Index

Background
NYC has an extensive GOP. This information is covered in our GOP

Introduction
Unified Protocols… p 1

Pediatric Definition and Discussion
Unified Protocols… p 2

General Approach to Prehospital Care
General Approach to the EMS Call
General Approach to the Patient
General Approach to Transportation
General Approach to Safety Restraining Devices
The General Approach is included for informational purposes in our appendix. Appendix B: Patient assessment

Extremis/Cardiac Arrest Protocols
Changed the title to read Critical/Cardiac arrest. We have been transitioning away from the term “extremis” as there is variable understanding of that term

Cardiac Arrest
State has option to do continuous compressions even if not intubated, evidence does not suggest a clear benefit. So, it was removed

CPR says follow AHA guidelines

After 20 mins of CPR EMT consider OLMC for termination was removed. In our region EMTs can call at any time to consider termination. But with short times to ALS arrival, BLS unlikely to be managing a cardiac arrest for 20 minutes without ALS.

Removal of CPR device - NYS language suggests that CPR should not be done in a moving ambulance unless it is with a mechanical device. Removal of specific brands of mechanical CPR devices.

Cardiac Arrest – Pediatric
Our protocol includes bradycardia because it was needed when we unified the ALS component

Language about Mechanical CPR devices was removed as above

Foreign Body Obstructed Airway
Unchanged

Foreign Body Obstructed Airway – Pediatric
Unchanged

Respiratory Arrest/Failure
Respiratory Arrest/Failure – Pediatric
Historically we have included cardiac and respiratory arrest under one protocol. In our protocol we titled this Respiratory Distress/Failure

Obvious Death

This is included in our GOP under Cardiopulmonary Resuscitation (see attached copy)

General Adult and Pediatric Medical Protocols

AMS: Altered Mental Status

Our AMS protocol is inclusive of Opioid overdose, and pupil check was removed (treat the clinical picture and pupillary checks should be part of general patient assessment)

AMS: ALTE/BRUE – Pediatric

This is included in Appendix B Patient Assessment.

Anaphylaxis

Anaphylaxis – Pediatric

For CFR we limited the protocol to a single Epi administration
EMTs can contact Medical Control for a second administration

Behavioral Emergencies

We named our protocol Excited Delirium to include states other than simply behavioral issues.
Content is similar

Carbon Monoxide Exposure – Suspected

We have a HAZMAT Section in our protocols. The Carbon Monoxide was added under that section.
The content is unchanged

Cardiac Related Problem

EMTs will not be obtaining 12 lead ECGs (generally short time to ALS intercept or hospital transport in NYC)

Cardiac Related Problem – Pediatric

This was felt to be more educational and is covered in the patient assessment section of the appendix

Childbirth: Obstetrics

The NYC Unified Protocols have two protocols, one to cover obstetric emergencies (mostly to accommodate the ALS component) and a childbirth protocol.
In childbirth we included the procedure for providers to review while en route.
NYC is not adding all details of breach including No elevate of the hips for limb presentation and No uterine inversion for our region

Childbirth: Newborn/Neonatal Care

Content is the same. We changed the language to be in line with our step by step design.

Difficulty Breathing: Asthma/Wheezing

Difficulty Breathing: Asthma/Wheezing – Pediatric

In NYC 1 dose of Epi is available to EMTs under standing orders this is for both adult and pediatrics (previously approved)
Difficulty Breathing: Stridor – Pediatric

*Content is the same*

Environmental – Cold Emergencies

*In NYC active rewarming for frostbite was removed. Given our short transport times it was felt not appropriate for our region*

Environmental – Heat Emergencies

*In NYC active cooling was moved to the EMT section*

Opioid (Narcotic) Overdose

*This is included in AMS protocol*

Poisoning

*The NYC unified protocols expanded this protocol to include specific poisoning instructions
Our protocol is also titled “Poisoning or Drug Overdose”*

Seizures

*Content is the same
Pediatrics and Adult protocols are separate*

Sepsis/Septic Shock

*The NYC protocol covers undifferentiated shock and sepsis/septic shock
Criteria for sepsis has been moved to the end of the protocol*

Sepsis/Septic Shock – Pediatric

*See rationale above*

Stroke

*The NYC region has developed a stroke protocol that was developed for differentiating LVO strokes and transportation to appropriate stroke centers. This protocol also uses the NYC S-LAMS for assessment.*

Technology Assisted Children

Total Artificial Heart (TAH)

Ventricular Assist Device (VAD)

*These protocols have been included in the Appendices under Appendix D: Advanced Medical Technologies – They have been included for educational purposes.
They are preceded by a note that reads: The following appendix on “Advanced Medical Technologies” includes a discussion of supportive measures of medical devices. No New York City EMS providers (including CFR) should attempt to modify, tape, clamp, or otherwise troubleshoot any of these medical devices unless specifically trained and authorized to do so by their agency and medical director.*

The following medical protocols are additional in NYC:

*Abdominal Pain/Severe Nausea/ Vomiting
Hyperglycemia
Drowning/Decompression illness*

Trauma Protocols

Trauma Patient Destination
This is covered in our GOP and Appendices

Amputation
  Content is the same

Avulsed Tooth
  Content is the same

Bleeding/Hemorrhage Control
  Content is the same. NYC has additional language about impaled objects

Burns
  Content is the same, we have added NYC specific burn plan information and Burn center Criteria

Chest Trauma
  Content is the same

Eye Injuries
  NYC has included special considerations to address Non-penetrating Foreign Object, Impaled objects and Avulsed Eyes

Musculoskeletal Trauma
  In the NYC Unified protocols, this protocol is titled “Bone and Joint Injuries.” the content is the same

Patella Dislocation
  This is included as a Medical Control option under the Bone and Joint Injuries Protocol

Suspected Spinal Injuries
  In the NYC Unified protocols, this protocol is titled “Head, Neck and Spine Injuries.” the content is the same however, the format is consistent with the NYC design

The following Trauma protocols are additional in NYC:
  Abdominal Injuries
  Traumatic Cardiac Arrest

The following HAZMAT protocols are additional in NYC:
  Smoke Inhalation
  Cyanide Exposure
  WMD/ Nerve Agent Exposure

Resources (These protocols have been added to our GOP and Appendices)

Advance Directives/DNR/MOLST
  Appendix C

APGAR
  Appendix K

Automatic Transport Ventilator
Appendix D

Child Abuse Reporting

Appendix U – Additional Resources

Glasgow Coma Score (GCS)

Appendix E

Incident Command

This is covered in our GOP

Needlestick/Infectious Exposure

Appendix U – Additional Resources

Normal Vital Signs for Infants/Children

NYC had made a previous decision to refer to a dosing tape rather than presenting a table. The Appendix reads: “Appendix J has been deleted. For Pediatric equipment and dosing values, refer to Length Based Dosing Device.”

Oxygen Administration

This is covered in our GOP

Pediatric Assessment Triangle

Appendix B – Patient Assessment

Prescribed Medication Assistance

Appendix U – Additional Resources

Refusal of Medical Attention

Omitted - This Conflicts with current RMA policies in the region

Responsibilities of Patient Care

Appendix U – Additional Resources

Transfer of Patient Care

Appendix U – Additional Resources
Est. 1974
Regional Emergency Medical Advisory Committee
Prehospital Treatment Protocols
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Introduction

The Regional Unified Protocols of New York City include the Statewide Basic Life Support Adult and Pediatric Treatment Protocols as the current minimal standards for basic life support (BLS) delivered by certified first responders (CFR), and emergency medical technicians (EMT) in New York State. Advanced life support (ALS) protocols have been included in the unified design to insure a seamless transition from CFR through ALS care.

Advanced providers are also responsible for, and may implement, the standing orders indicated for BLS care. Protocols are listed for each provider level and STOP lines indicate the end of standing orders. Generally, BLS interventions should be completed before ALS interventions.

Numbered steps are used throughout this document. Processes should be followed sequentially, using clinical judgement, and tasks should be performed as most appropriate for patient care.

The color-coded format of the protocols allows each level of EMS professional to easily follow the potential interventions that could be performed by level of certification.

CFR AND ALL PROVIDER LEVELS

1. Standing Order treatments start in this section, which applies to CFRs, and all higher levels of care.

   CFR STOP

EMT

2. EMTs and Paramedics Standing Orders continue in this section after performing the treatments in the CFR.

   EMT STOP

PARAMEDIC

3. This section of Standing Orders applies only to Paramedics, and should be performed after performing the CFR and EMT sections above it.

   Paramedic STOP

MEDICAL CONTROL OPTIONS

1. These orders are typically available only for Paramedics.
   a. In some cases there will be orders for EMTs, these will be called out where they appear as applying to EMTs.

KEY POINTS / CONSIDERATIONS

1. This section applies to all providers, and may contain guidance, additional details, explanations, advisories, and appendices.

2. These protocols have been Unified to combine treatments for all Prehospital Emergency Medical Services provider levels in a single document.
   a. Each level provider should start from the top of any given protocol, and complete the treatments in the order listed. EMTs and Paramedics should complete the treatments for the lower provider levels before proceeding to the section for their level of care.
   b. Each provider level is formatted with a color-coded bar at the top, and a red STOP at the bottom indicating the end of Standing Orders for that provider level.
Pediatric Definition and Discussion
The period of human development from childhood to adulthood is a continuum with the transition occurring during puberty. Since the completion of this transition is not sharply demarcated and varies among individuals, it is difficult to set a precise age when childhood ends and adulthood begins. It follows that use of such a definition to determine when a pediatric or an adult protocol is to be used is also problematic.

The medical control agreement contained within these protocol document states, “providers are expected to utilize their best clinical judgment and deliver care and procedures according to what is reasonable and prudent for specific situations.” The determination of when to utilize an adult or pediatric protocol shall be no different and subject to the same CQI review that is compulsory with any other aspect of prehospital emergency care.

As a general guideline for use with these protocols, the following definition has been established:

- Pediatric protocols should be considered for patients who have not yet reached their 15th birthday
General Cardiac Arrest Care (Non-Traumatic) (Adult)

**CFR AND ALL PROVIDER LEVELS**

1. Begin CPR per AHA guidelines.
2. If patient is under 9 years of age, see the Non-Traumatic Cardiac Arrest and Severe Bradycardia (Pediatric) protocol.
3. Apply an automated external defibrillator, if available, with minimal disruption of CPR, until the AED is turned on.
4. Once a defibrillator is applied, immediately turn the machine “On”.
5. Analyze (do not perform CPR while the machine is analyzing).
6. Whenever the “NO SHOCK INDICATED” message appears, CPR should be performed for 2 minutes followed by the next analysis.
7. Until transport arrives, continue CPR, re-analyze every 2 minutes and shock as indicated.

**CFR STOP**

**EMT**

8. Request ALS assistance.
9. Transportation procedures should begin, after a total of three (3) cycles of CPR and AED analysis.

**EMT STOP**

**Paramedic**

11. If an AED is in place, transition from AED use to ALS monitor use.
   a. Transition must occur only after the completion of the next AED analysis/shock decision.
12. Analyze the cardiac rhythm, and commence with appropriate subprotocol for dysrhythmia management below:
   a. Ventricular Fibrillation / Pulseless Ventricular Tachycardia (Adult)
   b. Pulseless Electrical Activity (PEA) / Asystole (Adult)

NOTE: In the event that the initial EKG rhythm changes, refer to the appropriate cardiac arrest sub-protocol. Complete Standing Orders without repetition of previously administered drugs and contact Medical Control for further orders.

**Paramedic STOP**

**Key Points / Considerations**

1. Minimize interruption in compressions for placement of a mechanical CPR device.
2. Do not delay beginning compressions to begin ventilations.
3. Do not delay ventilations to connect supplemental oxygen.
4. Adequate ventilation may require disabling the pop-off valve is the bag-valve mask unit is so equipped.
5. AED should be placed as soon as possible without interrupting compressions to do so.
6. Special considerations when applying pads:
   a. If a patient has a medication patch, it may be removed (use appropriate PPE).
   b. Prior to pad placement, the chest should be dry, and if needed shave chest hair.
   c. Attach external chest pads.
   d. If the patient has a pacemaker, position the pads at least 1 inch away from the pacemaker device.
7. Artifact from vibrations in a moving ambulance may compromise the effectiveness of the AED.
**Ventricular Fibrillation / Pulseless Ventricular Tachycardia (Adult)**

**Paramedic**

1. Continue CPR and defibrillation cycles.
   a. Defibrillate using the maximum joule setting possible.
2. After second rhythm analysis, perform advanced airway management.
3. Intravascular access.
4. Administer Epinephrine 1 mg (10 ml of a 1:10,000 Solution) IV bolus.
5. If there is no change in the rhythm, administer Amiodarone 300 mg, IV bolus.
6. If there is no return of spontaneous circulation (ROSC) administer Epinephrine 1 mg (10 ml of a 1:10,000 solution) IV bolus, every 3 – 5 minutes.
7. After 20 minutes of ACLS, consider calling medical control if contact has not already been made, for additional orders, or termination of resuscitation.

**Paramedic STOP**

**Medical Control Options**

If there is insufficient improvement in hemodynamic status:

1. If Ventricular Fibrillation or Pulseless Ventricular Tachycardia recurs, a repeat dose of Amiodarone 150 mg, IV bolus may be given.
2. Administer Sodium Bicarbonate 44-88 mEq IV bolus.
   a. Repeat doses of Sodium Bicarbonate 44 mEq, IV bolus, may be given every 10 minutes.
3. Administer Magnesium Sulfate 2 gm, IV bolus diluted in 10 ml of Normal Saline (0.9% NS), over 2 minutes.
4. In cases of suspected hyperkalemia or Calcium Channel Blocker overdose, administer Calcium Chloride (CaCl$_2$) 1 gm, slowly, IV bolus. Follow with a crystalloid fluid flush.

**Key Points / Considerations**

1. Do not interrupt compressions for placement of an advanced airway.
2. Maximum joule setting may vary depending on the defibrillator in use.
3. Calcium Chloride and Sodium Bicarbonate should be given in separate IV lines or separated by a flush of at least 20 ml of crystalloid fluid.
Pulseless Electrical Activity (PEA) / Asystole (Adult)

Paramedic

1. Continue CPR with minimal interruption.
2. For suspected tension pneumothorax, follow Appendix O (Needle Decompression of Tension Pneumothorax).
3. Perform advanced airway management.
4. Intravascular access.
5. Administer Epinephrine 1 mg (10 ml of a 1:10,000 Solution) IV bolus.
6. Obtain a blood glucose level.
   a. If the glucometer reading is below 60 mg/dL, administer up to 25 gm of Dextrose, IV bolus.
7. If there is no return of spontaneous circulation (ROSC), administer Epinephrine 1 mg (10 ml of a 1:10,000 solution), IV bolus, every 3-5 minutes.
8. After 20 minutes of ACLS, consider calling medical control if contact has not already been made, for additional orders, or termination of resuscitation.

Medical Control Options

If there is insufficient improvement in hemodynamic status:

1. Administer Sodium Bicarbonate 44-88 mEq IV bolus.
   a. Repeat doses of Sodium Bicarbonate 44 mEq, IV bolus, may be given every 10 minutes.
2. In cases of suspected hyperkalemia or Calcium Channel Blocker overdose, administer Calcium Chloride (CaCl₂) 1 gm, slowly, IV bolus. Follow with a crystalloid fluid flush.
3. Crystalloid fluid, up to three (3) liters.

Key Points / Considerations

1. Do not interrupt compressions for placement of an advanced airway.
2. Consider the possibility of conditions masquerading as PEA/Asystole which require immediate treatment.
3. If the glucometer reading is above 60 mg/dL, Dextrose should be withheld.
4. Calcium Chloride and Sodium Bicarbonate should be given in separate IV lines or separated by a flush of at least 20 ml of crystalloid fluid.
Non-Traumatic Cardiac Arrest and Severe Bradycardia (Pediatric)

**CFR AND ALL PROVIDER LEVELS**

*For infants and children in non-traumatic cardiac arrest, or infants and children under 9 years of age with a heart rate less than 60 beats per minute (severe bradycardia) and signs of inadequate central (proximal) perfusion (decompensated shock):*

1. **Bradycardia:** A heart rate less than 60 beats per minute and signs of inadequate central perfusion (decompensated shock).
   a. Assist ventilation at a rate of 20 breaths per minute.
   b. Begin CPR, if the heart rate is not rapidly increasing following 30 seconds of assisted ventilation.
   c. Check for a pulse every 2 minutes.

2. **If the Infant or Child is in cardiac arrest:**
   a. Immediately initiate CPR per AHA guidelines.
   b. If available, attach AED, analyze.
      i. Pediatric-capable AED pads and cables should be used if available and appropriate.
   c. Continue CPR until patient transported, or pulse returns at a rate greater than 60 beats per minute.

3. Begin assisted ventilation at a rate of 20 breaths per minute, once the heart rate is greater than 60 beats per minute.

4. Switch to high concentration mask or “blow by” oxygen once ALL of the following are true:
   a. The heart rate is greater than 100 beats per minute
   b. The respiratory rate is greater than 20 breaths per minute
   c. Central cyanosis disappears

● **CFR STOP**

5. Request ALS assistance.
6. Transport, keeping child warm.

● **EMT STOP**

7. Begin cardiac monitoring, record and evaluate EKG rhythm.
8. If in Ventricular Fibrillation or pulseless Ventricular Tachycardia:
   a. Immediately defibrillate at 4 joules/kg, using pads of appropriate size.
   b. Immediately resume CPR for 5 cycles while defibrillator is recharging.
9. If still in Ventricular Fibrillation or pulseless Ventricular Tachycardia:
   a. Immediately repeat defibrillation at 10 joules/kg, using pads of appropriate size.
   b. Immediately resume CPR for 5 cycles while defibrillator is recharging.
10. Perform Advanced Airway Management if less invasive methods of airway management are not effective.
11. During transport, or if transport is delayed:
   a. Intravascular access. (If two attempts at IV access are unsuccessful, obtain IO access.).
   b. Administer Epinephrine 0.01 mg/kg (0.1 ml/kg of a 1:10,000 solution) IV bolus.
   c. If still in Ventricular Fibrillation or pulseless Ventricular Tachycardia:
      i. Immediately repeat defibrillation at 10 joules/kg, using paddles of appropriate size.
ii. Immediately resume CPR for 5 cycles while the defibrillator is recharging.

iii. Administer Amiodarone 5 mg/kg IV bolus.

d. Repeat Epinephrine 0.01 mg/kg (0.1 ml/kg of a 1:10,000 solution) IV bolus every 3 - 5 minutes.

**Paramedic STOP**

### Medical Control Options

*If there is insufficient improvement in hemodynamic status:*

1. Repeat any of the above Standing Orders.

2. Administer Naloxone IV bolus:
   a. In patients two (2) years of age or older, 2 mg.
   b. In patients, less than two (2) years of age, 1 mg.

3. Administer Dextrose 0.5 mg/kg, IV bolus:
   a. Use 10% Dextrose in patients less than or equal to one (1) month of age.
   b. Use 25% Dextrose in patients greater than one (1) month of age and less than 15 years of age.

4. Administer Sodium Bicarbonate 1 mEq/kg, IV bolus.

5. If Torsades de Pointes is present, administer Magnesium Sulfate, 25 - 50 mg/kg IV bolus.

6. Crystalloid fluid, 20 ml/kg.

### Key Points / Considerations

1. The IV dose of Epinephrine for pediatric patients is 0.01 mg/kg (0.1 ml/kg of a 1:10,000 solution).

2. Refer all weight based fluids/medications to a Length Based Dosing Device.

3. **GUIDELINES FOR INFANT AND CHILD RESUSCITATION:** Cardiopulmonary resuscitation in an infant is performed utilizing chest compressions with interposed ventilations in a ratio of 15:2 at a rate of 120 events (105 compressions, 15 ventilations) per minute.

4. Automated defibrillation should not be delayed or withheld for any reason.

5. If the defibrillator is unable to deliver the recommended dose, use the lowest available setting.

6. Do not delay CPR to wait for the automated external defibrillator (AED).
Obstructed Airway (Adult)

CFR AND ALL PROVIDER LEVELS

1. If the patient is conscious and can breathe, cough, speak, or cry:
   a. Encourage coughing.
2. If the patient is unconscious or cannot breathe, cough, speak, or cry:
   a. Perform airway maneuvers or CPR, as per current AHA guidelines.
3. If airway obstruction is relieved:
   a. ABCs and vital signs.
   b. Airway management, and appropriate oxygen therapy.

● CFR STOP

EMT

4. Request ALS assistance.
5. Transport.
6. Continue obstructed airway maneuvers enroute to the hospital until the foreign body is dislodged.

● EMT STOP

Paramedic

7. Perform direct laryngoscopy, attempt to remove the foreign body with Magill Forceps.
9. If able to confirm intubation via direct visualization, but unable to ventilate:
   a. Note the Endotracheal Tube depth.
   b. Deflate the Endotracheal Tube cuff.
   c. Advance the Endotracheal tube to its deepest depth.
   d. Return the Endotracheal Tube to its original depth.
   e. If using a cuffed tube, re-inflate the Endotracheal Tube cuff and attempt ventilation again.
   f. If unable to effectively ventilate the patient using the above maneuvers, immediately initiate transport.

● Paramedic STOP
Obstructed Airway (Pediatric)

CFR AND ALL PROVIDER LEVELS

1. If the patient is conscious and can breathe, cough, speak, or cry:
   a. Encourage coughing.

2. If the patient is unconscious or cannot breathe, cough, speak, or cry:
   a. Perform airway maneuvers or CPR, as per current AHA guidelines.

3. If airway obstruction is relieved:
   a. ABCs and vital signs.
   b. Airway management, and appropriate oxygen therapy.

● CFR STOP

EMT

4. Request ALS assistance.

5. Transport.

6. Continue obstructed airway maneuvers enroute to the hospital until the foreign body is dislodged.

● EMT STOP

Paramedic

7. Perform direct laryngoscopy, attempt to remove the foreign body with Magill Forceps.


9. If able to confirm intubation via direct visualization, but unable to ventilate:
   a. Note the Endotracheal Tube depth.
   b. Deflate the Endotracheal Tube cuff.
   c. Advance the Endotracheal tube to its deepest depth.
   d. Return the Endotracheal Tube to its original depth.
   e. If using a cuffed tube, re-inflate the Endotracheal Tube cuff and attempt ventilation again.
   f. If unable to effectively ventilate the patient using the above maneuvers, immediately initiate transport.

● Paramedic STOP
Respiratory Distress / Failure / Acute Pulmonary Edema (Adult)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs.
2. If an obstructed airway is suspected, see the Obstructed Airway (Adult) protocol.
3. Airway management.
4. Administer oxygen.
5. Do **NOT** permit physical activity.
6. Place the patient in a position of comfort.

**EMT STOP**

7. For patients who are experiencing exacerbation of asthma or wheezing, see the Asthma / COPD / Wheezing (Adult) protocol.
8. Request Advanced Life Support assistance.
9. Initiate CPAP if available and if patient meets appropriate indication, as authorized by the service medical director (see Appendix P).

**EMT STOP**

**Paramedic**

10. Begin cardiac monitoring, record and evaluate EKG rhythm.
11. Intravascular access.
12. Monitor vital signs every 2 – 3 minutes.
13. For patients with acute pulmonary edema:
    a. Administer Nitroglycerin* Tablet 1/150 gr or Spray 0.4 mg, sublingually, every 5 minutes, as long as systolic blood pressure remains 100 mmHg or higher.

**Paramedic STOP**

**Medical Control Options**

1. Administer one of the following benzodiazepines for anxiolysis:
   a. Lorazepam 1-2 mg, IV/IN/IM bolus.
   b. Midazolam up to 5mg, IV/IN/IM bolus.
2. Administer Furosemide 20-80 mg, IV bolus.

**Key Points / Considerations**

1. All patients who are in respiratory arrest must have ventilatory assistance unless a valid New York State Prehospital DNR Order and/or MOLST form is presented to the crew.
2. Monitor breathing continuously. Be alert for signs of hypoxia and/or increasing respiratory distress.
3. For adult patients with signs of on-going hypoxia, inability to adequately protect their airway, and/or exhibiting signs of inadequate respiration, assisted ventilations may be required. This should be done utilizing one of the following methods:
   a. Pocket mask with supplemental oxygen set at 10 – 15 liters/minute.
4. *Drug Advisories:
   a. Nitroglycerin – shall not be administered to patients who have used erectile dysfunction medications within the past 72 hours, unless otherwise directed by Medical Control.
Respiratory Distress / Failure / Arrest (Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs
2. Airway management.
   a. If an obstructed airway is suspected, see the Obstructed Airway (Pediatric) protocol.
3. Assess breathing:
   a. If respiratory distress is present:
      i. Administer oxygen and allow the patient to maintain a comfortable, upright position.
   b. If respiratory failure is present:
      i. Assist ventilations at a rate of 20 breaths per minute.
         1. Chest rise is the best indication of adequate ventilation in the pediatric patient.
         2. Do not over-inflate the lungs.
4. Keep the child warm.

**CFR STOP**

**EMT**

5. Request ALS assistance.
6. Transport, keeping the child warm.

**EMT STOP**

**Paramedic**

_For patients in actual or impending respiratory arrest, or who are unconscious and cannot be adequately ventilated:_

7. If overdose is suspected, refer to the Altered Mental Status (Adult and Pediatric) protocol.
8. Perform Endotracheal Intubation, if less invasive methods of airway management are not effective.
9. If a tension pneumothorax is suspected, perform Needle Decompression. (See Appendix O)

**Paramedic STOP**

**Medical Control Options**

*If there is insufficient improvement in respiratory status:*

1. Intravascular access. (Attempt IV access no more than twice.)

**Key Points / Considerations**

1. Respiratory Distress is characterized by:
   a. Increased respiratory effort *without* central cyanosis (anxiety, nasal flaring, or intercostal retractions).
2. Respiratory Failure is characterized by:
   a. Ineffective respiratory effort *with* central cyanosis (agitation, lethargy, severe dyspnea, labored breathing, bobbing, grunting, or marked intercostal and parasternal retractions).
3. Bradycardia is an ominous sign that indicates hypoxic cardiac arrest may be imminent.
4. High concentration oxygen should always be used in pediatric patients.
5. Do not allow the mask to press against the eyes.
6. Do not hyper-extend the neck.
7. Refer all weight based fluids/medications to a Length Based Dosing Device.
8. Tension pneumothorax in a child in respiratory arrest may develop after resuscitative efforts have begun.
Altered Mental Status (Adult and Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. Assess the situation for potential or actual danger and establish a safe zone, if necessary.
2. If an underlying medical or traumatic condition causing an altered mental status is not apparent; the patient is fully conscious, alert, and able to communicate; and an emotional disturbance is suspected, see the Excited Delirium (Adult and Pediatric) protocol.
3. ABCs and vital signs.
4. Airway management, and appropriate oxygen therapy.
   a. If an overdose is strongly suspected, use high flow oxygen.
5. If an opioid overdose is suspected, and the patient’s respiratory rate is less than 10/minute, Administer intranasal (IN) Naloxone, if available, via mucosal atomizer device (MAD):
   a. Adult patient:
      i. 1 mg/ml in each nostril for a total of 2mg/2ml.
   b. Pediatric Patient:
      i. 0.5 mg/0.5 ml in each nostril for a total of 1 mg/1ml.
   c. If after 5 minutes, there is no improvement, administer a repeat dose of naloxone:
      i. Adult patient:
         1. 1 mg/ml in each nostril for a total of 2mg/2ml.
      ii. Pediatric Patient:
         1. 0.5 mg/0.5 ml in each nostril for a total of 1 mg/1ml.

**EMT**

6. Request ALS assistance.
7. A glucometer should be used to document blood glucose level prior to administration of glucose solution, fruit juice or non-diet soda.
   a. If the glucometer reading is above 60 mg/dL, withhold treatment for hypoglycemia.
8. For patients with a history of diabetes, who are conscious but confused and able to drink without assistance, then provide by mouth:
   a. A glucose solution
   b. Fruit juice
   c. Or non-diet soda
9. If an opioid overdose is suspected, and the patient’s respiratory rate is less than 10/minute, Administer intranasal (IN) Naloxone, if available, via mucosal atomizer device (MAD):
   a. Adult patient:
      i. 1 mg/ml in each nostril for a total of 2mg/2ml.
   b. Pediatric Patient:
      i. 0.5 mg/0.5 ml in each nostril for a total of 1 mg/1ml.
   c. If after 5 minutes, there is no improvement, administer a repeat dose of naloxone:
      i. Adult patient:
         1. 1 mg/ml in each nostril for a total of 2mg/2ml.
      ii. Pediatric Patient:
         1. 0.5 mg/0.5 ml in each nostril for a total of 1 mg/1ml.
10. Transport.
11. Assess and monitor the Glasgow Coma Score.
   a. Do not delay transport.

**EMT STOP**

### Paramedic

12. Intravascular access.
13. If an opioid overdose is suspected, and the respiratory rate is less than 10/minute:
   a. For Adult patients administer Naloxone titrate to response in increments of 0.5mg up to 4mg IV/IN/IM.
   b. For pediatric patients administer Naloxone titrated to response in increments of 0.5 mg IV/IN/IM:
      i. In patients two (2) years of age or older, up to 2 mg.
      ii. In patients, less than two (2) years of age, up to 1 mg.
14. Administer Dextrose or Glucagon:
   a. For adult patients, administer up to 25 gm Dextrose IV bolus.
   b. For pediatric patients, administer Dextrose 0.5 gm/kg IV bolus.
      i. Use 10% Dextrose in patients less than or equal to one (1) month of age.
      ii. Use 25% Dextrose in patients greater than one (1) month of age and less than 15 years of age.
   c. In adult and pediatric patients if intravascular access is unavailable, administer Glucagon, 1 mg, IM/IN.
15. If there is still no change in mental status or it fails to improve significantly:
   a. Repeat administration of up to 25 gm Dextrose IV bolus.

**Paramedic STOP**

### Medical Control Options

*If there is still no change in mental status:*
1. Repeat any of the above standing orders.

### Key Points / Considerations

1. Consider underlying cause of AMS (e.g., trauma, medical, behavioral) and treat as necessary.
2. All suicidal or violent threats or gestures must be taken seriously.
   a. Utilize law enforcement personnel if the patient poses a danger to themselves, emergency personnel and/or others.
3. Do not administer any oral solutions to unconscious patients or to patients with head injuries.
4. Diabetic patients with a blood glucose level reading between 60 – 80 mg/dL may still be experiencing hypoglycemia.
   a. In the presence of such signs and symptoms, treat accordingly.
5. Refer all weight-based fluids/medications to a Length Based Dosing Device.
6. Each certification level provider may administer a maximum of two (2) Naloxone doses as described in their respective protocol sections.
7. All providers may substitute Naloxone Nasal Spray (Adult and Pediatric patients: 4 mg/0.1 ml in ONE nostril) for intranasal naloxone dose, if approved by agency medical director.
8. Relative Contraindications of Naloxone:
   a. Cardiopulmonary arrest
   b. Active seizure
   c. Evidence of nasal trauma, nasal obstruction and/or epistaxis
Anaphylaxis (Adult)

CFR AND ALL PROVIDER LEVELS

1. ABCs.
2. Airway management.
3. Administer oxygen.
4. Assess cardiac and respiratory status:
   a. If either is abnormal (e.g. severe respiratory distress or shock):
      i. Assist the patient with administration of prescribed Epinephrine auto-injector.
      ii. If Epinephrine has not been prescribed, administer Epinephrine via auto-injector. (for CFR: Only if available and trained to do so.)
      iii. NOTE: Patients weighing more than 30 kg (66 lbs), use adult Epi-auto injector (0.3 mg); patients weighing less than 30 kg (66 lbs) use pediatric Epi-auto injector (0.15 mg).
5. Refer immediately to the Respiratory Distress / Failure / Acute Pulmonary Edema (Adult), Obstructed Airway (Adult), or Shock / Sepsis (Adult) protocols as appropriate.
6. If cardiac arrest occurs, refer immediately to the General Cardiac Arrest Care (Non-Traumatic) (Adult) protocol.

CFR STOP

EMT

7. Request ALS assistance.
   a. Do not delay transport for any reason, including waiting for a potential second dose of epinephrine.
8. Assess cardiac and respiratory status:
   a. If both are normal, initiate transport.
      i. If either is abnormal (e.g. severe respiratory distress or shock):
         1. Administer Epinephrine as directed above. (Epinephrine may be administered IM using a syringe, if trained and approved by agency medical director to do so.)
9. Initiate transport if not previously done.
10. Contact On-Line Medical Control for authorization to administer a second dose of Epinephrine IM, if needed and if available.
11. For wheezing, administer Albuterol Sulfate 0.083%, one (1) unit dose or 3 ml via nebulizer at a flow rate that will deliver the solution over 5 minutes to 15 minutes.
   a. If symptoms persist, Albuterol Sulfate 0.083%, one (1) unit dose or 3 ml via nebulizer at a flow rate that will deliver the solution over 5 minutes to 15 minutes, may be repeated twice for a total of three (3) doses.

EMT STOP

Paramedic

12. If the patient is exhibiting airway compromise:
   a. Perform Advanced Airway Management.
   b. Consider procedural sedation options, if appropriate. (see GOP: Prehospital Sedation.)
13. For patients with signs of shock OR history of anaphylaxis:
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14. For patients with NO Signs of shock, and who do not have a history of anaphylaxis:
   a. Intravascular access.

15. Administer ONE of the following:
   a. Methylprednisolone 125 mg IV, slowly over 2 minutes.
   OR
   b. Dexamethasone, 12 mg IV, slowly over 2 minutes.

16. Administer Diphenhydramine* 50 mg IV/IM.

17. Administer Ipratropium Bromide 0.02% (1-unit dose of 2.5 ml), by nebulizer, in conjunction with the first three (3) doses of Albuterol Sulfate.

18. Monitor vital signs every 5 minutes.


Paramedic STOP

Medical Control Options

1. EMT:
   a. Administration of a second dose of Epinephrine IM, if needed and if available.
      i. Patients weighing more than 30 kg (66 lbs), use adult Epinephrine (0.3 mg).
      ii. Patients weighing less than 30 kg (66 lbs) use pediatric Epinephrine (0.15 mg).

2. Paramedic:
   a. Repeat any of the above standing orders.
   b. For patients who remain in shock after the administration of crystalloid bolus, either by clinical symptoms or by persistent hypotension (mean arterial pressure less than 65 mmHg), see the Shock / Sepsis (Adult) protocol Medical Control Options for vasopressors.

Key Points / Considerations

1. Do not delay transport to the hospital.
2. Anaphylaxis can be a potentially life-threatening situation most often associated with a history of exposure to:
   a. An inciting agent/allergen (bee sting or other insect venom)
   b. Medications/drugs
   c. Foods such as peanuts, seafood, etc
3. Patients with an allergic reaction and signs of bronchospasm may require treatment for anaphylaxis.
4. Albuterol Sulfate and Ipratropium Bromide shall be mixed and administered simultaneously, for a maximum of three doses.
5. CFR administration of epinephrine via auto-injector must be reported to your agency’s medical director as soon as possible.
6. The presence of any of the following symptoms characterizes the clinical findings that authorize and require treatment according to this protocol:
   a. Respiratory distress:
      i. Upper airway obstruction (Stridor)
      ii. Severe bronchospasm (wheezing)
b. Cardiovascular collapse / hypotensive shock.

7. **Drug Advisories:**
   a. **Diphenhydramine Hydrochloride** – has an atropine-like action and must be used with caution in patients with a history of increased intraocular pressure, hyperthyroidism, cardiovascular disease, and/or hypotension.
Anaphylaxis (Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs.
2. Airway management.
3. Administer oxygen.
4. Assess cardiac and respiratory status:
   a. If either is **abnormal (e.g. severe respiratory distress or shock):**
      i. Assist the patient with administration of prescribed Epinephrine auto-injector.
      ii. If Epinephrine has not been prescribed, administer Epinephrine via auto-injector. (for CFR: Only if available and trained to do so.)
      iii. NOTE: Patients 9 years of age and older or weighing more than 30 kg (66 lbs), use adult Epi-auto injector (0.3 mg); patients younger than 9 years of age or weighing less than 30 kg (66 lbs) use pediatric Epi-auto injector (0.15 mg).
5. Refer immediately to the **Respiratory Distress / Failure / Arrest (Pediatric), Obstructed Airway (Pediatric)**, or **Shock / Sepsis (Pediatric)** protocols as appropriate.
6. If cardiac arrest occurs, refer immediately to the **Non-Traumatic Cardiac Arrest and Severe Bradycardia (Pediatric)** protocol.

**CFR STOP**

**EMT**

7. Request ALS assistance.
   a. Do not delay transport for any reason, including waiting for a potential second dose of epinephrine.
8. Assess cardiac and respiratory status:
   a. If both are normal, initiate transport.
      i. If either is **abnormal (e.g. severe respiratory distress or shock):**
         1. Administer Epinephrine as directed above. (Epinephrine may be administered IM using a syringe, if trained and approved by agency medical director to do so.)
9. Initiate transport if not previously done.
10. Contact On-Line Medical Control for authorization to administer a second dose of Epinephrine IM, if needed and if available.
11. For wheezing, administer Albuterol Sulfate 0.083%, one (1) unit dose or 3 ml via nebulizer at a flow rate that will deliver the solution over 5 minutes to 15 minutes.
   a. If symptoms persist, Albuterol Sulfate 0.083%, one (1) unit dose or 3 ml via nebulizer at a flow rate that will deliver the solution over 5 minutes to 15 minutes, may be repeated twice for a total of three (3) doses.

**EMT STOP**

**Paramedic**

12. If the patient is exhibiting airway compromise:
   a. Perform Advanced Airway Management.
   b. Consider procedural sedation options, if appropriate. (see GOP: Prehospital Sedation.)

13. For patients with signs of shock OR history of anaphylaxis:
a. If not already given, administer Epinephrine (1:1,000 solution / 1 mg/ml) 0.01 mg/kg IM; max
dose 0.3 mg.
b. Intravascular access.
c. Crystalloid fluid, 20 ml/kg (Maximum of 3 liters).

14. For patients with NO Signs of shock, and who do not have a history of anaphylaxis:
   a. Intravascular access.

15. For patients over 2 years of age, administer ONE of the following:
   a. Methylprednisolone 2 mg/kg IM/IV. (Maximum dose is 125 mg.)
   OR
   b. Dexamethasone 0.6 mg/kg IM/IV. (Maximum dose is 12 mg.)

16. Administer Diphenhydramine*, 1 mg/kg IV/IM (maximum total dose is 50 mg).

17. Administer Ipratropium Bromide 0.02%, by nebulizer, in conjunction with the first three (3) doses
   of Albuterol Sulfate. Use the following doses of Ipratropium Bromide:
   a. For Children 6 years of age or older: one-unit dose of 2.5 ml.
   b. For children under 6 years of age: ½ unit dose of 2.5 ml (1.25 ml).

18. Monitor vital signs every 5 minutes.


Paramedic STOP

Medical Control Options

1. **EMT:**
   a. Administration of a second dose of Epinephrine IM, if needed and if available.
      i. Patients 9 years of age and older or weighing more than 30 kg (66 lbs), use adult
         Epinephrine (0.3 mg).
      ii. Patients younger than 9 years of age or weighing less than 30 kg (66 lbs) use
         pediatric Epinephrine (0.15 mg).

2. **Paramedic:**
   a. Repeat any of the above standing orders.
   b. For patients less than 2 years old: Administer Dexamethasone 0.6 mg/kg IV/IM.
   c. For patients who remain in shock after the administration of crystalloid bolus, either by clinical
      symptoms or by persistent hypotension (mean arterial pressure less than 65 mmHg), see the
      Shock / Sepsis (Pediatric) protocol Medical Control Options for vasopressors.

Key Points / Considerations

1. Do not delay transport to the hospital.
2. Anaphylaxis can be a potentially life-threatening situation most often associated with a history of
   exposure to:
   a. An inciting agent/allergen (bee sting or other insect venom)
   b. Medications/drugs
   c. Foods such as peanuts, seafood, etc
3. Patients with an allergic reaction and signs of bronchospasm may require treatment for
   anaphylaxis.
4. Albuterol Sulfate and Ipratropium Bromide shall be mixed and administered simultaneously, for a
   maximum of three doses.
5. CFR administration of epinephrine via auto-injector must be reported to your agency’s medical
   director as soon as possible.
6. The presence of any of the following symptoms characterizes the clinical findings that authorize and require treatment according to this protocol:
   a. Respiratory distress:
      i. Upper airway obstruction (Stridor)
      ii. Severe bronchospasm (wheezing)
   b. Cardiovascular collapse / hypotensive shock.
7. Refer all weight based fluids/medications for pediatric patients to a Length Based Dosing Device.
8. *Drug Advisories:
   a. Diphenhydramine Hydrochloride – has an atropine-like action and must be used with caution in patients with a history of increased intraocular pressure, hyperthyroidism, cardiovascular disease, and/or hypotension.
Excited Delirium (Adult and Pediatric)

CFR AND ALL PROVIDER LEVELS

1. Assess the situation for potential or actual danger and establish a safe zone, if necessary.
2. If the patient is agitated and presents a risk of physical harm to providers, public or self:
   a. Request law enforcement assistance.
   b. Attempt to verbally de-escalate the patient’s condition.
3. If the patient continues to struggle while being physically restrained, request ALS assistance.
   a. Providers may participate in restraining a patient if a police officer requests assistance or when it becomes necessary for self-protection.
      i. Only the amount of force required to effectively restrain the patient may be used.
      ii. Only soft restraints, such as towels, triangular bandages, or commercially available soft medical restraints may be used by providers to restrain the patient to the stretcher, and only if necessary to protect the patient and others from harm.
4. ABCs and vital signs.
5. Airway management, and appropriate oxygen therapy.

● CFR STOP

EMT

6. Determine Blood Glucose Level. If reading is below 60 mg/dL, refer to the Altered Mental Status (Adult and Pediatric) protocol.
7. Transport.

● EMT STOP

Paramedic

8. Prehospital Chemical Restraint Procedure (For Adult Patients Only):
   a. If patient continues to struggle while being physically restrained:
      i. Administer Midazolam 10 mg IM/IN (IM is the preferred route).
   b. If the patient is not adequately sedated, contact Medical Control.
9. After adequate sedation:
   a. Intravascular access.
   b. Crystalloid fluid, up to 1 liter via macro-drip.
   c. Begin cardiac monitoring, record and evaluate EKG rhythm.
   d. Begin Pulse Oximetry monitoring.
   e. Obtain a blood glucose level. If the glucometer reading is below 60 mg/dL:
      i. Administer up to 25 gm of Dextrose, IV bolus.
      ii. If intravascular access is unavailable, administer Glucagon, 1 mg, IM/IN.

● Paramedic STOP

Medical Control Options

If the patient continues to struggle while being physically restrained:
<table>
<thead>
<tr>
<th>Option</th>
<th>Class</th>
<th>Medication</th>
<th>Route</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Dissociative Agents</td>
<td>Ketamine</td>
<td>IntraMuscular</td>
<td>2-4 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>IntraNasal</td>
<td>1-2 mg/kg</td>
</tr>
<tr>
<td>2.</td>
<td>IM Benzodiazepines</td>
<td>Midazolam</td>
<td>IntraMuscular</td>
<td>Up to 10 mg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lorazepam</td>
<td>IntraMuscular</td>
<td>4 mg</td>
</tr>
<tr>
<td>3.</td>
<td>IV or IN Benzodiazepines</td>
<td>Diazepam</td>
<td>IV bolus</td>
<td>5-10 mg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Midazolam</td>
<td>IV Bolus</td>
<td>Up to 5 mg</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>IntraNasal</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lorazepam</td>
<td>IV bolus</td>
<td>2 mg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>IntraNasal</td>
<td></td>
</tr>
</tbody>
</table>

**Key Points / Considerations**

1. Agitated patients must be presumed to have an underlying medical or traumatic condition.
2. All suicidal or violent threats or gestures must be taken seriously. Utilize law enforcement personnel if the patient poses a danger to themselves, emergency personnel, and/or others.
3. Diabetic patients with a blood glucose level reading between 60 – 80 mg/dL may still be experiencing hypoglycemia.
   a. In the presence of such signs and symptoms, treat accordingly.
4. If the patient is agitated, the preferred route of choice is IM.
   a. Once the patient is adequately sedated, IV access should be established in the event additional sedation is necessary.
5. Patient must NOT be transported in a face-down position.
6. If the patient is in police custody and/or has handcuffs on, a police officer should accompany the patient in the ambulance to the hospital. The provider must have the ability to immediately remove any mechanical restraints that hinder patient care at all times.
Suspected Myocardial Infarction (Adult)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs.
2. Airway management, and appropriate oxygen therapy.
3. Do not permit physical activity.
4. Place patient in a position of comfort.
5. Administer 324 mg chewable Aspirin*, by mouth, if trained to do so.

● CFR STOP

**EMT**

6. Request ALS assistance, Do NOT delay transport.
   a. If ALS arrival time exceeds transport time or is unknown, the patient should be transported.
8. During transport or while awaiting ALS:
   a. If the patient requests, assist the patient with their prescribed Nitroglycerin*, up to 3 doses, 5 minutes apart, provided the patient's systolic BP remains above 120 mmHg.

● EMT STOP

**Paramedic**

9. Begin cardiac monitoring, record and evaluate EKG rhythm.
10. Perform, record and evaluate 12 lead EKG.
11. Initiate transport.
12. Intravascular access.
13. Monitor vital signs every 2-3 minutes.
14. If chest pain persists, administer a Nitroglycerin* Tablet 1/150 grain or Spray 0.4 mg, sublingually, every 5 minutes, as long as systolic blood pressure remains 100 mmHg or higher.

● Paramedic STOP

**Key Points / Considerations**

1. Acute coronary syndrome is a term used for any condition brought on by sudden reduced blood flow to the heart.
2. Treat an unstable dysrhythmia prior to initiation of a 12 lead EKG.
3. For patients exhibiting ST-elevation, refer to General Operating Procedures – Transportation Decisions and Procedures: STEMI Patients
4. Aspirin should NOT be enteric coated.
5. **Drug Advisories:**
   a. **Aspirin** – should not be administered to patients with known hypersensitivity to aspirin. Gastrointestinal complaints are not a contraindication.
   b. **Nitroglycerin** – shall not be administered to patients who have used erectile dysfunction medications within the past 72 hours, unless otherwise directed by Medical Control.
Dysrhythmia (Adult)

CFR AND ALL PROVIDER LEVELS

1. ABCs and vital signs.
2. Airway management, and appropriate oxygen therapy.
3. Begin CPR if patient is in cardiac arrest (see the General Cardiac Arrest Care (Non-Traumatic) (Adult) protocol).

● CFR STOP

EMT

4. Request ALS assistance.
5. Transport.

● EMT STOP

Paramedic

6. Begin cardiac monitoring, record and evaluate EKG rhythm.
7. Treat specific dysrhythmias, according to the following protocols:
   a. Atrial fibrillation / Atrial flutter (Adult)
   b. Bradydysrhythmia (Adult)
   c. Supraventricular Tachycardia (Adult)
   d. Ventricular Tachycardia with a Pulse / Wide Complex Tachycardia of Uncertain Type (Adult)
8. Intravascular access.
9. Monitor vital signs every 2-3 minutes.

● Paramedic STOP

Key Points / Considerations

1. Stable Dysrhythmia:
   a. Any adult patient having a dysrhythmia NOT associated with signs of hypoperfusion.
   b. Any pediatric patient having a dysrhythmia NOT associated with depressed mental status and absent peripheral pulses and/or hypotension, i.e., decompensated shock.
2. Unstable dysrhythmia:
   a. Any adult patient having a dysrhythmia associated with:
      i. Hypotension (systolic blood pressure < 90 mmHg), i.e., decompensated shock.
      ii. Altered mental status (e.g., agitation, confusion).
   b. Any pediatric patient having a dysrhythmia associated with:
      i. Depressed mental status and absent peripheral pulses.
      ii. Hypotension (systolic blood pressure < 70 mmHg + [2x age in years]), i.e., decompensated shock.
3. Consider Procedural Sedation prior to any electrical therapy for conscious patients.
4. When using a monitor for which the maximum joule setting is less than 360 joules, utilize equivalent synchronized cardioversion energies.
5. Further repeated attempts at synchronized cardioversion should be performed using the monitor’s maximum setting if device cannot deliver more than 200 joules in place of the consecutive joule settings.
Atrial Fibrillation / Atrial Flutter (Adult)

**Paramedic**

*Unstable Atrial Fibrillation or Atrial Flutter:*
1. Perform synchronized cardioversion using 100 joules.
2. Repeat synchronized cardioversion as necessary using 200, 300, 360 joules.

**Paramedic STOP**

**Medical Control Options**
1. If synchronized cardioversion fails to convert the dysrhythmia, or the patient has stable Atrial Fibrillation or Atrial Flutter (generally with a heart rate of 150 beats per minute or higher):
   a. Administer Diltiazem* 0.25 mg/kg IV bolus, slowly over 2 minutes, monitoring blood pressure continuously.
   b. Administer Amiodarone 150 mg, diluted in 100 ml D5W over 10 minutes IV infusion.

**Key Points / Considerations**
1. Refer to considerations above in the Dysrhythmia (Adult) protocol.
2. *Drug Advisories:*
   a. **Diltiazem** - must be used with caution in patients with liver or kidney disease, congestive heart failure, atrioventricular conduction abnormalities, and/or hypotension. Medical Control should be alerted to these conditions, and the dose should be reduced to half the normal dose.
Bradydysrhythmia (Adult)

**Paramedic**

*If the patient has a ventricular rate of less than 60 beats/minute and signs of decompensated shock:*

1. Administer Atropine Sulfate 0.5 mg, IV bolus.
2. Begin Transcutaneous Pacing.

**Medical Control Options**

*If there is insufficient improvement in cardiac status:*

1. Repeat Atropine Sulfate 0.5 mg IV bolus, every 3-5 minutes. (Maximum total dosage is 3 mg).
2. Administer Dopamine 2 mcg/kg/min, IV infusion.
   a. Infusion rate may be increased until the desired therapeutic effects are achieved or adverse effects appears. (Maximum rate is 10 mcg/kg/min, IV infusion).
3. In cases of suspected hyperkalemia or Calcium Channel Blocker overdose, administer Calcium Chloride (CaCl₂) 1 gm, *slowly*, IV bolus. Follow with a crystalloid fluid flush.
4. For pre-existing acidosis, administer Sodium Bicarbonate 44-88 mEq IV bolus.
   a. Repeat Sodium Bicarbonate 44 mEq, IV, every 10 minutes.

**Key Points / Considerations**

1. Refer to considerations above in the Dysrhythmia (Adult) protocol.
2. Calcium Chloride and Sodium Bicarbonate should be given in separate IV lines or separated by a flush of at least 20 ml of crystalloid fluid.
Supraventricular Tachycardia (Adult)

**Paramedic**

1. For patients with unstable SVT:
   a. Perform synchronized cardioversion using 100 joules.
   b. Repeat synchronized cardioversion as necessary using 200, 300, 360 joules.

2. For patients with stable SVT:
   a. Administer Adenosine 6 mg, IV bolus, rapidly, followed by a crystalloid fluid flush.
   b. Observe EKG monitor for 1-2 minutes for evidence of synchronized cardioversion.
   c. If there is no change, administer Adenosine 12 mg, IV bolus, rapidly, followed by a crystalloid fluid flush.
   d. If there is no change, repeat Adenosine 12 mg, IV bolus, rapidly, followed by a crystalloid fluid flush.

● **Paramedic STOP**

**Medical Control Options**

*If Adenosine fails to convert the dysrhythmia:*

1. If complex width is narrow and the patient is stable:
   a. Administer Diltiazem* 0.25 mg/kg IV, slowly over 2 minutes, monitoring blood pressure continuously.

2. If complex width is narrow and the patient is unstable:
   a. Perform synchronized cardioversion using 100 joules.
   b. Repeat synchronized cardioversion as necessary using 200, 300, 360 joules.

3. Administer Amiodarone 150 mg, diluted in 100 ml D$_5$W over 10 minutes IV Infusion.

**Key Points / Considerations**

1. **Refer to considerations above in the Dysrhythmia (Adult) protocol.**

2. **Drug Advisories:**
   a. Diltiazem - must be used with caution in patients with liver or kidney disease, congestive heart failure, atrioventricular conduction abnormalities, and/or hypotension. Medical Control should be alerted to these conditions, and the dose should be reduced to half the normal dose.
Ventricular Tachycardia with a Pulse / Wide Complex Tachycardia of Uncertain Type (Adult)

**Paramedic**

1. For patients with Unstable Ventricular Tachycardia with a pulse:
   a. Perform synchronized cardioversion using 100 joules.
   b. Repeat synchronized cardioversion as necessary using 200, 300, 360 joules.
2. Administer Amiodarone 150 mg, diluted in 100 ml D$_5$W over 10 minutes IV infusion.

**Paramedic STOP**

**Medical Control Options**

*If Amiodarone fails to convert the dysrhythmia:*

1. Perform synchronized cardioversion using 100 joules.
2. Synchronized cardioversion may be repeated as necessary using 200, 300, 360 joules.
3. Administer Magnesium Sulfate 2 gm, IV bolus, diluted in 10 ml of Normal Saline (0.9% NS), over 2 minutes.
4. In cases of suspected hyperkalemia or Calcium Channel Blocker overdose, administer Calcium Chloride (CaCl$_2$) 1 gm, *slowly*, IV bolus. Follow with a crystalloid fluid flush.
5. For pre-existing acidosis, administer Sodium Bicarbonate 44-88 mEq IV bolus.
   a. Repeat Sodium Bicarbonate 44 mEq, IV, every 10 minutes.

**Key Points / Considerations**

1. *Refer to considerations above in the Dysrhythmia (Adult) protocol.*
2. Calcium Chloride and Sodium Bicarbonate should be given in separate IV lines or separated by a flush of at least 20 ml of crystalloid fluid.
Obstetric Emergencies

**CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs.
2. Airway management.
3. Administer oxygen.
4. If the mother is having contractions, has the sensation of a bowel movement, or the urge to push – check for crowning. If there is crowning, prepare for imminent delivery.
5. Place the patient in a LEFT lateral recumbent position.
6. If the patient is lying on an extrication device, elevate the right side of the extrication device a few inches.
7. Assess for shock and treat, if appropriate (see the Shock / Sepsis (Adult) protocol).
8. If delivery has begun do not permit mother to go to the bathroom.
9. If delivery has begun, see the Emergency Childbirth protocol.

**CFR STOP**

**EMT**

10. Special Considerations:
   a. For any Special Considerations listed above, request ALS assistance.
   b. If seizures occur, see the Seizures (Adult) protocol.
      i. **Hypertension:**
         1. Keep the mother calm; avoid loud noises, and dim lighting.
      ii. **Seizures:**
         1. If seizures occur, see the Seizures (Adult) protocol.
      iii. **Imminent Delivery:**
         1. Do not permit mother to go to the bathroom.
         2. If delivery has begun, see the Emergency Childbirth protocol.
      iv. **Post-Partum Hemorrhage:**
         1. Massage the mother’s abdomen over the uterus.
         2. If available, place a sanitary napkin over the vaginal opening.

11. Transport.

**EMT STOP**

**Paramedic**

*For patients with severe pre-eclampsia, eclampsia or post-partum hemorrhage:*

12. Intravascular access.

**Paramedic STOP**

**Medical Control Options**

1. For severe pre-eclampsia:
   a. Administer Magnesium Sulfate 2 gm, IV infusion diluted in 50 – 100 ml of Normal Saline (0.9% NS) over 10 – 20 minutes.
2. For eclampsia (seizure):
   a. Administer Magnesium Sulfate 2-4 gm, IV infusion diluted in 50 - 100 ml of normal Saline (0.9% NS), over 10 – 20 minutes. (Maximum total dose is 4 grams)

**Key Points / Considerations**

1. Consider Supine Hypotension Syndrome as a cause of shock.
2. Severe pre-eclampsia is characterized by any one of the following:
   a. Systolic blood pressure of 160 mmHg or higher
   b. Diastolic blood pressure of 110 mmHg or higher
   c. Severe headaches
   d. Visual disturbances
   e. Acute pulmonary edema
   f. Upper abdominal tenderness
Emergency Childbirth

CFR AND ALL PROVIDER LEVELS

1. ABCs and vital signs.
2. Airway management.
3. Assess the mother for shock and treat, if appropriate.
4. If the mother is in active labor, visually inspect the perineum (area between the vagina and the anus) for bulging or crowning.
5. If delivery is imminent, proceed as follows:
   a. Administer oxygen if there are any complications with delivery.
   b. Apply gentle pressure against the neonate’s head to prevent tearing of the perineum.
      i. **DO NOT** apply pressure to the soft spots (fontanels).
   c. As the head presents, clear the airway of secretions using the bulb syringe, as follows:
      i. Depress the bulb syringe prior to insertion
      ii. First suction the mouth, insert no more than 1 ½ inches
      iii. Then suction the nose, insert no more than ½ inch
      iv. Suctioning is critical
   d. Support the head and thorax as the neonate delivers.
      i. Momentarily position the head lower than the body to allow for drainage.
      1. Repeat suctioning as necessary prior to spontaneous or stimulated respirations.
   e. Gently guide the head downward until the shoulder appears, The other shoulder is delivered by gentle upward traction.
   f. Thoroughly but rapidly, dry the newborn with a clean, dry towel.
   g. Monitor the neonate’s airway.
      i. To stimulate breathing, first rub the lower back, and then gently snap the soles of the feet.
      1. **Spontaneous respirations should begin within 30 seconds after birth.**
   h. Resuscitate if necessary (see the Neonatal Care / Resuscitation protocol).
   i. If proper equipment is available:
      i. Place the first clamp 8 to 10 inches from the neonate Place the second clamp 3 inches from the first clamp toward the mother.
      ii. Cut between the clamps and check both ends for bleeding.
      iii. If the equipment is not available, tie the umbilical cord with gauze at the same landmarks, but **DO NOT** cut the cord.
   j. If continuous bleeding is seen from either end of the cord, add a second clamp to the end that is bleeding.
   k. Wrap the infant in a dry, warm blanket or towels and a layer of foil or plastic wrap over the layer of blankets or towels or use a commercial-type infant swaddler, if one is provided with the OB kit. Do not use foil alone.
   l. Cover the infant’s scalp with an appropriate warm covering.
   m. Re-assess the mother for shock and treat, if appropriate (see the Shock / Sepsis (Adult) protocol).
   n. If post-partum hemorrhage occurs, see the Obstetric Emergencies protocol.
   o. For care of the neonate, see the Neonatal Care / Resuscitation protocol.
6. If delivery is imminent, request ALS assistance.
   a. ALS assistance **must** be requested for premature or multiple births, or if the amniotic fluid is meconium stained.

7. Transport.
   a. Do not delay transport waiting for the placenta to deliver.
   b. If miscarriage or stillbirth occurs, bring all expelled material to the hospital with the mother. If there is any doubt about viability, begin neonatal resuscitation.

8. Special Considerations:
   a. Abnormal Presentations:
      i. Breech Presentation:
         1. Place the mother in a face-up position with hips elevated.
         2. Support the thorax of the neonate as it delivers.
         3. A full delivery may occur.
         4. If the head does not deliver immediately:
            a. Place sterile, gloved fingers between the neonate’s face and the wall of the birth canal to establish an air passageway.
            b. This position must be maintained until the head delivers.
      ii. Prolapsed cord:
         1. Place the mother in a face-up position with hips elevated.
         2. If the cord is not pulsating:
            a. Place sterile, gloved fingers into the birth canal and push the head back 1 to 2 inches towards the cervix until the cord begins to pulsate.
         3. Wrap saline-moistened, sterile dressings around the cord.
            a. Do not attempt to insert the cord back into the uterus. The cord should be continuously monitored for the presence of a pulse.
   b. Complications During Birth:
      i. Cord Around the Neck:
         1. If the cord is loose, gently slip the cord over the neonate’s head.
         2. If this is not possible, immediately place 2 clamps on the cord and cut between them.
      ii. Amniotic Sac Not Ruptured:
         1. Immediately remove the sac from around the face using sterile, gloved fingers only.
      iii. Wedged Shoulders:
         1. Guide the head downward to aid in the delivery of the upper shoulder.
      iv. Multiple Births:
         1. Deliver each multiple birth according to the protocol for Emergency Childbirth, making sure to tie each umbilical cord between births.
         2. Clamp and cut the cord of the first neonate prior to the next birth.
         3. If the second birth does not occur within 10 minutes, begin transport.
Key Points / Considerations

1. Consider supine hypotension syndrome as a cause of shock.
2. Neonate's are subject to rapid heat loss and must be kept warm and dry.
Neonatal Care / Resuscitation

CFR AND ALL PROVIDER LEVELS

1. For Neonates: Minutes to 24 hours old.
2. Thoroughly but rapidly, dry the neonate with a clean, dry towel.
3. ABCs and vital signs.
4. Airway management.
5. Suction the mouth, and then nose using a bulb syringe.
6. If the infant is not breathing spontaneously or not crying vigorously:
   a. Gently rub the infant's lower back
   b. Gently tap the bottom of the infant's feet
7. a. Begin resuscitation if the neonate has any of the following:
       i. Persistent central cyanosis (longer than 15 – 30 seconds)
       ii. Respiratory rate less than 30 breaths per minute
       iii. Heart rate between 60 – 100 beats per minute
   b. Clear the infant's airway by suctioning the mouth and nose gently with a bulb syringe.
   c. Assist ventilations at a rate of 30 – 60 breaths per minute.
8. Start CPR immediately if the neonate has either one of the following conditions:
   a. A heart rate less than 60 beats per minute
   b. Cardiac arrest
9. Stop CPR and begin assisted ventilation at a rate of 30 – 60 breaths per minute once the heart rate is greater than 100 beats per minute.
   Note: Perform chest compressions with assisted ventilations at a 3:1 compression to ventilation ratio.
10. Switch to high concentration mask or “blow by” oxygen once all of the following are present:
    a. Respiratory rate is greater than 30 breaths per minute, AND
    b. Heart rate is greater than 100 beats, AND
    c. Central cyanosis disappears.
11. Monitor the umbilical cord for bleeding.
12. Wrap the infant in a dry, warm blanket or towels and a layer of foil or plastic wrap over the layer of blankets or towels or use a commercial-type infant swaddler, if one is provided with the OB kit. Do not use foil alone.

● CFR STOP

EMT

13. Determine the APGAR Score at 1 and 5 minutes after delivery (see Appendix K).
14. Request ALS assistance if beginning neonatal resuscitation.
15. Transport, keeping the neonate warm.

● EMT STOP

Paramedic

16. If CPR has been initiated, and the heart rate remains less than 60 beats per minute and not rapidly increasing after 30 seconds of CPR:
   a. Perform Endotracheal Intubation.
17. During transport, or if transport is delayed:
   a. If the heart rate remains less than 60 beats per minute:
      i. Intravascular access. (Attempt IV access no more than twice.)
      ii. Administer Epinephrine 0.01 mg/kg (0.1 ml/kg of a 1:10,000 solution) IV, every 3 – 5 minutes.
      iii. Obtain a blood glucose level.
         1. If the glucometer reading is below 40 mg/dL, administer Dextrose 10% 5 ml/kg IV via syringe \textbf{NOT} via infusion.
         iv. Crystalloid fluid, 10 ml/kg.

\textbf{Paramedic STOP}

\textbf{Key Points / Considerations}

1. Cardiopulmonary resuscitation in a neonate is performed utilizing chest compressions with interposed ventilations at a ratio 3:1 at a rate of 120 (90 compressions, 30 ventilations) per minute.
2. Refer all weight based fluids/medications to a Length Based Dosing Device.
3. Each ventilation should be given gently, over one second per respiratory cycle, assuring that the chest rises with each ventilation.
4. Neonates are subject to rapid heat loss and must be kept warm and dry.
5. \textbf{Do not delay transport or resuscitation in order to obtain an APGAR Score.}
Asthma / COPD / Wheezing (Adult)

**CFR AND ALL PROVIDER LEVELS**

1. **ABCs and vital signs.**
   a. If patient exhibits signs of imminent respiratory failure, refer to the appropriate treatment protocol.
2. **Airway management.**
3. **Administer oxygen.**
4. **Limit the patient's physical activity.**
5. **Place the patient in a position of comfort.**
6. If the patient is prescribed albuterol (either by inhaler or nebulizer), and they have their albuterol with them, assist them in taking their albuterol (if trained to do so).

**EMT STOP**

7. **Assess the following prior to administration of the first nebulized bronchodilator treatment:**
   a. **Vital signs**
   b. **Patient's ability to speak in complete sentences**
   c. **Accessory muscle use**
8. **Administer Albuterol Sulfate 0.083%, in one (1) unit dose or 3 ml via nebulizer at a flow rate that will deliver the solution over 5 to 15 minutes.**
   a. **Do not delay transport to complete medication administration.**
9. **Begin transport.**
10. After beginning transport; albuterol Sulfate 0.083%, in one (1) unit dose or 3 ml via nebulizer at a flow rate that will deliver the solution over 5 to 15 minutes, may be repeated twice for a total of three (3) doses if necessary.
11. For patients in severe respiratory distress or shock:
    a. **Request ALS assistance.**
    b. **Administer Epinephrine, 0.3 mg (one dose only) IM.**
       i. Administration of epinephrine must be reported to your agency's medical director as soon as possible.
12. **Initiate CPAP if available and if patient meets appropriate indication, as authorized by the service medical director (see Appendix P).**

**EMT STOP**

**Paramedic**

13. **Administer Ipratropium Bromide 0.02% (1-unit dose of 2.5 ml), by nebulizer, in conjunction with the first three (3) doses of Albuterol Sulfate.**
14. **In patients with severe respiratory distress, respiratory failure, and/or decreased breath sounds:**
    a. If not already administered, administer Epinephrine, 0.3 mg IM.
15. **Continue administration of Albuterol Sulfate 0.083% (one-unit dose of 3 ml) by nebulizer until the patient shows improvement.**
16. For patients with severe respiratory distress:
    a. **Intravascular access.**
    b. **In patients with a history of dysrhythmia or cardiac disease: Begin Cardiac monitoring, record and evaluate EKG rhythm.**
c. In patients whose symptoms are NOT suggestive of chronic obstructive pulmonary disease:
   i. Administer Magnesium Sulfate, 2 gm, IV infusion, diluted in 50-100 ml of Normal Saline (0.9% NS), over 10-20 minutes.

17. For patients with severe respiratory distress, administer one parenteral steroid medication:
   a. For Adult patients:
      i. Methylprednisolone 125 mg IV/IM.
         OR
      ii. Dexamethasone, 12 mg IV/IM.

**Paramedic STOP**

**Medical Control Options**

**EMT & Paramedic:**

1. Administer a second dose of Epinephrine, 0.3 mg IM.

**Key Points / Considerations**

1. Patients who require supplemental oxygen should receive high concentration oxygen via a non-rebreather mask set at 10-15 liters/minute:
   a. The reservoir must remain at least 1/3 full following inspiration.
   b. If a mask is not tolerated by the patient, a nasal cannula set at 6 liters/minute should be used and such use properly documented.
   c. There is no reason to withhold high concentration of oxygen when required in adult patients.
   d. *Patients who are chronically maintained on oxygen and do not require high concentration oxygen shall be administered oxygen at their prescribed rate of flow.

2. Patients who need assisted ventilation may be presenting with any one of the following:
   i. On-going hypoxia
   ii. Inability to adequately protect their airway
   iii. And/or exhibiting signs of inadequate respiration

   b. Utilize one of the following methods:
      i. Pocket mask with supplemental oxygen set at 10-15 liters/minute.
      ii. Bag-valve-mask and reservoir with supplemental oxygen set at 10-15 liters/minute.

3. Medical control must be contacted for any patient refusing medical assistance or transport.

4. Albuterol Sulfate and Ipratropium Bromide shall be mixed and administered simultaneously, for a maximum of three doses.

5. Do not delay transport to administer additional nebulized bronchodilator nebulizer treatments.

6. Epinephrine should be used with caution in patients with COPD.

7. A silent chest is an ominous sign that indicates respiratory failure and arrest are imminent.
Asthma / Wheezing (Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs.
   a. If patient exhibits signs of imminent respiratory failure, refer to appropriate treatment protocol.
2. Airway management
3. Administer oxygen.
4. Limit the patient’s physical activity.
5. Place the patient in a position of comfort.
6. If the patient is prescribed albuterol (either by inhaler or nebulizer), and they have their albuterol with them, assist them in taking their albuterol (if trained to do so).

**EMT STOP**

7. Assess the following prior to administration of the first nebulized bronchodilator treatment:
   a. Vital signs
   b. Patient’s ability to speak in complete sentences
   c. Accessory muscle use
8. Administer Albuterol Sulfate 0.083%, in one (1) unit dose or 3 ml via nebulizer at a flow rate that will deliver the solution over 5 to 15 minutes.
   a. Do not delay transport to complete medication administration.
10. After beginning transport; albuterol Sulfate 0.083%, in one (1) unit dose or 3 ml via nebulizer at a flow rate that will deliver the solution over 5 to 15 minutes, may be repeated twice for a total of three (3) doses if necessary.
11. For patients in severe respiratory distress or shock:
   a. Request ALS assistance.
   b. Administer Epinephrine (one dose only) IM:
      i. For patients 9 years of age and older or weighing more than 30 kg (66lbs).
         1. Adult Epinephrine (0.3 mg).
      ii. For patients younger than 9 years of age or weighing less than 30 kg (66lbs).
         1. Pediatric Epinephrine (0.15 mg).
      iii. Administration of epinephrine must be reported to your agency’s medical director as soon as possible.

**EMT STOP**

12. Administer Ipratropium Bromide 0.02%, by nebulizer, in conjunction with the first three (3) doses of Albuterol Sulfate. Use the following doses of Ipratropium Bromide:
   a. For children 6 years of age or older: one-unit dose of 2.5 ml.
   b. For children under 6 years of age: ½ unit dose of 2.5 ml (1.25 ml).
13. In patients with severe respiratory distress, respiratory failure, and/or decreased breath sounds:
   a. If not already administered, give Epinephrine 0.01 mg/kg (0.01 ml/kg of a 1:1,000 solution), IM. Maximum dose is 0.3 mg.
14. Continue administration of Albuterol Sulfate 0.083% (one-unit dose of 3 ml) by nebulizer until the patient shows improvement. Maximum total of three (3) doses.
15. For patients over 2 years of age with severe respiratory distress, administer Dexamethasone 10 mg IM/IV.

**Paramedic STOP**

**Medical Control Options**

**EMT:**
1. Administer a second dose of Epinephrine IM.
   a. Patients 9 years of age and older or weighing more than 30 kg (66 lbs), use adult Epinephrine (0.3 mg).
   b. Patients younger than 9 years of age or weighing less than 30 kg (66 lbs) use pediatric Epinephrine (0.15 mg).

**Paramedic:**
2. During transport, or if transport is delayed; if the patient develops or remains in severe respiratory distress or respiratory failure, and/or continues to have decreased breath sounds:
   a. Administer or repeat Epinephrine 0.01 mg/kg (0.01 ml/kg of a 1:1,000 solution), IM. Maximum dose is 0.3 mg.
   b. Administer additional doses of albuterol 0.083%, in one (1) unit dose or 3 ml via nebulizer at a flow rate that will deliver the solution over 5 to 15 minutes.
   c. Intravascular access. (Attempt IV no more than twice)
   d. For patients less than 2 years old: Administer Dexamethasone 0.6 mg/kg IV/IM.

**Key Points / Considerations**
1. Patients who require oxygen should receive high concentration oxygen via the mask that best fits around the mouth and nose, preferably a non-rebreather mask.
   a. Humidified oxygen is preferred.
   b. If a mask is not tolerated, then “blow-by” oxygen is acceptable.
   c. High concentration oxygen should always be used in pediatric patients.
      i. There are no contraindications to the use of high concentration oxygen.
   d. If assisted ventilations via a mask are required, it must be ensured that the mask does not cover the eyes.
2. Patients who need assisted ventilations may be presenting with any one of the following:
   i. On-going hypoxia
   ii. Inability to adequately protect their airway
   iii. And/or exhibiting signs of inadequate respiration
   b. Utilize one of the following methods:
      i. Pocket mask with supplemental oxygen set at 10-15 liters/minute.
      ii. Bag-valve-mask and reservoir with supplemental oxygen set at 10-15 liters/minute.
3. Medical control must be contacted for any patient refusing medical assistance or transport.
4. Albuterol Sulfate and Ipratropium Bromide shall be mixed and administered simultaneously, for a maximum of three doses.
5. Do not delay transport to administer additional nebulized bronchodilator nebulizer treatments.
6. Severe respiratory distress in a child is characterized by markedly increased respiratory effort, i.e., severe agitation, dyspnea, tripod position, and suprasternal and substernal retractions.
7. A silent chest is an ominous sign that indicates respiratory failure and arrest are imminent.
8. Refer all weight-based fluids/medications to a Length Based Dosing Device.
Stridor / Croup / Epiglottitis (Pediatric)

CFR AND ALL PROVIDER LEVELS

1. Administer oxygen.
   a. Administer high concentration blow-by oxygen (humidified if available) delivered by tubing or face mask held about 3-5 inches from face (as tolerated)

2. Assess for foreign body airway obstruction.
   a. Refer immediately to the Obstructed Airway (Pediatric) protocol, if indicated.

3. Assess for anaphylaxis.
   a. Refer immediately to the Anaphylaxis (Pediatric) protocol, if indicated.

4. Ongoing assessment of the effectiveness of breathing.
   a. Refer to the Respiratory Distress / Failure / Arrest (Pediatric) protocol, if necessary.

○ CFR STOP

EMT

5. If the child is unconscious request ALS assistance.

6. Transport.

○ EMT STOP

Paramedic

7. DO NOT attempt advanced airway management.
   a. Use bag-valve-mask ventilation.

○ Paramedic STOP

Key Points / Considerations

1. Croup should be suspected in a child with stridor, retractions, barking cough, normal or slightly elevated temperature, sternal retractions, and/or a history of upper respiratory infection.

2. Epiglottitis should be suspected in a child with stridor, retractions, muffled voice, high fever, tripod position and/or drooling.

3. Avoid agitating the child, particularly if there is concern for upper airway edema.

4. If the patient has stridor (inspiratory), it is often an upper airway problem (physiologic or mechanical obstruction).

5. A vaccination history should be obtained because unvaccinated children are at higher risk of epiglottitis.
Cold Emergencies (Adult and Pediatric)

CFR AND ALL PROVIDER LEVELS

1. ABCs and vital signs.
2. Airway management.
3. Remove the patient from the cold environment to a warm environment.
4. Prevent further loss of body heat.
5. Do NOT allow the patient to smoke or drink either alcohol or caffeinated beverages.
6. If the patient is conscious, able to swallow, and can drink without assistance, give warm liquids slowly by mouth.
7. **Special considerations:**
   a. **Localized Cold Injury:**
      i. Remove clothing and jewelry from affected area.
      ii. Protect areas from pressure, trauma, and friction. Wrap the area in dry, bulky dressings, digits should be wrapped individually.
      iii. Do NOT rub the area or break blisters.
   b. **Hypothermia (General):**
      i. Monitor airway.
      ii. Assess carotid pulse for 30 - 45 seconds.
      iii. Begin CPR, if appropriate.
      iv. Do not allow physical activity.
      v. Monitor breathing for adequacy.
      vi. Administer oxygen.
      vii. Gently remove any wet clothing and jewelry and dry the patient.
      viii. Place heat packs, if available, in the patient’s groin area, lateral chest, and neck.
      ix. Wrap the patient in dry blankets.

● CFR STOP

EMT

8. Transport.
9. If the patient has an altered mental status, request ALS assistance.

● EMT STOP

Key Points / Considerations

1. Vital signs may be extremely depressed.
2. Hypothermic patients remain viable for a longer period of time.
3. For infants and young pediatric patients, cover the head with a cap or towel to decrease heat loss.
4. CPR should be initiated on all pulseless and apneic hypothermic patients.
5. Avoid rough handling of the hypothermic patient so as to reduce the risk of inducing cardiac arrest.
6. For unconscious patients, use caution with heat packs to avoid burns.
Heat Emergencies (Adult and Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs.
2. Airway management.
3. Move the patient to a cooler environment, or cool the environment.
4. Remove outer clothing.
5. Administer oxygen.
6. Restrict physical activity.
7. Place in recovery position, if altered mental status.
8. Assess for shock and treat, if appropriate.
9. Provide water if the patient is conscious and is able to drink without assistance. (If available).

**CFR STOP**

**EMT**

10. If the patient has an altered mental status, request ALS assistance.
11. Transport.
12. For patients presenting with hot, flushed, and dry skin: cool the patient rapidly.

**EMT STOP**

**Paramedic**

13. Intravascular access.
14. For Adult patients: Crystalloid fluid, 500 ml.
   a. Crystalloid fluid infusion may be repeated up to a maximum of 2 liters as needed, if there are no signs of pulmonary edema and no concern for water intoxication.

**Paramedic STOP**

**Key Points / Considerations**

1. Do not lower body temperature so as to produce shivering.
2. Cooling of the patient should **NOT** delay transport.
3. Patients who are experiencing a heat emergency and no longer sweating should be treated and transported rapidly.
4. Water intoxication occurs when patients ingest excessive water which causes potentially life-threatening electrolyte abnormalities.
   a. Suspect water intoxication in long distance runners who consume large amounts of water and present with collapse or confusion.
   b. Cool the patient, as indicated, and contact medical control before administering any oral fluid to a patient with suspected water intoxication.
5. Special populations who should be considered at high risk for adverse outcomes:
   a. Elderly patients
   b. Patients with comorbidities, on diuretics, or psychiatric medications
   c. Athletes
Poisoning or Drug Overdose (Adult and Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs.
2. Airway management, and appropriate oxygen therapy.
3. Assess for shock and treat, if appropriate (see the Shock / Sepsis (Adult), or Shock / Sepsis (Pediatric) protocol).
4. Document the name of the substance(s) involved, the amount taken, and the time and duration of exposure.
5. Contact Medical Control, if available.
6. **Special Considerations:**
   a. **Ingested Substance:**
      i. Do not induce vomiting.
      ii. Do not attempt to neutralize the substance.
   b. **Inhaled Substance:**
      i. Ensure that the scene is safe to enter.
      ii. Remove the patient from the contaminated environment.
   c. **Envenomation (Adult & Pediatric Patients):**

<table>
<thead>
<tr>
<th>Insect Stings</th>
<th>Snakebite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove the stinger by scraping with an index card or credit card.</td>
<td>Keep injection site lower than heart.</td>
</tr>
<tr>
<td>Cover with sterile dressing.</td>
<td>Cover with sterile dressing.</td>
</tr>
<tr>
<td>Apply cold compress, if available.</td>
<td>Immobilize the area and restrict patient activity.</td>
</tr>
</tbody>
</table>

d. **Absorption:**
   i. Take precautions to avoid contamination.
   ii. Remove all contaminated clothing.
   iii. Brush away any dry agents or blot away any excess liquids from the skin.
   iv. Flush the area with sterile saline, sterile water, or plain water for at least 20 minutes.
   v. Bandage any contact burns with a saline-moistened, sterile dressing.

**CFR STOP**

7. Request ALS assistance for patients with respiratory distress/failure or altered mental status, or if so directed by Medical Control.
8. For altered mental status, see the [Altered Mental Status (Adult and Pediatric)] protocol.
10. **Special Considerations:**
    a. **Inhaled Substance:**
      i. Administer oxygen, especially if carbon monoxide is suspected.
    b. **Envenomation/Venomous Bites:**
      i. Request ALS assistance, DO NOT delay transport. Refer immediately to the protocols as appropriate:
         1. Anaphylaxis (Adult)
         2. Anaphylaxis (Pediatric)
         3. [Respiratory Distress / Failure / Acute Pulmonary Edema (Adult)]
4. Respiratory Distress / Failure / Arrest (Pediatric)
5. Shock / Sepsis (Adult)
6. Shock / Sepsis (Pediatric)

   ii. Move the patient to the ambulance with minimal patient movement, i.e. on a stretcher or wheeled stair chair.

   iii. Do not attempt to capture the envenoming animal (snake, scorpion, spider, etc.), nor remove the venom with suction devices.

<table>
<thead>
<tr>
<th>Marine</th>
<th>Snakebite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove stinging bristles by patting the area with adhesive tape, then wipe with alcohol.</td>
<td>If the venomous bite occurred on an extremity immobilize the extremity.</td>
</tr>
<tr>
<td>Remove stinging spine.</td>
<td>Transport to Venomous Bite Center (See Appendix H).</td>
</tr>
<tr>
<td>Cover with sterile dressing.</td>
<td></td>
</tr>
<tr>
<td>Transport should not be delayed for this treatment</td>
<td></td>
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</tbody>
</table>

✓ EMT STOP

Key Points / Considerations

1. Compartment syndrome - limb edema causing constriction at the tourniquet, worsening pain, paresthesia, skin pallor/coolness, or loss of pulses.

2. Be careful and aware of off gassing.
Seizures (Adult)

CFR AND ALL PROVIDER LEVELS

1. Protect the patient from injury.
2. ABCs.
3. Airway management:
   a. Position the patient to maintain airway patency.
   b. Do not attempt placement of OPA during convulsions.
   c. Consider use of NPA during active seizures, if available.
4. Avoid unnecessary or excessive restraint.
5. Administer oxygen.
6. Treat all injuries as appropriate.

CFR STOP

EMT

7. Measure blood glucose level.
   a. If the glucose reading is below 60 mg/dL, refer to the Altered Mental Status (Adult and Pediatric) protocol.
8. Request ALS assistance for ongoing seizures at time of patient contact.

EMT STOP

Paramedic

For patients experiencing generalized seizures that are ongoing or recurring.

10. If the patient is actively seizing, administer ONE of the following:
    If intravascular access has already been established, utilize the intravascular route. If intravascular access is not established, utilize the most appropriate and quickest route of administration available (IM/IN), based on available resources.
    a. Administer Midazolam 5 mg, IV/IM/IN.
    OR
    b. Administer Lorazepam 2 mg IV/IM/IN.
    OR
    c. Administer Diazepam 5 mg, IV. (Rate of administration may not exceed 5 mg/min.)
11. After 5 minutes for generalized seizures that are ongoing or recurring, a single repeat of the same medication, at the same dose, may be given.
12. Intravascular access.
13. Begin cardiac monitoring, record and evaluate rhythm.
14. Perform Advanced Airway Management in patients with GCS < 8, AND if less invasive methods of airway management are not effective.

Paramedic STOP

Medical Control Options

If seizure activity persists:

1. Administer any of the benzodiazepines listed above.

Key Points / Considerations

1. Do NOT force anything into the patient’s mouth.
2. Avoid unnecessary or excessive restraint.
3. Status epilepticus (continuing seizure) is a critical medical emergency. Anticonvulsant medication should be administered as soon as possible, preferably starting no later than 5-10 minutes after the onset of the seizure.

4. Diabetic patients with a blood glucose level reading between 60 – 80 mg/dL may still be experiencing hypoglycemia.
   a. In the presence of such signs and symptoms, treat accordingly.
Seizures (Pediatric)

CFR AND ALL PROVIDER LEVELS

1. Protect the patient from injury.
2. ABCs.
3. Airway management:
   a. Position the patient to maintain airway patency.
   b. Do not attempt placement of OPA during convulsions.
   c. Consider use of NPA during active seizures, if available.
4. Avoid unnecessary or excessive restraint.
5. Administer oxygen.
6. Treat all injuries as appropriate.

CFR STOP

EMT

7. Measure blood glucose level.
   a. If the glucometer reading is below 60 mg/dL, refer to the Altered Mental Status (Adult and Pediatric) protocol.
8. Request ALS assistance for ongoing or recurring seizures at time of patient contact.

EMT STOP

Paramedic

For patients experiencing seizures that are ongoing or recurring:

10. Determine blood glucose level prior to administration of Dextrose or Glucagon.
11. Administer Glucagon 1 mg IM/IN.
   a. NOTE: If the glucometer is above 60 mg/dL, Dextrose and Glucagon should be withheld.
12. If the patient is still seizing, administer Midazolam 0.2 mg/kg, IM or IN. (Maximum dose is 5 mg)
   a. IN is the preferred route of administration.
13. During transport, or if transport is delayed:
   a. Intravascular access. (Attempt IV access no more than twice.)
   b. Administer Dextrose 0.5 mg/kg IV bolus:
      i. Use 10% Dextrose in patients less than or equal to one (1) month of age.
      ii. Use 25% Dextrose in patients greater than one (1) month of age and less than 15 years of age.

Paramedic STOP

Medical Control Options

If seizures persist administer one of the following:

1. Lorazepam 0.1 mg/kg IV/IN bolus, slowly over 2 minutes.
   a. Repeat doses of Lorazepam 0.1 mg/kg, IV/IN, may be given if seizures persist.
   OR
2. Diazepam 0.2 mg/kg IV bolus slowly over 2 minutes.
   a. Repeat doses of Diazepam 0.2 mg/kg, IV bolus, may be given if seizures persist.
   OR
3. Midazolam 0.2 mg/kg IV bolus, slowly over 2 minutes, OR 0.2 mg/kg IN/IM when there is no intravascular access. (Maximum dose is 5 mg)
   a. Repeat doses of Midazolam 0.2 mg/kg, IV/IN/IM, may be given if seizures persist.
      (Maximum repeated dose is 5 mg) IN is the preferred route of administration when there is no intravascular access.

**Key Points / Considerations**
1. Refer all weight or size-based medications to a Length based dosing device.
2. Do not administer Lorazepam, Diazepam or Midazolam if the seizures have stopped.
Shock / Sepsis (Adult)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs, including blood pressure.
2. Airway management.
3. Administer oxygen.
4. Control external bleeding. See the Bleeding / Hemorrhage Control / Impaled Object (Adult and Pediatric) protocol.
5. Elevate the legs.
7. Treat injuries as appropriate.

**CFR STOP**

**EMT**

8. Request ALS assistance.
9. Obtain a blood glucose level.
10. Transport.

**EMT STOP**

**Paramedic**

11. If the patient is demonstrating signs of inadequate ventilation:
   a. Perform Advanced Airway Management.
   b. For conscious patients, use procedural sedation options.

12. For suspected tension pneumothorax, follow Appendix O (Needle Decompression of Tension Pneumothorax).

13. Intravascular access.

14. Crystalloid fluid:
   a. For non-cardiogenic shock: Administer up to 3 liters, via a macro-drip.
   b. For cardiogenic shock: Administer a 250 ml bolus.
      i. A 250 ml bolus may be repeated once for a total of 500 ml of crystalloid fluid.

15. Begin cardiac monitoring.

16. Perform, record & evaluate a 12 Lead EKG.

17. For patients who remain in shock after the administration of a crystalloid bolus, either by clinical symptoms, or by persistent hypotension (systolic BP < 90 mmHg or mean arterial pressure < 65 mmHg). Administer ONE of the following, titrated to a systolic BP greater than 90 mmHg or mean arterial pressure (MAP) greater than 65 mmHg:
   a. Epinephrine 10 mcg IV bolus, slowly over 1 minute. Repeat epinephrine 10 mcg IV every 5 minutes as needed.
      OR
   b. Norepinephrine 2 mcg/min IV infusion. Titrate as needed to a maximum dose of 20 mcg/min IV.
      OR
   c. Dopamine 5 mcg/kg/min IV infusion. Titrate as needed to a maximum dose of 20 mcg/kg/min IV.

18. Monitor vital signs every 2-3 minutes.
19. For patients with illness of a presumed infectious source meeting Sepsis Criteria. (Refer to Key Points/Considerations):
   a. Accurate documentation of pre-arrival fluid administration is required.
   b. Measure and record lactate level (if available).
   c. Measure and record oral temperature (if available), also consider using last temperature obtained at patient’s facility (if available).

**Paramedic STOP**

**Medical Control Options**

1. Administer any of the above standing orders.

**Key Points / Considerations**

1. Prepare push-dose epinephrine by mixing 1 ml of epinephrine 1:10,000 with 9 ml of normal saline. Concentration will then be 1:100,000, and the 10 mcg dose will be 1 ml of this mixed solution.
2. An unstable dysrhythmia must be treated prior to initiation of a 12 lead EKG.
3. Vasopressor infusions should be administered, preferably via an 18 gauge or larger IV catheter, or an IO, using an IV flow regulating device. Standard IV administration sets are not considered IV flow regulating devices.
4. Check lung sounds after each bolus of crystalloid. Stop IV fluid if patient develops rales or other signs of pulmonary edema.

**CRITERIA FOR SEVERE SEPSIS / SEPTIC SHOCK**

5. SBP < 90 mmHg OR MAP < 65 mmHg OR unexplained altered mental status
6. At least two (2) of the following must be present, without evidence of shock from cardiac or traumatic etiologies:
   a. Respiratory rate > 20 OR PaCO2 < 32 mmHg
   b. HR > 110/min
   c. Temperature
      i. Skin: Tactile fever/hypothermia
      OR
      ii. Temperature > 100.4°F (38°C), if thermometer is available
   d. Point of care lactate > 4 mmol/L
   e. White blood count > 12,000 or < 4,000 cells/mm³ or > 10% bands, if available.
Shock / Sepsis (Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs.
2. Airway management.
3. Administer high concentration oxygen.
4. Control external bleeding. See the Bleeding / Hemorrhage Control / Impaled object (Adult and Pediatric) protocol.
5. Keep the child warm.
6. Elevate the legs.
7. Treat all injuries as appropriate.

**CFR STOP**

**EMT**

8. Request ALS assistance.
9. Transport, keeping the child warm.

**EMT STOP**

**Paramedic**

*For pediatric patients in decompensated shock:*

10. If signs of hemorrhage or dehydration are not present, begin cardiac monitoring, record and evaluate EKG rhythm.
   a. For patients in Supraventricular Tachycardia or Ventricular Tachycardia with a pulse and with evidence of low cardiac output, proceed to medical control options.

11. During transport, or if transport is delayed:
   a. Intravascular access. (Attempt IV access no more than twice.)
   b. Crystalloid fluid, 20 ml/kg, via a large bore IV catheter.
   c. If signs of hemorrhage or dehydration are present, and the patient remains in decompensated shock, continue rapid infusion of crystalloid fluid, up to an additional 20 ml/kg (total of 40 ml/kg) via a second large bore catheter.

**Paramedic STOP**

**Medical Control Options**

*For patients still remaining in decompensated shock:*

1. If signs of hemorrhage or dehydration are still present, continue rapid infusion of crystalloid fluid, up to an additional 20 ml/kg (total of 60 ml/kg).
2. If in Supraventricular Tachycardia or Ventricular Tachycardia with a pulse, with evidence of low cardiac output, and the Defibrillator is able to deliver calculated dose:
   a. Perform Synchronized cardioversion at 0.5 mg - 1 joule/kg, using pads of appropriate size.
   b. If this fails to convert the dysrhythmia, Synchronized Cardioversion may be repeated at 1 - 2 joules/kg, using pads of appropriate size.
   c. **DO NOT** perform synchronized cardioversion in pediatric patients with Supraventricular Tachycardia or Ventricular Tachycardia with a pulse unless the defibrillator is able to deliver calculated dose.
3. If in Supraventricular Tachycardia with evidence of low cardiac output, but the Defibrillator is not able to deliver calculated dose:
   a. Administer Adenosine 0.1 mg/kg IV bolus (maximum initial dose 6 mg), rapidly, followed by 2 - 3 ml of crystalloid fluid flush.
   b. Observe EKG monitor for 1-2 minutes for evidence of synchronized cardioversion.
   c. If there is no change, administer Adenosine 0.2 mg/kg IV bolus (maximum dose 12 mg), rapidly, followed by 2 - 3 ml of crystalloid fluid flush.
   d. If there is no change, repeat Adenosine 0.2 mg/kg IV bolus (maximum dose 12 mg), rapidly, followed by 2 - 3 ml of crystalloid fluid flush.

**Key Points / Considerations**

1. High concentration oxygen should always be used in pediatric patients.
2. Refer all weight-based fluids/medications to a Length Based Dosing Device.

**CRITERIA FOR SEVERE SEPSIS / SEPTIC SHOCK**

1. Patients with at least one (1) symptom from each of the following categories, without evidence of shock from cardiac or traumatic etiologies:
   a. Abnormal temperature
      i. Skin: Tactile fever/hypothermia
         OR
      ii. Temperature > 100.4°F (38° C), if thermometer is available
   b. Elevated vital signs
      i. High heart rate (age dependent)
         OR
      ii. High respiratory rate (age dependent)
   c. Any of the following signs and symptoms
      i. Poor perfusion (capillary refill > 3 seconds, decreased peripheral pulses, distal extremity [hands/feet] coolness and dusky color, or age-dependent hypotension)
         OR
      ii. Need for oxygen
         OR
      iii. Altered mental status (lethargy, irritability)
         OR
      iv. Point of care lactate > 4 mmol/L
Stroke (Cerebrovascular Accident) (Adult and Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs.
2. Airway management, and appropriate oxygen therapy.

**EMT STOP**

3. Use a Glucometer to measure blood glucose level.
   a. If the Blood Glucose Level is 60 mg/dL or above, proceed to NYC S-LAMS evaluation.
   b. If the Blood Glucose Level is less than 60 mg/dL, see the Altered Mental Status (Adult and Pediatric) protocol.
   c. If neurologic deficits persist after treatment and the Blood Glucose Level is 60 mg/dL or above, proceed to NYC S-LAMS evaluation per Appendix Q.
4. Determine NYC S-LAMS score (for each element and total score) in the prehospital care report, and the “Last Known Well”; the exact time the patient was last in his or her usual state of health and/or seen without symptoms by interviewing the patient, family, and bystanders (this may be different than the “Time of Symptom Onset”).
5. Transport per Appendix Q.

**EMT STOP**

**Key Points / Considerations**

1. If the historical/physical findings indicate an acute stroke, transport the patient to the closest appropriate Stroke Center as determined by Appendix Q, unless:
   a. The patient is in cardiac arrest or has an unmanageable airway
   b. The patient has other medical conditions that warrant transport to the nearest appropriate New York City 911 system ambulance destination emergency department as per protocol
2. If the patient has a NYC S-LAMS score of $\leq 3$, transport patient to the closest appropriate Primary Stroke Center.
3. If the patient has a NYC S-LAMS score of $\geq 4$, contact OLMC for Transport Decision to the closest Thrombectomy Stroke Center*, unless Stroke Exclusion Criteria are met:
   a. Total time from onset of patient’s symptoms to EMS patient contact is greater than 5 (five) hours.
   b. Patient is wheelchair or bed-bound.
   c. Seizure is cause of symptoms.
   d. Loss of Consciousness (LOC).
   e. Trauma is cause of symptoms.
   f. Transport time to Thrombectomy Stroke Center is $> 30$ minutes.
4. *See Appendix R for a list of Thrombectomy Stroke Center Hospitals.
5. Do not delay transport.
6. Request ALS assistance if BLS airway management is not adequate.

**Stroke Patient Assessment Triage And Transportation**

1. NYC S-LAMS Scale
   a. For patients exhibiting signs and symptoms of a stroke (CVA), utilize the NYC S-LAMS Stroke Scale:
      i. Assess for **Facial Droop** - have the patient show teeth or smile.
         1. **Absent** - if both sides of the face move equally, the score is $0$. 
2. **Present** - if one side of the face does not move as well as the other, the score is 1.
   
   ii. Assess for **Arm Drift** - have the patient close eyes and hold both arms straight out with palms facing up for 10 seconds.
      
      1. **Absent** - if both arms remain up or move the same, the score is 0.
      2. **Drifts down** - if one arm drifts slowly down compared to the other arm, the score is 1.
      3. **Falls rapidly** - if one arm falls rapidly, the score is 2.
   
   iii. Assess for **Speech Deficit** - have the patient say a simple sentence, for example, “you can’t teach an old dog new tricks”
      
      1. **Normal** - if the patient uses correct words with no speech slurring, the score is 0.
      2. **Present** - if the patient slurs words, uses the wrong words, or is unable to speak, the score is 1.
   
   iv. Assess for hand **Grip Strength** - have the patient hold both of your hands and squeeze them at the same time.
      
      1. **Normal** – if they squeeze both hands equally, the score is 0.
      2. **Weak grip** - if one hand has a weaker grip than the other, the score is 1.
      3. **No grip** – if one hand does not grip at all, the score is 2.

b. Document the scores for each of the four S-LAMS elements and the total score in the PCR narrative (or PCR pre-assigned fields, if available).

c. If any of the elements of the NYC S-LAMS Stroke Scale are positive, establish onset of signs and symptoms, and document in the PCR, by asking the following:
   
   i. To patient – “When was the last time you remember before you became weak, paralyzed, or unable to speak clearly?”
      
      AND / OR
   
   ii. To family or bystander – “When was the last time you remember before the patient became weak, paralyzed, or unable to speak clearly?”
      
      OR
   
   iii. If the patient woke with the deficit, the time of onset is the time patient went to sleep.
Abdominal Pain / Severe Nausea / Vomiting (Adult and Pediatric)

CFR AND ALL PROVIDER LEVELS

For adult and pediatric patients with severe nausea, or vomiting:

1. ABCs and vital signs.
2. Airway management, and appropriate oxygen therapy.
3. If a traumatic cause is suspected, see the Abdominal Injuries (Adult and Pediatric) protocol.
4. Do not allow the patient to eat or drink.

● CFR STOP

EMT

5. Assess for shock and treat, if appropriate. (See the Shock / Sepsis (Adult), or Shock / Sepsis (Pediatric) protocol)
6. Place patient in position of comfort.
7. Transport.

● EMT STOP

Paramedic

8. Intravascular access.
9. Monitor vital signs every 5 minutes.
10. Consider and treat, as per appropriate protocol, underlying causes of the patient’s nausea/vomiting (e.g., poisoning, Myocardial Ischemia, etc.).
11. For patients over 2 years of age: Administer Ondansetron* 0.1 mg/kg (maximum dose is 4 mg), PO/IV/IM bolus. (May give the IV formulation orally, if tolerated.)
   a. For continued severe nausea, or vomiting, repeat Ondansetron* 0.1 mg/kg (maximum dose is 4 mg), PO/IV/IM bolus once (1). Maximum total dose is 8 mg. (May give the IV formulation orally, if tolerated.)

● Paramedic STOP

Key Points / Considerations

1. *Drug Advisories:
   a. Ondansetron - has been associated with prolongation of the QT interval, possibly resulting in Torsades de Pointes.
      i. Should be used with caution in patients with:
         1. A history of cardiac disease
         2. Those taking other medications known to prolong the QT interval
      ii. Should NOT be administered to patients with a history of familial QT prolongation.
2. Consider cardiac monitoring and obtaining a 12-lead EKG, for detection of prolonged QT or cardiac etiology of symptoms.
3. Refer all weight based fluids/medications for pediatric patients to a Length Based Dosing Device.
Hyperglycemia (Adult and Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. If signs of shock, treat under the Shock / Sepsis (Adult), or Shock / Sepsis (Pediatric) protocol.
2. ABCs and vital signs.
3. Airway management, and appropriate oxygen therapy.
4. Maintain body temperature.

● **CFR STOP**

**EMT**

   a. Request ALS assistance for patients with a Blood Glucose Level above 300 mg/dL, AND altered mental status, tachypnea, or signs of dehydration.

● **EMT STOP**

**Paramedic**

6. If patient is demonstrating signs of inadequate ventilation, perform Advanced Airway Management.
7. Intravascular access for patients with any of the following:
   a. A Blood Glucose Level above 300 mg/dL with altered mental status, tachypnea, or signs of dehydration
   b. A Blood Glucose Level above 500 mg/dL
   c. A glucometer reading of “high”, “HI”, or “check ketones”
8. For Adult patients:
   a. Crystalloid fluid, up to a maximum of 1 liter*
9. For pediatric patients:
   a. Crystalloid fluid, 20 ml/kg, to a maximum of 1 liter*
10. Begin cardiac monitoring, record and evaluate EKG rhythm.
11. Transport.

● **Paramedic STOP**

**Medical Control Options**

1. Adult patients:
   a. Administer one (1) additional liter of crystalloid fluid.
2. Pediatric patients:
   a. Administer an additional bolus of 10 ml/kg (maximum of 1 liter) of crystalloid fluid.

**Key Points / Considerations**

1. *Accurate documentation of pre-arrival fluid administration is required.
2. Refer all weight based fluids/medications to a Length Based Dosing Device.
Drowning / Decompression Illness (Adult and Pediatric)

CFR AND ALL PROVIDER LEVELS

1. Remove patient from water.
   a. Observe spinal injury precautions; if appropriate.

2. ABCs and vital signs.

3. Airway management.

4. Assist ventilations if appropriate (see the Respiratory Distress / Failure / Acute Pulmonary Edema (Adult), or Respiratory Distress / Failure / Arrest (Pediatric) protocol).

5. Begin CPR if patient is in cardiac arrest (see the General Cardiac Arrest Care (Non-Traumatic) (Adult) protocol).

6. Administer oxygen.

7. Assess for shock and treat, if appropriate (see the Shock / Sepsis (Adult), or Shock / Sepsis (Pediatric) protocol).

8. If Cold Water Drowning (water temperature below 70°F), treat for hypothermia (See the Cold Emergencies (Adult and Pediatric) protocol).

 CFR STOP

EMT

9. For suspected decompression illness (dive injury):
   a. Place the patient in a LEFT lateral recumbent position.
   b. If possible, obtain the following information:
      i. Recent dive history
      ii. The maximum depth of the dive(s)
      iii. The total time spent underwater
      iv. The mixture of compressed gases used
   c. Transport the patient and companion divers via ground transportation to the nearest appropriate hospital (See Appendix H.)

10. Transport

 EMU STOP

Key Points / Considerations

1. Hypothermic patients remain viable for a longer period of time, therefore, if appropriate, initiate CPR.
Amputation (Adult and Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. Refer immediately to the Bleeding / Hemorrhage Control / Impaled Object (Adult and Pediatric) protocol, as indicated.
2. ABCs and vital signs.
3. Elevate and wrap the stump with moist sterile dressings and cover with dry bandage.
5. Provide or direct care for amputated part:
   a. Moisten sterile dressing with sterile saline solution and wrap amputated part.
   b. Place the severed part in a water-tight container, such as a sealed plastic bag.
   c. Label the bag with the patient’s name and time of the injury.
   d. Place this container on ice or cold packs, using caution to avoid freezing the limb.

**CFR STOP**

**EMT**

6. Transport to the nearest appropriate hospital according to the patient’s condition.

**EMT STOP**

**Key Points / Considerations**

1. Distal amputations (those distal to wrist or ankle) do not typically require a trauma center.
2. Transport the amputated part with the patient, if possible, but do not delay transport to search for amputated part.
3. Consider medical control consultation if there is uncertainty regarding appropriate destination facility.
Avulsed Tooth (Adult and Pediatric)

**Criteria:** Applies to permanent teeth only.

1. ABCs and vital signs.
2. Hold the tooth by the crown (not the root).
3. Quickly rinse the tooth with saline before reimplantation, but do not brush off or clean the tooth of tissue.
4. Remove the clot from the socket; suction the clot, if needed.
5. Reimplant the tooth firmly into its socket with digital pressure.
6. Have the patient hold the tooth in place using gauze and bite pressure.
7. Report to hospital staff that a tooth has been reimplanted.

**Key Points / Considerations**

1. The best transport medium for an avulsed tooth is in the socket, in the appropriate situation.
   a. The best chance for success is when reimplantation occurs within five minutes of the injury.
   b. If the patient has altered mental status, do not reimplant.
   c. If the patient must be transported in a supine position, do not reimplant.
   d. Do not reimplant if the alveolar bone/gingiva are missing, or if the root is fractured.
   e. Do not reimplant if the patient is immunosuppressed, or reports having cardiac issues that require antibiotics prior to procedures.
2. If the patient is not a candidate for reimplantation and avulsed a permanent tooth, place the avulsed tooth in interim storage media (commercial tooth preservation media, low fat milk, patient's saliva, or saline) and keep cool. Avoid tap water storage, if possible, but do not allow the permanent tooth to dry.
Bleeding / Hemorrhage Control / Impaled Object (Adult and Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs.
2. Airway management, and appropriate oxygen therapy.
3. Immediate intervention for severe bleeding:
   a. Apply pressure directly on the wound with a dressing:
      i. Hemostatic gauze* may be applied with initial direct pressure.
         1. Rolled gauze may be used if hemostatic gauze is not available.
         2. Pack wound and hold pressure.
         3. If bleeding soaks through the dressing, apply additional dressings.
      ii. If bleeding is controlled, apply a pressure dressing to the wound.
      iii. If severe bleeding persists through conventional dressings and hemostatic dressing becomes available, remove all conventional dressings, expose site of bleeding, and apply hemostatic dressing*.
      iv. Cover the dressed site with a pressure bandage.
4. Immediate intervention for uncontrollable bleeding from an extremity:
   a. Place tourniquet 2-3 inches proximal to the wound.
   b. If bleeding continues, you may place a second tourniquet proximal to the first, or above the knee or elbow, if wound is distal to these joints
5. Note the time of tourniquet application and location of tourniquet(s)
6. Assess for shock and treat, if appropriate.
7. **Special considerations:**
   a. Impaled object:
      i. **DO NOT** remove the object.
         1. If the object is impaled in the cheek and is compromising the airway, remove it and bandage both sides of the wound.
      ii. Support and secure the object with bulky dressings.

◆ CFR STOP

**EMT**

8. Transport to the nearest appropriate hospital according to the patient’s condition.

◆ EMT STOP

**Key Points / Considerations**

1. Infection control precautions must be followed when making contact with all patients, especially the patient’s blood or body secretions.
2. Hemostatic dressings* should be used according to manufacturer’s instructions and training and may require removal of coagulated blood to directly access the source of bleeding.
   a. *If equipped and trained.
3. **Do not remove a tourniquet that was placed for life-threatening bleeding.**
   a. If a tourniquet had been placed for apparently non-life-threatening bleeding, the tourniquet may be released while maintaining the ability to immediately reapply and otherwise control the hemorrhage should significant bleeding occur.
4. These steps are not intended to be used in sequence; interventions should be taken using the best judgement of the EMS professional.
5. Hemodialysis access sites may result in life threatening hemorrhage. Direct digital pressure should be used first followed by tourniquet ONLY in the setting of life-threatening hemorrhage when other means of hemorrhage control have been unsuccessful.

6. When extremity bleeding sites cannot be rapidly determined, tourniquets may be placed high and tight in accordance with training.

7. Conventional and pressure splints may also be used to control bleeding.
Burns (Adult and Pediatric)

CFR AND ALL PROVIDER LEVELS

1. Stop the burning process.
2. Observe spinal precautions, if appropriate.
3. ABCs and vital signs.
4. Airway management and appropriate oxygen therapy.
5. Remove smoldering clothing that is not adhering to the patient's skin.
6. Remove rings, bracelets, and constricting objects at or distal to burned area, if possible.
7. Cover the burn with dry sterile dressings.
8. Burns to the eye require copious irrigation with normal saline – do not delay irrigation.
   a. Other neutral fluid may be used, if needed, such as tap water.
9. Consider the potential for carbon monoxide poisoning and refer to the Carbon Monoxide (Adult and Pediatric) protocol, as indicated.

EMT

10. Burns should be covered with dry, sterile dressings.
11. Moist sterile dressings may be used to augment pain management only if the burn is ≤ 10 % BSA (body surface area).
12. Transport.

EMT STOP

Paramedic

For Adult and Pediatric patients

13. If there is evidence of burns to the upper airway or upper airway compromise is anticipated, perform Advanced Airway Management.
   a. If the patient is alert prior to performing Advanced Airway Management, refer to General Operating Procedures – Prehospital Procedural Sedation.
15. Intravascular access.
16. Crystalloid fluid:
   a. Adult patients: rapid infusion of up to 2 liters, via a macro-drip.
      i. If transport is delayed or extended, administer one additional liter. (Maximum 3 liters.)
   b. For Pediatric patients:
      i. Administer 20ml/kg with a repeat of 20 ml/kg (maximum of 2 liters) via macro-drip.
      ii. If transport is delayed or extended, administer an additional 20 ml/kg bolus (Maximum total of 3 liters.)
17. For patients who are experiencing severe pain administer one of the following:
   a. Administer Morphine Sulfate, for patients with a systolic blood pressure greater than 110 mmHg, 0.1 mg/kg (not to exceed 5 mg), IV/IM.
      i. For continued pain, Morphine Sulfate 0.1 mg/kg (not to exceed 5 mg), IV/IM, may be repeated after five minutes following the initial dose. (Maximum total dose is 10 mg.)
   b. Administer Fentanyl 1 mcg/kg (maximum dose is 100 mcg), IV/IN/IM, if available.
      i. For continued pain, Fentanyl 1 mcg/kg (not to exceed 100 mcg), IV/IN/IM, may be repeated after five minutes following the initial dose. (Maximum total dose is 200 mcg.)

   **Note:** For patients with burns involving the airway, consultation with On-Line Medical Control is required prior to administration of analgesics.

18. Special Considerations:
   a. Electrical burns:
      i. Begin cardiac monitoring, record and evaluate EKG rhythm.
   b. Chemical Eye Injuries:
      i. Assist the patient with removal of contact lens (if present).
      ii. If the patient is agitated or unable to hold eyelid open; instill of one of the following treatments. 1-2 gtts per eye, topically, into the affected eye(s) to facilitate irrigation.
         1. Proparacaine HCl 0.5% solution.
         2. Tetracaine HCl 0.5% solution.

**Paramedic STOP**

<table>
<thead>
<tr>
<th>Key Points / Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Assure scene safety and patient decontamination for chemical burns / HAZMAT Exposure.</td>
</tr>
<tr>
<td>a. For liquid chemical burns, flush with copious amount of water or saline, ideally for a minimum of 20 minutes.</td>
</tr>
<tr>
<td>b. For dry powder burns, brush powder off before flushing.</td>
</tr>
<tr>
<td>c. Use caution to avoid the spread of the contaminant to unaffected areas (especially from one eye to the other).</td>
</tr>
<tr>
<td>d. Consider other injuries, including cardiac dysrhythmias.</td>
</tr>
<tr>
<td>2. Consider smoke inhalation and airway burns.</td>
</tr>
<tr>
<td>a. Administer high flow oxygen.</td>
</tr>
<tr>
<td>b. Oxygen saturation readings may be falsely elevated.</td>
</tr>
<tr>
<td>3. If hazardous material involvement is suspected, immediately notify the destination hospital to allow for decontamination.</td>
</tr>
<tr>
<td>4. The whole area of the patient’s hand is ~1% BSA (body surface area).</td>
</tr>
<tr>
<td>a. When considering the total area of a burn, DO NOT count first degree burns.</td>
</tr>
<tr>
<td>5. Burns &gt; 10% are only to be dressed with dry simple sterile dressings once the burning process has stopped.</td>
</tr>
<tr>
<td>6. Hypothermia is a significant concern in these patients</td>
</tr>
</tbody>
</table>
7. If the mechanism of illness/injury and/or historical/physical findings indicate major burns, transport the patient to the nearest New York City 911 System Burn Center, (refer to Burn Patient Criteria below), unless one of the following conditions is met:
   a. The patient is in cardiac arrest, or has an unmanageable airway.
   b. The patient also has major trauma.
   c. An on-line medical control physician so directs.
   d. The event is declared a BURN MCI, in which case patients may be transported to New York City Burn Disaster Receiving Hospitals (BDRH) as per NYC Burn Disaster Plan.

8. If hypoventilation develops after the administration of opioid analgesics:
   a. Administer Naloxone, titrated in increments of 0.5 mg up to response, up to 4 mg, IV/IN/IM.

9. Accurate documentation of pre-arrival fluid administration is required.

### Burn Patient Criteria

**Adult and Pediatric Patients with 2nd and 3rd degree cutaneous burns:**

1. \( \geq 15\% \) of body surface area (BSA) burns
2. 3\(^{rd}\) degree burns involving \( \geq 5\% \) of BSA
3. \( \geq 9\% \) of BSA in persons:
   a. \(< 5 \) or \( > 60 \) years of age
      **OR**
   b. With a pre-existing disease, which may complicate or retard recovery
4. Respiratory burns
5. Electrical burns
6. Burns with associated trauma
7. Burns involving any one of the following:
   a. Eyes
   b. Ears
   c. Face
   d. Hands
   e. Feet
   f. Genitalia
Chest Injuries (Adult and Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. Observe spinal injury precautions, if appropriate.
2. ABCs and vital signs
3. Airway management, and appropriate oxygen therapy.
4. Position the patient on the affected side unless it will complicate the injury.
5. If there is a sucking chest wound, cover with occlusive dressing; if dyspnea increases, release the dressing, momentarily, during exhalation.

**CFR STOP**

**EMT**

6. Transport.

**EMT STOP**

**Paramedic**

7. For suspected tension pneumothorax, follow Appendix O (Needle Decompression Of Tension Pneumothorax).
8. Begin cardiac monitoring.

**Paramedic STOP**

**Key Points / Considerations**

1. Decreased breath sounds and muffled heart sounds indicate life-threatening chest injuries. The patient should be transported immediately.
Eye Injuries (Adult and Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs.
2. Airway management, and appropriate oxygen therapy.
3. **DO NOT** apply pressure to the globe of the eye.
4. Bandage both eyes loosely.
5. **Special Considerations:**
   - **Non-penetrating Foreign Object / Chemical Eye Injury:**
     i. Immediately and continuously flush the affected eye(s) with Normal Saline (0.9% NS) for a minimum of 20 minutes.
   - **Impaled Object:**
     i. Stabilize (or limit movement of) any object lodged in the eye, and cover both eyes to prevent consensual movement.
   - **Avulsed Eye:**
     i. **DO NOT** attempt to replace the eye back into the socket.
     ii. Wrap the eye with saline-moistened, sterile dressings.
     iii. Stabilize this with a paper cup or similar object.

**CFR STOP**

**EMT**

6. Remove contact lens(es), if possible.
7. **Special Considerations:**
   - **Non-penetrating Foreign Object:**
     i. Continue flushing the affected eye(s) enroute to the hospital.
8. Transport.

**EMT STOP**

**Paramedic**

9. **Special Considerations:**
   - **Non-penetrating Foreign Object / Chemical Eye Injury (Adult and Pediatric):**
     i. If the patient is agitated or unable to hold eyelid open; instill of one of the following treatments. 1-2 gtts per eye, topically, into the affected eye(s) to facilitate irrigation. 1-2 gtts per eye, topically, into the affected eye(s) may be repeated once if needed:
       1. Proparacaine HCl 0.5% solution.
       2. Tetracaine HCl 0.5% solution.

**Paramedic STOP**
Bone and Joint Injuries (Adult and Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs.
2. Airway management, and appropriate oxygen therapy.
3. Assess for shock and treat, if appropriate.
4. Manually stabilize the injury.
5. Cover protruding bones and associated wounds with dry, sterile dressings.
6. Check for peripheral (distal) pulses, motor function, and sensation in the injured extremity.
7. Apply cold pack(s) to closed injury sites.

- **CFR STOP**

**EMT**

8. Avoid excess pressure over sites.
9. Immobilize the injury:
   a. Check for peripheral (distal) pulses, motor function and sensation in the injured extremity before and after immobilization.
   b. If the distal extremity is cyanotic, or lacks a pulse, or if a long bone is severely deformed, align the extremity by applying gentle manual traction prior to splinting. Stop and splint in position found if increase in pain, or resistance is felt.
   c. Apply a splint:
      i. Traction splinting is indicated if there is an isolated, closed mid-thigh fracture, and no suspected injury to the pelvis, knee, lower leg, or ankle on the same side (depending on particular device).
   d. Joints above and below the deformity should be immobilized.
   e. An injured joint should be immobilized in the position of function. If unable to move to position of function due to increased pain or resistance, splint in the position found.
   f. Stabilize potentially unstable pelvic fractures with a pelvic binder, if available.
10. Elevate the injury site after splinting.
11. Transport.

- **EMT STOP**

**Paramedic**

*For Adult and Pediatric patients with an isolated extremity injury, if there is severe pain.*

15. Monitor vital signs every 5 minutes.
16. Administer one of the following:
   a. Morphine Sulfate, for patients with a systolic blood pressure greater than 110 mmHg, 0.1 mg/kg (not to exceed 5 mg), IV/IM.
      i. For continued pain, Morphine Sulfate 0.1 mg/kg (not to exceed 5 mg), IV/IM, may be repeated after five minutes following the initial dose. (Maximum total dose is 10 mg.)
   b. Administer Fentanyl 1 mcg/kg (maximum dose is 100 mcg), IV/IN/IM, if available.
      i. For continued pain, Fentanyl 1 mcg/kg (not to exceed 100 mcg), IV/IN/IM may be repeated after five minutes following the initial dose. (Maximum total dose is 200 mcg.)

● Paramedic STOP

Medical Control Options

1. **Patella Dislocation:**
   *For isolated, clinically obvious, medial or lateral dislocation of the patella.*
   a. If obvious medial or lateral patella dislocation, gradually extend the knee while, at the same time, a second provider applies pressure on the patella towards the midline of the knee.
   b. **Note:** If unsure of patella dislocation, or if body habitus (e.g. large body build or obesity) prevents accurate assessment, immobilize in position found.
   c. When straight, place the entire knee joint in a knee immobilizer or splint.

Key Points / Considerations

1. Splinting should not delay transport of the critical or unstable patient.
2. Refer all weight based fluids/medications for pediatric patients to a Length Based Dosing Device.
3. If hypoventilation develops after the administration of opioid analgesics:
   a. Administer Naloxone, titrated in increments of 0.5 mg up to response, up to 4 mg, IV/IN/IM.
4. Patella Dislocation:
   a. May be described as “knee went out”.
   b. Intra-articular and superior dislocations are not reducible in the prehospital environment.
   c. If there is severe increased pain or resistance, stop and splint in the position found.
   d. Patient usually feels significantly better after reduction, but they still need transport to a hospital for further evaluation and possible treatment.
Head, Neck, and Spine Injuries (Adult and Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs while stabilizing the cervical spine.
2. Airway management, and appropriate oxygen therapy.
3. Seal open neck wounds with an occlusive dressing.
   a. **DO NOT** bandage completely around the neck.
4. Assess for shock and treat, if appropriate. Observe spinal injury precautions and apply a rigid cervical collar if potential mechanism for spinal injury.

**● CFR STOP**

**EMT**

5. Patients meeting one or more of the following criteria, either at the time of evaluation or at any time following the injury in question, must have spinal precautions during care and transport:
   a. Altered mental status for any reason, including possible intoxication due to drugs or alcohol
   b. GCS < 15
   c. Complaint of, or inability of the provider to assess for neck and/or spine pain or tenderness
   d. Weakness, paralysis, tingling, or numbness of the trunk or extremities at any time since the injury
   e. Deformity of the spine not present prior to the injury
   f. Distracting injury or circumstances, including anything producing an unreliable physical exam or history
   g. High risk mechanism (axial loading such as diving or tackling, high-speed motor vehicle collisions, rollover collisions, falls greater than standing height)
   h. Provider concern for potential spinal injury
6. If the patient meets any of the above criteria for spinal precautions, is not awake, or is unstable, then apply a rigid collar.
7. Continue to monitor the Glasgow Coma Score. (See Appendix F.)
8. Transport.

**● EMT STOP**

**Paramedic**

*In patients with head trauma with a GCS of 13 or lower:*

9. Perform Advanced Airway Management in patients with a Glasgow Coma Scale is less than eight (8) AND if less invasive methods of airway management are not effective.
   a. Consider procedural sedation if patient is alert prior to performing Advanced Airway Management.
11. Intravascular access.
12. If a seizure is witnessed, treat with parenteral benzodiazepines per the Seizures (Adult), or Seizures (Pediatric) protocol.

**● Paramedic STOP**

**Medical Control Options**

*If seizure activity persists:*

1. Repeat or administer parenteral benzodiazepines per the Seizures (Adult), or Seizures (Pediatric) protocol's Medical Control Options.
Key Points / Considerations

1. Do not use a nasopharyngeal airway in patients with facial burns or if severe head injury has occurred.
2. Hyperventilation should not be performed.
Abdominal Injuries (Adult and Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs.
2. Airway management, and appropriate oxygen therapy.
3. Assess for shock and treat, if appropriate.
4. **Special Considerations:**
   a. **Evisceration:**
      i. Do NOT replace the protruding organ.
      ii. Place saline-moistened, sterile dressings over the organ.
      iii. Do NOT pour fluid directly onto the wound.
      iv. Secure dry, bulky dressings over the moistened dressings.
      v. An occlusive dressing may be placed as the final layer to maintain body heat.
      vi. Position the patient appropriately with knees slightly bent.

**CFR STOP**

**EMT**

5. Transport.

**EMT STOP**
Cardiac Arrest (Adult and Pediatric)

<table>
<thead>
<tr>
<th>CFR AND ALL PROVIDER LEVELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Begin CPR per AHA guidelines.</td>
</tr>
<tr>
<td>2. Apply an automated external defibrillator, if available, with minimal disruption of CPR, until the AED is turned on.</td>
</tr>
<tr>
<td>3. Once a defibrillator is applied, immediately turn the machine “On”.</td>
</tr>
<tr>
<td>4. Analyze (do not perform CPR while the machine is analyzing).</td>
</tr>
<tr>
<td>5. Whenever the “NO SHOCK INDICATED” message appears, CPR should be performed for 2 minutes followed by the next analysis.</td>
</tr>
<tr>
<td>6. Until transport arrives, continue CPR, re-analyze every 2 minutes and shock as indicated.</td>
</tr>
</tbody>
</table>

**CFR STOP**

<table>
<thead>
<tr>
<th>EMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Simultaneously begin transportation of the patient and Basic Cardiac Life Support procedures, as circumstances permit.</td>
</tr>
<tr>
<td>8. Request ALS assistance.</td>
</tr>
</tbody>
</table>

**EMT STOP**

<table>
<thead>
<tr>
<th>Paramedic</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. For suspected tension pneumothorax, follow Appendix O (Needle Decompression Of Tension Pneumothorax).</td>
</tr>
<tr>
<td>10. Perform Advanced Airway Management if other methods of airway control are not effective.</td>
</tr>
<tr>
<td>11. Begin cardiac monitoring, record and evaluate EKG rhythm while enroute to the hospital:</td>
</tr>
<tr>
<td>a. If the EKG demonstrates Ventricular fibrillation or pulseless ventricular tachycardia, see the Ventricular Fibrillation / Pulseless Ventricular Tachycardia (Adult), or Non-Traumatic Cardiac Arrest and Severe Bradycardia (Pediatric) protocol.</td>
</tr>
<tr>
<td>12. Intravascular access. (Attempt intravascular access no more than twice.)</td>
</tr>
<tr>
<td>13. Crystalloid fluid:</td>
</tr>
<tr>
<td>a. For Adult patients: up to 3 liters, via one or two large bore (14-16) gauge catheters using a macro drip.</td>
</tr>
<tr>
<td>b. For Pediatric patients:</td>
</tr>
<tr>
<td>i. 20 ml/kg via a large bore IV.</td>
</tr>
<tr>
<td>ii. If the patient remains in traumatic cardiac arrest: Give additional 20 ml/kg (for a total of 40 ml/kg) rapid infusion of crystalloid fluid. Start a second large bore IV catheter (if necessary).</td>
</tr>
<tr>
<td>NOTE: Attempt second IV no more than twice.</td>
</tr>
</tbody>
</table>

**Paramedic STOP**

<table>
<thead>
<tr>
<th>Medical Control Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Continue rapid IV infusion of crystalloid fluid up to an additional 20 ml/kg (total of 60 ml/kg).</td>
</tr>
</tbody>
</table>

**Key Points / Considerations**

1. **Traumatic cardiac arrest is a critical, life-threatening emergency and should be transported immediately.**

2. Refer all weight or size-based medications/fluids to a Length based dosing device for pediatric patients.
Carbon Monoxide (Adult and Pediatric)

**CFR AND ALL PROVIDER LEVELS**
1. Ensure that the scene is safe to enter.
2. Remove the patient from the contaminated environment.
3. ABCs and vital signs.
4. Airway management.
5. Administer oxygen via non-rebreather.
6. Assess for shock and treat, if appropriate (see the Shock / Sepsis (Adult), or Shock / Sepsis (Pediatric) protocol).

**CFR STOP**

**EMT**
7. Obtain patient's carbon monoxide level (SpCO) if available and trained to do so.
8. Transport.

**EMT STOP**

**Key Points / Considerations**
1. Patients who are pregnant, symptomatic, or have a SpCO level > 25% are considered high risk and must be taken to the hospital for evaluation.
2. Symptoms of Carbon Monoxide poisoning include:
   a. Syncope
   b. Headache
   c. Chest pain
   d. Nausea / vomiting
Smoke Inhalation (Adult and Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs.
2. Airway management.
3. Administer oxygen.
4. Treat any burns according to the Burns (Adult and Pediatric) protocol.

**CFR STOP**

**EMT**

**EMT STOP**

**Paramedic**

*This protocol should be utilized ONLY for the management of symptomatic patients after exposure to smoke in an enclosed space and cyanide exposure is suspected.*

5. Perform Advanced Airway Management, if necessary.
6. Begin cardiac monitoring, record and evaluate EKG rhythm.
8. Begin SpCO monitoring, if available.
9. Obtain at least two (2) sites of intravascular access.
10. Administer Hydroxocobalamin and Sodium Thiosulfate IV for patients with any of the following symptoms according to Table 1, if available:
   a. Cardiac arrest
   b. Respiratory arrest
   c. Altered mental status
   d. Seizures
   e. Hypotension not attributable to other obvious causes

**NOTE:** Prior to administration of Hydroxocobalamin, obtain three blood samples using the tubes provided in the cyanide toxicity kit.

**TABLE 1: Cyanide Toxicity Kit (Hydroxocobalamin 5 g in 250 ml bottle, Sodium Thiosulfate 12.5 g in 50 ml vial).**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric (0 - 14 years)</td>
<td>75 mg/kg (3 ml/kg of the prepared Hydroxocobalamin solution) IV over 1 minutes Maximum dose 5 g If needed may repeat 75 mg/kg IV over 15 minutes</td>
<td>250 mg/kg (3 ml/kg of the prepared Sodium Thiosulfate solution) IV over 10 minutes</td>
</tr>
<tr>
<td>Adult (≥ 15 years)</td>
<td>5 g (250 ml of the prepared Hydroxocobalamin solution) IV over 1 minutes. If needed may repeat 5 g IV over 15 minutes</td>
<td>12.5g (150 ml of the prepared Sodium Thiosulfate solution) IV over 10 minutes</td>
</tr>
</tbody>
</table>
11. Hydroxocobalamin solution is prepared by adding 200 ml of NS or D₃W to Hydroxocobalamin 5 g powder in the bottle provided. Due to the volume of Hydroxocobalamin powder, the total volume of Hydroxocobalamin solution will be 250 ml.

The vented macro drip tubing that accompanies the Cyanide Toxicity Kit should be used to administer the Hydroxocobalamin solution in the wide open position to ensure the correct administration time of approximately 15 minutes.

12. Sodium Thiosulfate solution is prepared by adding Sodium Thiosulfate 12.5 g (50 ml) to a 100 ml bag of NS or D₃W for a total volume of 150 ml.

**NOTE:** In the event that only one intravascular access line is established, administer Hydroxocobalamin BEFORE Sodium Thiosulfate as Sodium Thiosulfate will inactivate Hydroxocobalamin.

**NOTE:** Whenever Hydroxocobalamin is administered, follow with a 20 ml flush of crystalloid fluid prior to administration of any other medication.

13. For patients who remain in shock after the administration of a crystalloid bolus, administer vasopressors per the Shock/Sepsis (Adult) protocol.

**Paramedic STOP**

**Key Points / Considerations**

1. Vasopressor infusions should be administered, preferably via an 18 gauge or larger IV catheter, or an IO, using an an IV flow regulating device. Standard IV administration sets are not considered IV flow regulating devices.

2. For patients with smoke inhalation who have signs and symptoms consistent with carbon monoxide poisoning, refer to the Carbon Monoxide (Adult and Pediatric) protocol.

### CYANIDE TOXICITY KIT (if available)

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>One (1) 5 g bottle of crystalline powder Hydroxocobalamin</td>
<td></td>
</tr>
<tr>
<td>One (1) 12.5 g bottle of Sodium Thiosulfate (50 ml of 25% solution)</td>
<td></td>
</tr>
<tr>
<td>Three (3) 100 ml bags 0.9% NS, D₃W</td>
<td></td>
</tr>
<tr>
<td>20 ml syringe</td>
<td></td>
</tr>
<tr>
<td>One (1) 2 ml fluoride oxalate whole blood tub</td>
<td></td>
</tr>
<tr>
<td>One (1) 2 ml K2 EDTA tube</td>
<td></td>
</tr>
<tr>
<td>One (1) 2 ml lithium heparin tube</td>
<td></td>
</tr>
<tr>
<td>Three way stopcock connector</td>
<td></td>
</tr>
</tbody>
</table>
Cyanide Exposure (Adult and Pediatric)

**CFR AND ALL PROVIDER LEVELS**

1. ABCs and vital signs.
2. Airway management.
3. Administer oxygen.
4. Treat any burns according to the Burns (Adult and Pediatric) protocol.

**CFR STOP**

**EMT**

**EMT STOP**

**Paramedic**

_This protocol should be utilized ONLY for the management of critical patients with suspected exposure to cyanide._

If operating at a scene with suspected cyanide exposure where the total patient count is greater than 5, a class order is required. Refer to GOP WMD protocol management decisions. The class order may be issued by a FDNY-OMA Medical Director who is on-scene or as relayed through an FDNY-OMA Medical Director through On-Line Medical Control (Telemetry) or through FDNY Emergency Medical Dispatch.

**NOTE:** The issuance of any class order shall be conveyed to all regional medical control facilities for relay to units in the field.

If operating at a scene with suspected cyanide exposure where the total patient count is 5 or less at one time, the following protocol remains as a Standing Order.

**NOTE:** Treatment within the “hot” and “warm” zones may be performed only by appropriately trained personnel wearing appropriate chemical protective clothing (CPC) as determined by the FDNY Incident Commander.

**NOTE:** If providers encounter a patient who has not been appropriately decontaminated from liquid cyanide, the providers should leave the area immediately until appropriate decontamination has been performed.

5. Perform Advanced Airway Management, if necessary.
6. Begin cardiac monitoring, record and evaluate EKG rhythm.
8. Begin SpCO monitoring, if available.
9. Obtain at least two (2) sites of intravascular access.
10. Administer Hydroxocobalamin and Sodium Thiosulfate IV for patients with any of the following symptoms according to Table 1, if available:
   a. Cardiac arrest
   b. Respiratory arrest
   c. Altered mental status
   d. Seizures
   e. Hypotension not attributable to other obvious causes

**NOTE:** Prior to administration of Hydroxocobalamin, obtain three blood samples using the tubes provided in the cyanide toxicity kit, as soon as possible.
TABLE 1::Cyanide Toxicity Kit (Hydroxocobalamin 5 g in 250 ml bottle, Sodium Thiosulfate 12.5 g in 50 ml vial)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Hydroxocobalamin&lt;sup&gt;A&lt;/sup&gt;</th>
<th>Sodium Thiosulfate&lt;sup&gt;B&lt;/sup&gt;</th>
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<td>Pediatric (0 - 14 years)</td>
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<td>5 g (250 ml of the prepared Hydroxocobalamin solution) IV over 1 minute. If needed may repeat 5 g IV over 15 minutes</td>
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11. Hydroxocobalamin solution is prepared by adding 200 ml of NS or D<sub>5</sub>W to Hydroxocobalamin 5 g powder in the bottle provided. Due to the volume of Hydroxocobalamin powder, the total volume of Hydroxocobalamin solution will be 250 ml. The vented macro drip tubing that accompanies the Cyanokit<sup>®</sup> should be used to administer the Hydroxocobalamin solution in the wide open position to ensure the correct administration time of approximately 15 minutes.

12. Sodium Thiosulfate solution is prepared by adding Sodium Thiosulfate 12.5 g (50 ml) to a 100 ml bag of NS or D<sub>5</sub>W for a total volume of 150 ml.

**NOTE:** In the event that only one intravascular access line is established, administer Hydroxocobalamin BEFORE Sodium Thiosulfate as Sodium Thiosulfate will inactivate Hydroxocobalamin.

**NOTE:** Whenever Hydroxocobalamin is administered, follow with a 20 ml flush of crystalloid fluid prior to administration of any other medication.

13. For patients who remain in shock after the administration of a crystalloid bolus, administer vasopressors per the Shock/Sepsis (Adult) protocol.

***Paramedic STOP***

**Key Points / Considerations**

1. **Class Order** - A general order given by a FDNY-OMA Medical Director to perform a specific intervention or interventions at a specific location/s during a specified time period. This order is generally reserved for disaster situations.

2. If the patient is alert prior to performing Advanced Airway Management, refer to the General Operating Procedures – Prehospital Sedation.

3. Vasopressor infusions should be administered, preferably via an 18 gauge or larger IV catheter, or an IO, using an an IV flow regulating device. Standard IV administration sets are not considered IV flow regulating devices.
### CYANIDE TOXICITY KIT (if available)

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</tr>
<tr>
<td>20 ml syringe</td>
<td>Three way stopcock connector</td>
</tr>
</tbody>
</table>
Weapons of Mass Destruction Nerve Agent Exposure (Adult and Pediatric)

**CFR AND ALL PROVIDER LEVELS**

ONLY the FDNY Office of Medical Affairs (OMA) may authorize the use of the DuoDote® through a Class Order issued by a FDNY OMA Medical Director who is on-scene or as relayed by a FDNY OMA Medical Director through On-Line Medical Control (Telemetry) or through FDNY Emergency Medical Dispatch.

**NOTE:** The issuance of any class order shall be conveyed to all regional medical control facilities for relay to the units in the field.

Treatment within the “hot” and “warm” zones may be performed only by appropriately trained personnel wearing appropriate chemical protective clothing (CPC) as determined by the FDNY Incident Commander.

**RED TAG** may be treated simultaneously with decontamination.  
**YELLOW / ORANGE TAG** will be treated as soon as possible following decontamination.  
**GREEN TAG** (asymptomatic) will be decontaminated and receive close observation.

<table>
<thead>
<tr>
<th>Patients Older Than 8 Years of Age</th>
<th>Initial Treatment (Table 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tag Color</strong></td>
<td><strong>Signs &amp; Symptoms</strong></td>
</tr>
<tr>
<td><strong>RED</strong></td>
<td>SLUDGEM and ONE of the following: Respiratory distress, or Agitation</td>
</tr>
<tr>
<td><strong>YELLOW / ORANGE</strong></td>
<td>SLUDGEM, or Respiratory distress</td>
</tr>
<tr>
<td><strong>GREEN</strong></td>
<td>Asymptomatic None</td>
</tr>
</tbody>
</table>

1. The goal of treatment is drying of secretions and resolution of other symptoms.
2. Do not give more than three auto-injector kits to any patient.
3. Record on the triage tag the number of Atropine and DuoDote® kits used.
5. Monitor every 15 minutes.
6. All treatment subsequent to the initial doses shall comply with Table 2 and includes:
   - Extended on-scene operations
   - Transport to ambulance destinations, and
   - Treatment at casualty collection points
Patients Older Than 8 Years of Age
Extended Re-Evaluation & Treatment (Table 2)

<table>
<thead>
<tr>
<th>Tag Color</th>
<th>Signs &amp; Symptoms</th>
<th>Monitor Interval</th>
<th>Auto-injector Administration</th>
<th>Atropine Repeat Dosing Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>RED</td>
<td>SLUDGEM and ONE of the following: Respiratory distress, or Agitation</td>
<td>Monitor every 5 minutes</td>
<td>Up to a total maximum of 3 DuoDote® kits</td>
<td>2 mg every 3-5 minutes as needed</td>
</tr>
<tr>
<td>YELLOW / ORANGE</td>
<td>SLUDGEM, or Respiratory distress</td>
<td>Monitor every 5 to 15 minutes</td>
<td>Up to a total maximum of 2 DuoDote® kits</td>
<td>2 mg every 5-10 minutes as needed</td>
</tr>
<tr>
<td>GREEN</td>
<td>Asymptomatic</td>
<td>Monitor every 15 minutes</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

NOTE: In the setting of a nerve agent exposure, all symptomatic children age 0-8 years shall be assigned a RED tag.

Pediatric Patients

<table>
<thead>
<tr>
<th>Tag Color</th>
<th>Exposure AND Signs &amp; Symptoms</th>
<th>Atropine &amp; Antidote Kit Doses Monitor Interval</th>
<th>Atropine Repeat Dosing Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>RED (Peds)</td>
<td>Severe Respiratory Distress, or Agitation, or SLUDGEM</td>
<td>Age &lt; 1 year 1 Peds Atropine Auto-injector (0.5 mg) No DuoDote® kit Monitor every 3 minutes</td>
<td>Atropine every 3 minutes as needed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Age 1 - 8 years 1 DuoDote® kit Monitor every 3 minutes</td>
<td></td>
</tr>
<tr>
<td>GREEN (Peds)</td>
<td>No</td>
<td>None</td>
<td>Monitor every 10 minutes for symptoms of exposure</td>
</tr>
</tbody>
</table>

● CFR STOP

Key Points / Considerations

1. Class Order - A general order given by a FDNY-OMA Medical Director to perform a specific intervention or interventions at a specific location/s during a specified time period. This order is generally reserved for disaster situations.
2. If enough resources are available, begin treatment of Yellow and Orange tagged patients prior to decontamination. Do not delay decontamination of these patients.