

**2007
REGIONAL
TREATMENT PROTOCOLS
FOR THE
MOUNTAIN LAKES REGION**

**EMT BASIC
EMT INTERMEDIATE
EMT CRITICAL CARE
EMT PARAMEDIC**



**Mountain Lakes Regional EMS Council
Mountain Lakes REMAC**

**Serving
Clinton, Essex, Franklin, Warren and Washington Counties**

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Introduction from the Regional Emergency Medical Advisory Committee

The REMAC is proud to put forth these protocol revisions for the Mountain Lakes Regional EMS Council. These have been developed after an extensive review of the recent American Heart Association Guidelines and protocols from other regions, as well as recent relevant medical literature. These evidence based guidelines for care are designed to improve patient outcomes, while decreasing any potential risk to the patient and maximizing the interventions appropriate for each level of care.

The protocols have an entirely new look to them. They have a colored coded format that goes from Basic EMT to Advanced care, are easy to follow, and cross regional boundaries for ease of use by providers who are familiar with this format already. The new color coded format is as follows:

EMT

- EMT, EMT-I, EMT-CC and Paramedic standing orders

EMT Stop Line

Intermediate

- EMT-I, EMT-CC and Paramedic standing orders

Intermediate Stop Line

Critical Care

- EMT-CC

Critical Care Stop line

Paramedic

- Paramedic standing orders

Paramedic Stop Line

On-line Medical Control

- Any order within the level of care for the provider

Key Points

Additional points specific to patients that fall within the protocol:

The protocols are designed to serve the region as a whole, and include all levels of field providers. As taught in every EMT class, BLS should be done before ALS, and advanced providers are responsible for all appropriate basic interventions. At all provider levels the stop lines are clearly delineated.

At anytime you are unclear as to what is allowed on standing orders, establish Medical Control, and the Mountain Lakes physician will direct you. Once Medical Control has been contacted the Mountain Lakes physician's orders supersede standing orders.

PATIENTS WHO REMAIN UNSTABLE AFTER STANDING ORDERS HAVE BEEN CARRIED OUT REQUIRE CONSULTATION WITH AN ON-LINE MEDICAL CONTROL PHYSICIAN.

Unstable vital signs in an adult are defined as:

- Pulse of 50 or less and 120 or above
- Systolic BP of 90 or less and 220 or above
- Diastolic BP of 120 or above
- Respiratory rate of 10 or less and 30 or above

Specific examples of other unstable patients include, but are not limited to, the following:

- Patients with chest pain who continue to have chest pain after the administration of morphine
- Patients with shortness of breath who continue to have shortness of breath after treatment
- Cardiac arrest patients with or without the return of pulses
- Patients with multi-system or penetrating trauma

**Bradycardia
BRADYCARDIA**

Heart rate < 60BPM and inadequate for clinical condition

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Pulse Oximetry

**EMT Stop Line
Intermediate**

- Establish IV Access with Bloods Drawn

**Intermediate Stop Line
Critical Care Tech. & Paramedic**

- Cardiac Monitor with 12 lead EKG

These are the signs and symptoms of poor perfusion caused by bradycardia. (eg, acute altered mental status, ongoing chest pain, hypotension or other signs)

Adequate Perfusion

Poor Perfusion

Observe/Monitor

- > **Transcutaneous Pacing**
For high degree block (Type II 2nd degree AV Block & 3rd degree AV Block))
Sinus Bradycardia if Vascular access not available
- > **Atropine 0.5 mg IV**

**Critical Care Tech Stop Line
Paramedic Stop Line
On-line Medical Control**

- Repeat Atropine 0.5 mg IV every 3 minutes (0.04 mg/kg)
- Dopamine 5 mcg/kg/min
- Valium 2-10 mg
- Morphine 2-10 mg

Chest Pain/Acute Coronary Syndrome

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Be prepared to provide CPR and defibrillation
- Aspirin 162 mg by mouth
- Assist patient with patient's own medication if applicable per NYS BLS Protocol

EMT Stop Line

Intermediate

- Venous Access, NS with bloods drawn

Intermediate Stop Line

Critical Care Tech. & Paramedic

- Cardiac Monitor with 12 Lead EKG
- Aspirin to a max of 324 mg (If ASA has not already been given)
- Nitroglycerin – 0.4 mg per dose (may give up to 3 doses)
 - BP must be greater than 100 systolic (consider additional fluid boluses)
 - Patient has a negative history of Viagra or similar medications within 36 hours
 - Vascular access must be established
- If systolic BP drops below 100 – Bolus patient with 250 ml Normal Saline
- Morphine – 2 mg IV/IM (If pain has not been relieved)

Critical Care Tech Stop Line

Paramedic Stop Line

On-line Medical Control

- Nitroglycerin regardless of vascular access
- Lopressor (Metoprolol) 5 mg slow IV push (over 1 minute)(may repeat up to 2 times or 15 mg)
- Repeat Nitroglycerin 0.4 mg every 5 minutes
- Nitroglycerin Paste 1 – 2 inches
- Repeat Morphine 2 – 10 mg IV/IM

Key Points

- Obtain 12 Lead EKG as soon possible
- Suspicion of Acute Coronary Syndrome/Myocardial Infarction is based on patient's history and not solely on the EKG
- Review 12 Lead EKG for ST elevation or presumably new LBBB: strongly suspicious for injury (STEMI)
- Notify receiving hospital with transmission if capable if unable to transmit; than describe what you see via radio/phone

Pulseless Arrest

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Call for help and start CPR
- Attach Defibrillator (AED)

Check Rhythm
Is it a Shockable Rhythm?
BLS – AED will determine
ALS – Interpret Rhythm

Shockable

Not shockable

VF/VT: for EMT's deliver one shock, resume CPR for 5 cycles and reanalyze, continue this cycle until advanced care assumes treatment

Asystole/PEA

EMT Stop Line

Intermediate

Deliver 1 Shock
Continue CPR
Establish IV with NaCl

DO NOT INTERRUPT CPR TO ESTABLISH INTRAVENOUS ACCESS

Resume CPR
Establish IV with NaCl

Intermediate Stop Line

Critical Care Tech. & Paramedic

Cardiac Monitor
Give 1 Shock
Manual Biphasic 200 J
Monophasic 360 J
Resume CPR Immediately

DO NOT INTERRUPT CPR TO ESTABLISH INTRAVENOUS ACCESS

Epinephrine 1 mg IV repeat every 3-5 min
Atropine 1 mg IV repeat every 3-5 minutes to max of 0.04 mg/kg if slow rate <60 or asystole

Give 5 Cycles of CPR

Check Rhythm
Shockable

Shockable

Not shockable

Continue CPR while Defibrillator is Charging
Give 1 shock
Resume CPR immediately
Epinephrine 1 mg IV & repeat every 3-5 min.

Give 5 Cycles of CPR

Check Rhythm
Shockable Rhythm

Shockable

Amiodarone 300 mg IV, then 150 mg

Give 5 cycles of CPR

Critical Care Tech Stop Line

Paramedic Stop Line

On-line Medical Control

Continue CPR
Give 1 shock
Resume CPR immediately
Magnesium Sulfate 1-2 Gms for torsades de pointes after 5 cycles of CPR

Not shockable

If asystole/PEA, advise Medical Control and follow right side of this algorithm
If pulse present, begin post resuscitation care
Consider termination of efforts

Not shockable

Check Rhythm
Shockable Rhythm

Shockable

Advise Medical Control and follow the VT/VF side of this algorithm

Tachycardia with a Pulse (Non-Sinus)

Tachycardia with a pulse

EMT

- o ABC'S, vital signs, airway management with high flow oxygen
- o Suction as needed

**EMT Stop Line
Intermediate**

Vascular Access with Bloods drawn, KVO

**Intermediate Stop Line
Critical Care Tech. & Paramedic**

Symptoms Persist

o Cardiac Monitor with 12 Lead EKG
Is the patient stable?

Stable

Unstable

Is QRS Complex
Narrow or Wide

Contact Medical Control
Prepare for immediate Synchronized Cardioversion

Narrow

Wide (≥ 0.12 sec)

Narrow QRS Is the Rhythm
regular?

Wide QRS
Is Rhythm Regular?
Contact Medical Control ASAP

Regular

Irregular

Regular

Irregular

Attempt Vagal Maneuvers
Give Adenosine 6 mg rapid
IV push

Possible A Fib/A Flutter
Contact Medical Control

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control

Repeat Adenosine 12 mg

Diltiazem (Cardizem
0.25 mg/kg slow IV)

Does the Rhythm Convert?

Converts

Does Not Convert

If rhythm converts
probable reentry SVT:
Monitor for
reoccurrence
Treat with additional
Adenosine or Diltiazem

Possible A Flutter,
Ectopic Atrial Tach or
Junctional Tach
Control rate: Diltiazem
Treat underlying causes

If Ventricular
Tachycardia or
uncertain rhythm:
Amiodarone 150 mg
IV over 10 min,
Repeat to max 2.2
G/24 hr
Elective
Synchronized
Cardioversion

Amiodarone 150
mg over 10 min
Avoid AV nodal
blocking agents
If Torsades de
Pointes give
Magnesium Sulfate
1-2 gms over 5-60
min.

Sedate patient if
possible
Synchronized
Cardioversion
If pulseless
arrest develops,
see protocol

Note: If patient becomes unstable
follow the right side of the algorithm

Hypoperfusion/Shock

EMT

- ABC'S, vital signs, airway management with high flow oxygen
- Suction as needed

EMT Stop Line

Intermediate

- Vascular Access, NS with bloods drawn
- Check lung sounds for Pulmonary Edema, if lung sounds clear:
 - 500 ml bolus Normal Saline
 - Establish an additional IV

Intermediate Stop Line

Critical Care Tech. & Paramedic

- Cardiac Monitor with 12 Lead EKG
- Additional bolus 500 ml Normal Saline, May repeat once

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control Options

- Normal Saline Boluses
- Dopamine 5-20 µ/kg/min

Key Points

- If shock or heart failure is secondary to arrhythmia (too slow/too fast), treat as per appropriate protocol
- For Pulmonary Edema and systolic BP \geq 100 mm Hg, refer to Pulmonary Edema protocol
- Decompensated shock is defined as systolic BP < 90 mm Hg and/or decreased level of consciousness
- Caution in elderly and patients with a history of CHF

General Pain Management

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed

EMT Stop Line

Intermediate

- Vascular Access, NS, Bloods Drawn (IV Lock)

Intermediate Stop Line

Critical Care Tech. & Paramedic

- Cardiac Monitor
- Morphine 0.05 mg/kg (not to exceed 5 mg)
 - IM if unable to obtain IV

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control Options

- Morphine 2 – 10 mg IV/IM
- Ondansetron (Zofran) 4 mg IV/IM
- Valium 2 – 10 mg IV

Key Points

- Do not give anything by mouth (NPO)
- Notify medical control immediately if patient has a systolic BP < 90
- Consider pain management for:
 - Severe burns without hemodynamic compromise
 - Suspected isolated extremity fractures or dislocations with severe pain
 - Abdominal pain with hemodynamic stability
- Establish online medical control for **ALL** other painful situations
- Contraindications for standing order pain management:
 - Altered mental status
 - Hypoventilation
 - Hypotension

Cold Emergencies/Hypothermia

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Remove wet clothing and apply dry covering
 - If patient is alert and responding appropriately:
 - › Actively re-warm the patient slowly
 - Warm humidified oxygen
 - Chemical hot packs
 - If patient is unconscious or not responding appropriately:
 - › Passively re-warm the patient slowly

EMT Stop Line

Intermediate

- Vascular Access, NS, Bloods Drawn

Intermediate Stop Line

Critical Care Tech. & Paramedic

- Cardiac Monitor with 12 Lead EKG
- Warmed NS 250 bolus

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control Options

- Warmed NS

Key Points

- Initiate rapid transport
- Cardiac medications are ineffective until body temperature is > 86° F
- In severe hypothermia, multiple shocks maybe ineffective (contact medical control)
- If patient is in cardiac arrest follow Pulseless Arrest protocol
- Sinus Bradycardia may be physiologic in severe hypothermia, cardiac pacing and atropine are not indicated

Diabetic Emergency

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- If the patient has a history of diabetes and has an altered mental status, check blood glucose level
- If blood glucose level is known or suspected to be low and the patient is able to self administer or swallow on command, give oral glucose on unit dose (19 -24 gms)
- Request an ALS intercept if the patient is unable to swallow on command or mental status remains altered following administration of oral glucose

EMT Stop Line Intermediate

- Vascular Access, NS, Bloods Drawn (IV Lock)
- If glucose level is below 80 and the patient cannot swallow on command, administer D5W 500 ml IV bolus

Intermediate Stop Line Critical Care Tech. & Paramedic

- If glucose level is below 80 and the patient cannot swallow on command, administer Dextrose 50% 25 grams IV bolus, may repeat if hypoglycemia returns during transport
- If unable to obtain vascular access, Glucagon 1 mg IM or SQ
- If glucose level is above 400, administer Normal Saline 250 ml IV bolus

Critical Care Tech. Stop Line Paramedic Stop Line On-line Medical Control Options

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

Key Points

- If the patient refuses transportation to the hospital and you have already administered medications you must contact medical control prior to leaving the patient or completing the RMA
- If the patient's blood glucose level is below 80 and the patient is a known diabetic with a patent airway, administer oral glucose or equivalent rather than establishing vascular access, if possible

Heat Emergencies/Hyperthermia

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Remove from heat source
- Rapid cooling for heatstroke:
 - Remove clothes
 - Sponge or spray with water and fan vigorously
 - Cold packs

EMT Stop Line Intermediate

- Vascular Access, NS, Bloods Drawn 500 ml bolus

Intermediate Stop Line Critical Care Tech. & Paramedic

- Cardiac Monitor
- Reassess and consider additional 500 ml bolus of normal Saline

Critical Care Tech. Stop Line Paramedic Stop Line On-line Medical Control Options

Key Points

- Check blood glucose level if diabetic or altered mental status
 - Heat Exhaustion
 - > Caused by volume and salt loss:

<ul style="list-style-type: none"> - Normal Mental Status - Muscle cramps - Weakness - Headache 	<ul style="list-style-type: none"> - Vomiting - Diaphoresis - Hypotension and/or Tachycardia - Temp. may be normal or elevated
---	--
 - Heat Stroke
 - > Caused by volume and salt loss and elevated temperature with:

<ul style="list-style-type: none"> - Abnormal mental status (hallucinations, ataxia, irritability, coma) - Elevated Temperature (may be very high) - May or may not have loss of sweating mechanism - True emergency requiring rapid cooling measures

Poisoning and Drug Overdose

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- If suspected organophosphate or nerve agent poisoning see associated protocol
- Determine exposure:
 - Type and amount of substance ingested, inhaled or contacted
 - Time of ingestion, exposure or contact
 - Gather any medications or medication vials used

EMT Stop Line

Intermediate

- Vascular Access, NS, Bloods Drawn

Intermediate Stop Line

Critical Care Tech. & Paramedic

- Cardiac Monitor with 12 lead EKG
- Opiate overdose: Narcan (Naloxone) 2.0 mg IV/IM/SQ

Critical Care Tech. Stop Line

Paramedic

- Glucagon 1 mg IV or IM
 - Beta blocker overdose with hypotension or symptomatic Bradycardia
- Calcium Chloride 10% 10 ml (1Gm) IV push
 - Calcium channel blocker overdose with hypotension or symptomatic Bradycardia

Paramedic Stop Line

On-line Medical Control Options

- Sodium Bicarbonate 50 meq (50 ml) IV over 30 seconds
 - Tricyclic Antidepressant overdose
- Valium (Diazepam) 2 – 10 mg IV over 30 seconds
 - Cocaine overdose
 - Alcohol withdrawal
 - PCP, Ecstasy, Crystal Meth, MDA ingestions
 - Agitation

Key Points

- For dangerous or agitated patients, ensure that there are police on the scene
- Glucagons and calcium may cause Bradycardia and possible hypotension
- For questions regarding ingested substances:

CALL
 CHEMTREC 1-800-424-9300
 CANUTEC 613-996-6666
 Poison Control 1-800-222-1222

Active Seizure

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Obtain Blood Glucose level, if equipped

**EMT Stop Line
Intermediate**

- Vascular Access, NS, Bloods Drawn
- If Blood Glucose < 80 administer D5W 500 ml

**Intermediate Stop Line
Critical Care Tech. & Paramedic**

- If Blood Glucose < 80:
 - Dextrose 25 Gms IV
 - Glucagon 1 mg IM/SQ
- Valium 5 mg IV/IM or Rectal

**Critical Care Tech. Stop Line
Paramedic Stop Line
On-line Medical Control**

- Valium 5 – 10 mg IV/IM or Rectal
- Dextrose 25 Gms IV
- Magnesium sulfate 2-4 Gms IV push over 5-10 minutes for Eclampsia

Key Points

- Obtain a good patient medical history
- Consider other possible causes of seizure:

- Hypoxia
- Substance withdrawal
- Overdose

- Head injury
- Hypotension
- Hyperthermia

- Contact and establish online medical control as soon as possible

Suspected Stroke

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Cincinnati Pre-hospital Stroke Scale Neurological Exam
- Obtain Blood Glucose level, if equipped
 - If glucose level is abnormal refer to the Diabetic Emergency Protocol

**EMT Stop Line
Intermediate**

- Vascular Access, NS, Bloods Drawn

**Intermediate Stop Line
Critical Care Tech. & Paramedic**

- Cardiac Monitor with 12 Lead EKG
- If the blood pressure number exceeds the following contact Medical Control
 - Systolic \geq 220
 - Diastolic \geq 120

**Critical Care Tech. Stop Line
Paramedic Stop Line
On-line Medical Control**

- Metoprolol (Lopressor) 5 mg slow IV push (over 1 minute)
- Nitroglycerin paste 1-2 inches chest wall

Key Points

- Determine the time when the patient was last seen or felt like they were in a "normal" state without signs and symptoms
- Contact Medical Control if the time of initial symptoms to arrival at a New York State Designated Stroke Center is less than or equal to 2 hours, for consideration to transport to a NYS Designated Stroke Center
- Consider Aero Medical Transport to a NYS Designated Stroke Center

Vomiting

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Nothing by mouth (NPO)

EMT Stop Line

Intermediate

- Vascular Access, NS, Bloods Drawn

Intermediate Stop Line

Critical Care Tech. & Paramedic

- Cardiac Monitor with 12 Lead EKG
- Normal Saline 500 ml bolus
 - Δ Caution in elderly patients or those with CHF Δ
- Ondansetron (Zofran) 4 mg IV or 4 mg IM

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control

- Ondansetron (Zofran)
- Fluid bolus
- Benadryl 25 – 50 mg IV/IM for dystonic reaction

Key Points

- Exclusions to this protocol:
 - Pediatric patients
 - Unresponsive or sedated patients
 - Allergy to medication

Organophosphate/Nerve Agent Poisoning and WMD

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed

EMT Stop Line

Intermediate

- Vascular Access, NS, Bloods Drawn

Intermediate Stop Line

Critical Care Tech. & Paramedic

- Cardiac Monitor with 12 Lead EKG
- For suspected organophosphate or nerve agent poisoning:
 - Atropine 2 mg IV or Atropine 2 mg IM auto injector

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control

- Atropine 2 mg IV or 2 mg auto injector (MD will dictate repeat and max doses)
- Valium (Diazepam) 2-5 mg IV/IM if seizures present

County Declared WMD/MCI Incidents

If suspected WMD incident refer to New York State advisory on Mark 1 kits, SEMAC advisory 03-05

Notify dispatch as per SNS/Chempak protocol for incident management

- Medical Control orders for NYS Certified EMTs and A-EMTs
 - Atropine 2 mg IV or 2 mg IM auto injector via 2 mg IV/IM every 5-10 minutes to the max dose of 6 mg (3 doses)
 - › **Note: If patient is suspected to be contaminated, providers should utilize IM auto injector to reduce exposure**
 - Pralidoxime (2-Pam Chloride) 600 mg IM auto injector, repeat every 5-10 minutes to the max dose of 1800 mg (3 doses)
 - Valium (Diazepam) auto injector 1 dose
 - › Use cautiously for uncontrolled seizures

Key Points

- General Procedures:
 - Put on personal protective equipment
 - Decontaminate as needed
 - Conduct appropriate airway measures
 - Determine exposure
- Obtain online Medical Control as soon as possible

Consider WMD incident if:

1. Location of release is not associated with chemical use (ie, patient is in non-farm setting)
2. Greater than 2 patients with similar signs and symptoms
3. Affected patients in different locations during the same call
4. Unusual age distributions (ie. Chemical exposure in pediatrics and adults simultaneously)
5. Simultaneous impact on human, animal and plant life

Initial Signs/Symptoms (SLUDGEM)

- Moderate
 - ~ Miosis (pupil constriction)
 - ~ Frontal headache, eye pain

Continued from previous page

- ~ Runny nose
- ~ Anorexia (loss of appetite)
- ~ Nausea
- ~ Excessive sweating
- ~ Tightness in chest, heartburn

- Severe
 - ~ Abdominal cramps
 - ~ Vomiting
 - ~ Profuse sweating
 - ~ Dyspnea
 - ~ Diarrhea
 - ~ Drooling and tearing
 - ~ Urinary frequency
 - ~ Involuntary urination or defecation
 - ~ Excessive bronchial secretions
 - ~ Loss of consciousness
 - ~ Flaccid paralysis
 - ~ Seizures

Eclampsia/Preterm Labor**EMT**

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Place patient in position of comfort, head elevated if tolerated
- Blood Glucose Level

EMT Stop Line**Intermediate**

- Vascular Access, NS, Bloods Drawn

Intermediate Stop Line**Critical Care Tech. & Paramedic**

- Cardiac Monitor with 12 Lead EKG

Critical Care Tech. Stop Line**Paramedic Stop Line****On-line Medical Control**

- Magnesium Sulfate 2-4 Gms IV in 100 ml of Normal Saline
 - Infuse over 20 minutes
- Valium 5 – 10 mg IV

Key Points

- Magnesium Sulfate should not be given to a patient with a history of renal failure

Pediatric Unconscious/Altered Mental Status/Diabetic Emergency

EMT & Intermediate

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Obtain Blood Glucose Level

EMT Stop Line

Intermediate Stop Line

Critical Care Tech. & Paramedic

- Vascular access with burette, NS, Bloods drawn
- Dextrose 50% 1 ml/kg diluted 1:1 with Normal Saline in burette
- Glucagon 1 mg IM, if unable to obtain vascular access

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control

- Dextrose 50% diluted 1:1 with Normal Saline in burette
- Endotracheal Intubation
- Narcan 0.01 mg/kg IV/IO/IM

Key Points

- Attempt to obtain a thorough medical history to ascertain patients presenting problem
- Establish Online Medical Control as soon as possible
- Gather and bring bottles of any medications if possible

Major Pediatric Trauma**EMT & Intermediate**

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed

EMT Stop Line**Intermediate Stop Line****Critical Care Tech. & Paramedic**

- Cardiac Monitor
- Vascular access with burette, NS, Bloods drawn

Critical Care Tech. Stop Line**Paramedic Stop Line****On-line Medical Control**

- Endotracheal Intubation
- Establish IO
- Thoracic Needle Decompression

Key Points

- Inadequate Ventilatory Status = the child is cyanotic, respiratory rate is low for child's age or capillary refill is greater than 2 seconds
- Burette or 3 way stopcock required on IV or IO access
- Do not delay transport for any reason

Newborn Resuscitation

EMT & Intermediate

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Warm, dry and stimulate
- Assess heart rate
 - If greater than 100 bpm with spontaneous respirations and pink color, continue assessment
 - If less than 100 bpm – start Bag Valve Mask ventilation with 100% oxygen
 - If less than 60 bpm and not responding rapidly to BVM ventilations – start chest compressions

EMT Stop Line

Intermediate Stop Line

Critical Care Tech. & Paramedic

- If heart rate remains less than 60 in spite of chest compressions and BVM ventilations, medication may be needed

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control

- Vascular access
- Epinephrine 1:10,000 (0.1 ml/kg) IV/IO
- Narcan 0.1 mg/kg

Key Points

- Most infants require only drying, warming, neutral airway positioning (towel or blanket under the torso), oral and nasal suctioning and gentle stimulation

Pediatric Symptomatic Bradycardia

EMT & Intermediate

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- If poor perfusion, altered level of consciousness or respiratory distress ventilate with Bag Valve Mask
- Start CPR if heart rate < 60 bpm despite ventilation

EMT Stop Line

Intermediate Stop Line

Critical Care Tech. & Paramedic

- Cardiac Monitor
- Consider advanced airway management if BVM ventilations inadequate

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control

- Vascular access, bloods drawn, NS kvo
- Epinephrine 1:10,000 0.01 mg/kg (0.1 ml/kg) IV/IO
- Atropine 0.02 mg/kg IV/IO
- Transcutaneous pacing
- Endotracheal Intubation

Key Points

- Obtain online Medical Control as soon as possible
- Consult Broselow Tape
- Waveform Capnography if available

Pediatric Cardiac Arrest

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- For sudden, witnessed arrest use AED over the age of one (1) year
- For un-witnessed arrest by anyone, start CPR for 2 minutes
 - Follow with AED analysis

**EMT Stop Line
Intermediate**

- Vascular access with Burette, NS, Bloods drawn

**Intermediate Stop Line
Critical Care Tech. & Paramedic**

- Cardiac Monitor
- Ventricular Fibrillation/Pulseless Ventricular Tachycardia
 - Pediatric manual defibrillator paddles must be used in children < 1 years old and/or weighing < 10 kg to insure proper defibrillation:
 - > Defibrillate 2 joules/kg then 4 joules/kg
 - > Resume CPR immediately – 5 cycles (2 minutes)
 - > Reassess rhythm
 - Epinephrine 1:10,000 0.01 mg/kg (0.1 ml/kg) IV/IO
- Asystole or PEA
 - Epinephrine 1:10,000 0.01 mg/kg (0.1 ml/kg) IV/IO

**Critical Care Tech. Stop Line
Paramedic Stop Line
On-line Medical Control**

- Repeat Epinephrine
- Amiodorone 5 mg/kg IV/IO
- Magnesium Sulfate 50 mg/kg (max dose 2 Gms) IV/IO
- Epinephrine 1:1000 0.1mg/kg ET

Key Points

- Attempt to use pediatric pads for AEDs
- Most pediatric arrests are due to hypoxia or are respiratory issues in nature, ventricular fibrillation is somewhat rare
- Search for and treat possible causes of contributing factors:

<ul style="list-style-type: none"> - Hypothermia - Hypovolemia - Hydrogen ion (acidosis) - Hypokalemia - Hyperkalemia 	<ul style="list-style-type: none"> - Toxins - Tamponade, Cardiac - Tension pneumothorax - Thrombosis - Trauma
--	--
- Minimize interruptions in chest compressions (100/minute)

Pediatric Hypoperfusion/Shock

EMT & Intermediate

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed

EMT Stop Line

Intermediate Stop Line

Critical Care Tech.

- Cardiac Monitor
- Vascular access with Burette, NS, Bloods drawn
- Bolus 20 ml/kg

Critical Care Tech. Stop Line

Paramedic

- Additional fluid bolus 20 ml/kg (may repeat 1 time)

Paramedic Stop Line

On-line Medical Control

- Epinephrine 1:10,000 0.01mg/kg (0.1 ml/kg) IV/IO

Key Points

- Symptoms of Hypoperfusion/Shock:
 - Capillary refill > 2 seconds
 - Cool, clammy or mottled skin
 - Inability to recognize parents
 - Restlessness, tachycardia, tachypnea
 - SBP < 70 mmHg (2 years old and older)
 - SBP < 60 mm Hg (less than 2 years old)

Pediatric Seizure**EMT & Intermediate**

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed

EMT Stop Line**Intermediate Stop Line****Critical Care Tech. & Paramedic**

- Cardiac Monitor
- If Status Epilepticus IV/IO access with Burette, NS
- Obtain Blood Glucose level

Critical Care Tech. Stop Line**Paramedic Stop Line****On-line Medical Control**

- Valium up to 0.2 mg/kg IV slow (max dose of 10 mg)
- Valium up to 0.2 mg/kg per rectum (max dose of 10 mg)

Key Points

- Status Epilepticus = seizures that persist for longer than 30 minutes or patient has 2 or more seizures without an intervening period of consciousness

Pediatric Tachycardia (Non-Sinus)

EMT & Intermediate

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed

EMT Stop Line

Intermediate Stop Line

Critical Care Tech. & Paramedic

- Cardiac Monitor with 12 Lead EKG
- For unstable patient:
 - Vascular access with Burette, NS, Bloods drawn

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control

- Unstable Patient:
 - Synchronized Cardioversion 0.5 – 1 joule/kg or Vagal Maneuvers
 - Consider sedation
 - › Valium 0.2 – 0.5 mg/kg
- Stable Patient:
 - Wide Complex QRS
 - › Establish IV/IO and Burette with NS
 - › Amiodarone 5 mg/kg IV/IO in 100 ml over 20 minutes
 - Narrow Complex QRS
 - › Adenosine (Adenocard) 0.1 mg/kg (max dose 6 mg) rapid bolus
 - Second dose 0.2 mg/kg (max dose 12 mg) rapid bolus

Key Points

- Contact Medical Control as soon as possible
- Newborn heart rate > 220 bpm is considered tachycardia
- Child older than 1 years of age with a heart rate > 180 bpm without P waves is considered tachycardia
- Consult Broselow Tape

Pediatric Acute Asthma

EMT & Intermediate

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Albuterol 2.5 mg via nebulizer, may repeat one time

EMT Stop Line

Intermediate Stop Line

Critical Care Tech.

- Cardiac Monitor with 12 Lead EKG
- Albuterol 2.5 mg & Atrovent 0.5 mg via nebulizer may repeat one time

Critical Care Tech. Stop Line

Paramedic

- Epinephrine 1:1,000 0.01 mg/kg IM, if no improvement from Albuterol/Atrovent treatments
- Vascular access, NS, bloods drawn, if continued shortness of breath after nebulized medication

Paramedic Stop Line

On-line Medical Control

- Epinephrine 1:1,000 0.01 mg/kg IM
- Continuous nebulizer treatment
- Magnesium Sulfate 50 mg/kg slow IV push 5-15 minutes

Key Points

- Contact Medical Control as soon as possible
- BLS providers:
 - For patients with a history of Angina, Myocardial Infarction, Arrhythmia or Congestive Heart Failure, Medical Control **MUST** be contacted prior to administration of albuterol
- Do not delay transport to the appropriate hospital
- If patient exhibits signs of imminent respiratory failure, refer to the Airway Management protocol

Decompensated COPD

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Assist patient with previously prescribed MDI

EMT Stop Line
Intermediate

- Vascular access, NS, Bloods drawn

Intermediate Stop Line
Critical Care Tech. & Paramedic

- Cardiac Monitor with 12 Lead EKG
- Albuterol 2.5 mg/Atrovent 0.5 mg via nebulizer may repeat one time

Critical Care Tech. Stop Line
Paramedic Stop Line
On-line Medical Control

- Albuterol nebulizer
- Continuous Albuterol nebulizer
- Endotracheal Intubation
- Valium 5-10 mg IV

Key Points

- Use Capnography if equipped
- Monitor CO₂ retention levels

Acute Pulmonary Edema

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Position of comfort

EMT Stop Line
Intermediate

- Vascular access, NS, Bloods drawn

Intermediate Stop Line
Critical Care Tech.

- Cardiac Monitor with 12 Lead EKG
- Nitroglycerin 0.4 mg SL, repeat every 5 minutes
 - Vascular access must be established
 - Maintain SBP > 100 mmHg
 - Patient must have negative history of Viagra or similar medication within 36 hours
- Lasix 40 mg IV over 2-3 minutes **only with peripheral edema**
- Upright assisted ventilations with BVM for patients with severe shortness of breath
- CPAP if equipped

Critical Care Tech. Stop Line
Paramedic

- Morphine 2 mg slow IV push

Paramedic Stop Line
On-line Medical Control

- Additional Nitroglycerin SL
- Morphine 2-4 mg IV
- Nitropaste 1-2 inches
- Lasix 20-100 mg IV
- Endotracheal Intubation

Key Points

- Use Capnography if equipped

Airway Management

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Obtain baseline Vital Signs
- Utilize Bag Valve Mask to support respiratory effort when appropriate
- Ventilate with airway adjunct when appropriate (nasal/oral)

EMT Stop Line

Intermediate

- If unable to adequately ventilate with BVM, attempt Endotracheal Intubation
- After two (2) unsuccessful ET attempts, attempt intubation with Combitube
- Vascular access, NS, Bloods drawn only after a secured adequate airway has been accomplished

Intermediate Stop Line

Critical Care Tech. & Paramedic

- Utilize advanced airway techniques if necessary in long transport situations
- CPAP if equipped

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control

- Valium 2-10 mg IV
- Morphine 2-10 mg IV

Key Points

- Apply C-Collar to assist with stabilization of endotracheal tube
- Confirm tube placement with at least two methods
- Apply and monitor waveform capnography

Allergic Reaction/Anaphylaxis

EMT & Intermediate

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Assist patient in use of prescribed Epi-pen (*if in respiratory distress or hypoperfusion/shock from reaction*)
 - If patient's Epi-pen is not available or expired, administer EMS agency's Epi-pen
- If in respiratory distress or hypoperfusion/shock without Epi-pen prescribed, contact medical control
 - If unable to contact medical control and patient is < 35 years old, administer one Epi-pen

EMT Stop Line

Intermediate Stop Line

Critical Care Tech. & Paramedic

- Vascular access, NS, Bloods drawn
- Cardiac Monitor
- Benadryl 50 mg IV/IM
- Epinephrine 1:1,000 0.3 mg IM

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control

- Endotracheal Intubation
- Continuous nebulizer treatment

Acute Asthma

EMT & Intermediate

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Albuterol 2.5 mg via nebulizer, may repeat one time

EMT Stop Line

Intermediate Stop Line

Critical Care Tech.

- Cardiac Monitor
- Albuterol 2.5 mg with Atrovent 0.5 mg via nebulizer may repeat one time
- Vascular access, NS, Bloods drawn, if continued shortness of breath after nebulized medications

Critical Care Tech. Stop Line

Paramedic

- Epinephrine 1:1,000 0.3 mg IM if no improvement from Albuterol/Atrovent treatment

Paramedic Stop Line

On-line Medical Control

- Epinephrine 1:1,000 0.3 mg IM
- Continuous nebulizer treatment
- Magnesium Sulfate 2-4 Gms slow IV over 5-15 minutes

Key Points

- BLS Providers:
 - Request advanced life support if available
 - For patients with a history of Angina, Myocardial Infarction, Arrhythmia or Congestive Heart Failure, Medical Control **MUST** be contacted prior to administration of albuterol
- Do not delay transport to the appropriate hospital
- If patient exhibits signs of imminent respiratory failure, refer to the Airway Management Protocol

Trauma Transport

CONSIDER AEROMEDICAL EVACUATION IN SEVERELY INJURED PATIENTS**EMT**

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Treat sucking chest wounds
- Stabilize flailed areas

EMT Stop Line**Intermediate**

- Establish two (2) large bore IVs, Bloods drawn

Intermediate Stop Line**Critical Care Tech. & Paramedic**

- Cardiac Monitor with 12 lead EKG

Critical Care Tech. Stop Line**Paramedic Stop Line****Trauma Characteristics and Mechanism of Injury**

- General Characteristics of Major Trauma patients
 - Pulse < 50 or >120
 - GCS ≤ 13
 - Respiratory rate < 10 or > 29/minute
 - SBP < 90 mm Hg
- Mechanism of injury which suggests major trauma
 - Ejection from automobile
 - Extrication time > 20 minutes
 - Vehicle collision resulting in 12" of intrusion into the passenger compartment
 - Fall > 20 feet
 - Vehicle/Pedestrian collision
 - Motorcycle crash
 - Vehicle/Bicycle collision > 5mph
 - Vehicle rollover with unrestrained occupant
 - Death in the same compartment

Trauma Shock

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- MAST or pelvic sling only for patients:
 - Unstable pelvic fracture and SBP < 90 mmHg

EMT Stop Line

Intermediate

- Establish two (2) large bore IVs with Normal Saline
 - Decompensated Shock – infuse wide open until SBP \geq 90 mmHg, then 250 ml/hr

Intermediate Stop Line

Critical Care Tech. & Paramedic

- Cardiac Monitor

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control

- Fluid challenge
- Dopamine infusion 5-20 μ /kg/min

Key Points

- Do not delay transport to start intravenous therapy
- Consider Aero-medical transport to a trauma center

Chest Trauma

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Treat sucking chest wounds
- Stabilize flail area

EMT Stop Line

Intermediate

- Thoracic Needle decompression
 - If pulseless/apneic with signs of tension pneumothorax
- Establish two (2) large bore IVs and infuse NS per Trauma Shock Protocol

Intermediate Stop Line

Critical Care Tech. & Paramedic

- Cardiac Monitor

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control

- Thoracic decompression

Key Points

- Signs of Tension Pneumothorax:
 - Hypotension
 - JVD
 - Subcutaneous air
 - Decreased breath sounds on one side
 - Altered level of consciousness
- Consider Aero-medical transport to a trauma center

Head Trauma

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Consider BVM ventilation if bradypneic or apneic

EMT Stop Line
Intermediate

- Vascular access, NS, Blood drawn, if present with signs and symptoms of shock
 - Infuse as per Trauma Shock Protocol

Intermediate Stop Line
Critical Care Tech.

- If signs of herniation, intubate patient and ventilate:
 - Adult: 20/minute
- Cardiac Monitor

Critical Care Tech. Stop Line
Paramedic

- If signs of herniation, intubate patient and ventilate:
 - Child: 25/minute

Paramedic Stop Line
On-line Medical Control

- IV rate adjustment
- Sedation

Key Points

- Patients with significant head injury are considered unstable. Consider Aero-medical transport if long transport times to nearest hospital
- Significant head injury defined and herniation:
 - GCS < 8
 - Active seizures
 - Fixed/asymmetrical pupils
 - Abnormal posturing (flexion or extension)
 - Intermittent apnea
 - Deterioration of GCS by 2 or more points after initial contact
- Waveform Capnography if going to intubate

Thermal Burns

EMT

- ABC's, vital signs, airway management with high flow oxygen
- Suction as needed
- Remove patient from thermal source and remove burning clothing or jewelry
- Consider Aero-medical transport to burn center if:
 - Burns to head, face and neck area with potential for airway compromise
 - Burns > 10% in children < 10 years of age and in adults > 50 years of age
 - Any burn > 20%

EMT Stop Line

Intermediate

- If burns > 10%, Vascular access, NS, Bloods drawn
- 500 ml NS bolus

Intermediate Stop Line

Critical Care Tech. & Paramedic

- If respiratory distress, prepare to intubate
- If moderate to severe pain refer to pain protocol

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control

- Morphine 2-10 mg IV/IM

Vascular Access

EMT

EMT Stop Line

Intermediate

- Adult IV access
- Adult and pediatric IV/IO in arrest

Intermediate Stop Line

Critical Care Tech. & Paramedic

- Pediatric IV
- Adult and Pediatric IO in Hypoperfusion and Cardiac Arrest
 - (EMT CC and Paramedic standing orders)

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control

Key Points

- IO access should only be used in life threatening conditions
- Pediatric IVs can be difficult therefore no prophylactic lines
- Blood tubes should be drawn with all IVs unless patient is critical or situation won't allow

Vascular Devices. Pre-Existing

EMT & Intermediate

EMT Stop Line

Intermediate Stop line

Critical Care Tech. & Paramedic

Restricted to AEMT-CC and AEMT-P who have had an in-service on this procedure

- Identify the device
 - If the patient is in Extremis and a lifesaving intervention will be performed, establish access to the device
 - If the patient is not in Extremis, consult Medical Control for orders to access the device
- No prophylactic IV lines may be established into pre-existing vascular devices
- Procedure to establish access to Pre-existing Vascular Access Device:
 - Discontinue any solution flowing into the pre-existing vascular device
 - Put on sterile gloves
 - Clean injection site with iodine solution
Do not remove or unscrew cap, unless no other means of accessing the device is possible
If you must remove the cap clamp the device before removal
 - Remove any clamps on vascular access and slowly withdraw 10 ml of fluid from the port and discard
 - Draw up a 10 ml Normal Saline flush
 - Inject Normal Saline 5 ml, if bolus does not inject freely, the access must not be used
 - If the device is patent, inject the remaining 5 ml from the syringe
 - Secure administration set to access site
 - Maintain Normal Saline KVO through device
 - Administer fluid bolus and/or medications as you would for a peripheral IV
 - If the access device is damaged and begins to leak, clamp it 1 inch from the skin entry site with a padded non-serrated hemostat

Critical Care Tech. Stop Line

Paramedic Stop Line

On-line Medical Control

Key Points

- EXTREMIS includes but is not limited to:
 - Cardiac arrest
 - Respiratory arrest
 - Status epilepticus
 - Decompensated shock
 - Life threatening arrhythmias
- Pre-existing vascular devices include Central Venous Catheters (CVC), Peripheral Inserted Central Catheters (PICC) and Renal Dialysis Lines
- Implanted ports and fistulas are not considered pre-existing vascular devices and cannot be accessed by the pre-hospital provider
- Percutaneous catheters below the nipple are not for vascular access and should not be used

Once the device is accessed, continuous flow of Normal Saline must be maintained

APPENDIX

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APGAR SCORE

- Score should be recorded at 1 minute and 5 minutes after the birth
- Do not withhold resuscitation efforts to determine APGAR score

Sign	0	1	2
A – Appearance	Blue, pale	Body pink, extremities blue	Completely pink
P – Pulse	Absent	Below 100	Above 100
G – Grimace (flick soles of feet)	No response	Grimace	Vigorous cry
A – Activity (muscle tone)	Limp	Some flexion	Active motion
R - Respirations	No effort	Weak, irregular	Strong cry

DEATH SITUATION GUIDELINES

General Aim:

Preservation of scene, including body as found, for investigative purposes within practical limits consistent with the role and responsibilities of EMTs.

Rules:

Situations will vary and the exercise of good practical judgment by those actually present can't be replaced by rules, even when they are based upon law. Rules are intended to establish norms and give direction while allowing some professional freedom to adjust according to common sense and professional expertise. However, they are not to be taken lightly in the formulation of policy or in practice.

The Deceased Patient Should Not Be Moved and the Scene Should Not Be Destroyed:

Bodies should be left as they are found when obviously dead. This is less of a concern when the body has already been moved or unusual situation has taken place. Infants are no general exception. Bodies in danger of being lost or further destroyed should be moved to protect them.

Reports:

A record of all actions and procedures along with any notes that indicate the experience and activities of the EMT, should be made available to the following:

- Police investigator
- Office of the Chief Medical Examiner
- Coroner
- Their delegate

The regularly kept PCR will suffice in most instances although investigators may seek clarification and further details.

Pronouncement:

There is no law that requires that a physician pronounce death. The fact of death and subsequent course of action are determined by the individual responders according to their level of expertise.

Hypothermia:

If, based on environmental temperatures and clinical situations, it is suspected that a patient only appear lifeless because of hypothermia, they should be transported and treated aggressively. On the other hand, patients who have been dead for a prolonged period of time will have a low body temperature. If the clinical situation does not suggest hypothermia as a cause for the patient's clinical state, pronouncement of death is appropriate.

Deaths Investigated by Medical Examiners/Coroners:

Deaths at home (even if felt to be the result of natural causes) need to be investigated. The Police or Medical Examiner/Coroner should be notified, unless the attending physician is present. This includes patients with active DNR orders. An exception is given to patients enrolled in a hospice program. In this case the hospice nurse and physician would be involved. Natural deaths at a nursing home do not need to be investigated. The Coroner can be contacted through County Dispatch or through the usual local mechanisms. If the Coroner allows, the family may then call the funeral home to make arrangements. EMTs may leave or stay until the body is moved as the situation dictates, considering the needs of the survivors and ability of the responders to remain on location.

Death Not Due to Natural Causes:

In all cases of injury, (poisonings, non-natural deaths and in suspicious deaths) every attempt should be made to protect the body and scene. The police should be notified and they should be advised of any information that may be useful in the investigation such as:

- Circumstances
- Medical history
- Findings on the body
- Statements and actions of those present.

Whenever possible, the EMT should remain until the police have arrived to protect the scene and the body. EMTs should not take any personal risks protecting the scene.

Children:

These guidelines can apply to children as well as adults. SIDS is not considered a documented natural death. Proper investigation and post mortem medical examination are necessary in these cases. This is not only because the potential for foul play may exist but also because the medical investigation of such deaths is not complete without detailed information gathering. It may help to explain to the families that notifying police is necessary to fully explore the situation for medical diagnosis. The EMS providers should notify the local police agency.

Body Disturbed:

If the body is touched, regardless of by whom, a written note should be made of its original position.

Body Removed to Ambulance:

The body, if already removed to the ambulance, should be transported rather than returned to the home or other scene.

Tubes and Medical Devices:

Tubes and medical devices should generally be left in place after death whenever possible. Certain reusable equipment may be removed to facilitate viewing by the family and to re-supply the ambulance. Written notation should be made to advise investigators that this was done.

Family Viewing and Holding of the Body:

Except in obviously suspicious cases, a family's request to view and even hold the body (especially of an infant) should be respected. A non-family member such as police, or medical personnel should be present while the family is viewing or holding the body, especially but not exclusively with regard to infants. Realize though, that holding of a body by the family or wrapping the body in anything may contaminate it with trace evidence. This may destroy criminal evidence in one situation and cause undue suspicion in another.

Trauma Arrest:

Trauma victims who are Pulseless and are in asystole may be pronounced dead at the accident scene. Medical Control may additionally elect to terminate resuscitation on patients who are Pulseless and have agonal cardiac activity (heart rate less than 40 beats per minute).

Other:

Ensure that your crew "debriefs" itself after all such cases. The decision not to continue resuscitation can be stressful on the rescuers also.

DEATH SITUATIONS IN MASS DISASTERS

General Responsibilities to the Deceased Persons:

The Medical Examiner/Coroner is responsible for the deceased victims of a mass disaster, which includes identification and removal from the scene. Their office should be informed immediately of any multiple fatality situations.

- **Bodies should be left in place at the scene**, except when they must be moved to preserve them from destruction or when they block access. The resting place of a victim may be critical toward identification of the body and/or reconstruction of an incident. They can be tagged as fatalities to prevent other medical personnel from repeating examination.
- **If a death has occurred en-route to the hospital**; The body does not need to be replaced at the scene, it can be brought to the hospital or other suitable storage place as determined by distances and needs of the other patients in the ambulance. If the body is left anywhere other than the hospital or designated temporary morgue, the body should be tagged and the Medical Examiner/Coroner should be advised.
- **The site from which a victim is removed should be noted on the PCR**, along with the name of the agency and name of the person who removed the victim. You should also note why removal was needed and if death occurred after removal. Such information may be critical toward identification of the body and/or reconstruction of the incident.
- **If an identification is made** while the EMS provider has the victim, dead or alive, a tag with at least the name and date of birth of the deceased along with the identifier's name, relationship, address and where he/she can be located should be put on the body.
- **Personal property should be left with the body** including clothing if the patient dies. Nothing should be removed from those already deceased.

HELICOPTER SCENE UTILIZATION GUIDELINES

When considering aero medical transport, CALL EARLY to place the helicopter EMS unit on standby. Helicopters may be mobilized simultaneously with ground units, and may be cancelled later if not needed

Patient transport should not be delayed awaiting a helicopter. Ground EMS units may begin transport and intercept with the helicopter en-route to the trauma center or community hospital.

Helicopter transport should be considered in the following situations:

- Unstable or potentially unstable trauma patient if air transport can reduce total transport time to a Trauma Center in < 30 minutes. Consultation with Medical Control is required unless the patient is unstable.
- Clinically unstable medical patients with extended ground transport times if air transport can significantly reduce transport time. Consultation with Medical Control is required.
- When ALS care is necessary and is not available from the local ground ambulance service or from a neighboring EMS service.
- Patient location is inaccessible or other forms of transport may be detrimental to the patient's status.
- Rapid evacuation to a specialty care facility is required, including serious burns, multisystem trauma, underwater diving injuries, etc.
- Multiple casualty incidents (MCI) that overwhelm the usual resources

MEDICATION DRIP RATES

Dopamine

- Rate is dependent on concentration
- Be sure to use the appropriate chart

Dopamine 200mg in 250 ml of Dextrose 5% / Water or Normal Saline

Patient's kg weight	50	60	70	80	90	100
Dosage (mcg/kg/min)	Gtts/min					
5 mcg	19	23	26	30	34	38
6 mcg	23	27	32	36	41	45
7 mcg	26	32	37	42	47	53
8 mcg	30	36	42	48	54	60
9 mcg	34	41	47	54	61	67
10 mcg	38	45	53	60	68	75
12 mcg	45	54	63	72	81	90
14 mcg	53	63	74	84	95	105
16 mcg	60	72	84	96	108	120
18 mcg	68	81	95	108	122	135
20 mcg	75	90	105	120	135	150

Dopamine 400mg in 250 ml of Dextrose 5% / Water or Normal Saline

Patient's kg weight	50	60	70	80	90	100
Dosage (mcg/kg/min)	Gtts/min					
5 mcg	9	11	13	15	17	19
6 mcg	11	14	16	18	20	23
7 mcg	13	16	18	21	24	26
8 mcg	15	18	21	24	27	30
9 mcg	17	20	24	27	30	34
10 mcg	19	23	26	30	34	38
12 mcg	23	27	31	36	41	45
14 mcg	26	32	37	42	47	53
16 mcg	30	36	42	48	54	60
18 mcg	34	41	47	54	61	68
20 mcg	38	45	52	60	68	75

Magnesium: 2gm in 100ml Normal Saline = 20mg/ml / 4gms in 100ml in Normal Saline = 40mg/ml		
Infusion Rate (over 20 min)	Admin Set: 10 drops/ml	Admin Set: 15 drops/ml
5 ml/min	50 drops/min	75 drops/min

Amiodarone (Cordarone): 150 mg in 100 ml Normal Saline = 1.5mg/ml		
Infusion Rate	Admin Set: 10 drops/ml	Admin Set: 15 drops/ml
10 ml/min (over 10 min)	100 drops/min	100 drops/min

Diltiazem (Cardizem): 100mg in 100 ml Normal Saline = 1mg/ml

MEDICATION FORMULARY

Medication	Cont./Unit	Required
Adenosine (Adenocard)	6mg	3
Albuterol Sulfate	2.5 mg	3
Amiodarone	150 mg	3
Aspirin (chewable)	81 mg/tblt	1 bottle
Atropine Sulfate	1 mg	4
Atrovent	0.5 mg	3
Calcium Chloride 10%	1 Gm	1
Charcoal (activated)	15 Gms	1
Dextrose 50%	25 Gm	2
Diazepam (Valium)	10 mg	2
Diltiazem (Cardizem)	100 mg	1
Diphenhydramine (Benadryl)	50 mg	2
Dopamine	400 mg	1
Duoneb		5
Epinephrine 1:10,000	1 mg	6
Epinephrine 1:1,000	1 mg	2
Epinephrine 1:1,000	30 mg	1
Glucagon	1 mg	1
Lasix	40 mg	2
Magnesium Sulfate	2 Gm	2
Metoprolol (Lopressor)	5 mg	4
Morphine Sulfate	10 mg	2-4
Naloxone (Narcan)	4 mg	1
Nitroglycerin SL Tablets	0.4 mg	25 tablets
Nitroglycerin SL Spray	0.4 mg	300 spray
Nitroglycerin Ointment 2%	7.5 mg/in	1 tube
Sodium Bicarbonate	50 mEq	2
Zofran	4 mg	2

Description	Required
Normal Saline – 1000 ml	2
Normal Saline – 500 ml	1
Normal Saline – 100 ml	1
Dextrose 5% in Water 50 ml	2
Dextrose 5% in Water 150 ml	1
Dextrose 5% in Water 500 ml	1
Macro Administration Set	2
Micro Administration Set	2
Extension Set w/medication port	2
Burette	1
14 Ga IV	2
16 Ga IV	3
18 Ga IV	5
20 Ga IV	5
22 Ga IV	3
24 Ga IV	2
Intraosseous Needle	2
Vacutainer	2
Vacutainer Luer Adapter Needles	2
Blood Specimen Tubes (Red, Blue, Purple, Mint, Yellow, Pink or specific to the facility your transporting to)	2 EA
Tape	2 rolls
Tourniquet	2

Iodine Prep Pads	10
Alcohol Prep Pads	10
Band aids	10
Gauze Pad – 2” x 2”	10
Gauze Pad – 4” x 4”	10
Arm Board	2
Nebulizer	2
Syringe – 1cc	5
Syringe – 3cc	5
Syringe – 5cc	2
Syringe – 10cc	5
Syringe – 20cc	2
Tubex holder/injector (large/small)	1 ea
Needles: 18 g, 20ga, 22ga, 25ga	4ea
Laryngoscope Handle – Adult	1
Laryngoscope Handle – Pediatric	1
Laryngoscope Blades (assorted) – Adult	1 set
Laryngoscope Blades (assorted) – Pediatric	1 set
ET Tubes – 2.5 – 5 uncuffed	2 ea
ET Tubes – 6 – 9 cuffed	2 ea
Stylette	2 ea infant, small, standard
Syringe – 10cc	2
Tape	2 rolls
CombiTube	2
Magil Forceps	1
Lidocaine Jelly tube	1
Commercial Tube Holder	2
Commercial Tube Placement device	2
Thoracic Decompression Needle – 14 ga x 3.0”	2
Monitor/Defibrillator	1
Batteries	Min to operate
Batteries (Spare)	2 sets
Adult defibrillation pads	2 sets
Pediatric defibrillation pads	2 sets
Electrodes	30
12 lead capability	Req
Capnography capability	Req
Pediatric Broselow Tape	1 Req

PEDIATRIC EMERGENCIES

- For these protocols, pediatric patients are defined as less than 9 years of age
- Have a Broselow Pediatric Tape or similar device available to accurately determine the correct medication dosage
- Normal Vital Signs for Infants and Children

Vital Signs Chart

Age	Respirations	Pulse	Systolic BP
Newborn	30 – 60	100 – 180	> 60
Infant (< 1 year)	30 – 60	100 – 160	> 60
Toddler (1-3 years)	24 – 40	90 – 150	> 70
Preschooler (3-5 years)	22 – 34	80 – 140	> 75
School Age (6-8 years)	18 – 30	70 - 120	> 80

From American Academy of Pediatrics, Pediatric Education for Prehospital Professionals

PHYSICIAN ON THE SCENE

Non – Mountain Lakes Physician

- Verify identity and specialty
 - Photo ID
 - Family member can identify Physician
 - Member of the EMS Crew can identify Physician
- Explain briefly to physician
 - Regional system
 - Pertinent protocols
 - That ALS is available to them if the following:
 - › They will transport the patient with you
 - › They will sign the physician release
- If they transport and sign release
 - All the equipment and personnel is available up to the training level of the EMS providers
- If they refuse either of the above
 - Initiate treatment as indicated
 - Establish a signal
- If there is any conflict that you are uncomfortable with, call a signal and let the two physicians speak to each other

Office, Prison MD or telemedicine, Sporting events with contract physicians

- Physician will guide treatment as long as they are with the patient
- Do not argue with the physician about care
- Initiate ALS after leaving the office if MD is not willing to accompany you and they do not want ALS

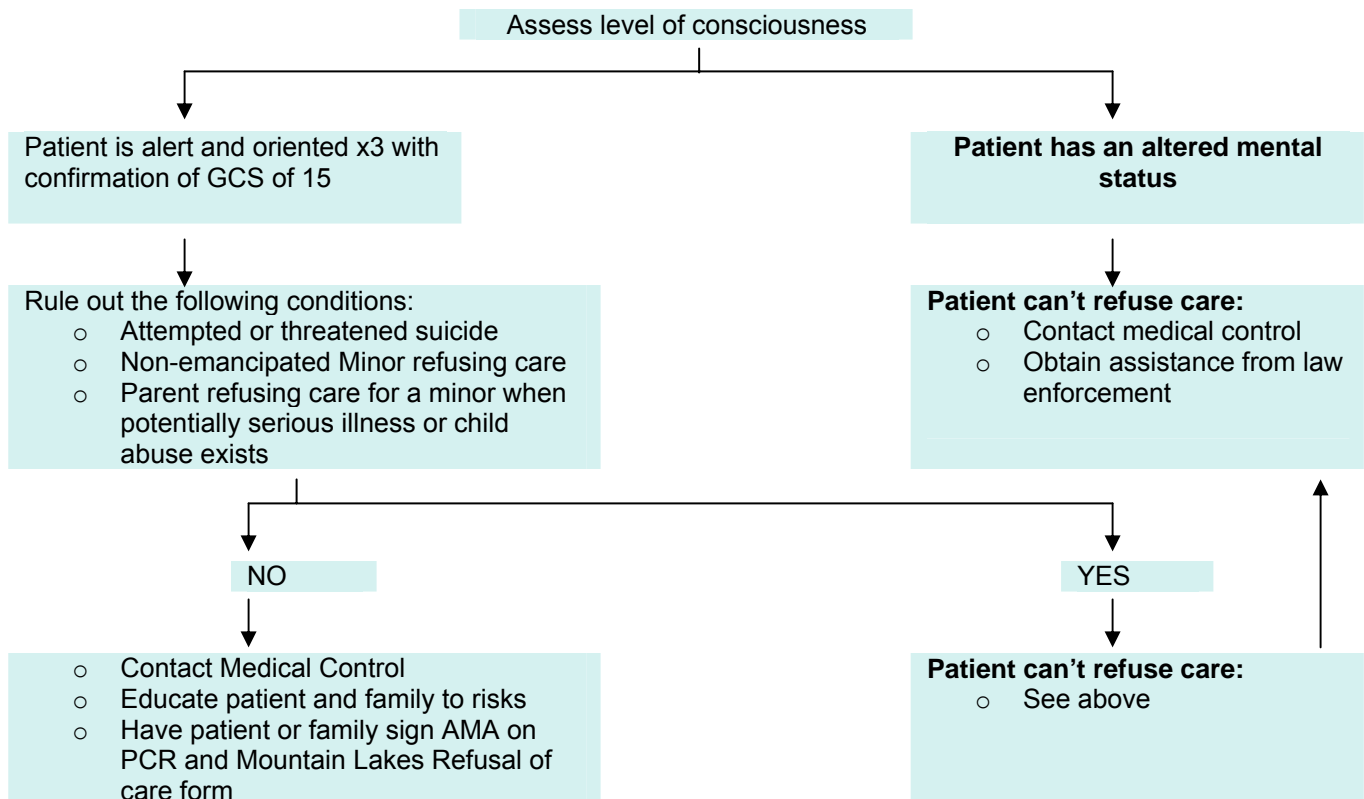
Mountain Lakes Physician (Medical Director)

- They are able to go with transport:
 - Obtain the MD's number for the PCR, when giving the report to hospital announce that a Mountain Lakes MD is on board and forward their information accordingly
- They are unable to go with transport:
 - Have the Mountain Lake's Physician (MD) speak directly to the on-line medical control at the hospital and record both of their MD numbers on your PCR

PATIENT'S REFUSAL OF CARE AGAINST MEDICAL ADVICE

An appropriate refusal of care is a process to go through rather than a signature on a document

- Under no circumstances should EMS personnel allow themselves to be placed in a position of danger. If this potential exists, go to a safe area and call for assistance
- Always talk with the patient and attempt to convince him/her of the need for treatment and/or transport
- Talk with family and friends in an attempt to convince the patient of the need for treatment and/or transport
- Offer to call Medical Control and have the patient speak directly with the physician or PA on duty
- If the patient still refuses treatment and/or transport do the following:



RESTRAINTS

Introduction:

Certain physical restraint procedures have resulted in the unintentional death or disability of patients, most commonly referred to as (positional asphyxia). This has been reported most often with the use of “hogtie” restraints and with a forceful prone-restraint. When using Prone (face down) restraint, with the body weight or straps severely impeding normal respirations can result in suffocation. This also can lead to the delay of recognizing and responding to, respiratory distress or cardiac arrest.

Policy:

Patient restraints should be used only to protect patients, staff or the public. They are needed during the occasions when the patient is felt not to have the mental capacity to make the decisions regarding their healthcare and when they pose a danger to themselves or others.

Patient Restraint during 911 calls:

The following principles should be followed:

- The need for physical restraint can be minimized by a calming your approach to the patient, which makes it clear that the purpose of EMS involvement is to help with a medical issue.
- Consideration should be given to medical conditions that can cause delirium such as:
 - Intoxication with prescription or illicit drugs
 - Hypoxia
 - Head injury
 - Renal or liver failure
 - Chronic dementia
 - Hypoglycemia
- The least restrictive method possible should be used to safely restrain a patient.
- Forceful restraint in the prone position (face down) must be avoided whenever possible because of its association with positional asphyxia, the inability to adequately monitor a patient’s airway, and the delay that would entail if the patient were to need immediate respiratory or cardiac resuscitation. A preferred method is to restrain one arm by the side with the other arm over the head and with the patient supine (on their back). An oxygen mask connected to oxygen may be used to cover the patient’s mouth if they are spitting or attempting to bite. Use of other types of restraints (such as the canvas “cocoon” type restraints) may be approved by the local medical director. These other restraints may be used as long as they don’t compromise or limit access to the chest and airway or they do not involve prone restraint.
- Restraint use must be fully documented. Documentation must include the reasons and events that led up to patient restraint, frequent assessments of the patient, and the means of restraint.
- If key lock restraints are used (handcuffs), law enforcement personnel must ride with the patient in the ambulance so that, if needed, the restraints can be quickly removed.
- Patients being transported to a hospital, who require restraint, must be transported in the ambulance whenever possible because of immediate access to equipment such as suction, ventilation equipment and defibrillation equipment. If key lock restraints are used or if EMS personnel are in danger because the physical restraints are not sufficient to restrain the patient, law enforcement personnel should accompany the patient in the ambulance.

PATIENT RESTRAINTS CONTINUED

- Patient Restraint during Inter-facility Transport:
 - Before transport – all patients should be medically cleared to ensure that there is not an unstable medical condition which could worsen en-route or which might explain the patient's behavior.
 - Patients who have not received medications or they have been witnessed to have already gone through the peak effects of a sedative drug are deemed appropriate for law enforcement transportation, especially if they are at high risk of elopement or violence.
 - Those patients who have an ongoing need for sedation require EMS transport. Many patients, if given a choice, will prefer sedation to physical restraint.
 - Law enforcement transport may be appropriate for patients who are being involuntarily committed but not in cases when it is for a voluntary admission.
 - The sending physician should consider the level of risk for elopement when deciding on the need for physical restraint during EMS transport. The decision regarding use of restraints is the responsibility of the sending physician, but the resources of the transporting EMS agency should be taken into consideration.
 - Restraints should be considered for those patients who are felt to be at risk for elopement or harm to themselves or others. The method of restraint should be sufficient to keep the patient from freeing themselves and should not be unnecessarily restrictive.
 - Cooperative patients who are felt to be at low risk for elopement or self-injury can be transported without restraint.
 - Patients transported by EMS should be in a hospital gown and should not be allowed to wear shoes to decrease the likelihood of elopement.
 - During transport, all patients require constant visual evaluation. An EMT should be in the patient compartment with the patient at all times.
 - If a non-restrained patient attempts to elope, pull the ambulance to the side of the road and attempt verbal de-escalation first. If this is unsuccessful contact medical control for an order to restrain and contact law enforcement. Do not put yourself in harm's way
 - Patients should never be restrained in a "hog-tied", hobbled or prone position or while sandwiched between backboards. Restraint should never compromise the airway or put pressure on the neck
 - The patient's dignity should be maintained during restraint.
 - If a restrained patient continues to struggle there is a risk of rhabdomyolysis and hyperkalemia as well as patient injury. Contact medical control so that chemical restraint (i.e. diazepam) can be considered.
 - Restraints should be periodically reevaluated to assess level of discomfort and neuro/vascular status in the distal parts of extremities.
 - Documentation should include the above evaluations, the method of restraint and the need for the restraint.
 - Law enforcement should be involved whenever there is a risk for injury to the EMS providers. In some instances, law enforcement may need to accompany the patient in the ambulance.
 - Use of weapons, including pepper spray, by EMS providers is not appropriate

TREAT AND RELEASE PROTOCOLS FOR MASS GATHERINGS

Regional protocols have been approved for the treatment and release in the field of certain patients with minor medical problems. These protocols apply only to mass gatherings and may only be utilized for a specific event with the prior approval of the service medical director. The protocols are not included here, and are only available from your service medical director. Medical problems that may be treated in the field under these circumstances without transportation to the hospital include:

- Minor Abrasions and Lacerations
- Minor Contusions, Sprains, and Musculoskeletal Injuries
- Insect Bites and Stings
- Minor Heat Related Illness
- Minor Hypothermia
- Minor Nose Bleeds
- Dispensing Tylenol