Regional EMS Guidelines
This Guideline format is based on that of New Britain EMS. Many thanks to them for allowing us to use it.

These Guidelines replace all previous versions, including those dated September, 2014

In these guidelines, the term IV is meant to be used interchangeably with IO. Any medication that can be administered IV can also be administered IO.

Click on any of the listings in the Table of Contents or hyperlinked text within the guidelines to navigate to the relevant guideline/policy/medication summary. Click on any title to return to the Table of Contents.
SUMMARY OF CHANGES
VERSION 9/2014 to v.7/1/2015 NCCEMS PATIENT CARE GUIDELINES

- Corrected all abbreviations of microgram from “µg” to “mcg”
- Spelling corrections and minor formatting
- Changed all blood pressure-dependent IV therapy references from a systolic BP of 100mmHg to 90mmHg.
- Changed all dopamine indication/titration endpoints from a systolic BP of 100mmHg to 90mmHg
- **Adult Airway:** Adding dosing and cautions to Neosynephrine and Benzocaine spray administration in PEARLS section. Added conscious orotracheal intubation as indication for benzocaine spray to PEARLS.
- **Pulmonary Edema:** Clarified approval to repeat dosing of SL nitro. Clarified when to consider use of nitropaste.
- **Respiratory Distress:** Added “or evidence of bronchospasm” to “wheezes” in decision tree.
- **Adult Anaphylaxis:** Modified definition / indication substantially. Removed dopamine from medical control option consideration. Added epinephrine drip as medical control option. Allow EMT/AEMT to repeat epi x1 if indicated.
- **Altered Level of Consciousness:** Added “Diabetic Emergency or” to the title of guideline. Amended pearl to allow oral glucose administration when a glucometer is not available and provider suspects a diabetic emergency. Amended pearl to allow administration of D25 or D50 instead of D10 if “in provider judgment it is more appropriate”.
- **Adult Seizures:** Added “preferred” to D10 and allowed for D25 or D50 “if D10 is unavailable or provider judges D25 or D50 to be more appropriate”.
- **Stroke:** Considerable changes to guideline including adding F.A.S.T. neurologic assessment tool and requiring reassessment of neurologic findings every 5 minutes.
- **Added Stroke Destination Guideline** directing stroke patients are to be transported to a ‘stroke ready’ hospital. All hospitals in our region are presently ‘stroke ready’.
- **Adult Shock:** Added branch points to Sepsis and Anaphylaxis guidelines. Changed cardiogenic shock dopamine SBP titration point to 90 mmHg for consistency with norepinephrine. Created separate branch for hemorrhagic shock with titrating resuscitation to SBP of 90mmHg instead of previous 100mmHg. Created pathway for paramedics to administer IV fluids to patients with evidence of volume depletion of other etiology.
• **Management of the Adult Trauma Patient:** Changed dopamine SBP titration point to 90 mmHg for consistency with norepinephrine. Change IV fluid administration endpoint from 100 to 90mmHg.

• **EMS Spine Precautions and Omitting Spinal Immobilization:** Removed both and inserted State SMR Guideline

• **Added Adult Septic Shock Guideline** directing early, aggressive care of septic shock and notification to hospitals of ‘Sepsis Alert’

• **Pediatric Asthma:** Added dosage guidance to epinephrine of “(1:1000) 0.01 mg/kg IM. May repeat once in 5 minutes if needed”.

• **Pediatric Anaphylaxis:** Modified definition / indication substantially. Allow EMT/AEMT to repeat epi x1 if indicated.

• **Management of adult trauma patient:** Removed backboard reference. Added hemostatic agent to bleeding control.

• **Cincinnati Stroke Scale Procedure** retitled “Stroke Screen” and added content regarding F.A.S.T.

• **12 Lead Procedure:** Added specific landmarks for precordial lead placement. Added reference to EMT 12 lead acquisition and transmission as part of a sponsor hospital approved BLS 12 lead program.

• **Norepinephrine:** Changed adult dosing to 4-30 mcg/min throughout all guidelines. Added guidance regarding titration in the norepinephrine formulary section.

• **Added OEMS memo from 2006 regarding alternate DNR bracelet**
Medical Advisory Committee
Connecticut Region 3 (North Central) EMS Medical Direction Policy

The undersigned agree to the following:

1. The following North Central Connecticut EMS Guidelines dated September of 2014 are approved for use and are to be followed by all sponsored EMS personnel. Modifications duly approved and distributed by the North Central Connecticut Medical Advisory Committee shall have full force and effect and are to be incorporated into these guidelines.

2. Off-line medical direction for all EMS agency personnel is the responsibility of the agency’s EMS sponsor hospital medical director.

3. On-line medical direction for regionally sponsored EMS personnel shall be provided by the Region 3 destination hospital in compliance with the regional patient care guidelines. The undersigned EMS medical directors agree to respect the standing orders of the participating hospitals.

4. The physician who gives any on-line medical order is responsible for signing the patient care form when available.

5. On-line medical direction shall be processed by the service’s sponsor hospital in cases where a destination hospital is not yet identified, communication with the destination hospital is impossible, the destination hospital is not a signatory to this agreement or in cases of special operational issues (e.g. MCI).

6. This policy does not pertain to inter-facility transfer patients or policies.

7. Special Considerations for Administering Schedule II-IV Controlled Substances:

   A. The pharmacy at each of the participating hospitals will maintain signatures of all physicians on their staff giving medical direction, including emergency attending physicians and emergency medical residents.

   B. When controlled substances are administered as an on-line medical order, the physician responsible for the order will, when available, sign the relevant patient care report and controlled substance use form.

   C. Controlled substances will be replaced at the EMS service or at service’s sponsor hospital in accordance with the agency’s/hospital’s approved policy.

This policy will be reviewed and approved annually. The physician signatures list will be updated and provided to the pharmacies on an annual basis.
Medical Advisory Committee
Connecticut Region 3 (North Central) EMS Medical Direction Policy (continued)

Connecticut Children’s Medical Center
James F. Packer, MD
Hospital EMS Medical Director (Print)  Signature  12/9/14
Date

Eastern Connecticut Health Network (Rockville and Manchester campuses)
James Castellano, MD
Hospital EMS Medical Director (Print)  Signature  Date
12/18/14

Hartford Hospital
Laura Bolton, MD
Hospital EMS Medical Director (Print)  Signature  Date
12/17/14

The Hospital of Central Connecticut (New Britain and Bradley campuses)
David Buono, MD
Hospital EMS Medical Director (Print)  Signature  Date
12/18/14

Johnson Memorial Hospital
David Hester
Hospital EMS Medical Director (Print)  Signature  Date
12/2/14

University of Connecticut Health Center (Farmington)
Richard Kamin
Hospital EMS Medical Director (Print)  Signature  Date
12/16/14

Saint Francis Hospital and Medical Center
Robert J. Grant, MD
Hospital EMS Medical Director (Print)  Signature  Date
12/9/14

Middlesex Hospital

Hospital EMS Medical Director (Print)  Signature  Date

Ver. 12/2014 NCCEMS MAC  Page 2 of 2
North Central Medical Advisory Committee Advisory 
Prehospital IV Initiations

Paramedics should no longer do a routine IV on all ALS patients. The current guidelines notwithstanding paramedics should consider restricting prehospital IV attempts to the following categories of patients.

1. Patients requiring IV fluid

2. Patients requiring IV medication

3. Patients who are at moderate risk for hypotension or requiring an IV medication

4. Additionally any medication that is described in these guidelines as being administered IV may also be administered via the IO route as well.

As always paramedics are expected to use their best judgment when applying these guidelines.
North Central Medical Advisory Committee Advisory
Normal Saline Shortage

1. When appropriate, EMS providers should use an IV saline lock rather than IV fluids at KVO.

2. Providers should use the smallest volume IV bag (use 250-500cc bags when available) appropriate to patient needs.

3. Lactated Ringers may be used as a direct substitute for Normal Saline, but should not be combined with any of the following drugs: Amiodarone, Atropine, Diltiazem, Fentanyl, Ondansetron, Metoprolol, Midazolam, Naloxone, and Vasopressin. Additionally, other IV fluids may be used according to patient need and sponsor hospital approval.

As always paramedics are expected to use their best judgment when applying these guidelines.
Table of Contents

General Guidelines
- Communication
- Universal Patient Care Algorithm
- Adult Airway Guideline

Cardiac Guidelines
- Acute Coronary Syndrome
- STEMI Destination Guideline
- STEMI Alert Procedure
- Routine Adult Cardiac Arrest Care
- AED Guidelines
- Guidelines for Non-Trauma Cardiac Arrests
- Bradycardia
- Tachycardia
- Return of Spontaneous Circulation/Post Resuscitation Care

Respiratory Guidelines
- Acute Pulmonary Edema
- Continuous Positive Airway Pressure (CPAP)
- Complete Airway Obstruction
- Respiratory Distress
- Sedation to Manage Airway Post-Intubation

Medical Guidelines
- Routine Medical Care
- Allergic Reaction
- Anaphylaxis
- Diabetic Emergencies or Altered Level of Consciousness
- Heat Related Emergencies
- Near Drowning
- Hypothermia
- Hypothermic Arrest
- Nausea/Vomiting
- Overdose / Poisonings
- Pain Management Adult
- Seizures
- Shock
- Anxiety/Behavioral Emergencies
- Dystonic Reaction
- Stroke
- Stroke Destination
- Alcohol Withdrawal
- Septic Shock/Sepsis Alert Process
Adult Trauma Guidelines – 13 Years Old
Patient Triage Guideline
Management of the Trauma Patient
Burns
Spinal Motion Restriction

OB/Gyn Guidelines
Antepartum Hemorrhage
Pregnancy Induced Hypertension and Seizures
Emergency Childbirth
Delivery Complications
Nuchal Cord
Prolapsed Cord
Breech Birth
Extremity Presentation
Post-Partum Care of Mother
Post-Partum Care of the Infant
Neonatal Resuscitation
Trauma in Pregnancy

Pediatric Medical Guidelines
Pediatric Patient Assessment
Pediatric Airway
General Guidelines for Pediatric Respiratory Distress
Pediatric Asthma
Suspected Croup or Epiglottitis
Pediatric Obstructed Airway
Pediatric Pain Management
Pediatric Allergic Reaction
Pediatric Anaphylaxis
Pediatric Fever
Pediatric Altered Mental Status / Hypoglycemia / Coma
Pediatric Seizures / Status Epilepticus
Pediatric Overdose/Poisoning
Pediatric Bradycardia
Pediatric Tachycardia (Adequate Perfusion)
Pediatric Tachycardia (Poor Perfusion)
Pediatric Pulseless Arrest

Pediatric Trauma Guidelines < 13 Years
Pediatric Trauma Triage
Pediatric Burn Patient
Appendix

**Procedures**

12-Lead ECG  
Stroke Screening  
Endotracheal Tube Inducer (Bougie)  
Esophageal-Tracheal Combitube  
Intranasal Naloxone  
Intraosseous Infusion  
Morgan Lens  
Needle Cricothyrotomy  
Needle Thoracostomy  
Pediatric Glasgow Coma Scale  
Rule of Nines Adult  
Rule of Nines Pediatric  
Surgical Cricothyrotomy  
Tube Confirmation Adjuncts  
Capnography  
Tourniquet  
STEMI Alert Procedure

**Medications**

Acetaminophen (Tylenol)  
Activated Charcoal  
Adenosine (Adenocard)  
Albuterol (Ventolin, Proventil)  
Amiodarone (Cordorone)  
Aspirin  
Atropine  
Benzocaine Spray  
Calcium Chloride  
Dextrose  
Diazepam (Valium)  
Diltiazem (Cardizem)  
Diphenhydramine (Benadryl)  
Dopamine (Intropin)  
Epinephrine 1:10,000  
Epinephrine 1:1000  
Fentanyl  
Glucagon  
Haloperidol (Haldol)  
Ipratropium (Atrovent)  
Lactated Ringers  
Lidocaine
Lorazepam (Ativan)
Magnesium Sulfate
Methylprednisolone (Solu-Medrol)
Metoclopramide Hydrochloride (Reglan)
Metoprolol (Lopressor)
Midazolam (Versed)
Morphine Sulfate
Naloxone (Narcan)
Nitroglycerin
Norepinephrine (Levophed)
Normal Saline
Olanzapine (Zyprexa)
Ondansetron (Zofran)
Oxygen
Phenylephrine (Neo-Syphrine)
Procainamide (Pronestyl)
Racemic Epinephrine (Vaponephrine)
Sodium Bicarbonate
Tetracaine Ophthalmic Solution
Vasopressin (Pitressin)

**Policies**
- Documentation of Prehospital Patient Care
- Transfer of Care from Paramedic to Basic Life Support
- Discontinuation of Prehospital Resuscitation
- Alternate State-Approved DNR Bracelet
- Interfacility Transport of Intubated Patients
- EMS Response to Detention Facilities / Jails
- AHA 2010 AED Guidelines
- Capitol Region Council of Governments RESP Plan
- The Role of EMS in Hospital Diversions
- Connecticut Diversion Guidelines
- SMART Triage
- Pain Control Policy
- Mass Casualty Policy
- Lights and Sirens
- Guidelines for Non Trauma Cardiac Arrests
COMMUNICATIONS

IMPORTANT CAUTION

The information contained in these Guidelines is compiled from sources believed to be reliable and significant efforts have been expended to make sure there are no inaccuracies. However, this cannot be guaranteed. Despite our best efforts, there may be typographical errors or omissions. The North Central CT EMS Council is not liable for any loss or damage that may result from these errors.

ON-LINE MEDICAL DIRECTION

It is agreed upon in the North Central Connecticut Regional Policy Manual that prehospital providers will contact the receiving hospital regarding obtaining patient care orders. This agreement includes all EMS providers.

COMMUNICATION FAILURE

In the event of complete communication failure, these Guidelines will act as the parameters for prehospital patient care. If communication failure occurs, the paramedic may follow the guidelines to render appropriate and timely emergency care to the patient.

Upon arrival at the receiving hospital, the EMS provider will immediately complete an incident report relating to the communication failure describing the events including the patient’s condition and treatment given. This incident report must be filed with the paramedic’s sponsor hospital EMS Medical Director and/or EMS Coordinator within 24 hours of the event. A copy of the patient’s run form will also accompany the incident report.

CMED Telephone Number for Telephone Patches

EMS Providers who wish to contact hospitals by phone may do so by contacting CMED at (860) 769-6051 and request a phone patch.
UNIVERSAL PATIENT CARE GUIDELINE

Scene Safety
BSI

Initial Assessment
Adult or Pediatric
C-Spine stabilization if indicated

Cardiac Arrest?

Vital Signs
Including Temperature* and
Pain Severity **

Cardiac Arrest Guideline
Adult or Pediatric

Airway Guideline
Adult or Pediatric

Consider Pulse Oximetry

Consider Cardiac Monitor and
12 Lead EKG

Appropriate Guideline

If patient doesn’t fit a Guideline
Contact Medical Control

* Temperature and pain may be either quantitative (a specific reading) or qualitative (a description, hot, cool, etc.)

** Pain severity should be recorded using a pain scale as outlined in the pain Guideline

PEARLS:
- Any patient contact which does not result in an EMS transport must have a completed PCR.
- Exam: Minimal exam if not noted on the specific Guideline is vital signs, mental status, and location of injury or complaint.
- Required vital signs on every patient include blood pressure, pulse, respirations, and pain/severity.
- Pulse oximetry and temperature documentation is dependent on the specific complaint.
- Timing of transport should be based on patient’s clinical condition.
Adult Airway Guideline, Page 1 of 2  Last Updated: December 28, 2011
Pearls:
- For this Guideline, adult is defined as 13 years old or greater.
- Quantitative waveform capnography to measure CO₂ is mandatory with all methods of intubation. Document results.
- Maintain c-collar/c-spine motion restriction to help maintain ETT placement of all intubated patients.
- Do not assume hyperventilation is psychogenic – use oxygen, not a paper bag.
- External Laryngeal Manipulation and/or the gum bougie or other devices as approved by medical control, should be used to assist with difficult intubations.
- Paramedics should consider using an alternative advanced airway when they are unable to intubate a patient or in lieu of endotracheal intubation when it is appropriate.
- Continuous pulse oximetry should be utilized in all patients with an inadequate respiratory function.
- No more than two attempts/visualizations at intubation should be performed. One additional attempt may be made by one other paramedic if they are available on scene.
- Paramedics should utilize auto-ventilators whenever possible.
- Definition of a Failed Airway – An airway in which you can’t intubate and can’t ventilate.
- Neosynephrine and Benzocaine Spray may be utilized to assist in nasotracheal or conscious orotracheal intubation. 2 to 4 sprays of Neosynephrine per nostril may be administered intranasally to reduce the incidence of bleeding. 1 to 2 sprays of benzocaine spray may be administered to reduce discomfort or gag reflex.
- ***DO NOT exceed ½ second per spray of benzocaine or 1 second total*** Excessive administration may result in methemoglobinemia which, in rare cases, may lead to hypoxia or death.
North Central Connecticut Regional Paramedic Guidelines

Cardiac Guidelines
### Universal Patient Care Guideline
(Assessment of ABC’s)

**Oxygen:** Oxygen Therapy if patient in respiratory distress (or SaO₂ is less than 94%)

**ASPIRIN:** Aspirin 324 mg
(Baby ASA PO 325mg (81mgx4))

**MONITOR:** Cardiac Monitor Performor 12-Lead ECG (if 12-lead shows STEMI, contact hospital as soon as possible for STEMI alert and transport to appropriate primary PCI facility)

**Vascular Access:** Establish IV or IO NS @ KVO

**NITROGLYCERIN:** Nitroglycerin (NTG) 0.4mg (1/150 gr.) sublingual or NTG spray (1) metered dose if SB/P > 100 systolic NTG may be repeated q 5 minutes to a total of 3 doses, until symptom free or SB/P ≤100

EMT/AEMT assists pt. with prescribed Nitroglycerin (as per dosing and limits to left)

If pain persists after 3rd administered NTG and SB/P remains >100 administer **Morphine Sulfate** (MS) 2mg to 6mg SIVP in 2mg increments q 5 minutes titrated to discomfort/pain relief provided SB/P >100. or **Fentanyl 1mcg/kg** to maximum single dose of 50mcg repeated up to three times q 5 min

**ANTI-NAUSEA:** Consider **Ondansetron (Zofran)** 4 mg Slow IV Over 2 - 5 Minutes or Deep IM or **Metoclopramide (Reglan)** 10mg

**2nd IV:** Consider establishing 2nd IV in high-risk patients.
Establish Medical Control
Possible Physician Orders:

Additional **MS 2mg SIVP every five minutes** (up to maximum dose of 0.1mg/kg) or **Fentanyl 1mcg/kg** to maximum single dose of 50mcg titrated to discomfort/pain relief provided SB/P > 100.

Additional sublingual **Nitroglycerin** (Additional of the patient’s own **Nitroglycerin** for EMTs and AEMTs)

### Pearls:
- Supplemental oxygen is not needed for patients without evidence of respiratory distress, heart failure or shock if the oxyhemoglobin saturation is > 94%.
- Avoid ASA administration in patients with hypersensitivity to ASA
- **Confirm that patient has not used erectile dysfunction meds in the past 48 hours due to the potential for severe hypotension if Nitroglycerin administered.**
- If patient has taken Nitroglycerin without relief, consider potency of the medication.
- If positive EKG changes, establish a second IV while en route to the hospital.
- Monitor for hypotension after administration of Nitroglycerin and Morphine.
- Diabetics and geriatric patients often have atypical pain, or only generalized complaints.
- **Paramedics should perform 12-lead prior to administration of NTG. If 12-lead shows inferior STEMI, do not administer NTG prior to performing a right sided ECG. If right side leads reveal possible right ventricular infarct, establish a large bore IV. Giving NTG to patients with right ventricular infarction is contraindicated.**
- The use of nitrates in patients with hypotension (SBP <100 mm Hg or ≥30 mm Hg below baseline), extreme bradycardia (<50 bpm), or tachycardia in the absence of heart failure (>100 bpm) is also contraindicated.
- If patient SB/P drops below 100, place patient supine, elevate legs and administer 250 cc bolus of Normal Saline, and remove any NTG paste/patch.
- Early transport and notification of the hospital are essential for patients suspected of ACS.
- If patient is wearing a nitroglycerin patch remove it prior to administering sublingual nitroglycerin.
- Absence of an IV shall not preclude use of first NTG dose provided SB/P remains >100
- If patient has taken Nitroglycerin without relief, consider potency of the medication
- Morphine should be used **with caution** in patients with unstable angina and NSTEMI.
- Monitor for hypotension after administration of Nitroglycerin and Morphine.
- Diabetics and geriatric patients often have atypical pain, or only generalized complaints.
- Early transport and notification of the hospital are essential for patients suspected of ACS.
STEMI DESTINATION GUIDELINE

Patient with active chest pain or equivalent symptoms (SOB, nausea, etc.) whose 12 lead ECG meets STEMI criteria.

Significant Trauma?

Yes → Transport to trauma center in accordance with current Trauma Regulations

No →

Patient has: Lytic contraindications Or Severe CHF Or Hypotension

Yes → Transport patient to Primary PCI Hospital

No →

Transport interval to PCI Hospital <30 minutes?

Yes →

No → Contact Medical Control at nearest facility to determine patient destination

STEMI defined by ECG of good quality with all of the following:
- a. ST elevation in 2 or more contiguous leads of ≥2 mm (V1-V4) or ≥1 mm (limb or lateral)
- b. QRS duration ≤ 0.12 second
- c. "Acute MI" or equivalent prints on 12-lead ECG and paramedic agrees

Notes:
1. Patients in arrest or a compromised airway will go to the nearest facility
2. Contraindications to t/brinolysis include:
   - 1. History of intracranial hemorrhage
   - 2. Known structural cerebrovascular lesion (e.g. AVM)
   - 3. Known malignant intracerebral neoplasm (primary or metastatic)
   - 4. Ischemic stroke within 3 months (except acute ischemic stroke within 3 hrs)
   - 5. Suspected aortic dissection
   - 6. Active bleeding or bleeding diathesis (excluding masses)
   - 7. Significant closed head trauma or facial trauma within 3 months
3. Receiving PCI center must be notified as early as possible. Notification should be made to medical control and include the statement "requesting STEMI activation".
4. Consider patient preference/history if multiple primary PCI centers are in similar proximity
5. If patient sustains cardiac arrest during transport to a primary PCI center, continue to that facility unless there are insufficient resources to manage the arrest or the provider is unable to manage the airway.

Baystate Medical Center
Hartford Hospital
John Dempsey Hospital
New Britain Campus of HCC
Saint Francis Hospital
STEMI ALERT PROCEDURE

1. Acquire a 12-lead on all patients suspected of Acute Coronary Syndrome (active chest pain or equivalent symptoms (SOB, nausea, etc.) on first contact.

2. If 12-lead is diagnostic for STEMI and paramedic believes patient is having STEMI, contact CMED for STEMI Alert with Medical Control patch, and transmit ECG if possible. If possible and less than 30 minutes from PCI center, do not wait until transporting to call hospital. Failure to notify hospital until 5 minutes out will delay reperfusion.

3. When hospital answers phone, confirm MD Control, and state “I have a STEMI Alert and am requesting STEMI activation.” If you are uncertain the patient is having a STEMI, say “I have a Possible STEMI Alert.”

4. Describe 12-lead and patient condition. Based on the conversation between paramedic and ED MD and if applicable, the transmitted 12-Lead, the cath lab will either be activated in advance of arrival, placed on standby or not activated until the physician can make a more detailed assessment at the hospital.

5. Provide Appropriate Care during transport per guideline. Have defib pads ready in case patient goes into unstable ventricular tachycardia or ventricular fibrillation. Consider disrobing patient if time permits. Have latest 12-lead ready to show ED MD on arrival. Be prepared to transport patient to cardiac cath lab on EMS stretcher if given the go-ahead from ED staff.

6. Please leave copy of PCR and all 12-lead strips at the hospital prior to departing. PCRs should include Time of 911 Dispatch, Time at Patient side, Time of 1st 12-lead, Arrival at the Hospital, as well as all care rendered.

7. If applicable to hospital, fill out QA/Patient Follow-up form in ED.

NOTES:

STEMI Definition for Field Activation
STEMI is defined by ECG of good quality with all of the following:
  a. ST elevation in 2 or more contiguous leads of >2 mm (V1-V4 or > 1 mm (limb or lateral)
  b. QRS duration < 0.12 second
  c. ***Acute MI*** or equivalent prints on 12-lead and paramedic agrees.

If the machine does not read ***Acute MI*** but the paramedic still strongly believes the ECG shows a STEMI, the paramedic may proceed with the activation request.
Computer Interpretation
Paramedics should not diagnose STEMI based solely on 12-lead computer interpretation. While the interpretation can be used to support your diagnosis, the computer is not infallible. The computer will not read all STEMIs as ***Acute MI Suspected***.” And the computer may read ***Acute MI*** when the ECG is clearly not a STEMI. The computer is less accurate with wide complex and tachycardic rhythms. STEMI Imposters

Paramedics should be familiar with and take into consideration all of the known STEMI Imposters, including

Bundle Branch Block
Paced Rhythms
Early Repolarization
Pericarditis
Left Ventricular Hypertrophy (LVH)

Other PEARLS
Do serial 12-leads (ideally all patients with ACS should have 12-lead on patient contact, on beginning transportation and on arrival at ED). STEMIs are often evolving. The STEMI may not appear until 3rd 12-lead or the STEMI captured on 1st 2-lead may disappear by arrival at the ED. A prehospital 12-lead documenting the transient elevation is critical in these patients.

Regional PCI Hospitals
Hartford Hospital
John Dempsey Hospital
New Britain
Saint Francis
Baystate Memorial Hospital (Springfield)

Early Notification Saves Lives!
ROUTINE ADULT CARDIAC ARREST CARE

Universal Patient Care Guideline
(Primary Assessment, think C-A-B)
Request Paramedic Intercept

Cardiac in Origin? Initiate CCR
(200 chest compressions, at least 100/min, 2 inches in depth with full chest recoil, place patient on Non-rebreather mask at 15lpm of oxygen)

- Analyze rhythm, give one shock (maximum energy), no pulse check
- Continue CCR
  (200 chest compressions, at least 100/min, 2 inches in depth with full chest recoil)
  - Analyze rhythm, give one shock (maximum energy), no pulse check
  - Continue CCR
    (200 chest compressions, at least 100/min, 2 inches in depth with full chest recoil)
    - Analyze rhythm, give one shock (maximum energy), no pulse check
    - Continue CCR
      (200 chest compressions, at least 100/min, 2 inches in depth with full chest recoil)

Start Here for arrests that are NOT cardiac in origin:
Resume Standard ACLS, 30 Compressions/2 breaths

- Consider Intubation (Do not interrupt compressions to do so)
- Utilize Semi-Automatic (or Automatic) External Defibrillator with Adult size defibrillation patches. If “Shock” advised administer shock x 1 in accordance to specific equipment energy waveform and manufacturer recommendations
  - Attach Monitor & quantitative waveform capnography
  - If Arrest Rhythm, continue down guideline

EMS Providers should provide aggressive resuscitation on scene for at least 20 minutes prior to consideration of transport or termination. Consider if transportation will have a benefit for patient care.

- CPR x 2 minute if indicated

Routine Adult Cardiac Arrest, Page 1 of 6

Last Updated: April 6, 2014
ROUTINE ADULT CARDIAC ARREST CARE (continued)

- **IV/IO Access** – 200mL Bolus
  - Reanalyze patient rhythm
    - “Shock” x 1 if indicated
  - Epinephrine 1:10,000 1mg, IVP repeated q 3-5 minutes
    or
    - Vasopressin (Pitressin), 40 units IVP as the first or second dose of Epinephrine
  - CPR x 2 minute if indicated
  - Reanalyze patient rhythm
    - “Shock” x 1 if indicated
  - Amiodarone (Cordorone) for VF/VT 300 mg IVP, repeat once in 10 min at 150 mg IVP
  - Continuing defibrillation as directed by AED
  - **Establish Medical Control**
    - Potential Orders for EMT and AEMT
    - Paramedic Intercept, Additional IV Line
    - Additional Fluid Bolus, Additional Shocks

If ROSC at any time, see [ROSC Guideline](#).
If no ROSC, consider termination of efforts according to guideline.
Utilize for all arrests of suspected cardiac origin. Do not use for non-cardiac related arrests such as traumatic arrest, drowning or respiratory arrest.

Start Immediate compressions, unless effective bystander CPR already in place.

Charge defibrillator during CPR (15 seconds before rhythm analysis).

Insert oral airway, apply 02 NRB at 15 lpm.

Switch compressors every 200 compressions. If one compressor is providing significantly stronger CPR than another, stick with best compressor until he or she shows signs of fatigue.

Consider using CPR feedback device such as metronome or monitor.

Delay application of mechanical device until 5th cycle of CPR unless it can be reliably applied with less in less than 10 seconds, without delay in compressions.
Give 1 mg Epi 1:10,000 every 5 minutes once IV in place.

Give 300 mg Amiodarone after first epi if shockable rhythm is present. Amiodarone may be repeated at 150 mg after 3-5 minutes.

Delay advanced airway during first 8-10 minutes of CCR. Never interrupt compressions to place ETI. Consider alternative airways such as King LT, LMA, or Combi-tube.

Provide resuscitation on scene for at least 20 minutes provided conditions are safe.

If BLS is on scene first, paramedics should resume CCR on their arrival, taking into account amount of time BLS has spent on CCR.

Once advanced airway is in place, ventilate at 8 breaths a minute. Be careful not to hyperventilate.

Do not provide over 600 ml per ventilation. Consider using pediatric BVM.

Cardiac arrests with ROSC should be brought to closest hospital unless post ROSC 12-lead shows STEMI, in which case patient should be brought to PCI center.

**Pearls:**

**Compressions** - Start chest compressions for any unresponsive adult victim with no breathing or no normal breathing (i.e., only gasps). Initiate chest compressions before giving rescue breaths (C-A-B rather than A-B-C). Push hard (>2 inches) and fast (> 100/min) and allow complete chest recoil. Minimize Interruptions. Consider rotating compressors every two minutes. If no advanced airway in place, 30:2 compression-ventilation ratio

For biphasic defibrillators, follow manufacturer recommendations regarding defibrillation energy settings. If recommendations are unknown for a biphasic unit, utilize 200 joules for all defibrillations. For monophasic units, deliver all defibrillations at 360 joules.

**Advanced Airways** - Advanced airways can be delayed if the patient can be effectively ventilated by bag-valve mask. The gold standard is not an ET, but an airway that can be effectively maintained. Minimize interruptions in CPR to secure an airway.

**Ventilation** - Deliver each rescue breath over 1 second. Give a sufficient tidal volume to produce visible chest rise. Once advanced airway is in place, (ET, Combi-tube, LMA, or King-LT) maintain continuous compressions. Ventilate with 600 ml of an adult ambu bag. 8-10 a minute. Utilize waveform capnography.

IV/IO access is the preferred route over ET for medications, with IV being preferred, If it is not readily available then use IO as back-up vascular access device.

- Meds which can be given through the ET tube:
  - **Epinephrine** dose should be 2-2.5mg 1:1000 diluted in 10cc NS.
  - **Atropine** dose should be 2 mg diluted in 10cc NS.
  - **Vasopressin (Pitressin)** dose should be 80 units
- Continue Quality CPR
- Treat Reversible Causes
- **Sodium bicarbonate** 1meq/kg IV may be given for tricyclic overdoses, known pre-existing hyperkalemia, and acidosis.
- If hypovolemia is suspected, administer 500cc bolus NS.
- If pneumothorax, perform needle decompression.
- If hypoglycemia, administer **Dextrose** IV.
- If hypothermic, follow hypothermia Guideline.
- In the setting of cardiac arrest and history of renal failure or dialysis, give **calcium chloride** 1 g IV over 1 minute.

**Capnography** - Utilize waveform quantitative waveform capnography to confirm and monitor ET placement. Quantitative waveform capnography should be used for all advanced airways. Observe ETCO2 readings during CPR to monitor quality of CPR. Sudden rise in ETCO2 may indicate return of spontaneous circulation (ROSC).

**CPR Devices** - CPR Devices should only be used with the approval of the service’s medical control. At no time should the deployment of the device delay or disrupt quality CPR. Services who utilize such devices are expected to train often in use of the device to ensure smooth and rapid deployment. Delay application of mechanical device until 5th cycle of CPR unless it can be reliably applied with less in less than 10 seconds, without delay in compressions.

**Epinephrine Infusion for Cardiac Arrest**

- Paramedics **may consider** giving patients in cardiac arrest an epinephrine infusion at 1 mg/5 min in place of additional epi boluses, following first epi 1 mg bolus.
- Drip should be shut off if ROSC is achieved.
  - **Sample way to mix drip**
    Mix 5 mg Epi 1:1000 in 250 ml bag
    Give 1 mg every 5 minutes (50 cc every 5 minutes) which is 0.2 mg Epi every minute (10 cc/min)

**Norepinephrine** is added as an alternative vasopressor to dopamine effective July 1, 2014. If a service carries both vasopressors, norepinephrine will be the preferred vasopressor for cardiogenic shock and hypotension post ROSC. (see attached drug sheet)

- Dose: 4-30 mcg/min titrated to blood pressure of 90 mmHg.
- Pediatric Dose: infusion 0.1 – 2micrograms/kg/min titrated to effect
North Central EMS Regional Medical Advisory Committee
Position on Non-traumatic Cardiac Arrest Scene Care and Transportation

“Cardiac compressions are less effective during ambulance transport than they are on scene. The 2010 American Heart Association (AHA) guidelines emphasize the importance of high quality, minimally interrupted compressions. Thus, TOR (Termination of Resuscitation) protocols that emphasize on-scene resuscitation may not only mitigate the risk of an ambulance crash, but also improve the probability of successful resuscitation by avoiding interruptions in compressions.” - NATIONAL ASSOCIATION OF EMS PHYSICIANS (2011)

While recognizing that each cardiac arrest scene has its own unique circumstances, as a general guideline, patients in non-traumatic cardiac arrest should receive full resuscitative efforts on scene. Moving a patient to the ambulance to start ALS resuscitation, to get to the hospital quicker or to meet a paramedic intercept may be counterproductive by lowering the quality of compressions in the critical early period of resuscitation. Any interruption in quality cardiac compressions decreases a patient’s chance of survival.

In general, patients should receive at least 20 minutes of resuscitative efforts on scene prior to considering movement. If a patient remains in asystole after twenty minutes of paramedic effort, termination of resuscitation guidelines should be considered. If the decision is made (at any time) to move the patient, care must be maintained to ensure that quality compressions are maintained throughout extrication and transportation. Failure to do so mitigates the patient’s chances for survival. Unless there are special circumstances, it is unlikely that a patient who cannot be resuscitated on scene with quality CPR and defibrillation will be resuscitated either at a paramedic intercept point or at the hospital.

Please refer to State Termination of Resuscitation Guidelines.
In the current CPR guidelines by the American Heart Association (AHA), there is a recommendation to change the shock sequence in existing AEDs. The AHA also states that local medical directors may consider allowing for two minutes of CPR prior to defibrillation of patients who present in either un-witnessed cardiac arrest or an arrest with a down time of greater than 3 – 4 minutes.

Effective January 1, 2007 the North Central Connecticut EMS Council will require the following:

1. Existing AEDs may continue to be used, including those that administer 3 successive shocks.

2. Services were expected to upgrade their AEDs to administer single shocks within the next year, before January 1, 2008.

3. If you are given programming options for your AED, it should be to analyze and shock once it is turned on. Please note that this is consistent with current (Guidelines 2010) AHA teachings. Shock energy levels should be in accordance with manufacturer recommendations.

4. **When more than one rescuer is present:** Upon arrival at a cardiac arrest CPR should be started immediately and continued until the AED pads are in place and the machine is ready to analyze. The AED should be placed on the patient as soon as it is available, regardless of downtime or if the arrest was witnessed or un-witnessed. In cases in which a defibrillator is not immediately available, CPR should be done until such time as a defibrillator is available.

5. **When there is only a single rescuer present:** Unwitnessed arrests should have the AED placed on the patient if no other help has arrived. (If additional help arrives they should place the AED on the patient as soon as they arrive). Witnessed arrests should have the AED placed immediately.
**BRADYCARDIA**

**Universal Patient Care Protocol**

- **IV Access**
  - Bradycardia, determine either absolute (<50 bpm) or relative

**Intervention sequence**

- **Atropine** 0.5 mg IV, may repeat in 0.5 mg increments, up to 3 mg total
- Transcutaneous Pacing (use first in 3rd degree HB)
- **Dopamine (Intropin)**
  - 2-10 mcg/kg/min IV drip
- **Epinephrine**
  - 2-10 mcg/min IV drip

If successfully employing Transcutaneous Pacing, follow Pain Management guideline to maintain patient comfort.

**PEARLS:**

- If patient has chronic renal failure contact Medical Control for a possible order of: **Calcium Chloride** 1g IV and/or **Sodium Bicarbonate** 1 mEq/kg IV.
- **Atropine** do not rely on atropine for 3rd degree heart block, wide complex ventricular escape beats, or Mobitz type II heart block or in patients with third-degree AV block with a new wide QRS complex.
- **Atropine** should be used with caution in cases of suspected acute myocardial infarction.
- Heart transplant patients will not respond to atropine.
TACHYCARDIA

Universal Patient Algorithm
Assess appropriateness for clinical condition. Heart rate
> 150/min if tachycardia

IV Access

Persistent tachyarrhythmia causing:
  Hypotension
  Acutely altered mental status
  Signs of shock
  Ischemic chest discomfort
  Acute heart failure

Yes →

No

Wide QRS? > 0.12 seconds

Yes →

No

Vagal Maneuvers

If regular rhythm, Adenosine (Adenocard) 6mg rapid IVP, follow with
30ml rapid NS flush, if no change after 2 min repeat @12mg IVP

If Adenosine (Adenocard) ineffective, or
rhythm is irregular then proceed to:

Diltiazem (Cardizem) 15-20mg SIVP
(0.25mg/kg, may repeat in 15-20min at
0.35mg/kg) usually 20-25mg SIVP
OR
Metoprolol (Lopressor) 5mg SIVP q 5
minutes up to three doses if needed.

If Diltiazem is used, then administer a
Diltiazem (Cardizem) maintenance
infusion 5 mg/hr, titrated to HR, up to a
dose of 15 mg/hr

*Decrease dose by 5mg for elderly patient,
see medication reference for patient >70

Pain Control for Cardioversion
consider 2-4 mg of Midazolam (Versed) if
BP > 100 systolic.

Synchronized cardioversion:
Initial recommended doses
  Narrow regular 50-100j
  Narrow irregular 120-200j
  Wide regular 100j
  Wide irregular – defibrillation (unsynchronized)

Consider Adenosine (Adenocard) if regular and
monomorphic

Antiarrhythmic Infusion

Amiodarone (Cordorone), 150mg over 10 min IV,
repeat as needed if V-tach recurs. Follow by a
maintenance infusion of 1mg/min for first 6 hours
or
Procainamide (Pronestyl), 20-50mg/min IV until
arrhythmia suppressed, hypotension ensues, QRS duration
increases >50% or maximum dose of 17mg/kg
administered. Maintenance infusion: 1-4 mg/min

Torsades?
Magnesium Sulfate 1-2g slow IVP over 5 - 60 min

Tachycardia, Page 1 of 2

Last Updated: October 25, 2011
Pearls:

- May give brief trial of medication based on dysrhythmia and Mental Status
- Adenosine (Adenocard) may not be effective in identifiable atrial flutter/fibrillation, yet is not harmful.
- Monitor for hypotension after administration of Diltiazem (Cardizem) or Metoprolol (Lopressor).
- If available, utilize Metoprolol (Lopressor) when patient takes PO Beta Blockers.
- Document all rhythm changes with monitor strips and obtain monitor strips with each therapeutic intervention.
- Unstable conditions must be related to the tachycardia. Signs and symptoms (S/S) may include: chest pain, SOB, decreased level of consciousness, hypotension, shock, CHF, pulmonary congestion, and AMI.
- Immediate cardioversion is seldom needed for heart rates < 150 BPM
- If patient is on no medications or on a Calcium Channel Blocker, Diltiazem (Cardizem) will be the first line medication. If the patient is already on a Beta Blocker, then Metoprolol (Lopressor) will be used.
Optimized ventilation and oxygenation
Maintain oxygen saturation to >94%
If not already in place, consider advanced airway and quantitative waveform capnography
Do not hyperventilate

Treat hypotension (systolic BP <90 mmHg)
IV/IO fluid bolus (1 – 2 L of LR or NS)
Consider treatable causes of the arrest
12-lead EKG

Consider vasopressor infusion (after fluid bolus)

Follow Induced Hypothermia Guideline if appropriate

Dopamine (Intropin) 5 – 10 mcg/kg/min or Norepinephrine (Levophed) 4-30 mcg/min titrated to blood pressure of 90 mmHg
North Central Connecticut Regional Paramedic Guidelines

Respiratory Guidelines
ACUTE PULMONARY EDEMA

Universal Patient Care Algorithm

- Oxygen Therapy (90% - 100%)
- Cardiac Monitor
  12 Lead EKG
- Consider CPAP if available (See CPAP guideline)
- IV Normal Saline KVO

SBP < 100 mmHg, or if erectile dysfunction
Medication use within the last 48 hours?

- Yes → Consult Medical Control
- No → Nitroglycerin 0.4 – 0.8 mg SL*

If SBP >100 mmHg.
If pulmonary edema persists, may repeat Nitroglycerine every 3-5 minutes as needed provided SBP >100 mmHg

If unable to administer nitroglycerine SL due to CPAP
(such as concern regarding re-establishing mask seal) and if Systolic BP is >150mmHg then Nitroglycerin Paste 1.5 inches, if >200 then 2 inches

*absence of an IV shall not preclude the use of first NTG dose provided that the SBP is >100 mmHg. If patients with Nitroglycerin paste become hypotensive, remove paste.

Consult Medical Control

PEARLS

- Sublingual dose of NTG can be either metered spray dose or tablet that dissolves.
- Judgment can be used with patients who are marginally hypotensive and CPAP may be used before Nitroglycerin
- CHF can at times be confused with sepsis and pneumonia. Use great care with NTG if diagnosis is unclear and the patient does not seem to be improving with the NTG.
CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)

Severe Respiratory distress?
- Accessory muscle use?
- Hypoxemia despite oxygen therapy?
- Marked work of breathing?
- Inability to speak in full sentences?

Patient has a condition contraindicating CPAP use?
- Respiratory Rate ≤10 breaths/minute
- Confusion: Inability to understand and cooperate with application of CPAP
- History of pneumothorax or recent tracheo-bronchial surgery
- Active nausea or vomiting despite anti-emetic therapy

Believed to be primarily Pulmonary Edema?
Apply CPAP at 7.5-10 cm H2O. If possible, adjust FiO2 to maintain Oxygen Saturation >94%.

Believed to be Other Respiratory Distress?
Apply CPAP at 2.5-5 cm H2O. If possible, adjust FiO2 to maintain Oxygen Saturation >94%.

Continue Reassessment. Titrate pressure setting based on patient response. Do not exceed 15 cm H2O pressure. If patient shows evidence of deterioration, discontinue CPAP. Consider BVM assist and possible intubation. If patient vomits, immediately discontinue CPAP.

If equipment allows, continue indicated nebulized bronchodilators in-line with CPAP. It is allowable to briefly interrupt CPAP to continue administration of ‘spray’ formulations of nitrates (if indicated)
- Reduce the risk of increasing their retention of CO2 or causing a pneumothorax.
- Notify receiving hospital early to allow preparations for continued CPAP/BiPAP.
**COMPLETE AIRWAY OBSTRUCTION**

**Conscious**
- Assess to determine airway obstruction
- Perform Heimlich Maneuver for conscious patient
- Continue Heimlich Maneuver until airway is cleared or patient becomes unconscious

**Unconscious**
- Assess to determine unresponsiveness
- Attempt to establish airway to determine airway obstruction
- Perform Heimlich Maneuver for unconscious patient
- If airway is still obstructed perform direct laryngoscopy and remove any foreign body using Magill Forceps
- If airway is still obstructed, attempt endotracheal intubation
- If airway is still obstructed, consider Transtracheal Ventilation or Surgical Airway
- Establish Medical Control
RESPIRATORY DISTRESS

Universal Patient Care Algorithm

Pulse Oximetry

Oxygen Therapy if \(\text{SaO}_2\) is below 94%
Including Quantitative waveform capnography

IV Normal Saline KVO

Wheezes or evidence of bronchospasm?

Asthma

If patient has a Bronchodilator (their own) and has not used it, assist them with 1 or 2 inhalations

Albuterol (Ventolin, Proventil) 2.5 mg in 2.5 mL of NS and Ipratropium (Atrovent) 2.5cc combined (DuoNeb)

(if repeat needed, administer Albuterol (Ventolin, Proventil) only up to 2 more doses)

Methylprednisolone (Solu-Medrol) 125 mg IVP

For Severe Cases
CPAP: Refer to CPAP guideline
Magnesium 2g over 10 min in 100mL IV infusion
Epinephrine 1:1000 0.3mg IM (if age <50, no cardiac hx, no hypertension)

Establish Medical Control
Possible Orders:
Epinephrine 1:1000 0.01mg/kg to a max of 0.3mg IM
Repeat Nebulizer Rx
EMTs and AEMTs Additional assistance with patient’s own bronchodilator

Albuterol (Ventolin, Proventil) 2.5 mg in 2.5 mL of NS and Ipratropium (Atrovent) 2.5cc combined (DuoNeb)

(if repeat needed, administer Albuterol (Ventolin, Proventil) only up to 2 more doses)

Methylprednisolone (Solu-Medrol) 125 mg IVP

In Severe Cases Refer to CPAP Guideline

Establish Medical Control
Possible Physician Orders
Repeat nebulizer treatment
EMTs and AEMTs Additional assistance with patient’s own bronchodilator

Respiratory Distress, Page 1 of 2

Last Updated: July 1, 2015
PEARLS

- If respirations begin to decrease in rate or depth with a change in mental status, begin to assist ventilations immediately.
- A patient who is experiencing moderate to severe respiratory distress with a respiratory rate > 24 with wheezing presumed to be reactive airway disease.
- All that wheezes is not asthma – It could be a sign of ACS, use care when administering β agonist medications
- Use Epinephrine with caution with preexisting dysrhythmias, hypertension, cardiac history, or history of ischemic cardiac chest pain, and patients over the age of 50.
The patient is intubated and being managed according to the proper Guideline and begins to “fight the tube.” In order to protect the patient’s airway and to manage the patient in a safe and effective manner the following Guideline should be utilized.

1. Patient is intubated and has positive confirmation of tube placement.
2. Patient begins to “buck” or “fight the tube.”
3. **Lorazepam (Ativan)** 2-4 mg SIVP or **Midazolam (Versed)** 2-4 mg IVP if BP is > 100 systolic
   - Reassess in 5-10 min and repeat once if needed
4. Reconfirm tube placement in the usual manner, including quantitative waveform capnography as per **Intubated Confirmation Procedure**
5. **Establish Medical Control**
   - Possible Physician Orders:
     - Additional medication to sedate patient

---

**Sedation Post Intubation, Page 1 of 1**

**Last Updated: June 13, 2008**

<table>
<thead>
<tr>
<th>EMR</th>
<th>EMT</th>
<th>AEMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paramedic</td>
<td>Medical Control</td>
<td>July 1, 2015</td>
</tr>
</tbody>
</table>
North Central Connecticut
Regional
Paramedic Guidelines

Medical Guidelines
ROUTINE MEDICAL CARE

PURPOSE: All patients, after receiving their initial assessment and priority assignment, are to receive routine medical care followed by the initiation of the appropriate Guideline.

ABCs, Address life threats immediately per appropriate Guideline

- Maintain and protect airway, using adjuncts as necessary
- Protect C-spine at all times if any possibility of injury
  - Oxygen per Guideline if SaO₂ is less than 94%

PATIENT ASSESSMENT

- Develop a DIFFERENTIAL DIAGNOSIS. Avoid “tunnel vision” in your diagnostic impression!!
- Place patient in position of comfort unless otherwise contraindicated

- Obtain and record vital signs every:
  - 15 minutes for stable patient
  - 5 minutes for the unstable patient
  - After administration of medication

- Initiate pulse oximetry monitoring
  - Request a paramedic intercept as early as possible

- IV Access
  - Cardiac monitoring as appropriate for patient’s presentation

- Treat the patient based upon appropriate patient care Guideline based upon diagnostic impression

- Destination hospital based upon patient condition, trauma regulation, request, or medical condition

- Contact Medical Control as early as possible
ALLERGIC REACTION

**Definition:** A limited reaction without signs and symptoms of Anaphylaxis

- Minor or moderate skin manifestations (redness, itching or hives)
- Stable hemodynamics without respiratory impairment
- Signs of adequate perfusion are present (appropriate mental status, skin color, temp, capillary refill, etc.)

**Universal Patient Care Guideline**

1. **Oxygen** as per Guideline
2. Establish IV with **Normal Saline**
3. Cardiac monitor
4. **Diphenhydramine (Benadryl)** 1mg/kg IV or IM or PO (max 50mg)
5. **Methylprednisolone (Solu-Medrol)** 125mg slow IVP
6. **Establish Medical Control**
   - Possible Physician orders:
     - **Epinephrine 1:1,000** 0.3mg IM (Epi-Pen for EMTs and AEMTs)

**An allergic reaction is a hypersensitivity to a given antigen. It is usually not life threatening, merely uncomfortable for the patient.**

**The patient is hemodynamically stable and complains of minor to moderate skin manifestation (erythema, pruritus or urticaria).**

**If angioedema is present refer to anaphylaxis Guideline**

**If wheezes or respiratory distress is present, refer to the anaphylaxis Guideline**
ANAPHYLAXIS

**Definition/Indications:**
- Hypotension or respiratory compromise with known allergen exposure
- Acute onset of symptoms and 2 or more of the following:
  - Respiratory compromise (dyspnea, wheeze, stridor)
  - Angioedema or facial/lip/tongue swelling
  - Widespread hives, itching, swelling
  - Persistent gastrointestinal involvement (vomiting, diarrhea, abdominal pain)
  - Altered mental status, syncope, cyanosis, delayed capillary refill, or decreased level of consciousness associated with known/suspected allergenic exposure
  - Signs of shock

---

**Universal Patient Care Guideline**

**Airway Management Guideline**

**Oxygen**

**Paramedic**

Epinephrine (1:1,000) 0.3 mg IM via syringe or Epi-Pen. May repeat up to every 5 minutes as needed.

**EMT, AEMT**

Administer Epi-Pen (0.3mg Epinephrine) May repeat once in 5 minutes if indicated

- **IV Ringers Lactate or Normal Saline** titrated to a BP > 90 systolic
- Cardiac monitoring

If patient remains hemodynamically unstable, administer Epinephrine 1:10,000 0.1 mg slow IV over 3 minutes, can be repeated X 2 to a maximum dose of 0.3mg IV or IO, titrated to effect. Repeat in 2 min prn.

- **Diphenhydramine (Benadryl)** 1mg/kg Slow IVP (max. 50mg)
- **Methylprednisolone (Solu-Medrol)** 125mg slow IVP

- **Albuterol (Ventolin, Proventil)** 2.5mg via nebulizer for respiratory distress

**Establish Medical Control**

Possible Physician orders: Repeat doses of Epi-Pen, Epinephrine or Epinephrine drip

Epinephrine (1:10,000) 0.1mg needs to be given slowly over 3 min. It can be mixed in a 50 to 100 cc bag NS to give better control of administration.
**DIABETIC EMERGENCY or ALTERED LEVEL OF CONSCIOUSNESS**

**Universal Patient Care Guideline**

- **Oxygen** Therapy if SaO₂ is less than 94%
  - Including quantitative waveform capnography

- **Spinal Motion Restriction**

- **IV Access**

- **Blood Glucose Analysis**

**Blood Glucose Low (<70mg/dl)**

- **Oral Glucose** if alert with intact gag reflex

**Dextrose 10%** up to 25 Gm

SIVP if blood glucose level is low, may repeat one dose if clinically indicated.

When IV access is unavailable, administer **Glucagon** 1.0 mg IM

**Blood Glucose Between 70 – 300 mg/dl**

- **Opiate overdose suspected?**
  - If the patient demonstrates a low respiratory rate (<10) or hypoventilation, administer:
    - **Naloxone (Narcan)** 0.4-2.0 mg IV/IO or IM or 2.0 mg IN

**Blood Glucose >300 mg/dl**

- **Normal Saline @ 1000mL/hour**

- **Monitor patient for fluid overload**

**No**

- **Return to Baseline?**

**Yes**

- **Establish Medical Control**

  - Possible Physician orders:
    - Additional **Oral Glucose, Dextrose** and/or **Naloxone (Narcan)**

**Consider other causes:** Head injury, Overdose, Stroke, Hypoxia

**Last Updated: July 1, 2015**
PEARLS

- Be aware of AMS as presenting sign of an environmental toxin or Haz-Mat exposure and protect personal safety.
- It is safer to assume hypoglycemia than hyperglycemia if doubt exists. Providers may administer oral glucose if no glucometer is available and they suspect a diabetic emergency in a patient who is alert and has an intact gag reflex. A patient may not be alert enough to administer oral glucose to if they are unable to hold the tube themselves.
- Do not let alcohol confuse the clinical picture. Alcoholics frequently develop hypoglycemia.
- Consider restraints if necessary for patient’s and/or personnel’s protection per the restraint policy.
- Treatment options are not mutually exclusive, consider other or combined causes.
- Can be given in any concentration 50%, 25% or 10% solutions as needed to bring patient back to baseline.
- D<sub>10</sub> is the preferred solution for hypoglycemic emergency. D<sub>10</sub> can be given either as an open drip or drawn up in a large syringe and given as IV pushes. If D10 unavailable or in provider judgment it is more appropriate, D<sub>25</sub> or D<sub>50</sub> may be used.
HEAT RELATED EMERGENCIES

Universal Patient Care Guideline

- Move patient to a cool environment
- Oxygen

Heat Cramps
- Establish IV Normal Saline
  Consider Fluid Bolus
- Establish Medical Control

Heat Exhaustion
- Remove Clothing as practical and fan moistened skin
- Establish IV Normal Saline
  Consider Fluid Bolus
- Cardiac Monitor & 12 Lead ECG
- Establish Medical Control

Heat Stroke
- Remove as much clothing as practical, cool patient with a cool wet sheet
- Apply cold packs under the arms, around the neck and at the groin
- Establish IV Normal Saline
  Consider Fluid Bolus
- Cardiac Monitor & 12 Lead ECG
- Establish Medical Control
**PEARLS**

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heat Cramps:</strong></td>
<td>Pain in muscles due to loss of fluid and salt. Frequently affects lower</td>
</tr>
<tr>
<td></td>
<td>extremities and abdomen. Cool, moist skin, normal to slightly elevated</td>
</tr>
<tr>
<td></td>
<td>temperature; nausea.</td>
</tr>
<tr>
<td><strong>Heat Exhaustion:</strong></td>
<td>The state of more severe fluid and salt loss leading to syncope,</td>
</tr>
<tr>
<td></td>
<td>headache, nausea, vomiting, diaphoresis, tachycardia, pallor and/or weak</td>
</tr>
<tr>
<td></td>
<td>pulse.</td>
</tr>
<tr>
<td><strong>Heat Stroke:</strong></td>
<td>A very serious condition. The patient may present with hot and flushed</td>
</tr>
<tr>
<td></td>
<td>skin, strong bounding pulse and altered mental status. The situation may</td>
</tr>
<tr>
<td></td>
<td>progress to coma and/or seizures. CAUTION: Sweating may still be present</td>
</tr>
<tr>
<td></td>
<td>in 50% of heat stroke patients.</td>
</tr>
</tbody>
</table>

- Do not massage cramping muscles
- Do not give patient oral fluids if patient is nauseated or confused.
- Place patient in cool environment and determine need for advanced life support.
- Determine patient’s past medical history and history related to present event.
NEAR DROWNING

Universal Patient Care Guideline

While protecting the cervical spine, establish a patent airway appropriate to the clinical situation

If hypothermic, follow Hypothermic Guideline

Bronchodilator via nebulizer as required for bronchospasm (follow Acute Respiratory Distress Guideline)

Treat according to appropriate Guideline

Contact Medical Control

Near Drowning, Page 1 of 1 Last Updated: June 13, 2008
## HYPOTHERMIA

**Universal Patient Care Guideline**

- Avoid rough handling or excessive movement
  - If CPR is required refer to **Hypothermic Arrest Guideline**
- Maintain the Airway
  - Assist ventilations if respiratory rate is less than 5/minute, but do not hyperventilate; Administer humidified **oxygen** at 100%
- Protect C-spine as necessary
- Remove patient from cold environment
  - Remove all wet clothing
  - Protect from further heat loss
- Establish IV **Normal Saline** (warmed) Check blood glucose level with IV start
  - If BP <90 administer 1L NS as a fluid challenge
- Monitor cardiac rhythm

### Mild Hypothermia
- (greater than 93.2 F or 34 C)
- Passive Rewarming
  - (Warm blankets, Warm Environment)

### Moderate Hypothermia
- (86-93.2 F or 30 – 34 C)
- Active External Rewarming
  - Hot packs wrapped in a towel may be applied to axillae, groin, abdomen

### Severe Hypothermia
- (Less than 86 F or 34 C)
- Active External Rewarming
  - Hot packs wrapped in a towel may be applied to axillae, groin, abdomen

- **Dextrose 25 GMs IVP**
- **Naloxone (Narcan)** 0.4-2.0mg IVP
  - If indicated

- **DO NOT DELAY TRANSPORT**
  - Transport the patient supine in a 10° head-down tilt

- **Contact Medical Control**

---

Hypothermia, Page 1 of 2

Last Updated: July 1, 2015
**PEARLS:**

When the body's core temperature decreases, the body will first respond by shivering. This is an attempt by the body to generate heat from muscle activity. Vasoconstriction will shunt blood from the skin and an increase in the patient’s metabolic rate will increase heat.

If these mechanisms cannot compensate for severe temperature drops and the body’s systems begin to fail, i.e. respiratory function will deteriorate and lead to hypoxemia. The patient may also develop dysrhythmias and cardiopulmonary arrest may occur.

Patients are particularly at risk for cardiac dysrhythmias during the warming phase of treatment.

D10 is the preferred solution for hypoglycemic emergency. D10 can be given either as an open drip or drawn up in a large syringe and given as IV pushes. If D10 unavailable or provide determines it is more appropriate, D25 or D50 may be used.

**HANDLE GENTLY: The cold heart is more susceptible to fibrillation**

Clinical Presentation for moderate hypothermia may include: Conscious, but often lethargic often shivering, with skin that is pale and cold to touch

Clinical presentation for severe hypothermia may include: Unconsciousness or decreased LOC, ice cold skin, inaudible heart sounds; unobtainable BP, or severe hypotension; unreactive Pupils, Very slow or absent respirations

**Avoid:**

- Hyperventilation because an extreme drop in CO₂ may cause ventricular fibrillation.
- Rubbing the skin.
- Rewarming frostbitten extremities until after the core is rewarmed to prevent vascular complications to the limb and the transportation of cold blood and detrimental by-products to the core.
- All unnecessary rough movements as they may precipitate arrhythmias
HYPOTHERMIC ARREST

Yes

Vfib/Vtach on monitor?

No

Defibrillate at 360 joules or appropriate biphasic setting.

Initiate CPR

Start rewarming

If no conversion, initiate CPR

Establish Medical Control for consideration of any further orders.

Contact Medical Control
Potential orders include increased time between medications for moderate hypothermia; however Do not administer medications unless directed to do so by Medical Control Physician.

Potential orders include increased time between medications for moderate hypothermia; however Do not administer medications unless directed to do so by Medical Control Physician.

PEARLS:
Once you have started CPR - DO NOT GIVE UP!

THE HYPOTHERMIC PATIENT IS NOT DEAD UNTIL THEY ARE WARM AND DEAD!

NOTE: Severely hypothermic patients may be without detectable pulse, blood pressure, or respirations. This may be physiologic for a hypothermic patient. Successful resuscitation without CNS complications has been accomplished in patients with a core temperature less than 70°F.

- Patients who are severely hypothermic are generally not given medications until they are warmed to >86 F or 30 C
- Those that are moderately hypothermic are given medications but at increased intervals between doses.
NAUSEA / VOMITING GUIDELINE

Universal Patient Care

IV Access

Consider 12 Lead ECG

If Patient is Hypotensive or Displays Orthostatic Hypotension: Administer 0.9% NS IV Bolus

Ondansetron (Zofran) (Zofran®) 4 mg Slow IV

OR

Metoclopramide (Reglan®) 10 mg Slow IV

Nausea and/or Vomiting Persists 5 Minutes after Administration?

No

Yes

Repeat (once) same anti-emetic as previously administered at the same dose (as listed above).

Nausea and/or Vomiting Persists at Least 10 Additional Minutes after Last Anti-emetic?

No

Yes

Administer single dose of alternate (not yet administered) anti-emetic. Either:

- Ondansetron (Zofran) 4 mg Slow IV or Deep IM

- Metoclopramide (Reglan®) 10 mg Slow IV

Continued Assessment

Pearls

- Ondansetron (Zofran) should routinely be used as the first line anti-emetic agent. Metoclopramide may be preferred in patients that are more calm and relaxed but are allergic to Ondansetron (Zofran) or where gastric emptying is desired.

- Do not exceed two doses of any one anti-emetic agent.

Nausea and Vomiting, Page 1 of 1

Last Updated: June 25, 2012
PEARLS:

It is essential to obtain the following information on all drug overdoses and poisonings:

- Name and ingredients of the substance(s) taken.
- The amount taken.
- Approximate time substance was taken.
- Method of substance abuse: ingestion, injection, inhalation, or topical transmission.
- Look for the container(s) of substance ingested and if appropriate transport with patient.
- Reason for the ingestion: e.g., suicide, accidental overdose, or mixture of incompatible substances.
- Vomiting prior to arrival.
- Remove topical contaminant as completely as possible, flush with water.
- At the earliest convenience contact Poison Control directly (1-800-222-1222) or through Medical Control.

**Inhalation or Topical Exposure?**

- **Yes**
  - **Evaluate the scene for safety consideration as a Hazmat Incident**
  - **Notify CMED as indicated**
  - **Follow BLS HAZMAT Guidelines as indicated**

- **No**
  - **Universal Patient Care Guideline**
  - **Cardiac Monitor**
    - Treat symptomatic rhythm according to protocol
  - **Yes**
    - **Conscious and Alert?**
      - **Follow Altered Mental Status Guideline**
      - **Establish Medical Control**
        - **Establish IV of Normal Saline or Lactated Ringers**
        - If hypotensive without cardiogenic pulmonary edema consider fluid bolus
      - **12 Lead ECG**
      - **If Known Overdose, Move to Specific Antidotal Therapy Guideline**
  - **No**
    - **Establish Medical Control**
      - **Possible Physician orders: Activated Charcoal 30-50 g PO**

**Overdose/Poisonings, Page 1 of 3**

**Last Updated: June 2, 2009**

<table>
<thead>
<tr>
<th>EMR</th>
<th>EMT</th>
<th>AEMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paramedic</td>
<td>Medical Control</td>
<td>July 1, 2015</td>
</tr>
</tbody>
</table>
For Persistent Hypotension or Symptomatic Bradycardia Refractory to Atropine and Fluids Consider:

- Glucagon 0.1 mg/kg (max 5mg) IV
- Repeat in 5 minutes PRN

For hypotension or bradycardia with poor perfusion despite previous measures consider:

- Epinephrine 1mcg/kg/min IV Infusion
- Titrate to effect

For Refractory Bradycardia (<40 BPM) with poor perfusion consider:

- Transcutaneous Pacing. Set rate between 50-60 PPM.

For persistent hypotension with poor perfusion despite previous measures consider:

- Dopamine (Intropin) 10-20 mcg/kg/minute IV

- Providers are encouraged to consult Medical Control early in the management of toxicological emergencies when possible.
- Ensure large, patent vein when administering calcium chloride to avoid extravasation and tissue injury.
**Overdose/Poisonings** (Continued)

**Stimulant or Anticholinergic**
- Monitor body temperature. Consider active external cooling.
- Manage agitation, chest pain and seizures following appropriate guidelines.
- Consider Repeat Fluid Bolus if Hypotensive.
- Cocaine or Diphenhydramine

**Sodium Channel Blockers** (Tricyclic Antidepressants, Diphenhydramine)
- QRS > 0.10 sec?
  - Consider: Sodium Bicarbonate 1 mEq/kg IV
  - Repeat once in 5 minutes if QRS still >0.10 sec

**Organophosphate Poisoning** (SLUDGE symptoms)
- Administer: **Atropine** 2mg IV or IM
  - Repeat, doubling dose every 5 minutes until bronchorrhea ceases. i.e. Initial dose of 2mg; Second dose of 4mg; Third dose of 8 mg, etc.
- Administer Lorazepam (Lorazepam (Ativan)) 0.1 mg/kg (max 2mg) IM or IV
  - If seizures are observed, follow seizure guideline

- Providers are encouraged to consult Medical Control early in the management of toxicological emergencies when possible.
- Ensure large, patent vein when administering calcium chloride to avoid extravasation and tissue injury.
- In TCA overdose, Sodium Bicarbonate is the preferred treatment, with Magnesium or Lidocaine.

---

**Overdose/Poisonings, Page 3 of 3**

<table>
<thead>
<tr>
<th>EMR</th>
<th>EMT</th>
<th>AEMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paramedic</td>
<td>Medical Control</td>
<td>July 1, 2015</td>
</tr>
</tbody>
</table>

**Last Updated:** June 2, 2009
PAIN MANAGEMENT (ADULT)

Universal Patient Care Guideline
(Include Pain Scales in assessment)
Use non-pharmacological pain management. (positioning, splinting, padding, reassurance, guided imagery, hot and cold therapy) when possible

IV Access

Yes

Acute Coronary Syndrome / Chest Pain?

Follow Acute Coronary Syndrome Guideline

No

Patient Reports Moderate to Severe Pain (4 or greater on 1-10 scale) after BLS interventions?

Yes

Significant Head Trauma? or GCS < 13? or SBP < 100?

Yes → Establish Medical Control
Possible Physician Orders:
Morphine
Fentanyl

No

If patient is spinal motion restricted or has a history of nausea / vomiting from Narcotics and no contraindications exist,
Then Administer:
Ondansetron (Zofran®) 4mg slow IV
or Metoclopramide (Reglan) 10 mg Slow IV

Ask Patient “Would you like some pain medicine?”
If answer “YES”

Fentanyl
Fentanyl up to 1mcg/kg IV over 1-2 minutes, IM or IN (to maximum single dose of 100mcg, for patients over 65 divide in two equal halves administered five minutes apart. Withhold the second half of the dose if it is no longer indicated.

Morphine
0.1 mg/kg Morphine Sulfate (2mg/min increments) up to 10 mg slow IV via syringe or IV infusion (over at least 5 minutes) For patients over 65 administer 0.05 mg/kg.
or If IV access is unavailable, Administer 0.1 mg/kg Morphine Sulfate up to 10 mg IM

Pain Control (Adult), Page 1 of 3

Last Updated: March 5, 2012
Ask Patient “Would you like some pain medicine?” If answer “YES”

<table>
<thead>
<tr>
<th>If ten (10) Minutes after completion of first dose, and patient still reports moderate to severe pain, administer: <strong>Fentanyl up to 1mcg/kg</strong> (to maximum single dose of 100mcg). For patients over 65 divide in two equal halves administered five minutes apart. Withhold the second half of the dose if it is no longer indicated.</th>
</tr>
</thead>
<tbody>
<tr>
<td>If Ten minutes after the last dose of Morphine and the patient still reports moderate to severe pain, administer: <strong>0.05 mg/kg Morphine</strong> Slow IV (over at least 4-5 minutes in 2mg/min increments) to a maximum single dose of 5 mg.</td>
</tr>
</tbody>
</table>

Ask Patient “Would you like some pain medicine?” If answer “YES”

<table>
<thead>
<tr>
<th>If ten (10) Minutes after completion of second dose, and patient still reports moderate to severe pain, administer: <strong>Fentanyl up to 1mcg/kg</strong> (to maximum single dose of 100mcg). For patients over 65 divide in two equal halves administered five minutes apart. Withhold the second half of the dose if it is no longer indicated. <strong>To a maximum grand total dose of 3mcg/kg or 300mcg</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>If Ten minutes after the last dose of Morphine and the patient still reports moderate to severe pain, administer: <strong>0.05 mg/kg Morphine</strong> Slow IV (over at least 4-5 minutes in 2mg/min increments) to a maximum single dose of 5 mg. <strong>No patient should receive more than 0.2mg/kg or 20mg total of Morphine on standing orders</strong></td>
</tr>
</tbody>
</table>

Patients who complain of localized itching, should receive Diphenhydramine (Benadryl) 1mg/kg to a max of 25mg. If the progress to a generalized allergic reaction, follow Allergic Reaction Guideline

Establish Medical Control

Possible Physician Orders:
- **Additional Morphine**
- **Additional Fentanyl**
- **Lorazepam (Ativan) for anxiety relief**
Pearls:

- All patients receiving prehospital narcotic analgesics or benzodiazepines should have continuous pulse oximetry monitoring, ECG and non-invasive quantitative waveform capnography (if available).
- Consider administering morphine as an infusion over 5 -10 minutes in 50 – 100 mL of D₅W or 0.9% NS to minimize side effects.
- **Stop medication administration** if significant adverse effects (severe nausea, vomiting, hypotension, respiratory depression) or sedation (decreased mental status) develop.
- Respiratory depression should be treated with oxygen and ventilatory support if necessary.
- Attempt verbal and tactile stimulation to reverse respiratory depression prior to considering Naloxone (Narcan).
- Administer the smallest possible reversal dose of Naloxone (Narcan) to maintain adequate respirations. Dilute 0.4 mg Naloxone (Narcan) in 10cc 0.9% NS syringe and slowly titrate to effect.
- Morphine and Fentanyl should not be mixed without permission of medical control.
- Patients who complain of localized itching, should receive Diphenhydramine (Benadryl) 1 mg/kg to a max of 25mg. If generalized allergic reaction, follow guidelines under Allergic Reaction.
- **Fentanyl maybe given intranasally under the following dosing regimen:**
  - Administer Fentanyl IN, initial dose 1.5 mcg/kg (100 mcg max single dose), may administer a second dose 1.5mcg/kg (100 mcg max single dose) if needed after 10 minutes, for a total maximum dose of 200 mcg. **Administer half a single dose in each nostril**

- Patients who complain of localized itching, should receive Diphenhydramine (Benadryl) 1 mg/kg to a max of 25mg. If generalized allergic reaction, follow guidelines under Allergic Reaction.
- **Fentanyl maybe given intranasally under the following dosing regimen:**
  - Administer Fentanyl IN, initial dose 1.5 mcg/kg (100 mcg max single dose), may administer a second dose 1.5mcg/kg (100 mcg max single dose) if needed after 10 minutes, for a total maximum dose of 200 mcg. **Administer half a single dose in each nostril**
PAIN ASSESSMENT (ADULT)

Purpose:

To identify and facilitate appropriate management of painful conditions in the prehospital setting.

Guiding Principles:

Pain is a medical condition and patients possess a right to have their pain treated.

All patients should be assessed for the presence of pain which should then be managed appropriately.

Procedure:

The EMS provider will evaluate all conscious patients (regardless of presenting complaint) for the presence and severity of pain once immediate life threats have been addressed.

This assessment will be repeated after any pain management intervention, change in apparent pain level or at least every 15 minutes. This evaluation will consist of, at a minimum, either a verbal numeric score or a visual analog score. If possible, also use the verbal score. Pain scores must be documented on the patient care report.

Visual Analog Scale

Ask the patient to mark or point to the severity of their pain on a scale of zero to ten with zero being no pain and ten being unbearable pain, the worst pain they have ever felt.

Verbal Numeric Pain Score

Ask the patient to rate the severity of their pain on a scale of zero to ten with zero being no pain and ten being unbearable, the worst pain ever.

Verbal Pain Score

Ask the patient to assign one of the following adjectives to rate their pain:

- NONE
- MILD
- MODERATE
- SEVERE
- UNBEARABLE
**Documentation**

Run form documentation will include an assessment of the patient’s pain, the nature of the pain, treatment of the pain, a reassessment of the pain, and patient satisfaction with pain relief efforts.

If a paramedic chooses not to medicate a patient in moderate to severe pain, the reasons for withholding analgesia must be documented.
SEIZURES

**Universal Patient Care Guideline**
Consider Trauma, Hypoglycemia, Overdose
Go to appropriate Guideline if indicated

- Protect the patient from personal injury
- High flow oxygen if \( \text{SaO}_2 \) is < 94%
- Establish an IV of Normal Saline @ KVO
  and obtain blood glucose level and record
  If patient actively seizing, do not delay medicine administration to obtain IV

### Dextrose
- up to 25 Gm IVP (using \( D_{10} \)W (preferred), or \( D_{25} \), or \( D_{50} \)W if \( D_{10} \) is unavailable or provider judges \( D_{25} \) or \( D_{50} \) to be more appropriate)

**Glucagon**
- 1mg IM if IV access unavailable

### Possible Physician Orders:
- Additional anti-seizure medication
- Additional Dextrose

---

1. In absence of an established IV, Midazolam (Versed) IM is the preferred option in status epilepticus as studies have shown it stops the seizure quicker and results in fewer hospital admissions than IV Lorazepam (Ativan).
2. In absence of the other drug, Midazolam (Versed) can be given IV and Lorazepam (Ativan) can be given IM.
3. Midazolam (Versed) can be given IN, but this route is considered less reliable than IM.
4. The dosing above is intended for convulsing patients in status epilepticus. More moderate doses can be considered in partial seizures.
5. The sooner seizures can be stopped, the easier they are to stop and the less damage the patient may suffer from the seizure.
6. After giving first dose of Midazolam (Versed) IM, attempt to get an IV, and if obtained and patient still seizing after 5 minutes, give next dose Lorazepam (Ativan) IV.

**Seizures, Page 1 of 1**

**Last Updated:** July 1, 2015
**SHOCK**

Universal Patient Care Guideline
Control obvious external bleeding

High flow oxygen if SaO₂ is < 94%

Consider early transport of patient

Suspected hemorrhagic shock?

- Yes
  - En route to hospital, establish large bore IV Normal Saline or Ringers Lactate; titrate to SBP > 90 mmHg

- No
  - Follow applicable Sepsis or Anaphylaxis Guideline

Follow applicable Sepsis or Anaphylaxis Guideline

Establish IV Normal Saline KVO

Cardiac Monitor
12 Lead EKG
Treat any underlying arrhythmias as per Guideline

Consider Fluid Challenge of 300-500 ml

Cardiogenic Shock?

- Yes
  - Establish IV Normal Saline KVO
  - Cardiac Monitor/12 Lead EKG
  - If patient displays evidence of volume depletion:
    - Consider IV fluid bolus 10-20 mL/kg Normal Saline
    - Consider continuous IV fluid infusion up to 1000mL/hr
  - Establish Medical Control

- No
  - Cardiogenic Shock?
    - No
      - Establish IV Normal Saline KVO
      - Cardiac Monitor
      - 12 Lead EKG
      - Treat any underlying arrhythmias as per Guideline
      - Consider Fluid Challenge of 300-500 ml
      - Establish Medical Control

Dopamine (Intropin)
5 mcg/kg/min up to 20 mcg/kg/min titrated to a systolic BP ≥ 90 mmHg

or
Norepinephrine (Levophed)
4-30 mcg/min titrated to a systolic BP ≥ 90 mmHg

Establish Medical Control

Note: Lung sounds and respiratory status must be continuously monitored to avoid pulmonary edema.
**BEHAVIORAL EMERGENCIES**

The following medical control options may be utilized for the patient with a psycho-social condition exhibiting extreme anxiety, and who is hemodynamically stable.

---

**Universal Patient Care Guideline**

**Cardiac Monitor**

**IV Access**

**Patient Violent?**

**No**

**Midazolam (Versed)** 0.1mg/kg IM or IV up to 10mg (5mg average dose)

May be repeated to a total max of 10 mg or 0.2mg/kg to a max 10mg IN.

**or**

**Lorazepam (Ativan)** up to 0.5 - 2 mg slow IV or IM

**Establish Medical Control**

Possible Physician Orders:

Repeat any of the above options as ordered.

---

**Yes**

(Refer to Behavioral Emergencies Guidelines below)

---

For Adult Patients

**Midazolam (Versed)** 0.1mg/kg IM up to 10mg (5mg average dose)

May be repeated to a total max of 10 mg or 0.2mg/kg to a max 10mg IN.

**and**

**Haloperidol (Haldol)** 5 mg IM or **Olanzapine (Zyprexa)** 5-10 mg IM

For Pediatric Patients see table below

Pears

**or**

**Lorazepam (Ativan)** 0.05mg/kg up to 4mg IM (2 mg average dose)

**and**

**Haloperidol (Haldol)** 5 mg IM or **Olanzapine (Zyprexa)** 5-10 mg IM

For Pediatric Patients see table below

PEARLS

---

For Pediatric Patients see table below

PEARLS

**Establish Medical Control**

Possible Physician Orders:

Additional Medication

---

Behavioral Emergencies, Page 1 of 3

Last Updated: June 11, 2013
PEARLS:

- Administration of Haloperidol (Haldol) decreases a person’s seizure threshold. Use with caution on patients with a history of seizure disorders or cocaine overdose.
- Use caution with patients with a known prolonged QT segment
- Midazolam (Versed) and Haloperidol (Haldol) or Lorazepam (Ativan) and Haloperidol (Haldol) may be mixed in the same syringe. Midazolam (Versed) and Haloperidol (Haldol) should be the first option for violent patients without an established IV because Midazolam (Versed)’s mechanism of action is quicker.
- Olanzapine (Zyprexa) may not be combined with either Midazolam (Versed) or Haloperidol (Haldol) in the same syringe.
- EKG, Pulse Oximetry and quantitative waveform capnography should all be monitored continuously

<table>
<thead>
<tr>
<th>Drug</th>
<th>Age</th>
<th>Dose</th>
<th>Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haloperidol (Haldol)</td>
<td>0-6 YOA</td>
<td>Not Recommended</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>6-12 YOA</td>
<td>1-3mg</td>
<td>I.M.</td>
</tr>
<tr>
<td></td>
<td>12-adult dose</td>
<td>5mg</td>
<td>I.M.</td>
</tr>
<tr>
<td>Lorazepam (Ativan)</td>
<td>3-12 YOA</td>
<td>0.05-0.2mg/kg up to 2 mg</td>
<td>I.M.</td>
</tr>
<tr>
<td></td>
<td>12-adult dose</td>
<td>0.05mg/kg up to 4mg IM (2 MG average)</td>
<td>I.M.</td>
</tr>
</tbody>
</table>
North Central EMS Behavioral Emergency Guidelines

EMS providers may use physical and/or chemical restraints on patients who pose a danger to themselves or others.

Providers should make every effort to ensure that law enforcement and adequate assistance are present when attempting to restrain a violent or combative patient.

Only the minimum amount of restraint necessary to protect providers and the patient should be used.

Providers should first attempt to verbally calm the patient down. If the patient does not comply, physical restraint may be attempted.

Providers should assess the patient for medical conditions that could be contributing to the patient’s behavior. If an assessment cannot be performed prior to physical restraint, it should occur as soon as possible after restraint is applied when it is safe and feasible.

Physical restraints must be soft in nature and pose no threat to the patient’s safety. Only the extremities shall be restrained and these restraints must be assessed every five minutes.

Patients must never be hog-tied, restrained in a prone position with hands tied behind their backs or placed between backboards or mattresses. No restraint shall ever be tied around the head, neck or chest. A surgical mask, spit shield, or an oxygen mask may be placed loosely on the patient to prevent spitting.

Handcuffs may only be used by law enforcement or correction officials on patients in their custody. If the law enforcement officer insists that the patient remain handcuffed during transport, they must either accompany the patient or provide a key to EMS personnel.

Chemical restraint may be used per guideline following unsuccessful attempts at verbal and/or physical restraint or when a patient continues to forcibly struggle against physical restraints.

All restrained patients must have continual reassessment of vital signs and neurovascular status of distal extremities. In chemically restrained patients (safety permitting) this should include ECG, pulse oximetry, and quantitative waveform capnography if the patient is no longer alert.

Documentation must include justification for restraint, type of restraint used, restraint procedure, results of continual reassessment, medications administered, the indications for the administration, and any other care rendered.

Do not hesitate to involve medical direction in any call involving restraint.
DYSTONIC REACTION

Universal Patient Care Guideline

IV Access

Administer 25 – 50 mg of Diphenhydramine (Benadryl), IV or IM

Establish Medical Control
**STROKE GUIDELINE**

- **Universal Patient Care Guideline**
- **F.A.S.T./Cincinnati Prehospital Stroke Scale**
- Check Blood Glucose. If below 70 mg/dl then Administer up to 25G of Dextrose (D10W preferred)
- Transport patient to appropriate facility per North Central Regional Stroke Destination Guideline. Call in Acute Stroke Alert ASAP
- IV Access (if not already obtained)
- Contact Medical Control

**Pearls:**

According to the latest science, the sooner an eligible patient receives TPA, the better they do. Minutes count.

Perform FAST Stroke Screen –Cincinnati Prehospital Stroke Scale

**FAST (Incorporates Cincinnati Scale)**

F   Face Drooping – Does one side of the face droop or is it numb? Ask the person to smile. Is the person's smile uneven?

A   Arm Weakness – Is one arm weak or numb? Ask the person to raise both arms. Does one arm drift downward?

S   Speech Difficulty – Is speech slurred? Is the person unable to speak or hard to understand? Ask the person to repeat a simple sentence, like "The sky is blue." Is the sentence repeated correctly?

T   Time - If someone shows any of these symptoms, even if the symptoms go away, Time is Critical. Record time when the first symptoms appeared.

Note: patient can be a 0 on Cincinnati Scale and still be having stroke. Maintain high index of suspicion. Utilize additional stroke identification tools (see Stroke Screening in Procedures).
**STROKE GUIDELINE (continued)**

**Pearls:**

Early notification to the receiving hospital is essential to ensure the immediate availability of an appropriate in-hospital response.

Try to limit scene time to 15 minutes or less, and transport rapidly. Transport should be equivalent to trauma or acute myocardial infarction calls.

BLS should not delay transport to await arrival of ALS to scene.

Contact receiving hospital for **ACUTE STROKE ALERT** and include following information:

- Time of symptom onset/Last Known Well Time
- Description of neurologic deficits (include Cincinnati stroke scale)
- Blood glucose level

When contacting CMED say, “I need a radio patch to (Name of Hospital) for a Stroke Alert.” This will help CMED prioritize your patch. It is not necessary to ask for Medical Control.

Transport witness if possible.

Limit IV attempts due to possibility of patient receiving TPA. Use 18 or 20 gauge IV if possible.

If patient tolerates, elevate head of stretcher 30 degrees.

Perform and document vital signs and neuro exam every 5 (five) minutes (on both 911 calls and interfacility transfers involving stroke patients).

Neuro exam should include repeat **F.A.S.T./Cincinnati Stroke Screen** and pupil evaluation.

Remember: Time is Brain. Do Not Delay and Provide Advance Notification to Speed Time to TPA when patient meets criteria.

The FDA approved window for IV TPA is 3 hours from symptom onset. However, some patients may receive IV TPA up to 4.5 hours from symptom onset.
Suspected stroke patients should be brought to closest certified stroke center or stroke-ready hospital.*

*Stroke ready hospital shall have:
   1) Access to 24 Hour CT Scan
   2) Access to a neurologist either in person or through telemedicine
   3) Ability to conduct emergency lab testing
   4) Ability to give TPA
   5) Policies in place to transfer patients to primary or comprehensive stroke center

Consider patient preference/history if multiple stroke centers are in similar proximity.

In all instances, those patients requiring immediate hemodynamic or airway stabilization should be transported to the closest appropriate facility

As of the date of this guideline, all hospitals in the North Central Connecticut Region meet stroke-ready criteria.
**ALCOHOL WITHDRAWL**

Alcohol Withdrawal resulting in tremors, anxiety, hypertension, tachycardia, hallucinations, and/or seizures

---

Universal Patient Care Guideline

---

IV Access

---

Administer 1-2 mg of **Lorazepam (Ativan)** IV

---

Consider 0.9% **NS** IV Bolus

---

Establish Medical Control
**SEPTIC SHOCK/SEPSIS ALERT GUIDELINE**

**Identification of Possible Septic Shock**

Suspected infection – YES

Evidence of sepsis criteria – YES (2 or more):

- Temperature < 96.8 °F or > 100.4 °F (if available)
- Heart rate > 90 bpm.
- Respiratory rate > 20 bpm.
- Systolic blood pressure < 90 mmHg.
- New onset altered mental status OR increasing mental status change with previously altered mental status.

**Routine Patient Care.**
- Administer oxygen at a rate to keep oxygen saturation .94%.
- Do not delay transport.
- Notify ED of possible SEPSIS ALERT patient.

**Initiate up to two (2) large-bore IVs. Do not delay transport to start IV.**
- Administer 0.9% NaCl to maintain systolic blood pressure >90mmHg in 500ml boluses. Total volume should not exceed 4,000ml.
- Patients should be reassessed frequently, with special attention given to the lung examination to ensure volume overload does not occur.

**Obtain serum lactate level (if available and trained)**
- If there is no response after 2,000 ml IV fluid infused, continue up to 4,000 mL IV fluid and consider:
  - Norepinephrine 4 – 30 micrograms/minute
  - Dopamine infusion 5 – 20 micrograms/kg/minute. *(Use only if not carrying Norepinephrine)*

**PEARLS:**

- Sepsis is a systemic inflammatory response due to infection, often resulting in significant morbidity and mortality.
- Severe septic shock has a 50% mortality rate and must be treated aggressively.
- Early goal directed therapy consisting of IV fluid administration and early antibiotics reduces mortality in septic patients. *(Remember to reassess prior to increasing fluid).*

**REMEMBER: EARLY NOTIFICATION SAVES LIVES!**
North Central Connecticut Regional Paramedic Guidelines

Adult Trauma Guidelines ≥13 years Old
INJURED PATIENT TRIAGE GUIDELINE*

When transport to a Level I or II Trauma facility is indicated, but the ground transport time to that hospital is judged to be greater than twenty (20) minutes, determination of destination hospital shall be in accordance with medical control.

1. Call Medical Control for direction
2. Measure Vital Signs and level of Consciousness
   - Glasgow Coma Scale 12 or less
3. Assess Anatomy of Injury
   - Gunshot wound to head, neck, chest, abdomen or groin?
   - Third degree burns > 15% or of the face or airway?
   - Evidence of spinal cord injury?
   - Amputation other than digits?
   - Two or more proximal long bone fractures?
4. Assess mechanism of injury and other factors
   - Falls >20 feet
   - Apparent high speed impact
   - Ejection of patient from vehicle
   - Death of same vehicle occupant
   - Pedestrian hit by car at > 20 mph
   - Rollover accident
   - Significant vehicle deformity – especially of steering wheel
   - Age <5 or >55
   - Known cardiac disease or respiratory distress
   - Penetrating injury to neck, thorax, or abdomen other than gunshot wounds
5. Evaluate as per usual Guidelines

- Severely injured patients <13 years should be taken to a Level I or II facility with pediatric resources including pediatric ICU.
- All EMS providers transporting trauma patients to hospitals shall provide receiving hospital with a complete OEMS approved patient care form prior to departing from the hospital.

WHEN IN DOUBT, CONSULT WITH MEDICAL CONTROL

*State of Connecticut Regulation of Department of Public Health, Concerning Statewide Trauma System: Section 19a-177-5.
**Management of the Trauma Patient**

---

### Scene Assessment
- Initial Patient Assessment
- Stabilize C-Spine during assessment
- Open airway using Modified Jaw thrust, if indicated
- Consider Rapid Extrication

---

### Patient Airway / Administer Oxygen / Ventilate
- Determine Patient’s Hemodynamic Status (Vital signs)
- Control External Bleeding with Direct Pressure

---

### Maintain SpO2 > 94% (Utilize Pulse Oximetry, Quantitative waveform capnography & ETCO2)
- Selective Spinal Assessment / Spinal Motion Restriction

---

<table>
<thead>
<tr>
<th>The following treatments should not delay transport</th>
<th>Injury Specific Treatments</th>
</tr>
</thead>
</table>
| Initiate Vascular Access  
2 large bore peripheral IV  
or 1 single IO  
If patient is hypotensive - infuse Normal Saline or Lactated Ringers at W/O then titrate to maintain SBP > 90. Do not exceed 2000cc infusion | • Head Injury – ventilate 350-500ml at rate 10 / min. If herniation signs develop, increase rate to 20/min & maintain CO2 Level of 34-38.  
• Chest Wound – apply an occlusive dressing. Release dressing if S&S of Tension Pneumothorax occurs.  
• Flail Chest – Airway management with manual splinting  
• Abdominal Evisceration – apply moistened NS sterile occlusive dressing.  
• Impaled Objects – do not remove & stabilize in place  
• Extremity Fractures – check neurovascular status & immobilize  
• Isolated Femur Fracture – Traction Splint  
• Pelvic Fx with hypotension – consider pelvic binder  
• Pregnant Pt – check externally for contractions, vaginal bleeding, amniotic fluid. If hypotensive, place patient left lateral recumbent  
• Bleeding Control – Direct Pressure, Tourniquet. Consider hemostatic agent  
• Spinal Cord Injury – consider Dopamine (Intropin) 5-20 mcg/kg/min or Norepinephrine (Levophed) 4-30 mcg/min. Titrate to maintain systolic blood pressure of 90 mmHg  
• If Tension Pneumothorax (dyspnea, hypotension & diminished breath sounds) present - needle decompression |

---

Begin Transport to Trauma Center according to the guidelines outlined in the State of Connecticut Injured Patient Triage Guideline

---

Management of Trauma Patients, Page 1 of 2  
Last Updated: July 1, 2015
PEARLS

- Vital signs include Blood Pressure, Pulse (rate, strength and location), Respiratory Rate, Skin (color, moisture and temperature), Pain Level & Glasgow Coma Scale.

- To control hemorrhage direct pressure is the 1st choice. Do not elevate extremity or use pressure points. The use of tourniquets must be considered in severe hemorrhage if direct pressure fails or is not able to be done effectively. If a tourniquet is applied it should be just proximal to site of hemorrhage & tightened until bleeding stops. Mark time of application on tourniquet leave site exposed for visual monitoring of hemorrhage.

- Paramedics may straighten severely angulated fractures if the distal extremity has signs of decreased perfusion. Premedication with sedation or analgesia should be strongly considered. EMRs, EMTs and AEMTs should splint angulated fractures in position found. In unusual circumstances or extremely prolonged transport times, EMTs and AEMTs may contact medical control for authorization to straighten severely angulated fractures if the distal extremity has signs of decreased perfusion.

- **Dopamine (Intropin)** infusion at 5-20 mcg/kg/ min. Generally start at 5 mcg/kg/min and increase every 10 minutes by an additional 5 mcg/kg/min until SBP>90. Do not exceed 20 mcg/kg/min.
Universal Patient Care Guideline

Oxygen

Establish an IV Lactated Ringers or Normal Saline (in area not affected by burn if possible).

Type of Burn
Assess percentage of Total Body Surface Area Burned

Thermal Burns
Cover burns with clean, dry dressing. If the burns are less than 10% and are superficial or partial thickness you can moisten towels or sheets with sterile normal saline for comfort. Otherwise use dry sterile dressings

Chemical Burns
Consider any chemical burn situation as a Hazmat situation. If potential Hazmat situation exists, notify receiving hospital ASAP Identify the chemical if possible

Ophthalmic Burns
Immediate and continuous flushing of the affected eye is performed using Lactated Ringers or Normal Saline. If contact lenses are known to be in the patient’s eyes, an attempt should be made to remove them and continue flushing.

Electrical Burns
Suspect spinal injury secondary to tetanic muscle contraction - Perform selective spinal exam / spinal motion restriction. Assess for entrance and exit wounds.

If burn injury greater than 20% BSA, begin fluid resuscitation at 500 ml/hr. If hypotensive, administer 250-500ml fluid bolus and titrate to patient’s BP >90 SB/P

Control Pain According to Pain Control Guideline

Establish Medical Control
Possible Physician Orders: Additional IV, Intubation.

Control Pain According to Pain Control Guideline

Establish Medical Control
Possible Physician Orders: Morphine Sulfate IVP

Remove affected clothing & jewelry (if not already done)

Brush off dry powder. Flush with copious amounts of water or saline unless contraindicated. Irrigate burns to the eyes with a minimum of 1 liter of Lactated Ringers or Normal Saline. Alkaline burns should receive continuous irrigation throughout transport. Consider the Morgan Lens for eye irritation, (see right).

Place the Morgan Lens in the affected eye(s) continuously flush with Lactated Ringers or Normal Saline while enroute to the hospital. Run 2 liters of fluid wide per eye, then administer KVO rate.

Cardiac Monitor Treat any cardiac rhythm disturbances per Guideline

Control Pain According to Pain Control Guideline

Establish Medical Control

Possible Physician Orders: Additional IV, Intubation, Morphine Sulfate IVP
**Pearls:**

**For Chemical Burns:**
- Try to obtain name of the chemical or its I.D.
- Phosphorus burns should not be irrigated, brush chemical off thoroughly.
- Hydrofluoric Acid burns - be aware of cardiac implications due to induced hypocalcemia and the need for immediate contact with Medical Control.
- Upon receiving the patient consider that they may still be contaminated

**For Ophthalmic Burns**
- Morgan Lens is not indicated in patients under six (6) years or age, or uncooperative patients.
- Advise patients not to touch/rub their eye(s) after instillation of anesthesia drops.

**Electrical Burns**
- Without placing self at risk, remove patient from the source of electricity or have the power cut off.
- Treat any trauma secondary to electrical insult as per Guideline
EMR
EMT
AEMT
Paramedic
Medical Control

Spinal Trauma

The Connecticut Department of Public Health and the physician EMS medical directors of the Connecticut EMS Medical Advisory Committee have approved the following guideline. This guideline represents a significant change in practice for EMS providers. It reflects our intention to ensure EMS standards in Connecticut remain consistent with the best emergency medicine standards. Services should consult with their EMS sponsor hospital regarding implementation of and training in the use of this guideline. Resources are available on the Education and Training page of the CT OEMS website at: http://www.ct.gov/dph/EMS

Special thanks to the New Hampshire Bureau of EMS for permission to use portions of their content and formatting.

PURPOSE: This protocol provides guidance regarding the assessment and care of patients who have a possible spinal injury.

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

ASSESSMENT FOR SELECTIVE SPINAL CARE

Patients who have experienced a mechanism of spinal injury require spinal motion restriction (as described further on) and protection of the injury site if they exhibit any of the following:

- Midline spinal pain, spinal deformity or tenderness with palpation;
- Abnormal (i.e. not baseline) neurological function or motor strength in any extremity;
- Numbness or tingling (paresthesia);
- Sensation is not intact and symmetrical (or baseline for patient);
- Cervical flexion, extension and rotation elicits midline spinal pain.

Or if they cannot competently participate in the assessment due to one of the following:

- Altered mental status (e.g., dementia, preexisting brain injury, developmental delay, psychosis, etc.);
- Alcohol or drug intoxication;
- Distracted by significant injuries to self or others;
- Insurmountable communication barriers (e.g. hearing impairment, language, etc.).

Patients without any of the above findings should generally be transported without the use of a cervical collar or other means to restrict spinal motion. Utilize spinal motion restriction only where, in the professional judgment of the provider, the patient is at high risk for spinal injury or displays clinical indications of injury (e.g. midline spinal pain or deformity of the spine).

When possible, the highest level provider on scene should determine whether spinal motion restriction is to be used or discontinued (collar removed, etc.).

When spinal motion restriction has been initiated and a higher level provider arrives, patients should be reassessed for spinal injury (as described in this section) to determine the most appropriate ongoing care.
EMR  EMT  AEMT  Paramedic  Medical Control  July 1, 2015

Spinal Trauma

Protocol Continued From Previous Page

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

CARE FOR PATIENTS WITH POSSIBLE SPINAL INJURY

- Routine Patient Care.
- Maintain manual in-line stabilization during assessment.
- Minimize spinal movement during assessment and extrication.
- Self-extrication by patient is allowable if patient is capable.
- A long backboard, scoop stretcher, vacuum mattress, or other appropriate full length extrication device may be used for extrication if needed.
- Apply adequate padding to prevent tissue ischemia and minimize discomfort.

If patient requires spinal motion restriction:

- Apply a cervical collar.
- For ambulatory patients, allow the patient to sit on the stretcher, and then lie flat. (The "standing take-down" is eliminated).
- Pull sheets, other flexible devices, scoops and scoop-like devices should preferentially be utilized to move non-ambulatory patients when appropriate. Long, rigid spine boards should have only limited utilization.
- Once the patient is moved to the stretcher, remove any hard backboard device.
- Patients should only be transported to the hospital on a rigid vacuum mattress or hard backboard if removal would delay transport of an unstable patient or it is necessary for other treatment priorities.
- Lay the patient flat on the stretcher, secure firmly with all straps, and leave the cervical collar in place. Elevate the back of the stretcher only if necessary to support respiratory function, patient compliance or other significant treatment priority.
- Instruct the patient to avoid moving their head or neck as much as possible.
- Consider the use of SpO2 and EtCO2 to monitor respiratory function.
- For conscious patients who poorly tolerate a rigid cervical collar (e.g., due to anxiety, shortness of breath), the cervical collar may be replaced with a towel roll and/or padding to minimize spinal motion.
- Patients with nausea or vomiting may be placed in a lateral recumbent position maintaining the head in a neutral position using manual stabilization, padding, pillows, and/or the patient's arm. Refer to applicable nausea and vomiting protocol.
- Transfer from ambulance to hospital stretchers and vice-versa should be accomplished while continuing to limit motion of the spine. The use of slide boards, sheet lifts, etc. should be considered.

- Long backboards do not have a role for patients being transported between facilities. If the sending facility has the patient on a long backboard or is asking EMS to use a long backboard for transport, EMS providers should discuss NOT using a long backboard with the sending facility physician before transporting a patient. If the sending physician requires a long backboard be used, it should be padded to minimize patient discomfort.
- Use spinal motion restriction with CAUTION for patients presenting with dyspnea and position appropriately. Spinal motion restriction may limit respiratory function with the greatest effect experienced by geriatric and pediatric patients restricted to a long spine board.
- Combative patients: Avoid methods that provoke increased spinal movement and/or combative.
- Patients with penetrating trauma such as a gunshot or stab wounds should NOT be immobilized on a long spine board. Additional movement will not worsen an already catastrophic spinal injury with neurological deficit. Emphasis should be on airway and breathing management, treatment of shock, and rapid transport to a level 1 or 2 trauma center.
SPINAL MOTION RESTRICTION continued

Spinal Trauma

EMTADVANCED EMT/PARAMEDIC STANDING ORDERS

PEDIATRIC PATIENTS

- For pediatric patients 8 y/o and younger or <60 pounds requiring spinal motion restriction, transport in a pediatric restraint system (as described in the ambulance minimum equipment list). Utilize pediatric restraint systems for older/larger children when appropriate and they fall within the device’s recommended range.
- Apply padding and cervical collar as tolerated to minimize the motion of the child’s spine. Rolled towels may be used for very young children or those who do not tolerate a collar.
- Avoid methods that provoke increased spinal movement.
- In a motor vehicle crash infants and children may remain in their own child safety seat, provided all of the following conditions are met:
  1. The seat has a self-contained harness;
  2. It is a convertible seat with both front and rear belt paths;
  3. Visual inspection, including under movable seat padding, does not reveal cracks or deformation;
  4. Vehicle in which safety seat was installed was capable of being driven from the scene of the crash;
  5. Vehicle door nearest the child safety seat was undamaged;
  6. The airbags (if any) did not deploy;
  7. Provider ensures appropriate assessment of patient posterior.

- If the patient requires significant care (e.g. airway management) that cannot be adequately performed in the car seat or pediatric restraint system, remove the patient and secure him/her directly to the stretcher.

PEARLS:

- As with traumatic brain injury, secondary injury to the spine often arises from increased pressure (e.g. swelling, edema, hemorrhage) or from hypoperfusion or hypoxia (e.g. vascular injury). While the optimal treatment for secondary injury has not been established, providers should protect the injury site and be cognizant of the risk of secondary injury.
- In some circumstances, extrication of a patient using traditional spinal immobilization techniques may result in greater spinal movement or may dangerously delay extrication.
- Studies suggest protecting the injury site from pressure may be as important as reducing spinal movement.
- All patients who have suffered possible spinal trauma should be handled gently and spinal motion should be minimized.
- Caution should be exercised in older patients (e.g. 65 years or older) and in very young patients (e.g. less than 3 years of age), as spinal assessment may be less sensitive discerning spinal fractures in these populations.
- Only remove secure-fitting helmets from patients receiving spinal motion restriction when necessary to provide clinically important patient care (e.g. airway maintenance, ventilation, etc.).
North Central Connecticut Regional Paramedic Guidelines

OB/Gyn Guidelines
ANTEPARTUM HEMORRHAGE (2\textsuperscript{nd} & 3\textsuperscript{rd} Trimester)

- Universal Patient Care Guideline
- DO NOT DELAY – Transport immediately to the hospital
- Oxygen
- Use a wedge to tilt the patient to the left to move the fetus off of the Inferior vena cava if the patient is in the second or third trimester
- IV Normal Saline wide open - titrate SBP >90
- Keep patient warm
  - Elevate lower extremities
  - Follow Shock Guideline
- Establish Medical Control
PREGNANCY INDUCED HYPERTENSION AND SEIZURES
(ECLAMPSIA / TOXEMIA)

Universal Patient Care Guideline

If hypoglycemia or drug overdose induced Status Epilepticus is suspected, treat according to appropriate Guideline.

Lorazepam (Ativan) 0.1mg/kg IVP with a max single dose of 2mg, repeated q 5 minutes to a max total dose of 8 mg

If IV access unavailable:

Midazolam (Versed) 0.1mg/kg to a max single dose of 5 mg IM

Magnesium Sulfate 4 Gm in 20 ml normal saline Slow IVP (over 5 minutes)
Follow with infusion of Magnesium Sulfate @ 1 - 2 Gm/Hour

If seizures recur or do not subside, contact medical control for repeat of above.

These seizures can occur up to four weeks post-partum.

PEARLS:

Eclampsia is preceded by preeclampsia which consists of hypertension, potential altered mental status and diffuse edema. Gentle ALS transport should be considered for these patients.
# EMERGENCY CHILDBIRTH

## Universal Patient Care Guideline

### Oxygen

### Establish IV Normal Saline at KVO rate

### No Crowning or urge to push

#### Transport to OB facility

### Crowning or urge to push

#### Imminent Delivery

#### Prepare for childbirth

- Control delivery with the palm of the hand so the infant does not “explode” out of the vagina. Support the infant's head as it emerges and support perineum with gentle hand pressure.

- Support and encourage the mother to control the urge to push.

- Tear the amniotic membrane, if it is still intact and visible outside the vagina. Check for cord around the neck.

#### Gently suction mouth and nose (with bulb syringe) of infant as soon as head is delivered.

#### IF Meconium is present & the infant has a HR<100, poor respiratory effort or poor muscle tone*

- Intubate and suction prior to stimulating breathing. Ventilate with BVM after suctioning.

- Note the presence or absence of meconium staining.

- As shoulders emerge, guide head and neck slightly downward to deliver anterior shoulder, then the posterior shoulder.

- The rest of the infant should deliver with passive participation. Get a firm hold on the baby.

- Repeat gentle suctioning then proceed to postpartum care of infant and mother.

- Dry and keep infant warm. If possible skin-to-skin contact with the mother while covering the infant with a blanket provides a good warming source.

- Establish date and time of birth and record, do APGAR at 1 and 5 minutes.

*If the infant has a HR >100, strong respiratory effort and good muscle tone, intubation and suctioning is not indicated.

---

**Emergency Childbirth, Page 1 of 1**

Last Updated: June 13, 2008
DELIVERY COMPLICATIONS

**Nuchal Cord**
(cord around baby’s neck)

Universal Patient Care Guideline

Emergency Delivery Guideline

Slip two fingers around the cord and lift over baby’s head.

If unsuccessful: Double clamp cord, cut cord between clamps with sterile scissors (blunt side next to baby, never use a scalpel) allow cord to release from baby’s neck.

Continue with normal delivery guideline.

Contact Medical Control

---

**Prolapsed Cord**
(cord presenting before the baby)

Universal Patient Care Guideline

Elevate mother’s hips in knee-chest position or left side down in Trendelenberg position.

Protect cord from being compressed by placing a sterile gloved hand in vagina and pushing up firmly on the presenting part of the fetus

Palpate cord for pulsation

Keep exposed cord moist and warm.

Keep hand in position and transport immediately.

Contact Medical Control

Do not remove hand until relieved by OB personnel.
Delivery Complications continued

Breech Birth
(legs or buttocks presenting first)

Universal Patient Care Guideline

↓

Emergency Delivery Guideline

↓

Never attempt to pull baby from the vagina by the legs or trunk.

↓

After shoulders are delivered, gently elevate the trunk and legs to aid in delivery of head (if face down)*

↓

Head should deliver in 30 seconds, if not; reach 2 fingers into the vagina to locate the baby’s mouth. Fingers in mouth will flex baby’s head and should assist in spontaneous delivery. If not: Press vaginal wall away from the baby’s mouth to create an airway. If head does not deliver in 2 minutes, keep your hand in position and transport ASAP.

ESTABLISH MEDICAL CONTROL

Extremity Presentation

Universal Patient Care Guideline

↓

Proceed immediately to the hospital

Place in Trendelenberg Position

↓

Establish Medical Control

↓

Do not attempt out of hospital delivery

Encourage mother to perform slow deep breathing
**Universal Patient Care Guideline**

- **Emergency Delivery Guideline**
  - Massage the fundus of the uterus
  
  Placenta should deliver within a few minutes to up to 30 minutes. DO NOT pull on cord to facilitate placental delivery. If delivered bring the placenta to the hospital, do not delay on scene waiting for the placenta to deliver.

  If the perineum is torn and bleeding, apply direct pressure with trauma dressing to outside of vagina only. DO NOT PACK VAGINA. Observe for excessive bleeding

  Titrate IV to maintain SBP >90 mm Hg, up to 3L

  If appropriate, put the infant to breast

**Establish Medical Control**
**Universal Patient Care Guideline**

- Note time and date of delivery.
- Dry the infant immediately and keep warm.
- Continue gentle bulb suctioning of the mouth and nose.
- Stimulate baby by rubbing its back or flicking the soles of its feet, this should be enough to stimulate the baby to begin crying and breathing. *Spontaneous respirations should begin within 30 seconds after stimulation*

#### Yes

- **Spontaneous Breathing?**
  - Yes
    - Place a pediatric face mask approximately 4 inches from the baby’s face and run oxygen at 15 L/min. until color improves. Gentle suctioning as needed.
  - No
    - Obtain 1 minute APGAR score

#### Yes

- Cyanotic?
  - No
    - Obtain 1 minute APGAR score
  - Yes
    - Clamp cord 6” to 8” from infant’s body. Cut cord with sterile scissors (blunt side next to infant) between clamps. Clamping of cord is not critical, and does not need to be done immediately

- Allow mother to hold baby next to her if her condition does not contradict this. Wrap both baby and mother together in blanket to diminish heat loss.

**Establish Medical Control**

- Begin artificial ventilations at 30 - 40 breaths/minute with infant B-V-M. Watch for chest rise.

- Pulse <80?
  - Yes
    - Begin CPR and follow Neonatal Resuscitation Guideline
  - No
    - Obtain 5 minute APGAR score

If there is any bleeding from the cord clamp, reclamp again in close proximity to the “leaking” clamp.

* IF Meconium is present AND the infant has a HR<100, poor respiratory effort or poor muscle tone Intubate and suction prior to stimulating breathing

IF the umbilical cord is not clamped, keep the infant level with mom. This will prevent infant CHF (blood from mom to baby) or infant anemia (blood from baby to mom).
Universal Patient Care Guideline

Post-Partum Care for Infants Guideline

Position infant on his/her back with head down. Check for meconium.

*Suction* mouth and nose with bulb syringe.

Dry infant and keep warm.

Stimulate infant by rubbing his/her back or flicking the soles of the feet. If the infant shows decreased LOC, mottling or cyanosis, and/or presents with a heart rate below 100 beats per minute

Breathing, HR >100

Breathing HR >100 but cyanotic

Apneic or HR <100

Observe

Administer Supplementary *Oxygen*

If after 30 seconds, persistent cyanosis administer positive pressure ventilation

If after 30 seconds, HR <60, administer positive pressure ventilation and chest compressions

If after 30 seconds, HR <60, administer **Epinephrine** 0.01 mg/kg (1:10,000) IV/IO; 0.1 mg/kg (1:1,000) ET

Consider maternal condition including medications - **Naloxone (Narcan)** 0.1 mg/kg

IM/IV/IO/ET IV/IO access, 10-20 ml/kg **Normal saline** bolus

Establish Medical Control

Possible Physician orders: Repeat **Epinephrine**, **Naloxone (Narcan)**

**Dextrose 5%** 5-10 ml/kg over 20 minutes other treatment options per consultation

Obtain blood glucose level

PEARLS:

Current AHA Guidelines no longer recommend routine suctioning of meconium. If **thick meconium with a HR< 100 weak respiratory effort or poor muscle tone**. Ventilate with BVM after suctioning.

Neonatal Resuscitation, Page 1 of 1

Last Updated: June 13, 2008
TRAUMA IN PREGNANCY

Universal Patient Care Guideline

Adult Trauma Management Guideline

Rapidly assess fetal viability - is uterus (fundus) above (viable) or below the umbilicus (non-viable fetus).

Treat mother aggressively for injuries based on mechanism of injury. Follow Trauma Guideline with the following considerations.

Oxygen

Check externally for uterine contractions.

Check externally for vaginal bleeding and amniotic fluid leak (Broken water).

If patient becomes hypotensive while supine, assist patient to left lateral recumbent position (to relieve pressure on the inferior Vena Cava by uterus).

Pearls:

The most common cause of fetal death is maternal death.

Fetus may be in jeopardy while mother’s vital signs appear stable.
North Central Connecticut Regional Paramedic Guidelines

Pediatric Medical Guidelines
Pediatric Patient Assessment, Page 1 of 1

Evaluate Airway

Patent?

No

Follow Pediatric Airway Guideline

No Problem

Evaluate Breathing and Circulation

Problem with Either

BVM with 100% oxygen

Problem with Circulation

Establish IV/IO and administer 20ml/kg Normal Saline
Reassess
May repeat fluid infusion x1

Establish Medical Control

Continue Transport
Reassess as necessary

No Problem

Evaluate Breathing and Circulation

Problem with Either

BVM with 100% oxygen

Problem with Circulation

Establish IV/IO and administer 20ml/kg Normal Saline
Reassess
May repeat fluid infusion x1

Establish Medical Control

Pediatric Patient Assessment, Page 1 of 1

Last Updated: June 13, 2008
PEDIATRIC AIRWAY ALGORITHM

Pediatric Assessment Guideline

Clear, no assistance needed

Assess Airway

Maintainable

Supplemental Oxygen

Position Head, Suction, Supplemental Oxygen, BVM, OPA or NPA

Transport and reassess Pulse Oximetry

Un-maintainable

Supplemental Oxygen, BVM, OPA or NPA

Spontaneous respirations with gag reflex? Short transport time?

Basic Airway Maneuvers (BVM, OPA or NPA)

Apneic with no gag reflex?

Consider managing airway with BLS techniques

Airway Obstruction?

BVM or consider ET or LMA

Heimlich Maneuver

Age <8 years: Needle Cricothyrotomy

Age >8 years: Surgical Cricothyrotomy

Direct Laryngoscopy

Removal with Magill Forceps

Establish Medical Control

Pediatric Airway Guideline, Page 1 of 1

Last Updated: June 13, 2008
**PEDIATRIC RESPIRATORY DISTRESS**

**Pediatric Assessment Guideline**

Determine the appropriate weight of the patient
If more than 50 kg (110 pounds), treat as an adult.
(Use pediatric resuscitation tape if weight unavailable)

Ensure patency of airway
Assess respiratory rate and effort

If airway is obstructed follow **Obstructed Airway Guideline**

Assess for sign of respiratory distress
Use of accessory muscles, stridor, retractions, nasal flaring or noisy respirations

Administer oxygen in the least irritating manner possible

Allow the children to assume the most comfortable position for themselves
as practical and safe during transport

See Guidelines for **Croup/Epiglottitis** or **Pediatric Asthma** if indicated
If patient requires ventilatory assistance, remember:

DO NOT OVER EXTEND NECK

Ventilate with a B-V-M first

Follow **Pediatric Airway Guideline**

Early transport of the pediatric patient is critical

**Establish Medical Control**
**Pediatric Asthma, Page 1 of 2**

**Severe Distress?** (Marked accessory muscle use, hypoxia, hypercapnia, etc.)

- **Yes**
  - Consider BVM Assist
  - Administer **Ipratropium Bromide** 0.5 mg nebulized concurrently with **Albuterol (Ventolin, Proventil)** (i.e. Combivent® / Duoneb®). Do not repeat Ipratropium.
  - Establish IV **Normal saline** Normal Saline
  - Administer Bolus 20 mL/kg
  - If minimal tidal volume, consider: **Epinephrine (1:1000)** 0.01 mg/kg IM. May repeat once in 5 minutes if needed.
  - Repeat nebulized **Albuterol (Ventolin, Proventil)**
  - If exacerbation is greater than 2 hours in duration: **Methylprednisolone (Solu-Medrol)** 2 mg/kg IV over 15 minutes
  - Monitor Patient Condition

- **No**
  - Repeat nebulized **Albuterol**
  - Monitor Patient Condition
Pearls:

Endotracheal Intubation should be avoided if possible.
Do not routinely initiate IV access for pediatric asthma.
SUSPECTED CROUP or EPIGLOTTITIS

Pediatric Patient Assessment Guideline

Pediatric Respiratory Distress Guideline

Allow child to achieve position of comfort

↓

Yes ← Respiratory Arrest → No

↓

Attempt ventilation with Pediatric B-V-M

If ineffective, may use adult B-V-M

Transport

Establish Medical Control

Possible Physician orders:

Nebulized Epinephrine (5mg of 1:1000) in 2.5-3ml NS.

or

Racepinephrine 2.25% (Vaponephrine) in 0.5 ml mixed with 2-3 mL of Normal Saline, Nebulized if the patient has respiratory distress or stridor at rest.

* If the patient has a complicated or cardiac hx contact medical control before administering epinephrine

If still ineffective, endotracheal intubation may be indicated

NOTE: In an unconscious patient, if there is strong suspicion for epiglottitis and if the patient is unable to be ventilated with a B-V-M and if an enlarged epiglottis is visualized, ONE attempt at intubation is allowed if the airway is able to be visualized. Consider using a smaller size tube than you normally would.

↓

If unsuccessful:

Needle Cricothyrotomy if under 8 years

Surgical Cricothyrotomy if over 8 years

Normal Saline nebulizer 5ml at 6L/min O₂ to provide humidified oxygen (no medications in nebulizer)

Establish Medical Control

Establish Medical Control

Croup/Epiglottitis, Page 1 of 2

Last Updated: June 25, 2012
SUSPECTED CROUP or EPIGLOTTITIS continued

Pearls:

Obtain history and assess respiratory status to include:

- Presence of stridor
- Respiratory rate and effort
- Drooling or mouth breathing
- Degree of cyanosis
- Increased skin temperature
- **DO NOT LOOK IN THE MOUTH**
- **IMPORTANT KEEP PATIENT CALM AND UPRIGHT**
- **DO NOT ATTEMPT TO ESTABLISH AN IV**
**PEDIATRIC OBSTRUCTED AIRWAY**

**Partial Obstruction**
Patient can breathe, cough, cry or speak

**Complete Obstruction**
Patient is unconscious, or unable to ventilate, or cyanotic with no air exchange

- Oxygen 100% by face mask held adjacent to face

- Transport

**If patient is conscious, but totally obstructed perform BLS airway clearing maneuvers appropriate to age**

- Open airway, attempt direct visualization with laryngoscope, and attempt removal of foreign body using Magill forceps as needed

- If unsuccessful continuing BLS airway clearing maneuvers, trying to ventilate with high pressure.

- If unsuccessful with above airway maneuvers and child is over the age of 8 years consider surgical cricothyrotomy. If child is under the age of 8 years, consider needle cricothyrotomy. Needle size is dependent upon the age/size of the child.

**Establish Medical Control**

---

**NOTE:** In an unconscious patient, if there is a strong suspicion for epiglottitis and if the patient is unable to be ventilated with a B-V-M and if an enlarged epiglottis is visualized, ONE attempt at intubation is allowed if the airway is able to be visualized. Consider using a smaller size tube than you normally would.
**PAIN MANAGEMENT (PEDIATRIC)**

<table>
<thead>
<tr>
<th>Pediatric Patient Assessment Guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Include Pain Scales in assessment, if pain greater than 4)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IV Access</th>
</tr>
</thead>
</table>

**Significant Head Trauma?**

- or
- GCS < 13?
- or
- SBP < age appropriate according to reference guide?

**NO**

<table>
<thead>
<tr>
<th>Contact Medical Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible Physician Orders:</td>
</tr>
<tr>
<td>Morphine Sulfate or Fentanyl</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Any other pediatric patient presenting with a persistent complaint of moderate to severe pain (rating 4 or greater on pain scale) including but not limited to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant Extremity Injuries</td>
</tr>
<tr>
<td>Burn Patients</td>
</tr>
<tr>
<td>Sickle Cell Crisis</td>
</tr>
<tr>
<td>Crush Injury Patients</td>
</tr>
<tr>
<td>Back and Spinal Pain</td>
</tr>
</tbody>
</table>

**Ask Patient “Would you like some pain medicine?” If answer “YES”**

Administer **0.1 mg/kg of Morphine Sulfate up to 10 mg** Slow IV over at least 5 minutes.

If IV access is unavailable, administer **0.1mg/kg of Morphine Sulfate** IM or SC.

**Fentanyl 1mcg/kg** IV over 1-2 minutes or IM, or IN (to maximum single dose of 100mcg) Divide the dose into two equal halves administered five minutes apart. Withhold the second half of the dose if it is no longer indicated.

**Ask Patient “Would you like some pain medicine?” If answer “YES”**

If ten (10) Minutes after completion of the last morphine dose, the patient still reports moderate to severe pain (4 or greater on 1-10 scale) and the Systolic BP is appropriate, administer:

**0.05mg/kg of Morphine Sulfate up to 5 mg** Slow IV over 4-5 minutes to a Maximum Single Dose of 5 mg

If ten (10) Minutes after completion of last Fentanyl dose, and patient still reports moderate to severe pain, administer: **Fentanyl 1mcg/kg** (to maximum single dose of 100mcg) Divide the dose into two equal halves administered five minutes apart. Withhold the second half of the dose if it is no longer indicated.

**Ask Patient “Would you like some pain medicine?” If answer “YES”**

If ten (10) Minutes after completion of the last morphine dose, the patient still reports moderate to severe pain (4 or greater on 1-10 scale) and the Systolic BP is appropriate, administer:

**0.05mg/kg of Morphine Sulfate up to 5 mg** Slow IV over 4-5 minutes to a Maximum Single Dose of 5 mg

*No patient should receive more than 0.2mg/kg or 20mg total of Morphine on standing orders* or

If ten (10) Minutes after completion of last Fentanyl dose, and patient still reports moderate to severe pain, administer: **Fentanyl 1mcg/kg** (to maximum single dose of 100mcg) Divide the dose into two equal halves administered five minutes apart. Withhold the second half of the dose if it is no longer indicated.

*To a maximum grand total dose of 3mcg/kg or 300mcg*
Contact Medical Control
Possible Physician Orders:
Additional Morphine Sulfate, or Fentanyl

Pearls:

- Maximize the use of non-pharmaceutical pain management techniques (e.g. positioning, padding and splinting, reassurance, guided imagery, heat/cold therapy, etc.) whenever possible
- All patients receiving prehospital narcotic analgesics or benzodiazepines should have continuous pulse oximetry monitoring, ECG and non-invasive quantitative waveform capnography (if available).
- If possible, dilute 10 mg morphine in at least 10 mL NS or D5W to facilitate slow administration.
- **Stop morphine administration** if significant adverse effects (severe nausea, vomiting, hypotension, respiratory depression) or sedation (decreased mental status) develop.
- Respiratory depression should be treated with oxygen and ventilatory support if necessary.
- Attempt verbal and tactile stimulation to reverse respiratory depression prior to considering Naloxone (Narcan) administration.
- If necessary, administer the smallest possible dose of Naloxone (Narcan) to maintain adequate respirations. Dilute 0.4 mg in 10cc 0.9% NS syringe and slowly titrate to effect.
- Document pain level before and after morphine or fentanyl administration:
  - <3 years old – Behavioral tool or FACES Scale
  - 3-7 years old – FACES Scale or visual analog scale
  - 8 – 13 years old – Visual Analog Scale
- Pediatric Systolic BP should be approximately 2 x Age in Years +70
- Fentanyl maybe given intranasally under the following dosing regimen:
  Administer Fentanyl IN, initial dose 1.5 mcg/kg (100 mcg max single dose), may administer a second dose 1.5mcg/kg (100 mcg max single dose) if needed after 10 minutes, for a total maximum dose of 3 mcg/kg or 200 mcg. **Administer half a single dose in each nostril**

Pediatric Pain Management, Page 2 of 2

Last Updated: October 27, 2011
PEDIATRIC PAIN ASSESSMENT (PEDIATRIC)

Purpose:

To identify and facilitate appropriate management of painful conditions in the prehospital setting.

Guiding Principles:

Pain is a medical condition and patients possess a right to have their pain treated.

All patients should be assessed for the presence of pain which should then be managed appropriately.

Procedure:

The EMS provider will evaluate all conscious pediatric patients (regardless of presenting complaint) for the presence and severity of pain once immediate life threats have been addressed.

This assessment will be repeated after any pain management intervention, change in apparent pain level or at least every 15 minutes. This evaluation will consist of, at a minimum, either a verbal numeric score or a visual analog score. If possible, also use the verbal score. Pain scores must be documented on the patient care report.

Determine the ability of the child to verbally express themselves and choose an appropriate pain scale. The following are general guidelines:

<3 years old – Behavioral tool or FACES Scale
3-7 years old – FACES Scale or visual analog scale
8 – 13 years old – Visual Analog Scale
**Behavioral Tool** (Add each category to calculate pain score 0-10)

<table>
<thead>
<tr>
<th>Category</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face</td>
<td>No particular expression Or smile</td>
<td>Occasional grimace or frown, withdrawn, disinterested</td>
<td>Frequent to constant frown, clenched jaw, quivering chin</td>
</tr>
<tr>
<td>Legs</td>
<td>Normal or relaxed position</td>
<td>Uneasy, restless, tense</td>
<td>Kicking or legs drawn up</td>
</tr>
<tr>
<td>Activity</td>
<td>Lying quietly, normal position, moves easily</td>
<td>Squirming, tense, shifting back and forth</td>
<td>Arched, rigid or jerking</td>
</tr>
<tr>
<td>Cry</td>
<td>No cry, (awake or asleep)</td>
<td>Moans or whimpers, occasional complaint</td>
<td>Cries steadily, screams, sobs, frequent complaints</td>
</tr>
<tr>
<td>Consolability</td>
<td>Content, relaxed</td>
<td>Reassured by “talking to, hugging, distractible</td>
<td>Difficult to console or comfort</td>
</tr>
</tbody>
</table>

**Wong Baker FACES Pain Rating Scale (Modified)**

Explain to the child that each face is for a person who feels happy because he has no pain or sad because he has some pain, or a lot of pain. Ask the child to choose the face that best describes how he/she is feeling.

Face 0 is very happy because he doesn’t hurt at all
Face 2 hurts just a little bit
Face 4 hurts a little more
Face 6 hurts even more
Face 8 hurts a whole lot
Face 10 hurts as much as you can imagine, although you don’t have to be crying to feel this bad.
**Visual Analog Scale**

Ask the patient to mark or point to the severity of their pain on a scale of zero to ten with zero being no pain and ten being unbearable pain, the worst pain they have ever felt.

![Visual Analog Scale Diagram]

**Verbal Numeric Pain Score**

Ask the patient to rate the severity of their pain on a scale of zero to ten with zero being no pain and ten being unbearable, the worst pain ever.

**Verbal Pain Score**

Ask the patient to assign one of the following adjectives to rate their pain:

- NONE
- MILD
- MODERATE
- SEVERE
- UNBEARABLE
**Definition:** A limited reaction without signs and symptoms of [Anaphylaxis](#)

- Minor or moderate skin manifestations
- Stable hemodynamics without respiratory impairment
- Blood pressure appropriate for age by formula or length based tape
- Signs of adequate perfusion are present (appropriate mental status, skin color, temp, capillary refill, etc.)

---

**Pediatric Patient Assessment Guideline**

**Universal Patient Care Guideline**

Avoid IV access and parenteral medication if possible to reduce patient discomfort and stress.

**Oxygen** as needed and tolerated

**Diphenhydramine (Benadryl)**

Elixir, tablet or dissolving strip 1 mg/kg orally.

Maximum dose 50 mg.

**Monitor Patient Condition.**

If respiratory impairment or hemodynamic instability develop or patient condition worsens, move to anaphylaxis guideline.

---

Consider administration of oral Diphenhydramine (Diphenhydramine (Benadryl)) and careful monitoring in the patient that receives an Epi-Pen prior to EMS arrival (for signs and symptoms (s/sx) of an allergic reaction) but then presents to EMS with no s/sx of a reaction and/or with an acuity level consistent with this guideline.
PEDIATRIC ANAPHYLAXIS

Definition/Indications:
- Hypotension or respiratory compromise with known allergen exposure
  Or
- Acute onset of symptoms and 2 or more of the following:
  - Respiratory compromise (dyspnea, wheeze, stridor)
  - Angioedema or facial/lip/tongue swelling
  - Widespread hives, itching, swelling
  - Persistent gastrointestinal involvement (vomiting, diarrhea, abdominal pain)
  - Altered mental status, syncope, cyanosis, delayed capillary refill, or decreased level of consciousness associated with known/suspected allergenic exposure
  - Signs of shock

Pediatric Assessment Guideline
↓
Oxygen and Pediatric Airway Guideline
↓

Paramedic
Epinephrine (1:1,000) 0.01 mg/kg IM via syringe or Epi-Pen (over 30kg) or Epi-Pen Jr. (under 30kg). May repeat up to every 5 minutes as needed.

EMT, AEMT
Administer Epi-Pen Jr. if under 30kg, Standard Epi-Pen if over 30kg
May repeat once if still indicated after 5 minutes

Establish IV access (IO if needed for Paramedic)
Fluid Bolus 20ml/kg of Normal Saline or Lactated Ringers
↓
If bronchospasm, administer Albuterol (Ventolin, Proventil) nebulized treatment (5 mg)
Diphenhydramine (Benadryl) 1mg/kg IV/IO push (over one minute) IM if no IV access. Maximum dose 50 mg.
If above treatment does not improve patient status:
Epinephrine (1:10,000) 0.01 mg/kg (maximum dose of 0.3mg) slow IV/IO push
Methylprednisolone (Solu-Medrol) 2mg/kg infusion over 15 minutes

Establish medical Control
Possible Physician orders:
Repeat Epinephrine IM or IV doses q 5 minutes
Epinephrine infusion 0.1 to 0.3 mcg/kg/min increasing to 1.0 mcg/kg/min as necessary
Fluid Bolus 20ml/kg of Normal Saline or Lactated Ringers

Reminder: Cardiac monitor is indicated for all patients receiving epinephrine.
Pediatric Patient Care Guideline

- Wear N95 mask if highly infectious agent suspected or bioterrorism related event
- Obtain temperature if available (Temporal artery scan preferred)
- Passive cooling without inducing shivering

Temperature 101.5°F (38.5°C) or greater

Or

Patient believed to be febrile and temperature is unavailable or unable to obtain.

Patient >6 months old?

Patient has received acetaminophen (Tylenol) within 4 hours?

No

Administer:

Acetaminophen (Tylenol) 15 mg/kg PO

Yes

Patient has received less than 15 mg/kg acetaminophen (Tylenol) within last 4 hours?

Yes

Consider administering a “make-up” dose to bring the total dose of acetaminophen (Tylenol) up to 15 mg/kg PO

No

Continued Reassessment Contact Medical Control

Pearls:

- This Guideline is NOT to be used for patients suffering from environmental hyperthermia
- If the patient is vomiting, suppositories are more appropriate and oral acetaminophen (Tylenol) should be withheld.
- Administer once the patient is in the ambulance to avoid patient/parent refusal after treatment.
- Concentrated infant drops (80 mg per 0.8 mL) are recommended and may be dispensed using a needless syringe.
- Do not administer acetaminophen (Tylenol) if the patient has received greater than 15 mg/kg dose
PEDIATRIC ALTERED MENTAL STATUS/HYPOGLYCEMIA/COMA

Pediatric Assessment Guideline

Pediatric Airway Guideline

Consider etiology (trauma, hypoglycemia, overdose, seizure, hypoxemia, etc.)
Treat according to appropriate Guideline
Determine GCS

Check Blood Glucose Level
In the following circumstances:
- Glucose < 70
- Blood Glucose not available and patient is known diabetic or
- History consistent with hypoglycemia
- Intact Gag Reflex

Administer Oral Glucose

Establish IV access

Administer Dextrose 10% 0.5 Gm/kg IV push
If IV access cannot be readily established
Administer Glucagon 0.02 mg/kg up to 1mg IM

If a narcotic overdose is suspected or unknown and respiratory insufficiency is present:
Administer Naloxone (Narcan) 0.1 mg/kg IV or IM or IN. May repeat to a maximum dose of 2.0 mg.

Establish Medical Control
Possible Physician orders:
If no IV access, establish IO
Repeat D10W
Repeat Naloxone (Narcan)

Pearl:
- For children less than a week old, see drug guide for dose of dextrose and contact medical control
- D10 is the preferred solution for hypoglycemic emergency. D10 can be given either as an open drip or drawn up in a large syringe and given as IV pushes. If D10 unavailable, D25 may be used or D50 diluted.

Pediatric Altered Mental Status, Page 1 of 1

Last Updated: July 1, 2015
**PEDIATRIC SEIZURES/STATUS EPILEPTICUS**

**Pediatric Patient Assessment Guideline**

If post-trauma and age <9 years spinal motion restriction as appropriate while maintaining airway

Closely assess respiratory activity. Use blow-by oxygen. Assist ventilations with B-V-M and 100% O₂ as necessary. Suction as necessary.

**IV Access**

**Check Blood Glucose Level**

If glucose level <70 administer:

**Dextrose 10% 0.5 Gm/kg**

**Cardiac monitor**

HAS THE SEIZURE PERSISTED BEYOND 10 MINUTES (from onset)?

**Yes**

Administer:

- **Lorazepam (Ativan)** 0.1 mg/kg (up to 4 mg) SIVP (or)
- **Diazepam (Valium)** 0.25 mg/kg (up to 3 mg) SIVP (or)

If unable to establish IV access administer:

- **Midazolam (Versed)** 0.1 mg/kg (up to 10 mg) IM or 0.2mg/kg (up to 10mg) IN

**Lorazepam (Ativan), Diazepam (Valium) or Midazolam (Versed)** may be repeated once as needed

**Establish Medical Control**

Possible Physician orders:

Administer:

- **Lorazepam (Ativan)** 0.1 mg/kg (up to 4 mg) SIVP (or)
- **Diazepam (Valium)** 0.25 mg/kg (up to 3 mg) SIVP (or)

If unable to establish IV access administer:

- **Midazolam (Versed)** 0.1 mg/kg (up to 10 mg) IM or 0.2mg/kg (up to 10mg) IN

**Lorazepam (Ativan), Diazepam (Valium) or Midazolam (Versed)** may be repeated once as needed

**Repeat Dextrose 10%**

**No**

Establish Medical Control

Possible Physician orders:

Repeat administration of anti-seizure medications

Repeat **Dextrose 10%**
PEARLS:

Initiate treatment based on history and clinical presentation. It is essential to make the distinction between focal motor, general motor seizures, and Status Epilepticus.

Most seizures do not require emergent intervention.

Perform an initial assessment. Attempt to determine the etiology i.e. whether the patient has a history of diabetes, seizure disorder, narcotic use, head trauma, poisoning or fever.

NOTE: If the seizure is controlled by one of the benzodiazepines, continuous assessment of respiratory status is critical as respiratory arrest can occur with use of these medications.
Conscious Oral Ingestion?

- Yes: Establish and maintain airway, Support ventilations as needed
- No: Inhalation or Topical Exposure?

Inhalation or Topical Exposure?

- Yes: Evaluate the scene for safety consideration as a Hazmat Incident
- No: Routine Patient Care Guideline

Routine Patient Care Guideline

- If indicated: Establish Medical Control
- If indicated: Establish IV of Normal Saline or Lactated Ringers
- Fluid bolus if hypotensive
- Cardiac Monitor
- Treat symptomatic rhythm according to Guideline

Establish Medical Control

- Possible Physician orders: Activated Charcoal*
- Management specific for agent exposure, Additional Dextrose 10%

Important: NEVER INDUCE VOMITING

If a Narcotic Overdose is suspected see Pediatric altered mental state-opiate Guideline

If patient remains unresponsive:
Rapid glucose determination
Administer Dextrose 10% 0.5 G/kg IV for glucose <70

Establish Medical Control

*An aqueous solution rather than a solution that includes Sorbitol should be used for pediatric patients

Pediatric OD/Poisoning, Page 1 of 1

Last Updated: July 1, 2015
PEDIATRIC BRADYCARDIA

Pediatric Patient Assessment Guideline

↓

Secure airway, ventilation, and administer 100% oxygen

↓

No

Symptomatic / Severe Cardiorespiratory Compromise Poor perfusion Hypotension Respiratory Difficulty

↓

Yes

Begin chest compression if, despite oxygenation and ventilation, heart rate <60 with poor perfusion in an infant / child

↓

Establish Medical Control

Possible Physician orders:

Pacing, other modalities

↓

Observe Support ABCs Transport

↓

Begin chest compression if, despite oxygenation and ventilation, heart rate <60 with poor perfusion in an infant / child

↓

Administer Epinephrine

IV/IO 0.01 mg/kg (1:10,000: 0.1mL/kg)

ET 0.1 mg/kg (1:1000: 0.1 mL/kg)

If Increased vagal tone, administer Atropine

1st dose 0.02 mg/kg, may repeat.

(minimum dose of 0.1 mg, maximum Total dose for child: 1 mg)

Consider Cardiac Pacing

↓

Pearls:

Most pediatric bradycardias are due to inadequate tissue oxygenation secondary to ventilation. Supporting the airway may resolve the bradycardia.
PEDIATRIC TACHYCARDIA
Rapid heart rate with adequate perfusion

Pediatric Patient Assessment Guideline

Oxygen

Obtain 12 lead EKG if possible

QRS duration Normal for age ≤ 0.09 sec

Evaluate QRS Duration

QRS duration wide for age > 0.09 sec

Evaluate rhythm

Probable SVT

Amiodarone (Cordorone) 5mg/kg IV over 20 – 60 min or Procainamide (Pronestyl) 15 mg/kg IV over 30 – 60 minutes Or Adenosine (Adenocard) 0.1 mg/kg IV (max first dose of 6 mg) if unclear of width of QRS

Probable sinus tachycardia

Establish IV access

Identify and treat possible causes:
Fever, shock, hypoxia, hypovolemia, drug ingestion, pneumothorax

Consider vagal maneuvers

Adenosine (Adenocard) 0.1 mg/kg IV (max first dose of 6 mg)
May double (0.2 mg/kg) and repeat dose once (max second dose of 12 mg)

Yes

Establish Medical Control

Termination

No

Establish Medical Control

May consider cardioversion after sedation at 0.5 – 1 j/kg (may increase to 2 j/kg if ineffective) Sedate before cardioversion

Pediatric Tachycardia, Page 1 of 2

Last Updated: October 27, 2011
Pediatric Tachycardia

Rapid heart rate with poor perfusion

**Pediatric Patient Assessment Guideline**

**Oxygen**

Obtain 12 lead EKG if possible

QRS duration
Normal for age ≤ 0.09 sec

**Evaluate rhythm**

**Evaluate QRS Duration**

QRS duration wide for age > 0.09 sec

**Probable SVT**

If cardiopulmonary compromise, attempt **synchronized cardioversion** with 0.5 to 1 j/kg (may increase to 2 j/kg if needed), if no compromise then continue to

**Probable sinus tachycardia**

Identify and treat possible causes:
Fever, shock, hypoxia, hypovolemia, drug ingestion, pneumothorax

Consider **vagal maneuvers**

**Adenosine (Adenocard)** 0.1 mg/kg IV (max first dose of 6 mg)

May double and repeat dose once (max second dose of 12 mg) or

Attempt **synchronized cardioversion** with 0.5 to 1 j/kg (may increase to 2 j/kg if needed)

**Yes**

If drug therapy successful start infusion drip

**Establish Medical Control**

**Termination**

**No**

Establish Medical Control

---

Pediatric Tachycardia, Page 2 of 2

Last Updated: October 27, 2011
**PEDIATRIC PULSELESS ARREST**

**Pediatric Patient Assessment Guideline**

Determine pulselessness and begin CPR
(30 chest compressions to 2 breaths if alone)
(15 chest compressions to 2 breath if more than 1 rescuer)
Confirm cardiac rhythm in more than one lead

**Identify and treat causes:**
Severe hypoxemia, Severe acidosis, Severe hypovolemia
Tension Pneumothorax, Cardiac Tamponade
Profound hypothermia

Request Paramedic Intercept
Follow Pediatric Airway Guideline
(Ventilate with BVM and 100% Oxygen) Utilize Semi-Automatic (or Automatic) External Defibrillator with Pediatric size defibrillation patches.*
If “Shock” advised administer one shock in accordance to specific equipment.
Attach Monitor

**VF/Pulseless VT**

- Defibrillate: 2 j/kg
- Defib w AED
- Resume CPR x 2 minutes
- IV/IO Access
- Defibrillate 4 j/kg
- Defib w AED
- Resume CPR

**Asystole / PEA**

- Continue CPR
- Re-Assess w AED every 2 min
- IV/IO Access
- Epinephrine
  - IV/IO 0.01 mg/kg, (1:10,000: 0.1 mL/kg)
  - ET 0.1 mg/kg, (1:1000: 0.1 mL/kg)
  - Repeat every 3 – 5 minutes

**Epinephrine**

- Continue CPR (5 cycles/2 min)
- Defibrillate >4 j/kg and <10j/kg
- Defib w AED

**Amiodarone (Cordorone)** 5 mg/kg IV/IO
- May be repeated x 2 up to 15mg/kg

Establish Medical Control

---

EMR  | EMT  | AEMT  | Paramedic  | Medical Control  | July 1, 2015
North Central Connecticut
Regional
Paramedic Guidelines

Pediatric
Trauma Guidelines
<13 Years
PEDIATRIC TRAUMA TRIAGE

**Pediatric Patient Assessment Guideline**

Does the patient meet Level I or II trauma center criteria in accordance with State of Connecticut trauma regulations (19a-177-5a)?

- **Yes**
  - GCS ≤ 12 or SBP < 90 (hypotensive for age) or RR < 10 or > 29
  - GSW to chest, head, neck, abdomen, or groin
  - Third degree burns > 15% TBSA, or third degree burns of face or with airway involvement
  - Evidence of spinal cord injury or amputation, other than digits or two or more obvious proximal long bone fractures

- **No**
  - Transport to the closest appropriate Level I or II Trauma center.

Does the patient meet any of the following Criteria requiring medical control in determining patient destination?

- **Yes**
  - Falls > 20 feet or 3 times the patient’s height, High Speed impact, Ejection of patient from vehicle, Death of same car occupant, Ped struck by car at > 20 MPH, Rollover MVC, Age<5 Penetrating injury to thorax, abdomen neck, or groin other than GSW

- **No**
  - Follow normal operating procedures for determining medical destination

If the patient is less than 13 years of age
Transport to a Level I or Level II trauma facility
With pediatric resources including a pediatric ICU.

If transport to an appropriate trauma center is Determined to be >20 minutes, contact your Medical control for direction

Utilize your department’s preauthorized Guideline or request medical direction in determining most appropriate patient destination

If the patient’s central pulses cannot be palpated, Airway cannot be managed, or bleeding is uncontrollable transport to nearest hospital.
**PEDIATRIC BURN PATIENT**

### Pediatric Patient Assessment Guideline

- **Oxygen**
  - Establish an IV **Lactated Ringers** (in area not affected by burn if possible).

- **Type of Burn**
  - Assess percentage of Total Body Surface Area Burned

#### Thermal Burns

- Cover burns with clean, dry dressing. If the burns are less than 10% and are superficial or partial thickness you can moisten towels or sheets with sterile normal saline for comfort. Otherwise use dry sterile dressings.

#### Chemical Burns

- Consider any chemical burn situation as a Hazmat situation. If potential Hazmat situation exists, notify receiving hospital ASAP.
  - Identify the chemical if possible
  - Remove affected clothing & jewelry (if not already done)
  - Brush off dry powder. Flush with copious amounts of water or saline unless contraindicated. Irrigate burns to the eyes with a minimum of 1 liter of **Lactated Ringers** or Normal Saline. Alkaline burns should receive continuous irrigation throughout transport. Consider the **Morgan Lens** for eye irrigation if older than 6, (see right).

#### Ophthalmic Burns

- Immediate and continuous flushing of the affected eye is performed using **Lactated Ringers** or Normal Saline. If contact lenses are known to be in the patient’s eyes, an attempt should be made to remove them and continue flushing.

#### Electrical Burns

- Suspect spinal injury secondary to tetanic muscle contraction – Spinal Motion Restriction. Assess for entrance and exit wounds.

- **IV Normal Saline**

- **Cardiac Monitor**
  - Treat any cardiac rhythm disturbances per guideline

- **Control Pain**
  - Refer to **Pediatric Pain Control Guideline**

### Establish Medical Control

- Possible Physician Orders:
  - Morphine Sulfate IVP
  - Additional MS, Intubation.

- **Control Pain**
  - Refer to **Pediatric Pain Control Guideline**

### Establish Medical Control

- Possible Physician Orders:
  - Additional MS, Intubation.

- **Control Pain**
  - Refer to **Pediatric Pain Control Guideline**

- **Establish Medical Control**
  - Possible Physician Orders:
    - Morphine Sulfate IVP
  - Cardiac Monitor
    - Treat any cardiac rhythm disturbances per guideline
  - Control Pain
    - Refer to **Pediatric Pain Control Guideline**

---

Pediatric Burns, Page 1 of 2

Last Updated: June 13, 2008
Pearls:

The approach to the pediatric burn patient should be similar in your approach to any burn patient, assuring your safety, the patient’s safety, stopping the burning process, and airway management all remain paramount.

These Guidelines will deal with specific fluid resuscitation measures and special considerations.

Please refer to the appendix for the “Pediatric Rule of Nines.” Please refer to the Adult Trauma - Burn section of these Guidelines for your “systems” approach to patient care.

The anatomical map of the pediatric patient changes with age, if in doubt as to the Body Surface Area involved in the burn see the “Rule of Nines.”

Be suspicious for burn patterns that may indicate child abuse, i.e. “stocking” or “glove” pattern burns.

Ophthalmic Chemical Burns

The Morgan Lens may be utilized in children >6yrs who are cooperative. Care must be taken to prevent any child who has had topical ophthalmic anesthesia from rubbing their eye - additional injury may occur since the pain receptors have been blocked.
North Central Connecticut Regional Paramedic Procedures
12-LEAD ECG

**When to obtain:** On patient contact (In conjunction with initial set of vitals).

**Indications:** Any patient suspected of acute coronary syndrome, including (but not limited to) any of the following:

1. Chest pain, pressure or discomfort
2. Radiating pain to neck or left arm. Also right arm, shoulder or back
3. Dyspnea
4. CHF
5. Cardiac Arrhythmias
6. Syncope/near syncope
7. Profound weakness
8. Epigastric discomfort
9. Hyperglycemia in diabetic patients
10. Sweating incongruent with environment
11. Nausea, vomiting
12. Previous cardiac history or other cardiac factors
13. Presence of anginal equivalents
14. Overdoses
15. Altered Mental Status
16. Before and after any rhythm conversion including PSVT and rapid afib

**In patients with suspected Acute Coronary Syndrome, a 12-Lead ECG should ideally be done on first patient contact, during transport and on arrival at the ED. ECG results should be transmitted and medical control notified.**

If 12-lead reveals possible STEMI, transmit ECG and inform Medical Control **Immediately** so the hospital will be prepared for your patient. **DO NOT WAIT UNTIL LATE IN YOUR TRANSPORT TO CALL.** Early notification saves lives!

12-leads should only be performed by paramedics who have taken an approved course and been evaluated for competency by medical control or by EMTs as part of a BLS 12-Lead program approved by the service’s sponsor hospital.

A normal 12-Lead ECG does not rule out the possibility of ischemic cardiac disease and must not be used to screen patients.
**12 LEAD ECG (continued)**

**Technique:**

1. Remove patient clothing above waist. Use a gown or sheet to preserve patient modesty
2. Apply limb leads (to the shoulders)
3. Print rhythm strip
4. Apply precordial leads
   - V1 just to right of sternum @ 4th intercostal space (ICS)
   - V2 just to left of sternum @ 4th ICS
   - V4 @ left midclavicular line, 5th ICS
   - V3 between V2 and V4
   - V5 @ left anterior axillary line – same level as V4
   - V6 @ left mid-axillary line – same level as V4
5. Place patient in position of comfort (supine preferred).
6. Verify that all leads are securely attached
7. Acquire 12-lead
8. Prepare to repeat 12-lead at 10 minute intervals or on change in condition
FAST (Incorporates Cincinnati Scale)

F  Face Drooping – Does one side of the face droop or is it numb? Ask the person to smile. Is the person's smile uneven?

A  Arm Weakness – Is one arm weak or numb? Ask the person to raise both arms. Does one arm drift downward?

S  Speech Difficulty – Is speech slurred? Is the person unable to speak or hard to understand? Ask the person to repeat a simple sentence, like "The sky is blue." Is the sentence repeated correctly?

T  Time - If someone shows any of these symptoms, even if the symptoms go away, Time is Critical. Record time when the first symptoms appeared.

Cincinnati Scale

Sign/Symptom: Facial Droop

How Tested: Have patient show their teeth or smile.

Normal: Both sides of the face move equally.

Abnormal: One side of the face does not move as well as the other.

Sign/Symptom: Pronator Drift/Arm Weakness

How Tested: The patient closes their eyes and extends both arms straight out, palms up, for 10 seconds.

Normal: Both arms move the same, or both do not move at all.

Abnormal: One arm either does not move, or one-arm drifts downward (pronator drift) compared to the other.

Sign/Symptom: Speech:

How Tested: The patient repeats “The sky is blue in Cincinnati.”

Normal: The patient says correct words with no slurring of words.

Abnormal: The patient slurs words, says the wrong words, or is unable to speak.
STROKE SCREENING (continued)

Patients with 1 of these findings on the Cincinnati Scale—as a new event—have a 72% probability of an ischemic stroke.

If all 3 findings are present the probability of an acute stroke is more than 85%.

If patient does not meet one of the three Cincinnati criteria, consider the following symptoms of sudden onset in your stroke differential diagnosis:

Acute mental status change
Acute gait disturbance
Acute speech disturbance
Acute Vertigo
Acute vision change
Fall with unknown reason
Numbness/tingling
Possible seizure
Possible TIA

REMEMBER: DO NOT DELAY TRANSPORT. PROVIDE EARLY NOTIFICATION WITH STROKE ALERT.
ENDOTRACHEAL TUBE INTRODUCER (BOUGIE)

Indication:
For use as a guide during adult endotracheal intubation, either routine or difficult, when the endotracheal tube cannot be passed despite a good view of the vocal cords, an incomplete view of the glottic opening, or when only the epiglottis is visualized.

Precautions:
The ETI is not to be used in a completely blind fashion. At a minimum, the epiglottis or an incomplete view of the glottic opening must be visualized. Excessive force, passage beyond the carina, or blind introduction may result in damage to the soft tissue of the oropharynx or trachea/bronchi.

Procedure:
1. A 15F ETI should be used for ET tube sizes 6.0 to 10.0.
2. Lubricate ETI with a water soluble lubricant.
3. Perform laryngoscopy. If cords not visible after optimal manipulation of the thyroid cartilage, identify landmarks (epiglottis at minimum) to aid intubation.
4. Place introducer (with curved tip) into the mouth and direct into glottis or underneath epiglottis with the firm end of the ETI pointing anterior. The intubator and/or person holding cricoid pressure may feel clicking as the ETI passes over the tracheal rings (this supports tracheal placement of the ETI).
5. Advance the ETI to approximately 20 cm at the teeth (look for black mark(s) on ETI)
6. The intubator may feel the ETI scathe to one side if the ETI passes the carina. If advanced to deeply, there may also be increased resistance upon entrance into the bronchus. Failure to meet resistance after almost complete insertion should suggest esophageal placement.

This concept can be used to confirm proper endotracheal tube placement if other techniques and/or signs of proper tube placement are difficult to interpret. GENTLY pass the ETI via the endotracheal tube. The carina/bronchus should impede ETI advancement at 30-35 cm depth. If no distal resistance is noted, the endotracheal tube may be in the esophagus.

7. If possible, continue laryngoscopy to elevate the pharyngeal soft tissue while an assistant threads an endotracheal tube over the introducer into the trachea. If the endotracheal tube meets resistance at the laryngeal inlet and will not pass, stop advancement efforts, withdraw the endotracheal tube 1-2 cm with rotation of the tube 90° in either or both directions while reattempting to advance the tube may help negotiate passage of the tube.

8. While the assistant holds the ETI, advance the endotracheal tube to the desired depth and hold the tube firmly in place while the ETI is gently withdrawn.

Remove laryngoscope, secure the endotracheal tube, and confirm tube placement as usual.
**ESOPHAGEAL-TRACHEAL COMBITUBE**

**Indication:**
Apneic patient without a gag reflex

**Contraindications:**
1. Patient under the age of 16 years.
2. Patient under 5’0” or over 6’6” in height. (for patients under 5’0” there is a SA tube)
3. Ingestion of a caustic substance. “SA” for short adult
4. Severe oral facial trauma.
5. Esophageal disease.
6. Patient with a stoma.

**Procedure:**
1. Use basic precautions including gloves and goggles.
2. Hyperoxygenate patient before attempting placement.
3. Test equipment while patient is being oxygenated.
4. If basic airway is in place remove it; keep head in neutral or slightly flexed position.
5. With one hand, grab tongue/mandible and lift towards ceiling.
6. With the other hand place the Combitube so that it follows the natural curve of the pharynx.
7. Insert to the tip of the mouth and advance gently until the printed ring is aligned with the teeth.
8. Do Not Force. If the Combitube does not advance easily withdraw and reinsert.
9. Inflate the blue tube balloon with 100 cc of air. Inflate the white tube balloon with 15cc of air.
   - #1 Blue - will inflate the posterior pharyngeal balloon.
   - #2 White - will inflate the distal balloon.
10. Begin ventilation through the longer blue connecting tube. If auscultation of breath sounds is positive and auscultation of gastric insufflation is negative, continue ventilations.
11. IF NECESSARY, if auscultation of breath sounds is negative, and gastric insufflation is positive, immediately begin ventilation through the shorter connecting clear tube. Confirm tracheal ventilation by auscultation of breath sounds and absence of gastric insufflation.
12. Removal of Combitube:
   a. Reassure patient
   b. Have suction ready and roll patient on their side.
   c. Remove 100cc of air from #1 (Blue line).
   d. Remove 15cc of air from #2 (White line).
   e. Gently withdraw Combitube, suction patient as necessary.

**Notes:**
The paramedic should not hesitate to utilize the Combitube as a backup or as an alternative advanced airway in a patient where the establishment of an ET tube may delay securing the patient’s airway.

Paramedics should generally leave the airway in if the airway is patent.

**Combitube, Page 1 of 1**
INTRANASAL NALOXONE (NARCAN)

Indication:

Suspected opiate overdose (See Altered Mental Status Guideline)

Procedure:

1. Load syringe with 2 mg (2ml) Naloxone (Narcan) and attach nasal atomizer
2. Place atomizer 1.5 cm within the nostril
3. Briskly compress syringe to administer 1 ml of atomized spray.
4. Remove and repeat in other nostril, spraying remaining 1ml.
5. If no results within 3 minutes, establish IV and administer IV Naloxone (Narcan).

Note:

It is recommended to use Naloxone (Narcan) 1mg/1ml concentration
INTRAOSSEOUS INFUSION

The following guideline is to be utilized for FDA approved intraosseous access devices only. You should follow the specific manufacturer’s guidelines for the insertion procedure.

INDICATIONS: May be inserted on standing order for the following:

Adult (≥ 40 kg) & Pediatric (3 – 39 kg)

1. Intravenous fluids or medications needed and a peripheral IV cannot be established in 2 attempts or 90 seconds AND the patient exhibits any of the following:
   a. An altered mental status
   b. Respiratory compromise
   c. Hemodynamic instability
   d. Status Epilepticus unresponsive to IM or rectal medication

2. If IV access is not readily available, then you may consider using IO as a backup PRIOR to peripheral IV attempts in the following situations:
   a. Cardiac arrest (medical or traumatic).
   b. Profound hypovolemia (Shock) with altered mental status.
   c. Patient in extremis with immediate need for delivery of medications and or fluids.

CONTRAINDICATIONS:
- Fracture of the tibia or femur or humerus
- Previous orthopedic procedure (knee replacement) or IO within 24 hours
- Infection over insertion site
- Inability to locate landmarks due to either significant edema or excessive tissue

Note: If contraindication exists, utilize an alternate insertion site.

PROCEDURE:
1. If the patient is conscious, explain the procedure and provide the rationale for it.
2. Use appropriate body substance isolation equipment.
3. If the patient is conscious, prime the extension set with 2%, preservative-free Lidocaine* and leave the syringe attached (up to 50 mg Lidocaine total).
4. Identify the insertion site.
5. Prep the site with betadine** or alcohol.
6. Prepare the IO needle.
7. Stabilize, insert the IO needle and remove the stylet.
8. Confirm proper placement (aspiration of marrow; flushes freely without extravasation).
9. Connect the extension set and flush with 2% preservative-free Lidocaine*:  
   a. Adults 20-50 mg  
   b. Pediatric 0.5 mg/kg  
10. Rapidly flush with 0.9% NaCl:  
    a. Adults 10cc  
    b. Pediatric 5cc  
11. Start infusion utilizing a pressure bag or BP cuff (if pressure bag unavailable).  
12. Secure the catheter and tubing.  
13. Attach identification wrist band, notify receiving facility staff and deliver removal instruction form to treating physician or nurse.  
14. Frequently monitor IO catheter site and patient condition.  

   * If the patient is unconscious or allergic to Lidocaine, prime the extension set with 5-10 mL 0.9% NaCl.  
   ** Betadine is preferred (if patient is not allergic to iodine). If time permits, swab three separate times in an outward, circular motion utilizing a fresh applicator each time.  

Note: Paramedics must have attended a medical control approved, device-specific in-service and demonstrated competency prior to utilizing an IO device in clinical practice.

COMPLICATIONS:  
- Infection  
- Compartment syndrome  
- Subcutaneous extravasation  
- Clotting of marrow in needle  
- Osteomyelitis/cellulitis

PEARLS

- Complications are infrequent (0.6%) and consist mostly of pain and extravasation.  
- IO flow rates are typically slower than with IV catheters. Use a pressure bag or pump.  
- Insertion of IO needles in conscious patients causes mild-moderate discomfort and is usually no more painful than a large bore IV.  
- Infusion through an IO line may cause severe discomfort for conscious patients and preservative-free lidocaine should be administered.  
- Onset of analgesia with lidocaine typically takes approximately 1 minute and lasts 40 minutes to 1 hr.  
- The most common side effect of lidocaine toxicity is seizures.

Sites:  

Should be used on sites in accordance with manufacturer recommendations and guidance from local medical control.
MORGAN LENS

Indication:

For use in patients age 6 years and older who have sustained an exposure injury to the eye(s), (i.e. dry or liquid chemical).

Equipment:

1. Gloves
2. 1000ml IV bag Lactated Ringers or Normal Saline
3. IV tubing (macro drip)
4. Morgan Lens
5. Tetracaine or other ophthalmic anesthetic
6. Towels or chux

Procedure:

- Explain procedure to patient and give rationale.
- Use BSI (Body Substance Isolation)
- Unless contraindicated*, instill one or two drops of Tetracaine.
- Instruct patient not to touch/rub eye(s).
- Spike IV bag and attach/flush tubing, connect Morgan Lens, maintain sterile environment of Morgan Lens.
- Have the patient look down, insert the Morgan Lens under the upper lid, then have the patient look up, retract lower lid and allow lens to drop into place.
- Begin flow rate at wide open and maintain this rate per patient tolerance. Have plenty of towels or chux to absorb flow.

*Contraindication: allergic reaction to local anesthetics, i.e. Novocain, Lidocaine
Indication:

The inability to secure the patient’s airway by other invasive procedures, (endotracheal intubation).

Cautions:

1. Needle cricothyrotomy is an invasive procedure and requires proper training and certification through one of the Regional Sponsor Hospitals.
2. Carbon dioxide (CO₂) build-up occurs rapidly. The procedure can be used only for a short period of time (30 minutes maximum) at which time a definitive airway must be established.
3. The patient must have a patent airway or a means established to allow outflow of air from the lungs.

Contraindications:

1. The ability to establish an easier and less invasive airway rapidly.
2. Acute laryngeal disorders such as laryngeal fractures that cause landmark distortion or obliteration of landmarks.
4. Injury or obstruction below the level of the cricothyroid membrane.

Complications:

Pneumothorax
Subcutaneous emphysema
Catheter dislodgment
Hemorrhage
Esophageal or mediastinal injury
Hypercarbia

Equipment:

- 14 gauge or larger over-the-needle catheter, or commercial product
- 10 cc syringe
- 3 cc syringe
- 15 mm adapter from a 3.0 ET tube
- Bag-valve-mask
- Oxygen
NEEDLE CRICOThYROTOMY (CONTINUED)

Equipment:

- Povidone iodine swabs
- Adhesive tape
- Trauma shears
- Suction equipment
- Gloves
- Goggles

Procedure:

- Observe basic precautions
- Prepare equipment: remove plunger from barrel of 3cc syringe. Attach 15mm adapter from the 3.0 ET tube.
- Palpate the thyroid cartilage, cricothyroid membrane, and suprasternal notch.
- Prep the skin with two povidone iodine or alcohol swabs.
- You may attach the 10 cc syringe to the over-the-needle catheter, or you may elect to use the catheter-needle assembly by itself. Puncture the skin over the cricothyroid membrane.
- Advance the needle at a 45-degree angle caudally (toward the feet).
- Carefully push the needle until it pops into the trachea (aspirating on the syringe as you advance the needle if you are using a syringe).
- Free movement of air confirms you are in the trachea.
- Advance the plastic catheter over the needle, holding the needle stationary, until the catheter hub comes to rest against the skin.
- Holding the catheter securely, remove the needle.
- Reconfirm the position of the catheter. Securely tape the catheter.
- Attach the 3 cc syringe with the 3.0 ET adapter to the catheter hub. Attach the BVM to the adapter and forcefully ventilate the patient. Forcefully squeeze the BVM over one second to inflate and then remove the BVM to allow for exhalation (for 4 seconds).
- Constantly monitor the patient’s breath sounds, ventilation status, and color. Adequate exhalation never forcefully occurs with this technique. The patient may develop hypercarbia (increased CO₂) and increased air pressure in the lungs possibly causing alveoli to rupture.

EMS Providers with Commercially made devices should follow the manufacturer’s recommendations and directions for use.
NEEDLE THORACOSTOMY

Indication:

Tension pneumothorax associated with either traumatic or spontaneous lung collapse and manifested by hypotension, severe respiratory distress, absent breath sounds with hyper resonance on the affected side. There may be possible tracheal shift to the unaffected side.

Contraindications:

There are no contraindications for field use.

Procedure:

1. The patient is supine with head and chest to 30 degrees (semi-sitting position).
2. Explain procedure and rationale if patient is conscious. Bare the chest.
3. Select site for procedure—usually the anterior second or third intercostal space in the midclavicular line.
4. Cleanse the skin.
5. Select needle or over-the-catheter needle size 14 gauge or larger.
6. Holding the needle/catheter perpendicular to the chest wall, insert it straight into the thorax, going just above a rib when one is encountered. Insert until air is heard escaping. Advance catheter and remove needle. This converts a tension pneumothorax to a simple pneumothorax. A chest tube thoracostomy will need to be placed in the ED.
7. Cover puncture site, stabilize catheter to transport. Although not mandatory, when possible, attach tube to flutter valve or flap valve.

“Pearls”

- Use the largest needle or catheter possible since “plugging” with tissue may occur.
- Intercostal nerve or artery damage, be sure to go above not below the rib.
- Injury to the diaphragm - site is too low or the patient is not positioned correctly.
- Subcutaneous placement - insertion not perpendicular to chest wall (remember it is curved, not flat).
- Infections - late complication - prevent this by prepping the skin well.

* Note: Since recent studies have shown that the standard 2” catheter may not be long enough to penetrate the chest wall of 10 to 35% of the population, in large patients with thick chest walls, if clinical improvement does not occur after initial attempt at decompression with a standard 2” catheter, decompression with a longer (up to 3.5”) catheter may be attempted. Insert needle only until air is heard escaping. Advance catheter until hub is on chest wall or until resistance is met. In extremely large patients, the paramedic has the option to use the larger catheter on first attempt.
### PEDIATRIC GLASGOW COMA SCALE

<table>
<thead>
<tr>
<th></th>
<th>CHILD</th>
<th>INFANT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye Opening</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 - opens spontanously</td>
<td>4 - opens spontaneously</td>
<td></td>
</tr>
<tr>
<td>3 - opens to speech</td>
<td>3 - opens to speech</td>
<td></td>
</tr>
<tr>
<td>2 - opens to pain</td>
<td>2 - opens to pain</td>
<td></td>
</tr>
<tr>
<td>1 – none</td>
<td>1 – none</td>
<td></td>
</tr>
<tr>
<td><strong>Verbal Response</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 - oriented</td>
<td>5 - coos and babbles</td>
<td></td>
</tr>
<tr>
<td>4 - confused</td>
<td>4 - irritable cry</td>
<td></td>
</tr>
<tr>
<td>3 - inappropriate words</td>
<td>3 - cries in pain</td>
<td></td>
</tr>
<tr>
<td>2 - incoprehensible words</td>
<td>2 – moans in pain</td>
<td></td>
</tr>
<tr>
<td>1 - none</td>
<td>1 - none</td>
<td></td>
</tr>
<tr>
<td><strong>Motor Response</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 - obeys commands</td>
<td>6 - spontaneous movement</td>
<td></td>
</tr>
<tr>
<td>5 - localizes pain</td>
<td>5 - withdraws to touch</td>
<td></td>
</tr>
<tr>
<td>4 - withdrawal to pain</td>
<td>4 - withdraws to pain</td>
<td></td>
</tr>
<tr>
<td>3 - flexion (pain)</td>
<td>3 - flexion (pain)</td>
<td></td>
</tr>
<tr>
<td>2 - extension (pain)</td>
<td>2 - extension (pain)</td>
<td></td>
</tr>
<tr>
<td>1 – none</td>
<td>1 – none</td>
<td></td>
</tr>
</tbody>
</table>

Changes in neurologic status can be of significance to the trauma surgeon or to the neurosurgeon. Significant alteration can change the outcome for the patient.
RULE of NINES ADULT

Adult Rule of Nines, Page 1 of 1

Last Updated: June 13, 2008
**RULE of NINES PEDIATRIC**

Lund and Browder method of calculating pediatric BSA for burns.

<table>
<thead>
<tr>
<th>Area</th>
<th>Age – 0</th>
<th>Age – 1</th>
<th>Age – 5</th>
<th>Age – 10</th>
<th>Age – 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>A = ½ of head</td>
<td>9 ½</td>
<td>8 ½</td>
<td>6 ½</td>
<td>5 ½</td>
<td>4 ½</td>
</tr>
<tr>
<td>B = ½ of thigh</td>
<td>2 ¾</td>
<td>3 ¼</td>
<td>4 ½</td>
<td>4 ¼</td>
<td>4 ½</td>
</tr>
<tr>
<td>C = ½ of leg</td>
<td>2 ½</td>
<td>2 ½</td>
<td>3</td>
<td>3</td>
<td>3 ¼</td>
</tr>
</tbody>
</table>

Pediatric Rule of Nines, Page 1 of 1

Last Updated: June 13, 2008
SURGICAL CRICOTHYROTOMY

Indication:

This is a surgical procedure and may be performed in extreme situations. It should be considered for field use only when all other techniques have failed.

Equipment:

1. Goggles
2. Gloves
3. Betadine prep swabs
4. #10 scalpel
5. 2x2 and 4x4 gauze sponges
6. Adhesive tape or umbilical tape
7. Endotracheal tube(s) 5.0 through 6.5

Procedure:

1. Basic precautions.
2. Stabilize larynx with thumb and index fingers.
3. Identify cricothyroid membrane and prep with Betadine swabs.
4. Using careful dissection cut through the skin and soft tissue in a vertical manner approximately 1cm.
5. Gently retract the skin to reveal the cricothyroid membrane.
6. Make a stab wound horizontally through the membrane to a depth of ¼” to ½.” Care should be taken not to enter too deeply as posterior structures may be injured.
7. Remove the scalpel and using the blunt end, insert it into the stab wound, rotate the blunt end 90 degrees to create an opening. Alternatively, hemostats, tracheal hooks, a bougie or a finger may all be used to dilate the opening. Maintain this opening and with gentle yet controlled pressure, pass the appropriate size endotracheal tube 1cm past the cuff.
8. Inflate the balloon. Attach a BVM and ventilate the patient.
9. Auscultate for breath and epigastric sounds, attach end-tidal CO₂.
10. Secure ETT in place. Consider “shortening” the ETT by cutting it, care should be taken not to cut it below the level of the pilot balloon.

Contraindication:

This procedure is **not indicated for pediatric patients, less than 8 years of age.**
TUBE CONFIRMATION ADJUNCTS

Statement: There are a number of different types and brands of end-tidal CO₂ detectors, it will not be dictated by the Region which type or which brand to use. However, it is the policy in the Region that each patient who is intubated will have quantitative wave-form end-tidal CO₂ and/or Esophageal Intubation Detector (EID) used to confirm placement and to monitor placement.

Indications: All intubated patients.

Procedure:

1. Following oral or nasal intubation, confirm positive and equal breath sounds and the absence of epigastric sounds. Place end-tidal CO₂ and EID.
2. Ventilate patient with 100% oxygen.
3. Depending upon the type/brand of end-tidal CO₂ detector used the paramedic will confirm tube placement by noting color change or CO₂ numbers.
4. If the EID (Esophageal Intubation Detector) is used, a rapid reinflation will occur with correct placement of the ETT.*
5. If confirmation that the tube is correctly placed is noted, ETT will be secured in place in the usual manner and monitored en route to the hospital.
6. If the end-tidal CO₂ detector or EID indicates incorrect ETT, immediate visualization of tube placement should be done. If ETT is incorrectly placed, immediately remove ETT, hyperoxygenate patient and reattempt intubation.
7. If visualization shows the ETT properly placed, secure tube in the usual manner and continue to ventilate and monitor patient en route to the hospital. Report finding to physician caring for patient.

Note: All ET Tube Attempts Must Be Documented On Regional ET Form

Proper documentation on the patient’s PCR should indicate use of end-tidal CO₂ and/or use of EID and findings.

*It is possible to have a positive placement finding with the EID. If the tube tip is at the level right above the vocal cords, but not through the cords rapid inflation of the bulb may occur.

Once a patient has stopped cellular respiration (death) color change is not always possible even with a properly placed ETT.

It is possible for an end-tidal CO₂ detector to have a positive color change with an esophageal intubation. This may occur for a limited time (usually on 4 or 5 ventilations) correct color change can be assured after this.
QUANTITATIVE WAVEFORM CAPNOGRAPHY

Capnography is the vital sign of ventilation, providing a breath by breath trend of respirations and an early warning system of impending respiratory crisis. Capnography will indicate an impending problem much sooner than pulse oximetry or patient observation.

Advanced Airway Indications

ET Tube Confirmation and Monitoring Tube Position
Quantitative waveform capnography must be used on all intubated patients. Continuous end-tidal CO2 monitoring can confirm both successful placement of a tracheal intubation and its continuing proper position. A good wave form indicating the presence of CO2 ensures the ET tube is in the trachea. You must still assess for equal lung sounds. Capnography cannot detect right main-stem intubations.

Monitoring CPR
Monitoring ETCO2 indirectly measures cardiac output, thus monitoring ETCO2 is a good way to measure the effectiveness of CPR. A decrease in cardiac output will lower the delivery of carbon dioxide to the lungs decreasing the ETCO2. The better the CPR, the higher the ETCO2.

Return of Spontaneous Circulation
ETCO2 can be the first sign of return of spontaneous circulation (ROSC). During a cardiac arrest, if you see the ETCO2 number suddenly shoot up, stop CPR and check for pulses. End-tidal CO2 will often overshoot baseline values when circulation is restored due to carbon dioxide washout from the tissues. After a minute, the number should return to baseline.

Loss of Spontaneous Circulation
In a resuscitated patient, if you see the stabilized ETCO2 number significantly drop in a person with ROSC, immediately check pulses. You may have to restart CPR.

Predictor of Resuscitation Outcome
End tidal CO2 monitoring can confirm the futility of resuscitation as well as forecast the likelihood of resuscitation. An ETCO2 level of 10 mmHg or less after 20 minutes of advanced cardiac life support can help accurately predict death. In general, patients with a high initial ETCO2 reading are more likely to be resuscitated than those with lower values. It is important to note, however, while a low initial ETCO2 makes resuscitation less likely than a higher initial ETCO2, patients have been successfully resuscitated with an initial ETCO2 >10 mmHg.

Ventilating Head Injured Patients
Capnography can help paramedics avoid hyperventilation in intubated head injured patients. Try to keep the patient as normocapnic as possible. A target value of 35 mmHg is recommended.
Combitubes and LMAs
Quantitative waveform capnography should also be used on Combi-tubes and LMAs as well as on all ET tubes. A capnography filter can also be used in between a bag valve mask and the face mask to access ETCO2 during BVM use.

Nonintubated Indications

Monitoring for Hypoventilation
When a person hypoventilates, their ETCO2 goes up. Hypoventilation can be caused by altered mental status such as overdose, sedation, intoxication, postictal states, head trauma, or stroke, or by a tiring CHF patient. A high or steadily rising ETCO2 can help a paramedic anticipate when a patient may require assisted ventilations or intubation. Monitoring ETCO2 provides a better gauge of ventilatory status than respiratory rate. ETCO2 will show a heroin overdose with a respiratory rate of 24 (with many shallow ineffective breaths) and an ETCO2 of 60 is more in need of arousal than a patient with a respiratory rate of 8 and an ETCO2 of 35.

ETCO2 in Asthma, COPD
End-tidal CO2 monitoring with a nasal cannula can be used to assess the severity of Asthma/COPD, and the effectiveness of treatment. Bronchospasm will produce a characteristic “shark fin” waveform, as the patient has to struggle to exhale, creating a sloping “B-C” upstroke. The shape is caused by uneven alveolar emptying. Successful treatment may lessen or eliminate the shark fin shape and return the ETCO2 to normal range. ETCO2 values may also fluctuate with severity of the episode. With a mild asthma, the CO2 will drop (below 35) as the patient hyperventilates to compensate. As the asthma worsens, the C02 levels will rise to normal. When the asthma becomes severe, and the patient is tiring and has little air movement, the C02 numbers will rise to dangerous levels. Pay as much attention to the trend as to the number.

Monitoring Sedated Patients
Quantitative waveform capnography should be used to monitor any patients receiving pain management or sedation (enough to alter their mental status) for evidence of hypoventilation and/or apnea. Beware of rising ETC02 values in these patients and be prepared to stimulate them to breathe if necessary.

Documentation
Paramedics should document their use of continuous ETCO2 monitoring and attach wave form strips to their PCRs.
ETCO2 of 35-45 mm Hg is the normal value for capnography. Some experts consider 30-45 as normal.

Hyperventilation will cause the number to go down. Hypoventilation will cause it to go up.

Some patients who are baseline hypercapnic will have much higher values as their norm.

Imperfect positioning of nasal cannula capnofilters may cause distorted low readings. Unique nasal anatomy, obstructed nares and mouth breathers may skew results and/or require repositioning of cannula. Also, oxygen by mask may lower the reading by 10% or more.

Pay as much attention to the ETCO2 trend as to the number!
TOURNIQUET USAGE GUIDELINES

INDICATIONS
A. A tourniquet should be used to control hemorrhagic wounds that have not responded adequately to direct pressure or in situations of significant extremity bleeding with the need for additional interventions (example: significant extremity bleeding with airway compromise. A tourniquet should be used to quickly control bleeding, freeing up Personnel to concentrate on airway issues.)

PRECAUTIONS
A. Use BSI
B. A tourniquet applied incorrectly can increase blood loss and lead to death.
C. Applying a tourniquet can cause nerve and tissue damage whether applied correctly or not. Proper patient selection is of the utmost importance.
D. Damage is unlikely if the tourniquet is removed within 2 hours. Low risk to tissue is acceptable over death secondary to hypovolemic shock.
E. Tourniquets should never be covered up by patient clothing or packaging.

TECHNIQUE
A. Attempt to control hemorrhage with direct pressure or pressure dressing.
B. If unable to control hemorrhage using the above means, apply a tourniquet, using the procedure below, and minding the above considerations
   a. Select commercially manufactured tourniquet, blood pressure cuff, or improvised “Spanish Windlass” is applied to the extremity proximal to the wound, preferably on single-bone structures (humerus and femur) above wound. Do not place over joints.
   b. Tighten tourniquet until bleeding stops.
   c. The time and date of application (“TK 20:30” indicates that the tourniquet was placed at 8:30 pm) should be written on a piece of tape and secured to the tourniquet or written directly on the patient’s skin next to the tourniquet with a permanent marker.
   d. The tourniquet should be left uncovered so that the site can be monitored for recurrent hemorrhage.
   e. Keep tourniquet on throughout transport – a correctly applied tourniquet should only be removed by the receiving hospital.
   f. Continue monitor patient vitals and wound
   g. Ensure receiving personnel are aware of tourniquet placement
STEMI ALERT PROCEDURE

1. Acquire a 12-lead on all patients suspected of Acute Coronary Syndrome (active chest pain or equivalent symptoms (SOB, nausea, etc.) on first contact.

2. If 12-lead is diagnostic for STEMI and paramedic believes patient is having STEMI, contact CMED for STEMI Alert with Medical Control patch, and transmit ECG if possible. If possible and less than 30 minutes from PCI center, do not wait until transporting to call hospital. Failure to notify hospital until 5 minutes out will delay reperfusion.

3. When hospital answers phone, confirm MD Control, and state “I have a STEMI Alert and am requesting STEMI activation.” If you are uncertain the patient is having a STEMI, say “I have a Possible STEMI Alert.”

4. Describe 12-lead and patient condition. Based on the conversation between paramedic and ED MD and if applicable, the transmitted 12-Lead, the cath lab will either be activated in advance of arrival, placed on standby or not activated until the physician can make a more detailed assessment at the hospital.

5. Provide Appropriate Care during transport per guideline. Have defib pads ready in case patient goes into unstable ventricular tachycardia or ventricular fibrillation. Consider disrobing patient if time permits. Have latest 12-lead ready to show ED MD on arrival. Be prepared to transport patient to cardiac cath lab on EMS stretcher if given the go-ahead from ED staff.

6. Please leave copy of PCR and all 12-lead strips at the hospital prior to departing. PCRs should include Time of 911 Dispatch, Time at Patient side, Time of 1st 12-lead, Arrival at the Hospital, as well as all care rendered.

7. If applicable to hospital, fill out QA/Patient Follow-up form in ED.

NOTES:

STEMI Definition for Field Activation
STEMI is defined by ECG of good quality with all of the following:

a. ST elevation in 2 or more contiguous leads of >2 mm (V1-V4 or > 1 mm (limb or lateral)
b. QRS duration < 0.12 second
c. ***Acute MI*** or equivalent prints on 12-lead and paramedic agrees.

If the machine does not read ***Acute MI*** but the paramedic still strongly believes the ECG shows a STEMI, the paramedic may proceed with the activation request.

Computer Interpretation

<table>
<thead>
<tr>
<th>EMR</th>
<th>EMT</th>
<th>AEMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paramedic</td>
<td>Medical Control</td>
<td>July 1, 2015</td>
</tr>
</tbody>
</table>
Paramedics should not diagnose STEMI based solely on 12-lead computer interpretation. While the interpretation can be used to support your diagnosis, the computer is not infallible. The computer will not read all STEMIs as ***Acute MI Suspected***. And the computer may read ***Acute MI*** when the ECG is clearly not a STEMI. The computer is less accurate with wide complex and tachycardic rhythms. STEMI Imposters

Paramedics should be familiar with and take into consideration all of the known STEMI Imposters, including

- Bundle Branch Block
- Paced Rhythms
- Early Repolarization
- Pericarditis
- Left Ventricular Hypertrophy (LVH)

**Other PEARLS**

Do serial 12-leads (ideally all patients with ACS should have 12-lead on patient contact, on beginning transportation and on arrival at ED). STEMIs are often evolving. The STEMI may not appear until 3rd 12-lead or the STEMI captured on 1st 2-lead may disappear by arrival at the ED. A prehospital 12-lead documenting the transient elevation is critical in these patients.

**Regional PCI Hospitals**

Hartford Hospital  
John Dempsey Hospital  
New Britain  
Saint Francis  
Baystate Medical Center (Springfield)

**Early Notification Saves Lives!**
North Central Connecticut
Regional Paramedic
Medications
Acetaminophen (Tylenol) (Tylenol)

Class: Antipyretic; Analgesic

Action: Antipyretic effect via direct action on the hypothalamus heat-regulation center; Unknown mechanism of analgesia

Indications: Pediatric fever; Minor pain

Contraindication: Hypersensitivity to acetaminophen (Tylenol)

Adverse effects: Hepatotoxicity in overdose
Nausea

Pedi Dose: 15 mg/kg every 4 – 6 hours as needed

Route: PO; PR

Note: Concentrated infant drops (80 mg per 0.8 mL) are recommended and may be dispensed using a needless syringe.

Appears in Pediatric Fever guideline

Last Updated: June 13, 2008
Activated Charcoal

Class: Absorbent

Action: Absorbs many drugs and poisons in the GI tract

Indication: Toxic ingestions - not caustics or pure petroleum

Contraindication: None for emergency use

Dose: 30-50-100 grams

Route: PO - usually in liquid form to drink

Pedi dose: 1-2 grams/kg

Appears in Overdose & Poisoning guideline
Appears in Pediatric OD/Poisoning guideline

Last Updated: June 13, 2008
**Adenosine**  
*(Adenocard)*

**Class:** Endogenous nucleoside

**Action:** Stimulates adenosine receptors; decreases conduction through the AV node

**Indication:** PSVT, Monomorphic Wide Complex Tachycardia

**Contraindication:** Patients taking Persantine or Tegretol.

**Precaution:** Short half-life must administer rapid normal saline bolus immediately after administration of drug. Use IV port closest to IV site.

**Side effect:** Arrhythmias, chest pain, dyspnea, bronchospasm (rare)

**Dose:** Adult - 6mg IV over 1-2 seconds; may repeat 12mg in 2 minutes. Pedi - 0.1mg/kg, may repeat once at 0.2mg/kg

**Route:** Rapid IV push, followed by a flush

Appears in Tachycardia – Afib/Aflutter guideline
Appears in Pediatric Tachycardia with Adequate Perfusion guideline
Appears in Pediatric Tachycardia with Poor Perfusion guideline

Last Updated: June 25, 2012
**Albuterol**  
*(Ventolin, Proventil)*

**Class:**  
β₂ Agonist  
Synthetic sympathomimetic  
Bronchodilator

**Action:**  
Stimulates β₂ receptors in the smooth muscle of the bronchial tree.

**Indication:**  
Relief of bronchospasm.

**Contraindication:**  
None for field use.

**Precaution:**  
Patient with tachycardia.

**Side effect:**  
Tachycardia

**Dose:**  
2.5mg (0.5ml of the 0.5% solution diluted to 3ml NS) for nebulized updraft.

**Route:**  
Inhaled as a mist via nebulizer.

**Pediatric Dose:**  
2.5mg nebulized updraft.

*Appears in Respiratory Distress guideline*  
*Appears in Anaphylaxis guideline*  
*Appears in Pediatric Asthma guideline*  
*Appears in Pediatric Allergic Reaction guideline*  
*Appears in Pediatric Anaphylaxis guideline*

---

**Last Updated: June 13, 2008**

**Amiodarone**
(Cordorone)

Class: Antiarrhythmic

Action: Reduces myocardial cell membrane excitability by increasing the effective refractory period. Inhibits alpha and beta adrenergic stimulation, causing peripheral vasodilation and decreased heart rate.

Indication: Cardiac arrest -- ventricular fibrillation. Wide Complex Tachycardia w/pulse>150 bpm.

Contraindication: None for cardiac arrest, contraindicated for wide complex tachycardia with hypotension (synchronized shock indicated). Bradycardia.

Dose: Cardiac arrest – 300 mg IV; May repeat at 150 mg. Wide Complex Tachycardia w/pulse>150 bpm – 150mg IV over 10 minutes. Drip – 1mg/min.

Route: IV

Side Effects: Hypotension, bradycardia, headache, dizziness, nausea, vomiting.

Appears in Tachycardia – Wide Complex guideline
Appears in V-fib/Pulseless V-tach guideline
Appears in Pediatric Tachycardia with Adequate Perfusion guideline
Appears in Pediatric Tachycardia with Poor Perfusion guideline
Appears in Pediatric Cardiac Arrest guideline

Last Updated: June 13, 2008
**Aspirin**  
*(Acetylsalicylic acid)*

**Class:** Antiplatelet  
**Action:** Inhibitor of platelet aggregation  
**Effects:** Decrease clotting time  
**Indication:** Chest pain of cardiac origin  
**Contraindication:** Allergy to aspirin  
**Dose:** 325mg tab or 4-baby aspirin (81mg per tab)  
**Route:** PO  
**Side Effects:** None with field use

Last Updated: June 13, 2008
**Atropine**
*(Atropine Sulfate)*

**Class:** Antimuscarinic  
Parasympathetic blocker  
Anticholinergic

**Action:** Blocks acetylcholine (ACh) at muscarinic sites

**Indication:** Symptomatic bradyarrhythmias  
Cholinergic poisonings  
Refractory bronchospasm

**Contraindication:** Relative contraindication wide complex bradycardia in the setting of acute ischemic chest pain

**Side effects:** Tachyarrhythmias  
Exacerbation of Glaucoma  
Precipitation of myocardial ischemia

**Dose:**  
Bradyarrhythmias - 0.5mg, may repeat every 3-5 minutes  
Organophosphate poisonings - 2mg IV or IM Repeat, doubling dose every 5 minutes until bronchorrhea ceases. i.e. Initial dose of 2mg; Second dose of 4mg; Third dose of 8 mg, etc.

**Route:** IV push

**Pedi dose:** 0.02mg/kg IV

Appears in the Bradycardia guideline  
Appears in Pediatric Bradycardia guideline  
Appears in the Poisoning and Overdose guideline

Last Updated: June 2013
**Benzocaine spray**
*(Cetacaine)*

**Class:** Topical anesthetic

**Action:** Blocks conduction of impulses at the sensory nerve endings.

**Indication:** Nasal intubations or oral intubations where patient may still have gag reflex. To improve patient comfort and tolerance of intubation.

**Contraindication:** Known sensitivity to Benzocaine products. Children under 1 year of age.

**Precaution:** Children under 6 years of age.

**Side effects:** Rash; May induce methemoglobinemia (especially in overdose or in infants and young children). This is a condition in which altered hemoglobin no longer effectively carries oxygen. It is characterized (in late stages) by a chocolate-brown color to the blood and cyanosis. Signs of methemoglobinemia are related to hypoxia and include: confusion, coma, seizures, respiratory distress and tachydysrhythmias. Standard pulse oximetry is not accurate in methemoglobinemia.

**Dose:** ½ second spray to the posterior pharynx; allow approximately 20-30 seconds after administration for effect to occur. Do not exceed one second total spray duration (expulsion rate ~200 mg/second)

**Route:** PO

*Last Updated: June 13, 2008*
**Calcium Chloride**

**Class:** Electrolyte

**Action:** Facilitates the actin/myosin interaction in the heart muscle.

**Indication:**
- Hypocalcemia
- Hyperkalemia with arrhythmia
- Calcium channel blocker intoxication with hypotension or symptomatic bradycardia

**Contraindication:** Not to be mixed with any other medication - precipitates easily.

**Precaution:** Patients receiving calcium need cardiac monitoring

**Side effect:**
- Cardiac arrhythmias
- Precipitation of digitalis toxicity

**Dose:** Usual dose is 5-10ml of 10% Calcium Chloride in 10ml.

**Route:** IV

**Pedi Dose:** 0.2ml/kg of 10% concentration

Appears in adult cardiac arrest guideline
Appears in Bradycardia guideline
Appears in V-fib/Pulseless V-tach guideline

Last Updated: June 13, 2008
**Dextrose**  
(D\textsubscript{50}W), (D\textsubscript{25}W) (D\textsubscript{10}W)

Class: Carbohydrate  
Action: Raises the blood sugar  
Indication: Diabetic patients with low blood sugar level (<70 mg/dL in adults)  
Altered mental states  
Seizure  
Contraindication: acute strokes with normal finger stick blood glucose i.e. neurotoxic  
Precaution: Tissue necrosis if infiltration occurs  
Side effects: As above-infiltration  
Intracerebral hemorrhages in neonates with undiluted D50  
Dose: Up to 25 Gm Slow IV push, may repeat (Can be given to adults as eitherD50, D25 or D10) **A concentration of D\textsubscript{10}W is the preferred method of administration of dextrose.**  
Route: IV slow, confirm IV placement prior to and during administration.  
Pedi Dose: **A concentration of D\textsubscript{10}W is the preferred method of administration of dextrose.** Otherwise1ml/kg of D\textsubscript{50}W slow IV push. **Dilute 1 to 4 in those less than 1 week old** and dilute 1 to 2 (D\textsubscript{25}W) in those 1 week to 16 years.

Appears in adult cardiac arrest guideline  
Appears in Altered Level of Consciousness guideline  
Appears in Hypothermia guideline  
Appears in Seizure guideline  
Appears in Stroke guideline  
Appears in Pediatric Altered Mental Status/Hypoglycemia guideline  
Appears in Pediatric Seizure guideline  
Appears in Pediatric OD/Poisoning guideline

Last Updated: June 11, 2013
**Diazepam**  
*(Valium)*

**Class:** Benzodiazepine

**Action:** Decreases cerebral irritability  
Calms CNS

**Indication:**  
Major motor seizures  
Acute anxiety states  
Pre-cardioversion

**Contraindication:** none for emergency field use

**Dose:**  
2 to 20mg to control seizure activity  
2 to 5mg for anxiety or pre-cardioversion

**Route:** IV push - slow

**Pedi dose:** 0.25 mg/kg (up to 3 mg) SIVP

Appears in Pediatric Seizure guideline

Last Updated: June 13, 2008
Diltiazem  
(Cardizem)

**Class:** Calcium channel blocker

**Action:** Partial blockade of AV node conduction

**Indication:** Atrial fibrillation, Atrial flutter, narrow complex tachycardia

**Contraindication:** Hypotension  
Hypersensitivity to drug  
Wide complex tachycardia  
Known history of Wolf Parkinson White (WPW)  
2° or 3° AV block

**Relative contraindication:** Already on Digoxin and Beta Blocker

**Side effect:** May induce VF if given to patient with wide complex tachycardia that is due to WPW.  
May cause hypotension

**Dose:**  
**Initial dose:** 0.25mg/kg slow IV (average dose 20mg in adult male)  
May repeat with 0.35 mg/kg (25 mg average) in 10-15 minutes if no or diminishing effect. Decrease by 5 mg per bolus for elderly (>70 yr/old).

**Route:** IV push (bolus) given over 2 minutes; reconstitute according to manufacturer’s recommendation.

**Pedi dose:** 0.25mg/kg

**Important points:**  
If patient is hypotensive secondary to drug administration:  
- If not in failure give IV fluids  
- If bradycardic administer CaCl₂  
- If still bradycardia give Atropine  
- Transcutaneous pacing may be necessary for markedly symptomatic bradycardia.  
- If CHF is present or worsens administer Dopamine (Intropin) infusion  
- If all of above fail (persistent hypotension >2-5 minutes) administer glucagon 1 mg IV

Appears in Tachycardia – Afib/Aflutter guideline  
Appears in Tachycardia – PSVT guideline  
**Last Updated:** June 13, 2008
Diphenhydramine  
(Benadryl)

Class: Antihistamine  
H1 blocker

Action: Blocks histamine receptor sites

Indication: Systemic anaphylaxis  
Drug induced extrapyramidal reactions

Contraindication: None with emergency use

Precaution: Asthma

Side effect: Sedation  
Hypotension

Dose: 25 - 50mg

Route: IV push, may also be given IM

Pedi Dose: 1mg/kg

Appears in Allergic Reaction guideline
Appears in Anaphylaxis guideline
Appears in Dystonic Reaction guideline
Appears in Pediatric Allergic Reaction guideline
Appears in Pediatric Anaphylaxis guideline

Last Updated: June 13, 2008
**Dopamine (Intropin)**

**Intropin**

**Class:** Naturally occurring catecholamine, adrenergic agents

**Action:** Stimulates $\alpha$, $\beta_1$ and Dopaminergic receptors

**Effects:**
- 0.5 to 2 mcg/kg/min - Renal and mesenteric vasodilation.
- 2 to 10 mcg/kg/min - Renal and mesenteric vasodilation persists and increased force of contraction (FOC).
- 10 to 20 mcg/kg/min - Peripheral vasoconstriction and increased FOC (HR may increase).
- 20 mcg/kg/min or greater - marked peripheral vasoconstriction (HR may increase).

**Indication:**
- Shock - Cardiogenic
- Septic
- Anaphylactic
- Bradycardia

**Contraindication:**
Pre-existing tachydysrhythmias or ventricular dysrhythmias.

**Precaution:**
- Infuse in large vein only
- Use lowest possible dose to achieve desired hemodynamic effects, because of potential for side effects.
- Do not D/C abruptly; effects of Dopamine (Intropin) may last up to 10 minutes after drip is stopped.
- Do not mix with NaHCO3 as alkaline solutions will inactivate Dopamine (Intropin).

**Side effect:**
- Tachydysrhythmias
- Ventricular ectopic complexes
- Undesirable degree of vasoconstriction
- Hypertension relate to high doses
- Nausea and vomiting
- Anginal pain

**Dose:**
- 2.0 - 20. mcg/kg/min titrated to desired effect

**Route:** IV drip

**Pedi dose:**
- same as adult dose - titrate to effect

- Appears in Bradycardia guideline
- Appears in Shock guideline
- Appears in V-fib/Pulseless V-tach guideline
- Appears in Management of the Trauma Patient
- Appears in Anaphylaxis guideline

**Last Updated: June 2011**
**Epinephrine 1:10,000**

**Class:** Natural catecholamine, adrenergic

**Action:** Stimulates both alpha (a) and beta (ß1 and ß2) receptors.

**Indication:**
- Cardiac arrest – Adult
- Cardiac arrest - Pediatric
- Anaphylaxis with shock

**Contraindication:** Use in pregnant women should be conservative
Pre-existing tachydysrhythmias

**Side effects:**
- Tachydysrhythmias
- Hypertension
- May induce early labor in pregnancy
- Headache, nervousness, decreased level of consciousness

**Dose:**
- 0.5 to 1.0 mg (usual) for cardiac arrest
- 0.1 mg slow IV over 3 minutes, can be repeated X 2 to a maximum dose of 0.3mg for anaphylaxis
- 2-10 mcg/min IV drip for bradycardia

**Route:**
- IV, IO
ET if given this route the dose should be doubled

**Pedi Dose:**
- 0.01 mg/kg (0.1 ml/kg)

Appears in Asystole guideline
Appears in Bradycardia guidelines (mixed in 1000mL IV drip)
Appears in V-fib/Pulseless V-tach guideline
Appears in PEA guideline
Appears in Anaphylaxis guideline
Appears in Neonatal Resuscitation guideline
Appears in Pediatric Anaphylaxis guideline
Appears in Pediatric Bradycardia guideline
Appears in Pediatric Cardiac Arrest guideline

**Last Updated:** June 2011
**Epinephrine 1:1,000**

**Class:** Same as Epi 1:10,000  
**Action:** Same as Epi 1:10,000  
**Indication:** Severe allergic reaction, status asthmaticus, laryngeal or lingual edema  
**Contraindication:** Use with caution in the presence of:  
Pre-existing tachydysrhythmias  
Hypertension  
Significant cardiac history  
Pregnancy  
**Side effect:** Same as Epi 1:10,000  
**Dose:** 0.3 mg  
**Route:** IM  
**Pedi dose:** 0.01 mg/kg (0.01 ml/kg) to a max. 0.3 mg (0.3ml)  
See PALS guidelines  
For croup administer 5mg (5ml) nebulized with 2.5-3ml of NS

**Appears in Bradycardia guidelines (mixed in 1000mL IV drip)**  
**Appears in Respiratory Distress guideline**  
**Appears in Allergic Reaction guideline**  
**Appears in Anaphylaxis guideline**  
**Appears in Pediatric Asthma guideline**  
**Appears in Croup/Epiglottitis guideline**  
**Appears in Pediatric Allergic Reaction guideline**  
**Appears in Pediatric Anaphylaxis guideline**

---

**Last Updated: June 13, 2008**

**Fentanyl Citrate**
Class: Narcotic analgesic

Action: Decreases pain perception and anxiety

Onset of action: Fentanyl citrate is a narcotic analgesic. A dose of 100 mcg (0.1 mg) (2 mL) is approximately equivalent in analgesic activity to 10 mg of morphine or 75 mg of meperidine.

Indications: Moderate to severe pain adults

Contraindications: Significant Head injury
GCS < 13
SBP < 100
Allergy to Fentanyl

Side effects: Respiratory depression or arrest
Decreased LOC
Hypotension
Increased vagal tone (slowed heart rate)
Nausea/vomiting
Pinpoint pupils
Increased cerebral blood flow
Urticaria
Chest Wall Rigidity

Precautions: Continuous patient monitoring after administration of Fentanyl is required including (when physically possible) pulse oximetry, ECG, quantitative waveform capnography (when available), vital signs and respiratory effort; Rapid administration increases the likelihood of side effects. Use aliquots of 25 mcg to 50 mcg for patients over 65.

Adult Dose: Analgesia general: Initial dose 1 mcg/kg (up to 100 mcg) slow IV over 3 to 5 minutes. Repeat dose of 1 mcg/kg (up to an additional 100 mcg) slow IV after 10 minutes if needed. Repeat dose of 1 mcg/kg (up to an additional 100 mcg) slow IV after an additional 10 minutes if needed for a total maximum dose of 300 mcg

Route: Slow IV; IO push – slow, IN, IM

Appears in Adult Pain Control Guideline

Last Updated: October 2011
Glucagon

Class: Pancreatic hormone

Action: Increases blood glucose by converting liver glycogen to glucose

Indication: Hypoglycemic patient who does not have IV access
Beta-blocker or calcium channel blocker overdose
Food bolus impaction in the esophagus

Contraindication: Known hypersensitivity
Pheochromocytoma / insulinoma

Precaution: Mix with own diluent - do not mix with saline

Side effect: Nausea / vomiting
Hyperglycemia

Dose: 1mg (1unit)

Route: IM

Pedi dose: 0.5 - 1mg

Appears in Bradycardia guideline (at 5mg IV)
Appears in Altered Level of Consciousness guideline
Appears in Seizure guideline
Appears in Pediatric Altered Mental Status/Hypoglycemia guideline

Last Updated: June 13, 2008
**Haloperidol**  
*(Haldol)*

**Class:** Tranquilizer, antipsychotic

**Action:** Inhibits CNS catecholamine receptors, strong anti-dopaminergic and weak anticholinergic.  
Acts on CNS to depress subcortical areas, mid-brain and ascending Reticular Activating System

**Indication:** Chemical restraint for violent, agitated, and aggressive patients who present a danger to themselves or to others and who cannot be safely managed otherwise.

**Contraindications:** Agitation secondary to shock or hypoxia  
Hypersensitivity  
Parkinson’s Disease  
CNS Depression  
Relative contraindication if has seizure history

**Side effects:** Extrapyramidal symptoms (dystonic reaction), restlessness, spasms  
Lowers seizure threshold  
Hypotension  
Tachycardia  
Vomiting  
Blurred vision  
May prolong QT segment

**Dose:** 5 mg IM may be combined with 2 mg Lorazepam (Ativan) in same syringe.

**Route:** IM

*Appears in Behavioral Emergency guideline*  
*Appears in Chemical Restraint Policy*

**Last Updated:** June 2011
Ipratropium  
(Atrovent)

Class: Anticholinergic Bronchodilator

Action: Relaxes bronchial smooth muscle

Effect: Bronchodilation

Indication: For use in severe COPD and Asthma cases after Albuterol (Ventolin, Proventil)

Contraindication: Hypersensitivity to ipratropium

Dose: 0.5 mg (2.5ml); Do not repeat

Route: Nebulized updraft

Side effects: Tachycardia, palpitations, headache (most common)

Appears in Respiratory Distress guideline
Lactated Ringers

Class: Isotonic crystalloid
Action: Approximates the electrolyte concentration of blood
Indication: Hypovolemic shock
Contraindications: Congestive Heart Failure
Renal Failure
Precaution: Monitor patient for fluid overload
Side Effect: Rare
Dose: Patient condition dependent; TKO, rapid bolus, “wide open”
Route: IV infusion
Pediatric Dosage: TKO, 20ml/kg (bolus)

Appears in Anaphylaxis guideline
Appears in Overdose & Poisoning guideline
Appears in Shock guideline
Appears in Management of the Trauma Patient guideline
Appears in Burn guideline (adult)
Appears in Pediatric Anaphylaxis guideline
Appears in Pediatric OD/Poisoning guideline
Appears in Pediatric Burn guideline
Appears in Morgan Lens Procedure

Last Updated: June 13, 2008
**Lidocaine**  
*(Xylocaine)*

**Class:** Antiarrhythmic

**Action:** Decreases ventricular irritability  
Elevates fibrillation threshold

**Indication:** Refractory Ventricular Tachycardia or ventricular fibrillation  
Recurrent runs of Ventricular tachycardia and after successful defibrillation to prevent the reoccurrence of VF or VT

**Contraindication:** AV blocks  
Sensitivity to medication  
Idioventricular rhythms  
Sinus bradycardias, SA arrest or block  
Ventricular conduction defects  
Not used to treat occasional PVCs

**Precaution:** Reduce dose in patients with CHF, renal or hepatic diseases

**Side effect:** Anxiety, apprehension,

**Toxicity:** Early: decreased LOC, tinnitus, visual disturbances, euphoria, combativeness, nausea, twitching, numbness, difficulty breathing or swallowing, decreased heart rate.  
Late: Seizure, hypotension, coma, widening QRS complex, prolongation of the P-R interval, hearing loss, and hallucinations.

**Dose:** 1.0 -1.5 mg/kg, may repeat 3-5 minutes  
IV - Drip usual dosage rate 2-4 mg/min

**Route:** IV, IO  
ET - double usual IV dose.

**Pedi dose:** 1.0mg/kg total pedi dose-3mg/kg

*Appears in IO Procedure*
**Lorazepam**  
*(Ativan)*

**Class:**  
Benzodiazepine

**Action:**  
Decreases cerebral irritability; sedation

**Effect:**  
Stops generalized seizures; produces sedation

**Indications:**  
Status Epilepticus  
Sedation for TCP or synchronized cardioversion  
Anxiety relief  
Delirium tremens (i.e. alcohol withdrawal resulting in tremors, anxiety, hypertension, tachycardia, hallucinations and/or seizures)

**Contraindications:**  
Hypersensitivity to benzodiazepines or benzyl alcohol

**Adult Dose:**  
Status Epilepticus: 4 mg slow IV (<2 mg/min) if patient weighs >39kg; 2mg if patient is <39kg  Repeat if condition persists every 5 minutes to a maximum dose of 8mg if patient still seizing

Agitation / Anxiety Relief: 0.5 – 2 mg slow IV (<2 mg/min) or IM  
Behavioral Emergency: 0.05mg/kg up to 4mg IM (2 mg average dose)

**Pediatric Dose:**  
Status Epilepticus: 0.1 mg / kg (max 2 mg per dose) slow IV (<2 mg/min)

**Route:**  
Slow IV (< 2 mg/min) diluted in at least an equal volume of NS; IM (undiluted)

**Side Effects:**  
CNS and respiratory depressant

**Precautions:**  
Continuous patient monitoring after administration of Lorazepam (Ativan) is required including (when physically possible) pulse oximetry, ECG, quantitative waveform capnography (when available), vital signs and respiratory effort; Rapid administration increases the likelihood of side effects. IV Lorazepam (Ativan) must be diluted in at least an equal volume of saline and administered no faster than 2 mg/minute.

Appears in Sedation Post Intubation guideline  
Appears in Adult Pain Control guideline  
Appears in Seizure guideline  
Appears in Anxiety guideline  
Appears in Pre-Eclampsia guideline  
Appears in Pediatric Seizure guideline  
Appears in Chemical Restraint Policy

**Last Updated:** June 2013
Magnesium Sulfate

**Class:** Electrolyte

**Action:** Facilitates the proper function of many enzyme systems in the body
Facilitates the Na-K magnesium dependent ATPase pump
Blocks calcium non-selectively

**Indication:** Polymorphic ventricular tachycardia (Torsades de pointes)
Refractory or recurrent VF or pulseless VT if has documented hypomagnesemia
Eclampsia
Severe Asthma

**Contraindication:** None for field emergency use

**Precaution:** Use with caution or not at all in the presence of renal insufficiency
or high degree AV block.

**Side effect:** Hypotension - mild but common
Heart block - uncommon
Muscular paralysis, CNS and respiratory depression - toxic effects

**Dose:**
- Torsades (pulseless)
  - 2 grams over 1-2 minutes
- Eclampsia
  - 4 grams over IV drip over ½ hour if actively seizing
- VF/VT (suspected hypomagnesemia)
  - 2 grams IV bolus
- Severe Asthma
  - 2 grams in 100cc over 10 minutes IV infusion

VT/Torsades with a pulse
- 1- 2g slow IVP over 5 - 60 min

**Route:** IV drip or IV push

Appears in Tachycardia – Wide Complex guideline
Appears in V-fib/Pulseless V-tach guideline
Appears in Respiratory Distress guideline
Appears in Eclampsia guideline

**Last Updated:** June 13, 2008
**Methylprednisolone**  
*Solu-Medrol*  

**Class:** Steroid  
Glucocorticoid  
Anti-inflammatory  

**Action:** Thought to stabilize cellular and intracellular membranes  

**Indication:** Asthma attack of greater than 2 hour’s duration  
COPD exacerbation  
Anaphylactic reaction  

**Contraindication:** none for emergency field use  

**Dose:** Reactive airway disease - 40 to 125mg  

**Route:** IV push – slow  
IV drip (infusion)  

**Pedi dose:** Reactive airway disease - 2 mg/kg (max 125 mg)  

*Appears in Respiratory Distress guideline*  
*Appears in Allergic Reaction guideline*  
*Appears in Anaphylaxis guideline*  
*Appears in Pediatric Asthma guideline*  
*Appears in Pediatric Allergic Reaction guideline*  
*Appears in Pediatric Anaphylaxis guideline*  

**Last Updated: June 2011**
Metoclopramide Hydrochloride
(Reglan)

Class: Anti-nausea / antiemetic

Action: Increase tone at the esophageal sphincter and increased gastric emptying

Indication: Nausea and vomiting

Contraindication: Hypersensitivity to drug
Pheochromocytoma
Seizure disorder
GI bleeding
GI obstruction
Peritonitis

Side effect: Nervousness
Somnolence
Dystonic reactions
Dizziness, weakness
Bowel disturbances

Dose: 10mg (adults only >14yrs)

Route: IV push slow (over 1-2 minutes)

Appears in ACS Guideline
Appears in Nausea & Vomiting guideline
Appears in Adult Pain Control guideline

Last Updated: June 13, 2008
Metoprolol (Lopressor) (Lopressor)

Class: Beta Blocker

Action: Partial blockade of Beta Receptors

Indication: Atrial fibrillation, Atrial flutter, narrow complex tachycardia

Contraindication: Hypotension (SBP < 110mmHg)
Bradycardia (HR < 70bpm)
Hypersensivity to drug
1st, 2nd or 3rd Degree Heart Block
Asthma
Acute Pulmonary Edema
Recent Cocaine Use

Side effect: Pulmonary Edema
Hypotension
Weakness

Dose: 5mg SIVP; Can be repeated q 5 minutes X 2 to a maximum total dose of 15 mg

Route: IV push (bolus) given over 5 minutes

Pedi dose: None

Important points: Utilize Metoprolol (Lopressor) for patients experiencing narrow complex tachycardias that are taking oral Beta Blockers.

Appears in Tachycardia – Afib/Aflutter guideline
Appears in Tachycardia – PSVT guideline

Last Updated: June 2011

Midazolam
Class: Benzodiazepine (short acting)

Action: CNS depressant

Effect: Sedation

Indications: Pre-cardioversion; TCP; seizure control; sedation post-intubation, ROSC hypothermia protocol, Anxiety, Agitation, Behavioral Emergency

Dose: 0.1mg/kg IM or IV up to 10mg. (5mg average dose) May be repeated to a total max of 10 mg; Administer 50% dose to patients >70 years old:

**IN dose:** Adults over 50kg, 10mg (2ml) of Midazolam (Versed); Pediatrics 0.2mg/kg not to exceed 10mg.

Route: Slow IV push; IM; IN

Side Effects: Decreased level of consciousness
Hypotension
Respiratory depression

Special Information: Any patient receiving Midazolam (Versed) must be closely monitored. This must include (if physically possible) pulse oximetry, ECG, quantitative waveform capnography (if available), all vital signs and respiratory effort.

For IN doses, load syringe with appropriate milliliter volume of Midazolam (Versed) (use only 5mg/ml concentration) and attach MAD nasal atomizer. Administer half volume as atomized spray to each nostril.

Appears in Tachycardia – Afib/Aflutter guideline
Appears in Tachycardia – PSVT guideline
Appears in Tachycardia – Wide Complex guideline
Appears in Sedation Post Intubation guideline
Appears in Seizure guideline
Appears in Pre-Eclampsia guideline
Appears in Pediatric Seizure guideline

Last Updated: June 11, 2013
Morphine Sulfate

Class: Narcotic analgesic

Action: Decreases pain perception and anxiety

Onset of action: Intravenous – immediate with peak effect at 10 – 15 minutes.

Indications: Moderate to severe pain adults
Moderate to severe pain pediatrics
AMI
Pulmonary Edema
Burns adults
Burns pediatrics

Contraindications: Significant Head injury
GCS < 13
SBP < 100
Allergic to Morphine, Codeine, Percodan

Side effects: Respiratory depression or arrest
Decreased LOC
Hypotension
Increased vagal tone (slowed heart rate)
Nausea/vomiting
Pinpoint pupils
Increased cerebral blood flow
Urticaria

Precautions: Continuous patient monitoring after administration of morphine is required including (when physically possible) pulse oximetry, ECG, quantitative waveform capnography (when available), vital signs and respiratory effort; Rapid administration increases the likelihood of side effects. Use initial dose of 0.5 mg/kg for patients over 65.

Adult Dose: Analgesia general: Initial dose 0.1 mg/kg (5 – 10 mg) slow IV over 4 to 5 minutes; Repeat dose 0.05 mg/kg slow IV after 10 minutes if needed X 2
ACS: 2 mg slow IV q 5 as needed to a total of 6 mg

Pedi dose: 0.1mg/kg (usual dose) slow IV or IM

Route: Slow IV; IO push – slow; IM

Last Updated: October 2011
Naloxone
(Narcan)

Class: Narcotic antagonist

Action: Reverses the effects of narcotics by competing for opiate receptor
sites. Will reverse respiratory depression cause by narcotics

Indications: Suspected overdose with depression of respiration and/or hypoxia

Contraindication: none for emergency field use

Side effect: Narcotic withdrawal

Dose: 0.4mg to 2.0mg - titrate to respiratory effort

Route: IV push; IM; IN

Pedi dose: 0.1mg/kg (max 2 mg per dose)

Appears in adult cardiac arrest guideline
Appears in Altered Level of Consciousness guideline
Appears in Hypothermia guideline
Appears in Adult Pain Control guideline
Appears in Neonatal Resuscitation guideline
Appears in Pediatric Pain guideline
Appears in Pediatric Altered Mental Status/Hypoglycemia guideline

Last Updated: June 13, 2008
Nitroglycerin

Class: Vascular smooth muscle relaxant

Action: Systemic vasodilator which decreases myocardial workload and oxygen consumption.

Indication: Angina Pectoris
Pulmonary edema

Contraindication: Hypotension
Children under 12 yrs.
Use of Erectile Dysfunction drugs within 48 hours
Right Ventricle Infarction
In Acute Coronary Syndrome: Severe bradycardia <50 bpm or tachycardia (>100 per minute)

Precaution: In Acute Coronary Syndrome avoid decreasing blood pressure > 30 mm Hg below baseline

Side effect: Hypotension, rarely brief asystole,
Headache and facial flushing
Dizziness, decreased LOC

Dose: 0.4mg may repeat q 3-5 minutes, titrate to pain, effect and blood pressure for angina. 0.4 – 0.8 mg for pulmonary edema.

Route: Sublingual - spray or tablet

Appears in Pulmonary Edema guideline

Last Updated: June 2011
Norepinephrine Bitartrate (Levophed)

Class: Vasopressor, Alpha and Beta 1 receptor adrenergic receptor agonist

Action:

Norepinephrine functions as a potent peripheral vasoconstrictor and as an inotropic stimulator of the heart and dilator of coronary arteries by stimulating the alpha and beta-1 receptors.

Indication:

1. Primary indication is cardiogenic shock, including hypotension post ROSC
2. Septic or neurogenic shock unresponsive to fluid challenge.

Precautions:

1. Norepinephrine is a potent vasoconstrictor and may cause hypertension. The rate of flow should be carefully monitored and blood pressures should be taken every 2-3 minutes.

2. Extravasation of Levophed into tissue may cause tissue necrosis. The IV should be checked prior to administration for patency, and should be monitored frequently during administration. Should the IV infiltrate notify hospital staff ASAP for possible antidote treatment.

3. Use of a larger vein is recommended whenever possible to reduce the risk of necrosis.

Administration:

4-30 mcg/minute titrated to blood pressure of 90 mm Hg.

Start infusion at 4 mcg/minute. May titrate upward in increments of 3-5 mcg/minute no more frequently than every 3 minutes. Reduce increments when approaching clinical goal (i.e. systolic blood pressure rising and approaching 90mmHg).

Pediatric Dose: infusion 0.1 – 2micrograms/kg/min titrated to effect

Appears in return of spontaneous circulation/post resuscitation care, shock trauma patient care guidelines

Last Updated: July 1, 2015
**Normal Saline (0.9% NaCl)**

**Class:** Isotonic electrolyte

**Action:** Fluid and sodium replacement

**Indications:**
- IV access in emergency situations
- Fluid replacement in hypovolemic states
- Used as a diluent for IVPB medications

**Contraindications:** None for field use

**Precaution:** Fluid overload

**Side Effect:** Rare

**Dose:** Dependent upon patient condition and situation, TKO, fluid bolus, “wide open”

**Route:** IV infusion

**Pediatric Dose:** TKO or 20ml/kg bolus

**Appears in**
- Allergic Reaction guideline
- Anaphylaxis guideline
- Altered Level of Consciousness guideline
- Heat Related Emergencies guideline
- Hypothermia guideline
- Nausea & Vomiting guideline
- Overdose & Poisoning guideline
- Seizure guideline
- Shock guideline
- Management of the Trauma Patient guideline
- Ante-partum Hemorrhage guideline
- Emergency Childbirth guideline
- Neonatal Resuscitation guideline
- Pediatric Assessment guideline
- Pediatric Asthma guideline
- Croup/Epiglottitis guideline
- Pediatric Pain guideline
- Pediatric OD/Poisoning guideline
- Pediatric Burn guideline
- IO Procedure
- ACS guideline
- Morgan Lens Procedure

**EMR**

<table>
<thead>
<tr>
<th></th>
<th>EMT</th>
<th>AEMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paramedic</td>
<td>Medical Control</td>
<td>July 1, 2015</td>
</tr>
</tbody>
</table>
Appears in Pediatric Allergic Reaction guideline
Last Updated: May 26, 2009
**Olanzapine**  
**Zyprexa**

**Class:** Atypical Antipsychotic / Thienobenzodiazepine

**Action:** The exact mechanism is unknown. However, it is believed that its effect is mediated through a combination of Dopamine (Intropin) and serotonin 5-HT 2 antagonism. It is a selective monoaminergic antagonist with a strong affinity for serotonin 5-HT 2A and 5 HT 2C receptors, and Dopamine (Intropin) D1, D2, D3, and D4 receptors. It also binds weakly and antagonizes GABA A, benzodiazepine, cholinergic muscarinic, and beta adrenergic receptors. In comparison to other antipsychotics Olanzapine (Zyprexa) also has a lower affinity for histamine H1 and Alpha 1 receptors.

**Onset of action:** Rapid onset with Peak effect 15 – 45 minutes

**Indications:** Chemical restraint for violent, agitated, and aggressive patients who present a danger to themselves or to others and who cannot be safely managed otherwise. Acute psychosis resulting in agitation.

**Contraindications:** Agitation secondary to shock or hypoxia, CNS depression, known hypersensitivity.

**Side effects:** Dry mouth, feeling hot, thirsty, dizziness, sedation, insomnia, orthostatic hypotension.

Olanzapine (Zyprexa) has a significantly low incidence of extrapyramidal symptoms

**Precautions:** Use caution in the elderly, and with patients who are suspected of being on CNS depressants. Use caution with seizure history and head injured patients. Do not combine Olanzapine (Zyprexa) in same syringe with Lorazepam (Ativan) or Midazolam (Versed).

**Adult Dose:** 5-10 mg IM  
13 or under consult with medical control

**Route:** Intramuscular

*Appears in Behavioral Emergency Guideline*

**Last Updated: June 11, 2013**
Ondansetron  
(Zofran)

Class: Antiemetic; Serotonin Receptor Antagonist, 5-HT3

Action: Selectively antagonizes serotonin 5-HT3 receptors

Indication: Nausea; Vomiting

Contraindication: Hypersensitivity to Ondansetron (Zofran)

Precautions: Hypersensitivity to other selective 5-HT3 antagonists

Adverse effects: Headache (40% incidence)  
QTc Prolongation  
Tachycardia; Anginal chest pain (rare)  
Constipation; diarrhea; dry mouth  
Dizziness (5% incidence)  
Transient Blindness (rare)

Pregnancy Class: B

Adult Dose: 4 mg or Slow IV over 2 – 5 minutes

Pediatric Dose: 0.1 mg/kg (max. single dose of 4 mg) IM or slow IV over 2 – 5 minutes

Routes: Slow IV over 2 – 5 minutes

Notes: Ondansetron (Zofran) causes less sedation and incurs minimal risk of dystonia as compared to other antiemetics such as Promethazine (Phenergan ®), prochlorperazine (Compazine®), or Metoclopramide (Reglan).

Appears in Nausea & Vomiting guideline  
Appears in Adult Pain Control guideline

Last Updated: June 13, 2008
Oxygen

Class: Gas

Action: Odorless, tasteless, colorless gas that is necessary for life. Brought into the body via the respiratory system and delivered to each cell via the hemoglobin found in RBCs.

Indications: Any hypoxic patient or patient who may have increased oxygen demands for any reason.

Contraindications: None for field use

Precautions: If patient has COPD avoid rebreather or >50% oxygen. However O₂ should never be withheld from any severely hypoxic patient (O₂ sat <90%) In which case provide oxygen titrated to a SAT of >94%. Avoid hyperxia.

Side effects: Hypercarbia and somnolence in COPD patients who retain CO₂

Dose: Titrate to >94%. Patient dependent 1 liter/minute via Nasal Prongs to 100% via rebreather face mask.

Route: Inhaled, or delivered via supplemental respiratory drive.

Appears in Respiratory Distress guideline
Appears in Routine Medical Care guideline
Appears in Anaphylaxis guideline
Appears in Altered Level of Consciousness guideline
Appears in Heat Related Emergencies guideline
Appears in Hypothermia guideline
Appears in Overdose & Poisoning guideline
Appears in Seizure guideline
Appears in Shock guideline
Appears in Management of the Trauma Patient guideline
Appears in Burn guideline (adult)
Appears in Ante-partum Hemorrhage guideline
Appears in Emergency Childbirth guideline
Appears in Post-Partum Care of the Infant guideline
Appears in Neonatal Resuscitation guideline
Appears in Trauma in Pregnancy guideline

Appears in Pediatric Assessment guideline
Appears in Pediatric Airway guideline
Appears in Pediatric Routine Cardiac Arrest
Appears in Pediatric Respiratory Distress
Appears in Croup/Epiglottitis guideline
Appears in Pediatric Obstructed Airway
Appears in Pediatric Allergic Reaction guideline
Appears in Pediatric Seizure guideline
Appears in Pediatric OD/Poisoning guideline
Appears in Pediatric Bradycardia guideline
Appears in Pediatric Burn guideline
Appears in Adult Airway guideline
Appears in ACS guideline

Last Updated: June 2011
Phenylephrine (Neo-Synephrine)
(Neo-Synephrine)

Class: Topical vasoconstrictor

Action: Stimulates alpha (a) receptors in blood vessels of the nasal mucosa causing vasoconstriction. Decreases risk and amount of nasal bleeding.

Indication: Facilitation of nasotracheal intubation

Contraindication: Severe hypertension.

Precaution: Administer prior to setting up equipment to allow medication a chance to take effect.

Side effect: Hypertension
Palpitations

Dose: 2-4 sprays each nostril

Route: Nasal spray

Last Updated: June 13, 2008
**Procainamide**  
*(Pronestyl)*

**Class:** Antiarrhythmic

**Action:** Suppress ventricular activity. May be effective when Lidocaine is not.

**Indication:** Ventricular dysrhythmias  
- recurrent VT  
- refractory PSVT  
- refractory VF/Pulseless VT

**Contraindication:** Complete heart block  
PVCs in conjunction with bradycardia, prolonged QT

**Precaution:** Hypotension following rapid injection  
Widening of the QRS complex and lengthening of the PR or the QT interval may induce AV conduction disturbances.  
Use with caution in patients with AMI  
IVP should not exceed 20mg/min. Not to exceed 1 gram total dose.  
Do not routinely use Procainamide (Pronestyl) and Amiodarone (Cordorone) together.

**Side effect:** Hypotension  
Heart blocks, asystole, VF  
Anxiety  
Nausea/vomiting  
Seizures

**Dose:** 20mg/min until one of the following is observed:  
- arrhythmia is suppressed  
- hypotension ensues  
- QRS complex is widened by 50% of its original width  
- a total of 1 gram has been given

**Route:**  
IV push  
IV infusion (usual dose is 1-4 mg/min IV drip)

**Pedi dose:** 15mg/kg IV over 30 to 60 minutes for V-tach with a pulse with good and poor perfusion

[Appears in Pediatric Tachycardia with Adequate Perfusion guideline](#)  
[Appears in Pediatric Tachycardia with Poor Perfusion guideline](#)

**Last Updated:** October 11, 2011
**RACEMIC EPINEPHRINE (VAPONEPHRINE)**

**Class:** Sympathomimetic

**Action:** Vasoconstriction may reduce swelling in the upper airway, and β effects on bronchial smooth muscle may relieve bronchospasm.

**Indication:** Bronchospasm in bronchiolitis
Stridor at rest in croup
Suspected epiglottitis

**Contraindication:** Acute angle glaucoma
CAD

**Side effect:** Tachycardia
Palpitations

**Dose:** 0.5 ml Racemic Epinephrine (Vaponephrine) mixed in 3 ml saline via nebulizer

**Route:** Nebulized

**Notes:** Onset 1-5 minutes, Duration 1-3 Hours

*Appears in Suspected Croup or Epiglottis Guideline*

Last Updated: June 25, 2012
Sodium Bicarbonate (NaHCO₃)

Class: Alkalotic agent

Action: Increases protein binding of tricyclic antidepressant and shunts potassium intracellularly as well as increasing renal elimination. Neutralizes acid in the blood. May help pH return to normal limits.

Indication: Tricyclic antidepressant overdose, hyperkalemia (consider strongly if cardiac arrest in renal dialysis patient).

Contraindication: Digitalis, Respiratory acidosis
Not to be used routinely in cardiac arrest (exceptions noted above).

Side effect: Metabolic alkalosis
Lowers K+ which may increase cardiac irritability
Worsens respiratory acidosis if ventilation is inadequate

Dose: 1.0 mEq/kg, may repeat if indicated at ½ initial dose

Route: IV push

Appears in adult cardiac arrest guideline
Appears in Bradycardia guideline

Last Updated: June 13, 2008
Tetracaine Ophthalmic Solution

Class: Topical anesthetic for the eye only

Action: Produces anesthesia in the eye approximately 30 seconds after application

Indication: For pain control in burns to the eye

Contraindication: Known allergic reaction to Tetracaine or Novocain type medications.

Dose: 1 or 2 drops to the affected eye

Route: Topically to the eye

Pedi dose: 1 or 2 drops to the affected eye

Appears in Morgan Lens Procedure

Last Updated: June 13, 2008
**Vasopressin**  
*(Pitressin)*

**Class:** Vasopressor, antidiuretic

**Action:** Potent alpha agonist in cardiac arrest, causes vasoconstriction

**Indication:** Cardiac arrest to replace first or second dose of epinephrine

**Contraindication:** History of hypersensitivity to Vasopressin (Pitressin)

**Dose:** One-time dose of 40 units IV push

**Route:** IV

- Appears in adult cardiac arrest guideline
- Appears in Asystole guideline
- Appears in V-fib/Pulseless V-tach guideline
- Appears in PEA guideline

*Last Updated: June 13, 2008*
Documentation of Prehospital Care

Documentation of assessments and patient care shall be done on all patients evaluated including, but not limited to: emergency, transfer, patient refusals, downgrades and stand by circumstances.

Documentation of patient care shall be done immediately upon completion of patient care, and/or transfer of care. The only exceptions to this practice are personal safety issues.

The EMS Patient Care Report (PCR) is a medical record and the primary source of information for continuous quality improvement review. Prehospital care personnel shall be responsible for providing clear, concise, complete and accurate documentation. The prehospital provider who authors the report must include his/her name and signature on the report.

When a patient is transported, the PCR will be delivered with the patient to the hospital. Vital information should also be immediately communicated to the Emergency Department staff for efficient and safe transfer of care.

The PCR shall be left at the receiving emergency department. Every effort shall be made to be certain that the nurse/and or physician responsible for care receive the record. In the event the crew is called out of the hospital to respond to an emergency call, the run form must either be faxed to the facility immediately following the call, or hand-delivered. All PCRs must be left within eight hours.

Failure to leave a run form is considered to be just cause for disciplinary action.

Each emergency department shall prominently post in their EMS area their procedure for leaving PCRs. Copy machines will be made available to EMS.

Hospitals may require a second copy of the PCR be left in a designated box for review by the hospital’s EMS Clinical Coordinator.

* * *

Question: What is so important about leaving a run form if no one is going to read it?

Answer: While it may often seem like no one reads the run form a paramedic leaves, this is not the case. The prehospital run form is essential reading to the emergency physician and later physicians in the patient’s continuing care. It is also essential that that prehospital ECG strips be affixed to the PCR.

Last Updated: June 13, 2008
Transfer of Adult Care from Paramedic to Basic Life Support

Tiered EMS response systems often rely upon the ability of Paramedics to triage patients to Basic Life Support Care to maximize the efficiency of limited numbers of Paramedic response units.

The following are some examples of high-risk conditions that will, for the most part, merit Paramedic care and/or monitoring.

1. Primary complaint of chest pain, chest discomfort, palpitations, or syncope in patients of any age.
2. Complaint of shortness of breath or difficulty breathing.
3. Patients with a new neurological deficit or presentation of stroke.
4. Patients with an initial diagnostic finding of blood glucose <80 or >400.
5. Patients who meet the physiologic or anatomic triage criteria for transport to a level 1 or 2 trauma center.
6. Patients for whom the transporting service requests the presence of the Paramedic.
7. Patients for whom Paramedic treatment (not assessment only) has been initiated.

On-line medical control may be utilized for downgrade consultation or for mitigating circumstances.

Documentation shall be consistent with the North Central Connecticut EMS Council Guidelines “Documentation of Patient Care” and include the reasons for the downgrade.

Last Updated: June 13, 2008
CONNECTICUT EMS MEDICAL ADVISORY COMMITTEE (CEMSMAC)

GUIDELINES FOR MRT, EMT, AEMT, PARAMEDIC
DETERMINATION OF DEATH / DISCONTINUATION OF
PRE-HOSPITAL RESUSCITATION FOR ADULTS OVER AGE 18

NON-MASS CASUALTY SITUATIONS

PROCEDURE FOR DETERMINATION OF DEATH

Local emergency responders and EMS personnel in Connecticut who are trained in any of the National Standard curricula are instructed to follow the most recent national guidelines of the American Heart Association.

All clinically dead patients will receive all available resuscitative measures including cardiopulmonary resuscitation (CPR) unless contraindicated by one of the exceptions defined below. A clinically dead patient is defined as any unresponsive patient found without respirations and without a palpable carotid pulse.

The person who has the highest level of currently valid EMS certification (above MRT level), has active medical control and who has direct voice communication for medical orders, who is affiliated with an EMS organization present at the scene will be responsible for, and have the authority to direct, resuscitative activities.

In the event there is a personal physician present at the scene who has an ongoing relationship with the patient, that physician may decide if resuscitation is to be initiated. In the event there is a registered nurse from a home health care or hospice agency present at the scene who has an ongoing relationship with the patient, and who is operating under orders from the patient’s private physician, that nurse (authorized nurse) may decide if resuscitation is to be initiated. If the physician or nurse decides resuscitation is to be initiated, usual medical direction procedures will be followed.

Resuscitation must be started on all patients who are found apneic and pulseless UNLESS the following conditions exist (SECTION 1- (a-d) are applicable to a MRT level provider):

I. **Traumatic injury or body condition** clearly indicating biological death (irreversible brain death), limited to:

<table>
<thead>
<tr>
<th>EMR</th>
<th>EMT</th>
<th>AEMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paramedic</td>
<td>Medical Control</td>
<td>July 1, 2015</td>
</tr>
</tbody>
</table>
a. Decapitation: the complete severing of the head from the remainder of the patient’s body.

b. Decomposition or putrefaction: the skin is bloated or ruptured, with or without soft tissue sloughed off. The presence of at least one of these signs indicate death occurred at least 24 hours previously.

c. Transection of the torso: the body is completely cut across below the shoulders and above the hips through all major organs and vessels. The spinal column may or may not be severed.

d. Incineration: 90% of body surface area 3° burn as exhibited by ash rather than clothing and complete absence of body hair with charred skin.

Section (e) and (f) require additional assessment confirmation found under “General Procedures,” a-c.

e. Dependent lividity with rigor mortis (when clothing is removed there is a clear demarcation of pooled blood within the body, and the body is generally rigid). DOES NOT APPLY TO VICTIMS OF LIGHTNING STRIKES, DROWNING OR HYPOTHERMIA —in which case follow your specific protocols.

f. Injuries incompatible with life (such as massive crush injury, complete exsanguination, severe displacement of brain matter)

II. Pronouncement of death at the scene by a licensed Connecticut physician or authorized registered nurse by a:

Physician or authorized registered nurse at the scene in person.

III. A valid DNR bracelet is present (per CGS 19a-580d), when it:

a. Conforms to the state specifications for color and construction.

b. Is intact: it has not been cut, broken or shows signs of being repaired.

c. Is on the wrist or ankle

d. Displays the patient’s name and the physician’s name.
GENERAL PROCEDURES:

In cases of dependent lividity with rigor mortis and in cases of injuries incompatible with life, the condition of clinical death must be confirmed by observation of the following:

a. Reposition the airway and look, listen, and feel for at least 30 seconds for spontaneous respirations; respiration is absent.

b. Palpate the carotid pulse for at least 30 seconds; pulse is absent.

c. Examine the pupils of both eyes with a light; both pupils are non-reactive.

d. Absence of a shockable rhythm with an AED for 30 seconds or lack of cardiac activity with a cardiac monitor [paramedic] (in at least 2 leads) for 30 seconds.

**If all the components above are confirmed, no CPR is required.**

If CPR has been initiated but all the components above have been subsequently confirmed, CPR may be discontinued and medical direction contacted as needed.

**Special Consideration:** For scene safety and/or family wishes, provider may decide to implement CPR even if all the criteria for death are met.

If any of the findings are different than those described above, clinical death is NOT confirmed and resuscitative measures must be immediately initiated or continued and the patient transported to a receiving hospital unless paramedic intercept is pending. Termination of resuscitative efforts could then be implemented by the paramedic protocol below.

**DO NOT RESUSCITATE (DNR) WITH SIGNS OF LIFE**

If there is a DNR bracelet or DNR transfer form and there are signs of life (pulse and respiration), EMS providers should provide standard appropriate treatment under existing protocols matching the patient’s condition. To request permission to withhold treatment under these conditions for any reason, contact DMO (Direct medical oversight).

If there is documentation of a DO NOT INTUBATE (DNI) advanced directive, the patient should receive full treatment per protocols with the exception of intubation. If for any reason intubation is being considered in a patient with a documented DNI directive, DMO must be contacted.
TERMINATION OF RESUSCITATIVE EFFORTS (PARAMEDIC LEVEL ONLY):

NONTRAUMATIC CARDIAC ARREST

Discontinuation of CPR and ALS intervention may be implemented after contact with medical direction if all of the following criteria have been met.

1. Patient must be least 18 years of age.
2. Patient is in cardiac arrest at the time of arrival of advanced life support, no pulse, no respirations, and no heart sounds.
3. ACLS is administered for at least twenty (20) minutes, according to AHA/ACLS Guidelines
4. There is no return of spontaneous pulse and no evidence of neurological function (non-reactive pupils, no response to pain, and no spontaneous movement).
5. Patient is asystolic in two (2) leads
6. No evidence or suspicion of any of the following: drug/toxin overdose, hypothermia, active internal bleeding, preceding trauma.
7. All Paramedic personnel involved in the patient’s care agree that discontinuation of the resuscitation is appropriate.

All seven items must be clearly documented in the ambulance patient care report (PCR).

DMO should be established prior to termination of resuscitation in the field. The final decision to terminate resuscitative efforts should be a consensus between the on-scene paramedic and the DMO physician. CONTACT DMO for confirmation of terminating resuscitation efforts.

If any of the above criteria are not met and there are special circumstances whereby discontinuation of pre-hospital resuscitation is desired, contact DMO.

Logistical factors should be considered, such as collapse in a public place, family wishes, and safety of the crew and public.

Examples: Inability to extricate the patient, significant physical environmental barriers, unified family wishes with presence of a living will.

All patients who are found in ventricular fibrillation or whose rhythm changes to ventricular fibrillation should in general have full resuscitation continued and be transported.

Patients who arrest after arrival of EMS should be transported.
TRAUMATIC CARDIAC ARREST:

1. Patients must be at least 18 years of age.

2. Resuscitation efforts may be terminated with approval of medical direction in any blunt trauma patient who, based on thorough primary assessment, is found apneic, pulseless, and asystolic on ECG upon arrival of emergency medical services at the scene.

3. Victims of penetrating trauma found apneic and pulseless by EMS, should be rapidly assessed for the presence of other signs of life, such as pupillary reflexes, spontaneous movement, response to pain and electrical activity on ECG. Resuscitation may be terminated with permission of DMO if these signs of life are absent. If resuscitation is not terminated, transport per protocol.

4. Do not delay initiating proper BLS resuscitation in order to contact DMO.

5. Cardiopulmonary arrest patients in whom mechanism of injury does not correlate with clinical condition, suggesting a non-traumatic cause of arrest, should have standard ALS resuscitation initiated.

DISPOSITION OF REMAINS:

I. Disposition of dead bodies is not the responsibility of EMS personnel but efforts must be taken to insure that there is a proper transfer of the responsibility for scene security. However, to be helpful to family, police, and others, EMS personnel may assist those who are responsible.

II. When a decision has been made to withhold or withdraw resuscitation, the body may be removed in one of the following ways:

   a. The Office of the Chief Medical Examiner (860-679-3980 or 1-800-842-8820) must be notified of any death which may be subject to investigation by the Chief Medical Examiner (CGS19a-407), which includes all deaths that occur outside a health care institution. Normally the police make this notification -otherwise EMS personnel should make the notification and document on the patient care record.

   b. If the body is in a secure environment (protected from view by the public or from being disturbed or moved by unauthorized people), the police should be contacted if not present already. The personal physician or coverage must be notified if at all possible and EMS personnel may leave when the patient has been turned over to the police. Example: a death at home
c. If the body is not in a secure environment and police have not yet arrived, transport the body to the hospital if scene safety is a concern. Example: death in the street with an unruly crowd of people.

d. If the body is not in a secure environment notify the police. The police may contact the Office of the Chief Medical Examiner for authorization to move the body by hearse, or the medical Examiner may elect to send a vehicle for the body. EMS personnel may leave after turning the scene over to other appropriate authority. Example: death occurring on the street.

DETERMINATION OF DEATH/DISCONTINUATION OF RESUSCITATION NOTES:

Consider the needs of survivors when considering the discontinuation of resuscitation, especially if crisis management services may be needed. Transport from the scene may be the better option.

Scene management and safety of the crew and public may prevent withholding/discontinuation of resuscitation. In general, do not cease resuscitation in public places/establishments.

Tubes and IV lines may be removed if patient is being picked up by a funeral home. If the patient is deemed a medical examiner’s case, leave tubes and lines in place. In all cases of trauma, tubes and IV lines must be left in place.

Documentation of all encounters with the patient’s family, personal physician, scene physician or nurse, medical examiner, law enforcement, and DMO should be on the PCR.

DNR TRANSFER FORM

a. To transmit a DNR order during transport by an EMS provider between healthcare institutions, the DNR order shall be documented on the DNR transfer form.

b. The DNR transfer form shall be signed by a licensed physician or a registered nurse and shall be recognized as such and followed by EMS providers.

c. The DNR remains in place during transport as well as to the point of admission to the receiving facility.
REVOCATION OF THE DNR

A valid DNR order can be revoked by the patient’s representative according to CT statutes.

However, in the event that EMS providers cannot verify the DNR status, the patient should be transported with normal care protocols followed.

A copy of all PCRs documenting pre-hospital deaths must be provided to medical direction within 24 hours of the event.

CEMSMAC RATIFIED 5/14/09

Last Updated: June 2, 2009
To: EMS Regional Council Coordinators
   EMS Service Chiefs
   EMS Clinical Coordinators
From: Michael Zanker, MD FACEP
   OEMS Medical Director
Date: 5/12/2006
Re: DNR Program – New Bracelet

Due to concerns raised by the public, a new bracelet has been approved by the Office. Working in collaboration with the program administrator, the Connecticut College of Emergency Physicians (CCEP), a vendor has been selected to provide an alternative bracelet to the standard orange plastic one already in use. This bracelet will be available only through CCEP and will be in addition to the existing orange bracelet. The bracelet will be at additional cost to the patient, and it will be embossed with the CT ONR program symbol. Pictures of the adult and child bracelets can be found at the following link: www.medicalidalertbracelet.com/wholesale.htm. Click on the “Standard Medical ID” tab, (A) is the adult bracelet, (C) is the approved child’s bracelet. There is no other change to the program. This new bracelet and the existing plastic orange bracelet are the ONLY two approved by the State. If you any further questions, please do not hesitate to contact me at 860-509-7875.

Phone:
Telephonic Device for the Deaf: (860) 509-7191
410 Capitol Avenue - MS #
P.O. Box 340508 Hartford, CT 06134
Affirmative Action/Equal Opportunity Employer
North Central Connecticut EMS Council
Scheduled Interfacility Transportation of Mechanical Ventilator Patients

In order to maintain a high quality of care during an interfacility transfer of Mechanical Ventilator Dependent patients, the North Central EMS Council has enacted the following policies:

Mechanical Ventilator Dependent patients who are hemodynamically stable with low risk of deterioration

1. Pulse Oximetry, and End-tidal CO2 production will be measured continuously during the transfer of Mechanical Ventilator Dependent patients. Continuous ECG may be an option.

2. The Mechanical Ventilator Dependent patients should be on a portable ventilator during transport. Reliance on BVM ventilation should only occur during equipment failure or transfer between devices. In the rare event a ventilator is not available; a second attendant must be present in the back of the ambulance to assist with ventilation.

Mechanical Ventilator Dependent patients who are hemodynamically stable/unstable with medium to high risk of deterioration

1. Continuous ECG, Pulse Oximetry, and End-tidal CO2 production will be measured continuously during the transfer of Mechanical Ventilator Dependent patients.

2. The Mechanical Ventilator Dependent patient should be on a portable ventilator during transport. Reliance on BVM ventilation should only occur during equipment failure or transfer between devices.

3. A second healthcare provider shall be available to assist with patient transport. In certain circumstances where the medications and/or equipment being utilized are not within the scope of practice for the out-of-hospital provider, the hospital shall supply an additional provider for transport.

4. A medium to high risk patient is defined as meeting at least, but not limited to one of the following criteria:
   a. is being transferred from one Hospital Critical Care area to another Hospital Critical Care area
   b. is currently endotracheal / nasotracheal intubated
   c. who has had any deterioration of vital signs

Last Updated: June 1, 2008
EMS Response to Detention/Holding Facilities

CONNECTICUT EMS MEDICAL ADVISORY COMMITTEE
(CEMSMAC)

EMS RESPONSE TO DETENTION/HOLDING FACILITIES

EMS providers are often called to detention or holding facilities to assess, treat and transport detainees. It is important to keep in mind that detainees have the same rights to medical treatment as does the lay public.

Request for Evaluation Only

While it is beyond the practice for paramedics or EMTs to provide intentional treat and release services, EMS responders often encounter situations where a patient (or law enforcement) desires evaluation, but does not want transportation.

When in such a situation, EMS responders must treat the scenario the same as they would a patient in a home or at an accident scene who requests evaluation only.

The EMS responder should follow good medical judgment in these situations, including doing a full history and assessment. Vitals signs should be assessed, including checking blood sugar if relevant.

Patient/detainee Refusal of Transport

If in the judgment of the EMS provider the patient/detainee should be medically evaluated at the hospital, every attempt should be made to convince the patient/detainee (and law enforcement) to allow ambulance transportation to a local medical facility.

EMS responders should offer transportation several times; fully explain the potential medical consequences of refusing care to the patient/detainee and make every effort to ensure all parties understand the risks, and advise the patient/detainee to ask the law enforcement officer to recall 911 if necessary.

Should the patient/detainee refuse this offer of transport, a full refusal PCR should be completed. The law officer should witness it. In the event the patient/detainee refuses care and refuses to sign the PCR, document this fact and have the law officer attest to the patient’s refusal to sign.
Police Officer Ordered Transport

In the event the patient/detainee refuses treatment and transportation, but law enforcement orders it, EMS should transport the patient/detainee and document all circumstances in the PCR. In all cases a law enforcement officer should accompany a detainee in the ambulance.

Law Enforcement Refused Transport

In the event the patient/detainee requests transport, but the law enforcement officer refuses to allow the patient/detainee to be transported, document this fact, including the name of the officer in your report. The officer can legally sign a refusal for a patient/detainee who requests transportation (however in practice this is not done – normally the patient/detainee will sign). Documentation should also include the EMS responder’s cautions to the law enforcement officer on the consequences of withholding necessary evaluation and or treatment. The EMS responder should request that the law enforcement officer sign under this documentation. Medical Direction must be contacted (see section below).

Medical Control

EMS responders are always encouraged to contact Medical Direction to allow the on-line physician to speak directly with the patient/detainee or law enforcement officer in an effort to convince them of the need for further medical evaluation. In all circumstances in which a patient/detainee is given an approved EMS medication such as a breathing treatment or dextrose, and then refuses transport or has transport denied by the law enforcement officer, the EMS responder must contact Medical Direction

Scope of Practice

At no time should an EMS responder perform any treatments or evaluation methods beyond their scope of practice such as administering insulin, dispensing or verifying medications.

Transport Destination

The law enforcement officer may determine the hospital of choice unless it conflicts with patient/detainee need as determined by regional guideline or state regulation. Medical Direction should be contacted with any questions.

CEMSMAC RATIFIED (WITH CORRECTIONS) 4/9/09

Last Updated: June 2, 2009
The Current CPR guidelines by the American Heart Association (AHA recommend to change the shock sequence in existing AEDs.

Effective January 1, 2007 the North Central Connecticut EMS Council will require the following:

1. Existing AEDs may continue to be used, including those that administer 3 successive shocks.

2. Services are expected to upgrade their AEDs to administer single shocks within the next year, before January 1, 2008.

3. If you are given programming options for your AED, it should be to analyze and shock once it is turned on. Please note that this is consistent with current AHA teachings. Shock energy levels should be in accordance with manufacturer recommendations.

4. **When more than one rescuer is present:** Upon arrival at a cardiac arrest CPR should be started immediately and continued until the AED pads are in place and the machine is ready to analyze. The AED should be placed on the patient as soon as it is available, regardless of downtime or if the arrest was witnessed or un-witnessed. In cases in which a defibrillator is not immediately available, CPR should be done until such time as a defibrillator is available.

5. **When there is only a single rescuer present:** Unwitnessed arrests should have the AED placed on the patient if no other help has arrived. (If additional help arrives they should place the AED on the patient as soon as they arrive). Witnessed arrests should have the AED placed immediately.

**Last Updated: December 28, 2011**
Capitol Region Council of Governments RESP Plan

The Capitol Region Council of Governments Regional Emergency Support (RESP) Plan.  
http://www.crcog.org/homeland_sec/plan.html

Last Updated: June 13, 2013
The Role of EMS in Hospital Diversions

As hospital diversions become increasingly common in the North Central region it is important for EMS personnel to understand their role and responsibilities when a local hospital is on diversion.

A hospital diversion occurs when a hospital’s resources or ability to treat certain patients has been temporarily compromised. By diverting a patient to another hospital, the emergency medical system is providing for the timeliest rendering of care for all patients entering the system.

It is understood however that any hospital must accept a patient who is so unstable that, in the opinion of the ambulance crew, the patient must be taken to the closest hospital regardless of the diversion status of that institution.

This may include, but not be limited to, patients with unmanageable airways, patients with CPR in progress, patients with uncontrolled external hemorrhage, patients requiring immediate ALS, but having no paramedic in attendance, and obstetrical patients in active labor.

In these cases, EMS personnel shall attempt to contact the receiving facility as soon as possible to report on the patient and the reasons they must override diversion status.

EMS should consider the additional transport time between hospitals. The distance for Hartford EMS services will obviously not be as big an obstacle as services requested to divert from outer lying areas.

We rely on EMS personnel to use their best judgment in each situation to do what is right for the individual patient and the larger EMS system.

Whenever in doubt, do not hesitate to contact medical control at the diverting hospital to discuss the transport destination for your patient.

Notes:

If there are compelling circumstances for a patient to go to a particular hospital, EMS should contact medical control at that facility to discuss destination.

<table>
<thead>
<tr>
<th>EMR</th>
<th>EMT</th>
<th>AEMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paramedic</td>
<td>Medical Control</td>
<td>July 1, 2015</td>
</tr>
</tbody>
</table>

Last Updated: June 13, 2008
State of Connecticut Hospital Diversion Policy

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

Date: January 17, 2008
To: Emergency Department Medical Directors
    Sponsor Hospital EMS Coordinators
    CMED Center Directors
From: J. Robert Galvin, M.D., M.P.H., M.B.A.
      Commissioner
Re: Revision to the Hospital Diversion Guidelines

Please review the attached guidelines regarding hospital diversions. These guidelines should be used as a template for regional and local coordination if hospital diversions are necessary.

This is a revision to the established guidelines, which were initially put into place, in 2002. The Connecticut EMS Medical Advisory Committee and the EMS Advisory Board have both provided extensive review and discussion on the subject of hospital diversions and I am supportive of the revisions.

Encl.

Last Updated: January 17, 2008
STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
STATE-WIDE DIVERSION GUIDELINES

NON-MCI CONDITIONS

Diversion should be utilized by an institution only as a last resort when patient safety within the institution may be jeopardized due to very high volume, or when the institution is not able to offer some of its normal services (such as CT scans). Diverting an ambulance can potentially place that patient at increased risk; therefore the welfare of the institution’s patients as well as the welfare of potential arrivals must be carefully weighed.

Before diversion due to volume is contemplated, the institution shall have attempted everything possible to ensure that the Emergency Department does not become filled with admitted patients waiting to go to other areas of the hospital. Departments filled with admitted patients are impeded in their ability to treat emergent patients and are delayed in treating new arrivals.

Prior to diversion, the institution should have exhausted all avenues to prevent reaching this point. Some of the ways to ensure this are: expediting discharges, bringing additional staff into the hospital, paying overtime/bonuses for staff to pick up shifts, bringing additional beds into service, and considering the cancellation of elective admissions or procedures for that day or the next.

Those regions with a diversion policy already in place should make sure the same components contained herein are included in their protocols. Any concerns or need for variation of the regional policies should be brought before the CEMS MAC prior to implementation. All regional policies should be sent to the CEMS MAC to be kept on file.

There are two types of diversion:

- Emergent Operational Diversion due to an acute natural disaster such as a fire, burst pipes, electrical shut-down, etc., a threat/act of violence, or Haz Mat contamination, that directly or indirectly affects the ED operation and patient safety. This also includes issues involving the rest of the hospital (fire, loss of electricity, loss of water, loss of the operating rooms, etc.)

  Emergent operational diversion may be required due to blocked routes of travel to the hospital secondary to an emergent situation.

  In those cases where the ED may need to go on diversion acutely, only C-Med needs to be notified. C-Med will in turn notify the surrounding hospitals.

- Emergent Medical Diversion for high ED census, lack of hospital beds of any category, or imaging malfunctions:

  Telephone Device for the Deaf: (860) 509-7191
  410 Capitol Avenue - MS #____
  P.O. Box 140008 Hartford, CT 06134
  Affirmative Action / An Equal Opportunity Employer

Last Updated: June 13, 2008
The hospital that wishes to divert must obtain the permission from those hospitals it wishes to divert to. Those found to accept must be in a reasonable distance from the diverting hospital due to the fact that ambulances will not travel large distances out of their assigned areas unless there is an MCI declared.

C-Med will only accept the diversion status if it has the names of the responsible parties at the diverting and accepting hospitals.

The C-Med center in the region where the diversion is occurring, will notify all the other area hospitals by a general toned announcement.

The C-Med center where the diversion is occurring will notify the neighboring C-Med center if diverting ambulances are crossing over to that region.

Diversion must be formally renewed every four hours with C-Med and the accepting hospitals. If the time expires and the diverting hospital has not extended diversion with the permission of the accepting hospital(s), CMED will announce that the diverting hospital has resumed normal operation.

As the internal or external reasons for diversion improve, it is expected that the diverting institution cancels its diversion status as soon as possible.

As conditions change, any hospital may remove itself, at any time, from the accepting list by notifying the diverting hospital and C-Med.

If a hospital that is contemplating diversion finds no accepting hospitals, it cannot divert.

If a diverting hospital has lost all those institutions that were accepting, it must cease to divert unless it can find an alternate accepting hospital.

In the event that severe weather conditions exist, C-Med may advise the diverting and receiving hospitals of these conditions. The final decision to implement/continue diversion will rest with the involved hospitals.

Scene providers should use the state trauma diversion criteria as well as the attached diversion criteria for guidance and contact medical control for destination decisions.

A hospital regardless of his diversion status must accept a patient who is so unstable that, in the opinion of the ambulance crew, the patient must be taken to the closest hospital. On-line medical direction must be contacted in this circumstance to discuss final destination.
SMART Triage

The SMART Triage algorithm is outlined below. EMS providers are encouraged to attend a SMART Triage training program. A list of upcoming programs may be found at CTTrain.com. SMART Triage is the official triage system of the State of Connecticut.

Last Updated: January 17, 2008
Pain Control Policy

North Central Connecticut Emergency Medical Services Council, Inc.

MEMO

Date: March 10, 2009
To: North Central EMS Services and Personnel
From: Betty R. Morris
Regional Coordinator, North Central Connecticut EMS Council
C. Steven Wolf, MD
Chair, North Central Medical Advisory Committee

Subject: North Central Connecticut EMS Medical Advisory Committee
Pain Management Letter

The North Central EMS Medical Advisory Committee would like to emphasize to all EMS services and personnel in the region the importance of proper and timely pre hospital pain management.

Pain is a medical condition that requires prompt treatment. Failure to promptly treat pain can lead to harmful physiological consequences for the patient. Every patient should have their pain assessed, treated and monitored.

North Central Guidelines require that all conscious patients be asked to rate their pain according to an accepted pain scale.

Run form documentation should include an assessment of the patient’s pain, the nature of the pain, treatment of the pain, a reassessment of the pain, and patient satisfaction with pain relief efforts.

Care should included non pharmacologic interventions and pharmacologic interventions when indicated.

We ask area hospitals and services to increase education, training and quality assurance efforts in this area to improve compliance with regional pain management guidelines and accepted standard of care.

Last Updated June 2, 2009
North Central C-MED

Region 3 Mass Casualty Incident Protocol

Pre-Hospital

North Central CT EMS Council
P.O. Box 1833
120 Holcomb Street
Hartford, CT 06144-1833

Business Phone: 860-769-6055
CMED Phone: 860-769-6051
Business Fax: 860-286-3034
Email: info@NorthCentralCTEMS.org

Last Updated: June 2, 2009
Page 1 of 18
The MCI section of this field manual was created with generous support from the ESF-8 EMS Section MCI Subcommittee

Special thanks to:

Dr. Steven C. Wolf, M.D., Chairman for the Department of Emergency Medicine, Saint Francis Care
Brenda Murphy, Chief Medical Officer, East Hartford Fire Department
Dave Koscuk, EMT-P, EMSI, Captain of Clinical Services, New Britain EMS
Scott A. Woods, EMS Service Chief, Newington Volunteer Ambulance Corps, Inc.
Table of Contents

Purpose…………………………………………………………………………….. 2
Introduction to MCI………………………………………………………………….. 3
Definitions……………………………………………………………………………… 3
MCI Thresholds ……………………………………………………………………… 3
MCI Threshold- Region 3…………………………………………………………… 4
MCI Levels……………………………………………………………………………. 5
First Unit on Scene…………………………………………………………………… 6
Notifying CMED of MCI……………………………………………………………. 7
CMED Notification to Area Hospitals……………………………………………… 7
Use of MED Channels……………………………………………………………… 8
MED Channel Assignments………………………………………………………… 9
MEDNET Notification……………………………………………………………… 9
Mutual Aid Call Out………………………………………………………………… 10
Ambulance Staging Areas………………………………………………………….. 11
Patient Dispersal…………………………………………………………………….. 11
Medical Control Policy……………………………………………………………… 12
After Action Reporting……………………………………………………………… 12
MCI Trailer Deployment Procedure……………………………………………… 13-15
RED Plan Activation……………………………………………………………….. 16
Medical Branch Incident Command Structure…………………………………. 17
Medical Branch Incident Command Structure Definitions……………………. 18-19
Checklists……………………………………………………………………………… 20
Medical Branch Director……………………………………………………………. 21
Medical Group Supervisor…………………………………………………………. 22
Triage Unit Leader…………………………………………………………………… 23
Triage Personnel……………………………………………………………………….. 24
Morgue Manager……………………………………………………………………. 25
Treatment Unit Leader……………………………………………………………… 26
Treatment Dispatch Manager………………………………………………………. 27
Immediate Txt. Area Manager…………………………………………………….. 28
Urgent Txt. Area Manager…………………………………………………………. 29
Delayed Txt. Area Manager………………………………………………………… 30
Transportation Unit Leader………………………………………………………… 31
Medical Comm. Coordinator……………………………………………………….. 32
Ambulance Coordinator……………………………………………………………. 33
Medical Supply Coordinator………………………………………………………. 34
CMED Radio Frequencies………………………………………………………….. 35
CT Trauma Centers………………………………………………………………….. 37
CT Hospitals w/Directions………………………………………………………….. 37-51
Out of State Hospitals Bordering CT……………………………………………… 52-66
U.S. Burn Centers…………………………………………………………………… 66-68
CT CMED Centers………………………………………………………………….. 68-69

Last Updated: June 2, 2009
North Central CMED System

Purpose

North Central CMED’s utmost concern is to provide pre-hospital and hospital users with the most efficient and reliable communications system possible.

This information is designed to familiarize you with North Central CMED’s procedures during a Multi-Casualty Incident, and is intended to assist with your communication needs if such an incident occurs.

Any questions or concerns regarding these guidelines should be addressed directly to North Central Connecticut EMS Council Management.
Introduction to the Mass Casualty Incident

“Multi-Casualty and “Mass Casualty” traditionally are interchangeable terms in Connecticut. Connecticut’s Term references an incident that meets locally defined thresholds in accordance with the jurisdiction emergency response plan.

- Large numbers of injured persons
- Large multi-agency response teams
- Inherently hazardous environments
- High stress environments

Local disaster plans identify the specific formula for each jurisdiction; knowing the local criteria is crucial to early recognition and declaration of MCI

What is a Mass Casualty?

FEMA Mass Casualty Incident Definition
Mass casualty incidents are incidents resulting from man-made or natural causes resulting in illness or injuries that exceed or overwhelm the EMS and hospital capabilities of a locality, jurisdiction, or region. A mass casualty incident is likely to impose a sustained demand for health and medical services rather than the short, intense peak demand for these services typical of multiple casualty Incidents.

What is a Multi-Casualty Incident?

FEMA Multi-Casualty Incident Definition
Multi-casualty incidents are incidents involving multiple victims that can be managed, with heightened response (including mutual aid if necessary), by a single EMS agency or system. Multi-casualty incidents typically do not overwhelm the hospital capabilities of a jurisdiction and/or region, but may exceed the capabilities for one or more hospitals within a locality. There is usually a short, intense peak demand for health and medical services, unlike the sustained demand for these services typical of mass casualty incidents.
MCI Threshold Definition

The point at which the number of patients at an MCI and the severity of their conditions are beyond the ability of available resources to provide adequate care.

The day-to-day EMS response is designed to assure scene safety and to triage, treat and transport no more than a few patients. If day-to-day procedures were followed at the scene of a large number of casualties, several problems could occur with scene management, triage, treatment, and transport.

The threshold formula is…

# Ambulances within 15 minutes X 2 victims +1 would constitute an MCI declaration for that community
Example:  6 ambulances X 2 victims = 12 victims
12 victims + 1 = 13 (MCI declaration)

MCI Threshold = 13 victims

If the numbers of victims exceeds the threshold, but few, if any, appear to be seriously injured, consideration should be given to not declaring an MCI.

North Central Region Threshold

“For Area Hospital Notification Only”

Field units are required to notify North Central CMED of incidents involving:

- Three ambulances to any incident
- Three critical (red) victims and/or
- Ten victims
MCI LEVELS

The establishment of MCI levels is to automatically trigger operational movement of resources without the CMED communicator needing special authority/direction. In theory the EMS officer would declare an MCI (level 1-4) and CMED following established protocol would automatically deploy resources as outlined:

Level 1 MCI (11-20 victims)
- 10 Ambulances (no need to specify ALS v BLS)
- 2 EMS Supervisors
- 1 Local MCI equipment resource

Level 2 MCI (21-50 victims)
- 15 ambulances
- 3 EMS Supervisors
- 1 Regional MCI trailer
- Consider 1 bus
- RED Plan Notification

Level 3 MCI (51-100 victims)
- 20 Ambulances
- Consider 2 buses
- 5 EMS Supervisors
- 1 Regional MCI Trailer
- RED Plan Notification

Level 4 MCI (>100 victims)
- 20 Ambulances (per 100 victims)
- Consider 2 Buses (per 100 victims)
- 5 EMS Supervisors (per 100 victims)
- 1 Regional MCI trailer (per 100 victims)
- RED Plan Notification

Hazardous Materials (HAZMAT) Weapons of Mass Destruction (WMD)

HAZMAT, CBRNE/WMD incidents will often require the use of local or regional HAZMAT teams.

Last Updated: June 2, 2009

<table>
<thead>
<tr>
<th>MRT</th>
<th>EMT</th>
<th>EMT-I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paramedic</td>
<td>Medical Control</td>
<td>January 13, 2015</td>
</tr>
</tbody>
</table>
FIRST UNIT ON THE SCENE

First unit on scene gives visual size-up, assumes and announces command, and confirms incident location, then…the 5 S’s

SAFETY assessment: Assess the scene observing for:

- Electrical hazards.
- Flammable liquids.
- Other life threatening situations.
- Be aware of the potential for secondary explosive devices.

SIZE UP the scene: How big and how bad is it? Survey incident scene for:

- Type and/or cause of incident.
- Approximate number of patients.
- Severity level of injuries (either Major or Minor).
- Area involved, including problems with scene access.

SEND information:

- Contact CMED with your size-up information.
- Request additional resources.

SETUP the scene for management of the casualties:

- Establish staging.
- Identify access and egress routes.
- Identify adequate work areas for Triage, Treatment, and Transportation.

SMART triage:

- Begin where you are.
- Ask anyone who can walk to move to a designated area.
- Use SMART Triage tags to mark patients.
- Move quickly from patient to patient.
- Maintain patient count.
- Provide only minimal treatment.
- Keep moving!

Remember…Establish COMMAND, SAFETY, SURVEY, SEND, SET-UP AND SMART.

Last Updated: June 2, 2009
Radio Procedures

It is essential that proper radio etiquette is used during transmissions to CMED. Unit to unit communications should be left to a minimum. Use plain language, avoid jargon and codes. Transmissions shall be professional, brief and concise.

When calling a unit or station, identify the unit or station being called then your I.D. Speak clearly into the microphone and build in pauses when giving reports to confirm the other party receives the message.

Notification to CMED for Declared Mass Casualty Incident

Upon declaration of an MCI, per protocol, CMED will confirm receipt of notification, alert area agencies and notify all hospitals in the North Central Region of the developing MCI with a simultaneous broadcast. CMED will not forward information to other agencies, hospitals, etc… until the incident is declared an MCI.

The Medical Branch Director/Medical Group Supervisor will request a CMED channel assignment. Once assigned, the Medical Branch Director/the Medical Group Supervisor will determine and communicate to CMED the following information:

1. Name/Title of the Medical Group Supervisor on scene.
2. Name/Title of the Patient Transportation Unit Leader/Ambulance Coordinator
4. Exact Location (town & street).
5. MCI Level (1-4)
6. Estimated number of victims. (Number of known injuries and estimated possible casualties).
7. Number of ambulances requested to the scene (if CMED is requested to perform mutual aid call out) and if an MCI trailer is needed.
8. Exact ambulance staging area and contact information

CMED Notification to Hospitals for Declared Mass Casualty Incident

Upon confirmation and receipt of declared MCI by the Medical Branch Director/ Medical Group Supervisor on scene, CMED will notify all hospitals in the North Central region of the developing mass casualty incident with a simultaneous broadcast, and telephone communications as necessary.

Patients will be sorted according to SMART criteria of red, yellow, green. Upon receiving direction from the Medical Group Supervisor, CMED will contact all area hospitals to determine red, yellow, and green capabilities.

During the incident, CMED will provide periodic updates to the hospitals in the affected area. These hospitals should report any changes in their status during an incident that may affect scene management, directly to CMED.

Last Updated: June 2, 2009
CMED will notify hospitals when ambulances depart the scene of an MCI. The following information will be reported for each transport:

- Ambulance number and destination hospital
- Patient SMART Tag
- Triage color
- Age and sex of patient(s)
- Nature of injury
- ETA

Incidents involving more than 10 patients CMED will notify Colchester Communications (MEDNET Control) of the incident.

**Use of MED Channels during Mass Casualty Incident**

**MED Channels are used to facilitate your direction requests to CMED.** MED channels will not be used as an “EMS ground frequency” or an uninterrupted direct link to any hospital. EMS units responding to an MCI are to sign on with CMED on MED 10. Units will then be directed to the assigned MCI MED channel.

**MCI Channel Assignment**

To maintain a sound communication system, CMED will authorize up to three MED channels to be used during an MCI.

**MCI Command and Control Channel**

This channel will be utilized for communications between the Medical Branch Director/Supervisor and CMED. This channel will be used to:

- Coordinate between scene and CMED
- Update CMED with established casualties
- Update CMED with escalation of the incident
- Update scene as to hospital bed availability

**MCI Transportation Channel**

This channel will be used by the Patient Transportation Unit Leader/Medical Communications Coordinator during MCI operations. The Patient Transportation Unit Leader should give concise patient SMART Tag reports to CMED for hospital notification. This will prevent ambulances from lengthy individual reports. This channel will be used to:

- Request mutual aid
- Coordination of arriving units (directions, new information, staging, etc…)
- Update scene of mutual aid status

<table>
<thead>
<tr>
<th>MRT</th>
<th>EMT</th>
<th>EMT-I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paramedic</td>
<td>Medical Control</td>
<td>January 13, 2015</td>
</tr>
</tbody>
</table>
• Provide patient reports to CMED
• Provide transportation information to CMED

Note: Entry notifications to the hospitals will be made by CMED. The Patient Transportation Unit Leader/Medical Communications Coordinator should give CMED patient reports which include: Ambulance number and hospital destination, SMART Tag number and color, age and sex, nature of injury, and ETA will be documented on the CMED patient tracking form.

MCI Channel Assignment

MCI Additional Channel

Depending upon the nature and scope of the MCI, North Central CMED may assign a third MED channel. Use of this channel will be determined after discussion between the CMED Center and the Medical Branch Director. Examples for channel use are listed below and are not all inclusive:

• Forward Movement of Patients
• Ambulance Strike Team Request
• Governmental agency requests
• Supply requests
• Stockpile request
• Further scene coordination
• Communication link between medical control hospital and medical control officer on scene. (This will be a non-repeaterized channel).

MEDNET (CT EMS Communications Network) Notification

CMED will notify various communications centers and appropriate public safety agencies via MEDNET, as necessary.
Mutual Aid is the process by which resources from one town/service area are deployed to respond to request for service in another town or service area. Mutual aid is used in the following circumstances:

1. There are more calls in a town service area than the primary responder can handle
2. There is need for additional resources above what the town/service provider can provide at a single incident
3. A mass casualty situation has occurred
4. The primary service has failed to initiate a response within established response parameters

As North Central CMED is not the primary dispatch center for any EMS service, they will have no role in mutual aid callout until such time as they are requested to assist in procuring mutual aid or when a MCI declaration occurs. In either instance, at the time of the request, North Central CMED will become the sole agency with the exception of pre-planned Special Operations to request additional units and responses. During Special Operations, it is the responsibility of the EMS Commander to advise CMED of the number of transport units on scene. At the time of the request North Central CMED should be provided with a turnover of agencies requested and responding, their unit numbers, clinical levels and ETA.

North Central CMED as part of the Statewide MEDNET System is responsible for mobilizing EMS assets in its service area for response to major incidents throughout the State of Connecticut. Pending completion of the Department of Public Health EMS Mobilization Plan, North Central CMED and its client EMS Provider Services will be guided by the following principles when requested to provide mutual aid in other areas of the State (outside of Region 3).

1. Only 25% of the on duty ambulance/paramedic units available in the North Central CMED Service area at the time of the request will be allocated to an out of region incident.
2. Upon a state DPH request for North Central CMED service area EMS assets, all EMS provider services will be requested to staff all of their available response units, to ensure coverage in Region 3.
3. At no time will on duty ambulance/paramedic units fall below 75% due to responses requested by the State, other regions or other CMED’s.
4. EMS providers will refrain from deploying assets from their service areas to other areas of the State except as may be directed by North Central CMED.

**Hospital Distribution**

As a general rule, in the case of an emergency, EMS transports patients to the closest geographic hospital. Sometimes, EMS and hospital conditions makes it more appropriate to take the patient to a hospital that is not the closest.

This point-of-entry plan addresses circumstances when, because of the health of the system, the system would benefit from distributing patients to a more distant hospital(s) emergency department. North Central CMED will monitor the overall status of the EMS and hospital systems. In the event of an MCI or other high volume incident or incidents, North Central CMED will assign hospital destinations to transport units.

**Staging Areas**
All responding EMS units should go directly to the assigned STAGING AREA and await further instructions. Do not leave the staging area until you are instructed to do so by the Medical Branch Director/Medical Group Supervisor or the direction of North Central CMED.

**Patient Dispersal from the Scene**

Patients will be sorted according to SMART Tag criteria of RED/YELLOW/GREEN/BLACK. Upon receiving direction from the Medical Branch Director/Medical Group Supervisor, CMED will contact all area hospitals to determine RED/YELLOW/GREEN capabilities.

- **Red**: Priority 1  
  Life-threatening but treatable injuries requiring immediate medical attention

- **Yellow**: Priority 2  
  Potentially serious injuries, but are stable enough to wait a short while for urgent medical treatment

- **Green**: Priority 3  
  Injuries that can wait for longer periods of time for delayed treatment

- **Black/Blue**: Dead/Expectant  
  Dead or (expectant still with life signs but injuries are incompatible with survival in austere conditions

To assure hospital capabilities have not reached capacity, transporting units will be assigned hospital destination by North Central CMED.

**Patient Dispersal to Receiving Hospitals**

**Purpose**

The purpose of this protocol is to assure that the treatment of patients at the scene of a mass casualty incident and transportation to receiving hospitals is done in accordance with accepted medical and communication standards. *Radio traffic should be kept at a minimum.* In accordance with the statewide program of Mass Casualty Care in Connecticut, patients requiring advanced life support will have effective medical control communications providing guidance for, advanced life support care without the need for individual orders, alternative transportation for patients receiving advance life support when insufficient MICU unit are available, and assurance that trauma patients are taken to appropriate trauma centers. Communications to hospitals and requests for medical control will be processed through the individual that has assumed responsibility for the EMS function at the scene of an incident.

**Scene Management**

<table>
<thead>
<tr>
<th>MRT</th>
<th>EMT</th>
<th>EMT-I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paramedic</td>
<td>Medical Control</td>
<td>January 13, 2015</td>
</tr>
</tbody>
</table>
Upon arrival at the scene of a mass casualty incident, the EMS provider sets up EMS scene control and designates and the Medical Branch Director/Medical Group Supervisor per their Mass Casualty Incident Plan. Whenever possible CMED should be advised of the incident’s scope. CMED will alert the hospitals closest to the incident’s scene. During the incident, CMED will provide periodic updates to the hospitals in the affected area. These hospitals should report any changes in their status during an incident that may affect scene management, directly to CMED.

Medical Control / Communication at the Scene

All EMS personnel providing treatment at the scene of a declared Mass Casualty Incident will follow standing orders protocols. It is not necessary to contact medical control of the individual service. Standing ALS orders will apply during a declared Mass Casualty Incident. If communication to medical control is necessary, CMED will provide a MED channel for the designated Treatment Officer. The Sponsor Hospital nearest the incident will be designated as the Medical Control Hospital. This should not be considered an “open patch.” The Treatment Officer should establish communication with CMED first to assure that a physician is online.

Med control policy

MEDICAL DIRECTION DURING A MASS CASUALTY INCIDENT

In order to reduce radio congestion and allow scene personnel to accomplish their tasks during a declared mass casualty incident, all regional protocols will revert to standing orders during this time. However, medical personnel cannot function beyond the scope of their training or above the authorized level of the service with which the personnel are responding. All patients treated under standing orders must have this documented on the PCR.

Nevertheless, scene personnel are encouraged to contact on line medical direction as needed to aid in the treatment efforts

After Action Reporting

The EMS Section of Region 3 Emergency Support Function (ESF)-8 will make itself available to facilitate an After Action Report of any MCI within Region 3. The After Action Report may be requested by the incident agency/town, the Region 3 Medical Advisory Committee (MAC), the Region 3 EMS Council or North Central CMED.

Last Updated: June 2, 2009

| MRT       | EMT          | EMT-I          | Paramedic  | Medical Control | January 13, 2015 |
Date: August 28, 2008

To: Regional Communication Centers
CMED Centers
EMS Service Chiefs
Fire Departments

From: J. Robert Galvin, M.D., M.P.H., M.B.A.
Commissioner

Re: Deployment Strategy for MCI Trailers

In a joint effort between the Department of Public Health and the Department of Emergency Management and Homeland Security, 5 regional Mass Casualty Incident Trailers have been deployed throughout the state to be utilized during large-scale events.

These trailers contain items such as immobilization and splinting supplies, trauma supplies and dressings, airway management and oxygen along with various miscellaneous items.

Attached please find the deployment protocol for these trailers, which outline the process for requesting this asset. Should you have any questions, please contact I. Leonard Guercia, Operations Branch Chief at (860) 509-7975 or via email at Leonard.guercia@ct.gov.

Thank you for your on-going support of our preparedness efforts.
REGIONAL MASS CASUALTY SUPPORT TRAILER

DEPLOYMENT PROCEDURE

GENERAL

The Connecticut Department of Public Health, in cooperation with the Connecticut Department of Emergency Management and Homeland Security (DEMHS), has partnered to deploy five (5) regional mass casualty supply trailers. These units contain a cache of durable and disposable medical equipment that can be used to support large-scale incidents, when local EMS supply resources have been, or are expected to be, exhausted. Each trailer has been stocked with primarily basic life support equipment, is designed to provide medical supplies and equipment to treat approximately 100 patients, and are pre-positioned in each of the five (5) DEMHS / EMS regions through a voluntary arrangement with the following EMS service providers:

Region 1: Wilton Volunteer Ambulance
Region 2: American Medical Response (AMR) of CT, New Haven
Region 3: New Britain EMS, New Britain
Region 4: American Ambulance Service, Norwich
Region 5: Danbury Fire Department

ACTIVATION / DEPLOYMENT

The Regional Mass Casualty Support Trailers are available to any local jurisdiction requiring the medical supply resources available on the units. In the event of a multi-casualty incident (MCI), the local incident Command, Medical Branch Director (or so authorized by the IC), or Medical Group Supervisor (or so authorized by the IC) shall initiate the request either directly through their local communications center, or through their local C-MED, for deployment of the regional MCI trailer to a designated staging location. The local communications center (C-MED) will then direct the designated Coordinated Medical Emergency Dispatch (CMED) center in the affected region. Those designated CMED centers are identified as follows:

Region 1: Southwest CMED (203) 338-6792
Region 2: South Central CMED (203) 489-5600
Region 3: North Central CMED (860) 769-6051
Region 4: Norwich CMED (880) 886-1463
Region 5: Northwest Public Safety (203) 769-6000

C-MED shall dispatch the closest unit to the incident. Based on the totality of the circumstances and in accordance with any established regional protocols, the designated C-MED may choose to either place a second unit on standby or deploy the second unit as redundant response in case there are factors preventing the original unit from completing the assigned mission. The second unit can also be deployed for additional equipment if required. Upon contact with the most appropriate hosting location’s dispatch center, C-MED will relay the following information:

a) Requesting agency
b) Incident location
c) Incident type
d) Estimated number of casualties
e) Special hazards or any safety concerns
f) Designated staging location to report to for assignment

MCI trailers deployment
02/08 DPH1
The designated C-MED will contact Incident Command, the Medical Branch Director or the Medical Group Supervisor via C-MED radio, or by phone through their local communications center, and inform them of an estimated time of arrival to the staging area as soon as the host EMS service provider has reported to C-MED that they are en-route with the staffed regional MCI trailer. The host EMS service provider is required to deploy the regional MCI trailer within 30 minutes of activation in the event of an emergency. It is important to note that the closest regional MCI trailer may not necessarily be from the affected Region. The designated C-MED shall verify the closest unit.

The designated C-MED will also contact the Department of Public Health at (860) 509-8000. In addition, the designated C-MED will notify each of the other four designated C-MED centers via direct phone line, MEDNET, or MEDSAT.

In instances where the Medical Branch Director or Medical Group Supervisor is authorized to call for resources, Incident Command must be informed that additional resources are being deployed to the incident. The Treatment Unit Leader should also be made aware that equipment has been requested, estimated arrival time, and where it is to be staged.

STAFFING

The EMS service providers /communities that host the regional MCI supply trailers are contracted to provide staffing throughout the incident. The trailer shall not be deployed to an incident, to include drills and exercises, without being staffed by at least two (2) personnel from the host agency. Staff responding with the trailers shall not be assigned to any other tasks. They are solely responsible for the operation of the trailer, including inventory control / equipment distribution, and completing demobilization procedures. Other emergency response personnel operating on the scene of a multi-casualty incident may assist the trailer operators with equipment distribution and demobilization only.

Note: Under no circumstances shall the requesting jurisdiction send a representative directly to the trailer location and transport the trailer to the designated staging location.

ON-SITE OPERATIONS

Upon arrival, trailer staff will liaison with Medical Branch Director, Medical Group Supervisor, or Treatment Unit Leader. The regional MCI trailer should be deployed between the treatment area and transport/loading area.

a) Site location requirement of 30' X 30'

b) Trailer staff must remain with the trailer at all times

Trailer Staff will deploy requested equipment to the treatment area(s) for medical treatment activities. They will maintain records of all medical and other supplies utilized that will need to be replaced, and will note any equipment failures or malfunctions at the conclusion.

DEMOBILIZATION

Upon completion of an assigned mission, the designated CMED center shall be notified by the host EMS service provider if the trailer is out of service due to mechanical failure, or cannot be re-deployed secondary to a depleted supply cache. They will in turn notify the Department of Public Health at (860) 509-8000 and each of the other four designated CMED centers via direct phone line, MEDNET, or MEDSAT, that the regional MCI trailer has been de-mobilized, and whether or not it is back in service.
Resp Plan Activation

The purpose of the Regional Emergency Support Plan (RESP Plan) is to provide a framework for member communities and agencies to collaborate in planning, communication information sharing and coordination activities before, during, and after a regional emergency.

*The Resp Plan does not supersede existing emergency operations plans or procedures that CMED currently has in place but works in coordination with the RESP Plan.*

RESP Plan Incident/Event Status Levels

- **Level One** – Single agency/community
- **Level Two** – Regular mutual aid event
- **Level Three** – Region resources activated through the RED Plan (Standard Regional Incident-SRI)
- **Level Four** – Regional and State resources activated (Disruptive Regional Incident- DRI)
- **Level Five** – Regional, State and Federal Resources activated (Major Regional Incident – MRI)

Notification and RESP Plan Activation

Key decision makers, subject matter experts, and RESF chairpersons are notified of a potential or actual incident through Regional Integrated Communication System (RICS). “RICS” is the regional radio designation for the Regional Integrated Communication System headquartered at Central Connecticut State University Campus Police Department.

RICS Activation Format:

- A designated authority or incident commander (or agency’s dispatcher) calls RICS at 860-832-3477 anytime 24/7 and requests specific resources or the activation of the RED Plan where RCC will anticipate resource needs without a specific request.

- RICS will broadcast the message over the “intercity” radio frequency.
- RICS will notify the chairperson of each RESF of the situation/event and provide the contact number in the message for the chairperson of RESF5 Emergency Management or the designated back-up official.
Lights and Sirens Use Policy
STATE OF CONNECTICUT DEPARTMENT OF PUBLIC HEALTH
OFFICE OF EMERGENCY MEDICAL SERVICES

RESPONSE AND TRANSPORTATION GUIDELINES FOR AUTHORIZED EMERGENCY MEDICAL VEHICLES (INCLUDING LIGHTS AND SIREN USE)

Due to the inherent risk of operating with lights and siren. Department of Public Health Authorized Emergency Medical Vehicles (AEMV), (specifically ambulances and EMS non-transport vehicles) should use emergency lights and siren only when responding to calls involving or transporting patients believed to need immediate life or limb threatening medical intervention. The mode of transport is a patient care medical decision.

Preparation
EMS personnel must use patient compartment vehicle occupant restraints whenever practical based upon patient critical needs. EMS personnel must use occupant restraints when driving. Front seat and patient compartment passengers/patients must use occupant restraints. EMS employers must ensure that EMS personnel who operate AEMVs are qualified and trained appropriately. Consideration should be given to the use of electronic behavior modifying instant feedback systems as a skills improvement and coaching tool.

The Department of Public Health should strongly encourage and financially support:

1. Emergency Vehicle Operators Training for all EMS Providers and,
2. The use of vehicle monitoring systems that encourage coaching and provide operators with immediate driving technique feedback and organizations with data for system improvement.

System Status
Connecticut Statute 14-283 must be adhered to.

Patient Response
Authorized Emergency Medical Vehicles should respond lights and siren only when directed by their dispatch center based on EMD criteria. Should additional information be received from public safety personnel suggesting that a response no longer merits a lights and siren mode while the AEMV is en route to the scene, the AEMV response should be downgraded to non-lights and siren mode. Similarly, should additional information be received from public safety personnel suggesting that a non lights and siren response merits a lights and siren mode while the AEMV is en route to the scene, the response should be upgraded to a lights and siren mode.

Patient Transport
The highest level certified/licensed EMS provider responsible for the patient's care will advise the driver of the appropriate mode of transportation based upon the medical condition of the patient.

When transporting the patient utilizing lights and sirens, the need for immediate medical intervention should be beyond the capabilities of the ambulance crew using available supplies and equipment and be documented on the patient care report.

The mode of transport for emergency interfacility transfers should be based upon the directions of the referring physician and on the condition of the patient unless the patient's condition has deteriorated en route.

Exceptions to these policies can be made under extraordinary circumstances.

Last Updated: June 2, 2009

<table>
<thead>
<tr>
<th>MRT</th>
<th>EMT</th>
<th>EMT-I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paramedic</td>
<td>Medical Control</td>
<td>January 13, 2015</td>
</tr>
</tbody>
</table>
Appendix A

Sec. 14-283. Rights of emergency vehicles. Obstruction of. (a) "Emergency vehicle", as used in this section, means any ambulance or vehicle operated by a member of an emergency medical service organization responding to an emergency call, any vehicle used by a fire department or by any officer of a fire department while on the way to a fire or while responding to an emergency call but not while returning from a fire or emergency call any state or local police vehicle operated by a police officer or inspector of the Department of Motor Vehicles answering an emergency call or in the pursuit of fleeing law violators or any Department of Correction vehicle operated by a Department of Correction officer while in the course of such officers employment and while responding to an emergency call.

(b) The operator of any emergency vehicle may (1) park or stand such vehicle, irrespective of the provisions of this chapter, (2) proceed past any red light or stop signal or stop sign, but only after slowing down or stopping to the extent necessary for the safe operation of such vehicle, (3) exceed the posted speed limits or other speed limits imposed by or pursuant to section 14-218a or 14-219 as long as such operator does not endanger life or property by so doing, and (4) disregard statutes, ordinances or regulations governing direction of movement or turning in specific directions.

(c) The exemptions herein granted shall apply only when an emergency vehicle is making use of all audible warning signal device, including but not limited to a siren, whistle or bell which meets the requirements of subsection (f) of section 14-80, and visible flashing or revolving lights which meet the requirements of sections 14-96p and 14-96q, and to any state or local police vehicle properly and lawfully making use of an audible warning signal device only.

(d) The provisions of this section shall not relieve the operator of an emergency vehicle from the duty to drive with due regard for the safety of all persons and property.

(e) Upon the immediate approach of an emergency vehicle making use of such an audible warning signal device and such visible flashing or revolving lights or of any state or local police vehicle properly and lawfully making use of audible warning signal device only, the operator of every other vehicle in the immediate vicinity shall immediately drive to a position parallel to, and as close as possible to, the right-hand edge or curb of the roadway clear of any intersection and shall stop and remain in such position until the emergency vehicle has passed, except when otherwise directed by a state or local police officer or a firefighter.

(f) Any officer of a fire department may remove, or cause to be removed, any vehicle upon any public or private way which obstructs or retards any fire department, or any officer thereof, in controlling or extinguishing any fire.

(g) Any person who willfully or negligently obstructs or retards any ambulance or vehicle operated by a member of an emergency medical service organization while answering any emergency call or taking a patient to a hospital, or any vehicle used by a fire department or any officer or member of a fire department while on the way to a fire, or while responding to an emergency call, or any vehicle used by the state police or any local police department, or any officer of the Division of State Police within the Department of Public Safety or any local police department while on the way to an emergency call or in the pursuit of fleeing law violators, shall be fined not more than two hundred dollars or imprisoned not more than seven days, or both.

(h) Nothing in this section shall be construed as permitting the use of a siren upon any motor vehicle other than an emergency vehicle, as defined in Subsection (a) of this section, or a rescue service vehicle which is registered with the Department of Motor Vehicles pursuant to section 19a-181.

(1) A police officer may issue a written warning or a summons to the owner of a vehicle based upon an affidavit signed by the operator of an emergency vehicle specifying (I) the license plate number, color and type of any vehicle observed violating any provision of subsection (e) or (g) of this section and (2) the date, approximate time and location of such violation.
North Central EMS Regional Medical Advisory Committee
Position on Nontraumatic Cardiac Arrest Scene Care and Transportation

“Cardiac compressions are less effective during ambulance transport than they are on scene. The 2010 American Heart Association (AHA) guidelines emphasize the importance of high quality, minimally interrupted compressions. Thus, TOR (Termination of Resuscitation) protocols that emphasize on-scene resuscitation may not only mitigate the risk of an ambulance crash, but also improve the probability of successful resuscitation by avoiding interruptions in compressions.” - NATIONAL ASSOCIATION OF EMS PHYSICIANS (2011)

While recognizing that each cardiac arrest scene has its own unique circumstances, as a general guideline, patients in nontraumatic cardiac arrest should receive full resuscitative efforts on scene. Moving a patient to the ambulance to start ALS resuscitation, to get to the hospital quicker or to meet a paramedic intercept may be counterproductive by lowering the quality of compressions in the critical early period of resuscitation. Any interruption in quality cardiac compressions decreases a patient’s chance of survival.

In general, patients should receive at least 20 minutes of resuscitative efforts on scene prior to considering movement. If a patient remains in asystole after twenty minutes of paramedic effort, termination of resuscitation guidelines should be considered. If the decision is made (at any time) to move the patient, care must be maintained to ensure that quality compressions are maintained throughout extrication and transportation. Failure to do so mitigates the patient’s chances for survival. Unless there are special circumstances, it is unlikely that a patient who cannot be resuscitated on scene with quality CPR and defibrillation will be resuscitated either at a paramedic intercept point or at the hospital.

Please refer to State Termination of Resuscitation Guidelines.