
- E. **If gasping, apnea, persistent central cyanosis or pulse < 100, assist ventilation** with a BVM and 100% O₂ at a rate of 40/minute.
 - 1. If **prolonged ventilation** is required, **intubate** the patient with an appropriate-sized ET Tube.
- F. Assess **heart rate**. Palpate brachial pulse or the base of the umbilical cord. **If HR is <60** begin **chest compressions**, and rapidly transport.
- G. **If HR > 100**, and baby is pink or blue in hands and feet, **keep warm and transport.**
- H. If **heart rate** remains **below 60 after chest compressions**, **administer 0.1 ml/kg epinephrine 1:10,000 IVP**. Repeat every 3-5 minutes as needed.

OBSTETRIC/GYNECOLOGIC

I. GENERAL MANAGEMENT

- A. If the patient is not breathing adequately, **manage the airway** per the **Airway Management** protocols.
- B. If patient is breathing adequately, **administer O₂**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- C. **Position patient** in most comfortable position. If the patient is >6 months pregnant, place patient in the left lateral recumbent position.
- D. Establish one or two IVs **of normal saline**. Use a macrodrip administration set. Draw bloods if time allows.
- E. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.**
- F. **Monitor ECG** lead II. Refer to the appropriate protocol if a dysrhythmia is seen.
- G. If suspected **ectopic pregnancy** follow **Vaginal Bleeding** protocol.

II. IMMINENT DELIVERY:

- A. **Prepare the area.**
- B. **Deliver the baby.**
 - 1. Coach the mother to bear down with contractions.
 - 2. Control the delivery of the head with gentle pressure.
 - 3. Remove the membranes, if they are intact.
 - 4. Check for the cord around the neck and gently slip it over the head if possible. If it is too tight, clamp and cut it.
 - 5. Suction the baby's airway; mouth first, then nose.
 - 6. Deliver the shoulders; anterior then posterior.
 - 7. The rest of the body will deliver rapidly after the shoulders.
 - 8. Support the child at the level of the vagina.
 - 9. Suction the airway again.
 - 10. Be careful not to drop the baby, they are very slippery.
 - 11. Clamp the cord 8 and 10 inches from the baby and cut it between the clamps. Ties may be used if clamps are unavailable.
- C. **Perform neonatal resuscitation.**
 - 1. Drying, warming, positioning, suctioning, tactile stimulation.
 - 2. Follow the **Neonatal Resuscitation** protocol.
- D. Do not wait on scene to deliver the placenta. If the patient is expecting twins, transport between deliveries if possible.
- E. If there is an **abnormal presentation**, contact medical control.

1. Breech; Deliver the body. **DO NOT PULL ON THE BABY.** If head will not deliver, insert gloved hand into vagina, form “V” with fingers to create an airway around the mouth and nose. Transport immediately maintaining airway en route.
2. Transport immediately for all other abnormal presentations unless otherwise directed by on-line medical control.

III. **PROLAPSED UMBILICAL CORD:**

- A. Insert gloved fingers into vagina and relieve pressure on cord.
- B. Do not attempt to push cord back into place.
- C. Transport immediately.

IV. **POST PARTUM HEMORRHAGE**

- A. **Control postpartum bleeding** by massage of the uterine fundus. Nursing can also help control postpartum bleeding.

OBSTRUCTED AIRWAY

I. MANAGEMENT-ADEQUATE AIR EXCHANGE

- A. **Do not interfere** with the patient's attempts to relieve the obstruction, including coughing and breathing.
- B. If patient is a child leave in caregiver's arms. Do not attempt to view airway or perform any procedure that will agitate child.
- C. **Apply 100% O₂** via non-rebreather mask as tolerated.
- D. Transport. Allow patient to travel in position preferred.

II. MANAGEMENT-POOR AIR EXCHANGE

- A. **Suction** the patient to remove any obstructing secretions or fluids.
- B. If **foreign body** is suspected,
 - 1. **Perform abdominal thrusts.** Use chest thrusts if the victim is very obese or in the late stages or pregnancy.
 - 2. Open the patient's mouth and **perform finger sweep.** Do not perform blind sweeps in children.
 - 3. If unconscious, perform **head tilt-chin lift.**
 - 4. **Attempt ventilation** by bag-valve-mask.
 - 5. **Repeat** steps 1-5 until adequate ventilation is established or laryngoscope is available.
 - 6. Use laryngoscope and Magill forceps to **view and remove** foreign body obstruction.
- C. **Assist ventilation** with bag-valve-mask attached to 100% O₂.
- D. **Consider endotracheal intubation.**
 - 1. If the cause is swelling, this procedure will be very difficult and should be performed by the most experienced team member. Use ET tube smaller than usual.
 - 2. **If patient is totally obstructed after intubation, advance tube deeply** in an attempt to push foreign body into right mainstem bronchus.
- E. Transport

POISONING/OVERDOSE

I. MANAGEMENT

- A. Conduct **scene size-up**. Call for hazardous materials assistance if needed.
- B. If more than one patient presents with signs and symptoms of poisoning consider this event as a possible public health emergency and make appropriate notifications.
- C. If the patient is not breathing adequately, **manage the airway** per the **Airway Management** protocols.
- D. If patient is breathing adequately, **administer O₂**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- E. **Contact medical control and Poison Control: 1 800-222-1222.**
- F. If unable to contact poison control and the patient ingested poison, and the **transport time** to a medical facility is **greater than 15 minutes**, **administer Activated Charcoal 1 gm/kg PO.** .
- G. Establish one or two IVs **of normal saline**. Use a macrodrip administration set. Draw bloods if time allows.
- H. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.**
- I. **If narcotic overdose** is suspected and the patient is unconscious and experiencing respiratory depression and/or hypotension, **administer naloxone, 0.4 to 2 mg, slow IVP or IM if no IV access.** Only administer enough naloxone to reverse respiratory depression and or hypotension.
- J. **Monitor ECG** lead II.
- K. **If it is known that the patient was exposed to an organophosphate poison; administer atropine 2-5 mg every 10-15 minutes.**
- L. **Consult medical control** for other specific treatment orders for poisoning.

PULMONARY EDEMA

I. MANAGEMENT

- A. **Position patient** with extremities dependent.
- B. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- C. If patient is breathing adequately, **administer O₂**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- D. **Reassure patient**. Don't overlook the value of calming and reassuring patient.
- E. Establish an **IV of normal saline TKO**. Use a microdrip administration set. Draw bloods if time allows. Carefully monitor flow rate.
- F. **Monitor ECG** lead II.
- G. **Consider morphine sulfate, 2-5 mg, IVP** (if the patient is not hypotensive).
- H. Transport

SEIZURES

- I. IF THE PATIENT IS ACTIVELY SEIZING OR IS POSTICTAL:
 - A. Try to **prevent injuries** from the motion of seizure.
 - B. **Insert a nasopharyngeal airway.**
 - C. **Maintain** the airway, **suction** if necessary.
 - D. **If patient is hypoxic** assist breathing with a **bag-valve-mask**, supplied with 15 liters of O₂ or a FROPVD.
 - E. If patient is **breathing adequately**, **give O₂**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
 - F. Start an **IV NS TKO.**
 1. For children, consult medical control and consider IO access if patient has status seizures and IV access cannot be obtained.
 - G. **Monitor ECG** lead II. If a dysrhythmia is seen, refer to the appropriate dysrhythmia protocol.
 - H. **Rule out treatable causes:**
 1. Draw bloods and perform glucometry. **If the patient has a blood sugar (BG) reading < 80 mg/dl, administer D₅₀W, 50 ml (25 grams), IVP.**
 - a) If the patient is believed to be malnourished, follow dextrose administration with thiamine, 100 mg slow IVP.
 2. **If narcotic overdose** is suspected and the patient is unconscious and experiencing respiratory depression and/or hypotension, **administer naloxone, 0.4 to 2 mg, slow IVP or IM if no IV access.** Only administer enough naloxone to reverse respiratory depression and or hypotension.
- II. IF THE PATIENT IS NOT SEIZING AND IS NOT POSTICTAL:
 - A. **Administer** O₂ 10-15 lpm by nonrebreather mask if the patient is symptomatic.
 - B. **Calm** the patient and provide continual reassurance.
 - C. **Position patient** in most comfortable position. Sitting upright - if normotensive or having trouble breathing. On side-if actively seizing. Supine - if airway management is needed.
 - D. Get an **accurate description** of the seizure type, duration, etc. Obtain a history from the patient, family, or other witness (part of body seizure started in, jerking of extremities, eyes deviated, mental status, urinary incontinence). Determine if there is a history of other significant medical conditions.
 - E. Do **head-to-toe examination.** Examine head and neck; look for trauma, examine pupils, look in oropharynx for injuries. Assess for incontinence of bladder and/or bowel. Examine extremities and look for obvious motor deficits.

STROKE

I. MANAGEMENT

- A. If trauma is suspected, **immobilize the spine** according to the **Spinal Immobilization** protocol
- B. If the patient is not breathing adequately, **manage the airway** per the **Airway Management** protocols.
- C. If patient is breathing adequately, give **supplemental O₂** as needed to maintain SpO₂ greater than 95%. If SpO₂ monitoring is not available, administer O₂, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- D. **Position with head elevated 30°.**
- E. **While en route** to hospital, establish an **IV NS TKO**. Use a microdrip administration set. Draw blood.
- F. **Check blood glucose.**
- G. **While en route, monitor ECG lead II.**
- H. Provide supportive care according to the appropriate protocol.

VAGINAL BLEEDING

I. MANAGEMENT

- A. If the patient is not breathing adequately, **manage the airway** per the **Airway Management** protocols.
- B. If patient is breathing adequately, and is **symptomatic** of shock, administer high flow O₂, **10-15 liters by nonrebreather** if patient can tolerate mask.
- C. If patient is breathing adequately, is **asymptomatic**, and SpO₂ >95% administer O₂, **at 2-6 liters by nasal cannula**.
- D. **Control external bleeding with direct pressure.**
- E. **Position patient.**
- F. **Conduct focused history and physical examination.**
 - 1. Determine last menstrual period. Assess for bleeding or discharge. Question for urinary symptoms, (frequency, pain, changes in color or odor).
 - 2. If patient is known to be pregnant, determine; due date, gravidity (number of pregnancies) and parity (number of live births), if membranes ruptured, drug use, possibility of multiple births, meconium staining, bleeding or spotting
 - 3. Palpate abdomen. Assess for guarding, distension, masses, and tenderness.
- G. Package any clots or tissues passed with bleeding in biohazard bag and transport to hospital with patient.
- H. **Transport** to hospital promptly.
- I. Establish **one or two IVs of normal saline or ringer's lactate**. Use a macrodrip administration set. Draw bloods if time allows.
- J. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.**
- K. **Monitor ECG** lead II. Refer to the appropriate protocol if a dysrhythmia is seen.

TRAUMA

MAJOR TRAUMA

I. MANAGEMENT

- A. In trauma cardiopulmonary arrest, consider terminating or withholding resuscitation according to the **Death in the Field** protocol.
- B. **Stabilize** patient's **spine** in a neutral, in-line position as indicated in the **Spinal Immobilization** protocol.
- C. **Calm the patient** and provide continual reassurance.
- D. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- E. If the **patient is breathing adequately** but has experienced serious trauma, administer **high flow O₂, 10-15 liters** (85-100 percent) **by nonrebreather**. If the patient has experienced minor to moderate trauma, O₂ should be provided at levels dictated by the **Pulse Oximetry Protocol**.
- F. Perform **management of chest wounds**:
 - 1. If **open chest wound** is present, dress with an **occlusive dressing** such as petroleum gauze secured on three sides, leaving one edge of dressing open.
 - 2. If flail chest is present with respiratory insufficiency, assist the patient's breathing with a bag-valve-mask device.
- G. **Control hemorrhage**.
- H. **Stabilize impaled objects** and do not remove unless the object is obstructing the airway or patient cannot be safely transported with the object in place.
- I. **Keep victim warm**.
- J. Apply **C-collar and backboard**.
- K. **Transport**
- L. Follow appropriate protocol for specific injuries.
- M. Establish **one or two IVs of normal saline or ringer's lactate**. Use a macrodrip administration set. Draw bloods if time allows.
- N. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml**.
 - 1. For **children less than eight**, **place** an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
 - 2. If the patient has an **uncontrollable hemorrhage** (e.g. internal bleeding), fluid resuscitate to and maintain a **systolic blood pressure of 90 mmHg**.
 - 3. If **hemorrhage is controllable**, resuscitate to **normal vital signs**.
- O. **While en route, Monitor ECG lead II**.

ABDOMINAL TRAUMA

I. MANAGEMENT

- A. **Follow Major Trauma protocol as indicated.**
- B. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- C. If patient is breathing adequately, **administer O₂**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- D. **Control external bleeding** and cover any open wounds with sterile dressings
- E. **Cover protruding organs** with moist gauze. Do not attempt to replace protruding organs. Apply a vapor barrier to hold in moisture and heat.
- F. **Stabilize impaled objects** penetrating the abdominal wall. Do not remove unless transport is not practical with the object in place.
- G. Establish **one or two IVs of normal saline or ringer's lactate**. Use a macrodrip administration set. Draw bloods if time allows.
 - 1. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.**
 - 2. For **children less than eight**, **place** an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
- H. **Monitor ECG** lead II.

CHEST TRAUMA

I. MANAGEMENT

- A. **Follow Major Trauma protocol as indicated.**
- B. Avoid transporting patient on injured side.
- C. If the patient is not breathing adequately, **manage the airway** per the **Airway Management** protocols.
- D. If the **patient is breathing adequately** but has experienced serious trauma, administer **high flow O₂, 10-15 liters** (85-100 percent) **by nonrebreather**. If the patient has experienced minor to moderate trauma, O₂ should be provided at levels dictated by the **Pulse Oximetry Protocol**.
- E. **Flail chest**
 - 1. As needed, **assist ventilation** with positive pressure O₂.
 - 2. Little can be done to stabilize a flail section in the field. Efforts should be focused on resuscitation and transport.
- F. **Open chest wounds**
 - 1. Cover with an **occlusive dressing** taped on three sides.
 - 2. Observe closely for signs of developing tension pneumothorax.
- G. **Tension pneumothorax**
 - 1. If a penetrating chest wound has been sealed, temporarily **unseal the wound**.
 - 2. Assist ventilation with positive pressure O₂ if necessary.
- H. Establish **one or two IVs of normal saline or ringer's lactate**. Use a macrodrip administration set. Draw bloods if time allows.
- I. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml**.
 - 1. For **children less than eight**, **place** an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
 - 2. If the patient has **shock**, **IVs** should be **started en route**.
 - 3. If the patient has an **uncontrollable hemorrhage** (e.g. internal bleeding), fluid resuscitate to and maintain a **systolic blood pressure of 90 mmHg**.
 - 4. If **hemorrhage is controllable**, resuscitate to **normal vital signs**.
- J. **Monitor ECG** lead II. If a dysrhythmia is seen, refer to the appropriate dysrhythmia protocol.

DISLOCATIONS-DELAYED TRANSPORT

I. GENERAL TREATMENT

- A. This protocol is to be used only by those who have taken specialized training in these procedures e.g. a Wilderness EMT course and are authorized by medical control.
- B. Medical control should be consulted if possible.
- C. An attempt to reduce a simple dislocation into anatomical position should be made if transport time is delayed or prolonged greater than two hours, even if distal circulation is normal.
- D. Check circulation and nerve function before and after any manipulation of an injured bone or joint.
- E. Discontinue an attempt at reduction if pain is significantly increased by manipulation; or resistance to movement is encountered.
 - 1. In these cases, the joint should be immobilized as comfortably as possible in the position of injury for transport.
- F. If trained and authorized, before attempting to reduce a dislocation, consider **morphine sulfate 2-5 mg** slow IVP titrated to pain relief. May repeat PRN up to max of 10 mg. .

II. SHOULDER

- A. Traction and External Rotation
 - 1. Apply gentle and steady traction along the axis of the humerus. If done correctly, this should cause a significant reduction in pain.
 - 2. While maintaining gentle steady traction, guide the patient into a comfortable supine position.
 - 3. Guide the arm first into a position of about 90 degrees abduction, and then into a position of full external rotation (i.e., "throwing a baseball"). Maintain gentle and steady traction during this movement.
 - 4. Positioning of the arm should cause no significant increase in pain, and will generally reduce pain if done correctly. Movement must be gradual and slow.
 - 5. When the position of 90 degrees abduction and full external rotation has been attained ("throwing a baseball"), hold the arm in that position and maintain light, gentle and steady traction to relieve muscle spasm.
 - 6. When the joint is in the correct position and muscle spasm is effectively relieved, the dislocation will generally reduce spontaneously within 15 minutes. Both the patient and the rescuer usually will feel joint reduction.
 - 7. If reduction does not occur, guide the arm into more abduction (up to 120 degrees = "high baseball" position). Continue gentle and steady traction and wait up to 15 minutes for spontaneous reduction.
 - 8. After reduction (or to check for reduction), first adduct the arm by bringing the elbow to the patient's side, and then internally rotate the arm. Maintain light and steady traction during this movement.

9. Recheck and document distal circulation and status of axillary and peripheral nerves.
10. Immobilize using a sling and swathe.
11. Immobilize as comfortably as possible in the position of injury and transport if the attempt at reduction is unsuccessful or:
 - a) pain is significantly increased by manipulation; or
 - b) resistance to positioning is encountered.

III. PATELLA

- A. Check and document distal circulation, motor and sensory function.
- B. Loosen the patellar tendon by flexing the hip and straightening the knee.
- C. After the hip is flexed and the knee straightened firmly push the patella medially back into normal position.
- D. Recheck and document distal circulation and status of peripheral nerves.
- E. Immobilize the leg in full extension.
- F. Immobilize as comfortably as possible in the position of injury and transport if the attempt at reduction is unsuccessful or:
 1. pain is significantly increased by manipulation; or
 2. resistance to positioning is encountered.

IV. DIGITS

- A. Check and document distal circulation, motor and sensory function.
- B. Apply firm traction to the distal segment while applying distal pressure to the distal bone and restore it to normal anatomic position.
- C. Recheck and document distal circulation and status of peripheral nerves.
- D. Immobilize by splinting or by taping injured digit to the adjacent uninjured digit.
- E. Immobilize as comfortably as possible in the position of injury and transport if the attempt at reduction is unsuccessful or:
 1. pain is significantly increased by manipulation; or
 2. resistance to positioning is encountered.

EXTREMITY TRAUMA

I. MANAGEMENT

- A. **Follow Major Trauma protocol as indicated.**
- B. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- C. If the **patient is breathing adequately** but has experienced serious trauma, administer **high flow O₂, 10-15 liters** (85-100 percent) **by nonrebreather**. If the patient has experienced minor to moderate trauma, O₂ should be provided at levels dictated by the **Pulse Oximetry Protocol**.
- D. **Control bleeding** and cover open wounds with a sterile dressing. Clean debris from exposed bone ends and irrigate with normal saline if possible.
- E. **Straighten** angulated **extremities**. Apply gentle traction and align the extremity to its normal anatomical position. Stop straightening if there is a significant increase in pain or resistance is felt.
- F. **Splint** the injury by immobilizing the fracture site as well as the joint above and below the fracture.
- G. **Immobilize injured joints** in the position found, unless motor function, sensation or circulation is impaired distal to the joint. In such cases, apply gentle traction and align the extremity in its normal anatomical position. Stop straightening if there is a significant increase in pain or resistance is felt.
- H. **Splinting** recommendations for **specific injuries**:
 - 1. Pelvic fracture
 - a) Wrap pelvis in sheet extending from umbilicus to mid thigh. Pull sheet ends in opposite directions, applying pressure to pelvis. Secure sheet with wire ties, or tighten and secure as in application of a tourniquet (a knot will not be tight enough).
 - 2. Shoulder Girdle
 - a) Sling and swath
 - 3. Hip Dislocation
 - a) Immobilize to a backboard using padding to maintain the limb in a comfortable position.
 - 4. Hip Fracture
 - a) Place on padded backboard with pillow between legs.
 - 5. Femur fractures
 - a) Traction splint if isolated to shaft of femur.
- I. PASG may be used as a splint in cases of multiple leg fractures.
- J. Amputated parts should be wrapped in sterile gauze moistened with normal saline, protected from contamination (e.g., placed in a sterile rubber glove or zip lock bag) and put in ice water
- K. Establish **one or two IVs of normal saline or ringer's lactate**. Use a macrodrip administration set. Draw bloods if time allows.

- L. If signs and or symptoms of shock are present, **run the IV solution wide open**, reassessing vital signs after every 250 ml.
1. For **children less than eight**, **place** an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
 2. If the patient has **shock**, **IVs** should be **started en route** to the receiving facility. Do not delay transport for IV access/fluid replacement.
 3. If the patient has an **uncontrollable hemorrhage** (e.g. internal bleeding), fluid resuscitate to and maintain a **systolic blood pressure of 90 mmHg**.
 4. If **hemorrhage is controllable**, resuscitate to **normal vital signs**.
- M. If the patient is experiencing **significant pain**, **contact medical control** and **consider** administering **morphine sulfate 2-5 mg** slow IVP titrated to pain relief. May repeat PRN up to max of 10 mg.

HEAD TRAUMA

I. MANAGEMENT

- A. **Follow Major Trauma protocol as indicated.**
- B. If indicated, **immobilize the spine.**
- C. If the patient is not breathing adequately, **manage the airway** per the **Airway Management** protocol and;
 - 1. Perform **endotracheal intubation**
 - 2. Maintain normal respirations; adult – **12 bpm**, infant and child 8 years of age or less – **16 bpm**, infants – **20 bpm** unless;
 - a) The GCS score is 8 or less,
 - b) and active seizures or one or more of the following signs are present,
 - (1) *Fixed or asymmetric pupils*
 - (2) *Abnormal flexion or abnormal extension*
 - (3) *Hypertension and bradycardia in conjunction with altered mental status*
 - (4) *Intermittent apnea*
 - (5) *Further decrease in GCS score of 2 or more points*
 - c) If the above signs are seen, hyperventilate the adult patient at **20 bpm**, or child and infant at **25 bpm**. **Do not hyperventilate unless the above criteria are met.**
- D. If the **patient is breathing adequately** but has experienced serious trauma, administer **high flow O₂, 10-15 liters** (85-100 percent) **by nonrebreather**. If the patient has experienced minor to moderate trauma, O₂ should be provided at levels dictated by the **Pulse Oximetry** Protocol.
- E. **Treat bleeding** as indicated.
- F. For mild head injuries or if the patient is on a backboard and is not hypotensive, elevate the head slightly
- G. Establish **one or two IVs of normal saline**. Use a macrodrip administration set. Draw bloods if time allows.
- H. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.**
 - 1. If the patient has **shock, IVs** should be **started en route**.
 - 2. If the patient has an **uncontrollable hemorrhage**, fluid resuscitate to and maintain a **systolic blood pressure of 90 mmHg**.
 - 3. If **hemorrhage is controllable**, resuscitate to **normal vital signs**.
 - 4. For **children less than eight**, place an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
- I. **Monitor ECG** lead II.

SOFT TISSUE TRAUMA

I. MANAGEMENT

- A. **Follow Major Trauma protocol as indicated.**
- B. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
 - 1. **Consider** intubating **the patient with an inhalation injury.**
- C. If the **patient is breathing adequately** but has experienced serious trauma, administer **high flow O₂, 10-15 liters** (85-100 percent) **by nonrebreather**. If the patient has experienced minor to moderate trauma, O₂ should be provided at levels dictated by the **Pulse Oximetry Protocol**.
- D. **Control bleeding:**
 - 1. Locate the site of bleeding from the wound and apply **direct pressure**.
 - 2. **Elevate** the bleeding area above the level of the heart.
 - 3. **Pressure points** may be used if direct pressure is not effective.
 - 4. Consider using a **tourniquet** if the above methods fail to slow or stop bleeding.
- E. **Treat shock:**
- F. **Straighten** grossly angulated **extremities**.
- G. Care for **all open wounds** as follows:
 - 1. Expose the wound.
 - 2. Control bleeding.
 - 3. Clean debris from the wound surface.
 - 4. Dress and bandage wound.
- H. Treatment for **specific wounds:**
 - 1. Puncture wounds
 - a) Search for exit wound.
 - b) Immobilize spine if mechanism indicates.
 - 2. Impaled objects
 - a) Stabilize in place.
 - b) If object is in the cheek and both ends are visible, remove it by pulling it out in the direction that it entered the cheek.
 - c) Remove only if patient cannot be safely transported with object in place.
 - 3. Partial Avulsions
 - a) Clean the wound surface and replace the flap.
 - 4. Amputations and complete avulsions
 - a) Treat stump or injured site as for any soft tissue injury.
 - b) Wrap amputated or avulsed part in gauze moistened with normal saline, place part in plastic bag and keep it cool (not frozen).
 - 5. Open neck wound

- a) Apply an occlusive dressing and secure, being careful not to compromise breathing.
 - b) Try to keep neck below level of heart.
- I. **Burns**
- 1. Thermal or electrical
 - a) Stop the burning process.
 - b) Remove any smoldering clothing and jewelry on affected limbs.
 - c) Apply **moist dressings** to burns totaling **less than 10%** body surface area (**BSA**).
 - d) Apply a **dry dressing** to burns **over 10% BSA**.
 - 2. Chemical
 - a) Use care not to contaminate yourself.
 - b) Remove any clothing that had come into contact with the chemical.
 - c) Irrigate with copious amounts of water. Brush any dry products off before irrigating. Be careful and try to control the run off.
 - d) Remove any jewelry on affected limbs.
- J. Establish **one or two IVs of normal saline or ringer's lactate**. Use a macrodrip administration set. Draw bloods if time allows.
- K. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml**.
- 1. For **children less than eight**, place an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
 - 2. If the patient has **shock**, **IVs** should be **started en route** to the receiving facility. Do not delay transport for IV access/fluid replacement.
 - 3. If the patient has an **uncontrollable hemorrhage** (e.g. internal bleeding), fluid resuscitate to and maintain a **systolic blood pressure of 90 mmHg**.
 - 4. If **hemorrhage is controllable**, resuscitate to **normal vital signs**.
- L. For **burn patients**, administer **Ringer's Lactate 4ml/kg/%BSA burned** (only count 2nd or 3rd degree burns toward TBSA burned). Give ½ of the calculated amount over the first eight hours post burn and the remainder within 24 hours post burn.
- M. If the patient is experiencing **significant pain**, **contact medical control** and **consider** administering **morphine sulfate 1-5 mg** slow IVP titrated to pain relief. May repeat PRN up to max of 10 mg.

ENVIRONMENTAL

AVALANCHE BURIAL

I. EVALUATION AND TREATMENT

- A. If patient is determined to be pulseless (after a pulse check of up to 60 seconds) and burial time is estimated to be less than 35 minutes, perform CPR for up to 30 minutes.
- B. If patient is determined to be pulseless (after a pulse check of up to 60 seconds) and burial time is estimated to be more than 35 minutes, perform CPR if an air pocket is present or uncertain. If no air pocket – do not perform CPR.
- C. Assess carefully for associated injuries. Follow the Major trauma Protocol.
- D. Follow the protocol on Hypothermia for additional therapy as needed.
- E. If the main problem is not severe hypothermia, medication should be used as in the normothermic patient
- F. Fluid therapy should be given as indicated but never at a “to keep open” rate, which may result in a frozen IV line. Boluses of warm fluid should be given as needed.

COLD WATER NEAR DROWNING:

II. EVALUATION AND TREATMENT

- A. A personal flotation device should be worn by all rescuers when working on or near water.
- B. Use abdominal thrusts only when a solid foreign body airway obstruction is suspected.
- C. Start CPR if the patient is pulseless after a pulse check of up to 60 seconds
- D. The CWND victim may not be severely hypothermic and should be resuscitated aggressively with CPR/ACLS.
- E. Assess carefully for associated injuries.
- F. Follow the appropriate section of the **Hypothermia** protocol (including the 60 second pulse check) for additional therapy as needed.

DIVING EMERGENCIES

I. GENERAL TREATMENT

- A. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- B. If patient is breathing adequately, **administer O₂**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- C. Prevent heat loss and rewarm as appropriate.
- D. Transport the patient in position of comfort, by ground, in an aircraft pressured to sea level, or by aircraft flying at lowest safe altitude (less than 1,000 feet, if possible).

II. MANAGEMENT-ACUTELY SICK DIVE EMERGENCY PATIENTS

- A. Initiate rapid transport to a medical facility.
- B. Document changes in the patient's signs, symptoms, and vital signs.
- C. Anticipate seizures and treat by protecting the patient during the seizure and resuming the administration of oxygen as soon as possible.
- D. Start an **IV** and give a **500 ml bolus of normal saline**, followed by **an infusion of 250 ml/hr**.
- E. If patient seizes, follow seizure protocol.

III. MANAGEMENT-STABLE DIVE EMERGENCY PATIENTS

- A. If the patient is not receiving IV fluids, give the patient warm, non-alcoholic fluids if this can be accomplished without interrupting the delivery of oxygen. Plain water is best. Fluids containing large amounts of sugar or caffeine should be avoided because of their diuretic potential.
- B. Oxygen should be continued until the patient reaches the medical facility.
- C. Perform a baseline neurological examination which tests at least orientation, eyes, facial movement, hearing, sensory perception, and balance and coordination, if possible.
- D. Transport to a medical facility for further evaluation and treatment.

FROSTBITE

I. MANAGEMENT

- A. Concerns:
1. Do not rub the frozen part;
 2. Do not allow the patient to have tobacco;
 3. Do not apply ice or snow;
 4. Do not attempt to thaw the frostbitten part in cold water;
 5. Do not attempt to thaw the frostbitten part with high temperatures such as those generated by stoves, exhaust, etc.; or
 6. Do not break blisters which may form.
- B. Treatment of deep frostbite is usually extremely painful and best accomplished in a medical facility. In most circumstances, the risks posed by improper rewarming or refreezing outweigh the risks of delaying treatment for deep frostbite.
- C. If transporting a patient with frostbite that will not be rewarmed in the field, the medical provider should protect the frostbitten parts from additional injury and temperature changes.
- D. Protect the rewarmed area from refreezing and other trauma during transport. A frame around the frostbitten area should be constructed to prevent blankets from pressing directly on the injured area.
- E. Do not allow an individual who has frostbitten feet to walk except when the life of the patient or rescuer is in danger. Once frostbitten feet are rewarmed, the patient becomes nonambulatory.
- F. Shock due to frostbite is very uncommon. However, medical personnel should always be alert for shock and begin treatment at the earliest sign it is developing. If the frostbite patient develops shock, personnel should perform a thorough examination for additional injuries.

HEAT EMERGENCIES

I. MANAGEMENT

- A. Remove patient to **safe environment** before starting treatment.
- B. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- C. If patient is breathing adequately, **administer O₂**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- D. **Position patient** to satisfy his or her physiological needs. Supine - to protect the airway. Supine with legs elevated-if are hypotensive. In a sitting position - if not hypotensive. On side-if vomiting.
- E. **Treat for shock.**
- F. Determine if there is a **history** of heat exposure. Assess temperature of the environment and exertion level.
- G. **Cool** patient.
 - 1. Passively cool patients with heat cramps. Place patient in air-conditioned room or in the back of the ambulance.
 - 2. Heat exhaustion patients should have clothing removed and be placed in cool environment.
 - 3. For the heatstroke patient immediate cooling is the priority. Wet patient down. Fan briskly. Run air conditioner at high level. Use ice packs if available. Apply to groin, under the armpits, sides of chest, head and neck.
- H. Begin **oral rehydration** if indicated for non-complicated heat cramps or minor heat exhaustion. Use water or balanced electrolyte solution such as Gatorade, Allsport, etc.
- I. Establish **one or two IVs of normal saline**. Use a macrodrip administration set. Draw bloods as time allows.
- J. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.**
 - 1. For **children less than eight**, **place** an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20 ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
- K. **Monitor ECG** lead II. Treat any dysrhythmias according to the **Dysrhythmia** protocol.

HYPOTHERMIA

I. ALL COLD PATIENTS:

- A. **Careful handling** is the highest priority
- B. **Prevent further heat loss.**
 - 1. Remove wet clothing if in shelter. Cut clothing off to avoid excessive movement.
 - 2. Cover the head and neck.
 - 3. Insulate above and below.
 - 4. Protect from the wind.
 - 5. Apply insulated heat packs to high heat transfer/loss areas such as the head, neck, underarms, sides of the chest, and groin.
 - 6. Cover with a vapor barrier (such as a plastic garbage bag).
 - 7. Move the patient to a warm environment.
 - 8. Consider covering patient's mouth and nose with a light fabric to reduce heat loss through respirations.
 - 9. Chemical heat packs slow cooling but do not rewarm. They are best used on hands and feet to prevent frostbite.
- C. **Rewarm**
 - 1. **If patient is alert** enough to swallow, give **food and drinks high in calories**. The calories will increase ability to shiver which is most effective field rewarming.
 - a) Do not give alcohol.
 - 2. Exercise drops temperature and then increases it but, this is not as effective as shivering. If dry and fed and shivering, mild exercise is OK
- D. Oxygen should be heated and humidified, if possible to a maximum of 108 ° F (42° C).
- E. Splinting should be performed, when indicated, with caution to prevent additional injuries to frostbitten tissues.
- F. Treat and transport to a medical facility.

II. MILD HYPOTHERMIA:

- A. Treat the patient as outlined above.
- B. If there is no way to get to a medical facility, rewarm the patient gradually by:
 - 1. Warm showers or warm bath if the patient is alert.
 - 2. Placing patient in a sleeping bag and providing contact with a warm body.

III. SEVERE HYPOTHERMIA WITH SIGNS OF LIFE:

- A. Treat the patient as outlined above with the following exceptions:
 - 1. Do **not** put severely hypothermic patients in a shower or bath.

2. Do **not** give a patient oral fluids or food unless he or she is capable of swallowing and protecting his or her airway.
3. Do **not** attempt to increase heat production through exercise.

IV. SEVERE HYPOTHERMIA WITH NO LIFE SIGNS:

- A. Rewarming is key to arrest survival in hypothermia. Field techniques are ineffective. The goal is to deliver a viable patient to a facility that can perform effective rewarming (most clinics and hospitals).
- B. Treat as above.
- C. Use **mouth-to-mask** breathing.
- D. An AED or monitor may help determine cardiac activity. If any organized (other than VT) electrical rhythm is shown, do not start CPR.
- E. If no pulse (after checking for up to 60 seconds) and no respirations and no contraindications, start CPR. Initiation of chest compressions should only follow careful and adequate ventilation for 3 minutes.
- F. Ventilate for at least 3 minutes with 100% O₂ prior to intubation attempts.
- G. Be careful to not hyperventilate patient-blows off CO₂ and causes vasoconstriction.
- H. If CPR can not be continued, it should not be started.
- I. If facility or transport unit is available in less than 3 hours, do not start CPR. If not, and indicated, do CPR for 30 minutes and terminate if no response.
- J. If the core temperature is **86° (30°C) or greater, defibrillation may be used** when indicated. If core is less than **86° (30°C)**, one set of three stacked shocks may be given if indicated.
- K. If resuscitation has been provided in conjunction with rewarming techniques for more than 60 minutes without the return of spontaneous pulse or respiration, contact the base physician for recommendations. If contact with a physician is not possible and delivery of the patient to the receiving facility will be delayed, Emergency Medical Technicians may consider terminating the resuscitation in accordance with AS 18.08.089.

V. IV THERAPY

- A. Many hypothermic patients are dehydrated and may require aggressive fluid resuscitation. The field goal is volume expansion not rewarming.
 1. Use bolus therapy for volume expansion to endpoint of normalization of vital signs; specifically heart rate.
- B. IV's should be heated to patient's current core temperature or greater. 98-104° F (37-40° C) is ideal.
- C. The recommended fluid for rehydration is a balanced salt solution, such as normal saline or ringer's lactate.
- D. Do not use TKO lines in hypothermic patients. Use a saline lock.

VI. MEDICATIONS:

- A. Indications for medications are the same for mildly hypothermic patients as they are for normothermic patients.
- B. In the patient with a core temperature of less than 86°F (30° C) medications should be withheld.
 - 1. Medications are inefficient and poorly metabolized in the hypothermic patient. In addition, due to delayed metabolism, medications given in normal therapeutic doses to severely hypothermic patients can result in toxicity when the patient is rewarmed.
- C. As with any person with altered consciousness, Narcan and 50% dextrose should be considered when there is a reasonable suspicion that their use is warranted.

PROCEDURES

Note:

As is the case with any advanced life support treatment provided by an EMT or MICP, the following ALS procedures may only be performed under the direction of a physician, either by direct verbal communications or through physician signed standing orders.

Some procedures listed in this section are not authorized in the EMT Scope of Certified Activities 7 AAC 26.040. Authorization must be obtained by the service medical director through the State EMS office by following 7 AAC 26.670 before an EMT may perform those procedures.

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BASIC AIRWAY MANAGEMENT

I. MANUAL MANEUVERS:

A. Head tilt, chin lift:

1. Indications:
 - a) The head tilt, chin lift maneuver shall be used to initially open and assure a patient airway in all non-trauma patients with altered level of consciousness.
2. Contraindications:
 - a) The head tilt, chin lift maneuver is contraindicated in cases of trauma.

B. Modified jaw thrust:

1. Indications:
 - a) The modified jaw thrust shall be used to initially open the airway of any patient with altered consciousness when there is suspicion of trauma.
2. Contraindications:
 - a) There are no contraindications to this procedure, however, it may cause discomfort to the patient.

C. Jaw lift:

1. Indications:
 - a) This procedure is used when placing an oral airway. It is a transitional technique from manual to mechanical maneuvers.
2. Contraindications:
 - a) There is a high risk of injury to the EMT's fingers when performing this procedure. It is therefore contraindicated in any patient who has the potential to bite the EMT.

D. Sellick's maneuver:

1. Indications:
 - a) To prevent gastric distension and regurgitation when performing bag-valve-mask ventilation.
 - b) When needed (requested), to position the larynx for intubation.
2. Contraindications:
 - a) This procedure is relatively contra-indicated in pediatric patients because the trachea is soft and easily occluded. It is also difficult to identify the anatomy in pediatric patients.

II. BASIC MECHANICAL ADJUNCTS:

A. Oropharyngeal (Oral) airway:

1. Indications:
 - a) The oral airway should be used as tolerated for any patient with altered consciousness or airway insufficiency.

- b) After successful endotracheal intubation, the oral airway should be inserted to serve as a bite block.
 - 2. Contraindications:
 - a) The oral airway is contraindicated in patients who do not tolerate insertion of the device. (i.e. gag reflex)
 - B. **Nasopharyngeal (Nasal) Airway:**
 - 1. Indications:
 - a) The nasal airway is to be used in any patient who cannot maintain his or her airway but will not tolerate an oral airway.
 - 2. Contraindications:
 - a) The nasal airway is contraindicated in any patient who may have a facial or lower skull fracture.
 - b) This airway is also contraindicated if the nose is obstructed.
- III. VENTILATION:
 - A. Attempts to ventilate are essentially useless until an open airway has been established.
 - 1. Consider placing more than one basic adjunct e.g., two NPAs or an NPA with an OPA.
 - B. **Mouth to Mask Ventilation:**
 - 1. This technique should be used until a bag-valve-mask is available.
 - C. **Bag-Valve Mask-(Adult):**
 - 1. Indications:
 - a) The BVM should be used for any patient with the following conditions:
 - (1) *apnea;*
 - (2) *respiratory rate greater than 30 or less than 10;*
 - (3) *inadequate or insufficient ventilation within any respiratory rate.*
 - 2. Contraindications:
 - a) There are no contraindications to the use of a bag-valve-mask.
- IV. SUCTIONING:
 - A. **Pharyngeal Suction:**
 - 1. Indications:
 - a) Pharyngeal suctioning is indicated whenever substances like blood, mucus, vomit, food particles etc. are present in the upper airway.
 - 2. Contraindications:
 - a) Hypoxia is a relative contraindication to pharyngeal suctioning.
 - b) However, it may be necessary to remove matter from the airway to prevent hypoxia.

- c) Pre-ventilation with 100% O₂ reduces hypoxia associated with suctioning.

V. TABLE OF TREATMENT ADJUNCTS:

Adjunct	Indications	Contraindications	Comments
Suction	Indispensable for all patients with fluid or particulate debris in airway	None	No more than 15 seconds per attempt
Modified jaw thrust	Initial airway maneuver for all trauma patients	None	None of these adjuncts protects against aspiration in patient with depressed consciousness
Hyperextension of neck	Opening airway of non-trauma patient	Potential cervical spine injury	
Nasal airway	Obstruction by tongue with gag reflex present	Potential mid-face injury	
Oral airway	Obstruction 2° to tongue, etc.	Positive gag reflex	

ADVANCED AIRWAY MANAGEMENT

I. DUAL LUMEN AIRWAY DEVICE

A. Indications

1. Intubation alternative for less experienced providers.
2. Difficult airway.
3. Failed intubation.

B. Contraindications

1. Patients under age 16
2. Intact gag reflex
3. Known esophageal disease
4. Caustic ingestion

II. LARYNGEAL MASK AIRWAY (LMA)

A. Indications:

1. Intubation alternative for less experienced providers.
2. Difficult airway.
3. Failed intubation.

B. Contraindications:

1. Vomiting
2. Gag reflex

III. ENDOTRACHEAL INTUBATION:

1. Indications:

- a) Airway obstruction.
- b) Cardiac Arrest
- c) Prolonged bag-valve mask ventilation
- d) Patient inability to protect airway.
- e) Shock, coma, severe head injury with Glasgow Coma score ≤ 8 .
- f) Severe respiratory distress that is not improved after treatment.
- g) Flail chest or other severe chest injuries
- h) Inhalation injuries.
- i) Early intubation is strongly recommended for patients who have burns to the head, neck, or upper chest.

2. Contraindications:

- a) Trauma-must use modified technique if cervical spine trauma is a possibility.
- b) Patient intolerance is only a relative contraindication to this procedure.

B. **Orotracheal Direct Viewing (Traumatic Mechanism of Injury):**

1. Indications:

- a) Any of the previous indications in the setting of trauma.
- 2. Contraindications:
 - a) Patient intolerance is a relative contraindication to this procedure.

IV. TABLE OF TREATMENT ADJUNCTS:

Adjunct	Indications	Contraindications	Comments
Dual Lumen Airway device	Inexperienced provider. Unable to intubate	16 or less Under 5' Intact gag Esophageal disease Caustic ingestion	Difficult to manage if secretions/vomit between cuffs.
Laryngeal Mask Airway	Inexperienced provider. Unable to intubate	Gag Reflex Vomiting	Does not provide complete protection from aspiration.
Orotracheal intubation	Failure of basic maneuvers; provides airway protection	None	Difficult in patients with severe maxillofacial injuries

V. MEDICATIONS THAT CAN BE ADMINISTERED BY TRACHEA:

Lidocaine
Epinephrine
Atropine
Narcan

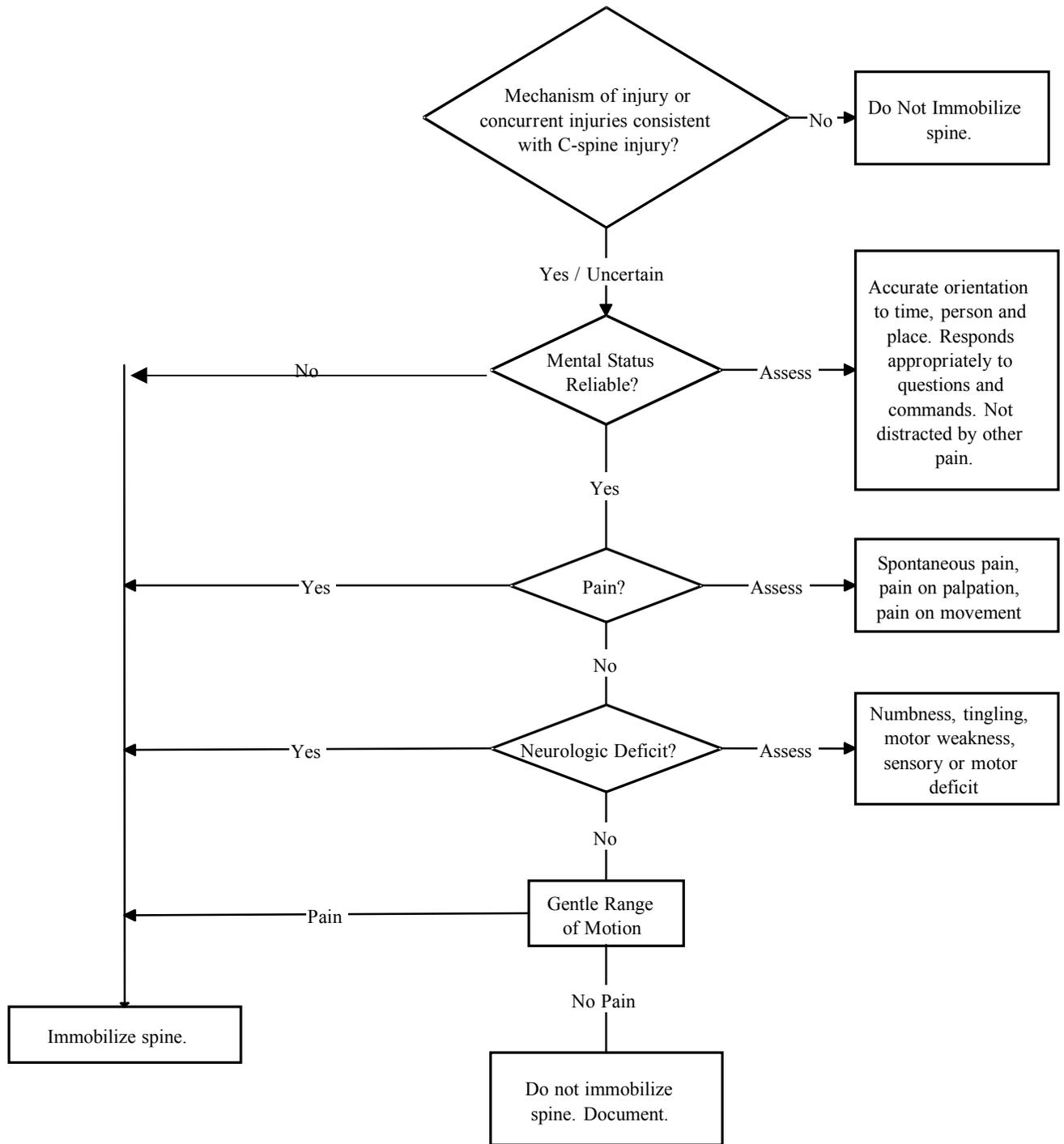
PULSE OXIMETRY**I. TREATMENT GUIDELINES**

A. For persons with underlying respiratory disease, titrate oxygen to maintain a normal saturation for that individual.

B. For persons without respiratory disease at sea level:

SpO ₂ READING	INTERPRETATION	ACTION
100% TO 95%	Ideal Range	Oxygen therapy as indicated by patient signs and symptoms, mechanism of injury, or nature of illness
95% TO 90%	Mild to Moderate Hypoxemia	Oxygen therapy as indicated by patient signs and symptoms, mechanism of injury, or nature of illness
90% TO 85%	Severe Hypoxemia	Check airway, start aggressive O ₂ therapy, high flow O ₂ via nonrebreather mask @ 15 lpm Consider bag valve mask ventilation with 100% O ₂
85% OR LESS	Respiratory Failure	Prepare to intubate or assist ventilations with 100% O ₂ and bag-valve-mask

SPINAL IMMOBILIZATION ALGORITHM



REFERENCE

CELSIUS TO FARENHEIT CONVERSIONS

Celsius	Fahrenheit
44.0	111.2
43.0	109.4
42.0	107.6
41.0	105.8
40.0	104.0
39.0	102.2
38.0	100.4
37.0	98.6
36.0	96.8
35.0	95.0
34.0	93.2
33.0	91.4
32.0	89.6
31.0	87.8
30.0	86.0
29.0	84.2
28.0	82.4
27.0	80.6
26.0	78.8
25.0	77.0
24.0	75.2
23.0	73.4
22.0	71.6
21.0	69.8
20.0	68.0
19.0	66.2
18.0	64.4
17.0	62.6
16.0	60.8
15.0	59.0
14.0	57.2
13.0	55.4
12.0	53.6
11.0	51.8
10.0	50.0

GLASGOW COMA SCALE

<u>Adult/Child</u>	<u>BEST</u>	<u>INFANT</u>
	Eye Opening	
Spontaneous	4	Spontaneous
To Voice	3	To speech
To Pain	2	To pain
None	1	No response
	Verbal Response	
Oriented	5	Coos, babbles
Confused	4	Irritable, cries
Inappropriate	3	Cries to pain
Incomprehensible	2	Moans, grunts
No response	1	No response
	Motor Response	
Obeys commands	6	Spontaneous
Localizes pain	5	Localizes pain
Withdraws	4	Withdraws
Flexion	3	Flexion
Extension	2	Extension
No response	1	No response
Total	3-15	Total

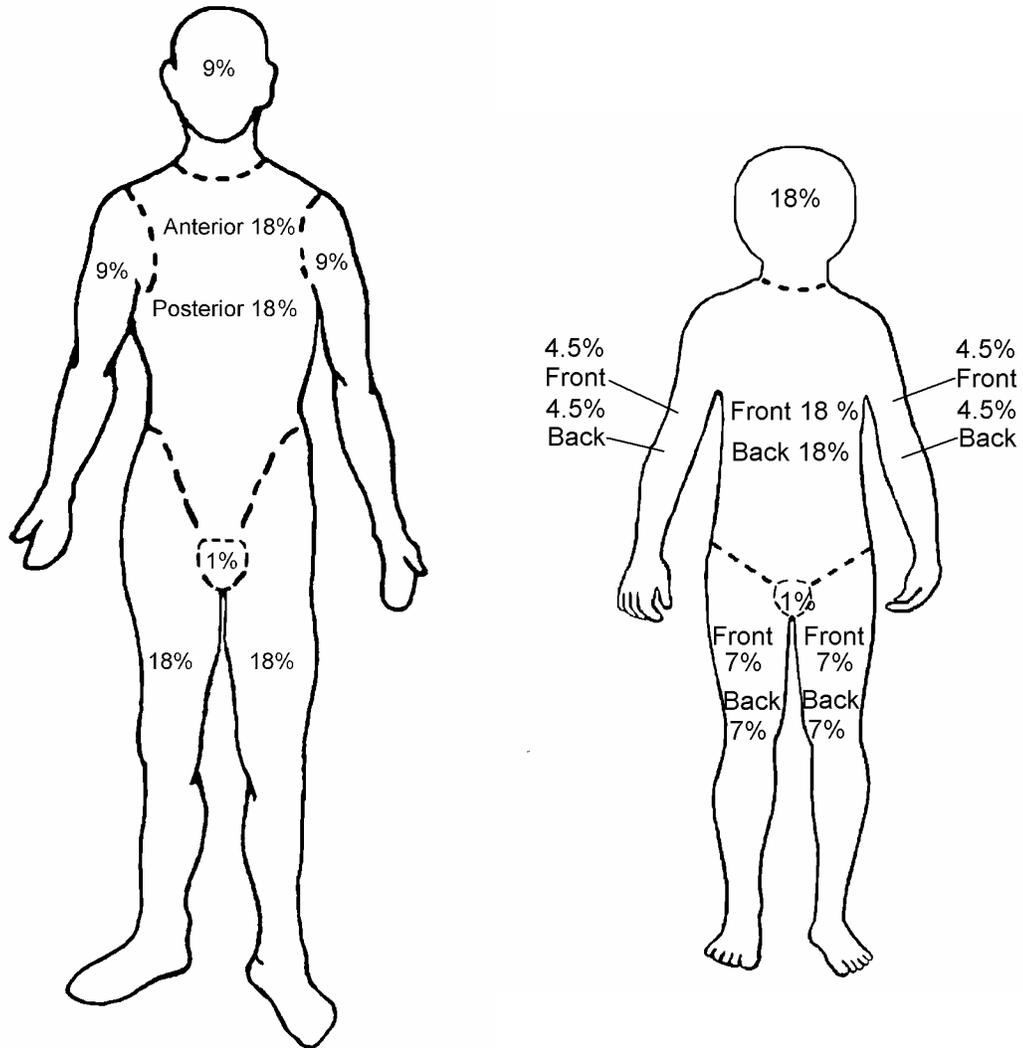
PEDIATRIC VITAL SIGNS

Pediatric Vital Signs			
Age	Pulse	Resp	BP (systolic)
Birth	100-180	30-60	40-60
Neonate	100-160	30-60	60-90
Infant	100-140	30-60	80-100
Toddler	80-120	20-30	80-110
School Age	60-120	18-30	80-110
Adolescent	60-100	12-16	90-120

TELEPHONE NUMBERS

Local Dispatch	
Medical Control	
Local Medical Facility	
Receiving Hospital	
Local Medevac	
Police	
Office of Children’s Services	1-800-478-4444
Senior and Disability Services	1-800-478-9996
US Coast Guard	1-800-478-5555
	225-5666 Juneau
	271-6700 Anchorage
Poison Control	1 800-222-1222
Radio Frequencies	
SAR	
Dive Rescue	
Suicide Prevention	1-800-SUICIDE

RULE OF NINES



ABBREVIATION LIST

ABC	airway, breathing, circulation	DT	delirium tremens
abd	abdominal	ECG	electrocardiogram
ABG	arterial blood gas	ED	emergency department
ACLS	Advanced Cardiac Life Support	eg	for example
AED	automated external defibrillation	EMS	emergency medical service
AHA	American Heart Association	EMT	emergency medical technician
AICD	automatic implantable cardioverter/ defibrillator	ET	endotracheal tube
AIDS	acquired immunodeficiency syndrome	ETA	estimated time of arrival
ALS	advanced life support	ETOH	ethyl alcohol
AMI	acute myocardial infarction	ETT	Emergency Trauma Technician
ASAP	as soon as possible	F	Fahrenheit
ASR	acute stress reaction	FiO2	fraction of inspired oxygen
AVPU	alert, voice, pain, unresponsive	Fr	french
BG	blood glucose	Fx	fracture
BLS	basic life support	GCS	Glasgow coma scale
BP	blood pressure	GI	gastrointestinal
BSA	body surface area	gm	gram
BSI	body substance isolation	gtts	guttae (drops)
C	centigrade	GU	genitourinary
c/o	complaint of	HAZMAT	hazardous materials
CDC	Centers for Disease Control	Hg	mercury
CHB	complete heart block	HR	heart rate
CHF	congestive heart failure	HTN	hypertension
CISD	critical incident stress debriefing	Hx	history
CISM	critical incident stress management	ICP	intracranial pressure
CME	continuing medical education	IM	intramuscular
CNS	central nervous system	IO	intraosseous
CO2	carbon dioxide	IV	intravenous
COPD	chronic obstructive pulmonary disease	IVP	IV push
CPR	cardio pulmonary resuscitation	J	joule
CSF	cerebral spinal fluid	Kg	kilogram
C-spine	cervical spine	LMA	laryngeal mask airway
CT	computerized tomography	LMP	last menstrual period
D50	dextrose 50%	LOC	loss of consciousness
D5W	dextrose 5% and water	LR	lactated ringers
		MCI	mass casualty incident
		MDI	metered dose inhaler
		mEq	milliequivalent
		mg,	milligram
		MI	myocardial infarction
		Min	minute
		MOI	mechanism of injury
		MVC	motor vehicle crash

NG	nasogastric	prn	pro re nata (as needed)
NPA	nasopharyngeal airway	psi	pounds per square inch
NPO	nil per os (nothing by mouth)	Pt	patient
NRB	non-rebreathing mask	PVC	premature ventricular contraction
NS	normal saline	RN	registered nurse
NTG	nitroglycerin	RSI	rapid sequence induction
O2	oxygen	SL	sublingual
OPA	oropharyngeal airway	SpO2	pulse oxygen saturation (pulse oximetry)
OPQRST	onset, provocation, quality, radiation, severity, time	SQ	subcutaneous
P	pulse	ST	sinus tachycardia
PASG	pneumatic anti-shock garment	SVT	supraventricular tachycardia
PE/Kg	Phenytoin Equivalent	TCP	transcutaneous pacer
PEA	pulseless electrical activity	VF	ventricular fibrillation
PFD	personal flotation device (life jacket)	VS	vital signs
PMH	past medical history	VT	ventricular tachycardia
PO	per os (by mouth)	WCT	wide complex tachycardia
PPE	personal protection equipment	wt	weight
PPV	Positive pressure ventilation	yo	year old