

Procedure: AIRWAY MANAGEMENT

EMT

- Oxygen administration / Assist ventilations with bag valve mask
- Call for ALS intercept enroute to the closest Emergency Department
- Consider CPAP for a spontaneously breathing patient, if indicated and credentialed by medical director (See PROCEDURE: CONTINUOUS POSITIVE AIRWAY PRESSURE).

EMT STOP

INTERMEDIATE

AEMT

- Needle thoracostomy if tension pneumothorax is present, OR bilateral needle thoracostomies if traumatic cardiac arrest (see Key Points).
- Evaluate the patient for characteristics of a difficult airway using LEMON. If characteristics of a difficult airway are present, consider using an elastic gum bougie during intubation attempt, OR placing a supraglottic airway.
- Endotracheal intubation (with cervical spine precautions prn) **OR** place FDA approved supraglottic airway device. ET: maximum 2 attempts and must be monitored with continuous waveform capnography from time of intubation.
NOTE: If unable to intubate, place supraglottic airway or just ventilate patient.
- Consider topical anesthetic spray or jelly prior to intubation/supraglottic airway placement.

INTERMEDIATE and AEMT STOP

CRITICAL CARE

- ***If unable to secure airway or adequately ventilate, perform needle or percutaneous cricothyrotomy with FDA approved device, if credentialed.***
- Place naso- or orogastric tube to decompress the stomach contents after the airway is secured.

CC STOP

PARAMEDIC

- If credentialed by medical director, consider MFI protocol.
- Surgical airway, if approved and credentialed by medical director

PARAMEDIC STOP

PHYSICIAN OPTIONS

- Additional intubation attempts by more experienced or higher level provider

Key Points/Considerations

- Signs of a tension pneumothorax requiring needle thoracostomy include unilateral loss of breath sounds, hypotension, hypoxia, evidence of penetrating or blunt chest trauma on the affected side, distended jugular veins, and tracheal deviation away from the affected side (late sign).
- Confirm endotracheal tube placement with auscultation and continuous waveform capnography.
- Maintain continuous waveform capnography if ETT placed until the patient is placed onto the ED stretcher.
- LEMON is a mnemonic that can be used to help assess for potential difficulty in intubation.

- L: Look for facial / airway features that will affect management (e.g. facial hair, deformities, etc).
- E: Evaluate the 3 – 3 – 2 rule. The patient should be able to open the mouth three fingerbreadths. The distance between the chin and the hyoid bone should be three fingerbreadths and the distance between the hyoid bone and the larynx should be 2 fingerbreadths.
- M: Mallampati score assesses visualization by asking the patient to open her mouth (see diagram). A score of 3 or 4 indicates likely difficulty with intubation.
- O: Obstruction, including stridor or foreign bodies
- N: Neck mobility - The less the mobility, the greater the difficulty.

Procedure: MEDICATION FACILITATED INTUBATION

INDICATIONS

- For use only by Paramedics credentialed by their Medical Director and with the assistance of a second MFI trained RN or ALS provider on scene.
- Medication facilitated intubation (MFI) may be utilized on standing orders when definitive airway control is necessary in a patient **14 years old or older.***

CONTRAINDICATIONS / PRECAUTIONS

- The use of paralytic agents is contraindicated if patients cannot be ventilated with a bag-valve-mask (BVM) due to anatomy, facial/airway trauma or other reasons.
- If unable to adequately ventilate the patient, perform cricothyroidotomy.

PROCEDURE

- Position the patient appropriately. Attach SaO₂, NIBP (if available) and Cardiac Monitor.
- Preoxygenate via NRB or with a BVM.
- Assemble and test all basic and advanced airway equipment including suction.
- Draw appropriate medications into labeled syringes.
- Have a second rescuer apply and maintain cricoid pressure.
- Administer Etomidate (Amidate) 0.3 mg/kg rapid IV push.
 - If ideal intubating conditions are obtained, intubate the patient.
 - Ketamine (Ketalar) 2mg/kg IV (one dose) is an alternative induction medication to Etomidate (Amidate).
- If ideal intubating conditions are not obtained, administer:
 - Succinylcholine (Anectine) 1.5 mg/kg IV **OR**
 - Rocuronium (Zemuron) 1 mg/kg IV.
- An additional two (2) attempts (maximum total attempts = 4 per patient) is permitted if performing Medication Facilitated Intubation.
- If intubation unsuccessful, or intubating conditions are poor, insert a supraglottic airway device.
- Abandon attempt if SaO₂ < 90% during the attempt. Ventilate the patient until SaO₂ > 98%.
- If unable to adequately ventilate the patient, perform needle or percutaneous cricothyroidotomy.
- Attach a continuous EtCO₂ monitor, confirm ETT placement and secure the ETT.
- Administer continual sedation with:
 - Midazolam (Versed) 2 mg IV every 5 minutes PRN **OR**
 - Lorazepam (Ativan) 2 mg IV every 5 minutes if hemodynamically stable **OR**
 - Diazepam (Valium) 5 mg IV every 5 minutes if hemodynamically stable
- Administer Vecuronium (Norcuron) 0.1 mg/kg or Rocuronium 1mg/kg IV **ONLY** if necessary for patient safety.
- Place naso- or orogastric tube and decompress the stomach contents.
- Continuously monitor ETT placement including effectiveness of oxygenation and ventilation.

PHYSICIAN OPTIONS

- Additional intubation attempts

Key Points/Considerations

- Prior to start of the procedure, evaluate the patient for features of a difficult airway using LEMON.
- If patient has features consistent with a difficult airway, consider utilizing an elastic gum bougie (or similar device) with the first intubation attempt or placing a supraglottic airway rather than endotracheal intubation.
- *May be used in patients age 14 and older **OR** those with obvious signs of puberty as defined in Pediatric: General Considerations.
- The ADULT PAIN / NAUSEA / SEDATION protocol should be utilized for ongoing sedation and pain management of patients who are already intubated.

Procedure: CONTINUOUS POSITIVE AIRWAY PRESSURE

EMT

- Oxygen administration / Assist ventilations with bag valve mask.
- Initiate CPAP for a spontaneously breathing patient, if credentialed by medical director
- Indications for use: (must have all three)
 - Age > 10 years old
 - Signs of severe respiratory distress defined as the patient does not improve after oxygen administration & at least two of the following:
 - Respiratory Rate > 24 / min
 - SaO₂ < 92%
 - Significantly decreased air movement
 - Pulmonary edema or frothy sputum, rales or severe wheezing all fields
 - Significantly increased work of breathing (e.g. retractions, tripod position, skin mottling, pallor or cyanosis)
 - Awake patient who can cooperate with CPAP
- Contraindications for use: (any one)
 - Altered mental status (GCS < 14)
 - Systolic BP < 90
 - Respiratory arrest or agonal respirations
 - Blunt or penetrating chest trauma
 - Suspected pneumothorax
 - Subcutaneous emphysema
 - Facial trauma inhibiting mask seal
 - High risk vomiting or aspiration
 - Tracheostomy
 - Stridor or suspected airway obstruction
- If indications are present and contraindications are absent:
 - Position patient in semifowlers position and apply a proper fitting CPAP mask at 10 cm H₂O pressure.



EMT STOP

INTERMEDIATE

AEMT

CRITICAL CARE

PARAMEDIC

- May increase by 5 cm H₂O every 5 minutes if no improvement, as long as the patient tolerates the increased pressure. (max 15 cm H₂O). May decrease by 5 cm H₂O immediately if patient unable to tolerate the pressure.

 INTERMEDIATE/AEMT/CC/PARAMEDIC STOP

PHYSICIAN OPTIONS

- Increase CPAP pressure.

Key Points/Considerations

- Patients who have not had CPAP/BiPAP before often require coaching to breath and relax with the machine.
- Sidestream capnography may not produce an accurate waveform secondary to high airflow rates.

Respiratory: ASTHMA / COPD

EMT

- Initiate oxygen therapy / BVM assist as necessary.
- Monitor pulse oximetry (if available).
- Follow BLS albuterol protocol if credentialed.
- Consider CPAP for a spontaneously breathing patient, if indicated and credentialed by medical director (See PROCEDURE: CONTINUOUS POSITIVE AIRWAY PRESSURE).
- Transport and intercept with ALS enroute to the Emergency Department.

EMT STOP

INTERMEDIATE

- Advanced airway procedure as indicated
- Initiate IV access if severe respiratory distress or wheezing continues after first nebulized albuterol.

INTERMEDIATE STOP

AEMT

- Albuterol 2.5 mg in 3 mL (unit dose) via nebulizer. May repeat to a total of three (3) doses

AEMT STOP

CRITICAL CARE

PARAMEDIC

- Albuterol 2.5 mg in 3 mL (unit dose) + Atrovent 0.5 mg in 2.5 mL (unit dose) mixed together, via nebulizer. May repeat to a total of three doses if needed.
- Consider 12 Lead EKG.
- Methylprednisolone 125 mg IV **OR** Prednisone 50 mg PO
- Magnesium sulfate 2 gram IV over 20 minutes for severe dyspnea

CC and PARAMEDIC STOP

PHYSICIAN OPTIONS

- Additional albuterol unit dose via nebulizer
- Epinephrine 1:1000 0.3 – 0.5 mg IM
- Epinephrine 1:10,000 mix 1mg in 250 mL normal saline bag. Run wide open until breathing improves then stop.
- Epinephrine 1:1000 0.5 mg Mix with 3mL normal saline nebulized.
- Terbutaline 0.25 mg SQ

Key Points/Considerations

- Remember “all that wheezes is not asthma!” Consider allergic reaction, airway obstruction, pulmonary edema, COPD exacerbation.
- A “shark fin” tracing on sidestream capnography is highly suggestive of Asthma/COPD.
- Epinephrine should only be used if patient’s tidal volume is so small that nebulized medications can’t work.
- If any provider has administered any medications they must consult medical control prior to allowing a patient to RMA or before transporting the patient BLS.
- Use epinephrine and terbutaline with caution in patients over the age of 55, those with a history of hypertension, and those with a prior cardiac history.

Respiratory: ACUTE PULMONARY EDEMA

EMT

- ABC and vital signs
- Airway management and appropriate oxygen therapy
- Sit patient upright, if possible.
- Consider CPAP for a spontaneously breathing patient, if indicated and credentialed by medical director (See PROCEDURE: CONTINUOUS POSITIVE AIRWAY PRESSURE).

EMT STOP

INTERMEDIATE

AEMT

- Vascular access with saline lock

INTERMEDIATE and AEMT STOP

CRITICAL CARE

PARAMEDIC

- CPAP, if equipped, early in care
- 12 Lead EKG (follow STEMI protocol if ECG shows an ST-elevation MI in addition to treatments below)
- Based on the patient's systolic blood pressure:
 - Hold NTG SL for a systolic BP below 100 mmHg.
 - NTG 0.4 mg SL 1 tablet every 5 minutes for a systolic BP of 100 – 160 mmHg
 - NTG 0.4 mg SL 2 tablets every 5 minutes for a systolic BP of 160 – 200 mmHg
 - NTG 0.4 mg SL 3 tablets every 5 minutes for a systolic BP over 200 mmHg
- Albuterol 2.5 mg in 3 mL (unit dose) + Atrovent 0.5 mg in 2.5 mL (unit dose) mixed together, via nebulizer, only if wheezes are present
- If unable to administer medication orally, Nitroglycerin Paste 1 – 2 inches transdermally

CC and PARAMEDIC STOP

PHYSICIAN OPTIONS

- Furosemide (Lasix) 40 mg IV over 2 – 3 minutes, if peripheral edema is present

Key Points/Considerations

- All patients with rales do not have pulmonary edema — consider the possibility of pneumonia or chronic obstructive pulmonary disease (COPD) exacerbation.
- May administer first dose of Nitroglycerin while preparing to establish vascular access.
- At least 50% of patients who present with acute pulmonary edema are not fluid overloaded and may even be dehydrated. The issue in those patients is abnormal distribution of fluid resulting in pooling in the lungs. Treatment goal in these patients is to restore proper fluid balance before using diuretics to prevent harm.

Cardiac: CHEST PAIN – Suspected Acute Coronary Syndrome

EMT

- Aspirin, four 81 mg tablets chewed (max daily dose 325 mg). **DO NOT ADMINISTER if patient has taken aspirin within 24 hrs, has active bleeding or has aspirin allergy.**
- Administer oxygen by non-rebreather if SaO₂ less than 94%, rales on lung auscultation or difficulty breathing
- Assist patient with his/her own prescribed nitroglycerin (1 dose). **Hold if SBP < 120 mmHg or if taken erectile dysfunction drug in past 72 hours.**

 EMT STOP

INTERMEDIATE

- IV NS KVO or saline trap

 INTERMEDIATE

AEMT

- IV NS KVO or saline trap
- Nitroglycerin 0.4 mg SL q5 min x 3. Hold if SBP < 100 mmHg

 AEMT STOP

CRITICAL CARE

PARAMEDIC

- 12 Lead EKG (transmit to MC if any question) **IF CONFIRMED STEMI, FOLLOW CONFIRMED STEMI PROTOCOL**
- Morphine 0.1 mg/kg, up to 5mg, slow IV for continuing pain. May repeat once prn. **Hold for SBP < 100 mmHg**
- If SBP < 100 mmHg and lungs clear: 0.9 NS 250 mL IV bolus.
- NTG Paste 1 – 2 inches transdermal when pain nearly resolved. **Hold if SBP < 100 mmHg**

 CC and PARAMEDIC STOP

PHYSICIAN OPTIONS

- Additional Morphine doses.
- Additional NTG

Key Points/Considerations

- Acquisition of a 12-lead ECG prior to administering NTG and ASA may better identify patients who are having an ST-elevation MI, therefore a 12 lead ECG should be performed as early as possible.
- Focus on maintaining ABC, pain relief, rapid identification, rapid notification and rapid transport to an appropriate facility.
- VS, including 12 Lead EKG, should be monitored frequently during transport.
- The first dose of Nitroglycerin may be administered while preparing to establish vascular access.
- Remember some patients who have MI or ACS complain of trouble breathing, nausea/vomiting, chest pressure, or other cardiac related symptoms. If any concern of a cardiac origin for the patient's complaint, perform a 12-lead ECG as soon as possible.

Cardiac: POST CARDIAC ARREST PROTOCOL

EMT

- Initiate oxygen therapy / BVM assist as appropriate.
- If patient conscious:
 - Administer Aspirin two 81 mg tablets chewed. DO NOT ADMINISTER if patient has taken aspirin within 24 hrs or has aspirin allergy.
 - Assist patient with his/her own prescribed nitroglycerin (1 dose) for chest pain. Hold if SBP < 120 mmHg or if taken erectile dysfunction drug in past 72 hours.

 EMT STOP

INTERMEDIATE

AEMT

- Initiate two IVs, either NS KVO or saline trap.

 INTERMEDIATE and AEMT STOP

CRITICAL CARE

PARAMEDIC

- 12 Lead EKG. IF CONFIRMED STEMI, FOLLOW CONFIRMED STEMI PROTOCOL.
- If MAP < 90 mmHg (see chart below), initiate Dopamine infusion at 5 mcg/kg/min, (see appendix) and titrate to keep MAP between 90 and 100 mmHg. (See chart below.)

 CC and PARAMEDIC STOP

PHYSICIAN OPTIONS

- Metoprolol 5 mg slow IV May repeat q 5 mins to a total of 3 doses (15 mg), if available.
- Additional sedation with appropriately dosed benzodiazepine
- Diversion to a PCI capable hospital

Key Points/Considerations

- Therapeutic Hypothermia is no longer recommended using cold saline in the prehospital setting.
- Acquisition of a 12 Lead ECG as soon as possible after ROSC will identify those patients who suffered cardiac arrest due to an MI and should be taken to a PCI capable hospital if medical control agrees.

Determining MAP		
If your Systolic is	And your Diastolic is	The MAP is at least
110	80	90
120	75-90	90-100
130	70-85	90-100
140	65-80	90-100

Or MAP = $\frac{\text{Systolic} + 2 \times \text{Diastolic}}{3}$

Medical: ALLERGIC REACTION / ANAPHYLAXIS

EMT

- Initiate oxygen therapy / BVM assist as necessary.
- Monitor pulse oximetry (if available).
- Follow BLS epi pen protocol if credentialed.
- Transport and intercept with ALS enroute to the Emergency Department.

EMT STOP

INTERMEDIATE

- Advanced airway procedure as needed
- Initiate IV access if severe respiratory distress.
- Administer Normal Saline 500 mL bolus as needed for hypotension. Reassess and repeat as needed.

INTERMEDIATE STOP

AEMT

- If wheezing present, administer Albuterol 2.5 mg in 3 mL unit dose nebulized. May repeat two additional times as needed.
- If severe respiratory distress, signs of shock or facial/throat edema, administer Epinephrine 0.3 mg (0.3 mL of 1:1000) IM.

AEMT STOP

CCT

PARAMEDIC

- Diphenhydramine 50 mg IV or IM (Hold if patient self-administered oral or may add to dose to equal 50 mg.)
- Methylprednisolone 125 mg IV or Prednisone 50 mg PO

CCT/PARAMEDIC STOP

PHYSICIAN OPTIONS

- Epinephrine (1:1000) 0.3 – 0.5 mg IM May repeat Q5 min prn
- Epinephrine infusion 1:10,000 Mix 1 mg in 250 mL normal saline bag. Run wide open until breathing improves then stop.
- Dopamine 10 mcg/kg/min Titrate to SBP > 100 mmHg with max 20 mcg/kg/min.
- If available: Cimetidine 300 mg IV or IM; Famotidine 20 mg IV; or Ranitidine 50 mg IV or IM
- Methylprednisolone 125mg IM

Key Points/Considerations

- Use Epinephrine with caution in patients over the age of 55, those with a history of hypertension, and those with a prior cardiac history.

Medical: DIABETIC EMERGENCIES

EMT

- ABC and vital signs
- Airway management and appropriate oxygen therapy
- Check glucose level, if credentialed. If normal, refer to Altered Mental Status protocol.
- If blood glucose is known or suspected to be low, and patient is able to swallow on command, give oral glucose one unit dose (19-24 grams), or available carbohydrate source.
- If blood glucose is CONFIRMED to be high, do not administer oral glucose.
- Call for ALS intercept if unable to swallow on command, or mental status remains altered following administration of oral glucose.

EMT STOP

INTERMEDIATE

- Vascular access and, if possible, bloods drawn
- If glucose level is below 60 and the patient is symptomatic, administer D10W 250 mL IV bolus (EMT-I ONLY). If not symptomatic, administer oral glucose.
- If glucose level is above 400, administer Normal Saline 500 mL IV bolus.

INTERMEDIATE STOP

AEMT

- If glucose level is below 60 and the patient is symptomatic, administer Dextrose 50% 25 g IV. May re-dose if hypoglycemia recurs during transport. If not symptomatic, administer oral glucose.
- If unable to obtain vascular access, Glucagon 1 mg IM, SC or atomized IN.

AEMT STOP

CRITICAL CARE

PARAMEDIC

- Administer Thiamine 100 mg IV before D50 ONLY if known chronic alcohol dependence.

CC and PARAMEDIC STOP

PHYSICIAN OPTIONS

- Additional Normal Saline IV bolus, if patient is hyperglycemic
- Additional Dextrose 50%, if patient is hypoglycemic

Key Points/Considerations

- If the patient wishes to refuse transportation to a hospital and you have administered any medications, you must contact Medical Control prior to leaving the patient or completing the RMA.
- If the patient's blood glucose level is below 60 and the patient is able to swallow on command, administer oral glucose or equivalent rather than establishing vascular access, if possible.
- If a patient on an insulin pump develops symptomatic hypoglycemia, ask the patient or family to turn off or disconnect the insulin pump until blood sugar stabilizes.

Medical: SEIZURES

EMT

- ABC and vital signs
- Airway management and appropriate oxygen therapy
- **Check blood glucose level**, if credentialed. If abnormal, refer to Diabetic Emergencies protocol.

 EMT STOP

INTERMEDIATE

AEMT

- Vascular access and, if possible, bloods drawn

 INTERMEDIATE and AEMT STOP

CRITICAL CARE

PARAMEDIC

- If female patient pregnant and over 20 weeks gestation **OR** up to 6 weeks post partum **AND** no history of seizures, administer Magnesium Sulfate 4 gm in 100 mL NS over 5 minutes IV/IO. May follow with Benzodiazepine as below for refractory seizure activity
- Administer Benzodiazepine if actively seizing or in pregnant female nonresponsive to magnesium administration. May repeat dose once in 5 minutes without delaying transport if seizures persist:
 - Midazolam (Versed) 2.5 mg IV/IO or 5 mg IM/IN **OR**
 - Diazepam (Valium) 5 mg IV/IM/IO **OR**
 - Lorazepam (Ativan) 2 mg IV/IM/IO

 CC and PARAMEDIC STOP

PHYSICIAN OPTIONS

- Additional Benzodiazepine doses
- Magnesium Sulfate 4 gm in 100 mL NS over 5 minutes IV/IO for maternity patient with unknown seizure history or length of gestation

Key Points/Considerations

- Protect the patient and EMS crew from injury during the seizure.
- Standing orders are for tonic/clonic seizures (grand mal seizures) only.
- All levels must contact medical control before administration of Benzodiazepine if Diastat (Diazepam) was administered PTA.
- Pre-eclampsia is defined as BP greater than 140/90 in a pregnant patient or one who has recently given birth. Signs and symptoms include severe headache, confusion and/or hyper-reflexia.
- Eclampsia is signs/symptoms of pre-eclampsia with seizure activity.

MEDICAL: EXCITED DELIRIUM SYNDROME

EMT

- ABC's
- Apply supplemental oxygen
- Check glucose if credentialed
- Monitor pulse oximetry (if available)
- Consider alternative conditions for altered mental status using the acronym "AEIOU TIPS"
- For tactile hyperthermia remove clothing and apply icepacks to head, neck, axilla and groin
- Call for ALS backup

EMT STOP

INTERMEDIATE

AEMT

- Establish vascular access
- Administer 1000ml saline bolus
 - If hyperthermia exists – chilled saline (if available) <60 °

INTERMEDIATE and AEMT STOP

CRITICAL CARE

- Continuous cardiac monitoring
- Administer Benzodiazepine
 - Midazolam (Versed) 5mg IM or 2.5mg IV **OR**
 - Diazepam (Valium) 10mg IM or 5mg IV **OR**
 - Lorazepam (Ativan) 4mg IM or 2mg IV **OR**

Critical Care STOP

PARAMEDIC

- Administer Benzodiazepine as above **OR**
 - Ketamine 2mg/kg IV or 4mg/kg IM (max dose 400mg)

PARAMEDIC STOP

PHYSICIAN OPTIONS

- Additional Saline Boluses
- Additional administration of benzodiazepine IV or IM
- Sodium Bicarbonate 50 mEq IV

Key Points/Considerations

- Most common pre-hospital (potential) features: high pain tolerance, tachypnea, sweating, agitation, tactile hyperthermia, non-compliance, lack of tiring, unusual strength
- Adequate physical control should be obtained first - Do not attempt to restrain or control severely agitated patients – always request police assistance
- Several different potential underlying causes including stimulant drug abuse (especially cocaine), psychiatric disease, psychiatric drug withdrawal, and metabolic disorders
- Hyperventilation is the bodies physiological reaction to acidosis - Caution with use of repeated doses of benzodiazepines as this has potential to blunt the compensatory respiratory mechanism
- “AEIOU TIPS” -

- | | |
|----------------------------|------------------------------------|
| - Alcohol | - Toxins/Trauma/Temperature |
| - Endocrine/Encephalopathy | - Infection |
| - Insulin (hypoglycemia) | - Psychiatric |
| - Oxygen (Hypoxia) | - Stroke/Shock/Subdural Hemorrhage |
| - Uremia | |

Trauma: GENERAL CONSIDERATIONS

Key Points/Considerations

- Trauma Arrest patients and patients with an unstable airway shall be transported to the nearest emergency department.
- UNSTABLE patients should be enroute to the hospital/landing zone within 10 minutes of disentanglement/extrication.
- A pregnant female less than 20 weeks gestation should be transported to the closest appropriate adult facility in accordance with the Trauma Triage Guidelines (see Appendix). Pregnant females greater than 20 weeks who do not meet Major Trauma criteria may be transported to the ED at the hospital the patient intends to deliver. **ALL PREGNANT WOMEN GREATER THAN 20 WEEKS GESTATION WHO MEET MAJOR TRAUMA CRITERIA **MUST** BE TRANSPORTED TO THE ADULT TRAUMA CENTER IN ACCORDANCE WITH THE GUIDELINES.**
- All other major trauma patients should be transferred to an appropriate Trauma Center:
 - If more than 30 minutes from a Trauma Center consider aeromedical assistance. Refer to the Aeromedical Utilization Policy.
 - If the time from injury to arrival at the trauma center is likely to be more than 60 minutes, contact Medical Control and consider transporting patient to the nearest hospital.
- All times start at the time the EMS provider determined the patient to meet major trauma criteria.
- Notify the receiving facility as early as possible giving brief description of mechanism of injury, patient status, and estimated time of arrival.
- Do not use MAST unless bilateral femur fractures are suspected and no traction splint is available or an unstable pelvic fracture is suspected. In these situations, inflate only as needed to stabilize the fracture. Do NOT use on pediatric patients less than 8 years old.
- Consider appropriate analgesia and nausea management.
- Regional trauma centers are listed on the WREMAC web site (<http://www.wremac.com>).

ADULT PAIN / NAUSEA / SEDATION

EMT

- ABC and vital signs
- Airway management and appropriate oxygen therapy
- Apply ice, elevation and immobilization of injured limb or area.

 EMT STOP

INTERMEDIATE

AEMT

- SaO2 monitor
- Vascular access prn if analgesia is anticipated.
- If nauseous, Normal Saline 500 mL bolus IV if no contraindications for fluid administration.

 INTERMEDIATE and AEMT STOP

CRITICAL CARE

PARAMEDIC

- Consider monitoring sidestream capnography (if available) for procedural sedation.
- Consider 12 lead ECG if profound nausea or vomiting.
- Analgesia:
 - Morphine 0.1 mg/kg IV, IO, IM up to 5mg. May be repeated in 5 min with total not to exceed 10 mg. (SEE KEY POINTS BELOW) **OR**
 - Fentanyl 50 mcg slow IV, IO, IM, or IN. May be repeated in 5 min with total not to exceed 100 mcg. **OR**
 - Ketorolac 30 mg IV, IO or IM once (do not use if history of bleeding disorder or renal disease, current pregnancy or age over 65)
- Nausea:
 - Ondansetron (Zofran) 4 mg IV, IO, IM, or PO . May repeat once in 10 minutes if needed.
- Sedation (**for a painful procedures only – not for chemical restraint**):
 - Midazolam (Versed) 2.5 mg IV/IO or 5 mg IM/IN. May repeat once as needed. **OR**
 - Diazepam 5 mg IV, IO, IM. May repeat once as needed. **OR**
 - Lorazepam 2 mg IV, IO, IM. May repeat once as needed.
- Diphenhydramine (Benadryl) 25 mg IV or IM once prn for itching or for motion sickness

 CC and PARAMEDIC STOP

PHYSICIAN OPTIONS

- Additional Morphine IV, IO or IM, or Fentanyl IV, IO, IM, or IN
- Additional Ondansetron (Zofran) IV, IO or IM
- Additional Midazolam, Diazepam, or Lorazepam IV, IO, IM, or IN

Key Points/Considerations

- Contraindications to standing order pain management: altered mental status, hypoventilation, SBP<100
- Fentanyl should be used if there is any concern for potential hemodynamic instability.
- The ADULT PAIN / NAUSEA / SEDATION protocol should be utilized for ongoing sedation and pain management of patients who are already intubated. However, this policy may not be used to facilitate intubation. Appropriately credentialed providers should utilize the MFI Protocol to facilitate intubation.

Procedure: PEDIATRIC AIRWAY MANAGEMENT

EMT

INTERMEDIATE

- Assist ventilations with bag valve mask with oxygen if available (room air is acceptable to start).
- Consider CPAP for a spontaneously breathing patient > 10 years old, if indicated and credentialed by medical director (See PROCEDURE: CONTINUOUS POSITIVE AIRWAY PRESSURE).
- Call for ALS intercept enroute to the closest Emergency Department.

EMT and INTERMEDIATE STOP

AEMT

- Consider advanced airway if CC/Paramedic care delayed.
- Needle Decompression if signs and symptoms consistent with Tension Pneumothorax

AEMT STOP

CRITICAL CARE

- Endotracheal intubation (cervical spine precautions prn) and monitor with continuous waveform capnography (max 2 attempts total), **OR** FDA approved supraglottic airway device
- Consider topical anesthetic spray or jelly prior to intubation/supraglottic airway placement.
- **If unable to intubate, place a supraglottic airway, or just ventilate the patient or perform needle cricothyrotomy.**

CC STOP

PARAMEDIC

- If patient is older than 15 years old OR has obvious signs of puberty, may perform Medicated Facilitated Intubation procedure, if credentialed by service medical director (see Medication Facilitated Intubation protocol).

PARAMEDIC STOP

PHYSICIAN OPTIONS

- Additional intubation attempts by more experienced or higher level provider
- Needle thoracostomy if tension pneumothorax is present (EMT-Intermediate)

Key Points/Considerations

- Signs of a tension pneumothorax requiring needle thoracostomy include unilateral loss of breath sounds, hypotension, hypoxia, penetrating or evidence of blunt chest trauma on the affected side, distended jugular veins, and tracheal deviation away from the affected side (late sign).
- Confirm endotracheal tube placement with auscultation and continuous waveform capnography.
- Maintain continuous waveform capnography until the patient is placed onto the ED stretcher.

Pediatric: ACUTE ASTHMA

EMT

INTERMEDIATE

- ABC, vital signs, and pulse oximetry if available
- Airway management and oxygen therapy
- Determine if patient has been given their own asthma medications.
- Follow BLS Nebulized Albuterol protocol.
- Consider CPAP for a spontaneously breathing patient > 10 years old, if indicated and credentialed by medical director (See PROCEDURE: CONTINUOUS POSITIVE AIRWAY PRESSURE).

 EMT and INTERMEDIATE STOP

AEMT

- Albuterol 2.5 mg in 3 mL (unit dose) via nebulizer. Repeat to a total of three (3) doses.

 AEMT STOP

CRITICAL CARE

PARAMEDIC

- Albuterol 2.5 mg in 3 mL (unit dose) mixed with Ipratropium 0.5 mg in 2.5 mL (unit dose), via nebulizer. Repeat to a total of three doses.

 CC and PARAMEDIC STOP

MEDICAL CONTROL TREATMENT OPTIONS

- Albuterol 2.5 mg in 3 mL (unit dose), repeated prn if patient does not improve after 3 doses of Albuterol/Ipratropium mix
- Epinephrine (1:1,000) 0.01 mg/kg IM (max 0.3 mg)
- Epinephrine (1:1,000) 1 mg mixed with 2-3 mL Normal Saline, via nebulizer (for stridor associated with croup)
- Prednisone (if available) 2 mg/kg PO (maximum 60 mg) or methylprednisolone 2 mg/kg IV or IM (maximum 125 mg)
- Terbutaline 0.01 mg/kg SQ (maximum 0.25 mg)
- Magnesium sulfate 25 mg/kg over 10-20 minutes IV (maximum 2 grams)
- Normal Saline 2-3mL nebulized

Key Points/Considerations

- Wheezing, diminished breath sounds, or prolonged expiration when accompanied with respiratory distress are indications for medication administration.
- Absence of breath sounds can be indicative of status asthmaticus. Be prepared for imminent respiratory arrest.
- If stridor, excessive drooling, or barking cough present, suspect epiglottitis or croup. If epiglottitis suspected, do not intubate.
- Allow child to maintain position of comfort and remain with parent if possible.

Pediatric: DIABETIC EMERGENCIES

EMT

- ABC and vital signs
- Airway management and appropriate oxygen therapy
- Check blood glucose level, if credentialed.
- If blood glucose is known or suspected to be low (less than 60 mg/dl), and patient is able to self-administer and swallow on command, give oral glucose one unit dose (19-24 grams), or available carbohydrate source.
- Call for ALS intercept if unable to swallow on command, or mental status remains altered following administration of oral glucose.

EMT STOP

INTERMEDIATE

- If blood glucose below 60 mg/dl (40 mg/dl for neonates) and the patient is symptomatic, administer D₁₀W, 5 mL/kg (maximum 250 mL) IV. If the patient is not symptomatic, administer oral glucose.
- If patient does not respond to initial treatment, recheck blood glucose and re-bolus with same dose of dextrose if blood glucose <60 mg/dl.

INTERMEDIATE STOP

AEMT

CRITICAL CARE

PARAMEDIC

- If blood glucose below 60 mg/dl (40 mg/dl for neonates) and patient is symptomatic, administer D₂₅ 2 mL/kg (maximum 100 mL). If patient is asymptomatic, administer oral glucose.
- If patient does not respond to initial treatment, recheck blood glucose and re-bolus with same dose of dextrose if blood glucose less than 60 mg/dl.
- Glucagon 0.5mg IM or IN (if patient < 20 kg) if unable to establish IV
- Glucagon 1 mg IM or IN (if patient ≥ 20 kg) if unable to establish IV
- If blood glucose above 400 mg/dl and signs of dehydration are present, administer normal saline 20mL/kg bolus (10 mL/kg for infants)

AEMT, CC and PARAMEDIC STOP

MEDICAL CONTROL TREATMENT OPTIONS

- For Hyperglycemia: Normal saline 20 mL/kg. May get order for repeat dosing

Key Points/Considerations

- Review the Refusal of Evaluation/Stabilization/Transport policy if patient and/or guardian refuse transport after treatment.
- To dilute D50 to a concentration of D25, mix equal volumes of D50 and normal saline.
- Attempt blood draw prior to medication administration to ensure receiving facility has an accurate baseline.
- If a patient on an insulin pump develops symptomatic hypoglycemia, ask the patient or family to turn off or disconnect the insulin pump until blood glucose stabilizes.

Pediatric: SEIZURES

EMT

INTERMEDIATE

AEMT

- ABC and vital signs
- Airway management and appropriate oxygen therapy
- Check blood glucose level, if credentialed. If level is abnormal refer to Pediatric Diabetic protocol.

 EMT, INTERMEDIATE, and AEMT STOP

CRITICAL CARE

PARAMEDIC

- Administer one of the following benzodiazepines:
 - Midazolam (Versed)
 - 0.1 mg/kg (max 2.5 mg) IV/IO **OR**
 - 0.2 mg/kg (max 5 mg) IM/IN **OR**
 - 0.4 mg/kg (max 10 mg) PR (remove needle first) **OR**
 - Diazepam (Valium)
 - 0.1 mg/kg (max 5 mg) IV/IO/IM **OR**
 - 0.5mg/kg (max 10 mg) PR (remove needle first) **OR**
 - Lorazepam (Ativan)
 - 0.1 mg/kg (max 2 mg) IV/IO/IM **OR**
 - 0.2 mg/kg (max 4 mg) PR (remove needle first)

 CC and PARAMEDIC STOP

MEDICAL CONTROL TREATMENT OPTIONS

- Additional
 - Midazolam (Versed) 0.1 mg/kg IV, IO, IM, or IN **OR**
 - Diazepam (Valium) 0.1 mg/kg IV, IO or IM **OR**
 - Lorazepam (Ativan) 0.1 mg/kg IV, IO or IM

Key Points/Considerations

- Protect the patient and EMS crew from injury during the seizure.
- Advanced EMS providers may assist the patient's family or caregivers with administration of rectal Valium (Diastat) if available.

Pediatric: PAIN / NAUSEA / SEDATION

EMT

INTERMEDIATE

AEMT

- ABC and vital signs
- Airway management and appropriate oxygen therapy
- Apply ice, elevation and immobilization of injured limb or area.



EMT, INTERMEDIATE and AEMT STOP

CCT

PARAMEDIC

- Nausea/Vomiting: Ondansetron (Zofran) 0.1 mg/kg (maximum 4 mg) IV or IM. May repeat once in 10 minutes for persistent nausea.
- Pain: Morphine 0.1 mg/kg IV or IM up to 5mg. May repeat once in 5 minutes prn.
- Sedation for painful procedures only (**not for restraint**):
 - Midazolam (Versed) 0.1 mg/kg (max 2.5 mg) IV/IO, or 0.2 mg/kg (max 5 mg) IM/IN **OR**
 - Diazepam (Valium) 0.1 mg/kg IV, IO or IM (max 5 mg) **OR**
 - Lorazepam (Ativan) 0.1 mg/kg IV, IO or IM (max 2 mg)
- Diphenhydramine 1 mg/kg (maximum 50 mg) IV or IM prn for itching



CCT AND PARAMEDIC STOP

MEDICAL CONTROL TREATMENT OPTIONS

- Morphine 0.1 – 0.2 mg/kg IV, IO or IM
- Fentanyl 0.5-1 mcg/kg IV, IO, IM, or IN

Key Points/Considerations

- Withhold opiate analgesia and benzodiazepine if patient is hypotensive.

Pediatric: OVERDOSE or TOXIC EXPOSURE

EMT

INTERMEDIATE

- ABC and vital signs
- Airway management and appropriate oxygen therapy
- Determine what was taken, when and how much, if possible.
- **Check blood glucose level**, if credentialed. If level is abnormal refer to Pediatric Diabetic protocol.
- For symptomatic patients with suspected Opiate overdose:
 - Naloxone 1 mg IN (0.5mg/ml injected with MAD in each nostril)

EMT AND INTERMEDIATE STOP

AEMT

CRITICAL CARE

PARAMEDIC

- For symptomatic opiate overdose: Naloxone (Narcan) 0.4 mg IV, IM, or IN. May repeat prn up to 2 mg total dose.
- Follow hypoperfusion protocol.

AEMT, CC and PARAMEDIC STOP

MEDICAL CONTROL TREATMENT OPTIONS

- For symptomatic patient with:
 - Organophosphate poisoning: Atropine 1 mg IV per dose every 3 – 5 minutes, until secretions dry
 - Dystonic reaction: Diphenhydramine (Benadryl) 1 mg/kg IV or IM (max 25 mg)
 - Beta blocker OD: Glucagon 1 mg IV
 - Administer a benzodiazepine for agitation:
 - Midazolam (Versed) 0.1 mg/kg (max 2.5 mg) IV/IO, or 0.2 mg/kg (max 5 mg) IM/IN **OR**
 - Diazepam (Valium) 0.1 mg/kg IV, IO or IM (max 5 mg) **OR**
 - Lorazepam (Ativan) 0.1 mg/kg IV, IO or IM (max 2 mg)
 - Calcium channel blocker OD: Calcium Chloride 20 mg/kg IV and Glucagon 1 mg IV
 - Tricyclic antidepressant OD: Sodium bicarbonate 1mEq/kg IV

Key Points/Considerations

- Includes patients who are unconscious/unresponsive without suspected trauma or other causes, and patients with a brief loss of consciousness.
- Dystonic reaction is uncontrolled contractions of face, neck or tongue.
- Do not contact Poison Control Center for medical direction.
- Gather and transport pills or other suspected substances in their containers.