# Emergency Medical Services
# Medical Practice Protocols




## Orange County NC
## Emergency Medical Services

## University of North Carolina
## Hospitals

**Orange County Emergency Medical Services**
**And**
**University of North Carolina Hospitals**

# Prehospital
# Advanced Life Support
# Protocols, Policies, and Procedures

## 2023 Version
**Updated July 2023**

The pages that follow represent the hard work and dedication of the frontline emergency medical caregivers within Orange County Emergency Medical Services and UNC-Hospitals Emergency Department. It is impossible to give individual credit to all that have been involved in the shaping of this manual, but their work and efforts are much appreciated.

These protocols are a direct reflection of many hours of hard work by, Kyle Ronn, Quality Assurance Coordinator, The OCES Protocol Committee, Dr. Joseph Grover, OCES Medical Director, Kim Woodward, OCES Operations Manager and Chasidy Kearns, OCES Training Coordinator. Without their dedication and perseverance, there would be no manual.

The North Carolina Office of Emergency Medical Services has approved all advanced life support protocols contained in this manual.

**The version of this manual reflects an ongoing effort to provide the best, appropriate EMS care based on each patient's needs and outcomes. The advanced differential and disposition components of each protocol are based on a defined program of initial training, continuing education, and ongoing quality management. Use of these protocols in any system outside of Orange County Emergency Medical Services is unproven and may result in an undue risk to the patient and to the EMS system and personnel involved.**

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## EMS Protocols - Formatting Conventions

For ease of learning and as an educational tool, the following graphical formatting conventions have been incorporated in this edition of the Orange County EMS Advanced Life Support protocols.

Protocols, Procedures, Policies, and Appendicies are denoted by each individual number and divided into appropriate sections. Page numbers are not used to keep a fluid document in the event of necessary changes.

Protocols Referenced protocols are designated by this symbol 

Medical Control Medical Control is designated by this symbol 

When a protocol step FOLLOWS a specific "Contact Medical Control" box in the chosen branch, direct Medical Control orders are required to continue with further treatment.

Most of the Protocols are now two pages and there are now “notes” section for your utilization.

Several alternative medications have been placed in this manual in case of drug shortage. In the event of drug shortage, in service education will occur before placing the alternative medication in service.

# Introduction

The following medical treatment protocols are developed for North Carolina EMS agencies. The process has evolved since 2007 and continues with input from Medical Directors, EMS Administration, North Carolina Chapter of Emergency Physicians Protocol Committee, North Carolina Office of EMS, EMS field personnel and the public at large through on-line surveys, public meetings across North Carolina and direct communication with stakeholders. The 2017 update expands on the 2012 and 2009 version and continues to incorporate evidence-based guidelines, expert opinion and historically proven practices meant to ensure that citizens and visitors of North Carolina will continue to be provided the highest quality pre-hospital patient care available. The North Carolina Chapter of Emergency Physicians develops and provides final approval.

The purpose of the protocol section is to provide treatment protocols outlining permissible and appropriate assessment, delivery of care, reassessment and procedures which may be rendered by pre-hospital providers. The protocols also outline which medical situations require direct voice communication with medical control. In general treatment protocols are specific orders which may and should be initiated prior to contact with Medical Control.

**Please note the medical protocols are divided into three (3) to four (4) sections.** The upper section includes three (3) boxes (History, Signs and Symptoms and Differential) which serves as a guide to assist in obtaining pertinent patient information and exam findings as well as considering multiple potential causes of the patients complaint. It is not expected that every historical element or sign / symptom be recorded for every patient. It is expected that those elements pertinent to your patient encounter will be included in the patient evaluation.

**The algorithm section describes the essentials of patient care. Virtually every patient should receive the care outlined in this section, usually in the order described. However each medical emergency must be dealt with individually and appropriate care determined accordingly. Professional judgment is mandatory in determining treatment modalities within the parameters of these protocols. Circumstances will arise where treatment may move ahead in the algorithm, move outside to another protocol and then re-enter later. While protocols are written based on body systems and primary complaints the patient should be treated as a whole and therefore the protocols should be considered as a whole in providing care.**

**<u>Professional judgment hierarchy:</u>**

The pre-hospital provider may determine that no specific treatment is needed;
*Or*
The pre-hospital provider may follow the appropriate treatment protocols and then consult Medical Control;
*Or*
The pre-hospital provider may consult Medical Control before initiating any specific treatment.

**Some protocols will encompass two (2) pages.** Protocols which exist in a single page format may have page 2 added by the local medical director. The PEARLS section will either be located at the bottom of page 1 (single page protocol) or page 2 (double page protocol). The PEARLS section provides points regarding the main protocol based on evidence to date, common medical knowledge and expert medical opinion.

**Information boxes highlighted in purple.** These areas are editable at the local level. They will mainly involve specific medications and dosages utilized by the local EMS agency. Page 2 will have a large section highlighted in purple where the local Medical Director may edit as they see fit to provide expanded points and treatment not otherwise specified in the algorithm. If the box is not to be utilized – add "***This Space Left Blank Intentionally***."

Finally these medical treatment protocols are established to ensure safe, efficient and effective interventions to relieve pain and suffering and improve patient outcomes without inflicting harm. They also serve to ensure a structure of accountability for Medical Directors, EMS agencies, pre-hospital providers and facilities to provide continual performance improvement. A recent report of the Institute of Medicine calls for the development of standardized, evidence-based pre-hospital care protocols for the triage, treatment and transport of patients. These protocols establish expectations of pre-hospital care in North Carolina.

# Introduction

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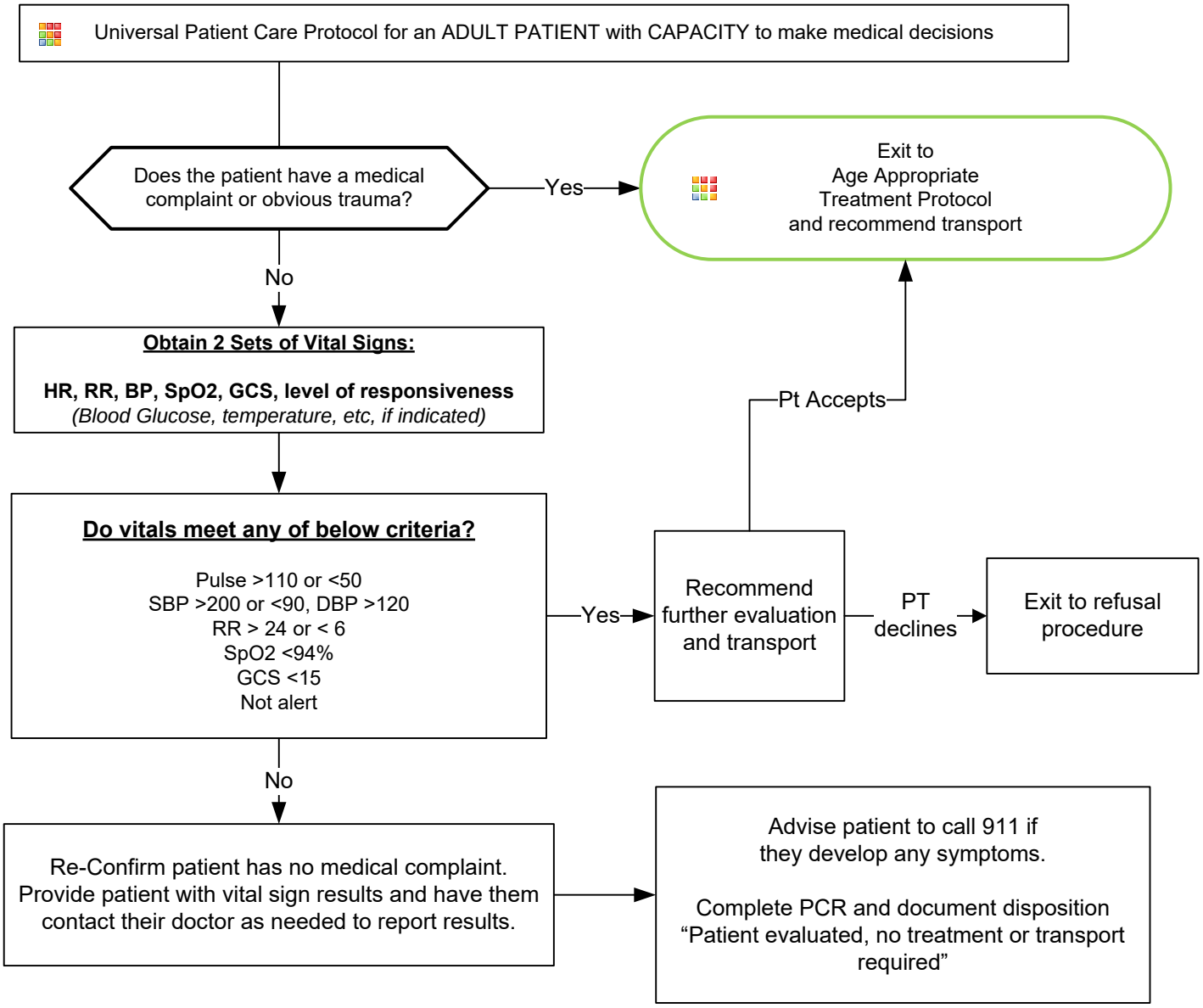
# Well Person

## History
- Patients requesting VS check
- Patient requests to be “checked out”
- EMS assist/lift assist
- Someone else called 911; patient did not request
- Other situation in which patient does not have medical complaint or obvious injury

## Signs and Symptoms
- Assess for medical complaint
- For hypertensive patients, check for chest pain, SOB, neurologic changes
- For lift assist calls, check for trauma, inability to ambulate

## Differential
- No complaint
- Hypertension
- Trauma
- Hypo/hyperglycemia




Universal Protocol Section

# Well Person



**PEARLS:**

- Patients who are denying more severe symptoms may initially present for a “routine check”.
- Confirm with the patient at least twice that they have no medical complaints.
- All persons who request medical evaluation or treatment are patients and must have a PCR completed.
- For these patients, the PCR may be brief but must include vital signs and documentation of the lack of a medical complaint. Additionally, patients with a potential mechanism for trauma should have a trauma exam completed.
- Should a patient refuse evaluation and/or decline further evaluation once begun, document as much as you can. Even patients who refuse vital signs can be observed and respirations measured. The PCR narrative is key in these and all cases, and must accurately and thoroughly describe the patient encounter.

## Dispositions

***No dispositions associated with this protocol***

# Universal Patient Care

Scene Safe

NO

Call for help/ additional resources
Stage until scene safe

YES

- Bring all necessary equipment to patient
- Demonstrate professionalism and courtesy
- Consider WMD in mass assemblies

**Utilize appropriate PPE**

Consider Airborne, Contact, or Droplet Isolation ***if indicated***

Initial assessment
BLS maneuvers
Initiate oxygen ***if indicated***

Adult Assessment Procedure

Pediatric Assessment Procedure

Conduct Screening for Weapons

**Required VS:**
Blood pressure
Palpated pulse rate
Respiratory rate
Pulse oximetry

**If Indicated:**
Glucose
12 Lead ECG
Temperature
Pain scale
CO Monitoring
EtCO2 Monitoring

Medical or Trauma

**Trauma Patient**

Evaluate MOI

Significant MOI

Primary and Secondary trauma assessment

No Significant MOI

Primary and Secondary trauma assessment

Focused assessment on specific injury

**Medical Patient**

Mental Status Exam

Unresponsive

Primary and secondary assessment

Obtain history of present illness from available sources / scene survey

Responsive

Obtain Chief Complaint

Primary and Secondary assessment
Focused assessment on specific complaint

Spinal Motion Restriction Procedure / Protocol TB 8 ***as indicated***

Obtain VS

Obtain SAMPLE

Repeat assessment while preparing for transport

Exit to
Age Appropriate Protocol(s)
***as indicated***

Continue on-going assessment
Repeat initial VS
Evaluate interventions / procedures

Transfer
Patient hand-off includes patient information, personal property and summary of care and response to care

Patient does not fit specific protocol

**Notify Destination or Contact Medical Control**

Universal Protocol Section

# Universal Patient Care



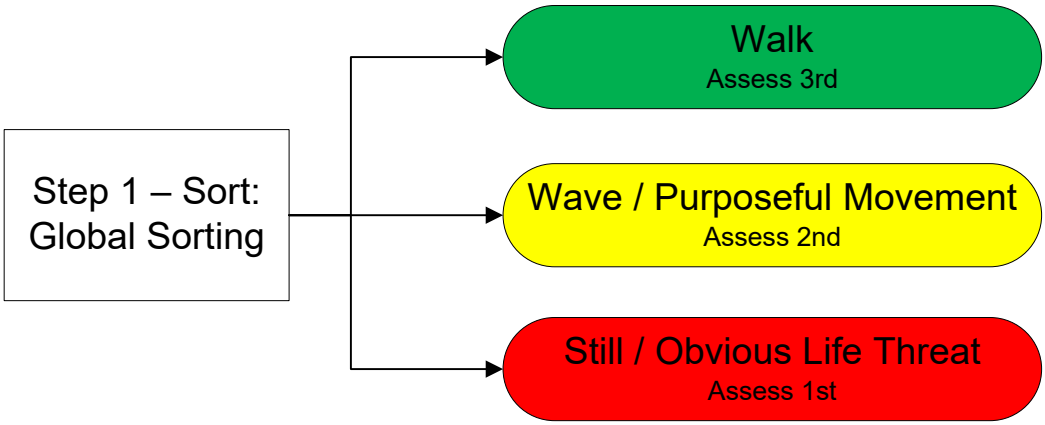
## Pearls

- **Recommended Exam: Minimal exam if not noted on the specific protocol is vital signs, mental status with GCS, and location of injury or complaint.**
- **Any patient contact, which does not result in an EMS transport, must have a completed Patient Care Report.**
- **Vital signs should be obtained before, 10 minutes after, and at patient hand off with all pain medications.**
- **Two complete vital sign acquisitions should occur at a minimum with any patient encounter.**
- **Patient Refusal (Declining Treatment and/ or Transport):**
  - Patient refusal is a high risk situation. Encourage patient to accept transport to medical facility.
  - Encourage patient to allow an assessment, including vital signs. Documentation of the event is very important including a mental status assessment describing the patient's capacity to refuse care.
  - **Guide to Assessing capacity:**
  - **C**:***Patient should be able to communicate a clear choice:*** This should remain stable over time. Inability to communicate a choice or an inability to express the choice consistently demonstrates incapacity.
  - **R**: ***Relevant information is understood:*** Patient should be able to voice a factual understanding of the illness/ injury, the options, and the risks and benefits of recommended treatment or transport.
  - **A**: ***Appreciation of the situation:*** Ability to communicate an understanding of the facts of the situation. The patient should be able to recognize the significance of the outcome potentially from their decision.
  - **M**: ***Manipulation of information in a rational manner:*** Demonstrate a rational process to come to a decision. Should be able to describe the logic they are using to come to the decision, though you may not agree with decision.
- **Pediatric Patient General Considerations:**
  - **A pediatric patient is defined by fitting with a Pediatric Medication/ Skill Resuscitation System, Age ≤ 15, weight ≤ 49 kg.**
  - Special needs children may require continued use of Pediatric based protocols regardless of age and weight.
  - Initial assessment should utilize the **Pediatric Assessment Triangle** which encompasses Appearance, Work of Breathing and Circulation to skin.
  - The order of assessment may require alteration dependent on the developmental state of the pediatric patient.
  - Generally the child or infant should not be separated from the caregiver unless absolutely necessary during assessment and treatment.
- Timing of transport should be based on patient's clinical condition and the agency transport policy.
- Consider consultation with Medical Control for patient(s) refusing treatment/ transport.
- Blood Pressure is defined as a Systolic/ Diastolic reading. A palpated Systolic reading may be necessary at times.
- SAMPLE: Signs/ Symptoms; Allergies; Medications; PMH; Last oral intake; Events leading to illness/ injury

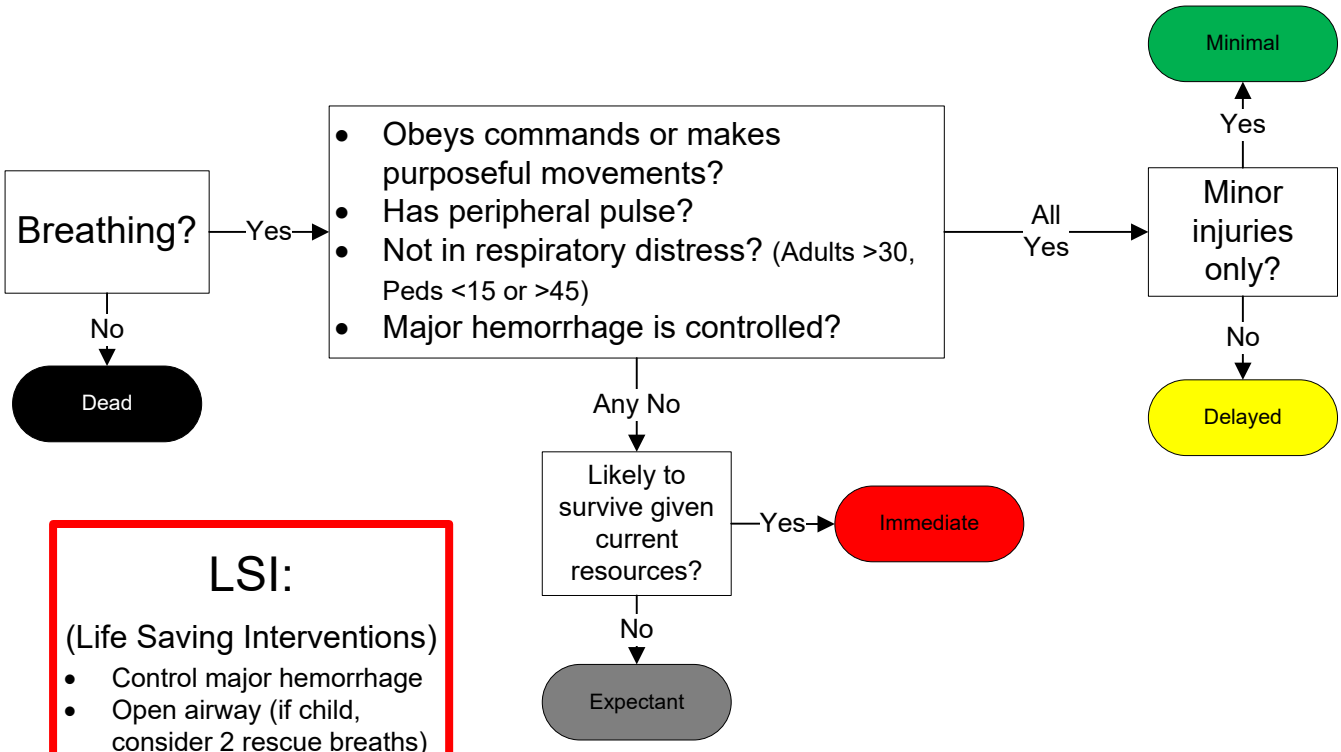
## Dispositions

***No dispositions associated with this protocol***

# Triage




Step 2 – Assess:
Individual Assessment




## LSI:

(Life Saving Interventions)

- Control major hemorrhage
- Open airway (if child, consider 2 rescue breaths)
- Chest decompression
- Auto injector antidotes

Universal Protocol Section

# Triage



**Pearls**

- **When approaching a multiple casualty incident where resources are limited:**
  - Triage decisions must be made rapidly with less time to gather information
  - Emphasis shifts from ensuring the best possible outcome for an individual patient to ensuring the best possible outcome for the greatest number of patients.
  - **As more help arrives, then the triage / treatment process may proceed simultainously.**
- **Scene Size Up:**
  1. **Conduct a scene size up. Assure well being of responders. Determine or ensure scene safety before entering. If there are several patients with the same complaints consider HazMat, WMC or CO poisoning.**
  2. **Take Triage system kit.**
  3. **Determine number of patients. Communicate the number of patients and nature of the incident, establish command and establish a medical officer and triage officer if personnel available**
- **Triage is a continual process and should recur in each section as resources allow.**

## Dispositions

***No dispositions associated with this protocol***

# Abdominal Pain Vomiting and Diarrhea

## History
- Age
- Time of last meal
- Last bowel movement/emesis
- Improvement or worsening with food or activity
- Duration of problem
- Other sick contacts
- Past medical history
- Past surgical history
- Medications
- Menstrual history (pregnancy)
- Travel history
- Bloody emesis / diarrhea

## Signs and Symptoms
- Pain
- Character of pain (constant, intermittent, sharp, dull, etc.)
- Distention
- Constipation
- Diarrhea
- Anorexia
- Radiation

**Associated symptoms:**
Fever, headache, blurred vision, weakness, malaise, myalgias, cough, headache, dysuria, mental status changes, rash

## Differential
- CNS (increased pressure, headache, stroke, CNS lesions, trauma or hemorrhage, vestibular)
- Myocardial infarction
- Drugs (NSAID's, antibiotics, narcotics, chemotherapy)
- GI or Renal disorders
- Diabetic ketoacidosis
- OB-Gyn disease (ovarian cyst, PID, Pregnancy)
- Infections (pneumonia, influenza)
- Electrolyte abnormalities
- Food or toxin induced
- Medication or Substance abuse
- Psychological

| | |
|---|---|
| | Consider Blood Glucose Analysis Procedure |
| B | 12 Lead ECG Procedure ***if indicated*** |
| | IV or IO Access Protocol UP 6 |
| P | Cardiac Montior |
| | Age Appropriate Diabetic Protocol AM 2/ PM 2 ***if indicated*** |
| | Pain Control Protocol UP 11 ***if indicated*** |
| | Age Appropriate Cardiac Protocol(s) ***if indicated*** |

**Age Specific Blood Pressure indicating possible shock**

**Age 0 – 28 days: SBP < 60**
**Ages ≥ 1 month: SBP < 70**
**Age 1 – 9: SBP < 70 + (2*x* Age)**

**Ages 10 – 64: SBP < 90**
**Ages ≥ 65: SBP < 110**

**All ages Shock Index:**
**HR > SBP**

Serious Signs/ Symptoms Hypotension, poor perfusion, shock

YES

| | |
|---|---|
| | IV or IO Access Protocol UP 6<br>Consider 2 Large Bore sites |
| A | **Normal Saline 500 mL Bolus**<br>Repeat as needed<br>Titrate SPB ≥ 90 mmHg<br>**Maximum 2 L**<br>**Peds: 20 mL/kg IV / IO**<br>Repeat as needed<br>Titrate to<br>Age Appropriate<br>SBP ≥ 70 + (2 x Age)<br>**Maximum 60 mL/kg** |
| A | **Ondansetron 4 mg**<br>**IV / IO / ODT / PO / IM**<br>**Peds: 0.2 mg/kg**<br>**Peds Maximum 4 mg**<br>May repeat in 15 minutes |
| | Age Appropriate Hypotension/ Shock Protocol AM 5/ PM 3 ***if indicated*** |

NO

| | |
|---|---|
| A | **Normal Saline IV TKO**<br>**Or Saline Lock** |
| A | **Ondansetron 4 mg**<br>**IV / IO / ODT / PO / IM**<br>**Peds: 0.2 mg/kg**<br>**Peds Maximum 4 mg**<br>May repeat in 15 minutes<br><u>If no response</u><br>**Promethazine**<br>**12.5 mg IV / IO / IM / PO**<br>May repeat x 1 as needed |

Monitor and Reassess

**Notify Destination or Contact Medical Control**

Universal Protocol Section

# Abdominal Pain
# Vomiting and Diarrhea



**Pearls**

- **Recommended Exam: Mental Status, Skin, HEENT, Neck, Heart, Lungs, Abdomen, Back, Extremities, Neuro**
- **Abdominal/ back pain in women of childbearing age should be treated as pregnancy related until proven otherwise.**
- **The diagnosis of abdominal aneurysm should be considered with abdominal pain, with or without back and/ or lower extremity pain or diminished pulses, especially in patients over 50 and/ or patients with shock/ poor perfusion. Notify receiving facility early with suspected abdominal aneurysm.**
- **Consider cardiac etiology in patients > 35, diabetics and/ or women, especially with upper abdominal complaints.**
- **Heart Rate: Tachycardia is one of the first clinical signs of dehydration and volume depletion and typically increases as dehydration becomes more severe.**
- **Nausea without vomiting should be treated like vomiting. Patient will benefit from symptom control with antiemetic even if not actively vomiting.**
- **Promethazine (Phenergan):**
  **May cause sedative effects in pediatric patients and in ages ≥ 65, and the debilitated, etc.)**
  **When giving promethazine IV, dilute with 10 mL of normal saline and administer slowly as it can also harm the veins.**
- Isolated vomiting in children is common but can be a sign of more serious pathology. Pyloric stenosis, bowel obstruction, and CNS processes (bleeding, tumors, or increased CSF pressures) all often present with vomiting.
- Vomiting and diarrhea are common symptoms, but can be the symptoms of uncommon and serious pathology such as stroke, CO poisoning, acute MI, new onset diabetes, diabetic ketoacidosis (DKA), and organophosphate poisoning. Maintain a high index of suspicion for serious pathology.

## Dispositions

**Paramedic:** Any patient with potential for a cardiac etiology.

**Advanced EMT:** Any patient with potential for Traumatic, Diabetic Ketoacidosis, or GI Bleed (blood / black stool or emesis) etiologies, or patients with abnormal vital signs

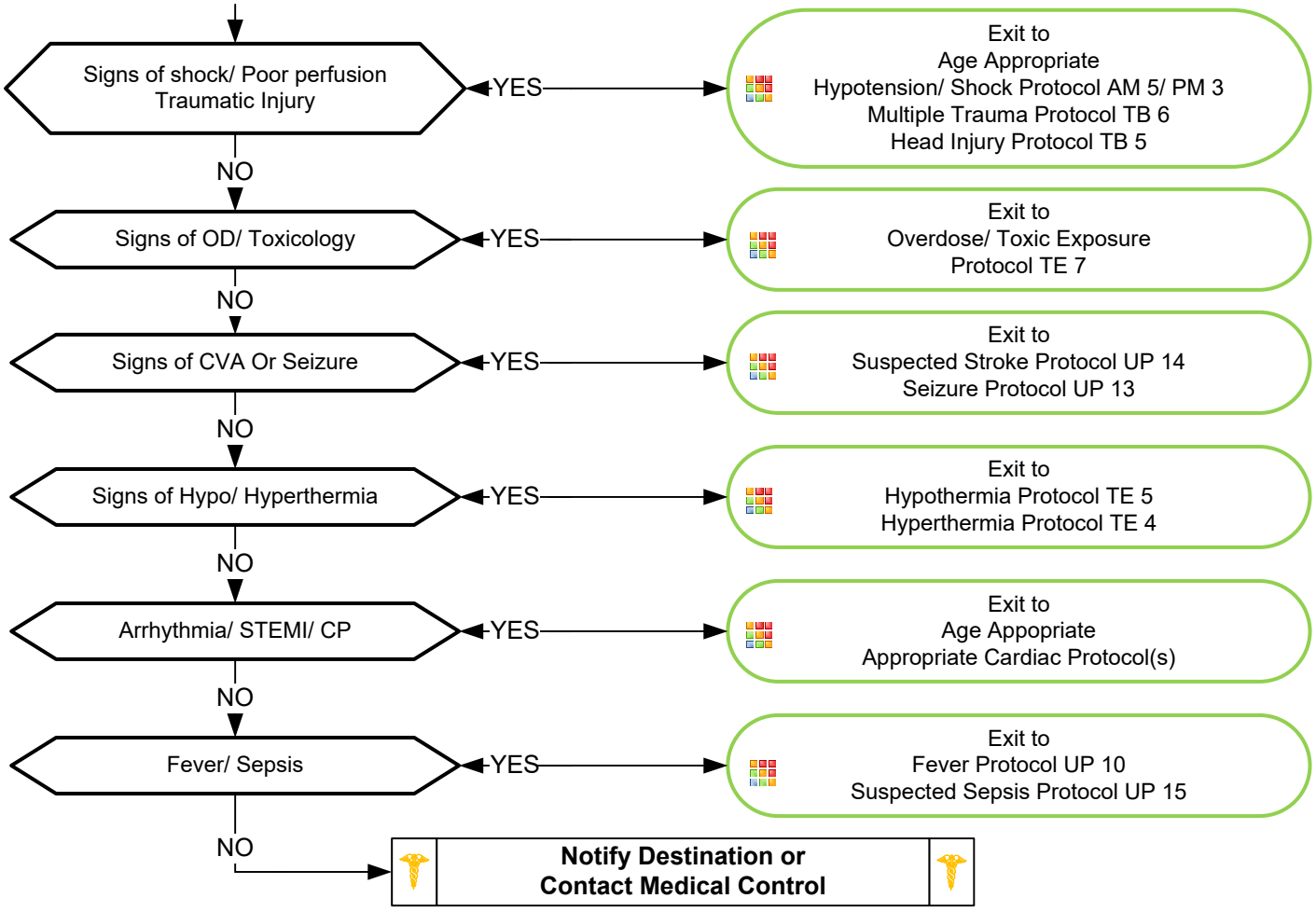
# Altered Mental Status

## History
- Known diabetic, medic alert tag
- Drugs, drug paraphernalia
- Report of illicit drug use or toxic ingestion
- Past medical history
- Medications
- History of trauma
- Change in condition
- Changes in feeding or sleep habits

## Signs and Symptoms
- Decreased mental status or lethargy
- Change in baseline mental status
- Bizarre behavior
- Hypoglycemia (cool, diaphoretic skin)
- Hyperglycemia (warm, dry skin; fruity breath; Kussmaul respirations; signs of dehydration)
- Irritability

## Differential
- Head trauma
- CNS (stroke, tumor, seizure, infection)
- Cardiac (MI, CHF)
- Hypothermia
- Infection (CNS and other)
- Thyroid (hyper / hypo)
- Shock (septic, metabolic, traumatic)
- Diabetes (hyper / hypoglycemia)
- Toxicological or Ingestion
- Acidosis / Alkalosis
- Environmental exposure
- Pulmonary (Hypoxia)
- Electrolyte abnormality
- Psychiatric disorder

| | |
|---|---|
| | Age Appropriate Airway Protocol(s) AR 1, 2, 3, 5, 6 ***if indicated*** |
| | Blood Glucose Analysis Procedure |
| **B** | 12 Lead ECG Procedure |
| | IV or IO Access Protocol UP 6 |
| | Age Appropriate Diabetic Protocol(s) AM 2/ PM 2 ***if indicated*** |




Universal Protocol Section

# Altered Mental Status



**Pearls**

- **Recommended Exam: Mental Status, HEENT, Skin, Heart, Lungs, Abdomen, Back, Extremities, Neuro.**
- **AMS may present as a sign of an environmental toxin or Haz-Mat exposure, protect personal safety.**
- **General:**
  - **The patient with AMS poses one of the most significant challenges.**
  - **A careful assessment of the patient, the scene, and the circumstances should be undertaken.**
  - **Assume the patient has a life threatening cause of their AMS until proven otherwise.**
  - **Pay careful attention to the head exam for signs of bruising or other injury.**
  - **Information found at the scene must be communicated to the receiving facility.**
  - **Patients not able to communicate with you coherently require a complete secondary survey (head-to-toe) exam to assess for trauma, infection, or signs of maltreatment/ abuse, or neglect.**
  - **Acute Stroke should be considered in all patients with acute AMS when < 24 hours from onset.**
- **Substance misuse:**
  - Patients ingesting substances can pose a great challenge.
  - DO NOT assume recreational drug use and/ or alcohol are the sole reasons for AMS.
  - Misuse of alcohol/ recreational drugs may lead to hypoglycemia or occult trauma.
  - More serious underlying medical and trauma conditions may be the cause.
- **Behavioral health:**
  - The behavioral health patient may present a great challenge in forming a differential.
  - DO NOT assume AMS is the result solely of an underlying psychiatric etiology.
  - Often an underlying medical or trauma condition precipitates a deterioration of a patients underlying disease.
- **Spinal Motion Restriction/ Trauma:**
  - Only utilize spinal immobilization if the situation warrants.
  - The patient with AMS may worsen with increased agitation when immobilized.
- **It is safer to assume hypoglycemia than hyperglycemia if doubt exists. Recheck blood glucose after Dextrose or Glucagon**
- Consider Restraints if necessary for patient's and/ or personnel's protection per USP 5 Restraints: Physical procedure.
- Do not let alcohol confuse the clinical picture. Alcoholics frequently develop hypoglycemia and may have unrecognized injuries.

## Dispositions

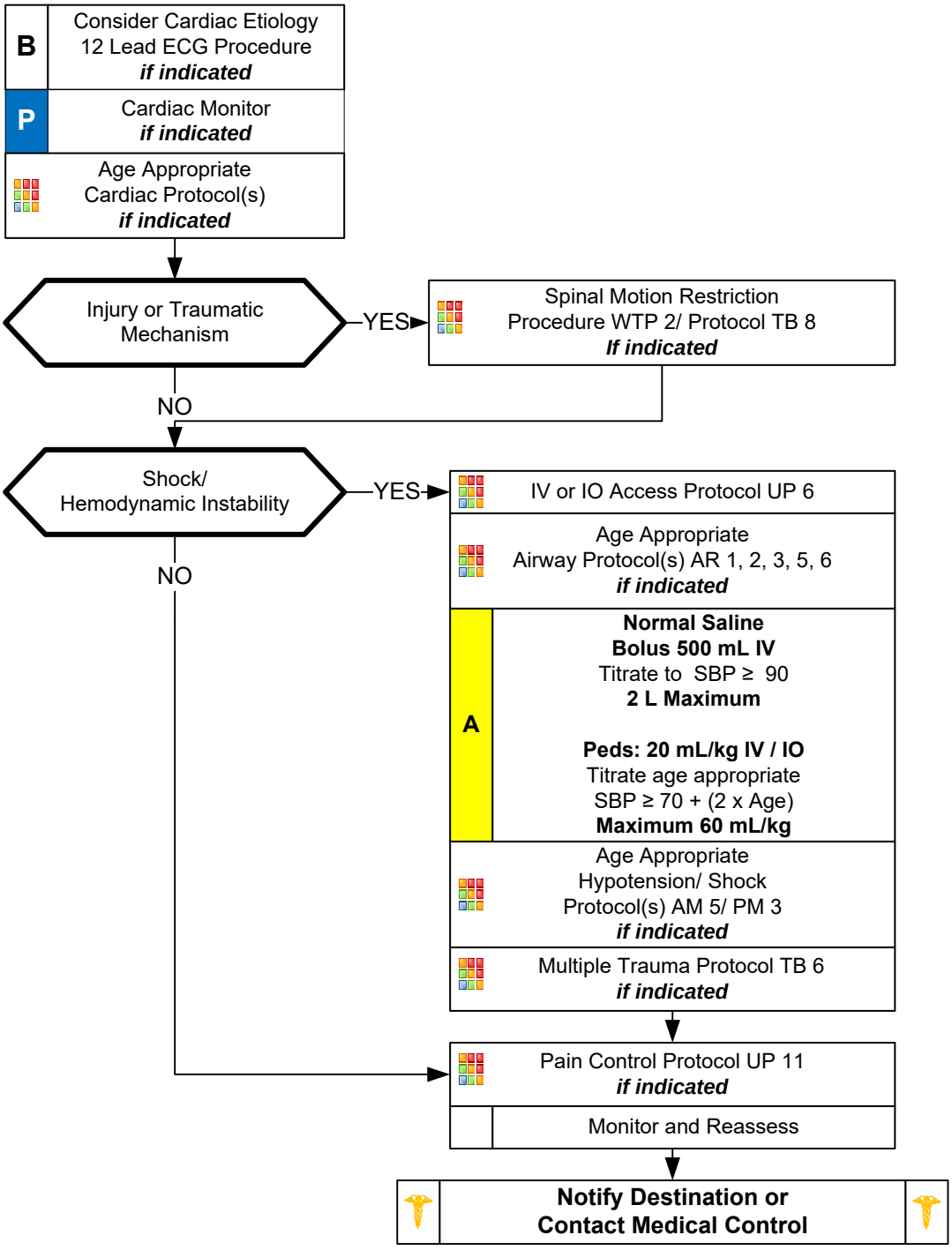
**Paramedic / Advanced EMT:** Any patient with a change in mental status, not otherwise addressed with separate protocol.

# Back Pain

## History
- Age
- Past medical history
- Past surgical history
- Medications
- Onset of pain / injury
- Previous back injury
- Traumatic mechanism
- Location of pain
- Fever
- Improvement or worsening with activity

## Signs and Symptoms
- Pain (paraspinous, spinous process)
- Swelling
- Pain with range of motion
- Extremity weakness
- Extremity numbness
- Shooting pain into an extremity
- Bowel / bladder dysfunction

## Differential
- Muscle spasm / strain
- Herniated disc with nerve compression
- Sciatica
- Spine fracture
- Kidney stone
- Pyelonephritis
- Aneurysm
- Pneumonia
- Spinal Epidural Abscess
- Metastatic Cancer
- AAA




Universal Protocol Section

# Back Pain

**Pearls**

- **Recommended Exam: Mental Status, Heart, Lungs, Abdomen, Neuro, Lower extremity perfusion, Back**
- **Back pain is one of the most common complaints in medicine and affects more than 90% of adults at some point in their life. Back pain is also common in the pediatric population. Most often it is a benign process but in some circumstances can be life or limb threatening.**
- **Consider pregnancy or ectopic pregnancy with abdominal or back pain in women of childbearing age.**
- **Consider abdominal aortic aneurysm with abdominal pain especially in patients over 50 and/ or patients with shock/ poor perfusion. Patients may have abdominal pain and/ or lower extremity pain with diminished pulses. Notify receiving facility early with suspected abdominal aneurysm.**
- **Consider cardiac etiology in patients > 35, diabetics and/ or women especially with upper abdominal complaints.**
- **Red Flags which may signal a more serious process associated with back pain:**
  - Age > 50 or < 18
  - Neurological deficit (leg weakness, urinary retention, or bowel incontinence)
  - IV Drug use
  - Fever
  - History of cancer, either current or remote
  - Night time pain in pediatric patients
- **Cauda equina syndrome is where the terminal nerves of spinal cord are being compressed (Symptoms include):.**
  - Saddle anesthesia (numbness between the genitalia and rectum)
  - Recent onset of bladder and bowel dysfunction. (Urine retention and bowel incontinence)
  - Severe or progressive neurological deficit in the lower extremity.
  - Motor weakness of thigh muscles or foot drop
- **Back pain associated with infection:**
  - Fever/ chills.
  - IV Drug user (consider spinal infection)
  - Recent bacterial infection like pneumonia.
  - Immune suppression such as HIV or patients on chronic steroids like prednisone.
  - Meningitis.
- **Spinal motion restriction in patients with underlying spinal deformity should be maintained in their functional position.**
- Kidney stones typically present with an acute onset of flank pain which radiates around to the groin area.

## Dispositions

**Paramedic:** Any patient with potential for cardiac etiology or SBP <90

**Advanced EMT:** Any patient with any sensory or motor deficit associated with a traumatic injury, change in mental status, an SP02 <94%, or Abnormal Glucose

# IV or IO Access

## History

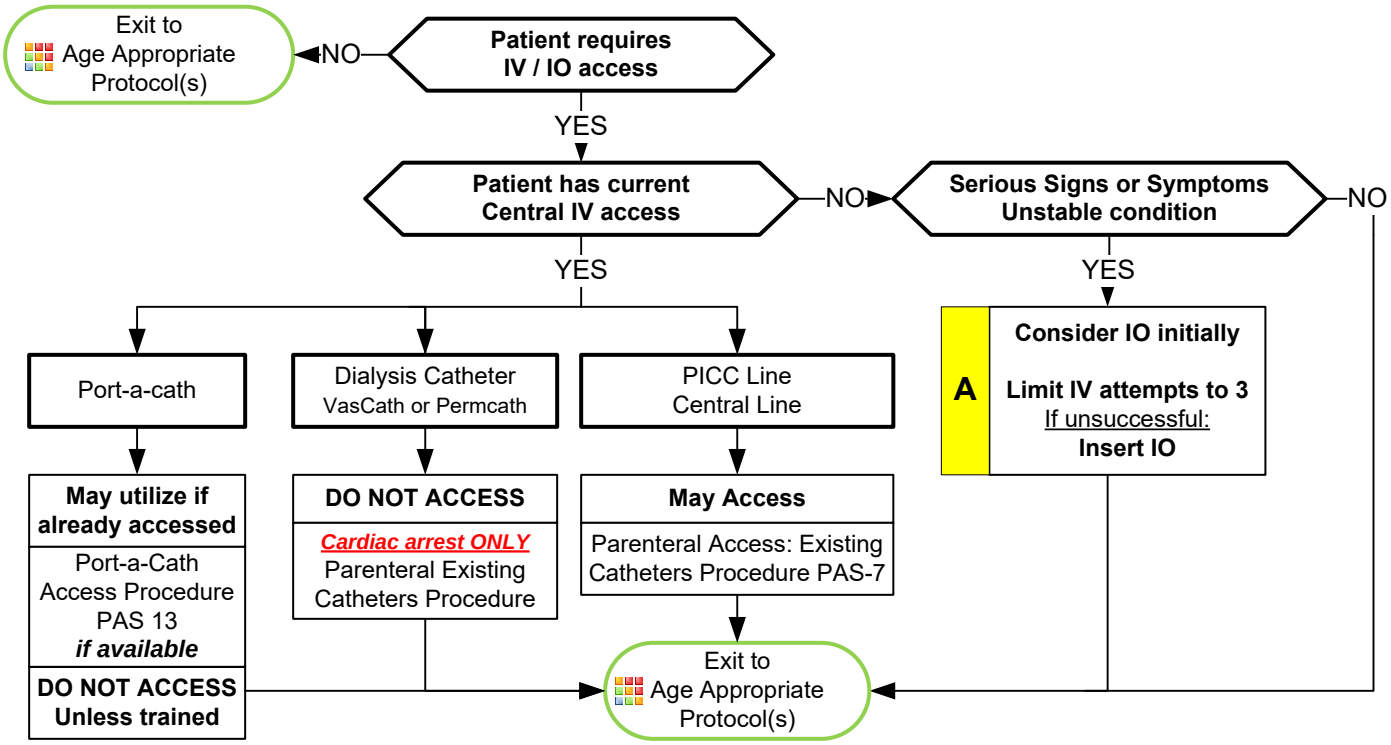
- Chronic medical conditions requiring recurrent need for IV access for medication, hydration, or blood sampling.
- Medical condition requiring administration of IV medications at home.
- End-stage renal disease requiring hemodialysis.
- Chronic medical condition requiring IV nutrition.

## Signs and Symptoms

- Fever
- Bleeding
- Hypotension
- Redness, swelling, and/or pain at IV catheter site
- Shortness of breath
- Chest pain
- IV catheter patency

## Differential

- Infection or sepsis
- Infection of catheter
- Clotted IV catheter
- Air embolism
- Pneumothorax
- Overdose of home medication
- Shock




Universal Protocol Section

# IV or IO Access



**Pearls**

- **Frequent encounter of patients with IV access devices and confusion as to which device can be accessed and used by EMS providers are common.**
- **If unclear about device use, always ask "Is this device used for dialysis?"**
- **When accessing central catheter, always ensure sterility of catheter connection point by cleaning port with alcohol, or similar disinfectant, 2 – 3 times prior to access.**
- **Central line catheters placed for administration of chemotherapy, medications, electrolytes, antibiotics, and blood are available to EMS providers for access and administration of fluids, medications, antibiotics, and blood products.**
- **Central line catheters placed for hemodialysis are NOT available for access by EMS providers unless the patient is in cardiac arrest.**
- Long term IV access is frequently needed for a variety of indications:
  - Medication administration such as antibiotics, pain relief, or chemotherapy.
  - Administration of IV nutrition or feeding.
  - Need for multiple IV line access or recurrent blood sampling.
  - Poor vasculature requiring repeated attempts at IV access.
  - End-stage renal disease requiring hemodialysis.
- Common complications of central access devices:
  - Infection
  - Damage to vasculature
  - Air embolism
  - Loss of patency due to clogging or clotting
  - Pneumothorax

## Dispositions

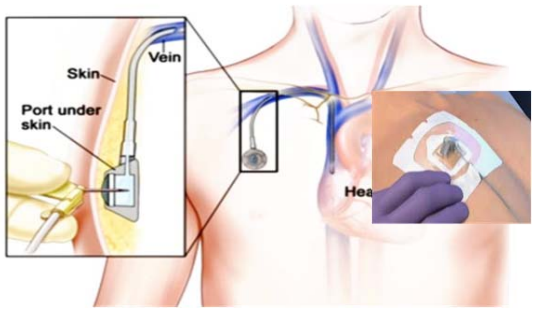
***No dispositions associated with this protocol***

# IV or IO Access

## Types of IV catheters:

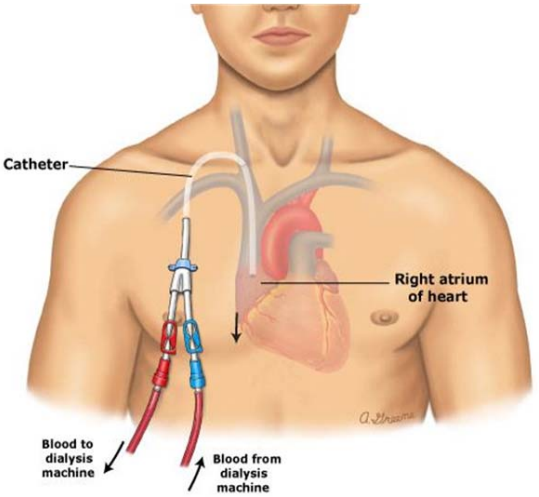
**Port-a-Cath® :**

Surgically implanted device allowing easy access to venous system.
The port and the catheter are all placed beneath the skin.
Requires a special kit and a specific needle to access.
**Paramedic does NOT routinely access this device.**
**Paramedic may utilize if already accessed with needle/ extension.**
**Paramedic may access if trained on procedure with access to proper equipment.**



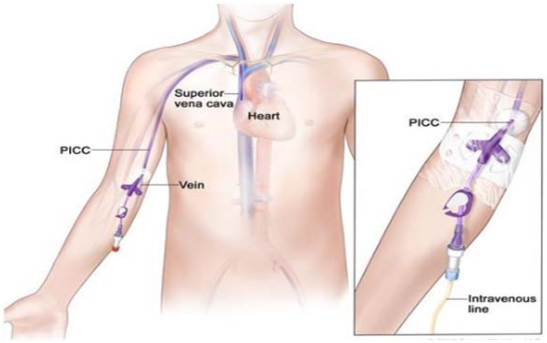

**Dialysis Catheter:**

Surgically implanted device used to access the vasculature for hemodialysis.
May be tunneled under the skin with access on outside of skin surface or may be non-tunneled with greater portion of catheter on outside of skin surface.
Catheter has a RED port indicating use for dialysis:
Most catheters have a RED port and a BLUE port.
Some catheters have a RED port and a WHITE port.
Dialysis catheters may be used for both short and long-term dialysis and should not accessed or used for delivery of fluids, medications, antibiotics, or blood products as it increases risk of infection, which then requires removal and subsequent loss of dialysis access.
**Paramedic and AEMT do NOT routinely access this device.**
**Paramedic and AEMT MAY access during cardiac arrest only (Only if IV or IO access cannot be established.)**



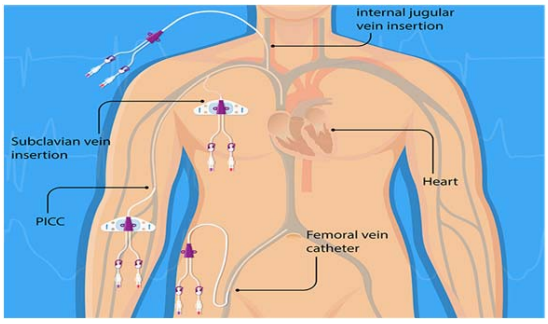

**PICC (Peripherally Inserted Central Catheters):**

Long catheter inserted into a vein in arm or leg (less common) with the tip of the catheter positioned into the central circulation.
Used for long-term IV fluids, medication administration, blood administration or blood draws.
May have 1 or 2 ports (possibly more, but less common.)
Port ends usually white, blue, or purple. (May be red, less common and is not used for dialysis.)
**Paramedic and AEMT may access and utilize following clean technique.**




**Central Lines:**

Catheter placed in large vein in the neck, under the clavicle, or in the groin.
Used for long-term IV fluids, medication administration, blood administration or blood draws.
May have 1 - 4 ports (possibly more, but less common.)
Port ends usually white, blue, or purple. (May be red, less common and is not used for dialysis.)
**Paramedic and AEMT may access and utilize following sterile technique.**



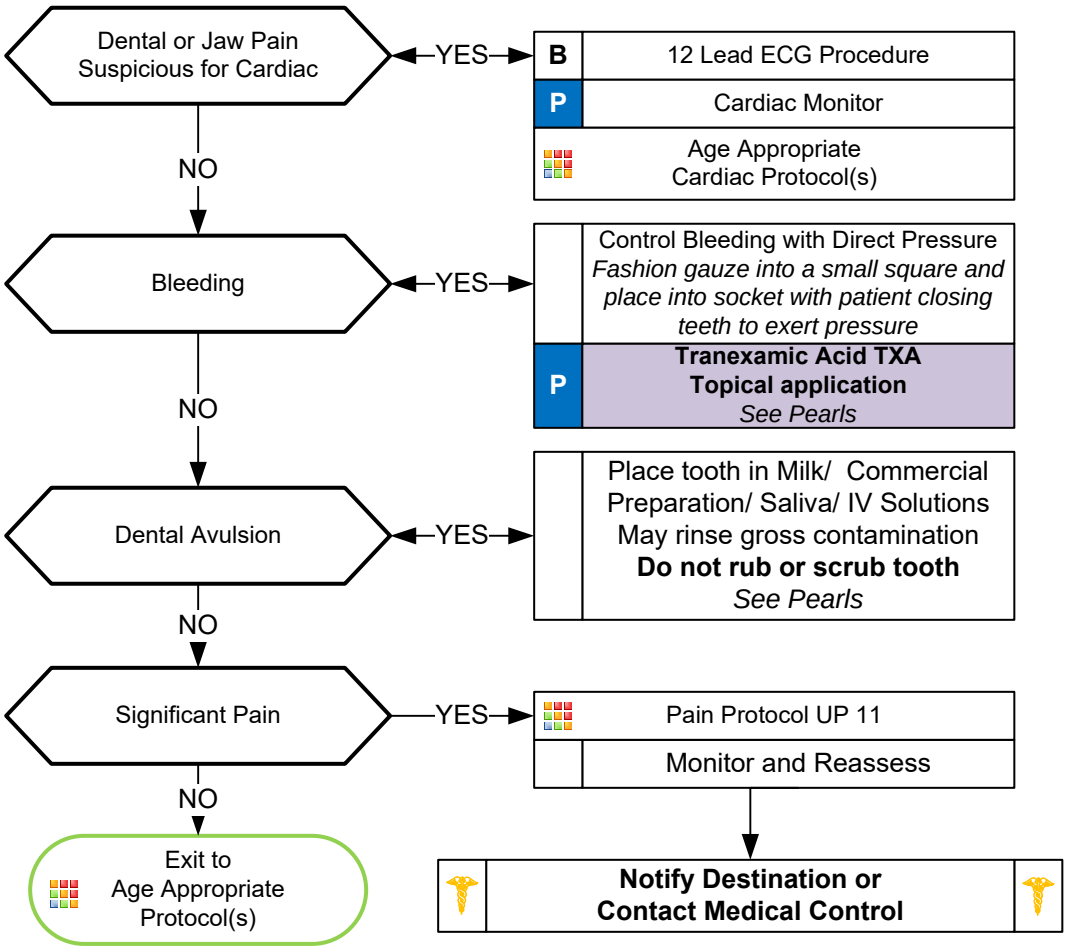

Universal Protocol Section

# Dental Problems

### History
- Age
- Past medical history
- Medications
- Onset of pain / injury
- Trauma with "knocked out" tooth
- Location of tooth
- Whole vs. partial tooth injury

### Signs and Symptoms
- Bleeding
- Pain
- Fever
- Swelling
- Tooth missing or fractured

### Differential
- Decay
- Infection
- Fracture
- Avulsion
- Abscess
- Facial cellulitis
- Impacted tooth (wisdom)
- TMJ syndrome
- Myocardial infarction




Universal Protocol Section

# Dental Problems



**Pearls**

- **Recommended Exam: Mental Status, HEENT, Neck, Chest, Lungs, Neuro**
- Significant soft tissue swelling to the face or oral cavity can represent a cellulitis or abscess.
- Scene and transport times should be minimized in complete tooth avulsions. Reimplantation is possible within 4 hours if the tooth is properly cared for, but unlikely when > 1 hour from time of injury.
- Cardiac chest pain may radiate to the jaw and teeth mimicking dental pain.
- **Avulsed tooth:**
  - Handle tooth by the crown, do not touch the root.
  - Rinse tooth if soiled but do not scrub, as this can damage the ligaments vital for possible reimplantation.
  - Rinse with mild, commercial tooth solution, normal saline or lactated ringers, or the patient's own saliva if dry.
  - Transport tooth in milk, commercial solution, patient's own saliva, or IV solution in a container to protect.
- **TXA Use in Dental Bleeding:**
  - May be used topically if approved by agency Medical Director.
  - Procedure should be created with specific guidance on how to administer TXA for dental bleeding.
  - TXA offers modest benefit as TXA instilled gauze combined with direct pressure.

## Dispositions

**Paramedic:** Any patient with potential for a cardiac etiology

**Advanced EMT:** Any patient with significant soft tissue swelling with potential airway obstruction

# Emergencies Involving Indwelling Central Lines

## History

- Central Venous Catheter Type
  - Tunneled Catheter (Broviac/ Hickman)
  - PICC (peripherally inserted central catheter
  - Implanted catheter (Mediport/ Hickman)
- Occlusion of line
- Complete or partial dislodge
- Complete or partial disruption

## Signs and Symptoms

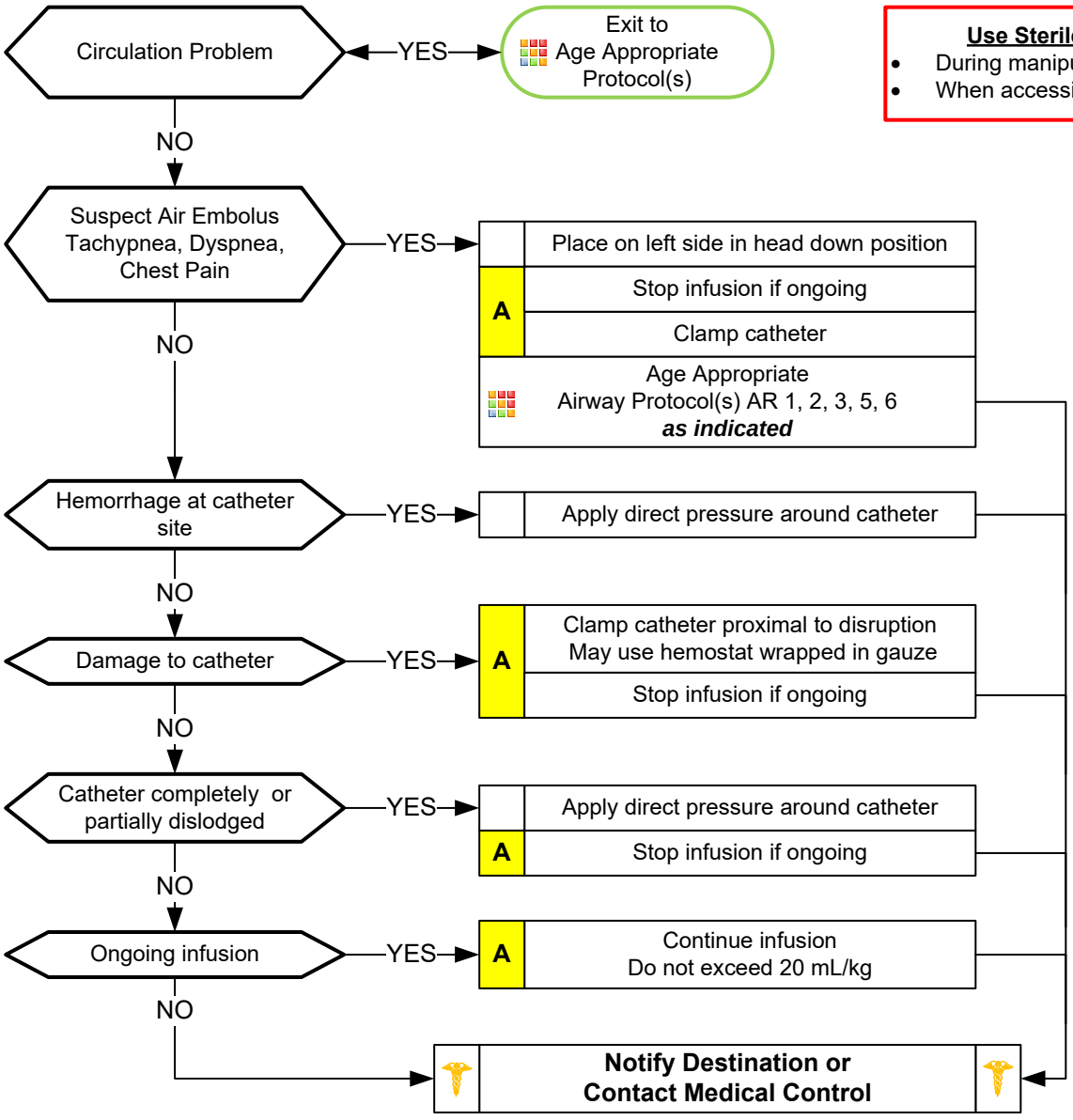
- External catheter dislodgement
- Complete catheter dislodgement
- Damaged catheter
- Bleeding at catheter site
- Internal bleeding
- Blood clot
- Air embolus
- Erythema, warmth or drainage about catheter site indicating infection

## Differential

- Fever
- Hemorrhage
- Reactions from home nutrient or medication
- Respiratory distress
- Shock

**Use Sterile Technique:**

- During manipulation of central line
- When accessing central line




Universal Protocol Section

# Emergencies Involving Indwelling Central Lines



**Pearls**

- **Always involve family/ caregivers as they may have specific knowledge and skills related to catheter device.**
- **Use strict sterile technique when accessing/ manipulating an indwelling catheter.**
- **Cardiac arrest: May access central catheter and utilize if functioning properly.**
- Do not attempt to force catheter open if occlusion evident.
- Some infusions may be detrimental to stop. Ask family or caregiver if it is appropriate to stop or change infusion.
- Hyperalimentation infusions (IV nutrition): If stopped for any reason, monitor for hypoglycemia.

## Dispositions

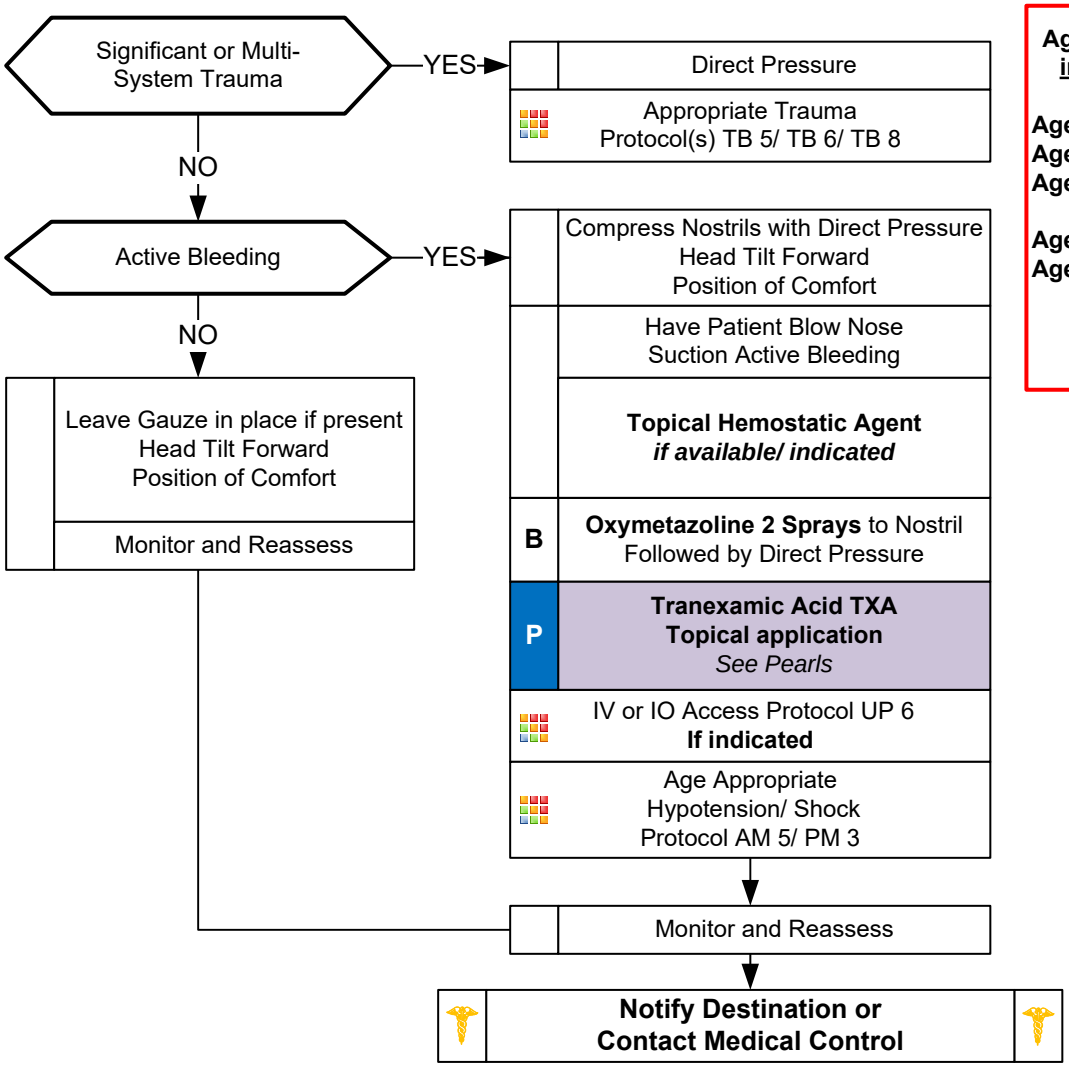
**Paramedic / Advanced EMT:** Any patient with an active or ongoing central line infusion.

# Epistaxis

## History
- Age
- Past medical history
- Medications (HTN, anticoagulants, aspirin, NSAIDs)
- Previous episodes of epistaxis
- Trauma
- Duration of bleeding
- Quantity of bleeding

## Signs and Symptoms
- Bleeding from nasal passage
- Pain
- Nausea
- Vomiting

## Differential
- Trauma
- Infection (viral URI or Sinusitis)
- Allergic rhinitis
- Lesions (polyps, ulcers)
- Hypertension




**Age Specific Blood Pressure indicating possible shock**

**Age 0 – 28 days: SBP < 60**
**Ages ≥ 1 month: SBP < 70**
**Age 1 – 9: SBP < 70 + (2*x* Age)**

**Ages 10 – 64: SBP < 90**
**Ages ≥ 65: SBP < 110**

**All ages Shock Index:**
**HR > SBP**

Universal Protocol Section

# Epistaxis



**Pearls**

- **Recommended Exam: Mental Status, HEENT, Heart, Lungs, Neuro**
- **TXA Use in Epistaxis:**
  May be used topically if approved by agency Medical Director.
  Procedure should be created with specific guidance on how to administer TXA for epistaxis.
  No clear evidence that TXA provides benefit over conventional vasoconstrictors and sustained direct pressure.
- It is very difficult to quantify the amount of blood loss with epistaxis.
- Bleeding may also be occurring posteriorly. Evaluate for posterior blood loss by examining the posterior pharnyx.
- Anticoagulants include warfarin (Coumadin), Apixaban (Elequis), heparin, enoxaparin (Lovenox), dabigatran (Pradaxa), rivaroxaban (Xarelto), and many over the counter headache relief powders.
- Anti-platelet agents like aspirin, clopidogrel (Plavix), aspirin/ dipyridamole (Aggrenox), and ticlopidine (Ticlid) can contribute to bleeding.

## Dispositions

**Paramedic / Advanced EMT:** Any patient with abnormal vital signs, airway concerns, or uncontrolled bleeding

# Fever/ Infection Control

## History
- Age
- Duration of fever
- Severity of fever
- Past medical history
- Medications
- Immunocompromised (transplant, HIV, diabetes, cancer)
- Environmental exposure
- Last acetaminophen or ibuprofen

## Signs and Symptoms
- Warm
- Flushed
- Sweaty
- Chills/Rigors

**Associated Symptoms (Helpful to localize source)**
- Myalgias, cough, chest pain, headache, dysuria, abdominal pain, mental status changes, rash

## Differential
- Infections / Sepsis
- Cancer / Tumors / Lymphomas
- Medication or drug reaction
- Connective tissue disease
  - Arthritis
  - Vasculitis
- Hyperthyroidism
- Heat Stroke
- Meningitis

| | |
|---|---|
| | Contact, Droplet, and Airborne Precautions<br>See Pearls |
| **B** | Temperature Measurement Procedure<br>***if available*** |
| | IV or IO Access Protocol UP 6<br>***If indicated*** |

Temperature ≥ 100.4° F (38° C)

NO → Exit to Age Appropriate Protocol(s) ***as indicated***

YES →

| | |
|---|---|
| **B** | **ADULT**<br>**Acetaminophen 325 – 1000 mg PO**<br>*and / or*<br>**Adult Ibuprofen 400 – 600 mg PO**<br><br>**PEDS**<br>**Acetaminophen 15 mg / kg PO**<br>*and / or*<br>**Ibuprofen 10 mg / kg PO**<br>(if age > 6 months) |

→ Exit to Age Appropriate Protocol(s) ***as indicated***

Universal Protocol Section

# Fever/ Infection Control



**Pearls**

- **Recommended Exam: Mental Status, Skin, HEENT, Neck, Heart, Lungs, Abdomen, Back, Extremities, Neuro**
- Febrile seizures are more likely in children with a history of febrile seizures and with a rapid elevation in temperature.
- Patients with a history of liver failure should not receive acetaminophen.
- **Droplet precautions** include standard PPE plus a standard surgical mask for providers who accompany patients in the back of the ambulance and a surgical mask or NRB O2 mask for the patient. This level of precaution should be utilized when influenza, meningitis, mumps, streptococcal pharyngitis, and other illnesses spread via large particle droplets are suspected. A patient with a potentially infectious rash should be treated with droplet precautions.
- **Airborne precautions** include standard PPE plus utilization of a gown, change of gloves after every patient contact, and strict hand washing precautions. This level of precaution is utilized when multi-drug resistant organisms (e.g. MRSA), scabies, or zoster (shingles), or other illnesses spread by contact are suspected.
- **All-hazards precautions** include standard PPE plus airborne precautions plus contact precautions. This level of precaution is utilized during the initial phases of an outbreak when the etiology of the infection is unknown or when the causative agent is found to be highly contagious (e.g. **SARS, SARS-CoV-2, COVID-19, MERS, Monkeypox**).
- Rehydration with fluids increases the patient's ability to sweat and improves heat loss.
- Allergies to NSAIDs (non-steroidal anti-inflammatory medications) are a contraindication to Ibuprofen. Do not give to patients who have renal disease or renal transplant.
- NSAIDs should not be used in the setting of environmental heat emergencies.
- **Do not** give aspirin to a child, age ≤ 15 years.
- Agency Medical Director may require contact of medical control prior to EMT/ EMR administering any medication.

## Dispositions

**Paramedic / Advanced EMT:** Any patient who is immunocompromised, meets Sepsis criteria, or with abnormal vital signs

# Pain Control

## History
- Age
- Location
- Duration
- Severity (1 - 10)
- If child use Wong-Baker faces scale
- Past medical history
- Medications
- Drug allergies

## Signs and Symptoms
- Severity (pain scale)
- Quality (sharp, dull, etc.)
- Radiation
- Relation to movement, respiration
- Increased with palpation of area

## Differential
- Per the specific protocol
- Musculoskeletal
- Visceral (abdominal)
- Cardiac
- Pleural/ Respiratory
- Neurogenic
- Renal (colic)

**Specific Complaint Protocol**

Assess Pain Severity

Combination of Pain Scale, MOI, circumstances, Injury or Illness severity

### Mild

**B**

**Acetaminophen 15 mg/kg PO**
**(325 – 1000 mg typical adult)**
**Maximum 1000 mg**
**Or**
**Ibuprofen 10 mg/kg PO**
**(400 – 600 mg typical adult)**
**Maximum 800 mg**
**Or**
**Aspirin 324 – 650 mg PO**
**(≥ 16 only)**

If no improvement
Consider
IV or IO Access Protocol UP 6
***if indicated***

Monitor and Reassess
Every 10 minutes following sedative

### Acute *Traumatic* Musculoskeletal Pain

BLS

**B**

**Nitrous Oxide**
50:50 Mixture
*Mix NO and O2*

**Adult / Peds:** Must be able to follow commands and self administer

### Moderate to Severe

IV or IO Access Protocol UP 6

**A**

**Ketorolac 15 mg IV / IO / IM**
*May repeat in 10 min*
**Max 30 mg**

**Peds: 0.5 mg/kg IV / IO / IM**
**Maximum 30 mg**

**P**

Cardiac Monitor

**Fentanyl 50 mcg IV / IO / IM / IN**
**(0.25 – 1 mcg/kg)**
May repeat 25 – 50 mcg
every 5 minutes as needed
**If age ≥ 60, give 0.5 mcg/kg**
**Maximum 200 mcg**
**Peds: 0.5 – 1 mcg/kg IV / IO / IM / IN**
May repeat 0.5 mcg/kg
every 5 minutes as needed
**Peds: Maximum 200 mcg**
**Or**
**Morphine 4 mg IV / IO / IM**
Repeat **2 mg** every 5 minutes as needed
**Peds: 0.1 mg/kg IV / IO / IM**
May repeat every 5 minutes
**Peds Maximum single does 2 mg**
**Maximum total dose 10 mg**

**Ketamine 10-20 mg IV / IO**

May repeat once after 20 minutes
**Maximum 20 mg single dose**

**Maximum 40mg**

**Peds: 0.3 mg/kg IV/IO**
**Maximum 20mg**

**Notify Destination or Contact Medical Control**

Universal Protocol Section

# Pain Control

**Pearls**

- **Recommended Exam: Mental Status, Area of Pain, Neuro**
- **Pain severity (0-10) is a vital sign to be recorded before and after PO, IV, IO, IM, or Inhaled medication delivery and at patient hand off. Monitor BP closely as sedative and pain control agents may cause hypotension.**
- **Ketamine:**
  - **Ketamine may be used in patients who are outside a Pediatric Medication/ Skill Resuscitation System product.**
  - **Ketamine may be used in patients who fit within a Pediatric Medication/ Skill Resuscitation System product only with DIRECT ONLINE MEDICAL ORDER, by the system MEDICAL DIRECTOR or ASSISTANT MEDICAL DIRECTOR.**
- **Ketamine: appropriate indications for pain control:**
  - **Patients who have developed opioid-tolerance. Sickle cell crisis patients with opioid-tolerance.**
  - **Patients who have obstructive sleep apnea.**
  - **May use in combination with opioids to limit total amount of opioid administration.**
- **Ketamine: caution when using for pain control:**
  - **Slow infusion or IV push over 10 minutes is associated with less side effects. Do not administer by rapid IV push.**
  - **Avoid in patients who have cardiac disease or uncontrolled hypertension.**
  - **Avoid in patients with increased intraocular pressure such as glaucoma.**
  - **Avoid use in combination with benzodiazepines due to depressed respiratory drive.**
- **Nitrous Oxide:** The analgesic effect of nitrous oxide is through non-competitive NMDA inhibition in the central nervous system.
  - The analgesic effects occur by releasing endogenous opioids that act on the opioid receptors.
  - Nitrous oxide stimulates cerebral blood flow and increases intracranial pressure.
  - It has no muscle relaxation properties unlike other volatile anesthetics.
  - Due to minimum blood solubility, not bound to any proteins and fast action, N2O has rapid onset and quickly eliminated by the lungs after discontinuation.
  - **The most common adverse reaction of N2O is nausea and vomiting and respiratory depression.**
  - When used alone, nitrous has limited respiratory effects but when used in combination with other sedatives, hypnotics, or opioids it can potentiate the respiratory depressant effects of these agents.
- **Both arms of the treatment protocol may be used in concert. For patients in Moderate pain for instance, you may use the combination of an oral medication and parenteral if no contraindications are present.**
- **Pediatrics:**
  - For children use Wong-Baker faces scale or the FLACC score (see Assessment Pain Procedure ASP 2)
  - Use Numeric (> 9 yrs), Wong-Baker faces (4-16yrs) or FLACC scale (0-7 yrs) as needed to assess pain.
- **Vital signs should be obtained before, 10 minutes after, and at patient hand off with all pain medications.**
- All patients who receive IM or IV medications must be observed 15 minutes for drug reaction in the event no transport occurs.
- Do not administer **Acetaminophen** to patients with a history of liver disease.
- Burn patients may required higher than usual opioid doses to titrate adequate pain control.
- For adult patients with significant burns involving > 15% BSA:
  - **Maximum Fentanyl 300 mcg**
  - **Maximum Morphine 20 mg**
- Consider agency-specific anti-emetic(s) for nausea and/ or vomiting.

## Dispositions

**Paramedic:** Any patient receiving Ketamine, or more than 50mcg of Fentanyl

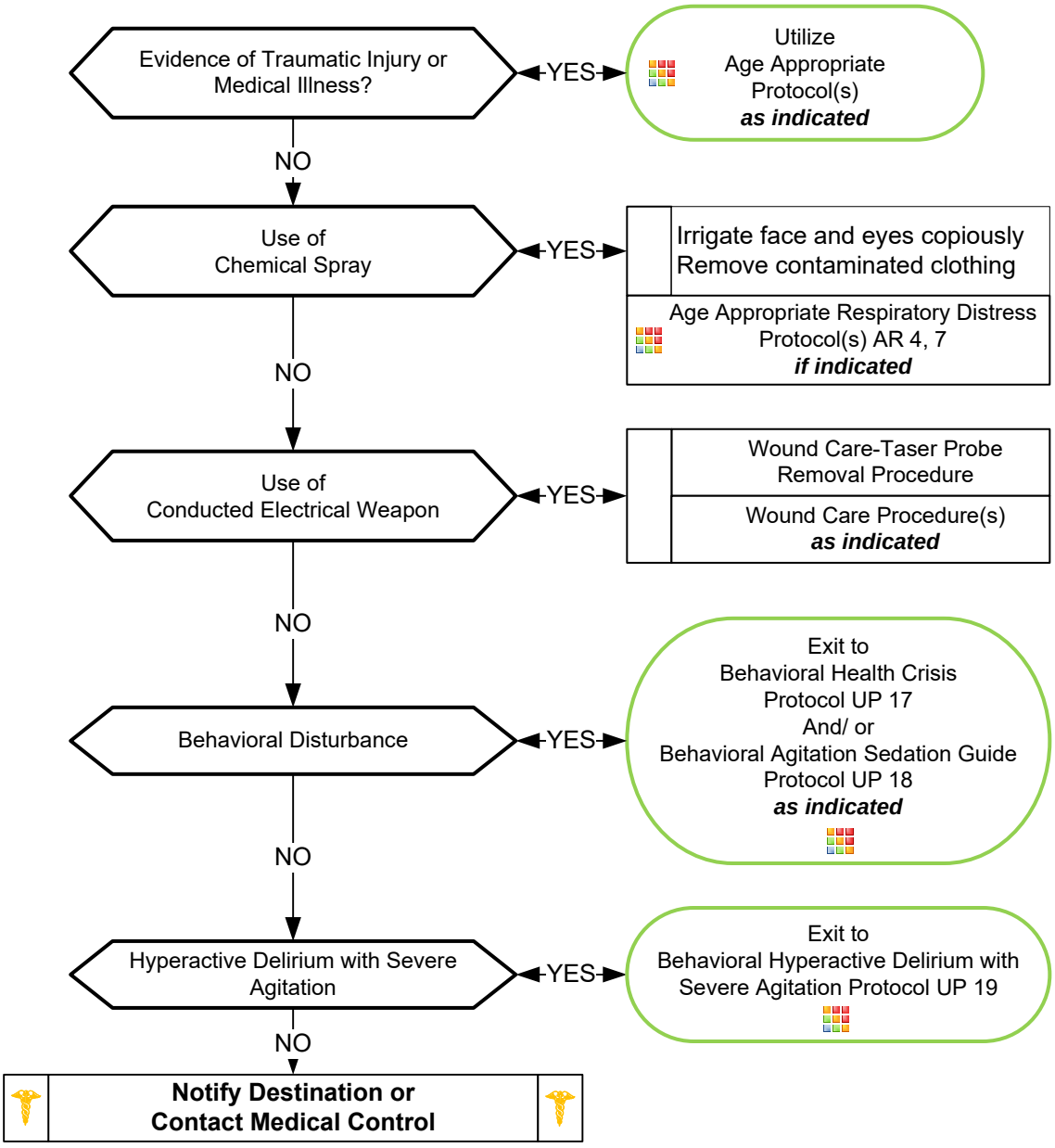
**Advanced EMT:** Any patients receiving more than 15mg of Toradol

# Police Custody

## History
- Traumatic Injury
- Drug Abuse
- Cardiac History
- History of Asthma
- Psychiatric History

## Signs and Symptoms
- External signs of trauma
- Palpitations
- Shortness of breath
- Wheezing
- Altered Mental Status
- Intoxication/Substance Abuse

## Differential
- Agitated Delirium Secondary to Psychiatric Illness
- Agitated Delirium Secondary to Substance Abuse
- Traumatic Injury
- Closed Head Injury
- Asthma Exacerbation
- Cardiac Dysrhythmia




Universal Protocol Section

# Police Custody



**Pearls**

- **Patient does not have to be in police custody or under arrest to utilize this protocol.**
- **Local EMS agencies should formulate a policy with local law enforcement agencies concerning patients requiring EMS and Law Enforcement services simultaneously.**
- **Agencies should work together to formulate a disposition in the best interest of the patient.**
- **Patients restrained by law enforcement devices must be transported and accompanied by a law enforcement officer in the patient compartment who is capable of removing the devices. However, when rescuers have utilized restraints in accordance with Restraint Procedure, the law enforcement agent may follow the ambulance during transport.**
- **All patients who require physical restraint (other than handcuffs) and / or chemical restraint must be continuously observed by ALS personnel on scene or immediately upon their arrival.**
- The responsibility for patient care rests with the highest authorized medical provider on scene per North Carolina law.
- If an asthmatic patient is exposed to irritant/ pepper spray and released to law enforcement, all parties should be advised to immediately contact EMS if wheezing/ difficulty breathing occurs.
- All patients with decision-making capacity in police custody retain the right to participate in decision-making regarding their care and may request care or refuse care of EMS.
- If extremity/ chemical/ law enforcement restraints are applied, follow USP 5 Restraints: Physical.
- **Consider Haldol or Droperidol for patients with history of psychosis or a benzodiazepine for patients with presumed substance misuse.**
- **Haldol is acceptable treatment in pediatric patients ≥ 12 years old. Safety and efficacy is not established in younger ages. Contact Medical Control for advice as needed.**
- **<u>Hyperactive Delirium with Severe Agitation:</u>**

  Medical emergency: Combination of delirium, psychomotor agitation, anxiety, hallucinations, speech disturbances, disorientation, violent/ bizarre behavior, insensitivity to pain, hyperthermia and increased strength.

  Potentially life-threatening and associated with use of physical control measures, including physical restraints and Tasers.

  Most commonly seen in male subjects with a history of serious mental illness and/or acute or chronic drug abuse, particularly stimulant drugs such as cocaine, crack cocaine, methamphetamine, amphetamines or similar agents.

  Alcohol withdrawal or head trauma may also contribute to the condition.

**If patient suspected of Hyperactive Delirium with Severe Agitation suffers cardiac arrest, consider a fluid bolus, administration of calcium gluconate (or chloride), and sodium bicarbonate early.**

- Do not position or transport any restrained patient is such a way that could impact the patients respiratory or circulatory status.
- Patients exposed to chemical spray, with or without history of respiratory disease, may develop respiratory complaints up to 20 minutes post exposure.

## Dispositions

**Paramedic**: Any patient requiring chemical restraint and / or restraints other than handcuffs

# Seizure

## History
- Reported / witnessed seizure activity
- Previous seizure history
- Medical alert tag information
- Seizure medications
- History of trauma
- History of diabetes
- History of pregnancy
- Time of seizure onset
- Document number of seizures
- Alcohol use, abuse or abrupt cessation
- Fever

## Signs and Symptoms
- Decreased mental status
- Sleepiness
- Incontinence
- Observed seizure activity
- Evidence of trauma
- Unconscious

## Differential
- CNS (Head) trauma
- Tumor
- Metabolic, Hepatic, or Renal failure
- Hypoxia
- Electrolyte abnormality (Na, Ca, Mg)
- Drugs, Medications, Non-compliance
- Infection / Fever
- Alcohol withdrawal
- Eclampsia
- Stroke
- Hyperthermia
- Hypoglycemia

Age Appropriate Airway Protocol(s) AR 1, 2, 3, 5, 6 ***as indicated***

Altered Mental Status Protocol UP 4 ***if indicated***

Childbirth/ Labor Protocol AO 1
Obstetrical Emergency Protocol AO 3 ***if indicated***

Behavioral Protocol UP 17, 18, 19 ***if indicated***

Loosen any constrictive clothing
Protect patient

Active Seizure Activity → YES → IV / IO Access → YES

P **Midazolam 2.5 mg IV / IO**
May repeat every 3 to 5 minutes as needed
**Maximum 10 mg**

**PEDS:**
**Midazolam 0.2 mg/kg IV / IO**
**Maximum single dose 2.5 mg**
May repeat every 3 to 5 minutes as needed
**Maximum 10 mg**

Active Seizure Activity → NO

IV / IO Access → NO

P **≥ 49 kg**
**Midazolam 5 mg IM**
May repeat in 5 minutes if needed
**Maximum 10 mg**

**< 49 kg**
**Midazolam 0.2 mg/kg IM**
**Maximum single dose 5 mg**

May repeat in 5 minutes if needed
**Maximum 10 mg**

Blood Glucose Analysis Procedure

IV or IO Access Protocol UP 6 ***if indicated***

P Cardiac Monitor ***if indicated***

Monitor and Reassess

**Notify Destination or Contact Medical Control**

Universal Protocol Section

# Seizure



**Pearls**

- **Recommended Exam: Mental Status, HEENT, Heart, Lungs, Extremities, Neuro**
- **Items in Red Text are key performance measures used to evaluate protocol compliance and care.**
- **Brief seizure-like activity can be seen following ventricular fibrillation or ventricular tachycardia associated cardiac arrest.**
- **Status epilepticus is defined by seizure activity lasting > 5 minutes or multiple seizures without return to baseline.**
- **Most seizure activity is brief, lasting only 1 – 2 minutes, and is associated with transient hypoventilation.**
- **Be prepared for airway problems and continued seizures.**
- **Seizure activity may be a marker of closed head injury, especially in the very young, examine for trauma.**
- **Adult:**
  **Midazolam 10 mg IM is effective in termination of seizures.**
  **Do not delay IM administration with difficult IV or IO access. IM Preferred over IO.**
- **Pediatrics:**
  **Midazolam 0.2 mg/kg (Maximum 5 mg) IM is effective in termination of seizures.**
  **Do not delay IM administration with difficult IV or IO access. IM Preferred over IO.**
- **Do not delay administration of anti-epileptic drugs to check for blood glucose.**
- **Grand mal seizures (generalized)** are associated with loss of consciousness, incontinence, and tongue trauma.
- **Focal seizures** affect only a part of the body and are not usually associated with a loss of consciousness, but can propagate to generalized seizures with loss of consciousness.
- Be prepared to assist ventilations especially if diazepam or midazolam is used.
- For any seizure in a pregnant patient, follow the AO 3 Obstetrical Emergencies Protocol.
- Midazolam (Versed) is shown to be as effective with IM route as Lorazepam (Ativan) is via the IV or IO route.
- Lorazepam (Ativan) is not as effective when administered IM. IV or IO route is preferred.
- Diazepam (Valium) is not effective when administered IM. Give IV or Rectally.
- **Optimal conditions for patients refusing transport following a seizure:**
  - Known history of seizures/epilepsy
  - Full recovery to baseline mental status
  - No injuries requiring treatment or evaluation
  - Adequate supervision
  - Seizure not associated with drugs or alcohol
  - Only 1 seizure episode in the past hour
  - Seizure not associated with pregnancy

## Dispositions

**Paramedic:** Any patients who receive Versed, any Pediatric patient, patient with have multiple seizures, patient with no return to baseline, or patients with abnormal vital signs. *(Transport requires an ALS capable unit)*

# Suspected Stroke

### History
- Previous CVA, TIA's
- Previous cardiac / vascular surgery
- Associated diseases: diabetes, hypertension, CAD
- Atrial fibrillation
- Medications (blood thinners)
- History of trauma
- Sickle Cell Disease
- Immune disorders
- Congenital heart defects
- Maternal infection / hypertension

### Signs and Symptoms
- Altered mental status
- Weakness / Paralysis
- Blindness or other sensory loss
- Aphasia / Dysarthria
- Syncope
- Vertigo / Dizziness
- Vomiting
- Headache
- Seizures
- Respiratory pattern change
- Hypertension / hypotension

### Differential
- See Altered Mental Status
- TIA (Transient ischemic attack)
- Seizure
- Todd's Paralysis
- Hypoglycemia
- Stroke
  Thrombotic or Embolic (~85%)
  Hemorrhagic (~15%)
- Tumor
- Trauma
- Dialysis / Renal Failure

**EMS Stroke Screen Assessment (CSS Assessment)**

Blood Glucose Analysis Procedure

**Consistent with Acute Stroke**

NO → Exit to Appropriate Protocol(s) ***as indicated***

YES

**Determine**
**1. Last Known Well Time**
**2. Time of Symptom Discovery**

**Time of Onset Or Time Last Seen Normal < 24 Hours**

YES → **Stroke Severity Screen Procedure (VAN Assessment)**

NO

Altered Mental Status Protocol UP 4 ***if indicated***

**B** 12 Lead ECG Procedure

IV / IO Protocol UP 6

Age Appropriate Cardiac Protocol(s) ***if indicated***

Head Trauma Protocol TB 5
Multiple Trauma Protocol TB 6 ***if indicated***

Seizure Protocol UP 13 ***if indicated***

**Notify Destination or Contact Medical Control**

**Transport Destination Facility based on:**
**STROKE**
**EMS Triage and Destination Plan**

- **Refer to plan for Last Known Well Time and Stroke Severity Assessment values**
- **Combination of factors will drive transport destination decision-making based on your region**

**Transport based on:**
**STROKE**
**EMS Triage and Destination Plan**

**Goal Scene Time ≤ 15 Minutes**
**Provide Early Notification of Destination Facility**
**Suspected Stroke Alert**

**B** 12 Lead ECG Procedure

IV / IO Protocol UP 6
Preferably 2 Sites

**A** Venous Access Blood Draw Procedure ***if applicable***

**P**
Cardiac Monitor

**Persistent Hypertension**
If SBP ≥ 185 or DBP ≥ 110
*After 3 readings all 5 minutes apart*
Contact Receiving Facility
Concerning Treatment of Hypertension

Universal Protocol Section

# Suspected Stroke



**Pearls**

- **Recommended Exam: EMS Stroke Screen and Severity Assessment, Mental Status, Neuro**
- **Items in Red Text are key performance measures used in the EMS Acute Stroke Care Toolkit.**
- **Acute Stroke care is evolving rapidly. Time of onset / last seen normal or well may be changed at any time depending on the capabilities and resources of your regional hospitals based on Stroke: EMS Triage and Destination Plan.**
- **Time of Onset or Last Seen Normal or Well:**
  - **One of the most important items the pre-hospital provider can obtain, of which all treatment decisions are based.**
  - **Be precise in gathering data to establish the time of onset and report as an actual time (i.e. 13:47 NOT "about 45 minutes ago.")**
  - **Without this information patient care may be delayed at facility.**
  - **Wake up stroke: Time starts when patient last awake or symptom free.**
- **Time of Symptom Discovery:**
  - **Time when symptoms of stroke are first noticed by patient or witness.**
- **Sources of information pertaining to Last Known Well time:**
  - **You are often in the best position to determine the actual Time of Onset while you have family, friends or caretakers available.**
  - **Often these sources of information may arrive well after you have delivered the patient to the hospital. Delays in decisions due to lack of information may negatively impact care.**
  - **Obtain contact information (phone number and name) of witnesses and give to facility providers.**
- **If patient has new onset balance, coordination, vertigo, and / or gait abnormality within 24hrs please consider consultation for concern for posterior stroke**
- **If possible place 2 IV sites.**
- **Blood Draw:**
  - **Many systems utilize EMS venous blood samples. Follow your local policy and procedures.**
- The differential listed on the Altered Mental Status Protocol should also be considered.
- Be alert for airway problems (swallowing difficulty, vomiting/aspiration).
- Hypoglycemia can present as a localized neurologic deficit, especially in the elderly.
- Document the Stroke Screen, Stroke Severity Score, and facility notification time in the PCR.
- Agencies may use validated pre-hospital stroke screen of choice.
- **Pediatrics:**
  - Strokes do occur in children, they are slightly more common in ages < 2, in boys, and in African-Americans.
  - Newborn and infant symptoms consist of seizures, extreme sleepiness, and using only one side of the body.
  - Children and teenagers symptoms may consist of severe headaches, vomiting, sleepiness, dizziness, and/or loss of balance or coordination.

## Dispositions

**Paramedic / Advanced EMT:** Any patient with findings consistent of Acute Stroke, or patients with an abnormal stroke screening with onset < 72 hours

# Suspected Sepsis

## History
- Duration and severity of fever
- Past medical history
- Medications / Recent antibiotics
- Immunocompromised (transplant, HIV, diabetes, cancer)
- Indwelling medical device
- Last acetaminophen or ibuprofen
- Recent Hospital / healthcare facility
- Bedridden or immobile
- Elderly and very young – at risk
- Prosthetic device / indwelling device

## Signs and Symptoms
- Warm
- Flushed
- Sweaty
- Chills / Rigors
- Delayed cap refill
- Mental status changes

**Associated Symptoms (Helpful to localize source)**
- myalgias, cough, chest pain, headache, dysuria, abdominal pain, rash

## Differential
- Infections: UTI, Pneumonia, skin/ wound
- Cancer / Tumors / Lymphomas
- Medication or drug reaction
- Connective tissue disease: Arthritis, Vasculitis
- Hyperthyroidism
- Heat Stroke
- Meningitis
- Hypoglycemia/hypothermia
- MI / CVA

Consider: Contact, Droplet, and Airborne Precautions

Temperature Measurement Procedure ***if available***

Fever / Infection Control Protocol UP 10 ***if needed***

Altered Mental Status Protocol UP 4 ***if needed***

**B** 12 Lead ECG Procedure

IV or IO Access Protocol UP 6 ***if indicated***

**P** Cardiac Monitor

Obvious or suspected infection **AND** any of these SIRS criteria:

SBP < 90 mmHg
Heart rate > 90/min
Respiratory Rate > 20
Temperature ≥ 100.4° F or < 96.0° F
New onset altered mental status - GCS< 15

YES

Any of the SIRS criteria **AND** either of the following present:

End tidal CO2 < 26 mmHg
**OR**
SBP < 90 mmHg

YES

**Sepsis Screen Positive?**

NO → Exit to Age Appropriate Condition Appropriate Protocol(s)

YES → **SEPSIS ALERT**
**Notify Receiving Facility Immediately**

**A**
Venous Access Blood Draw ***if applicable***

**Normal Saline 500 mL Bolus**
Repeat as needed
Titrate SPB ≥ 90 mmHg
MAP > 65 mmHg
**Maximum 2 L**
**Peds: 20 mL/kg IV / IO**
Repeat to titrate
Age Appropriate
SBP ≥ 70 + 2 x Age
**Maximum 60 mL/kg**
Repeat 500cc bolus to max 2 L as long as any SIRS criteria present, unless concern for fluid overload

**P**
**If SBP < 90 after 2 L IVF, begin Norepinephrine 1-10 mcg/min**
**Or**
**Dopamine 2-20 mcg/kg/min**
**IV / IO**
To effect SBP ≥ 90

Age Appropriate Hypotension / Shock Protocol AM 5 / PM 3

**Notify Destination or Contact Medical Control**

**MAP**
**(Mean Arterial Pressure)**

$$\frac{SBP + 2(DBP)}{3}$$

Monitor usually calculates this value on screen

Universal Protocol Section



This protocol has been altered from the original 2022 NCCEP Protocol by the local EMS Medical Director

# Suspected Sepsis



- **Pearls**
- **Recommended Exam: Mental Status, Skin, HEENT, Neck, Heart, Lungs, Abdomen, Back, Extremities, Neuro**
- **Recommended Exam Pediatrics: In childhood, physical assessment reveals important clues for sepsis. Look for mental status abnormalities such as anxiety, restlessness, agitation, irritability, confusion, or lethargy. Cardiovascular findings to look for include cool extremities, capillary refill >3 seconds, or mottled skin.**
- **Sepsis is a life threatening condition where the body's immune response to infection injures its own tissues and organs.**
- **Severe sepsis is a suspected infection and 2 or more SIRS criteria (or qSOFA) with organ dysfunction such as AMS or hypotension.**
- **Septic shock is severe sepsis and poor perfusion unimproved after fluid bolus.**
- **Agencies administering antibiotics should inquire about drug allergies specific to antibiotics or family of antibiotics.**
- **Following each fluid bolus, assess for pulmonary edema. Consider administration of agency specific vasopressor.**
- **Supplemental oxygen should be given and titrated to oxygenation saturation ≥ 94%.**
- **EKG should be obtained with suspected sepsis, but should not delay care in order to obtain.**
- **Abnormally low temperatures increase mortality and found often in geriatric patients.**
- Quantitative waveform capnography can be a reliable surrogate for lactate monitoring in detecting metabolic distress in sepsis patients. $EtCO_2$ < 25 mm Hg are associated with serum lactate levels > 4 mmol/L.
- Patients with a history of liver failure should not receive acetaminophen.
- **Droplet precautions:**
  Include standard PPE plus a standard surgical mask for providers who accompany patients in the back of the ambulance and a surgical mask or NRB O2 mask for the patient.
  This level of precaution should be utilized when influenza, meningitis, mumps, streptococcal pharyngitis, and other illnesses spread via large particle droplets are suspected.
  A patient with a potentially infectious rash should be treated with droplet precautions.
- **Airborne precautions:**
  Include standard PPE plus utilization of a gown, change of gloves after every patient contact, and strict hand washing precautions.
  This level of precaution is utilized when multi-drug resistant organisms (e.g. MRSA), scabies, or zoster (shingles), or other illnesses spread by contact are suspected.
- **All-hazards precautions:**
  Include standard PPE plus airborne precautions plus contact precautions.
  This level of precaution is utilized during the initial phases of an outbreak when the etiology of the infection is unknown or when the causative agent is found to be highly contagious (e.g. SARS).
- All patients should have drug allergies documented prior to administering pain medications.
- Allergies to NSAIDs (non-steroidal anti-inflammatory medications) are a contraindication to Ibuprofen.
- Agency Medical Director may require contact of medical control prior to EMT / MR administering any medication.
- **Sepsis Screen:**
  Agencies may use Adult / Pediatric Systemic Inflammatory Response Syndrome (SIRS) criteria or quickSOFA (qSOFA) criteria.
  Receiving facility should be involved in determining Sepsis Screen utilized by EMS.

## Dispositions

**Paramedic:** Any patient who meet Sepsis Alert Criteria, and have a SBP <90

**Advanced EMT:** Any patient who meet Sepsis Alert Criteria, and have a SBP >90

# Syncope

## History
- Cardiac history, stroke, seizure
- Occult blood loss (GI, ectopic)
- Females: LMP, vaginal bleeding
- Fluid loss: nausea, vomiting, diarrhea
- Past medical history
- Medications

## Signs and Symptoms
- Loss of consciousness with recovery
- Lightheadedness, dizziness
- Palpitations, slow or rapid pulse
- Pulse irregularity
- Decreased blood pressure

## Differential
- Vasovagal
- Orthostatic hypotension
- Cardiac syncope
- Micturition / Defecation syncope
- Psychiatric
- Stroke
- Hypoglycemia
- Seizure
- Shock (see Shock Protocol)
- Toxicological (Alcohol)
- Medication effect (hypertension)
- PE
- AAA

Age Appropriate Airway Protocol(s) AR 1, 2, 3, 5, 6 ***if indicated***

Blood Glucose Analysis Procedure

**B** 12 Lead ECG Procedure

IV or IO Access Protocol UP 6

**P** Cardiac Monitor

Altered Mental Status Protocol UP 4 ***if indicated***

Age Appropriate Cardiac Protocol(s) ***if indicated***

Age Appropriate Hypotension/ Shock Protocol AM 5/ PM 3 ***if indicated***

Multiple Trauma Protocol TB 6
Spinal Motion Restriction Procedure/ Protocol TB 8 ***if indicated***

**Age Specific Blood Pressure indicating possible shock**

**Age 0 – 28 days: SBP < 60**
**Ages ≥ 1 month: SBP < 70**
**Age 1 – 9: SBP < 70 + (2*x* Age)**

**Ages 10 – 64: SBP < 90**
**Ages ≥ 65: SBP < 110**

**All ages Shock Index:**
**HR > SBP**

Serious Signs/ Symptoms Hypotension, poor perfusion, shock

YES → **A**

IV or IO Access Protocol UP 6
Consider 2 Large Bore sites

**Normal Saline 500 mL Bolus**
Repeat as needed
Titrate SPB ≥ 90 mmHg
**Maximum 2 L**

**Peds: 20 mL/kg IV / IO**
Repeat as needed
Titrate to Age Appropriate
SBP ≥ 70 + 2 x Age
**Maximum 60 mL/kg**

Exit to Age Appropriate Condition Appropriate Protocol(s)

NO

**Notify Destination or Contact Medical Control**

Universal Protocol Section

# Syncope



**Pearls**

- **Recommended Exam: Mental Status, Skin, HEENT, Heart, Lungs, Abdomen, Back, Extremities, Neuro**
- **Syncope is both loss of consciousness and loss of postural/ muscle tone with collapse. Symptoms preceding the event are important in determining etiology.**
- **Syncope often is due to a benign process but can be an indication of serious underlying disease in both the adult and pediatric patient.**
- **Often patients with syncope are found normal on EMS evaluation. In general patients experiencing syncope require cardiac monitoring and emergency department evaluation.**
- **Differential should remain wide and include:**

| | | | |
|---|---|---|---|
| **Cardiac arrhythmia** | **Neurological problem** | **Choking** | **Pulmonary embolism** |
| **Hemorrhage** | **Stroke** | **Respiratory** | **Hypo or Hyperglycemia** |
| **GI Hemorrhage** | **Seizure** | **Sepsis** | |

- **High-risk patients:**

| | |
|---|---|
| **Age ≥ 60** | **Syncope with exertion** |
| **History of CHF** | **Syncope with chest pain** |
| **Abnormal ECG** | **Syncope with dyspnea** |

- **Abdominal/ back pain in women of childbearing age should be treated as pregnancy related until proven otherwise.**
- **The diagnosis of abdominal aneurysm should be considered with abdominal pain, with or without back and/ or lower extremity pain or diminished pulses, especially in patients over 50 and/ or patients with shock/ poor perfusion. Notify receiving facility early with suspected abdominal aneurysm.**
- **Consider cardiac etiology in patients > 35, diabetics, and/ or women especially with upper abdominal complaints.**
- **Heart Rate: Tachycardia is one of the first clinical signs of dehydration, typically increases as dehydration becomes more severe.**
- Syncope with no preceding symptoms or event may be associated with an arrhythmia.
- Assess for signs and symptoms of trauma if associated or questionable fall with syncope.
- Consider dysrhythmias, GI bleed, ectopic pregnancy, and seizure as possible causes of syncope.
- In general these patients should be transported: Patients who experience syncope associated with headache, neck pain, chest pain, abdominal pain, back pain, dyspnea, or dyspnea on exertion need prompt medical evaluation.
- More than 25% of geriatric syncope is cardiac dysrhythmia based.

## Dispositions

**Paramedic:** Any patient with syncope or fainting

# Behavioral Health Crisis

## History
- Situational crisis
- Psychiatric illness/medications
- Injury to self or threats to others
- Medic alert tag
- Substance abuse / overdose
- Diabetes

## Signs and Symptoms
- Anxiety, agitation, confusion
- Affect change, hallucinations
- Delusional thoughts, bizarre behavior
- Combative violent
- Expression of suicidal / homicidal thoughts

## Differential
- Altered Mental Status
- Alcohol Intoxication
- Toxin / Substance abuse
- Medication effect / overdose / withdrawal
- Depression
- Bipolar (manic-depressive)
- Schizophrenia
- Anxiety disorders

**Call for help**
**Call for additional resources**
**Stage prior to arrival**
**or**
**Wthdraw from scene until safe**

**Screen patient for weapons**
**Screen for scene safety**

Assess for underlying medical or traumatic condition causing behavioral disturbance

Age Appropriate Protocol(s)

**Establish rapport**
- Genuine respect for feelings/ circumstances
- Active listening
- Eye contact and at meet at eye level

**Create a quiet and safe environment**
- Only 1 provider talks to patient to limit stimuli
- Decrease unnecessary stimuli

**Identify major problem or crisis**
- "What happened to upset you?"
- "How are you feeling right now?"

**Assess for suicidal and/or homicidal thoughts**

**Identify major problem or crisis**
- "What happened to upset you?"
- "How are you feeling right now?"

Exit to
Behavioral
Agitation/ Sedation Guide
UP 18
Hyperactive Delirium with Severe Agitation
UP 19
Age Appropriate Protocol(s)

**Assess and score: BARS**
**Behavioral Activity Rating Scale**

**BARS**

**1 – Difficult or unable to wake**

**2 – Asleep, but responds normally to verbal or physical stimuli**

**3 – Drowsy, appears sedated**

**4 – Quiet and awake (normal activity)**

**5 – Overt activity (physical or verbal) Agitated but not disruptive**

**6 – Extremely or continuously active, Agitated, disruptive, but not violent**

**7 – Violent, requires restraint Agitated and violent**

**P**
Evaluation and Screening
Mental Health and Substance Use Protocol
CIT Paramedic Only
***if available***
Page 3

**Triage and Alternative Destination**
**Mental Health / Substance Abuse**
***if available***
**Consider UP 23**

**Notify Destination or**
**Contact Medical Control**

Universal Protocol Section

# Behavioral Health Crisis



**Pearls**

- **Recommended Exam: Mental Status, Skin, Heart, Lungs, Neurologic status**
- **Crew/ responders safety is the main priority. Call for assistance, stage, or withdraw from scene if necessary.**
- **Law Enforcement:**
  - **Any patient who is handcuffed or restrained by Law Enforcement and transported by EMS, must be accompanied by law enforcement during transport.**
  - **Patient should not be transported with upper extremities hand-cuffed behind back as this prevents proper assessment and could lead to injury.**
  - **Consider multidisciplinary coordination with law enforcement to approach verbal de-escalation, restraint, and/ or USP 6 Restraints: Therapeutic Take-down Procedure.**
- **Maintain high-index of suspicion for underlying medical or traumatic disorder causing or contributing to behavioral disturbance. Medical causes more likely in ages < 12 or > 40.**
- **General communications techniques**
  - **Ask Open-ended questions (questions that cannot be answered with a yes/no)**
    *"Tell me how we can help you?" "What caused you to call 911 today?"*
  - **Active listening (stay engaged, be able to summarize patient's story, use your body language to convey listening)**
    *Eye contact, nodding your head, periodically repeating back part of patient's story*
  - **Encouraging (remain positive, convey interest in patient's crisis)**
    *"Tell me more about that…"*
  - **Clarifying questions (ask patient to rephrase or repeat if you don't understand)**
    *"I'm not sure I understand, can you…?"*
  - **Emotional labeling (naming emotions patient is demonstrating, validating emotions**
    *"You look upset." "You seem angry."*
  - **Conversational pause (okay to allow a period of silence for patient to process information)**
- **Behavioral health disturbance incidents are increasing and commonly involve the following:**
  - **Substance misuse**
  - **Depression/ Anxiety/ Stress Reactions / Bipolar**
  - **Psychosis**
  - **Schizophrenia or schizophrenia-like illness**
- **Restraints:**
  - **All patients who receive either physical or chemical restraint must be continuously observed by ALS personnel on scene or immediately upon their arrival.**
  - **Do not position or transport any restrained patient is such a way that could impact the patients respiratory or circulatory status (i.e. prone position)**
- Maintain high-index of suspicion for medical, trauma, abuse, or neglect causes:
  Hypoglycemia, hyperglycemia, overdose, substance abuse, hypoxia, head injury, shock, sepsis, stroke, etc.
  Domestic violence, child or geriatric abuse/ neglect.
- **Extrapyramidal reactions:**
  Condition causing involuntary muscle movements or spasms typically of the face, neck and upper extremities. May present with contorted neck and trunk with difficult motor movements. Typically an adverse reaction to antipsychotic drugs like Haloperidol and may occur with your administration. When recognized, give **Diphenhydramine 50 mg IV / IO / IM / PO** in adults or **1 mg/kg IV / IO / IM / PO** in pediatrics, **Maximum 50 mg**.
- **See UP 23 for Additional Behavioral Health Resources**

## Dispositions

**Paramedic:** Patients requiring chemical restraint and / or restraints other than hand cuffs
*(Transport Requires an ALS capable unit)*

# Behavioral Agitation/ Sedation Guide

**Behavioral Activity Rating Scale (BARS)**

**Behavioral Activity Rating Scale**
**BARS scoring: 1 - 4**

YES → No sedation required → Exit to Age Appropriate Protocol(s)

NO

**Behavioral Activity Rating Scale**
**BARS scoring: 5**
Agitated but not disruptive
Able to calm and redirect

YES →
- Verbal De-escalation Procedure ASP 11
- B: **Prescribed Home PO / ODT Medication**
  Examples: **Haloperidol | Droperidol**
  **Lorazepam | Olanzapine**
- P: **PO / ODT Medication**
  Examples: **Haloperidol | Droperidol**
  **Lorazepam | Olanzapine**

NO

**Condition Improving?**
NO
YES → Exit to Age Appropriate Protocol(s)

**Behavioral Activity Rating Scale**
**BARS scoring: 6**

Agitated and disruptive
Not violent

- Verbal De-escalation Procedure ASP 11
- IV or IO Access Protocol UP 6 ***if indicated***
- P:
  Age ≥ 12 and ≤ 64
  **Haloperidol 2 - 5 mg IM**

  Age ≥ 65
  **2.5 mg IM**

  May repeat every 5 as needed
  **Maximum 10 mg**
- Consider Restraint Physical Procedure USP 5
  Monitor per restraint procedure
  ***if indicated***

**BARS**
**1 – Difficult or unable to wake**
**2 – Asleep, but responds normally to verbal or physical stimuli**
**3 – Drowsy, appears sedated**
**4 – Quiet and awake (normal activity)**
**5 – Overt activity (physical or verbal) Agitated but not disruptive**
**6 – Extremely or continuously active, Agitated, disruptive, but not violent**
**7 – Violent, requires restraint Agitated and violent**

**Capnography Monitoring**
- **End-tidal (EtCO2) monitoring is mandatory following use of chemical and physical restraints**

NO

**Condition Improving?**
NO
YES → Exit to Age Appropriate Protocol(s)

**Behavioral Activity Rating Scale**
**BARS scoring: ≥7**

Agitated and violent

P:
**Midazolam 2.5 mg IV / IO / IN**
**5 mg IM**

Age ≥ 65
**1 – 2.5 mg IV / IO / IN**
**2.5 mg IM**

**Peds: 0.1 – 0.2 mg/kg IV / IO / IM / IN**

Repeat every 2-3 minutes as needed
**Maximum 10 mg**

→ Exit to Hyperactive Delirium with Severe Agitation Protocol UP 19

Universal Protocol Section

# Behavioral Agitation/ Sedation Guide

## Pearls

- **Recommended Exam: Mental Status, Skin, Heart, Lungs, Neurologic status**
- **Crew/ responders safety is the main priority. Call for assistance, stage, or withdraw from scene if necessary.**
- **Law Enforcement:**
  - **Any patient who is handcuffed or restrained by Law Enforcement and transported by EMS, must be accompanied by law enforcement during transport.**
  - **Patient should not be transported with upper extremities hand-cuffed behind back as this prevents proper assessment and could lead to injury.**
  - **Consider multidisciplinary coordination with law enforcement to approach verbal de-escalation, restraint, and/ or USP 6 Restraints: Therapeutic Take-down Procedure.**
- **Maintain high-index of suspicion for underlying medical or traumatic disorder causing or contributing to behavioral disturbance. Medical causes more likely in ages < 12 or > 40.**
- **NOTE: Elderly Patients are more susceptible to benzodiazepine (Midazolam) effects, and doses are reduced.**
- **General communications techniques**
  - **Ask Open-ended questions (questions that cannot be answered with a yes/no)**
    *"Tell me how we can help you?" "What caused you to call 911 today?"*
  - **Active listening (stay engaged, be able to summarize patient's story, use your body language to convey listening)**
    *Eye contact, nodding your head, periodically repeating back part of patient's story*
  - **Encouraging (remain positive, convey interest in patient's crisis)**
    *"Tell me more about that…"*
  - **Clarifying questions (ask patient to rephrase or repeat if you don't understand)**
    *"I'm not sure I understand, can you…?"*
  - **Emotional labeling (naming emotions patient is demonstrating, validating emotions**
    *"You look upset." "You seem angry."*
  - **Conversational pause (okay to allow a period of silence for patient to process information)**
- **Behavioral health disturbance incidents are increasing and commonly involve the following:**
  - **Substance misuse**
  - **Depression/ Anxiety/ Stress Reactions / Bipolar**
  - **Psychosis**
  - **Schizophrenia or schizophrenia-like illness**
- **Restraints:**
  - **All patients who receive either physical or chemical restraint must be continuously observed by ALS personnel on scene or immediately upon their arrival.**
  - **Do not position or transport any restrained patient is such a way that could impact the patients respiratory or circulatory status.**
- Maintain high-index of suspicion for medical, trauma, abuse, or neglect causes:
  Hypoglycemia, hyperglycemia, overdose, substance abuse, hypoxia, head injury, shock, sepsis, stroke, etc.
  Domestic violence, child or geriatric abuse/ neglect.
- **Extrapyramidal reactions:**
  Condition causing involuntary muscle movements or spasms typically of the face, neck and upper extremities. May present with contorted neck and trunk with difficult motor movements. Typically an adverse reaction to antipsychotic drugs like Haloperidol and may occur with your administration. When recognized, give **Diphenhydramine 50 mg IV / IO / IM / PO** in adults or **1 mg/kg IV / IO / IM / PO** in pediatrics, **Maximum 50 mg**.
- **See UP 23 for Additional Behavioral Health Resources**

## Dispositions

**Paramedic:** All patients

Universal Protocol Section

# Behavioral
# Hyperactive Delirium With Severe Agitation

Scene Safe

YES

NO

**Call for help**
**Call for additional resources**
**Stage prior to arrival**
**or**
**Withdraw from scene until safe**

**Behavioral Activity Rating Scale (BARS)**

**Behavioral Activity Rating Scale**

**BARS scoring: 7**

**Capnography Monitoring**

- **End-tidal (EtCO2) monitoring is mandatory following use of chemical and physical restraints**

| | |
|---|---|
| P | **Midazolam 10 mg IM**<br><br>Age ≥ 65<br>**Midazolam 5 mg IM**<br><br>**Pediatrics:**<br>**Midazolam 0.1 – 0.2 mg/kg IM**<br>Repeat every 5 minutes as needed<br><br>**Midazolam Maximum Dose 10 mg** |
| P | Age ≥ 12 and ≤ 64<br>**Haloperidol 2 - 5 mg IM**<br><br>Age ≥ 65<br>**2.5 mg IM**<br><br>May repeat every 5 as needed<br>**Maximum 10 mg** |
| | IV or IO Access Protocol UP 6<br>Preferably 2 large bore |
| A | **Normal Saline 1 L Bolus**<br>Then **150 – 200 mL / hr**<br>May repeat **500 mL** Bolus<br>as needed<br>**Maximum 2 L**<br><br>**Peds: 20 – 60 mL/kg IV / IO**<br>**Maximum 60 mL/kg** |
| | Restraint Physical Procedure USP 5<br>Monitor per restraint procedure<br>***if indicated*** |
| | Restraint Therapeutic Take Down Procedure USP 6<br>***if indicated*** |
| | Hyperthermia Protocol |
| P | Cardiac Monitor |

**Notify Destination or Contact Medical Control**

**General Guidance**

- **Use of protocol is indicated when a medical emergency requires a combination of both physical restraint and chemical restraint in order to prevent imminent injury to a patient and/ or providers.**
- **Use of this protocol requires medical judgement and consultation with Medical Control where indicated.**
- **Non-medical personnel requests or opinions should not be used as a factor when implementing this protocol.**

Universal Protocol Section

# Behavioral
# Hyperactive Delirium With Severe Agitation



**Pearls**

- **Hyperactive Delirium with Severe Agitation:**
  - Medical emergency: Combination of delirium, psychomotor agitation, anxiety, hallucinations, speech disturbances, disorientation, violent/ bizarre behavior, insensitivity to pain, hyperthermia and increased strength.
  - Potentially life-threatening and associated with use of physical control measures, including physical restraints.
  - Most commonly seen in male subjects with a history of serious mental illness and/or acute or chronic drug abuse, particularly stimulant drugs such as cocaine, crack cocaine, methamphetamine, amphetamines or similar agents.
  - Alcohol or substance withdrawal as well as head trauma may also contribute to the condition.
- **Restraint use:**
  - Physical restraints are not contraindicated in agitated or excited delirium, but you must use caution.
  - Once sedated, prevent patient from continued struggle, which can worsen metabolic condition.
  - Prevent patient from assuming a prone position for prolonged period, move to supine position as quickly as possible.
  - Team approach for sedation and Restraint Therapeutic Take Down Procedure USP-6:
    - 1 provider for each limb.
    - 1 provider to lead restraint, maintain airway and control head.
    - 1 Provider to administer medication.
  - Do not position prone or prone with restraints, as this can impede respiration and ventilation.
- Hyperthermia: Assess for and treat hyperthermia.
- **NOTE: Elderly Patients are more susceptible to benzodiazepine (Midazolam) effects, and doses are reduced.**

## Dispositions

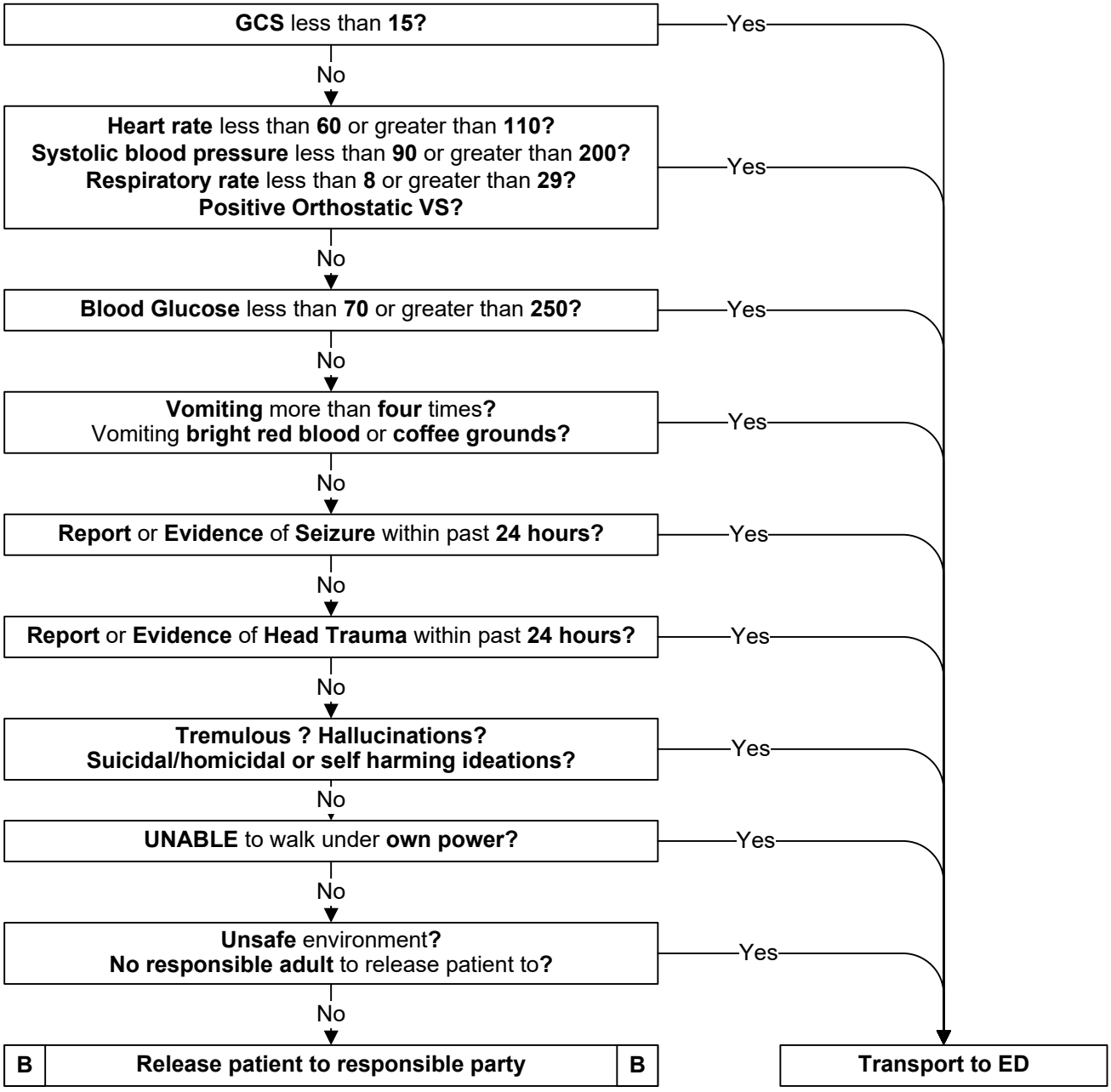
**Paramedic:** All patients

# Inebriated Person

**History:**
- Medical History
- Quantity / Duration of ETOH use
- Medications (Rx or recreational)

**Signs and Symptoms:**
- Level of consciousness
- Vomiting
- Staggered gait
- Slurred speech
- Blurred vision

**Differential:**
- Diabetic
- Psychiatric
- Overdose
- Any differential from Altered Mental Status protocol (25)




**Pearls:**
- **Exam: Mental Status, Neuro, Vital Signs**
- Serious medical conditions can present as inebriation. It is the paramedic's responsibility to rule out other causes.
- Unsafe environment means a place where physical injury (trauma or hypo/hyperthermia) is probable.

## Dispositions

**Paramedic / Advanced EMT:** Any patient with suspected seizure, suspected head trauma with a change in mental status, SBP <90, or SpO2 <94%

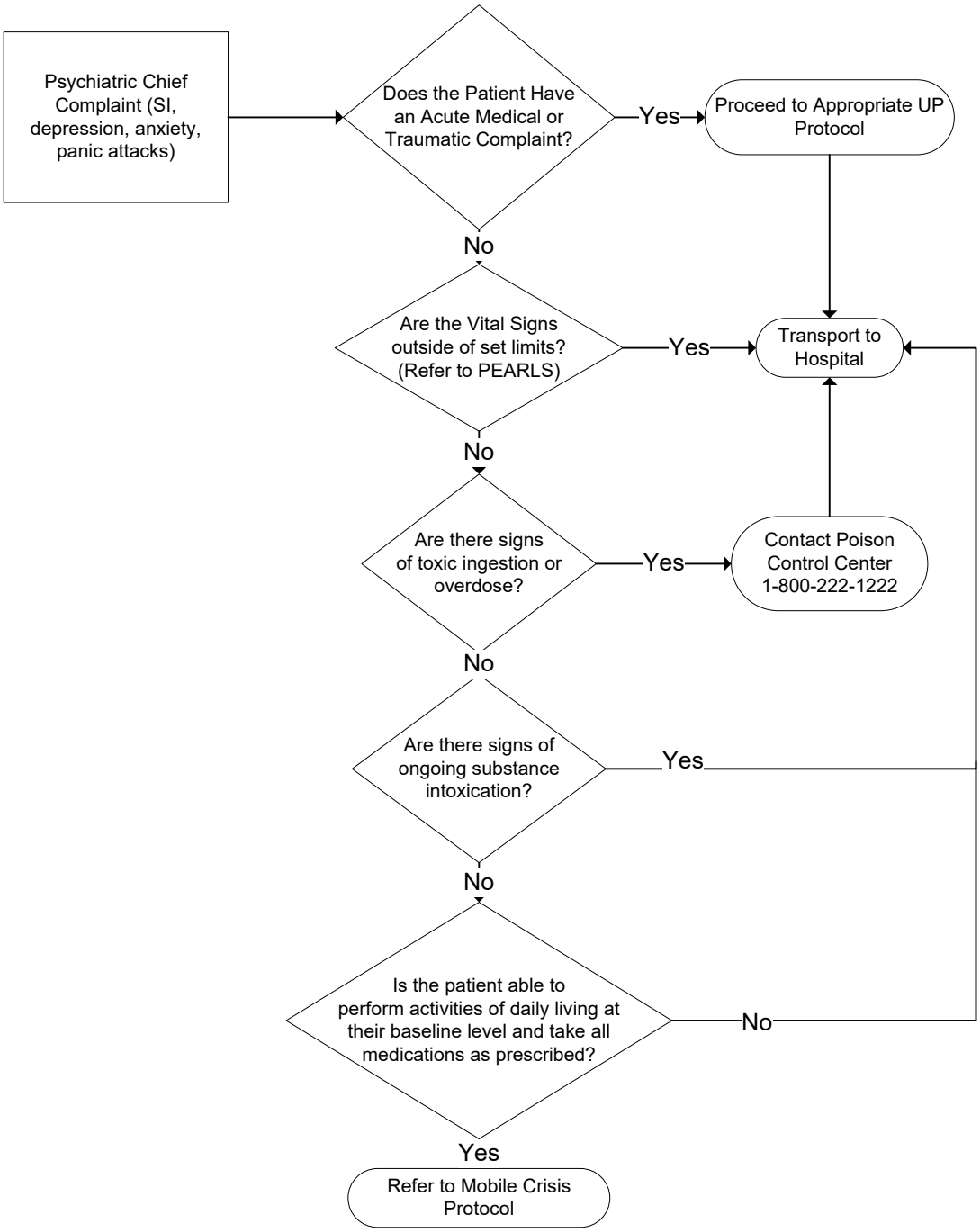
# Mobile Crisis Mental Health Protocol

**History**
- Situational Crisis
- Threats of hurting self
- Known psychiatric disease
- Severe anxiety / panic attacks
- Worsening depression

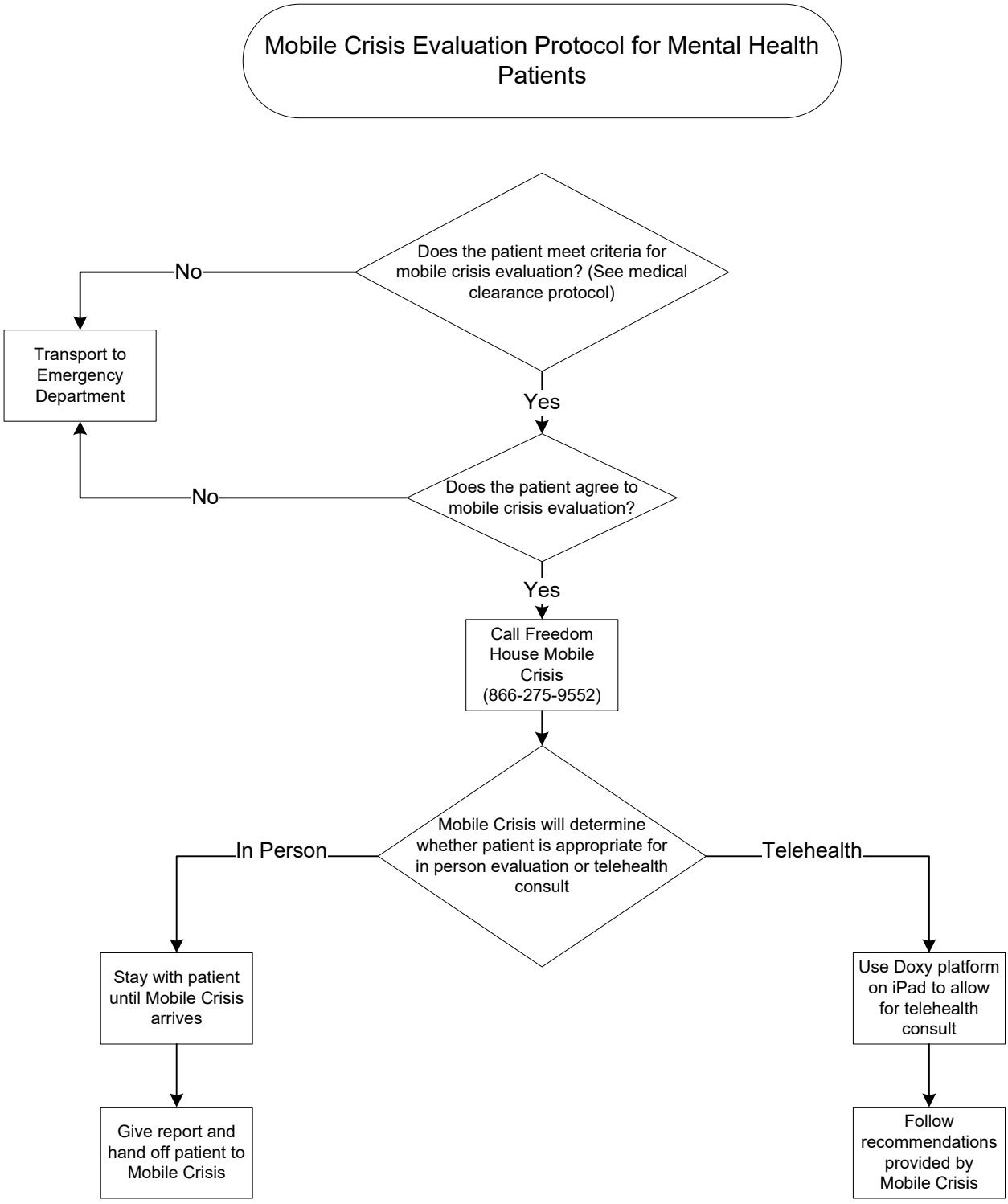
**Signs and Symptoms**
- Suicidal thoughts
- Anxiety or agitation
- Depression

**Differential**
- Altered mental status
- Excited delirium
- Intoxication
- Overdose
- Endocrine abnormality

## Medical Clearance Evaluation




Universal Protocol Section


Mobile Crisis Evaluation Protocol for Mental Health Patients
Does the patient meet criteria for mobile crisis evaluation? (See medical clearance protocol)
No
Transport to Emergency Department
Yes
Does the patient agree to mobile crisis evaluation?
No
Yes
Call Freedom House Mobile Crisis (866-275-9552)
Mobile Crisis will determine whether patient is appropriate for in person evaluation or telehealth consult
In Person
Telehealth
Stay with patient until Mobile Crisis arrives
Give report and hand off patient to Mobile Crisis
Use Doxy platform on iPad to allow for telehealth consult
Follow recommendations provided by Mobile Crisis

## PEARLS

**Appropriate Patient Population**

**Past Medical History:** Patients must have a known history of psychiatric illness, current situational crisis or recent increase in life stressors.

**Presentation:** Appropriate chief complaints include depression, anxiety, suicidal ideation or panic attacks

**Acute medical or traumatic conditions**

**Medical Complaints:** Patients with ongoing medical complaints require transport to the Emergency Department

**Ongoing bleeding/wounds:** Patients with on-going bleeding or wounds requiring further treatment should be transported to the Emergency Department.

**Medication administration:** Patients who require medication administration (i.e. Narcan, Haldol, Benadryl, etc) must be transported to the Emergency Department for evaluation.

**Agressive/Violent patients:** Any patient who is aggressive, violent or expresses homicidal ideation requires transport to the Emergency Department.

**Psychotic Patients:** Any patients displaying evidence of psychosis (ex: reports of auditory or visual hallucinations, responding to external stimuli) must be transported to the Emergency Department

**Minor Patients:** If the patient is a minor and the parent or guardian agrees to mobile crisis evaluation, the parent/guardian must remain with the patient through the evaluation and accompany them to the Emergency Department if an IVC is required.

**Minor Injuries:** Patient with minor injuries must be evaluated prior to contacting mobile crisis. Minor wounds that do not require ongoing medical care are appropriate for mobile crisis evaluation.

**Appropriate Vital Sign Ranges**

**Heart Rate**: Greater than 60 and less than 120

**Respiratory Rate and Pulse Oximetry**: RR<24, SpO2>92%

**Blood Pressure**: Systolic blood pressure > 100 and BP < 200/100.

**Blood Glucose**: >70 mg/dL and <250 mg/dL

**Temperature:** >96.8 F and < 100.4 F

**Age:** 13 years and older

# Alternate Destination: Mental Health Exclusion Criteria

**Entry from Behavioral Emergencies or Inebriated Person Protocols AND patient agrees with transport to alternative destination**

**P** Is the patient <18 or >65 years of age?

NO

**P** Does the Patient have any acute medical or traumatic conditions?

NO

**P** Do they meet **any** vital sign exclusion?
Temperature > 100°F
Heart Rate < 50 or > 120
Respirations > 24/min (with respiratory complaint)
SBP < 100 or BP > 200/100
BG < 60 or > 400

NO

**P** **Mental Status / Neuro:**
Does the patient have any alteration in mental status?
Does the patient have any history of seizure within the past 72 hours?

YES → **Exit to appropriate protocol and transport to Emergency Department**

NO

**P** **Medical / Trauma:**
Does the patient require frequent suctioning?
Does the patient need Oxygen or CPAP?
Does the patient have (or require) a continuous IV infusion, PICC Line, G Tube, or LVAD?
Does the patient require Dialysis?
Does the patient have wounds that need closure?
Is the patient in her third trimester of pregnancy (<28 wks)?

NO

**P** **Behavioral / General:**
Does the patient have a BARS score ≥ 6?
Has the patient shown any evidence of violent behavior, or required sedation for chemical restraint?
Does the patient have evidence of, or recent history of, an intentional overdose?
Is the patient unable to walk safely without assistance?
Is the patient unable to perform ADLs (Activities of Daily Living) without assistance?

NO

**P** **Patient meets all criteria for alternative destination AND consents to Alternative Destination**

YES → **Transport to Behavioral Health Facility**

Universal Protocol Section

# Alternate Destination:
# Mental Health Exclusion Criteria



**Pearls**

- Vital sign exclusions apply once the scene is controlled and the patient is calm. Initially elevated vitals are not hard exclusions if they improve with de-escalation.
- Unstable bulimia or anorexia patients may not be transported to alternative destination
- Patients must agree with decision to transport to alternative destination.
- Be on the lookout for patients that have taken excessive amounts of Tylenol (greater 4 grams/day) as this can be a life threatening overdose with very few, if any, early symptoms.
- If a patient has taken medications outside of normal dose, the Paramedic will contact Poison Control (800-222-1222). When calling, the Paramedic should be prepared with the information outlined in Policy 27 (State Poison Center).
- Transport and/or treatment is a team effort
- Appropriate management of these patients requires an ALS capable ambulance to ensure availability of chemical sedation if the patient's behavior changes during care or enroute.

**Disposition**:

EMS Transport: **ALS or BLS:** All patients going to the alternative destination. **Transport requires an ALS capable unit.**

# Detoxification / Behavioral Health Destination Protocol

**Recovery Response Center (RRC) only accepts Adult patients ≥ 18**

**Call RCC to give patient report while en route: (919) 371-0235**

**For all Behavioral Health or Substance Use Disorder Crises, consider contacting:**

- Patient's current mental health provider or ACTT
- Chapel Hill Mobile Crisis Team or the Orange County Mobile Crisis Team (866) 275-9952

**Enter from Page 1**

Mental health crisis **OR** Request for detoxification

No

Yes

Patient is stable **AND** meets acceptance criteria for Recovery Resource Center (RRC)

No

**Exit to appropriate Medical or Trauma Protocol,** *as indicated*

**See RRC Exclusion Criteria** *on this protocol*

Request for Detox

Behavioral Emergency

No

Involuntary Commitment (LEO on Scene)

No

Patient requests transport to Emergency Department

No

Patient refuses all transport options **and** **is *not* a danger to self or others**

No

Yes

**Transport to RRC or any ED**

Yes

**Transport to UNC, DRH, or RRC**

Yes

Determine EMS or LEO Transport

**Transport to UNC, DRH, or RRC**

Yes

Determine EMS or LEO Transport

**Transport to ED**

Yes

Follow Refusal of treatment/transport Clinical Standard

**Consider referral to Orange County Mobile Crisis Team**

**(866) 275-9552**

**Contact Destination or Medical Control**

**Return to page 1**

Universal Protocol Section

# Recovery Response Center (RRC)
# *Inclusion* Criteria

**Must be between 18 and 65 years of age, ambulatory, able to complete ADL's independently, and fit one of the four categories below.**

**Suicidal / Homicidal Ideation:**
- The patient expressed or expresses a desire to commit suicide or hurt someone else.
- The patient denies a present attempt at suicide or homicide and there is no evidence of such an attempt.

If patient has attempted suicide by any means, must transport to ED.

**Detoxification:**
- The patient requests assistance with detoxification from alcohol, recreational drugs, or prescription medications.
- The patient has not overdosed on any drugs within the last 24 hours.
    - **Exception:** recent opioid overdose and now alert and awake with low risk of recurrent respiratory depression

**New Onset of Mental Health Issues:**
- The patient is experiencing a new onset of depression, anxiety, or other mental health problem for which he or she has no current diagnosis or treatment regimen.
- The patient is <u>not</u> showing signs of psychosis. New onset of psychosis requires a full evaluation by a physician to rule out medical causes. Psychosis can present with, but is not limited to:
    - Audible or visual hallucinations
    - Odd beliefs or magical thinking
    - Excessive paranoia or suspiciousness

**Exacerbation of Ongoing Mental Health Issues:**
- The patient is experiencing depression, anxiety, or another mental health problem for which he or she has a current diagnosis.
- The patient may be showing signs of psychosis. Family or caregiver confirms that <u>this is a usual symptom</u> of this patient's mental illness and <u>not new</u>. See above for examples of psychoses.

# Sickle Cell Crisis

### History
- Past medical history
- Medications
- Recent Illness
- Prior Pain Crisis location
- Pain regimen at home

### Signs and Symptoms
- Pain
- One sided paralysis / weakness
- Difficulty walking / speaking
- Sudden vision changes
- Unexplained Numbness
- Severe headache
- Fever
- SOB
- Chest Pain
- Abdominal Pain
- Pallor

### Differential
- Sickle Cell Pain Crisis
- Aplastic Crisis
- Acute Chest Syndrome
- Alcohol / drug use
- Toxic Ingestion
- Seizure
- Stroke
- Altered baseline mental status
- Sepsis
- Pneumonia

Apply Hot Packs to affected areas: especially joints and areas of increased pain

Provide emotional support Calm and continual reassurance

| | |
|---|---|
| B | Blood Glucose Analysis as needed<br>Assess Pain Severity<br>12 Lead ECG Procedure |
| | IV or IO Access Protocol UP 6 |
| P | Cardiac Monitor |
| | Altered Mental Status<br>Protocol UP 4<br>***if indicated*** |
| | Manage Airway as appropriate<br>Protocol AR 1 & AR 5<br>***if indicated*** |
| | Suspected Stroke<br>Protocol UP 14<br>***if indicated*** |
| | Suspected Seizure<br>Protocol UP 13<br>***if indicated*** |
| | Hypotension/ Shock<br>Protocol AM 5 & PM 3<br>***if indicated*** |

Fluids indicated if signs of shock or hypotensive

**Sickle Cell Crisis**
- Acute Chest Syndrome
- Abdominal Crisis
- Joint Crisis

YES

Pain Control
Protocol UP 11

**Notify Destination or Contact Medical Control**

Universal Protocol Section

# Sickle Cell Crisis

**PEARLS**
Patterns of an acute sickle cell crisis are now recognizable. They are based on the part of the body where the crisis occurs.
Is this their typical pain crisis? If not, what is different about it?
Any fever, SOB, pleuritic chest pain?

***Acute chest syndrome:***
Sudden acute chest pain with coughing up of blood can occur. Low-grade fevers can be present. The person is usually short of breath. If a cough is present, it often is nonproductive. Acute chest syndrome is common in a young person with sickle cell disease. Chronic (long-term) sickle cell lung disease develops over time because the acute and subacute lung crisis leads to scarred lungs as well as other problems.

***Abdominal crisis:***
The pain associated with the abdominal crisis of sickle cell disease is constant and sudden. It becomes unrelenting. The pain may or may not be localized to any one area of the abdomen. Nausea, vomiting, and diarrhea may or may not occur.

***Joint crisis:***
Acute and painful joint crisis may develop without a significant traumatic history. Its focus is either in a single joint or in multiple joints. Often the connecting bony parts of the joint are painful. Range of motion is often restricted because of the pain. Avascular necrosis of the hips can occur, causing permanent damage.

***Stroke:***
Many sickle cell patients can present with strokes at a younger age than average. Ensure hospital pre-notification indicating it is a sickle cell patient as the standard of care for a Sickle Cell Stroke can involve exchange therapy as opposed to other treatments such as tPA.

## Dispositions

**Paramedic:** All patients experiencing acute sickle cell crisis.

# Adult Asystole / Pulseless Electrical Activity

**History**
- SAMPLE
- Estimated downtime
- See Reversible Causes below
- DNR, MOST, or Living Will

**Signs and Symptoms**
- Pulseless
- Apneic
- No electrical activity on ECG
- No heart tones on auscultation

**Differential**
- See Reversible Causes below

Cardiac Arrest Protocol AC 3

**Criteria for Death / No Resuscitation**
**Review DNR / MOST Form**

YES →
Decomposition
Rigor mortis
Dependent lividity
Blunt force trauma
Injury incompatible with life
Extended downtime with asystole

Do not begin resuscitation

Follow Deceased Subjects Policy

NO ↓

***Begin Continuous CPR Compressions***
***Push Hard (≥ 2 inches)***
***Push Fast (110 - 120 / min)***
***Change Compressors every 2 minutes***
***(sooner if fatigued)***
***(Limit changes / pulse checks ≤ 10 seconds)***

**Ventilate 1 breath every 6 seconds**
**30:2 Compression:Ventilation if no Advanced Airway**
***Monitor EtCO2***
***if available***

AED Procedure
***if available***

Search for Reversible Causes

**P**
Consider Chest Decompression Procedure

Cardiac Monitor

IV or IO Access Protocol UP 6

**A**
**Epinephrine (1:10,000) 1 mg IV / IO**
Repeat every 3 to 5 minutes
**After 3 doses**
Then
**Epinephrine Drip**
**Administer 1mg (1:1,000) in 1,000 mL IV / IO**
Wide Open

**Normal Saline Bolus 500 mL IV / IO**
May repeat as needed
**Maximum 2 L (including Epi Drip)**

Adult Rhythm Appropriate Protocol(s)
***as indicated***

On Scene Resuscitation / Termination of Resuscitation Protocol(s) AC 12
***as indicated***

**Notify Destination or Contact Medical Control**

**AT ANY TIME**

**Return of Spontaneous Circulation**

**Go to Post Resuscitation Protocol AC 9**

**Consider**
**No maximum**
**Epinephrine**
**push doses when:**

**Anaphylaxis**

**OR**

**Asthma Exacerbation**

**Are suspected**

**Reversible Causes**
Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypothermia
Hypo / Hyperkalemia

Tension pneumothorax
Tamponade; cardiac
Toxins
Thrombosis; pulmonary (PE)
Thrombosis; coronary (MI)

Adult Cardiac Protocol Section

# Adult Asystole / Pulseless Electrical Activity



**Pearls**

- **Team Focused Approach / Pit-Crew Approach recommended; assigning responders to predetermined tasks. Refer to optional protocol or development of local agency protocol.**
- **Efforts should be directed at high quality and continuous compressions with limited interruptions and early defibrillation when indicated.**
- **DO NOT HYPERVENTILATE: If no advanced airway (BIAD, ETT), compression to ventilation ratio is 30:2. If advanced airway in place, ventilate 10 breaths per minute with continuous, uninterrupted compressions.**
- **Do not interrupt compressions to place endotracheal tube. Consider BIAD first to limit interruptions.**
- **Passive oxygenation optional in agencies practicing Team Focused Approach / Pit-Crew Approach.**
- Reassess and document BIAD and / or endotracheal tube placement and EtCO2 frequently, after every move, and at transfer of care.
- **IV / IO access and drug delivery is secondary to high-quality chest compressions and early defibrillation**.
- **Defibrillation:** Follow manufacture's recommendations concerning defibrillation / cardioversion energy when specified.
- **End Tidal CO2 (EtCO2)**
  If EtCO2 is < 10 mmHg, improve chest compressions.
  If EtCO2 spikes, typically > 40 mmHg, consider Return of Spontaneous Circulation (ROSC)
- **Special Considerations**
  **Maternal Arrest** - Treat mother per appropriate protocol with immediate notification to Medical Control and rapid transport preferably to obstetrical center if available and proximate. Place mother supine and perform Manual Left Uterine Displacement moving uterus to the patient's left side. IV/IO access preferably above diaphragm. Defibrillation is safe at all energy levels.
  **Renal Dialysis / Renal Failure** - Refer to Dialysis / Renal Failure protocol caveats when faced with dialysis / renal failure patient experiencing cardiac arrest. 1 g Calcium Chloride given to all of these patients.
  **Opioid Overdose** - Naloxone cannot be recommended in opioid-associated cardiac arrest. If suspected, attention to airway, oxygenation, and ventilation increase in importance. Naloxone is not associated with improved outcomes in cardiac arrest.
  **Drowning / Suffocation / Asphyxiation / Hanging / Lightening Strike** – Hypoxic associated cardiac arrest and prompt attention to airway and ventilation is priority followed by high-quality and continuous chest compressions and early defibrillation.
- **Transcutaneous Pacing:**
  Pacing is NOT effective in cardiac arrest and pacing in cardiac arrest does NOT increase chance of survival
- Success is based on proper planning and execution. Procedures require space and patient access. Make room to work.
- Discussion with Medical Control can be a valuable tool in developing a differential diagnosis and identifying possible treatment options.

## Dispositions

**Paramedic:** All patients

# Bradycardia; Pulse Present

**History**
- Past medical history
- Medications
  - Beta-Blockers
  - Calcium channel blockers
  - Clonidine
  - Digoxin
- Pacemaker

**Signs and Symptoms**
- HR < 60/min with hypotension, acute altered mental status, chest pain, acute CHF, seizures, syncope, or shock secondary to bradycardia
- Chest pain
- Respiratory distress
- Hypotension or Shock
- Altered mental status
- Syncope

**Differential**
- Acute myocardial infarction
- Hypoxia / Hypothermia
- Pacemaker failure
- Sinus bradycardia
- Head injury (elevated ICP) or Stroke
- Spinal cord lesion
- Sick sinus syndrome
- AV blocks (1°, 2°, or 3°)
- Overdose

**Unstable**
**Heart Rate < 60 / min**
**and SBP <90**

Yes

| | |
|---|---|
| P | Cardiac Monitor |
| P | Transcutaneous Pacing Procedure |
| P | **Consider Sedation Prior to Pacing**<br><br>**Fentanyl 25 mcg IV / IO**<br>May repeat as needed<br>**Maximum 200 mcg**<br><br>**OR**<br><br>**Ketamine 10 mg IV / IO**<br>May repeat once<br>**Maximum 20 mg** |
| P | **Epinephrine 1 - 10 mcg/min IV / IO**<br>Titrate to SBP ≥ 90 mmHg |
| P | **Norepinephrine 1-10 mcg/min IV/IO**<br>Or<br>**Dopamine 2 – 20 mcg/kg/min IV / IO**<br>Titrate to SBP ≥ 90 mmHg<br>Maintain MAP > 65mmHg |

No and Symptomatic

| | |
|---|---|
| | Airway Protocol(s) AR 1, 2, 3<br>***if indicated*** |
| | Respiratory Distress<br>Protocol AR 4<br>***if indicated*** |
| | Chest Pain: Cardiac and STEMI<br>Protocol AC 4<br>***if indicated*** |
| B | Search for Reversible Causes |
| B | 12 Lead ECG Procedure |
| | IV or IO Access Protocol UP 6 |
| P | Cardiac Monitor |
| A | **Normal Saline Fluid Bolus**<br>**500 mL – 2 L NS IV / IO**<br>*(Unless Acute CHF)*<br>**Maximum 2 L** |
| P | **Atropine 1 mg IV / IO**<br>*May repeat every 3 – 5 minutes*<br>**Maximum 3 mg** |

**Suspected Beta-Blocker or Calcium Channel Blocker**

**Follow Overdose/ Toxic Ingestion Protocol TE 7**

**Reversible Causes**

Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypothermia
Hypo / Hyperkalemia

Tension pneumothorax
Tamponade; cardiac
Toxins
Thrombosis; pulmonary (PE)
Thrombosis; coronary (MI)

**Notify Destination or Contact Medical Control**

Adult Cardiac Protocol Section

# Bradycardia; Pulse Present



## Pearls

- **Recommended Exam: Mental Status, HEENT, Skin, Heart, Lungs, Abdomen, Back, Extremities, Neuro**
- **Identifying signs and symptoms of poor perfusion caused by bradycardia are paramount.**
- **Rhythm should be interpreted in the context of symptoms and pharmacological treatment given only when symptomatic, otherwise monitor and reassess.**
- **Consider hyperkalemia with wide complex, bizarre appearance of QRS complex, and bradycardia. Give Calcium Chloride or Gluconate in addition to Sodium Bicarbonate if hyperkalemia suspected.**
- **12-Lead ECG:**
  - **12 Lead ECG not necessary to diagnose and treat**
  - **Obtain when patient is stable and/or following rhythm conversion.**
- **Unstable condition**
  - **Condition which acutely impairs vital organ function and cardiac arrest may be imminent.**
  - **If at any point patient becomes unstable move to unstable arm in algorithm.**
- **Hypoxemia is a common cause of bradycardia. Ensure oxygenation and support respiratory effort.**
- **Atropine:**
  - **DO NOT DELAY PACING TRANSCUTANEOUS PACING to administer atropine in bradycardia with poor perfusion.**
  - **Ineffective and potentially harmful in cardiac transplantation. May cause paradoxical bradycardia.**
- **Symptomatic bradycardia causing shock or peri-arrest condition:**
  - **If no IV or IO access immediately available start Transcutaneous Pacing, establish IV / IO access, and then administer atropine and/or epinephrine.**
  - **Epinephrine or Dopamine may be considered if no response to Atropine.**
- **Symptomatic condition**
  - **Arrhythmia is causing symptoms such as palpitations, lightheadedness, or dyspnea, but cardiac arrest is not imminent.**
  - **Symptomatic bradycardia usually occurs at rates < 50 beats per minute.**
  - **Search for underlying causes such as hypoxia or impending respiratory failure.**
- **Serious Signs / Symptoms:**
  - **Hypotension. Acutely altered mental status. Signs of shock / poor perfusion. Chest pain with evidence of ischemia (STEMI, T wave inversions or depressions.) Acute CHF.**
- **Transcutaneous Pacing Procedure (TCP)**
  - **Indicated with unstable bradycardia unresponsive to medical therapy.**
  - **If time allows transport to specialty center because transcutaneous pacing is a temporizing measure.**
  - **Transvenous / permanent pacemaker will probably be needed.**
  - **Immediate TCP with high-degree AV block (2d or 3d degree) with no IV / IO access.**
- Consider treatable causes for bradycardia (Beta Blocker OD, Calcium Channel Blocker OD, etc.)

## Dispositions

**Paramedic:** Any patient with symptomatic bradycardia, or heart rate < 45

# Cardiac Arrest; Adult

**Criteria for Death / No Resuscitation**
**Review DNR / MOST Form**

YES

- Decomposition
- Rigor mortis
- Dependent lividity
- Blunt force trauma
- Injury incompatible with life
- Extended downtime with asystole

Do not begin resuscitation

Follow Deceased Subjects Policy

NO

***Begin Continuous CPR Compressions***
***Push Hard (≥ 2 inches)***
***Push Fast (110 - 120 / min)***
***Change Compressors every 2 minutes***
***(sooner if fatigued)***
***(Limit changes / pulse checks ≤ 10 seconds)***

**Ventilate 1 breath every 6 seconds**
**30:2 Compression:Ventilation if no Advanced Airway**
***Monitor EtCO2***
***if available***

**AT ANY TIME**

**Return of Spontaneous Circulation**

**Go to Post Resuscitation Protocol AC 9**

**ALS Available**

NO

- AED Procedure ***if available***
- Shockable Rhythm
  - NO
  - YES
    - AED Procedure
- Continue CPR 2 Minutes
- Repeat and reassess
- Airway Protocol(s) AR 1, 2, 3

YES

- P Cardiac Monitor
- Shockable Rhythm
  - NO
    - Asystole / PEA Protocol AC 1 ***as indicated***
    - Airway Protocol(s) AR 1, 2, 3
  - YES
    - VF / VT Protocol AC 8
    - Tachycardia Protocol AC 6, 7 ***as indicated***
    - Airway Protocol(s) AR 1, 2, 3

**Termination on Scene**
**Protocol AC 12**
***as indicated***

**Notify Destination or Contact Medical Control**

Adult Cardiac Protocol Section

# Cardiac Arrest; Adult

**Pearls**

- **Team Focused Approach / Pit-Crew Approach recommended; assign responders to predetermined tasks. Refer to optional protocol or development of local agency protocol.**
- **Efforts should be directed at high quality and continuous compressions with limited interruptions and early defibrillation when indicated.**
- **DO NOT HYPERVENTILATE: If no advanced airway (BIAD, ETT) compression to ventilation ratio is 30:2. If advanced airway in place, ventilate 10 breaths per minute with continuous, uninterrupted compressions.**
- **Do not interrupt compressions to place endotracheal tube. Consider BIAD first to limit interruptions.**
- **Passive oxygenation optional in agencies practicing Team Focused Approach / Pit-Crew Approach.**
- Reassess and document BIAD and / or endotracheal tube placement and EtCO2 frequently, after every move, and at transfer of care.
- **IV / IO access and drug delivery is secondary to high-quality chest compressions and early defibrillation**.
- **Defibrillation:**
  Follow manufacture's recommendations concerning defibrillation / cardioversion energy when specified.
  Charge defibrillator during chest compressions, near the end of 2-minute cycle, to decrease peri-shock pause.
  Following defibrillation, provider should immediately restart chest compressions with no pulse check until end of next cycle.
- **End Tidal CO2 (EtCO2)**
  If EtCO2 is < 10 mmHg, improve chest compressions.
  If EtCO2 spikes, typically > 40 mmHg, consider Return of Spontaneous Circulation (ROSC)
- **Special Considerations**
  **Maternal Arrest** - Treat mother per appropriate protocol with immediate notification to Medical Control and rapid transport preferably to obstetrical center if available and proximate. Place mother supine and perform Manual Left Uterine Displacement moving uterus to the patient's left side. IV/IO access preferably above diaphragm. Defibrillation is safe at all energy levels.
  **Renal Dialysis / Renal Failure** - Refer to Dialysis / Renal Failure protocol caveats when faced with dialysis / renal failure patient experiencing cardiac arrest.
  **Opioid Overdose** - Naloxone cannot be recommended in opioid-associated cardiac arrest. If suspected, attention to airway, oxygenation, and ventilation increase in importance. Naloxone is not associated with improved outcomes in cardiac arrest.
  **Drowning / Suffocation / Asphyxiation / Hanging / Lightning Strike** – Hypoxic associated cardiac arrest and prompt attention to airway and ventilation is priority followed by high-quality and continuous chest compressions and early defibrillation.
- **Transcutaneous Pacing:**
  Pacing is NOT effective in cardiac arrest and pacing in cardiac arrest does NOT increase chance of survival
- Success is based on proper planning and execution. Procedures require space and patient access. Make room to work.
- Discussion with Medical Control can be a valuable tool in developing a differential diagnosis and identifying possible treatment options.

## Dispositions

**Paramedic:** All patients

# Cardiac Arrest; Adult

**Today's Date:** **Patient Name:** **Patient DOB:**

**PRE-ROSC Adult Cardiac Arrest Checklist**

- ☐ Code Commander is identified
- ☐ Scene Manager ensures adequate space for resuscitation
- ☐ Continuous compressions are ongoing at 110-120 beats per minute, using a metronome when possible
- ☐ Change compressors every 2 minutes; limit changes/pulse checks to less than 10 seconds
  - o Consider Lucas Device application after 3 initial cycles of manual CPR
- ☐ Monitor is visible and the code commander is viewing the rhythm with all appropriate leads attached
- ☐ Defibrillations occurring at 2 minute intervals for shockable rhythms
  - o Pre-charge for shockable rhythms
- ☐ Airway managed with either a King airway, OPA with BVM, or an ETT
  - o Viral filter attached, as appropriate
  - o PEEP device attached, and set to 10 mmH20
- ☐ 02 cylinder with adequate PSI is attached to BVM
- ☐ ETCO2 waveform is present when an advanced airway is present, and the value is being monitored
- ☐ Vascular access has been obtained (IV/IO)
- ☐ Epinephrine (1:10,000) 1mg IV/IO is given every 3-5 minutes
- ☐ Underlying causes have been considered and treated early in arrest
  - o H's: Hydrogen ions (acidosis), hyperkalemia/hypokalemia, hypoxia, hypovolemia, hypothermia
  - o T's: Toxins, Tamponade, tension pneumothorax, thrombosis, thromboembolism
- ☐ Gastric distension is not a factor; if a factor correct as appropriate while monitoring ETCO2
- ☐ Family is receiving care and is at the patient's side, if appropriate

# Chest Pain: Cardiac and STEMI

## History
- Age
- Medications (Viagra / sildenafil, Levitra / vardenafil, Cialis / tadalafil)
- Past medical history (MI, Angina, Diabetes, post menopausal)
- Allergies
- Recent physical exertion
- **P**alliation / **P**rovocation
- **Q**uality (crampy, constant, sharp, dull, etc.)
- **R**egion / **R**adiation / **R**eferred
- **S**everity (1-10)
- **T**ime (onset /duration / repetition)

## Signs and Symptoms
- CP (pain, pressure, aching, vice-like tightness)
- Location (substernal, epigastric, arm, jaw, neck, shoulder)
- Radiation of pain
- Pale, diaphoresis
- Shortness of breath
- Nausea, vomiting, dizziness
- **Time of Onset**
- Women:
  - More likely to have dyspnea,
  - N/V, weakness or fatigue, back or jaw pain

## Differential
- Trauma vs. Medical
- Angina vs. Myocardial infarction
- Pericarditis
- Pulmonary embolism
- Asthma / COPD
- Pneumothorax
- Aortic dissection or aneurysm
- GE reflux or Hiatal hernia
- Esophageal spasm
- Chest wall injury or pain
- Pleural pain
- Overdose: Cocaine or Methamphetamine

**B** — **12 Lead ECG Procedure**

**Aspirin 81 mg x 4 PO (chewed)**
Or **325 mg PO**

**Nitroglycerin 0.3 / 0.4 mg Sublingual**
Repeat every 5 minutes x 3
***if prescribed to patient and (BP ≥ 100)***

**P** — Cardiac Monitor

**Acute Coronary Occlusion?**

Yes → **ACO (ST Elevation in aVR with diffuse ST depression, de Winter T-Waves, or Wellens Syndrome)** → **Transmit 12-Lead for ED Physician Consultation**

Yes → **STEMI or Posterior MI (See Information Box Below)**

**Transport based on:**
**STEMI**
**EMS Triage and Destination Plan**
**Immediate Notification of Facility**
**Immediate Transmission of ECG**
*if capable*
**Keep Scene Time to ≤ 10 Minutes**

**B** — *If transporting to Non PCI Center* **Reperfusion Checklist**

No

IV or IO Access Protocol UP 6

**A** — **Nitroglycerin 0.3 / 0.4 mg SL**
Repeat every 5 minutes as needed

**P** — **Morphine 2 – 4 mg IV / IO**
Repeat every 5 minutes as needed
**Maximum 10 mg**
**Or**
**Fentanyl 50 mcg (0.25-1 mcg/kg)**
**IM/IV/IO/IN**
25-50 mcg may be repeated in 5 mins
**Maximum 200 mcg**

Hypotension / Shock Protocol AM 5
***if indicated***

CHF / Pulmonary Edema Protocol AC 5
***if indicated***

**Notify Destination or Contact Medical Control**

**Acute MI / STEMI**

**STEMI Definition:**

- **≥ 1 mm ST Segment elevation in ≥ 2 contiguous leads**
  **OR**
- **≥ 2 mm ST/J point elevation in V2-V3 for men**
  **OR**
- **≥ 1.5 mm ST/J point elevation in V2-V3 for women**
  **OR**
- **ECG software diagnoses Acute MI with Typical or Atypical symptoms (as noted above)**

Adult Cardiac Protocol Section

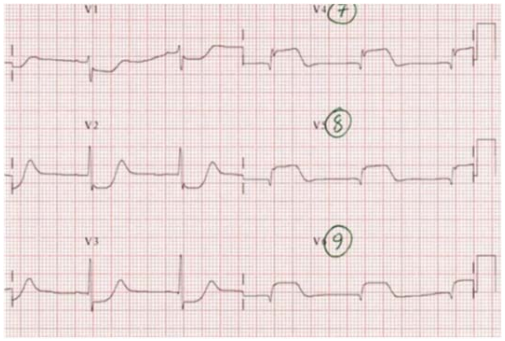
# Chest Pain: Cardiac and STEMI

## STEMI

| | | | |
|---|---|---|---|
| I Lateral | aVR | V1 Septal | V4 Anterior |
| II Inferior | aVL Lateral | V2 Septal | V5 Lateral |
| III Inferior | aVF Inferior | V3 Anterior | V6 Lateral |

| SITE | FACING | RECIPROCAL |
|---|---|---|
| SEPTAL | V1, V2 | NONE |
| ANTERIOR | V3, V4 | NONE |
| ANTEROSEPTAL | V1, V2, V3, V4 | NONE |
| LATERAL | I, aVL, V5, V6 | II, III, aVF |
| ANTEROLATERAL | I, aVL, V3, V4, V5, V6 | II, III, aVF |
| INFERIOR | II, III, aVF | I, aVL |
| POSTERIOR | NONE | V1, V2, V3, V4 |

## Posterior MI



## de Winter T-waves




### De Winter T-waves

- Tall, prominent, symmetrical T waves in the precordial leads
- Upsloping ST segment depression > 1mm at the J-point in the precordial leads
- Absence of ST elevation in the precordial leads
- Reciprocal ST segment elevation (0.5mm – 1mm) in aVR

## Wellens' Syndrome




### Wellen's Syndrome

- Deeply inverted or biphasic T waves in V2-3 (may extend to V1-6)
- ECG pattern present in pain-free state
- Isoelectric or minimally-elevated ST segment (< 1mm)
- No precordial Q waves
- Preserved precordial R wave progression
- Recent history of angina

**Pearls**

- **Recommended Exam: Mental Status, Skin, Neck, Lung, Heart, Abdomen, Back, Extremities, Neuro**
- **Items in Red Text are the key performance indicators for the EMS Acute Cardiac (STEMI) Care Toolkit**
- **Avoid Nitroglycerin in any patient who has used Viagra (sildenafil) or Levitra (vardenafil) in the past 24 hours or Cialis (tadalafil) in the past 36 hours due to potential severe hypotension.**
- **Acute Coronary Occlusion (including STEMI)**
  **Positive Reperfusion Checklist should be transported to the appropriate facility based on STEMI EMS Triage and Destination Plan.**
  **Consider placing 2 IV sites in the left arm: Many PTCI centers use the right radial vein for intervention.**
  **Consider placing defibrillator pads on patient as a precaution.**
  **Consider Normal Saline or Lactated Ringers bolus of 250 – 500 mL as pre-cath hydration.**
- **If CHF / Cardiogenic shock resulting from inferior MI (II, III, aVF), consider Right Sided ECG (V3 or V4). If ST elevation noted Nitroglycerin and / or opioids may cause hypotension requiring normal saline boluses.**
- Titrate oxygen administration for an Sp02 between 94 – 99%
- If patient has taken nitroglycerin without relief, consider potency of the medication.
- Monitor for hypotension after administration of nitroglycerin and narcotics (Morphine, Fentanyl, or Dilaudid).
- Diabetic, geriatric and female patients often have atypical pain, or only generalized complaints.
- **An ECG software diagnoses of Acute MI is identified by *** MEETS ST ELEVATION MI CRITERIA *****
- Document the time of the 12-Lead ECG in the PCR as a Procedure along with the interpretation (Paramedic).
- **EMT may administer Nitroglycerin to patients already prescribed medication. May be given from EMS supply.**

## Dispositions

**Paramedic:** All patients

# CHF / Pulmonary Edema

## History
- Congestive heart failure
- Past medical history
- Medications (digoxin, Lasix, Viagra / sildenafil, Levitra / vardenafil, Cialis / tadalafil)
- Cardiac history --past myocardial infarction

## Signs and Symptoms
- Respiratory distress, bilateral rales
- Apprehension, orthopnea
- Jugular vein distention
- Pink, frothy sputum
- Peripheral edema, diaphoresis
- Hypotension, shock
- Chest pain

## Differential
- Myocardial infarction
- Congestive heart failure
- Asthma
- Anaphylaxis
- Aspiration
- COPD
- Pleural effusion
- Pneumonia
- Pulmonary embolus
- Pericardial tamponade
- Toxic Exposure

Airway
Protocol(s) AR 1, 2, 3
***as indicated***

Chest Pain and STEMI
Protocol AC 4
***if indicated***

B — 12 Lead ECG Procedure

B — **Nitroglycerin 0.3 / 0.4 mg Sublingual**
Repeat every 5 minutes x 3
***if prescribed to patient and (BP >100)***

P — Cardiac Monitor

IV or IO Access Protocol UP 6

P — *Consider* **Ketamine 10 mg IV / IO**
For patients **NOT** tolerating NIPPV
**Requires Medical Direction Contact**

Assess Symptom Severity

**MILD**
Normal Heart Rate
Elevated or Normal BP

A — **Nitroglycerin 0.3 / 0.4 mg SL**
Repeat every 5 minutes
**Nitroglycerin Paste**
**SBP > 100 1 inch**
**SBP > 150 1.5 inches**
**SBP > 200 2 inches**

Improving — NO → B — **Airway CPAP Procedure**

YES

**MODERATE / SEVERE**
Elevated Heart Rate
Elevated BP

B — **Airway CPAP Procedure**

A — **Nitroglycerin 0.3 / 0.4 mg SL**
Repeat every 5 minutes
**Nitroglycerin Paste**
**SBP > 100 1 inch**
**SBP > 150 1.5 inches**
**SBP > 200 2 inches**

**CARDIOGENIC SHOCK**
Tachycardia followed by bradycardia
Hypertension followed by hypotension

B — Remove CPAP
***if in place***

Adult Hypotension / Shock
Protocol AM 5
***if indicated***

**Notify Destination or Contact Medical Control**

Adult Cardiac Protocol Section

# CHF / Pulmonary Edema



**Pearls**

- **Recommended Exam: Mental Status, Skin, Neck, Lung, Heart, Abdomen, Back, Extremities, Neuro**
- **Items in Red Text are key performance measures used to evaluate protocol compliance and care**
- **Furosemide and Opioids have NOT been shown to improve the outcomes of EMS patients with pulmonary edema. Even though this historically has been a mainstay of EMS treatment, it is no longer routinely recommended.**
- **Avoid Nitroglycerin in any patient who has used Viagra (sildenafil) or Levitra (vardenafil) in the past 24 hours or Cialis (tadalafil) in the past 36 hours due to potential severe hypotension.**
- **Carefully monitor the level of consciousness, BP, and respiratory status with the above interventions.**
- **If CHF / Cardiogenic shock resulting from inferior MI (II, III, aVF), consider Right Sided ECG (V3 or V4). If ST elevation noted Nitroglycerin and / or opioids may cause hypotension requiring normal saline boluses.**
- If patient has taken nitroglycerin without relief, consider potency of the medication.
- Contraindications to opioids include severe COPD and respiratory distress. Monitor the patient closely.
- Consider myocardial infarction in all these patients. Diabetics, geriatric and female patients often have atypical pain, or only generalized complaints.
- Allow the patient to be in their position of comfort to maximize their breathing effort.
- Document CPAP application using the CPAP procedure in the PCR. Document 12 Lead ECG using the 12 Lead ECG procedure.
- **EMT may administer Nitroglycerin to patients already prescribed medication. May give from EMS supply**.

## Dispositions

**Paramedic:** All patients

# Adult Tachycardia
## NARROW (≤ 0.11 sec)

### History
- Age
- Past medical history (MI, Angina, Diabetes, post menopausal)
- Recent physical exertion
- Palpitations, irregular heart beat
- **T**ime (onset /duration / repetition)

### Signs and Symptoms
- Chest pain, heart failure, dyspnea
- AMS
- Shock, poor perfusion, hypotension
- Pale, diaphoresis
- Shortness of breath
- Nausea, vomiting, dizziness

### Differential
- Trauma vs. Medical
- Sinus Tachycardia vs dysrhythmia
- Fever, sepsis, infection
- Pericarditis, pulmonary embolism
- Aortic dissection or aneurysm
- Overdose: Stimulants

**Assess tachycardia in context of clinical condition**
**Identify and treat underlying cause of tachycardia**

**Unstable**
**Typically HR ≥ 150 and SBP < 90**

YES →

| P | Cardioversion Procedure |
|---|---|
| | **Initial Syncronized Joules**<br>**Narrow and Regular: 100J**<br>**Narrow and Irregular: 200J**<br>*May repeat and increase dose with subsequent cardioversion attempts* |
| | **Consider Sedation Prior to Cardioversion**<br><br>**Fentanyl 25 mcg IV / IO**<br>May repeat as needed<br>**Maximum 200 mcg** |

NO ↓

| B | 12 Lead ECG Procedure |
|---|---|
| P | Cardiac Monitor |
| | IV or IO Access Protocol UP 6 |

**Regular Rhythm?**

YES →

| P | Attempt Vagal Maneuvers Procedure |
|---|---|
| | **Adenosine 12 mg IV / IO**<br>Rapid push with flush<br><br>May repeat **12 mg IV / IO** |

NO ↓

| P | |
|---|---|
| | **Normal Saline Bolus 500 mL IV / IO**<br>May repeat 500mL bolus to max 1 L, unless concern for fluid overload |
| | **Diltiazem 10 mg IV / IO**<br>May repeat 5mg dose every 3 minutes<br>**Maximum dose of 20 mg** |
| | Assess BP and Cardiac Rhythm after each dose |

**Notify Destination or Contact Medical Control**

Adult Cardiac Protocol Section

# Adult Tachycardia
## NARROW (≤ 0.11 sec)



**Pearls**

- **Recommended Exam: Mental Status, Skin, Neck, Lung, Heart, Abdomen, Back, Extremities, Neuro**
- **Most important goal is to differentiate the type of tachycardia and if STABLE or UNSTABLE and SYMPTOMATIC.**
- **12-Lead ECG:**
  - **12 Lead ECG not necessary to diagnose and treat**
  - **Obtain when patient is stable and/or following rhythm conversion.**
- **Unstable condition**
  - **Condition which acutely impairs vital organ function and cardiac arrest may be imminent.**
  - **If at any point patient becomes unstable move to unstable arm in algorithm.**
- **Search for underlying cause of tachycardia such as fever, sepsis, dyspnea, etc.**
- **Typical sinus tachycardia is in the range of 100 to (200 - patient's age) beats per minute.**
- **Symptomatic condition**
  - **Arrhythmia is causing symptoms such as palpitations, lightheadedness, or dyspnea, but cardiac arrest is not imminent.**
  - **Symptomatic tachycardia usually occurs at rates ≥ 150 beats per minute.**
    - **Patients symptomatic with heart rates < 150 likely have impaired cardiac function such as CHF.**
- **Serious Signs / Symptoms:**
  - **Hypotension. Acutely altered mental status. Signs of shock / poor perfusion. Chest pain with evidence of ischemia (STEMI, T wave inversions or depressions.) Acute CHF.**
- **If patient has history or 12 Lead ECG reveals Wolfe Parkinson White (WPW):**
  - **DO NOT administer a Calcium Channel Blocker (e.g. Diltiazem) or Beta Blockers.**
  - **Use caution with Adenosine and give only with defibrillator available.**
- **Regular Narrow-Complex Tachycardia:**
  - Vagal maneuvers and adenosine are preferred. Vagal maneuvers may convert 19% to 54 % of SVT.
  - Using passive leg raise with Valsalva is more effective.
  - Adenosine should be pushed rapidly via proximal IV site followed by 20 mL Normal Saline rapid flush.
  - Adenosine should not be used in the post-cardiac transplant patient without **Contact of Medical Control.**
  - Agencies using both calcium channel blockers and beta blockers should choose one primarily. Giving the agents sequentially requires **Contact of Medical Control**. This may lead to profound bradycardia / hypotension.
- **Irregular Narrow-Complex Tachycardia:**
  - Rate control is more important in pre-hospital setting rather than focus on rhythm conversion.
- **Synchronized Cardioversion:**
  - Recommended to treat UNSTABLE Atrial Fibrillation, Atrial Flutter and SVT.
- Monitor for hypotension after administration of Calcium Channel Blockers or Beta Blockers.
- Document all rhythm changes with monitor strips and obtain monitor strips with each therapeutic intervention.

## Dispositions

**Paramedic:** All patients

# Adult Monomorphic Tachycardia
## Wide Complex (≥0.12 sec)

### History
- Age
- Past medical history (MI, Angina, Diabetes, post menopausal)
- Recent physical exertion
- Palpitations, irregular heart beat
- **T**ime (onset /duration / repetition)

### Signs and Symptoms
- Chest pain, heart failure, dyspnea
- AMS
- Shock, poor perfusion, hypotension
- Pale, diaphoresis
- Shortness of breath
- Nausea, vomiting, dizziness

### Differential
- Trauma vs. Medical
- Sinus Tachycardia vs. dysrrhythmia
- Fever, sepsis, infection
- Pericarditis, pulmonary embolism
- Aortic dissection or aneurysm
- Overdose: Stimulants

**Assess tachycardia in context of clinical condition**
**Identify and treat underlying cause of tachycardia**

**Unstable**
**HR Typically ≥ 150 and SBP < 90**

YES

| | |
|---|---|
| P | Cardiac Monitor |
| | Cardioversion Procedure |
| | **Consider Sedation Prior to Cardioversion**<br><br>**Fentanyl 25 mcg IV / IO**<br>May repeat as needed<br>**Maximum 200 mcg** |
| | **<u>Wide: Regular and Irregular: 200 – 360J</u>**<br>**Monomorphic QRS (Synchronized)**<br><br>*May repeat and increase dose with subsequent cardioversion attempts* |

NO

| | |
|---|---|
| B | 12 Lead ECG Procedure |
| P | Cardiac Monitor |
| | IV or IO Access Protocol UP 6 |
| P | **Consider consultation with medical control** |

**Regular Rhythm?**

YES

| | |
|---|---|
| P | **Consider:** SVT with aberrancy<br><br>Attempt Vagal Maneuvers Procedure<br><br>**Adenosine 12 mg IV / IO**<br>Rapid push with flush<br>May repeat **12 mg IV / IO** |
| | **Consider:** Hyperkalemia<br>Peaked T-waves and / or QRS ≥ 0.12 sec<br>**Dialysis / Renal Failure AM 3** |
| P | **Consider:** Stable V-Tach<br><br>**Amiodarone 150 mg**<br>**in 100 mL of D5W IV / IO**<br>**Infuse over 10 minutes**<br><br>May repeat if wide complex tachycardia recurs<br><br>**Amiodarone 450 mg**<br>**in 250 mL of D5W**<br>**1 mg/min (33 mL/hr) IV / IO**<br>Or<br>**Procainamide 20 – 50 mg / min IV / IO**<br>**Procainamide 1 – 4 mg / min**<br>**Maximum 17 mg / kg** |

NO

| | |
|---|---|
| P | **Consider:** WPW if 12 lead or Patient history indicates<br><br>**<u>Wide: Regular and Irregular: 200 – 360J</u>**<br>**Monomorphic QRS (Synchronized)**<br><br>*May repeat and increase dose with subsequent cardioversion attempts* |
| | **Consider:** A-Fib with RVR with aberrancy<br><br>**Normal Saline Bolus 500 mL IV / IO**<br><br>**Diltiazem 10 mg IV / IO**<br>May repeat 5 mg dose every 3 minutes<br>*Max 20 mg* |

| | |
|---|---|
| | Monitor and Reassess |
| | **Notify Destination or Contact Medical Control** |

**<u>Monomorphic QRS:</u>**
- **All QRS complexes in a single lead are similar in shape.**

Adult Cardiac Protocol Section

# Adult Monomorphic Tachycardia
## Wide Complex (≥0.12 sec)

### Pearls

- **Recommended Exam: Mental Status, Skin, Neck, Lung, Heart, Abdomen, Extremities, Neuro**
- **Most important goal is to differentiate the type of tachycardia and if STABLE or UNSTABLE and if SYMPTOMATIC.**
- **12-Lead ECG:**
  **12-Lead ECG is not necessary to diagnose and treat arrhythmia. A single lead ECG is often all that is needed. Obtain12-Lead when patient is stable and/ or following a rhythm conversion.**
- **Monomorphic QRS:**
  **All QRS complexes in a single lead are similar in shape.**
- **Polymorphic QRS:**
  **QRS complexes in a single lead will change shape from complex to complex.**
- **Rhythm should be interpreted in the context of symptoms and pharmacological or electrical treatment given only when symptomatic, otherwise monitor and reassess.**
- **Unstable condition**
  **Condition which acutely impairs vital organ function and cardiac arrest may be impending.**
  **If at any point patient becomes unstable move to unstable arm in algorithm.**
- **Symptomatic condition**
  **Arrhythmia is causing symptoms such as palpitations, lightheadedness, or dyspnea but cardiac arrest is not impending.**
  **Symptomatic tachycardia usually occurs at rates ≥ 150 beats per minute. Patients symptomatic with heart rates < 150 likely have impaired cardiac function such as CHF.**
- **Serious Signs/ Symptoms:**
  **Hypotension. Acutely altered mental status. Signs of shock/ poor perfusion. Chest pain with evidence of ischemia (STEMI, T wave inversions or depressions.) Acute congestive heart failure.**
- **Search for underlying cause of tachycardia such as fever, sepsis, dyspnea, etc.**
- **Typical sinus tachycardia is in the range of 100 to (220 – patients age) beats per minute.**
- **If patient has history or 12-Lead ECG reveals Wolfe Parkinson White (WPW), DO NOT administer a Calcium Channel Blocker (e.g., Diltiazem) or Beta Blockers. Use caution with Adenosine and give only with defibrillator available.**
- **Regular Wide-Complex Tachycardia:**
  **Pulseless condition:**
  Immediate defibrillation if pulseless and begin CPR.
  **Unstable condition:**
  SBP <90, EtCO2 <26mmHg, or significant AMS
  **Stable condition:**
  Typically VT or SVT with aberrancy. Adenosine may be given if regular and monomorphic and if defibrillator available.
  Verapamil contraindicated in wide-complex tachycardias.
  Agencies using Amiodarone, Procainamide, and Lidocaine need to choose one agent primarily. Giving multiple anti-arrhythmics requires contact of Medical Control.
  Atrial arrhythmias with WPW should be treated with Amiodarone or Procainamide
- **Irregular Tachycardia:**
  Wide-complex, irregular tachycardia: Do not administer calcium channel, beta blockers, or adenosine as this may cause paradoxical increase in ventricular rate. This will usually require cardioversion. Contact Medical Control.
- Document all rhythm changes with monitor strips and obtain monitor strips with each therapeutic intervention.

### Dispositions

**Paramedic:** All patients

# Adult Polymorphic Tachycardia
## WIDE (≥ 0.12 sec) Torsades de pointes

### History
- Age
- Past medical history (MI, Angina, Diabetes, post menopausal)
- Recent physical exertion
- Palpitations, irregular heart beat
- Time (onset /duration / repetition)

### Signs and Symptoms
- Chest pain, heart failure, dyspnea
- AMS
- Shock, poor perfusion, hypotension
- Pale, diaphoresis
- Shortness of breath
- Nausea, vomiting, dizziness

### Differential
- Cardiac arrest
- Sinus Tachycardia vs dysrhythmia
- Fever, sepsis, infection
- Pericarditis, pulmonary embolism
- Aortic dissection or aneurysm
- Overdose

**Assess tachycardia in context of clinical condition**
**Identify and treat underlying cause of tachycardia**

**Unstable**
**HR Typically ≥ 150 and SBP < 90**

YES → P
Defibrillation Procedure
**Wide and Irregular: 200 – 360J**
**Polymorphic QRS (Not-Synchronized)**
*May repeat and increase dose with subsequent cardioversion attempts*
**Consider Sedation Prior to Defibrillation**
**Fentanyl 25 mcg IV / IO**
May repeat as needed
**Maximum 200 mcg**

NO

B 12 Lead ECG Procedure
P Cardiac Monitor
IV or IO Access Protocol UP 6

**Pulse Present?**

YES → P **Consider consultation with medical control**

NO → Exit to Cardiac Arrest Protocol AC 3

**QT Interval < 500 msec**
*Consider Infarct*

P
**Amiodarone 150 mg in 100 mL of D5W IV / IO**
Infuse over 10 minutes

Proceed to Amiodarone drip if tachycardia recurs or persists

**Amiodarone 450 mg in 250 mL of D5W**
**1 mg/min (33 mL/hr)**

Or
**Lidocaine**
**1 – 1.5 mg/kg IV / IO**

May repeat if refractory
**Lidocaine**
**0.75 mg/kg IV / IO**

**Maximum 3 mg/kg**

Monitor and Reassess

**QT Interval > 500 msec**
*See Pearls*

P
*Consider*
**Magnesium 2 g IV / IO**
May repeat
**Maximum 4 g**

Monitor and Reassess

**Notify Destination or Contact Medical Control**

**Polymorphic QRS:**
- **QRS complexes in a single lead will change shape from complex to complex.**

Adult Cardiac Protocol Section

# Adult Polymorphic Tachycardia
## WIDE (≥ 0.12 sec) Torsades de pointes



**Pearls**

- **Recommended Exam: Mental Status, Skin, Neck, Lung, Heart, Abdomen, Back, Extremities, Neuro**
- **Most important goal is to differentiate the type of tachycardia and if STABLE or UNSTABLE and SYMPTOMATIC.**
- **12-Lead ECG:**
  - **12 Lead ECG not necessary to diagnose and treat**
  - **Obtain when patient is stable and/or following rhythm conversion.**
- **Monomorphic QRS:**
  - **All QRS complexes in a single lead are similar in shape.**
- **Polymorphic QRS:**
  - **QRS complexes in a single lead will change shape from complex to complex.**
- **Rhythm should be interpreted in the context of symptoms and pharmacological or electrical treatment given only when symptomatic, otherwise monitor and reassess.**
- **Unstable condition**
  - **Condition which acutely impairs vital organ function and cardiac arrest may be imminent.**
  - **If at any point patient becomes unstable move to unstable arm in algorithm.**
- **Symptomatic condition**
  - **Arrhythmia is causing symptoms such as palpitations, lightheadedness, or dyspnea, but cardiac arrest is not imminent.**
  - **Symptomatic tachycardia usually occurs at rates ≥ 150 beats per minute. Patients symptomatic with heart rates < 150 likely have impaired cardiac function such as CHF.**
- **Serious Signs / Symptoms:**
  - **Hypotension. Acutely altered mental status. Signs of shock / poor perfusion. Chest pain with evidence of ischemia (STEMI, T wave inversions or depressions.) Acute congestive heart failure.**
- **Search for underlying cause of tachycardia such as fever, sepsis, dyspnea, etc.**
- **Typical sinus tachycardia is in the range of 100 to (220 – patients age) beats per minute.**
- **If patient has history or 12 Lead ECG reveals Wolfe Parkinson White (WPW), DO NOT administer a Calcium Channel Blocker (e.g., Diltiazem) or Beta Blockers. Use caution with Adenosine and give only with defibrillator available.**
- **Polymorphic / Irregular Tachycardia:**

This situation is usually unstable and immediate defibrillation is warranted.

If QT length is known, use for decision-making. Prolonged QT length defined as > 500 msec.

QT length < 500 msec:

**More likely related to ischemia or infarction**

Magnesium not likely helpful.

May quickly deteriorate into Ventricular Fibrillation.

Even when terminated by defibrillation, may recur, so follow with medication therapy.

QT prolongation > 500 msec:

**More likely Congenital Long QT, Drug, Hypokalemia, or Hypomagnesemia related**

Magnesium more likely to be helpful.

- Document all rhythm changes with monitor strips and obtain monitor strips with each therapeutic intervention.

## Dispositions

**Paramedic:** All patients

# Ventricular Fibrillation
# Pulseless Ventricular Tachycardia

Cardiac Arrest Protocol AC 3

**Begin Continuous CPR Compressions**
**Push Hard (≥ 2 inches) Push Fast (110 - 120 / min)**
**Change Compressors every 2 minutes**
**(*sooner if fatigued*)**
**(*Limit changes / pulse checks ≤ 10 seconds*)**

**<u>At the end of each 2 minute cycle</u>**
**Check AED / ECG Monitor**
**If shockable rhythm, deliver shock and immediately continue chest compressions**

Search for Reversible Causes

**Consider**
**No maximum Epinephrine doses when:**

**Anaphylaxis**

**OR**

**Asthma Exacerbation**

**Are suspected**

**<u>Reversible Causes</u>**

Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypothermia
Hypo / Hyperkalemia

Tension pneumothorax
Tamponade; cardiac
Toxins
Thrombosis; pulmonary (PE)
Thrombosis; coronary (MI)

IV or IO Access Protocol UP 6

**A**

**Epinephrine (1:10,000) 1 mg IV / IO**
***Max 1 dose***

**Continue CPR Compressions**
**Push Hard (≥ 2 inches) Push Fast (110 - 120 / min)**
**Change Compressors every 2 minutes**
**(*sooner if fatigued*)**
**(*Limit changes / pulse checks ≤ 10 seconds*)**

**<u>If Rhythm Refractory</u>**
**Continue CPR and give Agency specific Anti-arrhythmics and Epinephrine**
**Continue CPR up to point where you are ready to defibrillate with device charged.**
**Repeat pattern during resuscitation.**

**P**

**Amiodarone 300 mg IV / IO**

Refractory after Amiodarone
**Lidocaine 100 mg IV / IO**

Continued refractory after Amiodarone and Lidocaine
**Magnesium 2 gm IV / IO**

**Refractory after 2 Defibrillations Attempts**
Change location of defibrillation pads
***if available***

**Refractory after 4 Defibrillations Attempts**
Consider Dual Sequential Defibrillation Procedure
***if available***

**AT ANY TIME**

**Return of Spontaneous Circulation**

**Go to Post Resuscitation Protocol AC 9**

**Notify Destination or Contact Medical Control**

Adult Cardiac Protocol Section

# Ventricular Fibrillation
# Pulseless Ventricular Tachycardia



## Pearls

- **Team Focused Approach / Pit-Crew Approach recommended; assigning responders to predetermined tasks. Refer to optional Team Focused CPR Protocol AC 11 or development of local agency protocol.**
- **Efforts should be directed at high quality and continuous compressions with limited interruptions and early defibrillation when indicated.**
- **DO NOT HYPERVENTILATE: If no advanced airway (BIAD, ETT) compression to ventilation ratio is 30:2. If advanced airway in place, ventilate 10 breaths per minute with continuous, uninterrupted compressions.**
- **Do not interrupt compressions to place endotracheal tube. Consider BIAD first to limit interruptions.**
- **Passive oxygenation optional in agencies practicing Team Focused Approach / Pit-Crew Approach.**
- **Reassess and document BIAD and / or endotracheal tube placement and EtCO2 frequently, after every move, and at transfer of care.**
- **IV / IO access and drug delivery is secondary to high-quality chest compressions and early defibrillation**.
- **IV access is preferred route. Follow IV or IO Access Protocol UP 6.**
- **Defibrillation:**
  Follow manufacture's recommendations concerning defibrillation / cardioversion energy when specified.
  Charge defibrillator during chest compressions, near the end of 2-minute cycle, to decrease peri-shock pause.
  Following defibrillation, provider should immediately restart chest compressions with no pulse check until end of next cycle.
- **End Tidal CO2 (EtCO2)**
  If EtCO2 is < 10 mmHg, improve chest compressions. Goal is ≥ 20 mmHg.
  If EtCO2 spikes, typically > 40 mmHg, consider Return of Spontaneous Circulation (ROSC
- **Special Considerations**
  **Maternal Arrest** - Treat mother per appropriate protocol with immediate notification to Medical Control and rapid transport preferably to obstetrical center if available and proximate. Place mother supine and perform Manual Left Uterine Displacement moving uterus to the patient's left side. IV/IO access preferably above diaphragm. Defibrillation is safe at all energy levels.
  **Renal Dialysis / Renal Failure** - Refer to Dialysis / Renal Failure Protocol AM 3 caveats when faced with dialysis / renal failure patient experiencing cardiac arrest.
  **Opioid Overdose** - Naloxone cannot be recommended in opioid-associated cardiac arrest. If suspected, attention to airway, oxygenation, and ventilation increase in importance. Naloxone is not associated with improved outcomes in cardiac arrest.
  **Drowning / Suffocation / Asphyxiation / Hanging / Lightning Strike** – Hypoxic associated cardiac arrest and prompt attention to airway and ventilation is priority followed by high-quality and continuous chest compressions and early defibrillation.
- **Magnesium Sulfate is not routinely recommended during cardiac arrest, but may help with Torsades de points, prolonged QT, low Magnesium States (malnourished / alcoholic), and suspected digitalis toxicity**
- Return of spontaneous circulation: Heart rate should be > 60 when initiating anti-arrhythmic infusions.
- Success is based on proper planning and execution. Procedures require space and patient access. Make room to work.
- Discussion with Medical Control can be a valuable tool in developing a differential diagnosis and identifying possible

## Dispositions

**Paramedic:** All patients

# Post Resuscitation

**Return of Spontaneous Circulation**

↓

**Repeat Primary Assessment**

| | |
|---|---|
| B | **Optimize Ventilation and Oxygenation**<br>• Maintain SpO2 ≥ 94 %<br>• ETCO2 ideally 35 – 45 mm Hg<br>• Respiratory Rate 10 / minute<br>• DO NOT HYPERVENTILATE |
| | Airway<br>Protocol(s) AR 1, 2, 3, 4<br>***as indicated*** |
| B | 12 Lead ECG Procedure |
| | IV or IO Access Protocol UP 6 |
| P | Cardiac Monitor |
| | Monitor Vital Signs / Reassess |
| | Search for reversible causes |

↓

| | |
|---|---|
| | Chest Pain and STEMI<br>Protocol AC 4<br>***if indicated*** |
| | Hypotension / Shock<br>Protocol AM 5<br>***as indicated*** |
| A<br>P | **Optimize Systolic BP and Mean Arterial BP**<br>• Systolic BP > 90 mmHg<br>• Mean Arterial BP > 65 mmHg |
| | Appropriate Arrhythmia<br>Protocol(s) AC 2, 6, 7<br>***as indicated*** |
| | Seizure Protocol UP 13<br>***as indicated*** |
| | Targeted Temperature Management<br>Protocol AC 10<br>***if available*** |
| | Post Intubation BIAD Management<br>Protocol AR 8 |

↓

**Cardiac Arrest Triage and Destination Plan**

**Reversible Causes**

Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypothermia
Hypo / Hyperkalemia

Tension pneumothorax
Tamponade; cardiac
Toxins
Thrombosis; pulmonary (PE)
Thrombosis; coronary (MI)

Arrhythmias are common and usually self limiting after ROSC

If Arrhythmia Persists follow Rhythm Appropriate Protocol

Adult Cardiac Protocol Section

# Post Resuscitation

- **Pearls**
- **Recommended Exam: Mental Status, Neck, Skin, Lungs, Heart, Abdomen, Extremities, Neuro**
- **Continue to search for potential cause of cardiac arrest during post-resuscitation care.**
- **Hyperventilation is a significant cause of hypotension and recurrence of cardiac arrest in the post resuscitation phase and must be avoided at all costs. Titrate FiO2 to maintain SpO2 of ≥ 94%.**
- **Pain/sedation:**
  - **Patients requiring advanced airways and ventilation commonly experience pain and anxiety.**
  - **Unrelieved pain can lead to increased catecholamine release, ischemia, immunosuppression, and prolonged hospitalization.**
  - **Ventilated patients cannot communicate pain / anxiety and providers are poor at recognizing pain / anxiety.**
  - **Vital signs such has tachycardia and / or hypertension can provide clues to inadequate sedation, however they both are not always reliable indicators of patient's lack of adequate sedation.**
  - **Pain must be addressed first, before anxiety. Opioids are typically the first line agents before benzodiazepines. Ketamine is also a reasonable first choice agent.**
- **Ventilator / Ventilation strategies:**
  - **Tailored to individual patient presentations. Medical Control can indicate different strategies above.**
  - **In general ventilation with BVM should cause chest rise. With mechanical ventilation a reasonable tidal volume should be about 6 mL/kg and peak pressures should be < 30 cmH20.**
  - **Continuous pulse oximetry and capnography should be maintained during transport for monitoring.**
  - **Head of bed should be maintained at least 10 – 20 degrees of elevation when possible to decrease aspiration risk.**
- **EtCO2 Monitoring:**
  - **Initial End tidal CO2 may be elevated immediately post-resuscitation, but will usually normalize.**
  - **Goal is 35 – 45 mmHg but avoid hyperventilation to achieve.**
- **Titrate fluid resuscitation and vasopressor administration to maintain SBP of 90 – 100 mmHg or Mean Arterial Pressure (MAP) of 65 – 80 mmHg.**
- **STEMI (ST-Elevation Myocardial Infarction)**
  - **Consider placing 2 IV sites in the left arm: Many PCI centers use the right radial artery for intervention.**
  - **Consider placing defibrillator pads on patient as a precaution.**
  - **Document and time-stamp facility STEMI notification and make notification as soon as possible.**
  - **Document the time of the 12-Lead ECG in the PCR as a Procedure along with the interpretation (Paramedic).**
- **Consider transport to facility capable of managing the post-arrest patient including hypothermia therapy, cardiology / cardiac catheterization, intensive care service, and neurology services.**
- Targeted Temperature Management (optional):
  - Maintain core temperature between 33 - 36°C.
  - Infusion of cold saline is NOT recommended in the prehospital setting.
  - No evidence suggests improved survival with prehospital cooling.
- **Consider Epinephrine infusion in the patient with recurrent episodes of cardiac arrest that respond to Epinephrine injections. Consider utilizing multiple pressors together as necessary to maintain blood pressure and HR.**
- **While transcutaneous pacing may otherwise be indicated in the ischemic heart, consider the danger of missed re-arrest while pacing. In general titrate pressors as needed and only attempt pacing if indicated in the post-ROSC patient if mechanical capture can absolutely be verified (ie finger on the pulse AND good blood pressure) and constantly monitored.**
- The condition of post-resuscitation patients fluctuates rapidly and continuously, and they require close monitoring. Appropriate post-resuscitation management may best be planned in consultation with medical control.

## Dispositions

**Paramedic:** All patients

# Post Resuscitation

**POST-ROSC Adult Cardiac Arrest Checklist**

- ☐ ASSESS ETCO2 (should be >20 with good waveform)
  - o Do not try to obtain a “normal” ETCO2 by increasing respiratory rate
- ☐ FINGER ON PULSE; maintain for 10 minutes; consider delaying transport during this time period if appropriate
- ☐ Continuous visualization of cardiac monitor rhythm by paramedic personnel
- ☐ Check 02 supply, pulse Ox to TITRATE O2 lpm to SaO2 94-99%, PEEP to 10 mmH2O
- ☐ Obtain 12 lead EKG; if STEMI evident call CODE STEMI to the hospital and transmit if possible
- ☐ Obtain Blood Pressure- Pressor agent (s) indicated for SBP <90 or MAP <60
- ☐ Assess for and TREAT bradycardias < 60 bpm
- ☐ Evaluate for post-resuscitation airway placement (e.g. ETT)
  - o Consider using passive oxygenation with nasal cannula if placing ETT
- ☐ Scene manager establishes controlled egress method
- ☐ When patient is moved:
  - o Finger on the pulse
  - o Continuous ETCO2 monitoring
  - o Continuous assessment of cardiac rhythm
- ☐ Mask is available for BVM in case advanced airway fails
- ☐ Once in ambulance, confirm pulse, breath sounds, SaO2, ETCO2, and cardiac rhythm
- ☐ Defibrillation Pads and Lucas device should remain on patient for transport
- ☐ Appropriate personnel present in the back of the ambulance for transport
- ☐ Unless patient is following verbal commands, initiate hypothermia therapy
- ☐ Ensure transfer of paperwork including patient identification from scene manager to code commander
  - o Necessary information includes patient name, DOB, and medical history when available
- ☐ Inform destination hospital of incoming ROSC patient

# Team Focused CPR

**Criteria for Death / No Resuscitation**
**Review DNR / MOST Form**

**YES**

Decomposition
Rigor mortis
Dependent lividity
Blunt force trauma
Injury incompatible with life
Extended downtime with asystole

Do not begin resuscitation

Follow Deceased Subjects Policy

**NO**

***Begin Continuous CPR Compressions***
***Push Hard (≥ 2 inches)***
***Push Fast (110 - 120 / min)***
***Change Compressors every 2 minutes***
***(sooner if fatigued)***
***(Limit changes / pulse checks ≤ 10 seconds)***

**Ventilate 1 breath every 6 seconds**
**30:2 Compression:Ventilation if no Advanced Airway**
***Monitor EtCO2 if available***

**First Arriving Responders**
**Initiate Compressions Only CPR**
**(if only 1 provider present)**
Initiate Defibrillation Automated Procedure
***if available***
Call for additional resources

**Second Arriving BLS / ALS Responder**
Assume Compressions or
Initiate Defibrillation Automated / Manual Procedure
Place BIAD
DO NOT Interrupt Compressions
Ventilate at 6 to 8 breaths per minute

**AT ANY TIME**

**Return of Spontaneous Circulation**

**Go to Post Resuscitation Protocol AC 9**

**Third Arriving Responder**
**BLS or ALS**

**BLS**

**Establish Scene Commander**
(Hierarchy)
Fire Department or Squad Officer
EMT
First Arriving Responder

**Rotate with Compressor**
To prevent Fatigue and effect high quality compressions
Take direction from Team Leader

**Fourth / Subsequent Arriving Responders**
Take direction from Scene Commander

**Continue Cardiac Arrest Protocol AC 3**

**ALS**

**Establish Code Commander**
EMS ALS Personnel

**A**
Initiate Defibrillation Automated Procedure
Establish IV / IO
Administer Appropriate Medications
Establish Airway with BIAD if not in place

**P**
Initiate Defibrillation Manual Procedure
Continuous Cardiac Monitoring
Establish IV / IO
Administer Appropriate Medications
Establish Airway with BIAD if not in place

**Continue Cardiac Arrest Protocol AC 3**

**Scene Commander**
Fire Department / First Responder Officer
Code Commander until ALS arrival
Manages Scene / Bystanders
Ensures high-quality compressions
Ensures frequent compressor change
Responsible for briefing family prior to ALS arrival
**Ensure compliance with checklist and utilization of metronome**

**Team Leader**
ALS Personnel
Responsible for patient care
Responsible for briefing / counseling family

Adult Cardiac Protocol Section

# Team Focused CPR



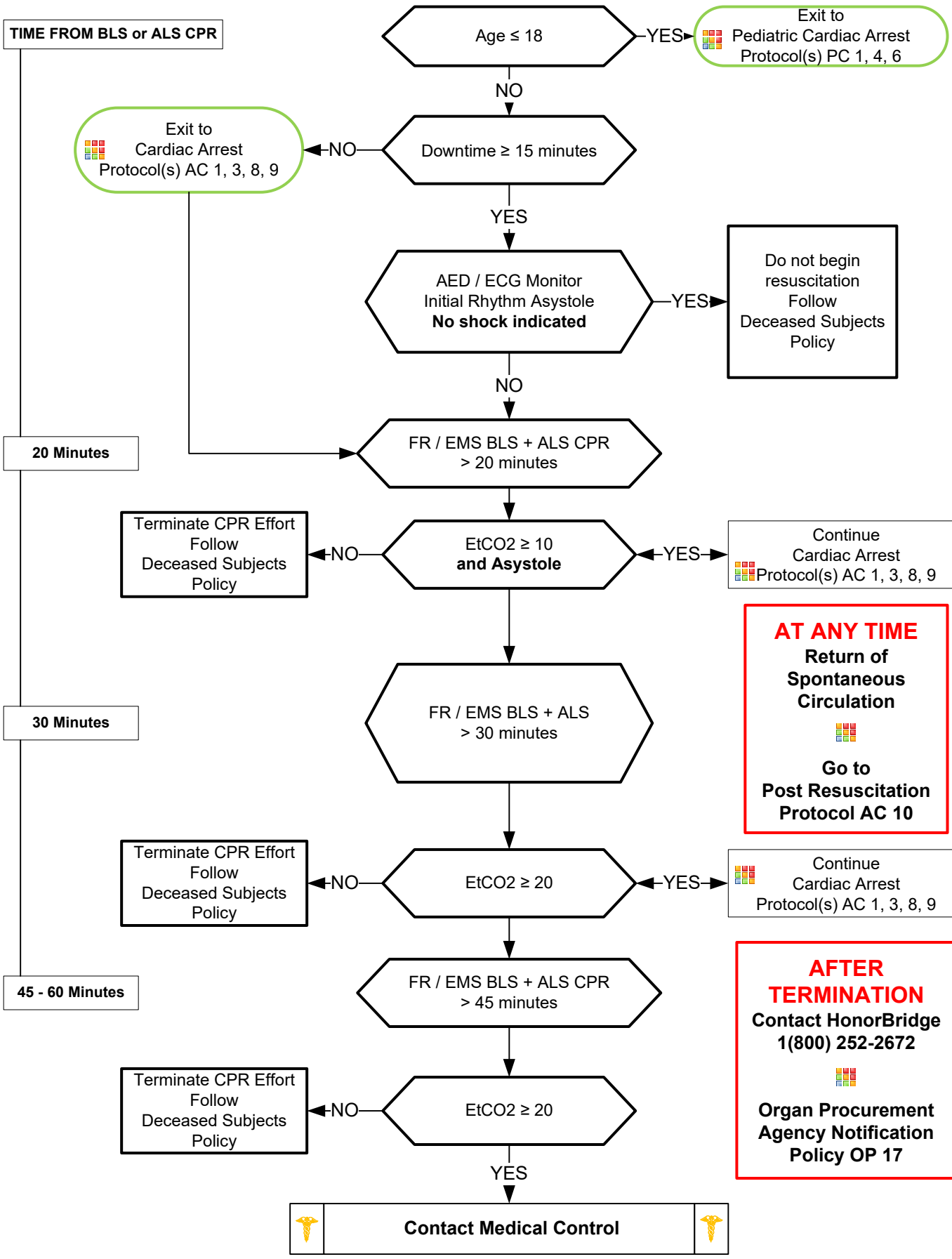
## Pearls

- **This protocol is optional and given only as an example. Agencies may and are encouraged to develop their own.**
- **Team Focused Approach / Pit-Crew Approach recommended; assigning responders to predetermined tasks. Refer to optional protocol or development of local agency protocol.**
- **Efforts should be directed at high quality and continuous compressions with limited interruptions and early defibrillation when indicated.**
- **DO NOT HYPERVENTILATE: If no advanced airway (BIAD, ETT), compression to ventilation ratio is 30:2. If advanced airway in place, ventilate 10 breaths per minute with continuous, uninterrupted compressions.**
- **Do not interrupt compressions to place endotracheal tube. Consider BIAD first to limit interruptions.**
- **Passive oxygenation optional in agencies practicing Team Focused Approach / Pit-Crew Approach.**
- Reassess and document BIAD and / or endotracheal tube placement and EtCO2 frequently, after every move, and at transfer of care.
- **IV / IO access and drug delivery are secondary to high-quality chest compressions and early defibrillation**.
- **Defibrillation:** Follow manufacture's recommendations concerning defibrillation / cardioversion energy when specified.
  - Charge defibrillator during chest compressions, near the end of 2-minute cycle, to decrease peri-shock pause.
  - Following defibrillation, provider should immediately restart chest compressions with no pulse check until end of next cycle.
- Success is based on proper planning and execution. Procedures require space and patient access. Make room to work.
- Discussion with Medical Control can be a valuable tool in developing a differential diagnosis and identifying possible treatment options.

## Dispositions

***No dispositions associated with this protocol***

# On Scene Resuscitation
# Termination of CPR




Adult Cardiac Protocol Section

# On Scene Resuscitation
# Termination of CPR



## Pearls

- **<u>General approach:</u>**
  - **1. Determine if a terminal disease is involved?**
  - **2. Is there an advanced directive such as a DNR / MOST form?**
  - **3. Did the patient express to your historian any desires regarding resuscitation and if so what measures?**
  - **4. Remember a living will is not a DNR.**
- **Obtain a history while resuscitation efforts are ongoing. Determine the most legitimate person on scene as your information source such as a spouse, child, or sibling or Durable Health Care Power of Attorney.**
- Basic and Advanced Life Support may use for treatment decisions.

## Dispositions

***No dispositions associated with this protocol***

# Target Temperature Management

**History**
- Non-traumatic cardiac arrests (drownings and hanging / asphyxiation are permissible in this protocol.)
- All presenting rhythms are permissible in this protocol
- Age 18 or greater

**Signs and Symptoms**
- Cardiac arrest
- Return of Spontaneous Circulation post-cardiac arrest

**Differential**
- Continue to address specific differentials associated with the arrhythmia

Return of Spontaneous Circulation ROSC

Criteria for Induced Hypothermia
Initial rectal temperature
**≥ 96.8 F (36C)**

NO → Exit to Post Resuscitation Protocol AC 9

YES

| | |
|---|---|
| **B** | **Advanced Airway (includes BIAD) in place** with EtCO2 > 20 mmHg |
| | Perform Neurological Assessment |
| | Expose and apply ice packs to axilla and groin areas |
| | IV or IO Access Protocol UP 6 |
| **A** | **1L Cold Normal Saline Bolus** |
| | Hypotension / Shock Protocol AM 5 ***as indicated*** |

Airway Protocol(s) AR 1, 2, 3 ***as indicated*** ← NO

Agencies utilizing cerebral cooling devices are unlikely to see a change in rectal temperature during transport.

Continued temperature assessment not warranted with these devices. Document initial temperature

Reassess Rectal Temperature
**Target: 91.4 – 96.8 °F**
***( Range 33 – 36C)***

≤ 91.4° F (33° C) → Stop cooling measures Until temperature increases

Reassess temperature every 10 minutes

Continue Post Resuscitation Care

≥ 91.4° F (33° C) → Continue Cooling

Exit to Post Resuscitation Protocol AC 9

Shivering noted → No

| | |
|---|---|
| **P** | **Fentanyl 50 – 75 mcg IV / IO**<br>Repeat every 5 minutes as needed<br>**Maximum 200 mcg**<br><br>**Versed 2.5 mg IV / IO**<br>Repeat every 5 minutes as needed<br>(If SBP > 100)<br>**Maximum 10 mg** |

**Notify Destination or Contact Medical Control**

Adult Cardiac Protocol Section

# Target Temperature Management



## Pearls

- **Criteria for Targeted Temperature Mangement:**
  - **Return of spontaneous circulation not related to blunt / penetrating trauma or hemorrhage with ventricular fibrillation / tachycardia and non-shockable arrhythmias.**
  - **Temperature greater than 93.2°F (34° C).**
  - **Advanced airway (including BIAD) in place with no purposeful response to verbal commands.**
  - **Infusion of cold saline is NOT recommended in the prehospital setting.**
- **Hyperventilation is a significant cause of hypotension and recurrence of cardiac arrest in the post resuscitation phase and must be avoided. Titrate $FiO_2$ to maintain $SpO_2$ of 92 - 98%.**
- **Pain/sedation:**
  - **Patients requiring advanced airways and ventilation commonly experience pain and anxiety.**
  - **Unrelieved pain can lead to increased catecholamine release, ischemia, immunosuppression, and prolonged hospitalization.**
  - **Ventilated patients cannot communicate pain / anxiety and providers are poor at recognizing pain / anxiety.**
  - **Vital signs such has tachycardia and / or hypertension can provide clues to inadequate sedation, however they both are not always reliable indicators of patient's lack of adequate sedation.**
  - **Pain must be addressed first, before anxiety. Opioids are typically the first line agents before benzodiazepines. Ketamine is also a reasonable first choice agent.**
- **EtCO2 Monitoring:**
  - **Initial End tidal CO2 may be elevated immediately post-resuscitation, but will usually normalize.**
  - **Goal is 35 – 45 mmHg but avoid hyperventilation to achieve.**
- **Titrate fluid resuscitation and vasopressor administration to maintain SBP of 90 – 100 mmHg or Mean Arterial Pressure (MAP) of 65 – 80 mmHg.**
- **Titrate fluid resuscitation and vasopressor administration to maintain SBP of > 90 mmHg or Mean Arterial Pressure (MAP) of 65 mmHg.**
- **STEMI (ST-Elevation Myocardial Infarction)**
  - **Consider placing 2 IV sites in the left arm: Many PCI centers use the right radial artery for intervention.**
  - **Consider placing defibrillator pads on patient as a precaution.**
  - **Document and time-stamp facility STEMI notification and make notification as soon as possible.**
  - **Document the time of the 12-Lead ECG in the PCR as a Procedure along with the interpretation (Paramedic).**
- **Consider transport to facility capable of managing the post-arrest patient including hypothermia therapy, cardiology / cardiac catheterization, intensive care service, and neurology services.**
- **Utilization of this protocol mandates transport to facility capable of managing the post-arrest patient and continuation of induced hypothermia therapy.**
- If no advanced airway in place obtained, cooling may only be initiated on order from medical control.
- No evidence suggests improved survival with prehospital cooling.
- The condition of post-resuscitation patients fluctuates rapidly and continuously, and they require close monitoring.
- Appropriate post-resuscitation management may best be planned in consultation with Medical Control.

## Dispositions

**Paramedic:** All patients

# Mechanical Circulatory Support
# LVAD, RVAD, and Bi-VAD



## History
- SAMPLE
- Bridge to transplant
- Destination therapy
- Estimated downtime
- LVAD, RVAD, Bi-Vad, TAH
- DNR, MOST, or Living Will
- Contact with LVAD coordinator

## Signs and Symptoms
- Unconsciousness
- Pulseless
- Apneic
- Poor capillary refill / skin color
- AMS or decreased mental status
- No electrical activity on ECG
- No heart tones on auscultation

## Differential
- See Reversible Causes below
- Infection/Sepsis
- Hypovolemia
- Cardiac arrest
- Hemorrhage

**Contact VAD coordinator:**
- As quickly as possible for troubleshooting and treatment advice, but do not delay emergency treatment
- Follow patient specific emergency plan if present
- **UNC:** (919) 216-2095
- **Duke:** (919) 681-1779 (9a-5p)
- **Duke:** After 5p (919) 684-8111 and ask for VAD Coordinator on Call

**Rapid assessment**
**Check for signs of life**
**Assess for adequate perfusion**

**Criteria for Death / No Resuscitation**
**Review DNR / MOST Form**

YES ▶
Decomposition
Rigor mortis
Dependent lividity
Blunt force trauma
Injury incompatible with life
Extended downtime with asystole

Do not begin resuscitation

Follow Deceased Subjects Policy

NO

**Unresponsive and Not breathing normally**

**Responsive or Unresponsive and Breathing normally**

Airway Protocol(s) AR 1, 2, 3 ***if indicated***

Respiratory Distress Protocol AR 4 ***if indicated***

**Assess LVAD function**
Look and listen for alarms
**LVAD Alarming?**

YES ▶ **Go to Page 2** ◀ YES

NO

Place stethoscope over heart

**Humming sound present?**

YES ▶ **Go to Page 3** ◀ YES

NO

Airway Protocol(s) AR 1, 2, 3 ***if indicated***

Respiratory Distress Protocol AR 4 ***if indicated***

Assume VAD failure
Initiate age appropriate ventilation rate

**Go to Page 2**

# Mechanical Circulatory Support
# LVAD, RVAD, and Bi-VAD

### History
- SAMPLE
- Bridge to transplant
- Destination therapy
- Estimated downtime
- LVAD, RVAD, Bi-Vad, TAH
- DNR, MOST, or Living Will
- Contact with LVAD coordinator

### Signs and Symptoms
- Unconsciousness
- Pulseless
- Apneic
- Poor capillary refill / skin color
- AMS or decreased mental status
- No electrical activity on ECG
- No heart tones on auscultation

### Differential
- See Reversible Causes below
- Infection/Sepsis
- Hypovolemia
- Cardiac arrest
- Hemorrhage

Entering from Page 1
No VAD humming heard and/or
VAD is alarming

**Attempt to restart LVAD**

Expose VAD control module
Expose VAD power source
Expose VAD driveline

**Driveline:**
- **Ensure driveline is connected firmly to control module**

**Power source (batteries or main power source):**
- **Ensure all power connections are firmly connected to control module**

**Battery charge:**
- **Check by pressing charge indicator**
- **Replace battery(s) if indicated**

**LVAD restarted? Humming sound over heart?**

YES → **Go to Page 3**

NO

**Spare control module:**
- **Attach batteries or main power source to spare control module**
- **Detach driveline and attach to spare control module**

**LVAD restarted? Humming sound over heart?**

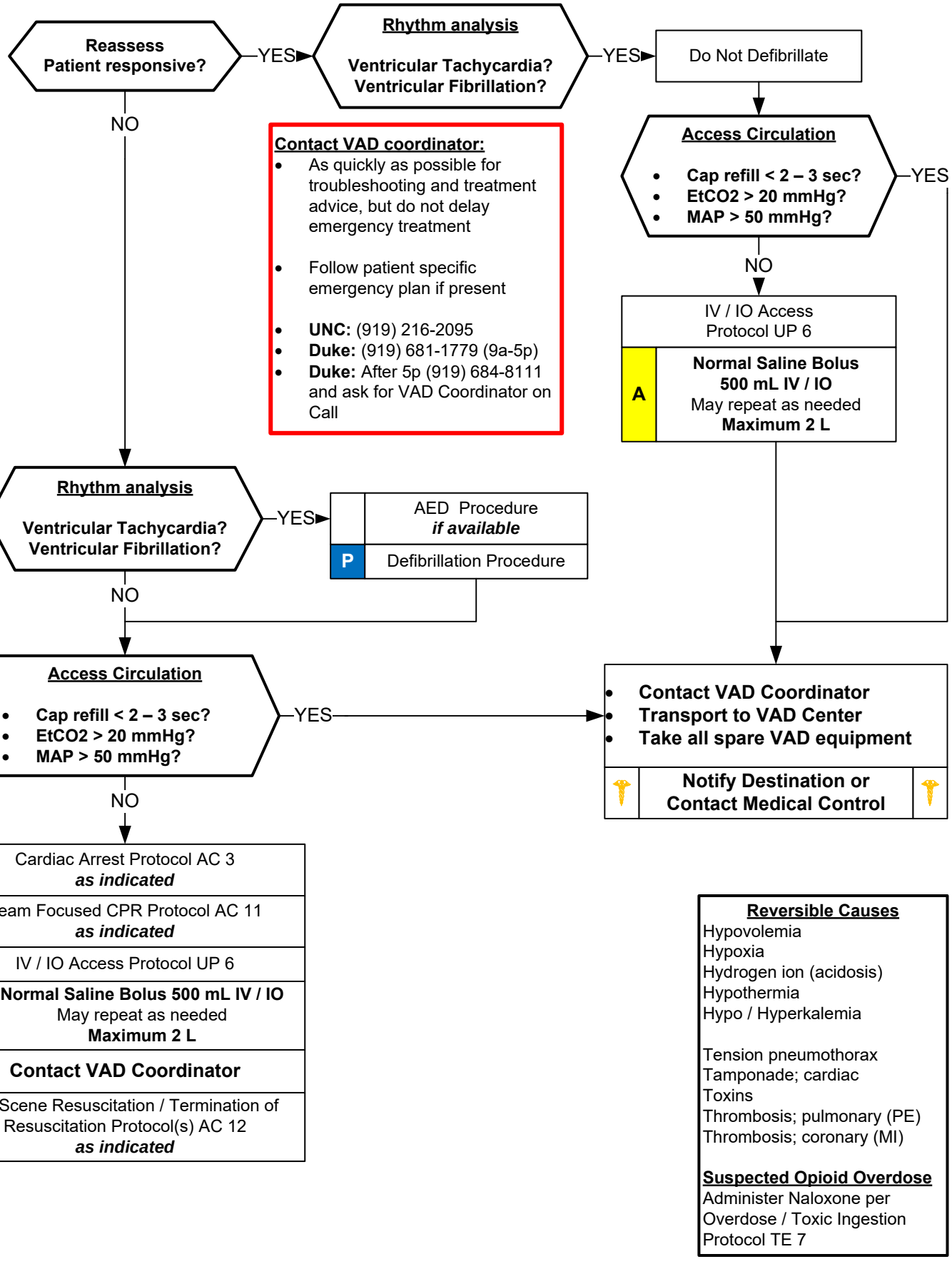
YES → **Go to Page 3**

NO

**Possible driveline cable fracture:**
- **Quickly, but gently manipulate cable trying to restore break**
- **If successful, tape driveline in place where functioning restored**

**Contact VAD coordinator:**
- As quickly as possible for troubleshooting and treatment advice, but do not delay emergency treatment
- Follow patient specific emergency plan if present
- **UNC:** (919) 216-2095
- **Duke:** (919) 681-1779 (9a-5p)
- **Duke:** After 5p (919) 684-8111 and ask for VAD Coordinator on Call

# Mechanical Circulatory Support
# LVAD, RVAD, and Bi-VAD



# Mechanical Circulatory Support
# LVAD, RVAD, and Bi-VAD



## Pearls

- **Recommended exam: Mental status, skin color, capillary refill, peripheral pulses, blood pressure.**
- **Assessment of blood flow and perfusion status:**
  - **Optimal BP attained by manual BP and Doppler.**
  - **Automated BP devices can measure a BP in about 50% of attempts and is not reliable to assess perfusion**
  - **A MAP of ≥ 60 mmHg is adequate for most LVAD patients.**
  - **Skin color, skin temperature, capillary refill**
- **Mechanical Circulatory Support devices:**
  - **LVAD – Left Ventricular Assist Device**
  - **RVAD – Right Ventricular Assist Device**
  - **BiVAD – Biventricular Ventricular Assist Device**
  - **TAH – Total Artificial Heart**
- **Reasons for use:**
  - **Bridge therapy – patients awaiting transplant or anticipated recovery.**
  - **Destination therapy – advanced heart failure, not candidate for transplant, and will live rest of life with device.**
- **Pump type and assessing pulses:**
  - **Pulsatile flow pumps – older units, not commonly in use now, but generate blood flow with a pulsatile flow and patient will have a palpable pulse.**
  - **Continuous flow pumps – majority of pumps now used and create blood flow in a continuous stream, no pulsatile flow, so patient will not have a palpable pulse.**
  - **Most devices are implanted inside the chest and have an internal pump, a driveline connected from the pump to the controller unit, and a power source consisting of batteries and electrical cord for receptacles.**
- **Common complications:**
  - **Disconnection of power supply, either battery disconnect, or electrical cord to receptacle disconnection.**
  - **Driveline failure or disconnection from controller unit.**
  - **Controller failure**
  - **Blood clot formation, acute stroke, and bleeding (mucosal and gastrointestinal most common sites)**
  - **Infection**
- Abnormal heart rhythm:
  - Pseudo-PEA: Normal cardiac electrical activity in a patient who is alert and well perfused with no palpable pulse.
  - Tachyarrhythmias are usually well tolerated.
- End Tidal CO2 (EtCO2)
  - If EtCO2 is < 10 mmHg, improve chest compressions. Goal is ≥ 20 mmHg.
  - If EtCO2 spikes, typically > 40 mmHg, consider Return of Spontaneous Circulation (ROSC)
- Transcutaneous Pacing:
  - Pacing is NOT effective in cardiac arrest and pacing in cardiac arrest does NOT increase chance of survival

Contact Numbers:

**UNC** VAD Coordinator – (919) 216-2095 for 24h On Call pager
**DUKE** VAD Coordinator – (919) 681-1779 from 9a-5p
**DUKE** After Hours – (919) 684-8111 and request VAD Coordinator On-Call

## Dispositions

**Paramedic:** All patients

# Total Artificial Heart

**History**
- SAMPLE
- Bridge to transplant
- Destination therapy
- Estimated downtime
- LVAD, RVAD, Bi-Vad, TAH
- DNR, MOST, or Living Will
- Contact with LVAD coordinator

**Signs and Symptoms**
- Unconsciousness
- Pulseless
- Apneic
- Poor capillary refill / skin color
- AMS or decreased mental status
- No electrical activity on ECG
- No heart tones on auscultation

**Differential**
- See Reversible Causes below
- Infection/Sepsis
- Hypovolemia
- Cardiac arrest
- Hemorrhage

**Rapid assessment**
**Check for signs of life**
**Assess for adequate perfusion**

**Contact transplant coordinator:**
- As quickly as possible for troubleshooting and treatment advice, but do not delay emergency treatment
- Follow patient specific emergency plan if present

**DO NOT USE ECG MONITOR**
- Total Artificial Heart does not generate ECG

**Criteria for Death / No Resuscitation**
**Review DNR / MOST Form**

YES → Decomposition, Rigor mortis, Dependent lividity, Blunt force trauma
Injury incompatible with life
Extended downtime
Do not begin resuscitation
Follow Deceased Subjects Policy

NO

**Pulse Present?**

NO → **Go to Page 2**

YES

- Airway Protocol(s) AR 1, 2, 3 ***if indicated***
- Respiratory Distress Protocol AR 4 ***if indicated***
- Altered Mental Status Protocol UP 4 ***if indicated***

→ **Check Blood Pressure**

**Systolic BP ≥ 150 mmHg**

A — **Nitroglycerin 0.3 / 0.4 mg SL**
Repeat every 5 minutes as needed

**Maintain SBP ≥ 90 mmHg**

P — **Furosemide 40 mg IV / IO** ***if available***
May assist patient taking their antihypertensive medication

**Maintain SBP ≥ 90 mmHg**

**Systolic BP < 150 mmHg And ≥ 90 mmHg**

**DO NOT USE:**
- Manual or mechanical chest compressions
- ECG/Defibrillation/Pacing/AED devices
- Vasopressor medications
- Antiarrhythmic medications

**Systolic BP < 90 mmHg**

- IV / IO Access Protocol UP 6

A — **Normal Saline Bolus 500 mL IV / IO**
May repeat as needed
**Maximum 1 L**

**Notify Destination or Contact Medical Control**

Adult Cardiac Protocol Section

# Total Artificial Heart

Entering from Page 1
No Pulse Present

**DO NOT USE ECG MONITOR**
- Total Artificial Heart does not generate ECG

**Attempt to restart Total Artificial Heart**

Expose Total Artificial Heart control module
Expose Total Artificial Heart power source
Expose Total Artificial Heart driveline

**Driveline:**
- **Ensure it is connected firmly to control module**
- **Ensure lines are not kinked or bent**

**Power source:**
- **Ensure all connections firmly to control module (batteries or main power source)**

**Battery charge:**
- **Check by pressing charge indicator**
- **Replace battery(s) if indicated**

**Back up Driver**
- **Change to back up driver *if available***

**Pulse Present?** YES → **Go to Page 1**

NO

**A** **Normal Saline Bolus 500 mL IV / IO**
May repeat as needed

**Maximum 1 L**

**Pulse Present?** YES → **Go to Page 1**

NO

Follow Deceased Subjects Policy

# Total Artificial Heart



## Pearls

- **Recommended exam: Mental status, skin color, capillary refill, peripheral pulses, blood pressure.**
- **Assessment of blood flow and perfusion status:**
  - **Manual and automated BP devices can measure a BP.**
  - **Skin color, skin temperature, capillary refill**
- **ECG and telemetry monitoring:**
  - **The artificial heart does not produre an ECG wave form or tracing.**
  - **Do not use the 12-Lead ECG or ECG monitoring as it will only show asystole.**
- **Total Artificial Heart:**
  - **Different than Ventricular Assist Device (LVAD, RVAD, or Bi-VAD)**
  - **The patient's left and right ventricles are removed and the artificial heart is connected to the right and left atria.**
  - **The patient is totally dependent on the artificial heart for circulatory support – the native heart is removed.**
  - **There are both a right and left side pump, driven by air, and each side driven by a separate driveline.**
  - **The drivelines are not electric, they are driven by air, so kinking can disrupt the pumping action.**
  - **Artificial heart produces a pulsatile wave form so the patient will have a palpable pulse when operational.**
- **Reasons for use:**
  - **Bridge therapy – patients awaiting transplant or anticipated recovery.**
  - **Destination therapy – advanced heart failure, not candidate for transplant, and will live rest of life with device.**
- **Common complications:**
  - **Most common is kinking or bending of the driveline(s) which stops air from moving and stops pumping action.**
  - **Disconnection of power supply, either battery disconnect, or electrical cord to receptacle disconnection.**
  - **Driveline failure or disconnection from controller unit.**
  - **Controller failure**
  - **Blood clot formation, acute stroke, and bleeding (mucosal and gastrointestinal most common sites)**
  - **Infection**
- **Blood pressure:**
  - **Optimal SBP is < 130 mmHg and > 90 mmHg.**
  - **Hypertension puts great strain on the pump and can cause blood to back up into the lungs and cause pulmonary edema and respiratory failure.**
  - **Epinephrine and vasopressors are ineffective, can cause hypertension, and may worsen the patient's condition.**
- Manual or mechanical chest compressions:
  - **Do not use**
- End Tidal CO2 (EtCO2)
  - Helpful in monitoring adequate perfusion status.
- Defibrillation/Cardioversion:
  - Do not use.
- Transcutaneous Pacing:
  - Do not use.

## Dispositions

**Paramedic:** All patients

# Wearable Cardioverter Defibrillator Vest

### History
- SAMPLE
- Known risk for Sudden Cardiac Death
- Risk for life-threatening arrhythmia
- No implanted defibrillator
- Heart failure – cardiomyopathy
- Decreased ejection fraction

### Signs and Symptoms
- Chest pain, dyspnea
- Palpitations
- Received shock from vest
- Poor capillary refill / skin color
- AMS or decreased mental status

### Differential
- See Reversible Causes below
- Arrhythmia
- Infection/Sepsis
- Hypovolemia
- Cardiac arrest
- Hemorrhage

**Conduct standard patient assessment**
**Primary/Secondary Surveys**

**Wearable Cardioverter-Defibrillator Vest Alarming?**

YES ▶

**Device Silent or Single-Tone Gong Alert**
Voice: None – silent
Voice: "Treatment given, call your doctor"
***See page 2***

NO

**Device Siren Alert Two-Tone**
Voice: "If patient is not responsive, call for help. Start CPR."
***See page 2***

**Device Siren Alert Two-Tone**
Voice: "Press response buttons to delay treatment."
"Bystanders, do not interfere."
***See page 2***

**Cardiac Arrest** YES ▶ Cardiac Arrest Protocol AC 3

NO

**Condition requires 12-Lead ECG**
**And/or**
**Continuous telemetry monitoring**

YES ▶

- Airway Protocol(s) AR 1, 2, 3 ***as indicated***
- Chest Pain and STEMI Protocol AC 4 ***if indicated***
- Age Appropriate Protocol(s) ***as indicated***
- IV / IO Protocol UP 6
- **Remove cardioverter-defibrillator vest**
  1. Remove the battery
  2. Remove the vest
  3. Place ECG electrodes
  4. Place pads anterior-lateral or anterior-posterior
- AED Procedure ***if available***
- **P** Cardioversion - Defibrillation Procedure(s)
- Cardiac Monitor

NO

Leave Vest in Place and Operational

Exit to Age Appropriate Protocol(s)

**Notify Destination or Contact Medical Control**

Adult Cardiac Protocol Section

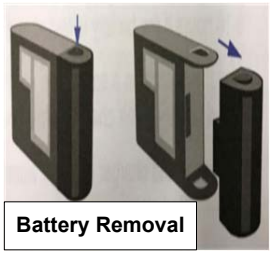
# Wearable Cardioverter Defibrillator Vest

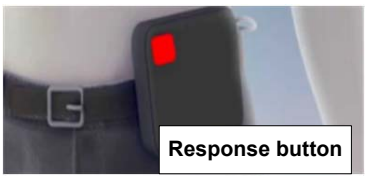










Battery Removal


Response button

## Pearls

- **Recommended exam: Mental status, skin color, capillary refill, peripheral pulses, blood pressure.**
- **Wearable Cardioverter-Defibrillator Vest:**
  - **Device is preparing to delivery a shock to the patient:**
  - **Before device delivers a shock, it tests to see if patient is conscious – voice prompt instructs patient to press the "response" button (see diagram above).**
  - **Only the patient should press the "response" button.**
  - **Once a treatable arrhythmia is detected it takes between 25 and 60 seconds to deliver the shock.**
- **Audible and tactile warning system:**
  - **The device will provide a vibration, a siren tone, and voice prompts to check if the patient is conscious and give them an opportunity to press the "response" button to abort a shock.**
  - **See audible warning system above.**
- **Reasons for use:**
  - **Currently only device on the market is the Zoll LifeVest.**
  - **Worn by patients at risk of sudden cardiac arrest or risk of abnormal and/or lethal arrhythmia.**
- **Blue gel on the patient's skin from the device:**
  - **Electrode pads release a blue get prior to treatment to improve shock conduction and reduce burning.**
  - **Do not remove the gel if the vest is left in place during treatment.**
  - **Remove gel if vest is removed for prehospital care.**
- **Shock to providers:**
  - **Do not touch the patient when the device is instructing you that a shock will be delivered.**
  - **Providers can be shocked by the device during energy delivery if provider is touching the patient.**
- Removing the device for prehospital care:
  - The device should only be removed when ECG monitor and defibrillator is available.
  - Continuous ECG monitoring and electrode pads should be in place when vest is removed.
- Defibrillation/cardioversion with vest in place:
  - Disconnect the device from the vest before you deliver a cardioversion or defibrillation
- Transcutaneous Pacing:
  - May be utilized with vest in place – disconnect the device from the vest before you perform transcutaneous pacing.

## Dispositions

**Paramedic:** All patients

# Allergic Reaction / Anaphylaxis

### History
- Onset and location
- Insect sting or bite
- Food allergy / exposure
- Medication allergy / exposure
- New clothing, soap, detergent
- Past history of reactions
- Past medical history
- Medication history

### Signs and Symptoms
- Itching or hives
- Coughing / wheezing or respiratory distress
- Chest or throat constriction
- Difficulty swallowing
- Hypotension or shock
- Edema
- N/V

### Differential
- Urticaria (rash only)
- Anaphylaxis (systemic effect)
- Shock (vascular effect)
- Angioedema (drug induced)
- Aspiration / Airway obstruction
- Vasovagal event
- Asthma or COPD
- CHF

**Assess Symptom Severity / Suspected Exposure to Allergen**

## MILD
*Skin Only*

| | |
|---|---|
| B | **Diphenhydramine**<br>**25 - 50 mg PO** |
| A | IV Procedure<br>***if indicated*** |
| A | **Diphenhydramine**<br>**25 - 50 mg IV / IM / IO** |
| B | Monitor and Reassess<br>Monitor for Worsening<br>Signs and Symptoms |

## MODERATE and SEVERE
*2 + Body Systems*
*With or without Hypotension*

| | |
|---|---|
| B | **Epinephrine 1:1000**<br>**0.3 – 0.5 mg IM**<br>*May repeat up to three (3) times* |
| B | **Diphenhydramine**<br>**25 - 50 mg PO**<br>*See Pearls* |
| B | **Albuterol Nebulizer**<br>**2.5 – 5 mg**<br>Repeat as needed x 3<br>***if indicated*** |
| | IV or IO Access Protocol UP 6 |
| A | **Diphenhydramine**<br>**25 - 50 mg IV / IM / IO**<br>***if not already given PO*** |
| A | **Albuterol Nebulizer**<br>**2.5 – 5 mg**<br>**+/- Ipratropium 0.5 mg**<br>Repeat as needed x 3<br>***if indicated*** |
| A | **Normal Saline Bolus**<br>**500 mL IV / IO**<br>Repeat as needed<br>**Maximum 2 Liters** |
| A | **Methylprednisolone**<br>**125 mg IV / IO** |
| P | *If no improvement*<br>**Epinephrine Drip**<br>**Epinephrine 1:1,000**<br>Administered in 1000 mL IV / IO<br>**Titrate to effect** |

| | |
|---|---|
| B | Consider 12 Lead ECG Procedure<br>***as appropriate*** |
| | Airway Protocol(s) AR 1 - 4<br>***if indicated*** |
| | Hypotension / Shock<br>Protocol AM 5<br>***if indicated*** |

**Notify Destination or**
**Contact Medical Control**

Adult Medical Protocol Section

# Allergic Reaction / Anaphylaxis

Calculations valid for **1 mg Epinephrine mixed into 1000 ml of Normal Saline.**
Adminsiter with a **10 gtt (Macro gtt)** setup.

| Epinephrine Infusion Rate (mcg/min) | Seconds per 1 Drop | Drops per Minute | Use the 10 gtt (Macro gtt) chamber! |
|---|---|---|---|
| 1 | 6 | 10 | |
| 2 | 3 | 20 | |
| 3 | 2 | 30 | |
| 4 | 1.5 | 40 | |
| 5 | 1.2 | 50 | |
| 6 | 1 | 60 | |
| 7 | 0.9 | 67 | |
| 8 | 0.8 | 75 | |
| 9 | 0.7 | 86 | |
| 10 | 0.6 | 100 | |

This drip chart is intended only for use by approved EMT-P providers within Orange County, NC.

## Pearls

- **Recommended Exam: Mental Status, Skin, Heart, Lungs, Abdominal**
- **Anaphylaxis is an acute and potentially lethal multisystem allergic reaction.**
- **Epinephrine and administration:**
  **Drug of choice and the FIRST drug that should be administered in acute anaphylaxis (Moderate / Severe Symptoms.) IM Epinephrine should be administered in priority before or during attempts at IV or IO access.**
- **Diphenhydramine and steroid administration:**
  **Diphenhydramine/ steroids have no proven benefit in Moderate/ Severe anaphylaxis.**
  **Diphenhydramine/ steroids should NOT delay initial or repeat Epinephrine administration.**
  **In Moderate and Severe anaphylaxis, Diphenhydramine may decrease mental status.**
  **Diphenhydramine should NOT be given to a patient with decreased mental status and/ or a hypotensive patient as this may cause nausea, vomiting, and/ or worsening mental status.**
- **Anaphylaxis unresponsive to repeat doses of IM epinephrine may require IV epinephrine administration by IV push or epinephrine infusion. Contact Medical Control for appropriate dosing.**
- **Symptom Severity Classification:**
  **Mild symptoms:**
  **Flushing, hives, itching, erythema with normal blood pressure and perfusion.**
  **Moderate symptoms:**
  **Flushing, hives, itching, erythema plus respiratory (wheezing, dyspnea, hypoxia) or gastrointestinal symptoms (nausea, vomiting, abdominal pain) with normal blood pressure and perfusion.**
  **Severe symptoms:**
  **Flushing, hives, itching, erythema plus respiratory (wheezing, dyspnea, hypoxia) or gastrointestinal symptoms (nausea, vomiting, abdominal pain) with hypotension/ poor perfusion or isolated hypotension.**
- **Allergic reactions may occur with only respiratory and gastrointestinal symptoms and have no rash/ skin involvement.**
- **Angioedema** is seen in moderate to severe reactions and is swelling involving the face, lips or airway structures. This can also be seen in patients taking blood pressure medications like Prinivil / Zestril (lisinopril)-typically end in **-il.**
- **Hereditary Angioedema** involves swelling of the face, lips, airway structures, extremities, and may cause moderate to severe abdominal pain. Some patients are prescribed specific medications to aid in reversal of swelling.
  **Paramedic may assist or administer this medication per patient/ package instructions.**
- **Patients with moderate and severe reactions should receive a 12 lead ECG and should be continually monitored, but this should NOT delay administration of epinephrine.**
- The shorter the onset from exposure to symptoms the more severe the reaction.

## Dispositions

**Paramedic:** Any patient with a SBP <90, SpO2 <94%, or requires an Epinephrine Drip

**Advanced EMT:** Any patient with abnormal vital signs, has facial swelling, or receives IM Epinephrine

# Diabetic; Adult

### History
- Past medical history
- Medications
- Recent blood glucose check
- Last meal

### Signs and Symptoms
- Altered mental status
- Combative / irritable
- Diaphoresis
- Seizures
- Abdominal pain
- Nausea / vomiting
- Weakness
- Dehydration
- Deep / rapid breathing

### Differential
- Alcohol / drug use
- Toxic ingestion
- Trauma; head injury
- Seizure
- CVA
- Altered baseline mental status

| | |
|---|---|
| | Blood Glucose Analysis Procedure |
| B | 12 Lead ECG Procedure ***if indicated*** |
| | IV or IO Access Protocol UP 6 |
| P | Cardiac Monitor |
| | Altered Mental Status Protocol UP 4 ***if indicated*** |
| | Hypotension/ Shock Protocol AM 5 ***if indicated*** |
| | Suspected Stroke Protocol AM 7 ***if indicated*** |
| | Seizure Protocol UP 13 ***if indicated*** |

| | |
|---|---|
| B | Blood Glucose ≤ 69 mg / dl and symptomatic<br>No venous access<br>**Glucagon 1 – 2 mg IM**<br>Repeat in 15 minutes if needed<br>**OR**<br>**Glucagon 3mg IN** |

**Blood Sugar ≤ 69 mg / dl**

| | |
|---|---|
| | **Consider Oral Glucose Solution** *if available* |
| | **Consider Oral Solution (Juices / Food)** |
| A | <u>If no improvement</u><br>**D10 125 mL – 250 mL IV / IO**<br>Or<br>**D50 12.5 - 25 gm IV / IO**<br>May repeat until Blood Glucose ≥ 80 mg/dL |

**Blood Sugar 70 – 249 mg / dl**

| | |
|---|---|
| | Blood Glucose Analysis Procedure ***if condition changes*** |

Exit to Appropriate Protocol(s)

**Blood Sugar ≥ 250 mg / dl**

| | |
|---|---|
| A | **Normal Saline Bolus**<br>**500 mL IV / IO**<br>May repeat as needed<br>**Then infuse 150 mL / hr** |

| | |
|---|---|
| | **Monitor and Reassess Every 5 minutes Until Blood Glucose ≥ 80 mg / dl** |

**Notify Destination or Contact Medical Control**

Adult Medical Protocol Section

# Diabetic; Adult



**Pearls**

- **Recommended exam: Mental Status, Skin, Respirations and effort, Neuro.**
- **Patients with prolonged hypoglycemia or those who are malnourished may not respond to glucagon.**
- **Do not administer oral glucose to patients who are not able to swallow or protect their airway.**
- **Quality control checks should be maintained per manufacturers recommendation for all glucometers.**
- **Patient's refusing transport to medical facility after treatment of hypoglycemia:**
  Blood sugar must be **≥ 80**, patient has ability to eat and availability of food with responders on scene.
  Patient must have known history of diabetes and not taking any oral diabetic agents.
  Patient returns to normal mental status and has a normal neurological exam with no new neurological deficits.
  Patient must demonstrate capacity to make informed health care decisions. See Universal Patient Care Protocol UP-1. Otherwise contact medical control.
- **Hypoglycemia with Oral Agents:**
  Patient's taking oral diabetic medications should be encouraged to allow transportation to a medical facility.
  They are at risk of recurrent hypoglycemia that can be delayed for hours and require close monitoring even after normal blood glucose is established.
  Not all oral agents have prolonged action so Contact Medical Control or NC Poison Control Center for advice.
  A noted exception to this is metformin.
  Patient's who meet criteria to refuse care should be instructed to contact their physician immediately and consume a meal.
- **Hypoglycemia with Insulin Agents:**
  Many forms of insulin now exist. Longer acting insulin places the patient at risk of recurrent hypoglycemia even after a normal blood glucose is established.
  Not all insulins have prolonged action so Contact Medical Control for advice.
  Patient's who meet criteria to refuse care should be instructed to contact their physician immediately and consume a meal.
- **Congestive Heart Failure patients who have Blood Glucose > 250:**
  Limit fluid boluses unless patient has signs of volume depletion such as, dehydration, poor perfusion, hypotension, and/ or shock.
- In extreme circumstances with no IV / IO access and no response to glucagon, D50 can be administered rectally, Contact Medical Control for advice.

## Dispositions

**Paramedic / Advanced EMT:** Any patient with an abnormal exam post Dextrose administration or blood sugar of <70 or >350 mg/dl

# Dialysis/ Renal Failure

## History
- Peritoneal or Hemodialysis
- Anemia
- Catheter access noted
- Shunt access noted
- Hyperkalemia

## Signs and Symptoms
- Hypotension
- Bleeding
- Fever
- Electrolyte imbalance
- Nausea and / or vomiting
- Altered Mental Status
- Seizure
- Arrhythmia

## Differential
- Congestive heart failure
- Pericarditis
- Diabetic emergency
- Sepsis
- Cardiac tamponade

Cardiac Arrest

YES → P
- **Calcium Gluconate 2 gm IV / IO (Or Calcium Chloride 1 gm IV / IO)**
- **Sodium Bicarbonate 50 mEq IV / IO**

→ Exit to Appropriate Cardiac Protocol(s) ***as indicated***

NO ↓

Shunt / Fistula Bleeding

YES →
- **Apply firm finger tip pressure to bleeding site**
- Apply dressing but avoid bulky dressing
- Dressing must not compress fistula / shunt as this will cause clotting of the shunt

NO ↓

- Blood Glucose Analysis Procedure
- Diabetic Protocol AM 2 ***as indicated***
- B — 12 Lead ECG Procedure
- IV or IO Access Protocol UP 6
- P — Cardiac Monitor
- CHF / Pulmonary Edema Protocol AC 5 ***as indicated***

NO ↓

Systolic Blood Pressure < 90

YES →
- A — **Normal Saline Bolus 250 mL** Repeat as needed **Maximum 1 L** *If lungs remain clear*
- Hypotensive/ Shock Protocol AM 5 ***as indicated***

NO ↓

Peaked T Wave QRS ≥ 0.12 sec

YES →
- P — **Calcium Gluconate 2 gm IV / IO (Or Calcium Chloride 1 gm IV / IO)**
- **Sodium Bicarbonate 50 mEq IV / IO**
- **Nebulized Albuterol 5mg** *may repeat once*

NO ↓

**Notify Destination or Contact Medical Control**

Adult Medical Protocol Section



Any local EMS System changes to this document must follow the NC OEMS Protocol Change Policy and be approved by OEMS

# Dialysis/ Renal Failure



**Pearls**

- **Recommended exam: Mental status. Neurological. Lungs. Heart. Skin.**
- **Preferably transport to a medical facility capable of providing dialysis treatment.**
- **Do not take Blood Pressure or start IV / IO in extremity which has a shunt/ fistula in place.**
- **Access of shunt indicated in the dead or near-dead patient only with no IV or IO access.**
- **If hemorrhage cannot be controlled with firm, uninterrupted direct pressure, application of tourniquet with uncontrolled dialysis fistula bleeding is indicated.**
- **Hemodialysis:**
  Process which removes waste from the blood stream and occurs about three times each week.
  Some patients do perform hemodialysis at home.
- **Peritoneal dialysis:**
  If patient complains of fever, abdominal pain, and/ or back pain, bring the Peritoneal Dialysis fluid bag, which has drained from the abdomen, to the hospital.

**Complications of Dialysis Treatment:**

Hypotension:
Typically responds to small fluid bolus of 250 mL Normal Saline.
May result in angina, AMS, seizure or arrhythmia.

Filtration and decreased blood levels of some medications like some seizure medications:

Disequilibrium syndrome:
Shift of metabolic waste and electrolytes causing weakness, dizziness, nausea and/ or vomiting and seizures.

Equipment malfunction:
Air embolism.
Bleeding.
Electrolyte imbalance.
Fever.

- **Fever:**
  Consider sepsis in a dialysis patient with any catheter extending outside the body.
- Always consider Hyperkalemia in all dialysis or renal failure patients.
- Sodium Bicarbonate and Calcium Chloride/ Gluconate should not be mixed. Ideally give in separate lines.
- Renal dialysis patients have numerous medical problems typically. Hypertension and cardiac disease are prevalent.

## Dispositions

**Paramedic:** Any patient who has missed any of their last 3 dialysis sessions, or has a complaint related to their dialysis needs

# Hypertension

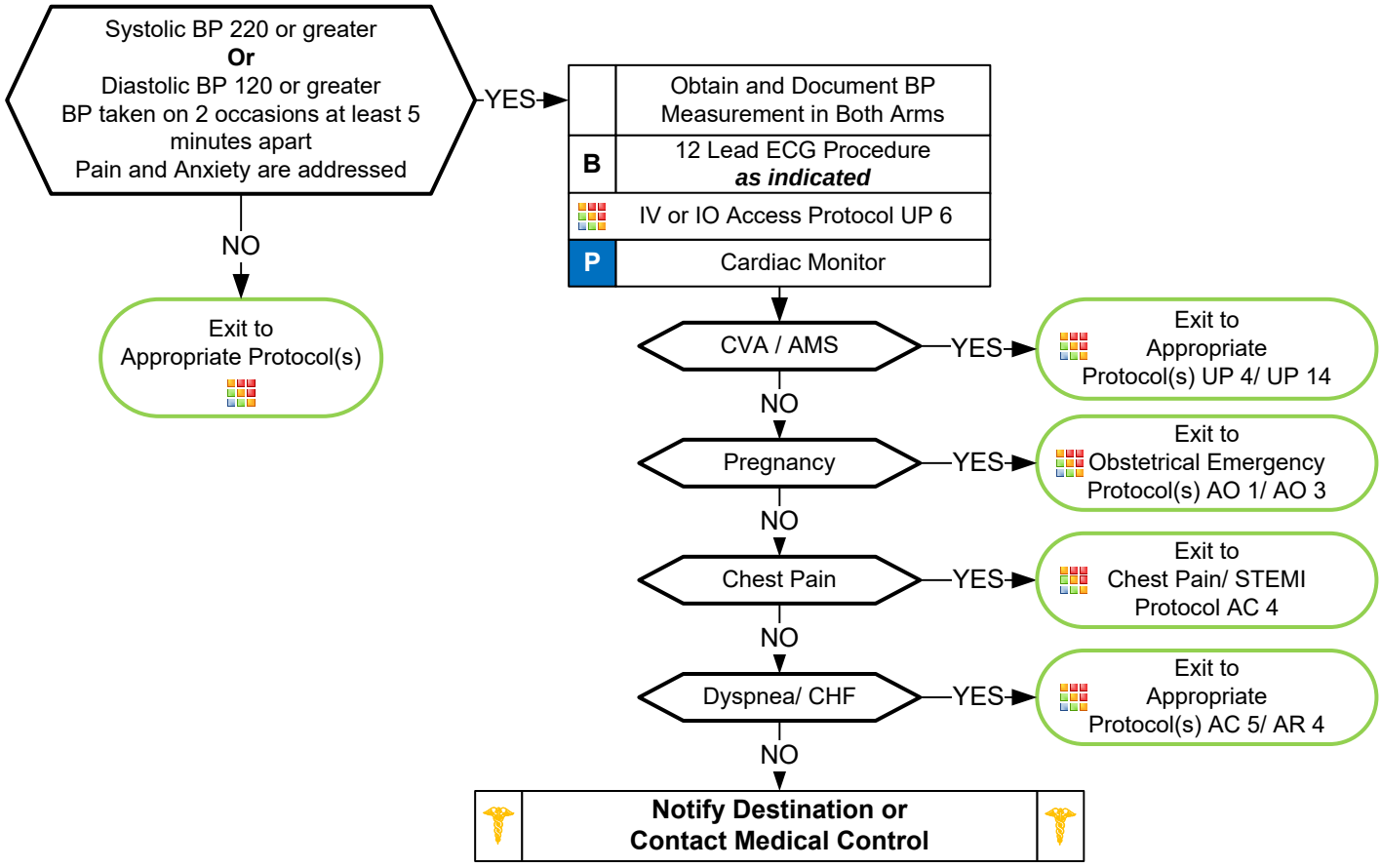
### History
- Documented Hypertension
- Related diseases: Diabetes; CVA; Renal Failure; Cardiac Problems
- Medications for Hypertension
- Compliance with Hypertensive Medications
- Erectile Dysfunction medications
- Pregnancy

### Signs and Symptoms
**One of these**
- Systolic BP 220 or greater
- Diastolic BP 120 or greater

**AND at least one of these**
- Headache
- Chest Pain
- Dyspnea
- Altered Mental Status
- Seizure

### Differential
- Hypertensive encephalopathy
- Primary CNS Injury
  - Cushing's Response with Bradycardia and Hypertension
- Myocardial Infarction
- Aortic Dissection / Aneurysm
- Pre-eclampsia / Eclampsia

Hypertension is not uncommon especially in an emergency setting. Hypertension is usually transient and in response to stress and/ or pain. A hypertensive emergency is based on blood pressure along with symptoms which suggest an organ is suffering damage such as MI, CVA or renal failure. This is very difficult to determine in the pre-hospital setting in most cases. Aggressive treatment of hypertension can result in harm. Most patients, even with significant elevation in blood pressure, need only supportive care. Specific complaints such as chest pain, dyspnea, pulmonary edema or altered mental status should be treated based on specific protocols and consultation with Medical Control.




Adult Medical Protocol Section

# Hypertension



## Pearls

- **Recommended Exam: Mental Status, Skin, Neck, Lung, Heart, Abdomen, Back, Extremities, Neuro**
- Elevated blood pressure is based on two to three sets of vital signs.
- Symptomatic hypertension is typically revealed through end organ dysfunction to the cardiac, CNS, or renal systems.
- All symptomatic patients with hypertension should be transported with their head elevated at 30 degrees.
- Ensure appropriate size blood pressure cuff utilized for body habitus.

## Dispositions

**Paramedic:** Any patient with symptoms related to hypertension

# Hypotension/ Shock

## History
- Blood loss - vaginal or gastrointestinal bleeding, AAA, ectopic
- Fluid loss - vomiting, diarrhea, fever
- Infection
- Cardiac ischemia (MI, CHF)
- Medications
- Allergic reaction
- Pregnancy
- History of poor oral intake

## Signs and Symptoms
- Restlessness, confusion
- Weakness, dizziness
- Weak, rapid pulse
- Pale, cool, clammy skin
- Delayed capillary refill
- Hypotension
- Coffee-ground emesis
- Tarry stools

## Differential
- Ectopic pregnancy
- Dysrhythmias
- Pulmonary embolus
- Tension pneumothorax
- Medication effect / overdose
- Vasovagal
- Physiologic (pregnancy)
- Sepsis

| | |
|---|---|
| | Blood Glucose Analysis Procedure |
| B | 12 Lead ECG Procedure |
| | IV or IO Access Protocol UP 6 |
| P | Cardiac Monitor |
| | Airway Protocol(s) ***if indicated*** |
| | Diabetic Protocol AM 2 ***if indicated*** |

**TXA / Blood Product Indicators:**
**V/S parameters for blunt/ penetrating trauma:**

**Adult:**
- **SBP ≤ 90 mmHg**

**Age ≥ 65**
**SBP < 100 mmHg + HR > 100**

**Peds:**
- **SBP < {70 + 2(Age)}**

History and Exam Suggest Type of Shock

**Cardiogenic**

Chest Pain: Cardiac and STEMI Protocol AC 4 Appropriate Cardiac Protocol(s) ***if indicated***

SBP ≥ 90 mmHg — YES

NO

P **Norepinephrine 5 mcg/min IV / IO** Titrate to effect: SBP ≥ 90 mmHg MAP ≥ 65 mmHg

**Hypovolemic** / **Distributive**

Allergy Protocol AM 1 ***if indicated***

Suspected Sepsis Protocol UP 14 ***if indicated***

Multiple Trauma Protocol TB 6 ***if indicated***

A **Normal Saline Bolus 500 mL IV / IO** Repeat to effect SBP > 90 **2 L Maximum**

P **Norepinephrine 5 mcg/min IV / IO Or Epinephrine 1 – 10 mcg/min IV / IO** Titrate to effect: SBP ≥ 90 mmHg MAP ≥ 65 mmHg ***See Page 2***

**Obstructive**

P Chest Decompression-Needle Procedure ***if indicated***

| Vasopressor Choice Guidance | |
|---|---|
| **Epinephrine** | **Norepinephrine** |
| ROSC: with Bradycardia | ROSC: with Tachycardia |
| Anaphylaxis | Cardiogenic Shock |
| Hypotension: with Bradycardia | Hypotension: with Tachycardia |
| Sepsis: with Bradycardia | Sepsis: with Tachycardia |
| Severe Asthma | *Tachycardia > 120* |
| Severe COPD | |

**Notify Destination or Contact Medical Control**

Adult Medical Protocol Section

# Hypotension/ Shock

**Tranexamic Acid (TXA)**

- **Administer 2 gm as slow IV push**
- Infuse during transport only, unless patient entrapped and can be administered without slowing extrication.

**Push-Dose Vasopressors:**

- **Epinephrine:** Mix 1:1000 (1mg in 1mL) into 1000 mL of NS or LR.
- **Norepinephrine:** Mix 1 mg into 1000 mL of NS or LR
- Yields a concentration of 1 mcg/mL of Epinephrine or Norepinephrine.
- **Give 5 – 10 mcg every 2 – 3 minutes** to effect SBP ≥ 90 and/or MAP of ≥ 65 mmHg.

- Use push-dose vasopressors, in conjunction with fluid resuscitation, with RSI procedure when hypotensive.
- Use push-dose vasopressors with hypotension unresponsive to fluid resuscitation.
- Use push-dose vasopressor as you are setting up a Epinephrine or Levophed drip.
- If patient requires ≥ 2 push dose vasopressors, start vasopressor infusion.

**Epinephrine and Norepinephrine DRIP**

1 mg of drug in 1000 mL NS or LR
(1 mcg / mL)
10 drop set

| Dose | gtts / min |
|---|---|
| 1 mcg/min | 10 gtts/min |
| 2 mcg/min | 20 gtts/min |
| 3 mcg/min | 30 gtts/min |
| 4 mcg/min | 40 gtts/min |
| 5 mcg/min | 50 gtts/min |
| 6 mcg/min | 60 gtts/min |
| 7 mcg/min | 70 gtts/min |
| 8 mcg/min | 80 gtts/min |
| 9 mcg/min | 90 gtts/min |
| 10 mcg/min | 100 gtts/min |

**Levophed:**

If patient requires ≥ 2 push dose vasopressors or has suspected sepsis, initiate Levophed drip.
**Levophed 5 mcg/min IV / IO** and titrate by **2 mcg/min every 2 – 3 minutes** to effect SBP ≥ 90mmHg and/or MAP ≥ 65 mmHg.

## Pearls

- **Recommended Exam: Mental Status, Skin, Heart, Lungs, Abdomen, Back, Extremities, Neuro**
- **Hypotension is defined as a systolic blood pressure less than 90. This is not always reliable and should be interpreted in context and consider patient's typical BP if known.**
- **Shock may be present with a normal blood pressure initially or even elevated blood pressure.**
- **Shock is often present with normal vital signs and may develop insidiously. Tachycardia may be the first and only sign.**
- **Consider all possible causes of shock and treat per appropriate protocol.**
- **Hypovolemic Shock:**
  Hemorrhage, trauma, GI bleeding, ruptured aortic aneurysm or pregnancy-related bleeding.
  **Tranexamic Acid (TXA):**
  **TXA is NOT indicated and should NOT be administered where trauma occurred > 3 hours prior to EMS arrival.**

**Cardiogenic Shock:**
Heart failure: MI, Cardiomyopathy, Myocardial contusion, Ruptured ventrical / septum / valve / toxins.

- **Distributive Shock:**
  Signs may include: Sepsis/ Anaphylactic/ Neurogenic/ Toxins
  Hallmark is warm, dry, pink skin with normal capillary refill time and typically alert.
- **Obstructive Shock:**
  Pericardial tamponade. Pulmonary embolus. Tension pneumothorax.
  Signs may include hypotension with distended neck veins, tachycardia, unilateral decreased breath sounds or muffled heart sounds.
- **Acute Adrenal Insufficiency or Congenital Adrenal Hyperplasia:**
  Body cannot produce enough steroids (glucocorticoids/ mineralocorticoids.)
  May have primary or secondary adrenal disease, congenital adrenal hyperplasia, or more commonly have stopped a steroid like prednisone. Injury or illness may precipitate.
  Usually hypotensive with nausea, vomiting, dehydration and/ or abdominal pain.
  **If suspected, Paramedic should give Methylprednisolone 125 mg IM / IV / IO or Dexamethasone 10 mg IM / IV / IO. Use steroid agent specific to your drug list.**
  **May administer prescribed steroid carried by patient IM / IV / IO. Patient may have Hydrocortisone (Cortef or Solu-Cortef). Dose: < 1y.o. give 25 mg, 1-12 y.o. give 50 mg, and > 12 y.o. give 100 mg or dose specified by patient's physician.**

## Dispositions

**Paramedic:** Any patient with a SBP <90

# Adult Airway

Assess Respiratory Rate, Effort, Oxygenation
Is Airway/ Breathing Adequate?

YES → Supplemental oxygen
Goal oxygen saturation ≥ 92%
Exit to
Appropriate Protocol(s)

NO

**Basic Maneuvers First**
-open airway chin lift/ jaw thrust
-nasal and/ or oral airway(s)
-Bag-valve mask (BVM) +/- PEEP

Spinal Motion Restriction
Procedure/ Protocol TB 8
***if indicated***

Altered Mental Status Protocol UP 4
***if indicated***

Respiratory Distress with a
Tracheostomy Tube
Protocol AR 10
***if indicated***

**Capnography Monitoring**

- **End-tidal (EtCO2) monitoring is mandatory following placement of an endotracheal tube.**
- **EtCO2 monitoring is mandatory following placement of a BIAD once available on scene.**

*Protocols AR 1, 2, and 3 should be utilized together (even if agency is not using Drug Assisted Airway Protocol) as they contain useful information for airway management.*

Airway Obstructed

YES →
- Airway Foreign Body Obstruction Procedure
- A: Direct Laryngoscopy ***Optional***
- P: Airway Cricothyrotomy Surgical Procedure ***if indicated***

NO

Breathing/ Oxygenation
Support needed?

YES →
- Supplemental Oxygen
  BVM
  Maintain
  Oxygen Saturation ≥ 92 %
- B: Consider Airway NIPPV Procedure
- B: Airway BIAD Procedure ***if indicated***
- A: Oral/ Nasotracheal Intubation Procedure ***Optional***
- P: Chest Decompression Procedure ***if indicated***
- P: Consider Airway Drug Assisted Protocol AR 3 ***if available***
- P: Post-intubation/ BIAD Management Protocol AR 8 ***if indicated***

NO

Monitor / Reassess
Supplemental Oxygen
***if indicated***

Exit to
appropriate protocol(s)

**Failed Airway:**

Unable to Ventilate and Oxygenate ≥ 90% during or after one (1) or more unsuccessful intubation attempts

and/ or
Anatomy inconsistent with continued attempts

and/ or
Three (3) unsuccessful attempts by most experienced Paramedic/ AEMT.

**Exit to**
**Adult Failed Airway Protocol AR 2**

**Notify Destination or Contact Medical Control**

Airway Respiratory Protocol Section

# Adult Airway

## Pearls

- **See Pearls section of protocols AR 2 and 3.**
- **For the purposes of this protocol a secure airway is when the patient is receiving appropriate oxygenation and ventilation.**
- **If an effective airway is being maintained by BVM with continuous pulse oximetry values of ≥ 90%, it is acceptable to continue with basic airway measures.**
- **Ventilation rate should be 10 - 12 per minute to maintain a EtCO2 of 35 – 45 and avoid hyperventilation.**
- **<u>Anticipating the Difficult Airway and Airway Assessment</u>**
  - **Difficult BVM Ventilation (ROMAN):**
    - **R**adiation treatment/ **R**estriction;
    - **O**bese/ **O**bstruction/ **O**B – 2d and 3d trimesters/ **O**bstructive sleep apnea;
    - **M**ask seal difficulty (hair, secretions, trauma);
    - **A**ge ≥ 55; **N**o teeth.
  - **Difficult Laryngoscopy (LEON):**
    - **L**ook externally for anatomical problems;
    - **E**valuate 3-3-2 (Mouth opening should equal 3 of patients finger's width, mental area to neck should equal 3 of patient's finger's width, base of chin to thyroid prominence should equal 2 of patients finger's width);
    - **O**bese, obstruction, OB – 2d and 3d trimesters;
    - **N**eck mobility limited.
  - **Difficulty BIAD (RODS):**
    - **R**adiation treatment/ **R**estriction;
    - **O**bese/ **O**bstruction/ **O**B – 2d and 3d trimesters/ **O**bstructive sleep apnea;
    - **D**istorted or disrupted airway;
    - **S**hort thyromental distance/ **S**mall mandible.
  - **Difficulty Cricothyrotomy / Surgical Airway (SMART):**
    - **S**urgery scars**;**
    - **M**ass or hematoma**,**
    - **A**ccess or anatomical problems**;**
    - **R**adiation treatment to face, neck, or chest;
    - **T**umor.
- **Complete an Airway Evaluation Form with any BIAD or Intubation procedure where medications are used to facilitate.**
- **<u>Nasotracheal intubation</u>:**
  - **Procedure requires spontaneous breathing and may require considerable time, exposing patient to critical desaturation.**
  - **Contraindicated in combative, anatomically disrupted or distorted airways, increased ICP, severe facial trauma, basal skull fracture, and head injury. Orotracheal route is preferred.**
- **Intubation attempt defined as laryngoscope blade passing the teeth or endotracheal tube passed into the nostril.**
- **If First intubation attempt fails, make an adjustment and try again: (Consider change of provider in addition to equipment).**
- AEMT and Paramedics should consider using a BIAD if oral-tracheal intubation is unsuccessful.
- During intubation attempts use External Laryngeal Manipulation to improve view of glottis.
- Gastric tube placement should be considered in all intubated patients if available or time allows.
- It is important to secure the endotracheal tube well to better maintain ETT placement. Manual stabilization of endotracheal tube should be used during all patient moves / transfers.
- **DOPE: D**isplaced tracheostomy tube / ETT, **O**bstructed tracheostomy tube / ETT, **P**neumothorax and **E**quipment failure.

## Dispositions

***No dispositions associated with this protocol***

# Adult, Failed Airway

**Definition of Failed Airway:**
Unable to Ventilate and Oxygenate ≥ 90% during
or after one (1) or more unsuccessful intubation attempts

and/ or
Anatomy inconsistent with continued attempts

and/ or
Three (3) unsuccessful attempts by most experienced Paramedic/AEMT.
*Each attempt should include change in approach or equipment*

NO MORE THAN THREE (3) ATTEMPTS TOTAL

**Capnography Monitoring**

- **End-tidal (EtCO2) monitoring is mandatory following placement of an endotracheal tube.**
- **EtCO2 monitoring is mandatory following placement of a BIAD once available on scene.**

*Protocols AR 1, 2, and 3 should be utilized together (even if agency is not using Drug Assisted Airway as they contain useful information for airway management.*

Failed Airway

Call for additional resources *if available* and contact **Medical Control** *when able*

BVM
Adjunctive Airway NPA/ OPA
Maintains
Oxygen Saturation ≥ 92 %

YES → Continue BVM
Supplemental Oxygen
Exit to
Appropriate Protocol(s)

NO

| | |
|---|---|
| **B** | Attempt<br>Airway Blind Insertion Airway<br>Device Procedure |
| **A** | Airway Video Laryngoscopy<br>Device Procedure<br>***if available*** |
| **P** | Airway Cricothyrotomy Surgical<br>Procedure<br>*if needed* |
| | Supplemental oxygen<br>BVM with Airway Adjuncts<br>Maintain<br>Oxygen Saturation ≥ 92 % |
| | Post-intubation<br>BIAD Management<br>Protocol AR 8 |

**Notify Destination or Contact Medical Control**

# Adult, Failed Airway



## Pearls

- **For the purposes of this protocol a secure airway is when the patient is receiving appropriate oxygenation and ventilation.**
- **If an effective airway is being maintained by BVM with continuous pulse oximetry values of ≥ 90%, it is acceptable to continue with basic airway measures.**
- **Ventilation rate should be 10 - 12 per minute to maintain a EtCO2 of 35-45 and avoid hyperventilation.**
- **Anticipating the Difficult Airway and Airway Assessment**
  - **Difficult BVM Ventilation (ROMAN):**
    - **R**adiation treatment/ **R**estriction;
    - **O**bese/ **O**bstruction/ **O**B – 2d and 3d trimesters/ **O**bstructive sleep apnea;
    - **M**ask seal difficulty (hair, secretions, trauma);
    - **A**ge ≥ 55; **N**o teeth.
  - **Difficult Laryngoscopy (LEON):**
    - **L**ook externally for anatomical problems;
    - **E**valuate 3-3-2 (Mouth opening should equal 3 of patients finger's width, mental area to neck should equal 3 of patient's finger's width, base of chin to thyroid prominence should equal 2 of patients finger's width);
    - **O**bese, obstruction, OB – 2d and 3d trimesters;
    - **N**eck mobility limited.
  - **Difficulty BIAD (RODS):**
    - **R**adiation treatment/ **R**estriction;
    - **O**bese/ **O**bstruction/ **O**B – 2d and 3d trimesters/ **O**bstructive sleep apnea;
    - **D**istorted or disrupted airway;
    - **S**hort thyromental distance/ **S**mall mandible.
  - **Difficulty Cricothyrotomy / Surgical Airway (SMART):**
    - **S**urgery scars**;**
    - **M**ass or hematoma**,**
    - **A**ccess or anatomical problems**;**
    - **R**adiation treatment to face, neck, or chest;
    - **T**umor
- **Complete an Airway Evaluation Form with any BIAD or Intubation procedure where medications are used to facilitate.**
- **Nasotracheal intubation:**
  - **Procedure requires spontaneous breathing and may require considerable time, exposing patient to critical desaturation.**
  - **Contraindicated in combative, anatomically disrupted or distorted airways, increased ICP, severe facial trauma, basal skull fracture, and head injury. Orotracheal route is preferred.**
- **Intubation attempt defined as laryngoscope blade passing the teeth or endotracheal tube passed into the nostril.**
- **If First intubation attempt fails, make an adjustment and try again: (Consider change of provider in addition to equipment)**
- AEMT and Paramedics should consider using a BIAD if oral-tracheal intubation is unsuccessful.
- During intubation attempts use External Laryngeal Manipulation to improve view of glottis.
- Gastric tube placement should be considered in all intubated patients if available or time allows.
- It is important to secure the endotracheal tube well to better maintain ETT placement. Manual stabilization of endotracheal tube should be used during all patient moves/ transfers.
- **Notify Medical Control AS EARLY AS POSSIBLE concerning the patient's difficult / failed airway.**
- **DOPE: D**isplaced tracheostomy tube/ ETT, **O**bstructed tracheostomy tube/ ETT, **P**neumothorax and **E**quipment failure.

## Dispositions

***No dispositions associated with this protocol***

# Adult COPD/ Asthma Respiratory Distress

## History
- Asthma; COPD -- chronic bronchitis, emphysema, congestive heart failure
- Home treatment (oxygen, nebulizer)
- Medications (theophylline, steroids, inhalers)
- Toxic exposure, smoke inhalation

## Signs and Symptoms
- Shortness of breath
- Pursed lip breathing
- Decreased ability to speak
- Increased respiratory rate and effort
- Wheezing, rhonchi
- Use of accessory muscles
- Fever, cough
- Tachycardia

## Differential
- Asthma
- Anaphylaxis
- Aspiration
- COPD (Emphysema, Bronchitis)
- Pleural effusion
- Pneumonia
- Pulmonary embolus
- Pneumothorax
- Cardiac (MI or CHF)
- Pericardial tamponade
- Hyperventilation
- Inhaled toxin (Carbon monoxide, etc.)

Adult Airway Protocol(s) ***as indicated***

Adult Allergic Reaction/ Anaphylaxis Protocol AM 1 ***as indicated***

B — 12 Lead ECG Procedure

IV or IO Access Protocol UP 6

P — Cardiac Monitor

**Following Assessment**

**WHEEZING**

B — **Albuterol Nebulizer 2.5 – 5 mg** Repeat as needed x 3

**STRIDOR**

B — **Albuterol Nebulizer 2.5 – 5 mg** Repeat as needed x 3

A — **Epinephrine Nebulizer 1 mg (1:1000) / 2 mL NS** May repeat x 1

Adult Airway Protocol(s) ***as indicated***

B — Airway NIPPV Procedure

A — **Albuterol Nebulizer 2.5 – 5 mg +/- Ipratropium 0.5 mg (DuoNeb)** Repeat as needed x 3 ***if indicated***

A — Consider **Epinephrine 1:1000 0.3 – 0.5 mg IM**

A — **Methylprednisolone 125 mg IV / IO / IM**

A — **Magnesium Sulfate 2g IV / IO** Infuse over 10 – 20 minutes

P — *Consider* **Ketamine 10 mg IV / IO** For patients **NOT** tolerating NIPPV **Requires Medical Direction Contact**

**Notify Destination or Contact Medical Control**

Airway Respiratory Protocol Section

# Adult COPD/ Asthma Respiratory Distress



## Pearls

- **Recommended Exam: Mental Status, HEENT, Skin, Neck, Heart, Lungs, Abdomen, Extremities, Neuro**
- **Items in Red Text are key performance measures used to evaluate protocol compliance and care.**
- **This protocol includes all patients with respiratory distress, COPD, Asthma, Reactive Airway Disease, or bronchospasm.**
- **Patients may also have wheezing and respiratory distress with viral upper respiratory tract infections and pneumonia.**
- **Pulse oximetry should be monitored continuously and consider End-tidal $CO_2$ monitoring if available.**
- **<u>Combination nebulizers containing albuterol and ipratropium (DuoNeb):</u>**
  - **Patients may require more than 3 nebulizer treatments, treatments should continue until improvement.**
  - **Following 3 combination nebulizers (DuoNeb), it is preferable to continue albuterol solely with subsequent treatments as there is no proven benefit to continual use of ipratropium.**
- **<u>Epinephrine:</u>**
  - **If allergic reaction or anaphylaxis is suspected, give immediately and repeat until improvement.**
  - **If allergic reaction is not suspected, administer with failure to improve and/ or impending respiratory failure.**
- **Consider Magnesium Sulfate with no improvement and/ or impending respiratory failure. Likely more effective with asthmatic exacerbation and less so with COPD exacerbation.**
- **<u>Non-Invasive Positive Pressure Ventilation (NIPPV: CPAP or Bi-Level/ BiPap):</u>**
  - **May be used with COPD, Asthma, Allergic reactions, and/ or CHF.**
  - **Consider early in treatment course.**
  - **Consider removal if SBP remains < 100 mmHg and not responding to other treatments.**
  - **If patient does not tolerate CPAP, consider Medical Direction for Ketamine**
- In patients using levalbuterol (Xopenex) you may use Albuterol for the first treatment then use the patient's supply for repeat nebulizers or agency's supply.
- A silent chest in respiratory distress is a pre-respiratory arrest sign.
- **EMTs may administer Albuterol if the patient is already prescribed, and may administer from EMS supply.**

## Dispositions

**Paramedic:** Any patient who received ketamine or epinephrine for respiratory distress, has persistent respiratory distress on CPAP, an SpO2 <94%, or an Altered Mental Status with respiratory distress

**Advanced EMT:** Any patient with abnormal vital signs, a history of intubation for respiratory distress, has stridorous breath sounds, or requires new oxygen support (NRB or CPAP)

# Pediatric Airway

Assess Respiratory Rate, Effort, Oxygenation
Is Airway / Breathing Adequate?

YES → Supplemental oxygen
Goal oxygen saturation ≥ 92%

Exit to
Appropriate Protocol(s)

NO

**Basic Maneuvers First**
-open airway chin lift/ jaw thrust
-nasal and/ or oral airway
-Bag-valve mask (BVM) +/- PEEP

Spinal Motion Restriction
Procedure / Protocol TB 8
***if indicated***

Consider AMS Protocol UP 4

Respiratory Distress with a
Tracheostomy Tube
Protocol AR 10
***if indicated***

**Capnography Monitoring**

- **End-tidal (EtCO2) monitoring is mandatory following placement of an endotracheal tube.**
- **EtCO2 monitoring is mandatory following placement of a BIAD once available on scene.**

*Protocols AR 3, 5, and 6 should be utilized together (even if agency is not using Drug Assisted Airway Protocol) as they contain useful information for airway management.*

Airway Obstructed → YES

- Airway Foreign Body Obstruction Procedure
- **A** Direct Laryngoscopy ***Optional***

NO

Breathing / Oxygenation Support needed → YES

- Supplemental Oxygen
  BVM
  Maintain
  Oxygen Saturation ≥ 92 %
- **B** Airway BIAD Device Procedure ***if indicated***
- **A** Oral / Tracheal Intubation Procedure ***Optional***
- **P** Chest Decompression Procedure ***if indicated***
- **P** Consider Airway, Drug Assisted Protocol AR 3 ***if available***
- **P** Post-intubation / BIAD Management Protocol AR 8 ***if indicated***

NO

Monitor /Reassess
Supplemental Oxygen
***if indicated***

Exit to
Appropriate Protocol(s)

**Failed Airway:**

Unable to Ventilate and Oxygenate ≥ 90% during or after one (1) or more unsuccessful intubation attempts

and/ or
Anatomy inconsistent with continued attempts

and/ or
Three (3) unsuccessful attempts by most experienced Paramedic/ AEMT.

**Exit to**
**Pediatric Failed Airway**
**Protocol AR 6**

**Notify Destination or**
**Contact Medical Control**

Airway Respiratory Protocol Section

# Pediatric Airway



## Pearls

**This protocol is for use in patients who FIT within a Pediatric Medication/ Skill Resuscitation System Product.**

- **For the purposes of this protocol, a secure airway is when the patient is receiving appropriate oxygenation and ventilation.**
- **If an effective airway is being maintained by BVM with continuous pulse oximetry values of ≥ 90%, it is acceptable to continue with basic airway measures.**
- **Ventilation rate:**
  - **30 for Neonates, 25 for Toddlers, 20 for School Age, and for Adolescents the normal Adult rate of 10 - 12 per minute.**
  - **Maintain EtCO2 between 35 - 45 and avoid hyperventilation.**
- **Ketamine for airway intervention and/ or sedation purposes:**
  - **Ketamine may be used in pediatric patients (fit within a Pediatric Medication/Skill Resuscitation System product, ≤ 15 years of age, or ≤ 49 kg) with DIRECT ONLINE MEDICAL ORDER by the system MEDICAL DIRECTOR or ASSISTANT MEDICAL DIRECTOR only.**
  - **Agencies using Ketamine in the pediatric population must also be using in their adult population.**
- **KETAMINE:**
  - **Ketamine may be used with or without a paralytic agent in conjunction with either an OPA, NPA, BIAD or endotracheal tube. BIAD is preferred over endotracheal tube until hypoxia and/ or hypotension are corrected.**
  - **Ketamine may be used during the resuscitation of hypoxia or hypotension in conjunction with airway management. Once hypoxia and hypotension are corrected, use of a sedative and paralytic can proceed if indicated.**
  - **Ketamine may be used in the dangerously combative patient requiring airway management IM. IV/ IO should be established as soon as possible.**
  - **Ketamine may be used for sedation once a BIAD or endotracheal tube are established and confirmed.**
  - **Agencies using Ketamine must follow Standards Policy: Medial Policy Section Ketamine Program Requirements. Medical Policy 2.**
- **Intubation:**
  - **Attempt defined as laryngoscope blade passing the teeth or endotracheal tube passed into the nostril.**
  - **Use of a stylet is recommended in all pediatric intubations.**
  - **Endotracheal tube: Depth = 3 x the diameter of the ETT. Estimated Size = 16 + age (years) / 4. Term newborn = 3. 5 mm.**
  - **If First intubation attempt fails, make an adjustment and try again: (Consider change of provider in addition to equipment)**
- **NC EMS Airway Evaluation Form:**
  - **Fully complete and have receiving healthcare provider sign confirming BIAD or endotracheal tube placement.**
  - **Complete online in region specific *ReadyOp* and upload completed form.**
  - **Complete when Ketamine, Etomidate, Succinylcholine and/ or Rocuronium or used to facilitate use of a BIAD and/ or endotracheal intubation.** Paramedics/ AEMT should consider using a BIAD if endotracheal intubation is unsuccessful.
- Secure the endotracheal tube well and consider c-collar in pediatric patients (even in absence of trauma) to better maintain ETT placement. Manual stabilization of endotracheal tube should be used during all patient moves / transfers.
- **≥ 10 years: Surgical cricothyrotomy or commercial kits based on agency preference recommended.**
- **DOPE: D**isplaced tracheostomy tube/ ETT, **O**bstructed tracheostomy tube/ ETT, **P**neumothorax and **E**quipment failure.

## Dispositions

***No dispositions associated with this protocol***

# Pediatric Failed Airway

**Definition of Failed Airway:**

- Unable to Ventilate and Oxygenate ≥ 90% during or after one (1) or more unsuccessful intubation attempts.
  and/ or
- Anatomy inconsistent with continued attempts.
  and/ or
- Three (3) unsuccessful attempts by most experienced Paramedic/ AEMT.
  *Each attempt should include change in approach or equipment*

NO MORE THAN THREE (3) ATTEMPTS TOTAL

Call for additional resources *if available* and contact **Medical Control** *when able*

Failed Aiway

**BVM**
**Adjunctive Airway NP/ OP**
Maintains
Oxygen Saturation ≥ 92%

YES → Continue BVM Supplemental Oxygen

Exit to Appropriate Protocol(s)

NO

**A** Airway Video Laryngoscopy Device Procedure ***if available*** ***Optional***

**B** Attempt Airway Blind Insertion Airway Device Procedure

BIAD / Cricothyrotomy Successful
Or
Oxygenation / Ventilation Adequate

YES → Exit to Post-intubation/ BIAD Management Protocol AR 8

NO

**Capnography Monitoring**

- **End-tidal (EtCO2) monitoring is mandatory following placement of an endotracheal tube.**
- **EtCO2 monitoring is mandatory following placement of a BIAD once available on scene.**

*Protocols AR 3, 5, and 6 should be utilized together (even if agency is not using Drug Assisted Airway Protocol) as they contain useful information for airway management.*

Supplemental oxygen
BVM with Airway Adjuncts
Maintain Oxygen Saturation ≥ 92%

**Notify Destination or Contact Medical Control**

Airway Respiratory Protocol Section

# Pediatric Failed Airway



## Pearls

**This protocol is for use in patients who FIT within a Pediatric Medication/ Skill Resuscitation System Product.**

- **For the purposes of this protocol, a secure airway is when the patient is receiving appropriate oxygenation and ventilation.**
- **If an effective airway is being maintained by BVM with continuous pulse oximetry values of ≥ 90%, it is acceptable to continue with basic airway measures.**
- **Ventilation rate:**
  - **30 for Neonates, 25 for Toddlers, 20 for School Age, and for Adolescents the normal Adult rate of 10 - 12 per minute. Maintain EtCO2 between 35 - 45 and avoid hyperventilation.**
- **Ketamine for airway intervention and/ or sedation purposes:**
  - **Ketamine may be used in pediatric patients (fit within a Pediatric Medication/Skill Resuscitation System product, ≤ 15 years of age, or ≤ 49 kg) with DIRECT ONLINE MEDICAL ORDER by the system MEDICAL DIRECTOR or ASSISTANT MEDICAL DIRECTOR only.**
  - **Agencies using Ketamine in the pediatric population must also be using in their adult population.**
- **KETAMINE:**
  - **Ketamine may be used with or without a paralytic agent in conjunction with either an OPA, NPA, BIAD or endotracheal tube. BIAD is preferred over endotracheal tube until hypoxia and/ or hypotension are corrected.**
  - **Ketamine may be used during the resuscitation of hypoxia or hypotension in conjunction with airway management. Once hypoxia and hypotension are corrected, use of a sedative and paralytic can proceed if indicated.**
  - **Ketamine may be used in the dangerously combative patient requiring airway management IM. IV/ IO should be established as soon as possible.**
  - **Ketamine may be used for sedation once a BIAD or endotracheal tube are established and confirmed.**
  - **Agencies using Ketamine must follow Standards Policy: Medial Policy Section Ketamine Program Requirements. Medical Policy 2.**
- **Intubation:**
  - **Attempt defined as laryngoscope blade passing the teeth or endotracheal tube passed into the nostril.**
  - **Use of a stylet is recommended in all pediatric intubations.**
  - **Endotracheal tube: Depth = 3 x the diameter of the ETT. Estimated Size = 16 + age (years) / 4. Term newborn = 3. 5 mm.**
  - **If First intubation attempt fails, make an adjustment and try again: (Consider change of provider in addition to equipment)**
- **NC EMS Airway Evaluation Form:**
  - **Fully complete and have receiving healthcare provider sign confirming BIAD or endotracheal tube placement.**
  - **Complete online in region specific *ReadyOp* and upload completed form.**
  - **Complete when Ketamine, Etomidate, Succinylcholine and/ or Rocuronium or used to facilitate use of a BIAD and/ or endotracheal intubation.** Paramedics/ AEMT should consider using a BIAD if endotracheal intubation is unsuccessful.
- Secure the endotracheal tube well and consider c-collar in pediatric patients (even in absence of trauma) to better maintain ETT placement. Manual stabilization of endotracheal tube should be used during all patient moves / transfers.
- **≥ 10 years: Surgical cricothyrotomy or commercial kits based on agency preference recommended.**
- **DOPE: D**isplaced tracheostomy tube/ ETT, **O**bstructed tracheostomy tube/ ETT, **P**neumothorax and **E**quipment failure.

## Dispositions

***No dispositions associated with this protocol***

# Pediatric Asthma
# Respiratory Distress

**History**
- Time of onset
- Possibility of foreign body
- Past Medical History
- Medications
- Fever / Illness
- Sick Contacts
- History of trauma
- History / possibility of choking
- Ingestion / OD
- Congenital heart disease

**Signs and Symptoms**
- Wheezing / Stridor / Crackles / Rales
- Nasal Flaring / Retractions / Grunting
- Increased Heart Rate
- AMS
- Anxiety
- Attentiveness / Distractability
- Cyanosis
- Poor feeding
- JVD / Frothy Sputum
- Hypotension

**Differential**
- Asthma / Reactive Airway Disease
- Aspiration
- Foreign body
- Upper or lower airway infection
- Congenital heart disease
- OD / Toxic ingestion / CHF
- Anaphylaxis
- Trauma

Pediatric Airway Protocol(s) 3, 5 - 7
***as indicated***

Pediatric
Allergic Reaction/ Anaphylaxis
Protocol PM 1
***as indicated***

B — 12 Lead ECG Procedure
***as indicated***

IV or IO Access Protocol UP 6
***if indicated***

P — Cardiac Monitor

**Following Assessment**

**WHEEZING / Asthma**

B — **Albuterol Nebulizer 1.25 - 2.5 mg**
Repeat as needed x 3

**STRIDOR / Croup**

B — **Albuterol Nebulizer 1.25 - 2.5 mg**
Repeat as needed x 3

A — **Epinephrine Nebulizer**
**1 mg (1:1000) in 2 mL NS**
May repeat x 1

Pediatric Airway Protocol(s) 3, 5 - 7
***as indicated***

A — **Albuterol Nebulizer**
**1.25 - 2.5 mg**
**+/- Ipratropium 0.5 mg (DuoNeb)**
Repeat as needed x 3
***if indicated***

A — Consider
**Epinephrine 1:1000**
**0.01 mg / kg IM**
**Maximum 0.3 mg**

A — **Methylprednisolone 2 mg / kg**
**IV / IO / IM**
**Maximum 125 mg**

A — **Magnesium Sulfate 40 mg/kg IV / IO**
Infuse over 10 – 20 minutes
**Maximum 2 gm**

**Notify Destination or**
**Contact Medical Control**

Airway Respiratory Protocol Section

# Pediatric Asthma
# Respiratory Distress



## Pearls

- **Recommended Exam: Mental Status, HEENT, Skin, Neck, Heart, Lungs, Abdomen, Extremities, Neuro**
- **Items in Red Text are key performance measures used to evaluate protocol compliance and care.**
- **This protocol includes all patients with respiratory distress, Asthma, Reactive Airway Disease, croup, or bronchospasm.**
- **Patients may also have wheezing and respiratory distress with viral upper respiratory tract infections and pneumonia.**
- **Pulse oximetry should be monitored continuously and consider End-tidal CO2 monitoring if available.**
- **Combination nebulizers containing albuterol and ipratropium (DuoNeb):**
  **Patients may require more than 3 nebulizer treatments, treatments should continue until improvement.**
  **Following 3 combination nebulizers (DuoNeb), it is preferable to continue albuterol solely with subsequent treatments as there is no proven benefit to continual use of ipratropium.**
- **Epinephrine:**
  **If allergic reaction or anaphylaxis is suspected, give immediately and repeat until improvement.**
  **If allergic reaction is not suspected, administer with no improvement and/ or impending respiratory failure.**
- **Consider Magnesium Sulfate with impending respiratory failure and/ or no improvement.**
- **Consider IV access when Pulse oximetry remains ≤ 92 % after first beta-agonist nebulizer treatment.**
- **Do not force a child into a position, allow them to assume position of comfort, typically the tripod position.**
- Bronchiolitis is a viral infection typically affecting infants which results in wheezing which may not respond to beta-agonists. Consider Epinephrine nebulizer if patient < 18 months and not responding to initial beta-agonist treatment.
- Croup typically affects children < 2 years of age. It is viral, possible fever, gradual onset, no drooling is noted.
- Epiglottitis typically affects children > 2 years of age. It is bacterial, with fever, rapid onset, possible stridor, patient wants to sit up to keep airway open, drooling is common. Airway manipulation may worsen the condition.
- In patients using levalbuterol (Xopenex) you may use Albuterol for the first treatment then use the patient's supply for repeat nebulizers or agency's supply.
- A silent chest in respiratory distress is a pre-respiratory arrest sign.
- **EMR/ EMT:**
  **The use of Epinephrine IM is limited to the treatment of anaphylaxis and may be given only by autoinjector,** unless manual draw-up is approved by the Agency Medical Director and the NC office of EMS.
  **Administration of diphenhydramine is limited to the oral route only**.
- **EMT administration of beta-agonist is limited to only patients currently prescribed the medication,** unless approved by the Agency Medical Director and the NC office of EMS.
- Agency Medical Director may require contact of medical control prior to EMT/ EMR administering any medication(s).

## Dispositions

**Paramedic:** Any patient who received epinephrine for respiratory distress, has persistent respiratory distress on CPAP, an SpO2 <94%, or an Altered Mental Status with respiratory distress

**Advanced EMT:** Any patient with abnormal vital signs, a history of intubation for respiratory distress, has stridorous breath sounds, or requires new or increased oxygen support (NC, NRB, or CPAP)

# Post-intubation/ BIAD Management

**Capnography Monitoring**

- **End-tidal (EtCO2) monitoring is mandatory following placement of an endotracheal tube.**
- **EtCO2 monitoring is mandatory following placement of a BIAD once available on scene.**

*Protocols AR 1, 2, 3, 5, and 6 should be utilized together (even if agency is not using Drug Assisted Airway Protocol) as they contain useful information for airway management.*

ETT or Blind Insertion Airway Device Successful

NO → Exit to Appropriate Adult or Pediatric Airway Protocol(s) 1 – 7

YES

Continue Airway Adjuncts
Maintain SpO2 ≥ 92%
Ventilate Age Appropriate breaths/ minute
May require faster rate
*See Pearls*

| | |
|---|---|
| B | Maintain EtCO2 35 – 45 |
| | 12 Lead ECG Procedure ***as indicated*** |
| | IV or IO Access Protocol UP 6 (preferably 2 sites) |
| P | Cardiac Monitor |
| | Transport Ventilator Procedure ***If available*** |
| | Mechanical Ventilation Adult Protocol AR 11 ***If available*** |

Is Sedation Needed?
(Awakening or Moving after Intubation / BIAD Placement Evidence of Anxiety / Agitation)

NO →

YES

**P**

**Fentanyl 50 - 75 mcg IV / IO**
Repeat every 5 minutes as needed
**Maximum 200 mcg**
**Pediatric: 1 mcg / kg IV / IO / IN**
May repeat **0.5 mcg / kg** every 5 minutes as needed
**Maximum 2 mcg / kg**

Or

**Morphine 4 mg IV / IO**
Repeat **2 mg** every 5 minutes as needed
**Maximum 10 mg**
**Pediatric: 0.1 mg / kg IV / IO**
May repeat **0.1 mg / kg** every 5 minutes as needed
**Maximum single dose 5 mg**
**Maximum 10 mg**

**Ketamine 10-20 mg IV / IO**
May repeat once
**Maximum 20 mg single dose**
**Maximum 40mg**

**Peds: 0.3 mg/kg IV/IO**
**Maximum 20mg**

**Midazolam 2.5 mg IV / IO**
Repeat every 3 – 5 minutes as needed
**Maximum 10 mg**
**Pediatric: 0.1 – 0.2 mg / kg IV / IO / IN**

**Notify Destination or Contact Medical Control**

# Post-intubation/ BIAD Management



## Pearls

- **Recommended Exam: Mental Status, HEENT, Heart, Lungs, Neuro**
- **Patients requiring advanced airways and ventilation commonly experience pain and anxiety.**
- **Unrelieved pain can lead to increased catecholamine release, ischemia, immunosuppression, and prolonged hospitalization.**
- **Ventilated patients cannot communicate pain/ anxiety and providers are poor at recognizing pain/ anxiety.**
- **Vital signs such as tachycardia and/ or hypertension can provide clues to inadequate sedation, however they are not always reliable indicators of a patient's lack of adequate sedation.**
- **Sedation strategy:**
  **Pain is the primary reason patients experience agitation and must be addressed first.**
  **Opioids and/ or Ketamine are the first line agents, alone or in combination.**
  **Benzodiazepines may be utilized if patient is not responding to adequate opioid and/ or Ketamine doses.**
  **Paralysis is considered a last resort, only when patients are not responding to opioids, Ketamine, or benzodiazepines.**
  **Patients that have received paralytics may be experiencing pain with no obvious signs or symptoms.**
  **Consider sedation early after giving paralytics, especially in patients receiving Rocuronium.**
- **Ventilation rate:**
  **Guidelines: 30 for Neonates, 25 for Toddlers, 20 for School Age, and for Adolescents the normal Adult rate of 10 – 12 per minute.**
  **Maintain EtCO2 between 35 - 45 and avoid hyperventilation.**
- **Ventilator/ Ventilation strategies will need to be tailored to individual patient presentations. Medical director can indicate different strategies above.**
- **Propofol:**
  Use restricted to agencies approved by the OEMS State Medical Director.
  Agencies must submit a use policy and education plan to the OEMS.
  Infusion must be supplied and initiated by a medical facility and may be used only during interfacility transfer.
  Paramedic may titrate infusion to maintain appropriate sedation but cannot initiate or bolus the medication.
- In general, ventilation with BVM should cause chest rise. With mechanical ventilation a reasonable tidal volume should be about 6 - 8 mL/kg and peak pressures should be < 30 $cmH_20$. Plateau Pressures should be < 30 $cmH_20$.
- Head of bed should be maintained at least 10 – 20 degrees of elevation when possible, to decrease aspiration risk.
- With abrupt clinical deterioration, if mechanically ventilated, disconnect from ventilator to assess lung compliance.
- **DOPE: D**isplaced tracheostomy tube/ ETT, **O**bstructed tracheostomy tube/ ETT, **P**neumothorax and **E**quipment failure.

## Dispositions

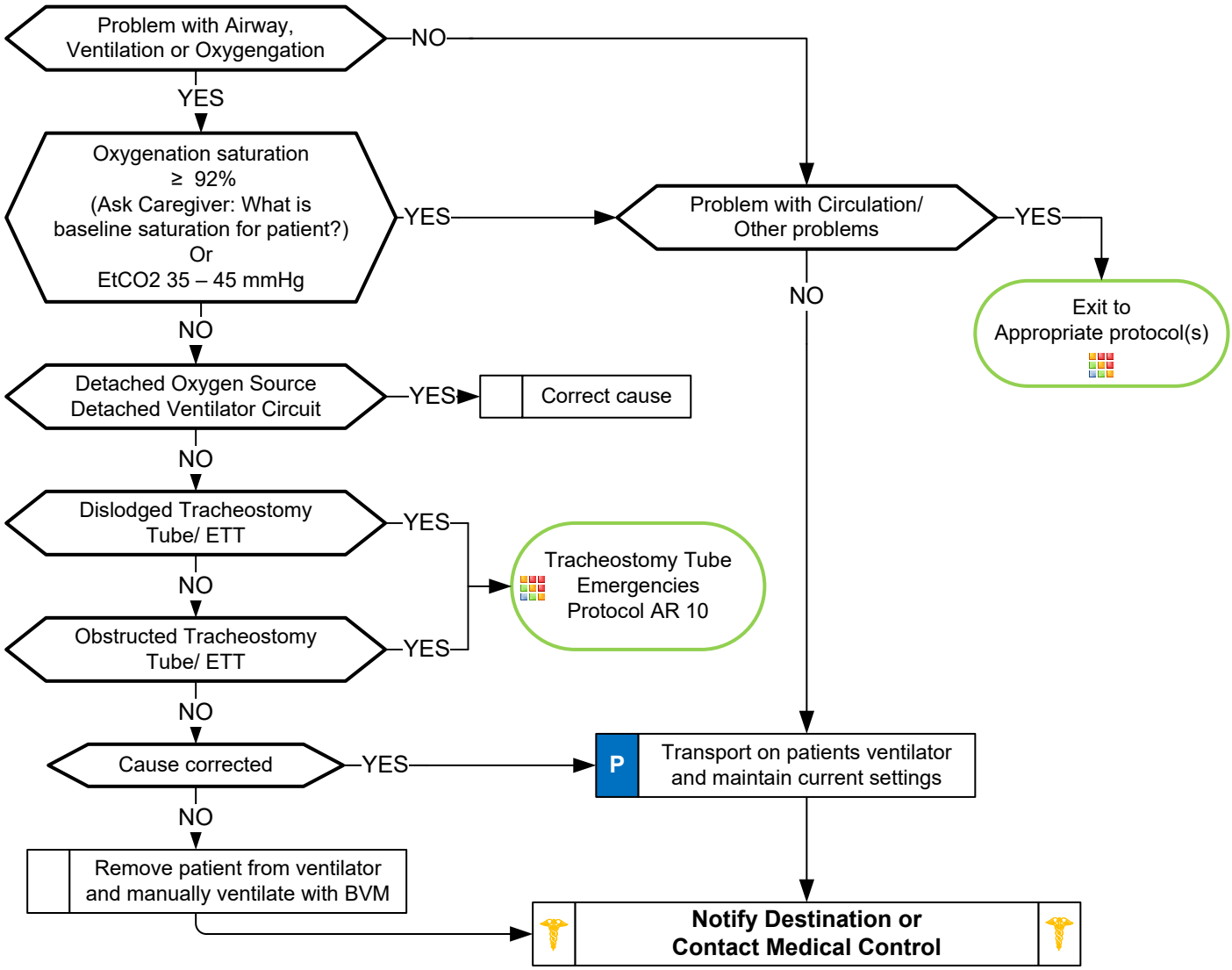
**Paramedic:** Any patient with an advanced airway.

# Ventilator Emergencies

## History
- Birth defect (tracheal atresia, tracheomalacia, craniofacial abnormalities)
- Surgical complications (damage to phrenic nerve)
- Trauma (post-traumatic brain or spinal cord injury)
- Medical condition (bronchopulmonary dysplasia, muscular dystrophy)

## Signs and Symptoms
- Transport requiring maintenance of a mechanical ventilator
- Power or equipment failure at residence

## Differential
- Disruption of oxygen source
- Dislodged or obstructed tracheostomy tube
- Detached or disrupted ventilator circuit
- Cardiac arrest
- Increased oxygen requirement / demand
- Ventilator failure




Airway Respiratory Protocol Section

# Ventilator Emergencies



## Pearls

- **Always talk to family/ caregivers as they have specific knowledge and skills.**
- **If using the patient's ventilator bring caregiver knowledgeable in ventilator operation during transport.**
- **Take patient's ventilator to hospital even if not functioning properly.**
- Always use patient's equipment if available and functioning properly.
- Continuous pulse oximetry and End Tidal $CO_2$ monitoring must be utilized during assessment and transport.
- Unable to correct ventilator problem: Remove patient from ventilator and manually ventilate using BVM.
- Typical alarms: Low Pressure/ Apnea: Loose or disconnected circuit, leak in circuit or around tracheostomy site.
  Low Power: Internal battery depleted.
  High Pressure: Plugged/ obstructed airway or circuit.
- **DOPE: D**isplaced tracheostomy tube/ ETT, **O**bstructed tracheostomy tube/ ETT, **P**neumothorax and **E**quipment failure.

## Dispositions

**Paramedic:** Any patient with a ventilator emergency

# Tracheostomy Tube Emergencies

## History
- Birth defect (tracheal atresia, tracheomalacia, craniofacial abnormalities)
- Surgical complications (accidental damage to phrenic nerve)
- Trauma (post-traumatic brain or spinal cord injury)
- Medical condition (bronchial or pulmonary dysplasia, muscular dystrophy)

## Signs and Symptoms
- Nasal flaring
- Chest wall retractions (with or without abnormal breath sounds)
- Attempts to cough
- Copious secretions noted coming out of the tube
- Faint breath sounds on both sides of chest despite significant respiratory effort
- AMS
- Cyanosis

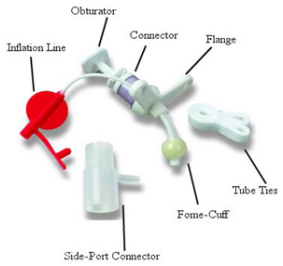
## Differential
- Allergic reaction
- Asthma
- Aspiration
- Septicemia
- Foreign body
- Infection
- Congenital heart disease
- Medication or toxin
- Trauma

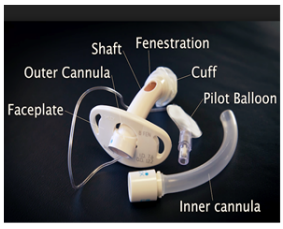
Trachesotomy Tube in place — YES → **A** Remove Obturator ***If in place*** → Inner Cannula in place (Double lumen) / Speaking Valve/ Decannulation plug in place — YES → **A** Remove Inner Cannula Or Remove Speaking Valve Remove Decannulation plug

Trachesotomy Tube in place — NO → Trachesotomy Tube available — YES → Allow *Caregiver* to insert Tracheostomy Tube **Or** **A** Place Tracheostomy Tube Or Appropriately sized ETT into stoma

Inner Cannula in place (Double lumen) — NO → **A** Advanced Suctioning Procedure Tracheostomy Tube Procedure

Trachesotomy Tube available — NO → **A** Place Tracheostomy Tube Or Appropriately sized ETT into stoma




Continued Respiratory Distress — YES → Assist Ventilations via Tracheostomy Tube / ETT; Age Appropriate Respiratory Distress Protocol

Continued Respiratory Distress — NO → **Notify Destination or Contact Medical Control**

Airway Respiratory Protocol Section

# Tracheostomy Tube Emergencies



## Pearls

- **Always talk to family/ caregivers as they have specific knowledge and skills.**
- **Important to ask if patient has undergone laryngectomy. This does not allow mouth/ nasal ventilation by covering stoma.**
- Use patients equipment if available and functioning properly.
- Estimate suction catheter size by doubling the inner tracheostomy tube diameter and rounding down.
- Suction depth: Ask family/ caregiver. No more than 3 to 6 cm typically. Instill 2 – 3 mL of NS before suctioning.
- Do not suction more than 10 seconds each attempt and pre-oxygenate before and between attempts.
- DO NOT force suction catheter. If unable to pass, then tracheostomy tube should be changed.
- Always deflate tracheal tube cuff before removal. Continual pulse oximetry and EtCO2 monitoring if available.
- **DOPE: D**isplaced tracheostomy tube/ ETT, **O**bstructed tracheostomy tube/ ETT, **P**neumothorax and **E**quipment failure.

## Dispositions

**Paramedic:** Any patients with a tracheostomy emergency and continued respiratory distress.

**Advanced EMT:** Any patient requiring tracheostomy troubleshooting.

# Blast Injury/ Incident

## History
- Type of exposure (heat, gas, chemical)
- Inhalation injury
- Time of Injury
- Past medical history/ Medications
- Other trauma
- Loss of Consciousness
- Tetanus/Immunization status

## Signs and Symptoms
- Hearing loss (TM rupture)
- Ocular burns/vision changes
- Multiple trauma/ penetrating trauma
- Hypotension/ shock
- Airway compromise/distress could be indicated by hoarseness/ wheezing
- Pneumothorax/ hemothorax
- Traumatic amputation (tourniquet)

## Differential
- Thermal /Chemical /Electrical Burn Injury
  - Superficial
    (1st Degree) red – painful
    (Don't include in TBSA)
  - Partial Thickness
    (2nd Degree) blistering
  - Full Thickness
    (3rd Degree) painless/charred or leathery skin
- Radiation injury

**Nature of Device:** Agent/ Amount. Industrial Explosion. Terrorist Incident. Improvised Explosive Device.
**Method of Delivery:** Incendiary/ Explosive
**Nature of Environment:** Open / Closed.
**Distance from Device:** Intervening protective barrier. Other environmental hazards,
**Evaluate for:** Blunt Trauma/ Crush Injury/ Compartment Syndrome/ Traumatic Brain Injury/ Concussion/ Tympanic Membrane Rupture/ Abdominal hemorrhage or Evisceration, Blast Lung Injury and Penetrating Trauma.

**Scene Safety/ Quantify number and Triage Patients/ Load and Go with Assessment/ Treatment Enroute**

Call for help/ additional resources
Stage until scene safe

Accidental/ Intentional Explosions
(See Pearls)

- Triage Protocol UP 2 ***as indicated***
- Age Appropriate Airway Protocol(s) AR 1, 2, 3, 5, 6 ***as indicated***
- Multiple Trauma Protocol TB 6 ***if indicated***
- IV and IO Access Protocol UP 6 ***if indicated***
- P — Cardiac Monitor ***if indicated***
- Thermal Burn Protocol TB 9
  Chemical and Electrical Burn Protocol TB 2 ***if indicated***
- Crush Injury Protocol TB 3 ***if indicated***
- Radiation Incident Protocol TB 7 ***if indicated***
- Decontamination Procedure USP 2 ***if indicated***
- Pain Control Protocol UP 11 ***if indicated***

Blast Lung Injury — YES → Age Appropriate Airway Protocol(s) AR 4, 7 ***as indicated***

NO

**Rapid Transport** to appropriate destination using
**Trauma and Burn:**
**EMS Triage and Destination Plan**

**Notify Destination or Contact Medical Control**

Trauma and Burn Protocol Section

# Blast Injury/ Incident

## Pearls

- **Types of Blast Injury:**
  - Primary Blast Injury: From the blast pressure (air) wave.
  - Secondary Blast Injury: Impaled objects. Debris which becomes missiles/ shrapnel.
  - Tertiary Blast Injury: Patient falling or being thrown/ pinned by debris.
  - Most Common Cause of Death: Secondary Blast Injuries.
- **Triage of Blast Injury patients:**
  - Blast Injury patients with burn injuries should be triaged using the Thermal Burn/ Chemical and Electrical Burn Protocol Guidelines for Critical/ Serious/ Minor Trauma and Burns and the Trauma and Burn: EMS Triage and Destination Plan.
  - Patients may be hard of hearing due to tympanic membrane rupture.
- **Care of Blast Injury Patients:**
  - Patients may suffer multi-system injuries including blunt and penetrating trauma, shrapnel, barotrauma, burns, and toxic chemical exposure.
  - Consider airway burns, which should prompt early and aggressive airway management as indicated.
  - Cover open chest wounds with semi-occlusive dressing or commercial chest seal product.
  - Use Lactated Ringers (if available) for all Critical or Serious Burns.
  - Minimize IV fluids resuscitation in patients with no signs of shock or poor perfusion.
- **Blast Lung Injury:**
  - Blast Lung Injury is characterized by respiratory difficulty and hypoxia. Can occur (rarely) in patients without external thoracic trauma. More likely to occur in an enclosed space or in close proximity to explosion.
  - Symptoms: Dyspnea, hemoptysis, cough, chest pain, wheezing, and hemodynamic instability.
  - Signs: Apnea, tachypnea, hypopnea, hypoxia, cyanosis, and diminished breath sounds.
  - Air embolism should be considered and patient transported in left-lateral decubitus position.
  - Blast Lung Injury patients may require early intubation but positive pressure ventilation may worsen the injury, avoid hyperventilation, which can cause further injury.
  - Air transport may worsen lung injury, monitor oxygenation and ventilation closely. Tension pneumothorax may occur requiring chest decompression. Be judicious with fluids as volume overload may worsen lung injury.
- **Accidental Explosions or Intentional Explosions:**
  - **All explosions or blasts should be considered intentional until determined otherwise.**
  - **Greatest concern is potential threat for a secondary device.**
  - Attempt to determine the source of the blast to include any potential threat for aerosolization of hazardous materials.
  - Evaluate scene safety including the source of the blast, which may continue to spill explosive liquids or gases.
  - Consider structural collapse, environmental hazard, and fire.
  - Conditions that led to the initial explosion may reoccur and lead to a second explosion.
  - Patients who physically able, typically will attempt to move as far away from the explosive source.
  - Evaluate surroundings for suspicious items; unattended back packs or packages, or unattended vehicles.
  - **If patient(s) is unconscious or there is fatalities and you are evaluating patient(s) for signs of life:**
    - **Before moving, note if there are wires coming from the patient(s), or if it appears the patient(s) is lying on a package/ pack, or bulky item. If so, do not move the patient(s), quickly back away and immediately notify a law enforcement officer.**
  - If there are no indications the patient is connected to a triggering mechanism for a secondary device, expeditiously remove the patient(s) from the scene and begin transport to the hospital.
  - Protect the airway and cervical spine, however beyond the primary survey, care and a more detailed assessment should be deferred until rapid transport begins.
  - If there are signs the patient was carrying the source of the blast, notify law enforcement immediately, and most likely a law enforcement officer will accompany your patient to the hospital.

## Dispositions

**Paramedic:** All patients

# Chemical and Electrical Burn

## History
- Type of exposure (heat, gas, chemical)
- Inhalation injury
- Time of Injury
- Past medical history/ Medications
- Other trauma
- Loss of Consciousness
- Tetanus/Immunization status

## Signs and Symptoms
- Burns, pain, swelling
- Ocular burns/ vision changes
- Loss of consciousness
- Hypotension/ shock
- Compartment syndrome
- Airway compromise/ distress could be indicated by hoarseness/ wheezing
- Electrical burn may be misleading with small contact/ external burn and major internal injury – burn/ trauma center transport is recommended

## Differential
- Thermal /Chemical /Electrical Burn Injury
  - Superficial
    - (1st Degree) red – painful (Don't include in TBSA)
  - Partial Thickness
    - (2nd Degree) blistering
  - Full Thickness
    - (3rd Degree) painless/ charred or leathery skin
- Radiation injury
- Blast injury

**Assure Chemical Source is NOT Hazardous to Responders.**
**Assure Electrical Source is NO longer in contact with patient before touching patient.**

Assess Burn/ Concomitant Injury Severity

| **< 5% TBSA 2nd/3rd Degree Burn** | **5-15% TBSA 2nd/3rd Degree Burn** | **>15% TBSA 2nd/3rd Degree Burn** |
|---|---|---|
| No inhalation injury, Not Intubated, Normotensive<br>GCS 14 or Greater<br>Minor Burn | Suspected inhalation injury or requiring intubation for airway stabilization<br>Hypotension or GCS 13 or Less<br>(When reasonably accessible, transport to a Burn Center)<br>Serious Burn | Burns with Multiple Trauma<br>Burns with definitive airway compromise<br>(When reasonably accessible, transport to a Burn Center)<br>Critical Burn |

Age Appropriate
Airway Protocol(s) AR 1, 2, 3, 4, 5, 6, 7
***if indicated***

IV or IO Access Protocol UP 6
Consider 2 IV sites if ≥ 15 % TBSA

Thermal Burn Protocol TB 9

Pain Control Protocol UP 11
***if indicated***

Identify Contact Points

**Eye Involvement**
Irrigate Involved Eye(s) with Normal Saline + for 30 minutes
Continue irrigation during transport

**Chemical Exposure/ Burn**
Flush Contact Area with Normal Saline for 15 minutes
Continue irrigation during transport

Decontamination Procedure USP 2
***if indicated***

Age Appropriate Cardiac Protocol(s)
***if indicated***

**Rapid Transport** to appropriate destination using
**Trauma and Burn:**
**EMS Triage and Destination Plan**

**Notify Destination or Contact Medical Control**

Trauma and Burn Protocol Section

# Chemical and Electrical Burn



## Pearls

- **Recommended Exam: Mental Status, HEENT, Neck, Heart, Lungs, Abdomen, Extremities, Back, and Neuro**
- **Green, Yellow, and Red in burn severity do not apply to the Start/ JumpStart Triage System.**
- **Refer to Rule of Nines.**
- **Transport and Destination:**
  **In general, chemical and electrical burns should be transported to a burn center.**
  **Burn center should be initial destination choice unless EMS system access is limited by time and/ or distance.**
  **When EMS transport to burn center is limited, transport to and stabilization at local center is appropriate.**
- **Chemical Burns:**
  Refer to Decontamination Procedure.
  With dry powders/ substances, gently brush or wipe off prior to irrigation. Do not aerosolize by brushing too vigorously.
  Normal Saline or Sterile Water is preferred, however if not available, do not delay irrigation and use tap water. Other water sources may be used based on availability.
  Flush the area as soon as possible with the cleanest, most readily available water or saline solution and use copious amounts of fluids.
  Flush contact area for a minimum of 15 minutes and continue until arrival at receiving facility.
  Hydrofluoric acid burns:
  Monitor ECG for peaked T waves, which can be sign of hypocalcemia.
  Eye involvement:
  Irrigation is recommended for a minimum of 30 minutes and continue until arrival at receiving facility.
- **Electrical Burns:**
  **Remember the extent of the obvious external burn from an electrical source does not always reflect more extensive internal damage. Small external injury may have large internal injury.**
  **Do not refer to wounds as an entry and exit wound**.
  **DO NOT contact patient until you are certain the source of the electrical shock is disconnected.**
  Attempt to locate contact points (generally there will be two or more.) A point where the patient contacted the source and a point(s) where the patient is grounded.
  Sites will generally be full thickness (3rd).
  Cardiac Monitor: Anticipate ventricular or atrial irregularity including VT, VF, atrial fibrillation, and/ or heart blocks.
  Attempt to identify the nature of the electrical source (AC or DC), the amount of voltage, and the amperage the patient may have been exposed to during the electrical shock.
  **Lightning strike:**
  Lightning strike victims are amenable to airway, breathing, cardiac compressions, as well as early defibrillation.
  **Use concept of reverse triage with multiple casualties. Resuscitate lightning strikes as the priority.**
  Lightning strike victims found alive do not often deteriorate quickly.

## Dispositions

**Paramedic:** Any patient with an electrical burn, suspected Inhalation Injury, or patient with SBP <90

**Advanced EMT:** Any patient with 3rd degree chemical burn, or any 2nd degree Chemical Burn with > 5% TBSA and SBP >90

# Crush Syndrome Trauma

## History
- Entrapped and crushed under heavy load > 30 minutes
- Extremity / body crushed
- Building collapse, trench collapse, industrial accident, pinned under heavy equipment

## Signs and Symptoms
- Hypotension
- Hypothermia
- Abnormal ECG findings
- Pain
- Anxiety

## Differential
- Entrapment without crush syndrome
- Vascular injury with perfusion deficit
- Compartment syndrome
- Altered mental status

Age Appropriate Airway Protocol(s) AR 1 - 7 ***as indicated***

**B** 12 Lead ECG Procedure

IV or IO Access Protocol UP 6

**P** Cardiac Monitor

Multiple Trauma Protocol TB 6 ***if indicated***

Thermal Burn Protocol TB 9
Chemical and Electrical Burn Protocol TB 2 ***if indicated***

Pain Control Protocol UP 11 ***as indicated***

**Age Specific Blood Pressure indicating possible shock**

**Age 0 – 28 days: SBP < 60**
**Ages ≥ 1 month: SBP < 70**
**Age 1 – 9: SBP < 70 + (2*x* Age)**

**Ages 10 – 64: SBP < 90**
**Ages ≥ 65: SBP < 100**

**All ages:**
**Shock Index HR > SBP**

**P**
Consider
**Midazolam 0.5 – 2.5 mg IV / IO**
**Midazolam 1 – 2.5 mg IN**
**Maximum 5 mg**
**Pediatric: 0.1 – 0.2 mg / kg**
**IV / IO / IN**
**Pediatric Maximum 2 mg**
Over 2 – 3 minutes as needed

Entrapped < 2 hours

**A**
**Normal Saline Infusion**
**1 Liter per hour IV / IO**
**Pediatric:**
**3 x maintenance fluid rate**

Entrapped > 2 hours

**A**
**Decrease Normal Saline Infusion**
**500 mL per hour IV / IO**
**Pediatric:**
**Maintenance fluid rate**

**Abnormal ECG**
Peaked T Waves
QRS ≥ 0.12 seconds
QT ≥ 0.46 seconds
Loss of P wave
Or
**Hemodynamically Unstable**
Or
**Asystole / PEA / VF / VT**

**P**
**Calcium Gluconate 2 g IV / IO**
**Or**
**(Calcium Chloride 1 g IV / IO)**
**Pediatric: 20 mg / kg IV / IO**
Over 2- 3 minutes

**Albuterol Nebulizer**
**2.5 – 5 mg**
May repeat x 3

**Sodium Bicarbonate**
**50 mEq IV / IO**
**Pediatric: 1 mEq / kg IV / IO**

Exit to Age Appropriate Cardiac Arrest Protocol AC 3 / PC 4 Arrhythmia Protocol(s) ***if indicated***

**Rapid Transport** to appropriate destination using Trauma and Burn: EMS Triage and Destination Plan

**Notify Destination or Contact Medical Control**

Trauma and Burn Protocol Section

# Crush Syndrome Trauma



**Pearls**

- **Recommended exam: Mental Status, Musculoskeletal, Neuro**
- **Scene safety is of paramount importance as typical scenes may pose hazards to rescuers. Call for appropriate resources.**
- **Crush Injury is a localized crush injury with systemic signs and symptoms causing muscle breakdown and release of potentially toxic muscle cell components and electrolytes into the circulation.**
- **Crush syndrome typically manifests after 1 – 4 hours of crush injury.**
- **Fluid resuscitation strategy:**
  - **If possible, administer IV / IO fluids prior to release of crushed body part, especially with crush > 1 hour.**
  - **If access to patient and initiation of IV / IO fluids occurs after 2 hours, give 2 liters of IV fluids in adults and 20 mL/kg of IV fluids in pediatrics, and then begin > 2 hour dosing regimen.**
- **If not able to perform IV / IO fluid resuscitation immediately, place tourniquet on crushed limb until IV / IO fluids can be initiated (even if tourniquet is not being used for hemorrhage control).**
- **Pediatric IV Fluid maintenance rate:**
  - **4 mL for the first 10 kg of weight +**
  - **2 mL for the second 10 kg of weight +**
  - **1 mL for every additional kg in weight after 20 kg**

| Example: 28 kg pediatric | |
|---|---|
| First 10 kg: | 4 mL/kg/hr = 40 mL/hr |
| Second 10 kg: | 2 mL/kg/hr = 20 mL/hr |
| Final 8 Kg: | 1 mL/kg//hr = 8 mL/hr |
| | Total: 68 mL/hr rate |

- **Consider all possible causes of shock and treat per appropriate protocol.**
- **Majority of decompensation in pediatrics is airway or respiratory related.**
- **Decreasing heart rate and hypotension occur late in children and are signs of impending cardiac arrest.**
- **Shock may be present with a normal blood pressure initially or even elevated.**
- **Shock often is present with normal vital signs and may develop insidiously. Tachycardia may be the only sign.**
- **Patients may become hypothermic even in warm environments. Maintain warmth.**
- Hyperkalemia from crush syndrome can produce ECG changes described in protocol, but may also be a bizarre, wide complex rhythm. Wide complex rhythms should also be treated using the VF/ Pulseless VT Protocol if indicated (AC 9 VF Pulseless VT Protocol and/ or PC 7 Pediatric VF Pulseless VT Protocol).

## Dispositions

**Paramedic:** Any patient with confirmed crush injury

# Extremity Trauma

## History
- Type of injury
- Mechanism: crush/ penetrating/ amputation
- Time of injury
- Open vs. closed wound / fracture
- Wound contamination
- Medical history
- Medications

## Signs and Symptoms
- Pain and/ or swelling
- Deformity
- Altered sensation/ motor function
- Diminished pulse/ capillary refill
- Decreased extremity temperature

## Differential
- Abrasion
- Contusion
- Laceration
- Sprain
- Dislocation
- Fracture
- Amputation

Wound care
Control Hemorrhage with Direct Pressure
Splinting as indicated

Consider
**Topical Hemostatic Agent/ Dressing**
***if available***

Wound Care WTP 4
Tourniquet Procedure WTP 7
***if indicated***

**A** IV or IO Access Protocol UP 6
***if indicated***

Age Appropriate
Airway Protocol(s) AR 1, 2, 3, 4, 5, 6, 7
***if indicated***

Multiple Trauma Protocol TB 6
***if indicated***

Age Appropriate Hypotension/ Shock
Protocol AM 5/ PM 3
***if indicated***

Pain Protocol UP 11
***if indicated***

Crush Syndrome Protocol TB 3
***as indicated***

**Open Fracture**
**or**
**Amputated Part with Bone Fracture**
- Best outcomes in patients who receive antibiotics within 60 minutes of injury

Amputation and/ or Open Fracture → YES

- Clean amputated part
- Wrap part in sterile dressing soaked in normal saline or lactated ringers
- Place part/ dressing in air tight container.
- Place container on ice if available.

NO

Monitor and Reassess

**P** **Agency Specific Antibiotic**
***if available***

**Notify Destination or Contact Medical Control**

Trauma and Burn Protocol Section

# Extremity Trauma



**Pearls**

- **Recommended Exam: Mental Status, Extremity, Neuro, Perfusion**
- Peripheral neurovascular status is important to assess and document, as well as time of assessment.
- In amputations, time is critical. Transport and notify medical control immediately, so that the appropriate destination can be determined.
- Hip dislocations as well as knee and elbow fracture/ dislocations have a high incidence of vascular compromise.
- Urgently transport any injury with neurological or vascular compromise.
- Blood loss may be concealed or not apparent with extremity injuries.
- Lacerations optimally should be evaluated for repair within 6 hours from the time of injury.
- **Multiple casualty incident: Tourniquet Procedure may be considered first instead of direct pressure.**

## Dispositions

**Paramedic / Advanced EMT:** Any patient with tourniquets, abnormal vital signs, uncontrolled bleeding, and / or amputations

# Head Trauma

**History**
- Time of injury
- Mechanism (blunt vs. penetrating)
- Loss of consciousness
- Bleeding
- Past medical history
- Medications
- Evidence for multi-trauma

**Signs and Symptoms**
- Pain, swelling, bleeding
- Altered mental status
- Unconscious
- Respiratory distress/ failure
- Vomiting
- Major traumatic mechanism of injury
- Seizure

**Differential**
- Skull fracture
- Brain injury (Concussion, Contusion, Hemorrhage or Laceration)
- Epidural hematoma
- Subdural hematoma
- Subarachnoid hemorrhage
- Spinal injury
- Abuse

**Prevent hypoxia, hypotension, and hyperventilation**

Age Appropriate Airway Protocol(s) AR 1, 2, 3, 5, 6 ***if indicated***

**Obtain and Record GCS**

All patients

Titrate **target SpO2 100%**

Monitor HR, BP and O2 every 3-5 minutes

Oxygen Therapy via Non-Rebreather for **ALL** patients with suspected Head Injury and meet **Trauma Destination Criteria**

Blood Glucose Analysis Procedure

B — Maintain EtCO2 35 – 45 mmHg
**Goal EtCO2 of 40 mmHg**

A — IV or IO Access Protocol UP 6 ***if indicated***

P — Cardiac Monitor

Altered Mental Status Protocol UP 4 ***if indicated***

Multiple Trauma Protocol TB 6 ***if indicated***

A — Maintain Age Appropriate SBP with Fluid Bolus
**Adult Goal:** SBP >100
**Ped Goal:** SBP >70 + 2x Age in years

Seizure Protocol UP 13 ***if indicated***

Spinal Motion Restriction Protocol TB 8
Procedure WTP 2 ***if indicated***

Pain Control Protocol UP 11 ***if indicated***

Monitor and Reassess

**Rapid Transport** to appropriate destination using
**Trauma and Burn: EMS Triage and Destination Plan**

**Notify Destination or Contact Medical Control**

**Hyperventilation:**
**Hyperventilation is NOT recommended in patients who require BVM, BIAD, or ETT.**

**A single episode of hypoxia, hypotension, and hyperventilation increases mortality**

Age Appropriate Hypotension/ Shock Protocol AM 5/ PM 3 ***if indicated***

**Age Specific Blood Pressure indicating possible shock**

**Age 0 – 28 days: SBP < 60**
**Ages ≥ 1 month: SBP < 70**
**Age 1 – 9: SBP < 70 + (2*x* Age)**

**Ages 10 – 64: SBP < 90**
**Ages ≥ 65: SBP < 110**

**All ages Shock Index:**
**SI = HR ÷ SBP**

**Use Shock Index, Pediatric Adjusted (SIPA)for children <12 (see pearls)**

Trauma and Burn Protocol Section

# Head Trauma

| Age | HR | SBP | SIPA cutoff value |
|---|---|---|---|
| 1–3 years | 70–110 | 90–110 | 1.2 |
| 4–6 years | 65–110 | 90–110 | 1.2 |
| 7–12 years | 60–100 | 100–120 | 1.0 |
| >12 years | 55–90 | 100–135 | 0.9 |

*SIPA, shock index, pediatric age-adjusted; HR, heart rate; SBP, systolic blood pressure.*

## Pearls

- **Recommended Exam: Mental Status, HEENT, Heart, Lungs, Abdomen, Extremities, Back, Neuro**
- **Hypoxia:**
  - **Single episode of hypoxia can worsen head injury and double mortality.**
  - **Maintain $SpO_2$ preferrable between 92 – 98%, but 100% if possible.**
- **Hyperventilation in head injury requiring advanced airway:**
  - **Hyperventilation lowers CO2 and causes vasoconstriction leading to increased intracranial pressure (ICP).**
  - **Hyperventilation is not recommended and can worsen the brain injury.**
  - **In patients requiring BVM, BIAD, or endotracheal tube, titrate ventilation rate to $EtCO_2$ between 35 - 45 mmHg.**
  - **Recommended ventilation rates with advanced airways:**
    - **Infant/ Toddler: 25 breaths / minute**
    - **Children: 20 Breaths / minute**
    - **Adolescents/ Adults: 10 – 12 Breaths / minute**
- **Hypotension:**
  - **Episodes of hypotension can worsen head injury and increase mortality:**
    - **In adults, target SBP is at least 100 mmHg.**
    - **In pediatrics, target SBP is at least > 70 + (2 x the age in years).**
  - **Usually indicates shock unrelated to the head injury and should be aggressively treated, otherwise limit fluid administration.**
- **GCS**
  - **Key performance measure used in the EMS Acute Trauma Care Toolkit.**
  - **Serial assessments of GCG with ongoing assessments should be performed.**

| Eye Opening Response | Verbal Response | Motor Response |
|---|---|---|
| 4 = Spontaneous | 5 = Oriented | 6 = Obeys commands |
| 3 = To verbal stimuli | 4 = Confused | 5 = Localizes pain |
| 2 = To pain | 3 = Inappropriate words | 4 = Withdraws from pain |
| 1 = None | 2 = Incoherent | 3 = Flexion to pain or decorticate |
| | 1 = None | 2 = Extension to pain or decerebrate |
| | | 1 = None |

- **Do not place in Trendelenburg position as this may increase ICP and worsen blood pressure.**
- **Poorly fitted cervical collars may also increase ICP when applied too tightly.**
- **In areas with short transport times, Drug Assisted Airway protocol is not recommended for patients who are spontaneously breathing and who have oxygen saturations of ≥ 90% with supplemental oxygen including BIAD/ BVM.**
- **Increased intracranial pressure (ICP) may cause hypertension and bradycardia (Cushing's Response).**
- Consider Restraints if necessary for patient's and/ or personnel's protection per the Restraints: Physical Procedure USP 5.
- **Concussions:**
  - Traumatic brain injuries involving any of a number of symptoms including confusion, loss of consciousness, vomiting, or headache.
  - Any prolonged confusion or mental status abnormality which does not return to normal within 15 minutes or any documented loss of consciousness should be evaluated by a physician ASAP.
  - **EMS Providers should not make return-to-play decisions when evaluating an athlete with suspected concussion. This is outside the scope of practice.**

## Dispositions

**Paramedic:** Any patient with SBP <90 (<110 in 65 and older)

**Advanced EMT:** Any patient with abnormal neurological exam, vomiting, respiratory distress, significant mechanism of injury, or warranting a trauma activation

# Multiple Trauma

## History
- Time and mechanism of injury
- Damage to structure or vehicle
- Location in structure or vehicle
- Others injured or dead
- Speed and details of MVC
- Restraints/ protective equipment
- Past medical history
- Medications

## Signs and Symptoms
- Pain, swelling
- Deformity, lesions, bleeding
- Altered mental status or unconscious
- Hypotension or shock
- Arrest

## Differential (Life threatening)
- Uncontrolled hemorrhage
- Airway obstruction/ deformity
- Chest:
- Tension pneumothorax
  Flail chest/ Open chest wound
  Pericardial tamponade/
  Hemothorax
- Head Trauma Protocol TB 5
- Intra-abdominal bleeding
- Pelvis/ Femur/ Extremity fracture
- Spine fracture/ Cord injury
- Hypothermia

Age Appropriate
Airway Protocol(s) AR 1 - 7
***as indicated***

**P** Chest Decompression Procedure WTP 1
***if indicated***

Control External Hemorrhage
Procedure(s) WTP 4, 5, 7
Consider Pelvic Binding
Splint Fractures Procedure WTP 3

IV or IO Access Protocol UP 6

Spinal Motion Restriction Procedure WTP 2
Spinal Motion Restriction Protocol TB 8
***if indicated***

**Obtain and Record GCS**

**TXA Indicators:**
**V/S parameters and findings for blunt or penetrating trauma:**

**ALL Criteria must be met:**
-Adult
-Obvious bleeding or suspected internal injuries from blunt or penetrating trauma
-Trauma occurred less than 3 hours ago
-Sustained tachycardia >110 **OR** SBP <90
(SBP <110 for Age >65)

**VS / Perfusion Abnormal / Shock?**

YES

Age Appropriate Hypotension/ Shock
Protocol AM 5/ PM 3
***if indicated***

**A** **TXA 2 g IV / IO**
*Slow push*
***if indicated***

**P** **Blood Products**
***if indicated***

NO

Head Injury Protocol TB 5
***if indicated***

Altered Mental Status
Protocol UP 4
***if indicated***

Pain Control Protocol UP 11
***if indicated***

Extremity Trauma Protocol TB 4
***if indicated***

Crush Syndrome Protocol TB 3
***if indicated***

Repeat Assessment Adult Procedure

Monitor and Reassess

**Rapid Transport** to appropriate destination using
**Trauma and Burn:**
**EMS Triage and Destination Plan**
**Limit Scene Time ≤ 15 minutes**
**Provide Early Notification**

**Notify Destination or Contact Medical Control**

Trauma and Burn Protocol Section

# Multiple Trauma

## Pearls

- **Recommended Exam: Mental Status, Skin, HEENT, Heart, Lung, Abdomen, Extremities, Back, Neuro**
- **Items in Red Text are key performance measures used in the EMS Acute Trauma Care Toolkit**
- **Scene time should not be delayed for procedures and all should be performed during rapid transport of unstable patients.**
- **Ask all patients if they are taking any anticoagulants and report during facility transition of care.**
- **Airway:**
  - **BVM and BIAD are acceptable for airway management to maintain $SpO_2$ of 92 – 98%.**
  - **Endotracheal intubation, if performed, should be completed during transport and should not delay scene time.**
- **Breathing:**
  - **Consider Chest Decompression with signs of shock and/ or injury to torso with evidence of tension pneumothorax.**
- **Circulation:**
  - **Control external hemorrhage and prevent hypothermia by keeping patient warm.**
  - **IV or IO access should be established during rapid transport of unstable patients.**
- **Head Injury with multiple trauma (Refer to Head Trauma Protocol TB 5):**
  - **Higher SBP targets are needed to maintain cerebral perfusion pressure.**
  - **Single episodes of Hypotension and/ or hypoxia are associated with worse outcomes in head injured patients.**
  - **Adult SBP target is ≥ 100 mmHg.**
  - **Pediatric SPB target is ≥ 70 + 2(Age) mmHg.**
- **Trauma Triad of Death:**
  - **Metabolic acidosis/ Coagulopathy/ Hypothermia**
- **Address by appropriate resuscitation measures and keeping patient warm, regardless of ambient temperature, which helps to treat metabolic acidosis, coagulopathy, and hypothermia.**
- **Tranexamic Acid (TXA):**
  - **Agencies utilizing TXA must submit letters from the their receiving trauma centers for approval by the OEMS Medical Director.**
  - **Receiving trauma centers must agree to continue TXA therapy with repeat dosing.**
  - **TXA is NOT indicated and should NOT be administered where trauma occurred > 3 hours prior to EMS arrival.**
- **Trauma in Pregnancy:**
  - Providing optimal care for the mother = optimal care for the fetus.
  - After 20 weeks gestation (fundus at or above umbilicus) transport patient on left side with 10 – 20° of elevation.
- **Geriatric Trauma:**
  - **Age ≥ 65: SBP < 110 mmHg or HR > SBP may indicate shock.**
  - Evaluate with a high index of suspicion, occult injuries difficult to recognize and with unexpected patient decompensation.
  - Risk of death with trauma increases after age 55.
  - Low impact mechanisms, such as ground level falls might result in severe injury especially in age over 65.
- See Regional Trauma Guidelines when declaring Trauma Activation.
- Maintain high-index of suspicion for domestic violence or abuse, pediatric non-accidental trauma, or geriatric abuse.
- **Refer to your Regional Trauma Guidelines when declaring Trauma Activation.**
- Severe bleeding from an extremity, not rapidly controlled with direct pressure, needs application of a tourniquet.
- Maintain high-index of suspicion for domestic violence or abuse, pediatric non-accidental trauma, or geriatric abuse.

## Dispositions

**Paramedic:** Any patient with need for TXA administration, SBP <90 (<110 in age 65 or older), chest trauma with concern for needing needle decompression, or GCS < 13

**Advanced EMT:** Any patient meeting Trauma Alert or Trauma and Burn EMS Destination Plan criteria

# Radiation Incident

## History
- Type of exposure (heat, gas, chemical)
- Inhalation injury
- Time of Injury
- Past medical history/ Medications
- Other trauma
- Loss of Consciousness
- Tetanus/Immunization status

## Signs and Symptoms
- Burns, pain, swelling
- Dizziness
- Loss of consciousness
- Hypotension/shock
- Airway compromise/ distress could be indicated by hoarseness/ wheezing
- Hypotension
- Thermal or Chemical Injury

## Differential
- Thermal /Chemical /Electrical Burn Injury
  - Superficial
    - (1st Degree) red – painful (Don't include in TBSA)
  - Partial Thickness
    - (2nd Degree) blistering
  - Full Thickness
    - (3rd Degree) painless/ charred or leathery skin

**Scene Safety / Quantify number and Triage Patients/ Load and Go with Assessment/ Treatment Enroute**

Assess Burn/ Concomitant Injury Severity

| Minor Burn | Serious Burn | Critical Burn |
|---|---|---|
| **< 5% TBSA 2nd/3rd Degree Burn**<br>No inhalation injury, Not Intubated, Normotensive<br>GCS 14 or Greater | **5-15% TBSA 2nd/3rd Degree Burn**<br>Suspected inhalation injury or requiring intubation for airway stabilization<br>Hypotension or GCS 13 or Less<br>*(When reasonably accessible, transport to a Burn Center)* | **>15% TBSA 2nd/3rd Degree Burn**<br>Burns with Multiple Trauma<br>Burns with definitive airway compromise<br>*(When reasonably accessible, transport to a Burn Center)* |

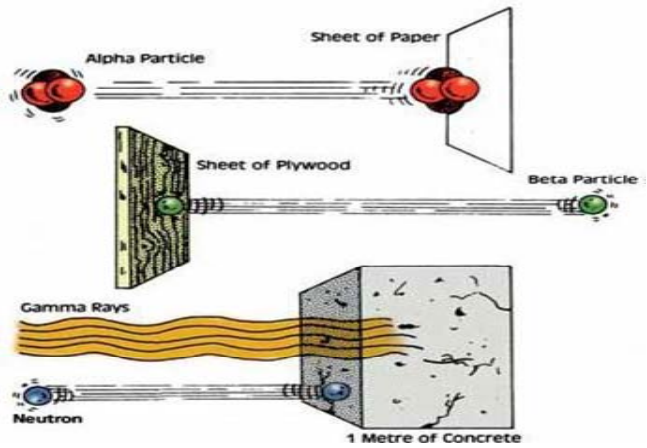
- Age Appropriate Airway Protocol(s) AR 1, 2, 3, 4, 5, 6, 7 ***if indicated***
- Eye Involvement
  - Irrigate Involved Eye(s) with Normal Saline for 15 – 30 minutes
  - May repeat as needed
- Flush Contact Area with Normal Saline for 15 minutes
- Decontamination Procedure USP 2 ***if indicated***
- IV and IO Access Protocol UP 6 ***if indicated***
- Age Appropriate Cardiac Protocol(s) ***as indicated***
- Thermal Burn Protocol TB 9 ***if indicated***
- **Rapid Transport** to appropriate destination using **Trauma and Burn: EMS Triage and Destination Plan**
- **Notify Destination or Contact Medical Control**

***Collateral Injury:*** Most all injuries immediately seen will be a result of collateral injury, such as heat from the blast, trauma from concussion, treat collateral injury based on typical care for the type of injury displayed.·

***Qualify:*** Determine exposure type; external irradiation, external contamination with radioactive material, internal contamination with radioactive material.·

***Quantify:*** Determine exposure (generally measured in Grays/Gy). *Information may be available from those on site who have monitoring equipment, do not delay transport to acquire this information.*

# Radiation Incident




**Time Phases of Radiation Injury**
**(Exposure Dose vs Clinical Outcome)**

| Exposure Dose (Gy) | Prodrome Severity | Manifest Illness - Symptom Severity | | | Prognosis |
|---|---|---|---|---|---|
| | | Hematologic | Gastrointestinal | Neurologic | |
| 0.5 to 1.0 | + | + | 0 | 0 | Survival almost certain |
| 1.0 to 2.0 | +/++ | + | 0 | 0 | Survival >90 percent |
| 2.0 to 3.5 | ++ | ++ | 0 | 0 | Probable survival |
| 3.5 to 5.5 | +++ | +++ | + | 0 | Death in 50% at 3.5 to 6 wks |
| 5.5 to 7.5 | +++ | +++ | ++ | 0 | Death probable in 2-3 wks |
| 7.5 to 10 | +++ | +++ | +++ | 0* | Death probable in 1-2.5 wks |
| 10 to 20 | +++ | +++ | +++ | +++ | Death certain in 5-12 days |
| > 20 | +++ | +++ | +++ | +++** | Death certain in 2-5 days |

**Abbreviations:** Gy: dose in Grey;
0: no effects; +: mild; ++: moderate; +++: severe or marked

* Hypotension
** Also cardiovascular collapse, fever, shock

Modified from : Waselenko, JK, MacVittie, TJ, Blakely, WF, et al. Medical management of the acute radiation syndrome: Recommendations of the strategic national stockpile radiation working group. Ann Int Med 2004; 140:1039.

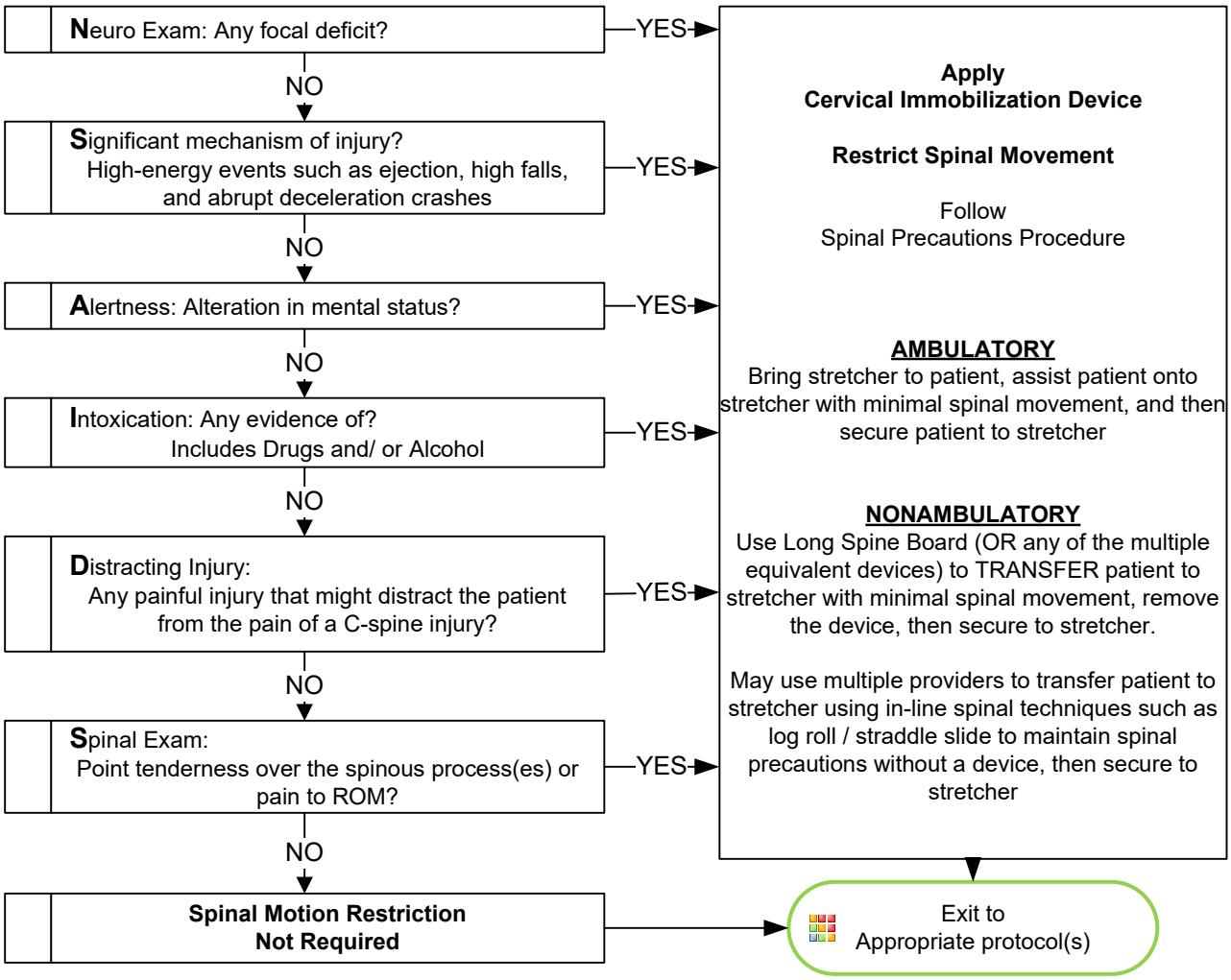
## Pearls

- **The three primary methods of protection from radiation sources:**
  - **Limiting time of exposure**
  - **Distance from**
  - **Shielding from the source**
- Dealing with a patient with a radiation exposure can be a frightening experience. Do not ignore the ABC's, a dead but decontaminated patient is not a good outcome. Refer to the Decontamination Procedure USP 2 for more information.
- Normal Saline or Sterile Water is preferred, however if not available, do not delay irrigation using tap water. Other water sources may be used based on availability. Flush the area as soon as possible with the cleanest, most readily available water or saline solution using copious amounts of fluids.
- **Three methods of exposure:**
  - External irradiation
  - External contamination
  - Internal contamination
- **Two classes of radiation:**
  - Ionizing radiation (greater energy) is the most dangerous and is generally in one of three states:
    - Alpha Particles, Beta Particles and Gamma Rays.
  - Non-ionizing (lower energy) examples include microwaves, radios, lasers and visible light.
- Radiation burns with early presentation are unlikely, it is more likely this is a combination event with either thermal or chemical burn being presented as well as a radiation exposure. When the burn is from a radiation source, it indicates the patient has been exposed to a significant source, (> 250 rem).
- Patients experiencing radiation poisoning are not contagious. Cross contamination is only a threat with external and internal contamination.
- Typical ionizing radiation sources in the civilian setting include soil density probes used with roadway builders and medical uses such as x-ray sources as well as radiation therapy. Sources used in the production of nuclear energy and spent fuel are rarely exposure threats as is military sources used in weaponry. Nevertheless, these sources are generally highly radioactive and in the unlikely event they are the source, consequences could be significant and the patient's outcome could be grave.
- Dirty bomb ingredients generally include previously used radioactive material and are usually combined with a conventional explosive device to spread and distribute the contaminated material.
- Refer to Decontamination Procedure USP 2/ WMD and Nerve Agent Protocol TE 8 for contamination events.
- If there is a time lag between the time of exposure and the encounter with EMS, key clinical symptom evaluation includes: nausea/ vomiting, hypothermia/ hyperthermia, diarrhea, neurological/ cognitive deficits, headache, and hypotension.
- This event may require an activation of the National Radiation Injury Treatment Network (RITN). UNC Hospitals, Atrium Health Wake Forest Baptist and Duke are the RITN hospitals, with burns managed at UNC and Wake Forest.

## Dispositions

**Paramedic / Advanced EMT:** All Patients

# Selective Spinal Motion Restriction



# Selective Spinal Motion Restriction



**Pearls**

- **Recommended Exam: Mental Status, Skin, Neck, Heart, Lungs, Abdomen, Back, Extremities, Neuro**
- **Patients meeting all the above criteria do not require spinal motion restriction. However, patients who fail one or more criteria above require spinal motion restriction, but does NOT require use of the long spine board for immobilization.**
- **Long spine boards are NOT considered standard of care in most cases of potential spinal injury. Spinal motion restriction with cervical collar, and securing patient to cot, while padding all void areas is appropriate.**
- **True spinal immobilization is not possible. Spine protection and spinal motion restriction do not equal long spine board.**
- **Spinal motion restriction is always utilized in at-risk patients. This includes cervical collar, securing to stretcher, minimizing movement/ transfers. and maintenance of in-line spine stabilization during any necessary movement/ transfers. This includes the elderly, or others with body or spine habitus preventing them from lying flat.**
- **Consider spinal motion restriction in patients with arthritis, cancer, dialysis, and underlying spine or bone disease.**
- Range of motion (ROM) is tested by touching chin to chest (look down), extending neck (look up), and turning head from side to side (chin to each shoulder) only in patients without posterior cervical mid-line pain. ROM should NOT be assessed if patient has midline spinal tenderness. Patient's range of motion should not be assisted, they must be able to complete alone.
- **EMR may participate in spinal motion restriction** per Agency Medical Director.
- **<u>Immobilization on a long spine board is not necessary where:</u>**
  **Penetrating trauma to the head, neck or torso with no signs and/ or symptoms of spinal injury.**
- **<u>Concerning mechanisms that may result in spinal column injury:</u>**
  **Fall from ≥ 3 feet and/ or ≥ 5 stairs or steps. Ground level falls in patients ≥ 65 years of age.**
  **MVC ≥ 30 mph, rollover, and/or ejection**
  **Motorcycle, bicycle, other mobile device, or pedestrian-vehicle crash**
  **Diving or axial load to spine**
  **Electric shock**



Revised
Apr 2023

Any local EMS System changes to this document must follow the NC OEMS Protocol Change Policy and be approved by OEMS

# Thermal Burn

**History**
- Type of exposure (heat, gas, chemical)
- Inhalation injury
- Time of Injury
- Past medical history/ Medications
- Other trauma
- Loss of Consciousness
- Tetanus/Immunization status

**Signs and Symptoms**
- Burns, pain, swelling
- Dizziness
- Loss of consciousness
- Hypotension/shock
- Airway compromise/ distress could be indicated by hoarseness/ wheezing

**Differential**
- Thermal /Chemical /Electrical Burn Injury
  - Superficial
    - (1st Degree) red – painful
    - (Don't include in TBSA)
  - Partial Thickness
    - (2nd Degree) blistering
  - Full Thickness
    - (3rd Degree) painless/ charred or leathery skin
- Radiation injury
- Blast injury

Assess Burn/ Concomitant Injury Severity

**< 5% TBSA 2nd/3rd Degree Burn**
No inhalation injury, Not Intubated, Normotensive
GCS 14 or Greater
Minor Burn

**5-15% TBSA 2nd/3rd Degree Burn**
Suspected inhalation injury or requiring intubation for airway stabilization
Hypotension or GCS 13 or Less
*(When reasonably accessible, transport to a Burn Center)*
Serious Burn

**>15% TBSA 2nd/3rd Degree Burn**
Burns with Multiple Trauma
Burns with definitive airway compromise
*(When reasonably accessible, transport to a Burn Center)*
Critical Burn

- Airway Protocol(s) AR 1, 2, 3, 5, 6 ***as indicated***
- Multiple Trauma Protocol TB 6 ***if indicated***
- Remove Rings, Bracelets, Constricting Items
- Dry Clean Sheet or Dressings
- IV or IO Access Protocol UP 6
  Consider 2 IV sites if ≥ 15 % TBSA

TBSA estimate at ≥ 20%

NO → **A** **Lactated Ringers or Normal Saline**
**0.25 mL/kg *X* (TBSA%)/hr**

YES → **A** **Lactated Ringers or Normal Saline**
***Age: ≤ 5 = 125 mL/hr***
***Age: 6–14 = 250 mL/hr***
***Age: ≥ 15 = 500 mL/hr***

- Pain Control Protocol UP 11 ***if indicated***
- Carbon Monoxide/ Cyanide Protocol TE 2 ***if indicated***
- Monitor and Reassess
- **Rapid Transport** to appropriate destination using Trauma and Burn: EMS Triage and Destination Plan

**Notify Destination or Contact Medical Control**

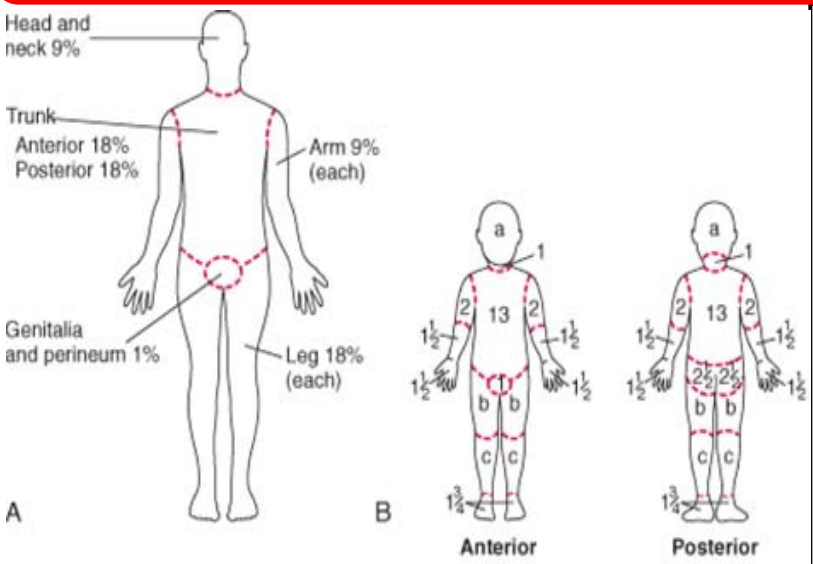
**Formula example:**
***70 kg patient with 15% TBSA***

0.25 *x* 70 kg = 17.5
17.5 *x* 15 = 263 mL/hr

***1. Lactated Ringers preferred over Normal Saline. Use if available, if not change over once available.***

Trauma and Burn Protocol Section

# Thermal Burn




Relative percentage of body surface area (% BSA) affected by growth

| | Age | | | | |
|---|---|---|---|---|---|
| Body Part | 0 yr | 1 yr | 5 yr | 10 yr | 15 yr |
| a = 1/2 of head | 9 1/2 | 8 1/2 | 6 1/2 | 5 1/2 | 4 1/2 |
| b = 1/2 of 1 thigh | 2 3/4 | 3 1/4 | 4 | 4 1/4 | 4 1/2 |
| c = 1/2 of 1 lower leg | 2 1/2 | 2 1/2 | 2 3/4 | 3 | 3 1/4 |

## Rule of Nines

- Rarely find a complete isolated body part that is injured as described in the Rule of Nines.
- More likely, it will be portions of one area, portions of another, and an approximation will be needed.
- For the purpose of determining the extent of serious injury, differentiate the area with minimal or 1st degree burn(superficial) from those of partial (2nd) or full (3rd) thickness burns.
- **For the purpose of determining Total Body Surface Area (TBSA) of burn, include only Partial (2nd) and Full Thickness (3rd) burns.** Report the observation of other superficial (1st degree) burns but do not include those burns in your TBSA estimate.
- Some texts will refer to 4th 5th and 6th degree burns. There is significant debate regarding the actual value of identifying a burn injury beyond that of the superficial, partial and full thickness burn at least at the level of emergent and primary care. For our work, all are included in Full Thickness burns

Estimate spotty areas of burn by using the size of the patient's palm as 1 %

## Pearls

- **Recommended Exam: Mental Status, HEENT, Neck, Heart, Lungs, Abdomen, Extremities, Back, and Neuro**
- **Green, Yellow, and Red In burn severity do not apply to the Start/ JumpStart Triage System.**
- **Airway considerations:**
  - **For systems performing RSI, Rocuronium is preferred agent (succinylcholine can be used in the first 24-hours)**
  - **Singed nasal hairs, facial burns, and/ or carbonaceous sputum are NOT absolute indications for intubation in a burn patient.**
  - **Utilizing non-rebreather face mask as well as NIPPV procedure are acceptable as tolerated.**
- **Critical or Serious Burns:**
  - **> 5-15% total body surface area (TBSA) 2nd or 3rd degree burns**
  - **3rd (full thickness) degree burns > 5% TBSA for any age group**
  - **Circumferential burns of extremities**
  - **Electrical or lightning injuries**
  - **Suspicion of abuse or neglect**
  - **Inhalation injury**
  - **Chemical burns**
  - **Burns of face, hands, perineum, or feet**
  - **Require direct transport to a Burn Center. Local facility should be utilized only if distance to Burn Center is excessive or critical interventions such as airway management are not available in the field.**
- Burn patients are trauma patients, evaluate for multisystem trauma.
- Assure whatever has caused the burn is no longer contacting the injury. (Stop the burning process!)
- Circumferential burns to extremities are dangerous due to potential vascular compromise secondary to soft tissue swelling.
- Burn patients are prone to hypothermia - never apply ice or cool the burn, must maintain normal body temperature.
- Evaluate the possibility of geriatric abuse with burn injuries in the elderly.
- Do not administer IM pain injections to a burn patient. IM dosing is variable in burn patients and may result in over or under dose.

## Dispositions

**Paramedic:** Any patient with suspected inhalation injuries or SBP <90

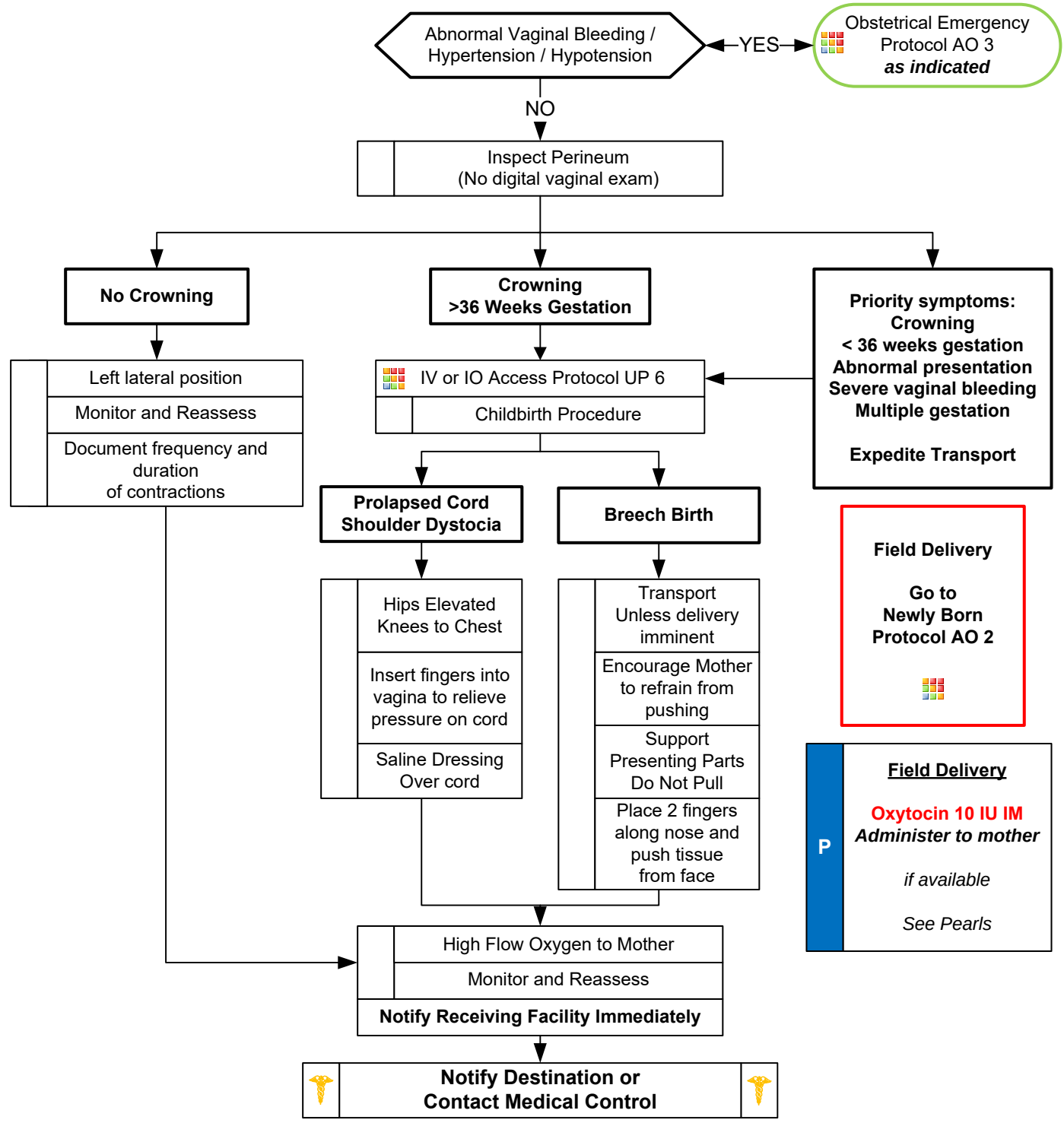
**Advanced EMT:** Any patient with 3rd degree burns, or any 2nd Degree Thermal Burn with > 5% TBSA and SBP>90

# Childbirth / Labor

## History
- Due date
- Time contractions started / how often
- Rupture of membranes
- Time / amount of any vaginal bleeding
- Sensation of fetal activity
- Past medical and delivery history
- Medications
- Gravida / Para Status
- High Risk pregnancy

## Signs and Symptoms
- Spasmodic pain
- Vaginal discharge or bleeding
- Crowning or urge to push
- Meconium

## Differential
- Abnormal presentation
  - Buttock
  - Foot
  - Hand
- Prolapsed cord
- Placenta previa
- Abruptio placenta




Adult Obstetrical Protocol Section

# Childbirth / Labor

**Apgar score**

| | Score 2 | Score 1 | Score 0 |
|---|---|---|---|
| **A**ppearance |  Pink |  Extremities blue |  Pale or blue |
| **P**ulse | > 100 bpm | < 100 bpm | No pulse |
| **G**rimace | Cries and pulls away | Grimaces or weak cry | No response to stimulation |
| **A**ctivity |  Active movement |  Arms, legs flexed |  No movement |
| **R**espiration | Strong cry | Slow, irregular | No breathing |

## Pearls

- **Recommended Exam (of Mother): Mental Status, Heart, Lungs, Abdomen, Neuro**
- **Record APGAR at 1 minute and 5 minutes after birth. Do not delay resuscitation to obtain APGAR.**
- **If neonate requiring resusciation, move quickly to AO 2 Newly Born Protocol**
- **After delivery, massaging the uterus (lower abdomen) will promote uterine contraction and help to control post-partum bleeding. Note: Apply Uterine Massage only after placenta delivery.**
- **Postpartum Hemorrhage:**
  - **Pitocin (Oxytocin):**
    Following field delivery, where available, administer 10 IU IM to promote uterine contraction and decrease postpartum hemorrhage.
    Agencies may administer IV or IO with approval from Medical Direction.
  - **Tranexamic Acid (TXA):**
    May give with uncontrolled hemorrhage and/ or signs of shock.
    NOT indicated and should NOT be administered where birth occurred > 3 hours prior to EMS arrival.
- **Transport or Delivery?**
  Decision to transport versus remain and deliver is multifactorial and difficult. Generally it is preferable to transport.
  Factors that will impact decision include: number of previous deliveries; length of previous labors; frequency of contractions; urge to push; and presence of crowning.
- **Maternal positioning for labor:**
  Supine with head flat or elevated per mother's choice. Maintain flexion of both knees and hips. Elevated buttocks slightly with towel. If delivery not imminent, place mother in the left, lateral recumbent position with right side up about 10 – 20°.
- **Umbilical cord clamping and cutting:**
  Place first clamp about 10 cm from infant's abdomen and second clamp about 5 cm away from first clamp. May delay cord clamping up to 1 minute, as this may reduce fetal anemia.
- **Multiple Births:**
  Twins occur about 1/90 births. Typically manage the same as single gestation. If imminent delivery call for additional resources, if needed. Most twins deliver at about 34 weeks so lower birth weight and hypothermia are common. Twins may share a placenta so clamp and cut umbilical cord after first delivery. Notify receiving facility immediately.
- Document all times (Contraction onset, contraction duration and frequency, delivery, APGAR 1 and 2, and placenta delivery).
- If maternal seizures occur, refer to the Obstetrical Emergencies Protocol.
- Some perineal bleeding is normal with any childbirth. Large quantities of blood or free bleeding are abnormal.

**NOTE: Viable Pregnancy confirmed by Last Menstrual Period or Ultrasound is 22 weeks or greater. If there are questions, please contact Medical Control.**

## Dispositions

**Paramedic / Advanced EMT:** Any patient with priority symptoms, imminent delivery, or is a high risk pregnancy

# Newly Born

## History
- Due date and gestational age
- Multiple gestation (twins etc.)
- Meconium / Delivery difficulties
- Congenital disease
- Medications (maternal)
- Maternal risk factors such as substance abuse or smoking

## Signs and Symptoms
- Respiratory distress
- Peripheral cyanosis or mottling (normal)
- Central cyanosis (abnormal)
- Altered level of responsiveness
- Bradycardia

## Differential
- Airway failure, Secretions, or Respiratory drive
- Infection
- Maternal medication effect
- Hypovolemia, Hypoglycemia, Hypothermia
- Congenital heart disease

**In a non-vigorous infant whose respirations are not improving after warming, drying, and stimulating within 30 seconds, move quickly to Positive Pressure Ventilation with BVM**

**Breathing or Crying?**
**Term Gestation?**
**Good Muscle Tone?**

ALL YES →
- **Warm, Dry, and Stimulate infant**
- **Infant with mother if possible *(skin-to-skin)***
- **Maintain normal temperature**
- Bulb suction airway only if needed
- Monitor and Reassess
- **Notify Destination or Contact Medical Control**

ANY NO ↓

- **Warm, Dry and Stimulate**
- **Bulb suction airway if needed**
- ***If not breathing within 30 seconds move quickly to next step: BVM***

↓

**Agonal breathing or Apnea?**
**Or**
**Heart Rate < 100 / min**
**Or**
**Labored breathing/ Persistent cyanosis**
***If not improving within 30 seconds move quickly to next step***

YES →
- Position and clear airway if necessary
- **BVM Ventilations with or without $O_2$**
- **Ventilation Rate: 40 – 60 breaths/ minute**
- **B** Pulse Oximetry Right Hand
- **P** Cardiac Monitor 3 or 4 – Lead

↓

**Heart Rate < 100**

YES →
- Check chest movement
- Change airway position
- Change BVM Technique
- **Add $O_2$ if not already providing**
- Pediatric Airway Protocol(s) AR 5, 6 ***if no improvement***

NO ↓

**Heart Rate < 60**

YES →
- **Chest Compressions**
- Pediatric Airway Protocol(s) AR 5, 6
- IV or IO Access Protocol UP 6
- **A** **Epinephrine 1:10,000**
- **0.01 mg /kg IV / IO**
- Every 3 to 5 minutes as needed
- **A** **Normal Saline Bolus**
- **10 mL / kg IV / IO**
- If not responding to epinephrine
- *May repeat x 1*
- Blood Glucose Analysis Procedure
- **A** **Blood Glucose < 40 mg/dL**
- **Administer 2 mL/kg of D10 IV / IO**
- Repeat as needed CBG ≥ 40 mg/dL

NO ↓

- ***Supplemental Oxygen (See Pearls for expected $SpO_2$)***
- Maintain warmth
- Monitor and Reassess

↓

**Notify Destination or Contact Medical Control**

Adult Obstetrical Protocol Section

# Newly Born



## Pearls

- **Recommended Exam: Quality of Cry, Muscle tone, Respirations, Heart Rate, Pulse Oximetry, and Gestational Age**
- **Majority of newborns do not require resuscitation, only warming, drying, stimulating, and cord clamping.**
  - **With term gestation, strong cry/ breathing, and good muscle tone, generally will not need resuscitation.**
  - **If no resuscitation needed, skin-to-skin contact with the mother is best way to maintain warmth of infant.**
  - **Maintain warmth of infant following delivery adjuncts; cap/ hat, plastic wrap, thermal mattress, radiant heat.**
  - **Most important vital signs in the newly born are heart rate, respirations, and respiratory effort.**
  - **About 10% of newborns need assistance to help them start breathing after birth.**
  - **About 1% of newborns require intensive resuscitation to restore/ support cardiorespiratory functions.**
- **Airway:**
  - **Positive Pressure Ventilations with BVM is the most important treatment in a newborn with poor respirations and/ or persistent bradycardia (HR < 100 BPM).**
  - **Adequacy of ventilation/ is measured mainly by increase in heart rate as well as chest rise.**
  - **If heart rate or respirations are not improving after 30 to 60 seconds of resuscitation, place BIAD or endotracheal tube.**
  - **Routine suctioning is no longer recommended, bulb suction only if needed.**
- **Breathing:**
  - **Oxygen is not necessary initially, but if infant is not responding with increased heart rate or adequate breathing, add oxygen to the BVM.**
- **Circulation/ Compressions:**
  - **Heart rate is critical during first few moments of life and is best monitored by 3 or 4 lead ECG, as pulse assessment is difficult in the neonate. Heart Rate is best tool for gauging resuscitation success.**
  - **If heart rate remains < 60 BPM after 30 to 60 seconds of BVM/ resuscitation, begin compressions.**
  - **With BIAD or ETT in place, compressions and ventilation should be coordinated with compression, compression, compression, then ventilation. (3:1 ratio with all events totaling 120 per minute)**
  - **2-thumbs encircling chest and supporting the back is recommended. Limit interruptions of chest compressions.**
- **If infant not responding to BVM, compressions, and/ or epinephrine, consider hypovolemia, pneumothorax, and/ or hypoglycemia (< 40 mg/dL).**
- **Document 1 and 5 minute APGAR in PCR or ePCR. DO NOT delay or interrupt resuscitation to obtain an APGAR score.**
- **Meconium staining:**
  - **Infant born through meconium staining who is NOT vigorous:**
  - **Bulb suction mouth and nose and provide positive pressure ventilation.**
  - **Direct endotracheal suctioning is no longer recommended.**
- **Expected Pulse Oximetry readings following birth:**
  - ***(Accurate only in infant NOT requiring resuscitation)***
  - **1 minute 60 – 65%**
  - **2 minutes 65 – 70%**
  - **3 minutes 70 – 75%**
  - **4 minutes 75 – 80%**
  - **5 minutes 80 – 85%**
  - **10 minutes 85 – 95%**
- Pulse oximetry should be applied to the right upper arm, wrist, or palm.
- Cord clamping:
  - May delay cord clamping for 1 minute, unless infant requires resuscitation.
- CPR in infants:
  - 90 compressions / minute with a 3:1 compression to ventilation ratio. This totals 120 events / minute.
  - 2-thumbs encircling chest and supporting the back is recommended. Limit interruptions of chest compressions.
- Maternal sedation or narcotics will sedate infant (Naloxone NO LONGER recommended, use supportive care only).
- D10 = D50 diluted (1 ml of D50 with 4 ml of Normal Saline) or **D10 solution at 2 mL/kg IV / IO.**
- **In the NEONATE, D10 is administered at 2 mL/kg.** *(NOT 5 mL/kg in the pediatric patient after the first month of life.)*

**Apgar score**

| | Score 2 | Score 1 | Score 0 |
|---|---|---|---|
| Appearance | Pink | Extremities blue | Pale or blue |
| Pulse | > 100 bpm | < 100 bpm | No pulse |
| Grimace | Cries and pulls away | Grimaces or weak cry | No response to stimulation |
| Activity | Active movement | Arms, legs flexed | No movement |
| Respiration | Strong cry | Slow, irregular | No breathing |

## Dispositions

**Paramedic:** Any patient with Heart Rate < 100

**Advanced EMT:** Any patient with APGAR < 8

# Obstetrical Emergency

## History
- Past medical history
- Hypertension meds
- Prenatal care
- Prior pregnancies / births
- Gravida / Para

## Signs and Symptoms
- Vaginal bleeding
- Abdominal pain
- Seizures
- Hypertension
- Severe headache
- Visual changes
- Edema of hands and face

## Differential
- Pre-eclampsia / Eclampsia
- Placenta previa
- Placenta abruptio
- Spontaneous abortion

Known or Suspected Pregnancy
Missed Period
Vaginal Bleeding
Abdominal Pain

YES

- Left lateral recumbant position
- Blood Glucose Analysis Procedure
- IV or IO Access Protocol UP 6
- P — Cardiac Monior
- Abdominal Pain Vomiting and Diarrhea Protocol UP 3 ***if indicated***
- Diabetic Protocol AM 2/ PM 2 ***if indicated***
- Hypotension/ Shock Protocol AM 5/ PM 3 ***if indicated***

NO

Exit to Appropriate Protocol(s)

Uncontrolled vaginal hemorrhage with signs of shock — YES

P — **TXA 1 gm IV / IO**
***Slow Push***
*See Pearls*

NO

Field Delivery? — YES

P — **Oxytocin 10 IU IM**
***Administer to mother***
*if available*

NO

Seizure Activity — YES

P — **Midazolam 2.5 mg IV / IO**
May repeat
every 3 to 5 minutes as needed

**Midazolam 5 mg IM**

**Midazolam 2 mg IN**

**Maximum 10 mg**

**Magnesium Sulfate 4 g IV / IO**
Over 2 – 3 minutes
May repeat x 1

NO

- Childbirth / Labor Protocol AO 1 **if indicated**
- Monitor and Reassess

**Notify Destination or Contact Medical Control**

Adult Obstetric Protocol Section



Any local EMS System changes to this document must follow the NC OEMS Protocol Change Policy and be approved by OEMS

# Obstetrical Emergency



**Pearls**

- **Recommended Exam: Mental Status, Abdomen, Heart, Lungs, Neuro**
- **Midazolam 5 – 10 mg IM is effective in termination of seizures. Do not delay IM administration with difficult or no IV or IO access. With active seizure activity, benzodiazepine is a priority over magnesium sulfate.**
- **Magnesium Sulfate should be administered as quickly as possible. May cause hypotension and decreased respiratory drive, but more likely in doses higher than 6 gm.**
- **Any pregnant patient involved in a MVC should be seen immediately by a physician for evaluation. Greater than 20 weeks generally require 4 to 6 hours of fetal monitoring. DO NOT suggest the patient needs an ultrasound but emphasize patient needs 4 to 6 hours of fetal monitoring.**
- **After delivery, massaging the uterus (lower abdomen) will promote uterine contraction and help to control post-partum bleeding. Note: Apply Uterine Massage only after placenta delivery.**
- **Postpartum Hemorrhage:**
  - **Pitocin (Oxytocin):**
    Following field delivery, where available, administer 10 IU IM to promote uterine contraction and decrease postpartum hemorrhage.
  - **Tranexamic Acid (TXA):**
    May give with uncontrolled hemorrhage and/ or signs of shock.
    NOT indicated and should NOT be administered where birth occurred > 3 hours prior to EMS arrival.
- **Ectopic pregnancy:**
  Implantation of fertilized egg outside the uterus, commonly in or on the fallopian tube. As fetus grows, rupture may occur. Vaginal bleeding may or may not be present. Many women with ectopic pregnancy do not know they are pregnant. Usually occurs within 5 to 10 weeks of implantation.
  Maintain high index of suspicion with women of childbearing age experiencing abdominal pain.
- **Preeclampsia:**
  Occurs in about 6% of pregnancies. Defined by hypertension and protein in the urine. RUQ pain, epigastric pain, N/V, visual disturbances, headache, and hyperreflexia are common symptoms.
  In the setting of pregnancy, hypertension is defined as a BP > 140 systolic or > 90 diastolic mmHg, or a relative increase of 30 systolic and 20 diastolic from the patient's normal (pre-pregnancy) blood pressure.
  Risk factors: < 20 years of age, first pregnancy, multi-gestational pregnancy, gestational diabetes, obesity, personal or family history of gestational hypertension.
- **Eclampsia:**
  Seizures occurring in the context of preeclampsia. Remember, women may not have been diagnosed with preeclampsia.
- **Post-Partum:**
  Preeclampsia and eclampsia may occur up to 6 weeks post partum
- Maintain patient in a left lateral position, right side up 10 - 20° to minimize risk of supine hypotensive syndrome.
- Ask patient to quantify bleeding - number of pads used per hour.

## Dispositions

**Paramedic:** Any patient with concern for eclampsia / seizure activity or SBP <90

**Advanced EMT:** Any patient with second or third trimester bleeding, or bleeding > 3 pads per hour

# Pediatric Asystole / PEA

## History
- Events leading to arrest
- Estimated downtime
- SAMPLE
- Existence of terminal illness
- Airway obstruction
- Hypothermia
- Suspected abuse

## Signs and Symptoms
- Pulseless
- Apneic
- No electrical activity on ECG
- No heart tones on auscultation

## Differential
- Respiratory failure
- Foreign body
- Infection (croup, epiglotitis)
- Congenital heart disease
- See Reversible Causes below

Pediatric Pulseless Arrest Protocol

**Criteria for Death / No Resuscitation**
**Review DNR / MOST Form**

YES →
Decomposition
Rigor mortis
Dependent lividity
Blunt force trauma
Injury incompatible with life
Extended downtime with asystole

Do not begin resuscitation

Follow Deceased Subjects Policy

NO

**Begin Continuous CPR Compressions**
**Push Hard (≥ 1/3 AP Diameter of Chest)**
**(1.5 inches Infant / 2 inches in Children)**
**Push Fast (100 - 120 / min)**
**Change Compressors every 2 minutes**
**(sooner if fatigued)**
***(Limit changes / pulse checks ≤ 10 seconds)***

**Ventilation rate:**
**1 breath every 6 seconds**
**15:2 Compression:Ventilation if no Advanced Airway**

AED Procedure
***if available***

**P** Cardiac Monitor

IV or IO Access Protocol UP 6

**A**
**Epinephrine1:10,000**
**0.01 mg/kg IV / IO Maximum Single Dose 1mg**
Or
**Epinephrine 1:1000 0.1 mg / kg ETT Maximum 2.5 mg**
Repeat every 3 – 5 minutes

**Normal Saline Bolus 20 mL/kg IV / IO**
May repeat as needed
**Maximum 60 mL/kg**

Search for Reversible Causes

Blood Glucose Analysis Procedure
***if applicable***

**P**
Consider
**Epinephrine 0.1 – 1 mcg / kg / min IV / IO**
Or
**Dopamine 2 – 20 mcg /kg / min IV / IO**
See Pearls

**Notify Destination or Contact Medical Control**

**AT ANY TIME**

**Return of Spontaneous Circulation**

**Go to Post Resuscitation Protocol**

**Reversible Causes**

Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypothermia
Hypo / Hyperkalemia

Tension pneumothorax
Tamponade; cardiac
Toxins
Thrombosis; pulmonary (PE)
Thrombosis; coronary (MI)

Pediatric Cardiac Protocol Section

# Pediatric Asystole / PEA

## Pearls

- **Team Focused Approach / Pit-Crew Approach recommended; assigning responders to predetermined tasks.**
- **Refer to optional protocol AC 11 or development of local agency protocol.**
- **Efforts should be directed at high quality and continuous compressions with limited interruptions and early defibrillation when indicated. Compress ≥ 1/3 anterior-posterior diameter of chest, in infants 1.5 inches and in children 2 inches.**
- **Majority of pediatric arrests stem from a respiratory insult or hypoxic event. Compressions should be coupled with ventilations.**
- **When advanced airway not in place perform 15 compressions with 2 ventilations.**
- **Use length-based or weight-based pediatric resuscitation system for medication, equipment, cardioversion, and defibrillation guidance. Pediatric paddles should be used in children < 10 kg.**
- **DO NOT HYPERVENTILATE:**
  **If advanced airway in place ventilate:**
  **1 breath every 6 seconds with continuous, uninterrupted compressions.**
- **Airway is a more important intervention in pediatric arrests. This should be accomplished quickly with BVM or BIAD.**
- **Patient survival is often dependent on proper ventilation and oxygenation / airway Interventions.**
- **Do not interrupt compressions to place endotracheal tube. Consider BIAD first to limit interruptions.**
- **High-Quality CPR:**
  Make sure chest compressions are being delivered at 100 – 120 / min.
  Make sure chest compressions are adequate depth for age and body habitus.
  Make sure you allow full chest recoil with each compression to provide maximum perfusion.
  Minimize all interruptions in chest compressions to < 10 seconds.
  Use AED or apply ECG monitor / defibrillator as soon as available.
- **Defibrillation:** Follow manufacture's recommendations concerning defibrillation / cardioversion energy when specified.
- **End Tidal CO2 (EtCO2)**
  If EtCO2 is < 10 mmHg, improve chest compressions. Goal is ≥ 20 mmHg.
  If EtCO2 spikes, typically > 40 mmHg, consider Return of Spontaneous Circulation (ROSC)
- **IV / IO access and drug delivery are secondary to high-quality chest compressions and early defibrillation**.
- **IV access is preferred route. Follow IV or IO Access Protocol UP 6.**
- **Special Considerations**
  **Maternal Arrest** - Treat mother per appropriate protocol with immediate notification to Medical Control and rapid transport preferably to obstetrical center if available and proximate. Place mother supine and perform Manual Left Uterine Displacement moving uterus to the patient's left side. IV/IO access preferably above diaphragm.
  Defibrillation is safe at all energy levels.
  **Renal Dialysis / Renal Failure** - Refer to Dialysis / Renal Failure Protocol AM 3 caveats when faced with dialysis / renal failure patient experiencing cardiac arrest.
  **Opioid Overdose** - If suspected, administer Naloxone per Overdose / Toxic Ingestion Protocol UP 7 while ensuring airway, oxygenation, ventilations, and high-quality chest compressions.
  **Drowning / Suffocation / Asphyxiation / Hanging / Lightning Strike** – Hypoxic associated cardiac arrest and prompt attention to airway and ventilation is priority followed by high-quality and continuous chest compressions and early defibrillation.
- Success is based on proper planning and execution. Procedures require space and patient access. Make room to work.

## Dispositions

**Paramedic:** All patients

# Pediatric Bradycardia With a Pulse

## History
- Past medical history
- Foreign body exposure
- Respiratory distress or arrest
- Apnea
- Possible toxic or poison exposure
- Congenital disease
- Medication (maternal or infant)

## Signs and Symptoms
- Decreased heart rate
- Delayed capillary refill or cyanosis
- Mottled, cool skin
- Hypotension or arrest
- Altered level of consciousness

## Differential
- Respiratory failure, Foreign body, Secretions, Infection (croup, epiglotitis)
- Hypovolemia (dehydration)
- Congenital heart disease
- Trauma
- Tension pneumothorax
- Hypothermia
- Toxin or medication
- Hypoglycemia
- Acidosis

Bradycardia causing
Hypotension / AMS / Poor Perfusion / Shock
**Typically HR < 60/min**

Pediatric Airway Protocol(s) AR 5, 6
**as indicated**

Identify underlying cause
Search for reversible causes

P — Cardiac Monitor

IV or IO Protocol UP 6

Heart Rate < 60/min
Persists despite oxygenation and ventilation

YES → Exit to Pediatric Cardiac Arrest Protocol(s) PC 1, 4, 7

NO

Identify underlying cause
Search for reversible causes

Blood Glucose Analysis Procedure

IV or IO Protocol UP 6

A — **Normal Saline Bolus**
**20 ml / kg IV / IO**
Repeat as needed x 3
**Maximum 60 mL / kg**

P — **Epinephrine 0.1 – 1 mcg / kg / min IV / IO**
**Or**
**Dopamine 5 – 20 mcg / kg/ min IV / IO**
Titrate to age appropriate
SBP ≥ 70 + 2 x Age

P — **Atropine 0.02 mg / kg IV / IO**
May repeat x 1
**Minimum single dose 0.1 mg**
**Maximum single dose 0.5 mg**

P — **If no improvement**
Consider
Transcutaneous Pacing Procedure

**Notify Destination or Contact Medical Control**

**Reversible Causes**

Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypothermia
Hypo / Hyperkalemia
Hypoglycemia

Tension pneumothorax
Tamponade; cardiac
Toxins
Thrombosis; pulmonary (PE)
Thrombosis; coronary (MI)

**Suspected Beta-Blocker or Calcium Channel Blocker**

**Follow Pediatric Toxicology Protocol**

Pediatric Cardiac Protocol Section

# Pediatric Bradycardia With Poor Perfusion



## Pearls

- **Recommended Exam: Mental Status, HEENT, Skin, Heart, Lungs, Abdomen, Back, Extremities, Neuro**
- **Bradycardia is often associated with hypoxia so insure patent airway, breathing, and circulation as needed.**
- **Begin CPR immediately with persistent bradycardia and poor perfusion despite adequate oxygenation and ventilation.**
- **Use length-based or weight-based pediatric resuscitation system for medication, equipment, cardioversion, and defibrillation guidance. Pediatric paddles should be used in children < 10 kg.**
- **Rhythm should be interpreted in the context of symptoms and pharmacological treatment given only when symptomatic, otherwise monitor and reassess.**
- **Consider hyperkalemia with wide complex, bizarre appearance of QRS complex, and bradycardia.**
- **12-Lead ECG:**
  - **12 Lead ECG not necessary to diagnose and treat**
  - **Obtain when patient is stable and/or following rhythm conversion.**
- **Unstable condition**
  - **Condition which acutely impairs vital organ function and cardiac arrest may be imminent.**
  - **If at any point patient becomes unstable move to unstable arm in algorithm**
- **Epinephrine is first drug choice for persistent, symptomatic bradycardia.**
- **Atropine:**
  - **Second choice, unless there is evidence of increased vagal tone or a primary AV conduction block, then give atropine first.**
  - **Ineffective and potentially harmful in cardiac transplantation. May cause paradoxical bradycardia.**
- **Symptomatic bradycardia causing shock or peri-arrest condition:**
  - **If no IV or IO access immediately available, start Transcutaneous Pacing, establish IV / IO access, and then administer epinephrine.**
  - **Epinephrine should be administered followed Atropine if no response.**
- **Symptomatic condition**
  - **Arrhythmia is causing symptoms such as palpitations, lightheadedness, or dyspnea, but cardiac arrest is not imminent.**
  - **Symptomatic bradycardia usually occurs at rates < 50 beats per minute.**
  - **Search for underlying causes such as hypoxia or impending respiratory failure.**
- **Serious Signs / Symptoms:**
  - **Hypotension. Acutely altered mental status. Signs of shock / poor perfusion. Chest pain with evidence of ischemia (STEMI, T wave inversions or depressions.) Acute CHF.**
- **Transcutaneous Pacing Procedure (TCP)**
  - **Indicated with unstable bradycardia unresponsive to medical therapy.**
  - **If time allows transport to specialty center because transcutaneous pacing is a temporizing measure.**
  - **Transvenous / permanent pacemaker will probably be needed.**
  - **Immediate TCP with high-degree AV block (2d or 3d degree) with no IV / IO access.**
- Most maternal medications pass through breast milk to the infant so maintain high-index of suspicion for OD-toxins.
- Hypoglycemia, severe dehydration and narcotic effects may produce bradycardia. Many other agents a child ingests can cause bradycardia, often is a single dose.

## Dispositions

**Paramedic:** All patients

# Pediatric Pulmonary Edema / CHF

### History
- Congenital Heart Disease
- Chronic Lung Disease
- Congestive heart failure
- Past medical history

### Signs/Symptoms
- Infant: Respiratory distress, poor feeding, lethargy, weight gain, +/- cyanosis
- Child/Adolescent: Respiratory distress, bilateral rales, apprehension, orthopnea, jugular vein distention (rare), pink, frothy sputum, peripheral edema, diaphoresis, chest pain
- Hypotension, shock

### Differential
- Congestive heart failure
- Asthma
- Anaphylaxis
- Aspiration
- Pleural effusion
- Pneumonia
- Pulmonary embolus
- Pericardial tamponade
- Toxic Exposure

History / Signs / Symptoms consistent with respiratory distress with crackles / rales / known CHF

→ Airway Patent
Ventilations adequate
Oxygenation adequate

NO → Pediatric Airway Protocol(s) 5, 6, 7 ***as indicated***

YES

Allergic Reaction Anaphylaxis

YES → Pediatric Allergic Reaction Anaphylaxis Protocol PM 1

NO

- Pulse Oximetry Monitoring
- **B**
  - 12 Lead ECG Procedure
  - EtCO2 Monitoring
- IV or IO Protocol UP 6 ***if indicated***
- **P** Cardiac Monitor

Position child with head of bed in up-position (25-40°)
Flexing hips with support under knees so that they are bent 90°

Transport to a Pediatric Specialty Center ***if available***

**Notify Destination or Contact Medical Control**

# Pediatric Pulmonary Edema / CHF



## Pearls

- **Recommended exam: Mental status, Respiratory, Cardiac, Skin, Neuro**
- **Contact Medical Control early in the care of the pediatric cardiac patient.**
- **Most children with CHF have a congenital heart defect, obtain a precise past medical history.**
- **Congenital heart disease varies by age:**
  - < 1 month: Tetralogy of Fallot, Transposition of the great arteries, Coarctation of the aorta.
  - 2 – 6 months: Ventricular septal defects (VSD), Atrioseptal defects (ASD).
  - Any age: Myocarditis, Pericarditis, SVT, heart blocks.
- **Treatment of Congestive Heart Failure / Pulmonary edema may vary depending on the underlying cause and may include the following with consultation by Medical Control:**
  - **Morphine Sulfate: 0.1 mg/kg IV / IO. Max single dose 5mg/dose**
  - **Fentanyl: 1 mcg/kg IV / IO. Max single dose 50 mcg.**
  - **Nitroglycerin: Dose determined after consultation of Medical Control.**
  - **Lasix 1 mg/kg IV / IO.**
  - **Agency specific vasopressor.**
- Do not assume all wheezing is pulmonary, especially in a cardiac child: avoid albuterol unless strong history of recurrent wheezing secondary to pulmonary etiology (discuss with Medical Control)

## Dispositions

**Paramedic:** All patients

# Pediatric Cardiac Arrest

### History
- Time of arrest
- Medical history
- Medications
- Possibility of foreign body
- Hypothermia

### Signs and Symptoms
- Unresponsive
- Cardiac arrest

### Differential
- Respiratory failure: Foreign body, Secretions, Infection (croup, epiglotitis)
- Hypovolemia (dehydration)
- Congenital heart disease
- Trauma
- Tension pneumothorax, cardiac tamponade, pulmonary embolism
- Hypothermia
- Toxin or medication
- Electrolyte abnormalities (Glucose, K)
- Acidosis

**Protocol Age Guidance:**

**<u>Newborn – 3 days:</u>**
**AO2 Newly Born**

**<u>3- days to 15 years:</u>**
**PC4 Pediatric Cardiac Arrest**

**<u>≥ 16 years:</u>**
**AC3 Cardiac Arrest; Adult**

**Criteria for Death / No Resuscitation**
**Review DNR / MOST Form**

YES → Do not begin resuscitation
Follow Deceased Subjects Policy

NO

**Begin Continuous CPR Compressions**
**Push Hard (≥ 1/3 AP Diameter of Chest)**
**(1.5 inches Infant / 2 inches in Children)**
**Push Fast (100 - 120 / min)**
**Change Compressors every 2 minutes**
**(sooner if fatigued)**
***(Limit changes / pulse checks ≤ 10 seconds)***

**Ventilate 1 breath every 6 seconds**
**15:2 Compression:Ventilation if no Advanced Airway**

ALS Available
- NO → AED Procedure *if available*
- YES → P Cardiac Monitor

AED Procedure *if available*
- NO → Shockable Rhythm
- YES → Defibrillation Automated

Defibrillation Automated → Continue CPR 2 Minutes

Repeat and reassess

Pediatric Airway Protocol(s) 5, 6

P Cardiac Monitor
- NO → Shockable Rhythm
- YES → Pediatric VF / VT Protocol PC 6
  Pediatric Tachycardia Protocol PC 5
  Pediatric Airway Protocol(s) 5, 6

NO → Pediatric Asystole / PEA Protocol PC 1
Pediatric Airway Protocol(s) 5, 6

Arrest secondary to Opioid OD?
- YES → **Naloxone 0.4 – 2 mg IN / IM**
  **Peds: 0.1 mg/kg IN**
  **Maximum 4 mg**
  A **Naloxone 0.4 – 2 mg**
  **Peds: 0.1 mg/kg**
  **IV / IO / IM / IN / ETT**
  **Maximum 4 mg**
- NO →

**Notify Destination or Contact Medical Control**

Pediatric Cardiac Protocol Section

# Pediatric Cardiac Arrest

## Pearls

- **Team Focused Approach / Pit-Crew Approach recommended; assigning responders to predetermined tasks. Refer to optional protocol or development of local agency protocol.**
- **Efforts should be directed at high quality and continuous compressions with limited interruptions and early defibrillation when indicated. Compress ≥ 1/3 anterior-posterior diameter of chest, in infants 1.5 inches and in children 2 inches.**
- **Majority of pediatric arrests stem from a respiratory insult or hypoxic event. Compressions should be coupled with ventilations.**
- **When advanced airway not in place perform 15 compressions with 2 ventilations.**
- **Use length-based or weight-based pediatric resuscitation system for medication, equipment, cardioversion, and defibrillation guidance. Pediatric paddles should be used in children < 10 kg.**
- **DO NOT HYPERVENTILATE:**
  **If advanced airway in place ventilate:**
  **1 breath every 6 seconds with continuous, uninterrupted compressions.**
- **Patient survival is often dependent on proper ventilation and oxygenation / airway Interventions.**
- **Do not interrupt compressions to place endotracheal tube. Consider BIAD first to limit interruptions.**
- **High-Quality CPR:**
  Make sure chest compressions are being delivered at 100 – 120 / min.
  Make sure chest compressions are adequate depth for age and body habitus.
  Make sure you allow full chest recoil with each compression to provide maximum perfusion.
  Minimize all interruptions in chest compressions to < 10 seconds.
  Use AED or apply ECG monitor / defibrillator as soon as available.
- **Defibrillation:**
  Follow manufacture's recommendations concerning defibrillation / cardioversion energy when specified.
  Charge defibrillator during chest compressions, near the end of 2-minute cycle, to decrease peri-shock pause.
  Following defibrillation, provider should immediately restart chest compressions with no pulse check until end of next cycle.
- **End Tidal CO2 (EtCO2)**
  If EtCO2 is < 10 mmHg, improve chest compressions. Goal is ≥ 20 mmHg.
  If EtCO2 spikes, typically > 40 mmHg, consider Return of Spontaneous Circulation (ROSC)
- **IV / IO access and drug delivery are secondary to high-quality chest compressions and early defibrillation**.
- **IV access is preferred route. Follow IV or IO Access Protocol UP 6.**
- **Special Considerations**
  **Maternal Arrest** - Treat mother per appropriate protocol with immediate notification to Medical Control and rapid transport preferably to obstetrical center if available and proximate. Place mother supine and perform Manual Left Uterine Displacement moving uterus to the patient's left side. IV/IO access preferably above diaphragm. Defibrillation is safe at all energy levels.
  **Renal Dialysis / Renal Failure** - Refer to Dialysis / Renal Failure Protocol AM 3 caveats when faced with dialysis / renal failure patient experiencing cardiac arrest.
  **Opioid Overdose** - If suspected, administer Naloxone per Overdose / Toxic Ingestion Protocol UP 7 while ensuring airway, oxygenation, ventilations, and high-quality chest compressions.
  **Drowning / Suffocation / Asphyxiation / Hanging / Lightning Strike** – Hypoxic associated cardiac arrest and prompt attention to airway and ventilation is priority followed by high-quality and continuous chest compressions and early defibrillation.
- Success is based on proper planning and execution. Procedures require space and patient access. Make room to work.

## Dispositions

**Paramedic:** All patients

# Pediatric Tachycardia
## Narrow Complex (≤ 0.09 sec)

### History
- Past medical history
- Medications or Toxic Ingestion (Aminophylline, Diet pills, Thyroid supplements, Decongestants, Digoxin)
- Drugs (nicotine, cocaine)
- Congenital Heart Disease
- Respiratory Distress
- Syncope or Near Syncope

### Signs and Symptoms
- Heart Rate: Child > 180/bpm
  Infant > 220/bpm
- Pale or Cyanosis
- Diaphoresis
- Tachypnea
- Vomiting
- Hypotension
- Altered Level of Consciousness
- Pulmonary Congestion
- Syncope

### Differential
- Heart disease (Congenital)
- Hypo / Hyperthermia
- Hypovolemia or Anemia
- Electrolyte imbalance
- Anxiety / Pain / Emotional stress
- Fever / Infection / Sepsis
- Hypoxia, Hypoglycemia
- Medication / Toxin / Drugs (see HX)
- Pulmonary embolus
- Trauma, Tension Pneumothorax

**Assess tachycardia in context of clinical condition**
**Identify and treat underlying cause of tachycardia**

**Unstable**
**With age appropriate hypotension**
HR Typically > 180 Child
HR Typically > 220 Infant

YES →

**P**
- Cardiac Monitor
- Cardioversion Procedure
  **0.5 – 1 J / kg**
  Repeat and increase to **2 J / Kg**
  May increase to **4 J / Kg**
  Or adult maximum
- Consider sedation
  Do NOT delay cardioversion
  **Fentanyl 0.5 – 1 mcg / kg IV / IO / IN**
  **Fentanyl 25 mcg IV / IO / IN if 25kg or greater**

  May repeat if needed
  **Maximum Single Dose 25 mcg**
  **Maximum Total Dose 200 mcg**

NO

**B**
- 12 Lead ECG Procedure

**P**
- Cardiac Monitor

- IV or IO Access Protocol UP 6

**Single lead ECG able to diagnose and treat arrhythmia**

12 Lead ECG not necessary to diagnose and treat, but preferred when patient is stable.

**Regular Rhythm?**

NO → **Contact Medical Control**

YES

**Probable Sinus Tachycardia**

Identify and Treat Underlying Cause

Exit to Age Appropriate Protocol(s)

**Probable SVT**

**P**
- Vagal Maneuvers
- **Adenosine 0.1 mg / kg IV / IO**
  **Maximum 6 mg**

  May repeat
  **Adenosine 0.2 mg / kg IV / IO**
  **Maximum 12 mg**

**Notify Destination or Contact Medical Control**

**AT ANY TIME**

**Pulseless**

**Go to Pediatric Pulseless Arrest Protocol**

Pediatric Cardiac Protocol Section

# Pediatric Tachycardia
## Narrow Complex (≤ 0.09 sec)



**Pearls**

- **Recommended Exam: Mental Status, Skin, Neck, Lung, Heart, Abdomen, Back, Extremities, Neuro**
- **Monomorphic QRS:**
  **All QRS complexes in a single lead are similar in shape.**
- **Polymorphic QRS:**
  **QRS complexes in a single lead will change from complex to complex.**
- **Use length-based or weight-based pediatric resuscitation system for medication, equipment, cardioversion, and defibrillation guidance. Pediatric paddles should be used in children < 10 kg.**
- **Rhythm should be interpreted in the context of symptoms and pharmacological or electrical treatment given only when symptomatic, otherwise monitor and reassess.**
- **12-Lead ECG:**
  **12-Lead ECG not necessary to diagnose and treat.**
  **Obtain when patient is stable and/or following rhythm conversion.**
  **When administering adenosine, obtaining a continuous 12-Lead can be helpful to physicians.**
- **Unstable condition:**
  **Condition which acutely impairs vital organ function and cardiac arrest may be imminent.**
  **If at any point patient becomes unstable move to unstable arm in algorithm**
  **If IV or IO access is in place, may administer adenosine and repeat, prior to synchronized cardioversion.**
- **Document all rhythm changes with monitor strips and obtain monitor strips with each therapeutic intervention.**
- **Serious Signs and Symptoms:**
  **Respiratory distress / failure.**
  **Signs of shock / poor perfusion with or without hypotension.**
  **AMS**
  **Sudden collapse with rapid, weak pulse**
- **Narrow Complex Tachycardia (≤ 0.09 seconds):**
  Sinus tachycardia: P waves present. Variable R-R waves. Infants usually < 220 beats / minute. Children usually < 180 beats / minute.
  SVT: > 90 % of children with SVT will have a narrow QRS (≤0.09 seconds.) P waves absent or abnormal. R-R waves not variable. Usually abrupt onset. Infants usually > 220 beats / minute. Children usually > 180 beats / minute.
  Atrial Flutter / Fibrillation
- **Vagal Maneuvers:**
  Breath holding. Blowing a glove into a balloon. Have child blow out “birthday candles” or through an obstructed straw. Infants: May put a bag of ice water over the upper half of the face careful not to occlude the airway.
- Separating the child from the caregiver may worsen the child's clinical condition.
- Monitor for respiratory depression and hypotension associated if Diazepam, Lorazepam, or Midazolam is used.
- Continuous pulse oximetry is required for all SVT Patients if available.

## Dispositions

**Paramedic:** All patients

# Pediatric Tachycardia
## Wide Complex (> 0.09 sec)

### History
- Past medical history
- Medications or Toxic Ingestion (Aminophylline, Diet pills, Thyroid supplements, Decongestants, Digoxin)
- Drugs (nicotine, cocaine)
- Congenital Heart Disease
- Respiratory Distress
- Syncope or Near Syncope

### Signs and Symptoms
- Heart Rate: Child > 180/bpm, Infant > 220/bpm
- Pale or Cyanosis
- Diaphoresis
- Tachypnea
- Vomiting
- Hypotension
- Altered Level of Consciousness
- Pulmonary Congestion
- Syncope

### Differential
- Heart disease (Congenital)
- Hypothermia/ Hyperthermia
- Hypovolemia or Anemia
- Electrolyte imbalance
- Anxiety/ Pain/ Emotional stress
- Fever/ Infection/ Sepsis
- Hypoxia, Hypoglycemia
- Medication/ Toxin/ Drugs (see HX)
- Pulmonary embolus
- Trauma, Tension Pneumothorax

**Assess tachycardia in context of clinical condition**
**Identify and treat underlying cause of tachycardia**

**Unstable**
**With age appropriate hypotension**
HR Typically > 180 Child
HR Typically > 220 Infant

YES →

| | |
|---|---|
| P | Cardiac Monitor |
| | Cardioversion Procedure |
| | **0.5 – 1 J / kg**<br>Repeat and increase to **2 J / Kg**<br>May increase to **4 J / Kg**<br>Or adult maximum |
| | Consider sedation<br>Do NOT delay cardioversion<br>**Fentanyl 0.5 – 1 mcg / kg IV / IO / IN**<br>**Fentanyl 25 mcg IV / IO / IN if 25kg or greater**<br><br>May repeat if needed<br>**Maximum Single Dose 25 mcg**<br>**Maximum Total Dose 200 mcg** |

NO ↓

| | |
|---|---|
| B | 12 Lead ECG Procedure |
| P | Cardiac Monitor |
| | IV or IO Access Protocol UP 6 |

**Single lead ECG able to diagnose and treat arrhythmia**

12 Lead ECG not necessary to diagnose and treat, but preferred when patient is stable.

**Regular Rhythm?** NO → **Contact Medical Control**

YES ↓

Probable Ventricular Tachycardia

| | |
|---|---|
| P | **If QRS Regular and Monomorphic**<br>**Adenosine 0.1 mg / kg IV / IO**<br>**Maximum 6 mg**<br><br>May repeat<br>**Adenosine 0.2 mg / kg IV / IO**<br>**Maximum 12 mg** |
| | **Expert consultation recommended for further medication management and/ or cardioversion procedure** |

**Notify Destination or Contact Medical Control**

**AT ANY TIME**

**Pulseless**

**Go to Pediatric Pulseless Arrest Protocol**

Pediatric Cardiac Protocol Section

# Pediatric Tachycardia
## Wide Complex (> 0.09 sec)



### Pearls

- **Recommended Exam: Mental Status, Skin, Neck, Lung, Heart, Abdomen, Neuro**
- **Monomorphic QRS:**
  **All QRS complexes in a single lead are similar in shape.**
- **Polymorphic QRS:**
  **QRS complexes in a single lead will change from complex to complex.**
- **Use length-based or weight-based pediatric resuscitation system for medication, equipment, cardioversion, and defibrillation guidance. Pediatric paddles should be used in children < 10 kg.**
- **Rhythm should be interpreted in the context of symptoms and pharmacological or electrical treatment given only when symptomatic, otherwise monitor and reassess.**
- **12-Lead ECG:**
  **12-Lead ECG is not necessary to diagnose and treat arrhythmia. A single lead ECG is often all that is needed.**
  **Obtain 12-Lead when patient is stable and/ or following a rhythm conversion.**
  **When administering adenosine, obtaining a continuous 12-Lead can be helpful later to physicians.**
- **Unstable condition:**
  **Condition which acutely impairs vital organ function and cardiac arrest may be imminent.**
  **If at any point patient becomes unstable move to unstable arm in algorithm**
- **Document all rhythm changes with monitor strips and obtain monitor strips with each therapeutic intervention.**
- **Serious Signs and Symptoms:**
  **Respiratory distress/ failure.**
  **Signs of shock/ poor perfusion with or without hypotension.**
  **AMS**
  **Sudden collapse with rapid, weak pulse**
- **Serious Signs and Symptoms:**
  **Respiratory distress/ failure.**
  **Signs of shock/ poor perfusion with or without hypotension.**
  **AMS**
  **Sudden collapse with rapid, weak pulse**
- **Wide Complex Tachycardia (≥ 0.09 seconds):**
  SVT with aberrancy.
  VT: Uncommon in children. Rates may vary from near normal to > 200/ minute.
  Most children with VT have underlying heart disease / cardiac surgery/ long QT syndrome/ cardiomyopathy.
- **Torsade's de Pointes/ Polymorphic (multiple shaped) Tachycardia:**
  Rate is typically 150 to 250 beats/ minute.
  Associated with long QT syndrome, hypomagnesaemia, hypokalemia, many cardiac drugs.
  May quickly deteriorate to VT.
  Separating the child from the caregiver may worsen the child's clinical condition.
- Monitor for respiratory depression and hypotension associated if Diazepam, Lorazepam, or Midazolam is used.
- Continuous pulse oximetry is required for all SVT patients if available.

### Dispositions

**Paramedic:** All patients

# Pediatric Ventricular Fibrillation
# Pulseless Ventricular Tachycardia

## History
- Events leading to arrest
- Estimated downtime
- Past medical history
- Medications
- Existence of terminal illness
- Airway obstruction
- Hypothermia

## Signs and Symptoms
- Unresponsive
- Cardiac Arrest

## Differential
- Respiratory failure / Airway obstruction
- Hyper / hypokalemia, Hypovolemia
- Hypothermia, Hypoglycemia, Acidosis
- Tension pneumothorax, Tamponade
- Toxin or medication
- Thrombosis: Coronary / Pulmonary Embolism
- Congenital heart disease

Pediatric Pulseless Arrest Protocol PC 4

**Begin Continuous CPR Compressions**
**Push Hard (≥ 1/3 AP Diameter of Chest)**
**(1.5 inches Infant / 2 inches in Children)**
**Push Fast (100 - 120 / min)**
**Change Compressors every 2 minutes**
**(sooner if fatigued)**
***(Limit changes / pulse checks ≤ 10 seconds)***

**Ventilate 1 breath every 6 seconds**
**15:2 Compression:Ventilation if no Advanced Airway**

Automated Defibrillation Procedure

**P** Defibrillation Manual Procedure
- First shock: 2 J / Kg
- Second shock: 4 J / Kg
- Subsequent shocks ≥ 4 J / kg

Maximum 10 J / kg or adult dose

IV / IO Protocol UP 6

**A**
**Epinephrine1:10,000**
**0.01 mg/kg IV / IO Maximum 1mg**
Or
**Epinephrine 1:1000 0.1 mg / kg ETT**
**Maximum 2.5 mg**
Repeat every 3 – 5 minutes

**If Rhythm Refractory to defibrillation**
- **Continue CPR and give Agency specific Anti-arrhythmic(s) in a drug-shock-drug-shock pattern.**
- **Continue CPR up to point where you are ready to defibrillate with device charged.**

**Repeat pattern during resuscitation.**

**P**
Continue Antiarrhythmic Utilized
Refer to Appropriate Pediatric Arrhythmia Protocol
**See Pearls**

**Notify Destination or Contact Medical Control**

**AT ANY TIME**

**Return of Spontaneous Circulation**

**Go to Post Resuscitation Protocol**

**Reversible Causes**

Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypothermia
Hypo / Hyperkalemia
Hypoglycemia

Tension pneumothorax
Tamponade; cardiac
Toxins
Thrombosis; pulmonary (PE)
Thrombosis; coronary (MI)

**Persistent VF / VT**
Or
**Torsades de Points**

**Magnesium Sulfate**
**40 mg/kg IV / IO over 1 – 2 minutes**
May repeat every 5 minutes
**Maximum 2 g**

Pediatric Cardiac Protocol Section

# Pediatric Ventricular Fibrillation
# Pulseless Ventricular Tachycardia



## Pearls

- **Team Focused Approach / Pit-Crew Approach recommended; assigning responders to predetermined tasks. Refer to optional protocol or development of local agency protocol.**
- **Efforts should be directed at high quality and continuous compressions with limited interruptions and early defibrillation when indicated. Compress ≥ 1/3 anterior-posterior diameter of chest, in infants 1.5 inches and in children 2 inches.**
- **Majority of pediatric arrests stem from a respiratory insult or hypoxic event. Compressions should be coupled with ventilations.**
- **When advanced airway not in place perform 15 compressions with 2 ventilations.**
- **Use length-based or weight-based pediatric resuscitation system for medication, equipment, cardioversion, and defibrillation guidance. Pediatric paddles should be used in children < 10 kg.**
- **DO NOT HYPERVENTILATE:**
  **If advanced airway in place ventilate: Ventilate 1 breath every 6 seconds**
- **Patient survival is often dependent on proper ventilation and oxygenation / airway Interventions.**
- **Do not interrupt compressions to place endotracheal tube. Consider BIAD first to limit interruptions.**
- **High-Quality CPR:**
  Make sure chest compressions are being delivered at 100 – 120 / min.
  Make sure chest compressions are adequate depth for age and body habitus.
  Make sure you allow full chest recoil with each compression to provide maximum perfusion.
  Minimize all interruptions in chest compressions to < 10 seconds.
  Use AED or apply ECG monitor / defibrillator as soon as available.
- **Defibrillation:**
  Follow manufacture's recommendations concerning defibrillation / cardioversion energy when specified.
  Charge defibrillator during chest compressions, near the end of 2-minute cycle, to decrease peri-shock pause.
  Following defibrillation, provider should immediately restart chest compressions with no pulse check until end of next cycle.
- **End Tidal CO2 (EtCO2)**
  If EtCO2 is < 10 mmHg, improve chest compressions. Goal is ≥ 20 mmHg.
  If EtCO2 spikes, typically > 40 mmHg, consider Return of Spontaneous Circulation (ROSC)
- **Antiarrhythmic agents:**
  Adenosine: First dose: 0.1 mg / kg (Maximum 6 mg) Second dose: 0.2 mg / kg (Maximum 12 mg)
  Amiodarone 5 mg / kg IV / IO (single dose Maximum 300 mg). May repeat x 2 to a Maximum of 15 mg / kg. (Must consult Medical Direction prior to use)
  Lidocaine 1 mg / kg IV / IO. Infusion 20 – 50 mcg / kg / min. If infusion is initiate > 15 minutes from first bolus, repeat 1 mg / kg bolus.
  Magnesium Sulfate 40 mg / kg IV / IO over 10 – 20 minutes. In Torsades de pointes give over 1 – 2 minutes. Maximum 2 g.
- **IV / IO access and drug delivery are secondary to high-quality chest compressions and early defibrillation**.
- **IV access is preferred route. Follow IV or IO Access Protocol UP 6.**
- **Special Considerations**
  **Maternal Arrest** - Treat mother per appropriate protocol with immediate notification to Medical Control and rapid transport preferably to obstetrical center if available and proximate. Place mother supine and perform Manual Left Uterine Displacement moving uterus to the patient's left side. IV/IO access preferably above diaphragm. Defibrillation is safe at all energy levels.
  **Renal Dialysis / Renal Failure** - Refer to Dialysis / Renal Failure Protocol AM 3 caveats when faced with dialysis / renal failure patient experiencing cardiac arrest.
  **Opioid Overdose** - If suspected, administer Naloxone per Overdose / Toxic Ingestion Protocol UP 7 while ensuring airway, oxygenation, ventilations, and high-quality chest compressions.
  **Drowning / Suffocation / Asphyxiation / Hanging / Lightning Strike** – Hypoxic associated cardiac arrest and prompt attention to airway and ventilation is priority followed by high-quality and continuous chest compressions and early defibrillation.
- Success is based on proper planning and execution. Procedures require space and patient access. Make room to work.

## Dispositions

**Paramedic:** All patients

# Pediatric Post Resuscitation

**History**
- Respiratory arrest
- Cardiac arrest

**Signs/Symptoms**
- Return of pulse

**Differential**
- Continue to address specific differentials associated with the original dysrhythmia

**Transport Destination Decision**

Post-resuscitation patient is medically complex.

Consider facility capabilities:
- Pediatric ICU service
- Pediatric Cardiology service
- Pediatric Neurology service
- Targeted Temperature Management

Pediatric Airway Protocol(s) AR 5 - 7 ***as needed***

Monitor Vital Signs / Reassess

Blood Glucose Analysis Procedure

**Optimize Ventilation and Oxygenation**
- Maintain SpO2 ≥ 90%
- Preferably SpO2 ≥ 94%
- Advanced airway if indicated
- ETCO2 ideally 35 – 45 mm Hg
- Respiratory Rate 8 – 10
- Remove Impedence Threshold Device

DO NOT HYPERVENTILATE

B 12 Lead ECG Procedure

IV or IO Protocol UP 6

P Cardiac Monitor

Pediatric Diabetic Protocol PM 2 ***if indicated***

Pediatric Hypotension / Shock Protocol PM 3 ***if indicated***

Pediatric Bradycardia Protocol PC 2 ***if indicated***

Pediatric Tachycardia Protocol PC 5, 6 ***as indicated***

**Hypotension Age Based**

**0 – 31 Days**
*< 60 mmHg*

**1 Month to 1 Year**
*< 70 mmHg*

**> than 1 Year**
*< 70 + ( 2 x age) mmHg*

Antiarrhythmic Medication Given During Arrest

YES → P Continue Antiarrhythmic Utilized Refer to Appropriate Pediatric Arrhythmia Protocol

NO

Arrhythmias are common and usually self limiting after ROSC

If Arrhythmia Persists follow Rhythm Appropriate Protocol

Post-intubation / BIAD Management Protocol AR 8

**Notify Destination or Contact Medical Control**

Pediatric Cardiac Protocol Section

# Pediatric Post Resuscitation



## Pearls

- **Recommended Exam: Mental Status, Neck, Skin, Lungs, Heart, Abdomen, Extremities, Neuro**
- **Goals of care are to preserve neurologic function, prevent secondary organ damage, treat the underlying cause of illness, and optimize prehospital care. Frequent reassessment is necessary.**
- **Hyperventilation is a significant cause of hypotension and recurrence of cardiac arrest in the post resuscitation phase and must be avoided. Titrate $FiO_2$ to maintain $SpO_2$ of 92 - 98%.**
- **Use length-based or weight-based pediatric resuscitation system for medication, equipment, cardioversion, and defibrillation guidance. Pediatric paddles should be used in children < 10 kg.**
- **Pain/sedation:**
  - **Patients requiring advanced airways and ventilation commonly experience pain and anxiety.**
  - **Unrelieved pain can lead to increased catecholamine release, ischemia, immunosuppression, and prolonged hospitalization.**
  - **Ventilated patients cannot communicate pain / anxiety and providers are poor at recognizing pain / anxiety.**
  - **Vital signs such has tachycardia and / or hypertension can provide clues to inadequate sedation, however they both are not always reliable indicators of patient's lack of adequate sedation.**
  - **Pain must be addressed first, before anxiety. Opioids are typically the first line agents before benzodiazepines. Ketamine is also a reasonable first choice agent.**
- **Ventilator / Ventilation strategies:**
  - **Tailored to individual patient presentations. Medical Control can indicate different strategies above.**
  - **In general ventilation with BVM should cause chest rise. With mechanical ventilation a reasonable tidal volume should be about 6 mL/kg and peak pressures should be < 30 cmH20.**
  - **Continuous pulse oximetry and capnography should be maintained during transport for monitoring.**
  - **Head of bed should be maintained at least 10 – 20 degrees of elevation when possible to decrease aspiration risk.**
- **EtCO2 Monitoring:**
  - **Initial End tidal CO2 may be elevated immediately post-resuscitation, but will usually normalize.**
  - **Goal is 35 – 45 mmHg but DO NOT hyperventilation to achieve.**
  - **EtCO2 should be continually monitored with advanced airway in place.**
- **Administer resuscitation fluids and vasopressor agents to maintain SBP at targets listed on page 1. This table represents minimal SBP targets.**
- **Targeted Temperature Management is recommended in pediatrics, but prehospital use is not associated with improved outcomes. Transport to facility capable of intensive pediatric care.**
- **Consider transport to facility capable of managing the post-arrest patient including hypothermia therapy, cardiology / cardiac catheterization, intensive care service, and neurology services.**
- **Antiarrhythmic agents:**
  - Adenosine: First dose: 0.1 mg / kg (Maximum 6 mg) Second dose: 0.2 mg / kg (Maximum 12 mg)
  - Amiodarone 5 mg / kg IV / IO (single dose Maximum 300 mg). May repeat x 2 to a Maximum of 15 mg / kg. (Must speak with Medical Control prior to administration.)
  - Lidocaine 1 mg / kg IV / IO. Infusion 20 – 50 mcg / kg / min. If infusion is initiated > 15 minutes from first bolus, repeat 0.5 mg / kg bolus.
  - Magnesium Sulfate 40 mg / kg IV / IO over 10 – 20 minutes. In Torsades de pointes give over 1 – 2 minutes. Maximum 2 g.
  - Procainamide 15 mg / kg IV / IO over 30 – 60 minutes. Monitor for increased QRS and increased QT.
- **Vasopressor agents:**
  - Dopamine 2 – 20 mcg / kg / min IV / IO
  - Epinephrine 0.1 – 1 mcg / kg / min IV / IO
  - Norepinephrine 0.1 – 2 mcg / kg / min IV / IO
  - Dose Calculation: mL / hour = kg x dose(mcg / kg / min) x 60 (min / hr) / concentration (mcg / mL)
- The condition of post-resuscitation patients fluctuates rapidly and continuously, and they require close monitoring. Appropriate post-resuscitation management may best be planned in consultation with Medical Control.

## Dispositions

**Paramedic:** All patients

# Pediatric Allergic Reaction

### History
- Onset and location
- Insect sting or bite
- Food allergy / exposure
- Medication allergy / exposure
- New clothing, soap, detergent
- Past medical history / reactions
- Medication history

### Signs and Symptoms
- Itching or hives
- Coughing / wheezing or respiratory distress
- Chest or throat constriction
- Difficulty swallowing
- Hypotension or shock
- Edema

### Differential
- Urticaria (rash only)
- Anaphylaxis (systemic effect)
- Shock (vascular effect)
- Angioedema (drug induced)
- Aspiration / Airway obstruction
- Vasovagal event
- Asthma / COPD / CHF

Assess Symptom Severity

**MILD**
*Skin Only*

| | |
|---|---|
| B | **Diphenhydramine**<br>**1 mg / kg mg PO** |
| | IV or IO Protocol UP 6<br>***If indicated*** |
| A | **Diphenhydramine**<br>**1 mg / kg IV / IM / IO / PO** |

| | |
|---|---|
| B | Monitor and Reassess<br>Monitor for Worsening<br>Signs and Symptoms |

**MODERATE and SEVERE**
*2 + Body Systems*
*With or without Hypotension*

| | |
|---|---|
| | **Epinephrine 1:1000 IM**<br>**≥ 30 kg 0.3 – 0.5 mg IM**<br>**< 30 kg 0.15 mg IM**<br>***if available*** |
| | **Diphenhyramine**<br>**1 mg/kg PO**<br>**Maximum 50 mg**<br>*See Pearls* |
| B | **Albuterol Nebulizer**<br>**2.5 – 5 mg**<br>Repeat as needed x 3<br>***if indicated*** |
| | Airway Pediatric Protocol(s)<br>***if indicated*** |
| | Pediatric Hypotension / Shock Protocol<br>PM 3<br>***if indicated*** |
| | IV or IO Protocol UP 6 |
| A | **Diphenhydramine**<br>**1 mg / kg IV / IM / IO / PO** |
| A | **Epinephrine 1:1000 IM**<br>**≥ 30 kg 0.3 – 0.5 mg IM**<br>**< 30 kg 0.15 mg IM**<br>Repeat every 5 minutes, if no improvement x3 |
| A | **Albuterol Nebulizer**<br>**2.5 – 5 mg**<br>**+/- Ipratropium 0.5 mg**<br>Repeat as needed x 3<br>***if indicated*** |
| A | **Methylprednisolone**<br>**2 mg/kg IV**<br>**Maximum 125 mg** |
| P | <u>No improvement with IM Epinephrine</u><br>**Epinephrine Drip**<br>**See Broselow Tape**<br>**1 mg in 1000/ Normal Saline IV/IO**<br>**Infuse with 60 gtt set wide open**<br>**10 ml/kg IV/IO(0.01 mg/kg)**<br>Titrate to appropriate response |

**Notify Destination or Contact Medical Control**

Pediatric Medical Protocol Section

# Pediatric Allergic Reaction



## Pearls

- **Recommended Exam: Mental Status, Skin, Heart, Lungs, Abdomen**
- **Anaphylaxis is an acute and potentially lethal multisystem allergic reaction.**
- **Epinephrine administration:**
  **Drug of choice and the FIRST drug that should be administered in acute anaphylaxis (Moderate/ Severe Symptoms.) IM Epinephrine should be administered in priority before or during attempts at IV or IO access.**
- **Diphenhydramine and steroid administration:**
  **Diphenhydramine/ steroids have no proven benefit in Moderate/ Severe anaphylaxis.**
  **Diphenhydramine/ steroids should NOT delay initial or repeat Epinephrine administration.**
  **In Moderate and Severe anaphylaxis, Diphenhydramine may decrease mental status.**
  **Diphenhydramine should NOT be given to a patient with decreased mental status and/ or a hypotensive patient as this may cause nausea, vomiting, and/ or worsening mental status.**
- **Anaphylaxis unresponsive to repeat doses of IM epinephrine may require IV epinephrine administration by IV push or epinephrine infusion. Contact Medical Control for appropriate dosing.**
- **Symptom Severity Classification:**
  **Mild symptoms:**
  **Flushing, hives, itching, erythema with normal blood pressure and perfusion.**
  **Moderate symptoms:**
  **Flushing, hives, itching, erythema plus respiratory (wheezing, dyspnea, hypoxia) or gastrointestinal symptoms (nausea, vomiting, abdominal pain) with normal blood pressure and perfusion.**
  **Severe symptoms:**
  **Flushing, hives, itching, erythema plus respiratory (wheezing, dyspnea, hypoxia) or gastrointestinal symptoms (nausea, vomiting, abdominal pain) with hypotension and poor perfusion.**
- **Allergic reactions may occur with only respiratory and gastrointestinal symptoms and have no rash/ skin involvement.**
- **Angioedema** is seen in moderate to severe reactions and is swelling involving the face, lips or airway structures. This can also be seen in patients taking blood pressure medications.
- **Hereditary Angioedema** involves swelling of the face, lips, airway structures, extremities, and may cause moderate to severe abdominal pain. Some patients are prescribed specific medications to aid in reversal of swelling.
  **Paramedic may assist or administer this medication per patient/ package instructions.**
- **Fluids and Medication titrated to maintain a SBP >70 + (age in years x 2) mmHg.**
- The shorter the onset from exposure to symptoms the more severe the reaction.

## Dispositions

**Paramedic:** Any patients with age appropriate hypotension or SpO2 <94%

**Advanced EMT:** Any patients who are treated with epinephrine, have facial swelling, or exhibit wheezing or tachypnea

# Pediatric Diabetic

## History
- Past medical history
- Medications
- Recent blood glucose check
- Last meal

## Signs and Symptoms
- Altered mental status
- Combative/ irritable
- Diaphoresis
- Seizures
- Abdominal pain
- Nausea/ vomiting
- Weakness
- Dehydration
- Deep/ rapid breathing

## Differential
- Alcohol/ drug use
- Toxic ingestion
- Trauma; head injury
- Seizure
- CVA
- Altered baseline mental status.

| | |
|---|---|
| | Blood Glucose Analysis Procedure |
| B | 12 Lead ECG Procedure ***if indicated*** |
| | IV or IO Access Protocol UP 6 |
| P | Cardiac Monitor |
| | Altered Mental Status Protocol UP 4 ***if indicated*** |
| | Hypotension/ Shock Protocol AM 5 ***if indicated*** |
| | Seizure Protocol UP 13 ***if indicated*** |

| | |
|---|---|
| A | ***Blood glucose ≤ 69 mg/dl Symptomatic with NO IV / IO Access:*** Awake, alert and able to tolerate oral agent: Give **oral glucose solution**. If unable to tolerate oral: **Glucagon 0.1 mg/kg IM (Maximum 1 mg)** Repeat every 15 minutes as needed to keep Blood glucose > 60 mg / dl. |

**Blood Sugar ≤ 69 mg / dl**

| | |
|---|---|
| | **Oral Glucose ½ to 1 Tube** If age appropriate |
| | **Consider Oral Solution (Juices / Food)** |
| A | **Dextrose 10% 5ml/kg** |
| A | **Repeat Dextrose** Every 5 minutes Until Blood Glucose 70 mg / dl or greater |

**Blood Sugar 70 – 249 mg / dl**

| | |
|---|---|
| | Blood Glucose Analysis Procedure ***if condition changes*** |

Exit to Appropriate Protocol(s)

**Blood Sugar ≥ 250 mg / dl**

| | |
|---|---|
| A | **Normal Saline Bolus 10 - 20 mL/kg IV / IO** **Maximum 20 mL/kg** |

| | |
|---|---|
| | **Monitor and Reassess Every 5 minutes Until Blood Glucose ≥ 80 mg / dl** |

**Notify Destination or Contact Medical Control**

Pediatric Medical Protocol Section

# Pediatric Diabetic



## Pearls

- **Recommended Exam: Mental Status, HEENT, Skin, Respirations and effort, Abdomen, Neuro.**
- **Patients with prolonged hypoglycemia or those who are malnourished my not respond to glucagon.**
- **Do not administer oral glucose to patients that are not able to swallow or protect their airway.**
- **Quality control checks should be maintained per manufacturers recommendation for all glucometers.**
- **D10/ D25 Preparation:**
  - **D10: Remove 10 mL of D50 from a D50 vial. Add 40 mL of NS with the 10 mL of D50 with a total volume of 50 mL.**
  - **D10: Alternative, Discard 40 mL from the D50 vial and draw up 40 mL of NS with a total volume of 50 mL.**
  - **D25: Remove 25 mL of D50 and draw up 25 mL of NS with a total volume of 50 mL.**
- **Patient's refusing transport to medical facility after treatment of hypoglycemia:**
  - Adult caregiver must be present with pediatric patient.
  - Blood sugar must be ≥ 80, patient has ability to eat and availability of food with responders on scene.
  - Patient must have known history of diabetes and not taking any oral diabetic agents.
  - Patient returns to normal mental status and has a normal neurological exam with no new neurological deficits.
  - Must demonstrate capacity to make informed health care decisions. See Universal Patient Care Protocol UP-1.
  - Otherwise contact medical control.
- **Hypoglycemia with Oral Agents:**
  - Patients taking oral diabetic medications should be strongly encouraged to allow transportation to a medical facility.
  - They are at risk of recurrent hypoglycemia that can be delayed for hours and require close monitoring even after normal blood glucose is established.
  - Not all oral agents have prolonged action so Contact Medical Control or NC Poison Control Center for advice.
  - Patients who meet criteria to refuse care should be instructed to contact their physician immediately and consume a meal.
- **Hypoglycemia with Insulin Agents:**
  - Many forms of insulin now exist. Longer acting insulin places the patient at risk of recurrent hypoglycemia even after a normal blood glucose is established.
  - Not all insulins have prolonged action so Contact Medical Control for advice. Patients who meet criteria to refuse care should be instructed to contact their physician immediately and consume a meal.
- In extreme circumstances with no IV and no response to glucagon, Dextrose 50 % can be administered rectally. Contact medical control for advice.

## Dispositions

**Paramedic / Advanced EMT:** Any patient with an abnormal exam post Dextrose administration or blood sugar of <70 or >350 mg/dl

# Pediatric Hypotension/ Shock

## History
- Blood loss
- Fluid loss
- Vomiting
- Diarrhea
- Fever
- Infection

## Signs and Symptoms
- Restlessness, confusion, weakness
- Dizziness
- Tachycardia
- Hypotension (Late sign)
- Pale, cool, clammy skin
- Delayed capillary refill
- Dark-tarry stools

## Differential
- Shock
  - Hypovolemic
  - Cardiogenic
  - Septic
  - Neurogenic
  - Anaphylactic
- Trauma
- Infection
- Dehydration
- Congenital heart disease
- Medication or Toxin

Blood Glucose Analysis Procedure

IV or IO Access Protocol UP 6

P Cardiac Monitor

Pediatric Airway Protocol(s) ***if indicated***

Diabetic Protocol PM 2 ***if indicated***

**Age Specific Blood Pressure indicating possible shock**

**Age 0 – 28 days: SBP < 60**
**Ages ≥ 1 month: SBP < 70**
**Age 1 – 9: SBP < 70 + (2*x* Age)**

**Ages 10 – 64: SBP < 90**
**Ages ≥ 65: SBP < 110**

**All ages Shock Index: HR > SBP**

History and Exam Suggest Type of Shock

**Cardiogenic**

Chest Pain: Cardiac and STEMI Protocol AC 4
Appropriate Pediatric Arrhythmia Protocol(s) ***if indicated***

A **Normal Saline Bolus**
**5 – 10 mL / kg IV / IO**
Titrate to age appropriate
SBP ≥ 70 + (2 x Age)
**Maximum 10 mL / kg**

**Hypovolemic** / **Distributive**

Pediatric Allergy Protocol PM 1 ***if indicated***

Suspected Sepsis Protocol UP 15 ***if indicated***

Multiple Trauma Protocol TB 6 ***if indicated***

A **Normal Saline Bolus**
**20 mL / kg IV / IO**
Titrate to age appropriate
SBP ≥ 70 + (2 x Age)
**Maximum 60 mL / kg**

**Obstructive**

P Chest Decompression-Needle Procedure ***if indicated***

P **Norepinephrine**
**0.1-2 mcg/kg/min IV/IO**
Titrate to age appropriate
SBP ≥ 70 + 2 x Age

**Notify Destination or Contact Medical Control**

Pediatric Medical Protocol Section

# Hypotension/ Shock



## Pearls

- **Recommended Exam: Mental Status, Skin, Heart, Lungs, Abdomen, Back, Extremities, Neuro**
- **Consider all possible causes of shock and treat per appropriate protocol. Majority of decompensation in pediatrics is airway or respiratory related.**
- **Decreasing heart rate and hypotension occur late in children and are signs of impending cardiac arrest.**
- **Shock may be present with a normal blood pressure initially or even elevated.**
- **Shock often is present with normal vital signs and may develop insidiously. Tachycardia may be the first and only sign.**
- **Consider all possible causes of shock and treat per appropriate protocol.**
- **Hypovolemic Shock:**
  Hemorrhage, trauma, GI bleeding, or pregnancy-related bleeding.
  **Tranexamic Acid (TXA):**
  **Agencies utilizing TXA must submit letters from the their receiving trauma centers for approval by the OEMS Medical Director.**
  **Receiving trauma centers must agree to continue TXA therapy with repeat dosing.**
  **TXA is NOT indicated and should NOT be administered where trauma occurred > 3 hours prior to EMS arrival.**
- **Cardiogenic Shock:**
  Heart failure: MI, Cardiomyopathy, Myocardial contusion, Ruptured ventricle/ septum/ valve/ toxins.
- **Distributive Shock:**
  Signs may include: Septic/ Anaphylactic/ Neurogenic/ Toxic
  Hallmark is warm, dry, pink skin with normal capillary refill time and typically alert.
- **Obstructive Shock:**
  Pericardial tamponade. Pulmonary embolus. Tension pneumothorax.
  Signs may include hypotension with distended neck veins, tachycardia, unilateral decreased breath sounds or muffled heart sounds.
- **Acute Adrenal Insufficiency or Congenital Adrenal Hyperplasia:**
  Body cannot produce enough steroids (glucocorticoids/ mineralocorticoids.)
  May have primary or secondary adrenal disease, congenital adrenal hyperplasia, or more commonly have stopped a steroid like prednisone. Injury or illness may precipitate.
  Usually hypotensive with nausea, vomiting, dehydration and/ or abdominal pain.
  **If suspected, Paramedic should give Methylprednisolone 125 mg IM / IV / IO or Dexamethasone 10 mg IM / IV / IO. Use steroid agent specific to your drug list.**
  **May administer prescribed steroid carried by patient IM / IV / IO. Patient may have Hydrocortisone (Cortef or Solu-Cortef). Dose: < 1y.o. give 25 mg, 1-12 y.o. give 50 mg, and > 12 y.o. give 100 mg or dose specified by patient's physician.**

## Dispositions

**Paramedic:** All patients

# Bites and Envenomations

## History
- Type of bite/ sting
- Description/ photo for identification
- Time, location, size of bite/ sting
- Previous reaction to bite/ sting
- Domestic vs. Wild
- Tetanus and Rabies risk
- Immunocompromised patient

## Signs and Symptoms
- Rash, skin break, wound
- Pain, soft tissue swelling, redness
- Blood oozing from the bite wound
- Evidence of infection
- Shortness of breath, wheezing
- Allergic reaction, hives, itching
- Hypotension or shock

## Differential
- Animal bite
- Human bite
- Snake bite (poisonous)
- Spider bite (poisonous)
- Insect sting / bite (bee, wasp, ant, tick)
- Infection risk
- Rabies risk
- Tetanus risk

Call for help/ additional resources
Stage until scene safe

**Contact**
**Carolinas Poison Control**
**1-800-222-1222**
**Or**
**Agency Specific Number**

- General Wound Care Procedure
- Immobilize Injury
- Remove any constricting clothing/ bands/ jewelry
- IV or IO Access Protocol UP 6 ***if indicated***
- Age Appropriate Trauma Protocol(s) TB 4, 5, 6 ***if indicated***
- Age Appropriate Allergic Reaction/ Anaphylaxis Protocol AM 1/ PM 1 ***if indicated***
- Age Appropriate Hypotension/ Shock Protocol AM 5 / PM 3 ***if indicated***
- Pain Control Protocol UP 11 ***if indicated***
- Extremity Trauma Protocol TB 4 ***if indicated***

Identification of Animal

### Spider Bite/ Bee or Wasp Sting
*Venomous*

- Keep bite at level of heart ***if able***
- Apply Ice Packs
- **P**
  - **<u>Muscle Spasm</u>**
  - **Midazolam 2.5 mg IV / IO / IM / IN**
  - **Pediatrics:**
  - **Midazolam 0.1 – 0.2 mg / kg IV / IO / IM / IN**
  - Over 2 to 3 minutes
  - **Maximum 10 mg IM**

### Snake Bite
*Venomous*

- Keep bite at level of heart ***if able***
- Remove any constricting clothing/ bands
- **DO NOT apply ICE**
- Mark Margin of Swelling / Redness and Time

### Mammal Bite

Transport
- NO → Contact and Document contact with Animal Control Officer
- YES

Monitor and Reassess

**Notify Destination or Contact Medical Control**

Toxin-Environmental Protocol Section

# Bites and Envenomations



**Pearls**

- **Recommended Exam: Mental Status, Skin, Extremities (Location of injury), and a complete Neck, Lung, Heart, Abdomen, Back, and Neuro exam if systemic effects are noted**
- **Immunocompromised patients are at an increased risk for infection: diabetes, chemotherapy, transplant patients.**
- **Consider contacting the North Carolina Poison Control Center for guidance (1-800-222-1222).**
- **Do not put responders in danger attempting to capture an animal or insect for identification purposes.**
- **Evidence of infection: swelling, redness, drainage, fever, red streaks proximal to wound.**
- **Human bites:**
  Human bites have higher infection rates than animal bites due to normal mouth bacteria.
  Hand and foot bites have highest rates of infection.
- **Dog/ Cat/ Carnivore bites:**
  Carnivore bites are much more likely to become infected and all have risk of Rabies exposure.
  Cat bites may progress to infection rapidly due to a specific bacteria (Pasteurella multicoda).
- **Snake bites:**
  Poisonous snakes in this area are generally of the pit viper family: rattlesnake and copperhead.
  Coral snake bites are rare: Very little pain but very toxic. "Red on yellow - kill a fellow, red on black – venom lack."
  Amount of envenomation is variable, generally worse with larger snakes and early in spring.
  Snake bites are treated based on signs and symptoms and progression.
  **It is not important to attempt to identify the type of snake and attempts may endanger providers.**
  **Do not bring a snake to the facility for identification as accidental bites to providers may occur.**
- **Spider bites:**
  Black Widow spider bites tend to be minimally painful, but over a few hours, muscular pain and severe abdominal pain may develop (spider is black with red hourglass on belly).
  Brown Recluse spider bites are minimally painful to painless. Little reaction is noted initially but tissue necrosis at the site of the bite develops over the next few days (brown spider with fiddle shape on back).
- **Animal bite(s) in subjects declining transport to a medical facility for evaluation:**
  NCGS 130A-196 requires that all animal bites be reported to the local health department even if the bite is by the owner's animal, and even if accidental.
  Reporting requirements can be satisfied by reporting to local animal control official.

## Dispositions

**Paramedic:** Any patients with potential for cardiac etiology, or any use of Versed, difficulty swallowing / speaking or SBP <90

**Advanced EMT:** Any patient with Abnormal Vital signs, Anaphylaxis, Epinephrine administration, Rapid progression of symptoms, Respiratory distress, Significant swelling

# Carbon Monoxide/ Cyanide

**History**
- Smoke inhalation
- Ingestion of cyanide
- Eating large quantity of fruit pits
- Industrial exposure
- Trauma
- Reason: Suicide, criminal, accidental
- Past Medical History
- Time/ Duration of exposure

**Signs and Symptoms**
- AMS
- Malaise, weakness, flu like illness
- Dyspnea
- GI Symptoms; N/V; cramping
- Dizziness
- Seizures
- Syncope
- Reddened skin
- Chest pain

**Differential**
- Diabetic related
- Infection
- MI
- Anaphylaxis
- Renal failure/ dialysis problem
- Head injury/ trauma
- Co-ingestant or exposures

Immediately Remove from Exposure

Appropriate Airway Protocol(s) 1 - 7 ***as indicated***

High Flow Oxygen

Blood Glucose Analysis Procedure

B — 12 Lead ECG Procedure

IV or IO Access Protocol UP 6

P — Cardiac Monitor/ CO Monitor

Altered Mental Status Protocol UP 4 ***if indicated***

Age Appropriate Diabetic Protocol AM 2/ PM 2 ***if indicated***

Age Appropriate Multiple Trauma Protocol TB 6 Head Injury TB 5 ***if indicated***

Age Appropriate Hypotension/ Shock Protocol AM 5/ PM 3 ***if indicated***

**Contact**
**Carolinas Poison Control**
**1-800-222-1222**
**Or**
**Agency Specific Number**

High Suspicion of Cyanide

YES → P — **Hydroxocobalamin 70 mg / kg IV / IO**
**Maximum 5 g**

***If available***

NO

Continue Care
Continue High Flow Oxygen

Monitor and Reasses

**Notify Destination or Contact Medical Control**

Toxin-Environmental Protocol Section

# Carbon Monoxide/ Cyanide



**Pearls**

- **Recommended exam: Neuro, Skin, Heart, Lungs, Abdomen, Extremities**
- **Scene safety is priority.**
- Consider CO and Cyanide with any product of combustion.
- Normal environmental CO level does not exclude CO poisoning.
- Symptoms present with lower CO levels in pregnancy, children, and the elderly.
- Continue high flow oxygen regardless of pulse ox readings.

## Dispositions

**Paramedic:** Any patient with Chest Pain, Seizure, or suspicion for cyanide, or any patient with GCS <15 or SBP <90

**Advanced EMT:** Any patient with symptomatic Carbon Monoxide exposure

# Drowning

## History
- Submersion in water regardless of depth
- Possible history of trauma
- Slammed into shore wave break
- Duration of submersion/ immersion
- Temperature of water or possibility of hypothermia

## Signs and Symptoms
- Unresponsive
- Mental status changes
- Decreased or absent vital signs
- Foaming/ Vomiting
- Coughing, Wheezing, Rales, Rhonchi, Stridor
- Apnea

## Differential
- Trauma
- Pre-existing medical problem
  - Hypoglycemia
  - Cardiac Dysrhythmia
- Pressure injury (SCUBA diving)
  - Barotrauma
  - Decompression sickness
- Post-immersion syndrome

**Awake and Alert**

- Supplemental Oxygen ***as tolerated***
- Spinal Motions Restriction Procedure/ Protocol TB 8 ***if indicated***
- Remove wet clothing Dry/ Warm Patient
- Monitor and Reassess
- **Encourage transport and evaluation even if asymptomatic or with minimal symptoms** *Asymptomatic drowning patients (refusing transport) should be instructed to seek medical care/call 911 if they develop any symptoms within 6 hours*
- IV or IO Access Protocol UP 6 ***if indicated***
- P Cardiac Monitor ***as indicated***

**Awake but with AMS**

- **5 Breaths via BVM**/ mouth-to-mouth ***as tolerated***
- Supplemental Oxygen ***as tolerated***
- Age Appropriate Airway Protocol(s) 1 - 7 ***as indicated***
- Spinal Motion Restriction Procedure/ Protocol TB 8 ***if indicated***
- Altered Mental Status Protocol UP 4 ***as indicated***
- Remove wet clothing Dry/ Warm Patient
- IV or IO Access Protocol UP 6
- P Cardiac Monitor

Age Appropriate Airway Protocol(s) AR 1 - 7 ***as indicated***

**Notify Destination or Contact Medical Control**

**Unresponsive**

- **5 Breaths via BVM**/ mouth-to-mouth ***as tolerated***

Pulse
- YES → Age Appropriate Airway Protocol(s) 1 - 7 ***as indicated***
- NO → Exit to Age Appropriate Cardiac Arrest Protocol(s) AC 3/ PC 4

Airway Protocol(s) AR 1 - 7
Spinal Motion Restriction Protocol TB 8 ***as indicated***

**Dive Accident / Barotrauma**
**Divers Alert Network**
**1-919-684-9111**
**Or**
**Agency specific hyperbaric information**

Toxic-Environmental Protocol Section

# Drowning



**Pearls**

- **Recommended Exam: Respiratory, Mental status, Trauma Survey, Skin, Neuro**
- **Drowning is the process of experiencing respiratory impairment (any respiratory symptom) from submersion/ immersion in a liquid.**
- **Begin with BVM ventilations, if patient does not tolerate, then apply appropriate mode of supplemental oxygen.**
- **Ensure scene safety. Drowning is a leading cause of death among would-be rescuers.**
- **When feasible, only appropriately trained and certified rescuers should remove patients from areas of danger.**
- **Regardless of water temperature – resuscitate all patients with known submersion time of ≤ 25 minutes.**
- **Regardless of water temperature – If submersion time ≥ 1 hour consider moving to recovery phase instead of rescue.**
- **Foam is usually present in airway and may be copious, DO NOT waste time attempting to suction. Ventilate with BVM through foam (suction water and vomit only when present.)**
- **Cardiac arrest in drowning is caused by hypoxia, airway and ventilation are equally important to high-quality CPR.**
- **Encourage transport of all symptomatic patients (cough, foam, dyspnea, abnormal lung sounds, hypoxia) due to potential worsening over the next 6 hours.**
- Predicting prognosis in prehospital setting is difficult and does not correlate with mental status. Unless obvious death, transport.
- Hypothermia is often associated with drowning and submersion injuries even with warm ambient conditions.
- Drowning patient typically has <1 – 3 mL/kg of water in lungs (does not require suction) Primary treatment is reversal of hypoxia.
- Spinal motion restriction is usually unnecessary. When indicated it should not interrupt ventilation, oxygenation and/ or CPR.

## Dispositions

**Paramedic:** Any patient with confirmed drowning with AMS

**Advanced EMT:** Any patient with confirmed drowning that is now awake and alert

# Hyperthermia

## History
- Age, very young and old
- Exposure to increased temperatures and / or humidity
- Past medical history / Medications
- Time and duration of exposure
- Poor PO intake, extreme exertion
- Fatigue and / or muscle cramping

## Signs and Symptoms
- Altered mental status / coma
- Hot, dry or sweaty skin
- Hypotension or shock
- Seizures
- Nausea

## Differential
- Fever (Infection)
- Dehydration
- Medications
- Hyperthyroidism (Thyroid Storm)
- Delirium tremens (DT's)
- Heat cramps, exhaustion, stroke
- CNS lesions or tumors

Temperature Measurement Procedure ***if available***

Temperature Measurement should NOT delay treatment of hyperthermia

- Remove from heat source to cool environment
- Cooling measures
- Remove tight clothing
- Blood Glucose Analysis Procedure
- Age Appropriate Diabetic Protocol AM 2/ PM 2 ***as indicated***

**Heat Stroke**

**Classic Heat Stroke**
- Not common type
- Hot and Dry
- Altered Mental Status

**Exertional Heat Stroke**
- **Most common type**
- Wet with prior sweating
- Altered Mental Status

Assess Symptom Severity

**HEAT CRAMPS**
Normal to elevated body temperature
Warm, moist skin
Weakness, Muscle cramping

- PO Fluids as tolerated
- Monitor and Reassess

**HEAT EXHAUSTION**
Elevated body temperature
Cool, moist skin
Weakness, Anxious, Tachypnea

**HEAT STROKE**
Fever, usually > 104°F (40°C)
Hot, dry skin
Hypotension, AMS / Coma

- Age Appropriate Airway Protocol(s) AR 1 - 7 ***as indicated***
- Altered Mental Status Protocol UP 4 ***as indicated***
- Active cooling measures Target Temp < 102.5° F (39°C)
- **B** 12 Lead ECG Procedure
- IV or IO Access Protocol UP 6
- **P** Cardiac Monitor
- **A** **Normal Saline Bolus**
  **500 mL IV / IO**
  Repeat to effect SBP > 90
  **Maximum 2 L**
  **PED: Bolus 20 mL/kg IV / IO**
  Repeat to effect Age appropriate SBP ≥ 70 + 2 *x* Age
  **Maximum 60 mL/kg**
- Age Appropriate Hypotension/ Shock Protocol AM 5/ PM 3 ***as indicated***
- Monitor and Reassess

Utilize Dunk Tank or Hyperthermia Cooling Procedure GP7, as available
(See PEARLS)

**Notify Destination or Contact Medical Control**

Toxic-Environmental Protocol Section



Revised Feb 2025

Any local EMS System changes to this document must follow the NC OEMS Protocol Change Policy and be approved by OEMS

# Hyperthermia



**Pearls**

- **Recommended Exam: Mental Status, Skin, HEENT, Heart, Lungs, Neuro**
- **Extremes of age are more prone to heat emergencies (i.e. very young and very old).**
- **Temperature measurement:**
  - **Obtain and document patient temperature if able.**
  - **Many thermometers and routes of measurement are available.**
  - **Order of preference for route of measurement: Rectal > oral > temporal > axillary.**
- Heat illness is predisposed by use of: tricyclic antidepressants, phenothiazines, anticholinergic medications, and alcohol.
- Cocaine, Amphetamines, and Salicylates may elevate body temperatures.
- Intense shivering may occur as patient is cooled.
- **Heat Cramps:**
  Consists of benign muscle cramping secondary to dehydration and is not associated with an elevated temperature.
- **Heat Exhaustion:**
  Consists of dehydration, salt depletion, dizziness, fever, mental status changes, headache, cramping, nausea and vomiting. Vital signs usually consist of tachycardia, hypotension, and an elevated temperature.
- **Heat Stroke:**
  Consists of dehydration, tachycardia, hypotension, temperature ≥ 104°F (40°C), and an altered mental status.
  Sweating generally disappears as body temperature rises above 104°F (40°C).
  The young and elderly are more prone to be dry with no sweating.
  **Exertional Heat Stroke:**
  **In exertional heat stroke (athletes, hard labor), the patient may have sweated profusely and be wet on exam.**
  **Rapid cooling takes precedence over transport as early cooling decreases morbidity and mortality.**
  **If available, immerse in an ice water bath for 20 minutes. Monitor rectal temperature and remove patient when temperature reaches 102.5°F (39°C). Your goal is to decrease rectal temperature below 104°F (40°C) with target of 102.5°F (39°C) within 15 minutes. Stirring the water aids in cooling.**
  **Nearly 66% of all exertional heat strokes occur in high school athletes during the month of August.**
  **In NC, it is mandatory that all high school field houses have a dunk tank and available ice and water.**
  **Other methods include cold wet towels below and above the body or spraying cold water over body continuously.**
- **Neuroleptic Malignant Syndrome (NMS):**
  Neuroleptic Malignant Syndrome is a hyperthermic emergency which is not related to heat exposure.
  It occurs after taking neuroleptic antipsychotic medications.
  This is a rare but often lethal syndrome characterized by muscular rigidity, AMS, tachycardia and hyperthermia.
  **Drugs Associated with Neuroleptic Malignant Syndrome:**
  Prochlorperazine (Compazine), promethazine (Phenergan), clozapine (Clozaril), risperidone (Risperdal) metoclopramide (Reglan), amoxapine (Ascendin), and lithium.
  **Management of NMS:**
  Supportive care with attention to hypotension and volume depletion.
  Use benzodiazepines such as diazepam or midazolam for seizures and/ or muscular rigidity.

## Dispositions

**Paramedic:** Any patient with suspected heat stroke, seizures, GCS <15, SBP <90, altered mental status, severe cramping, or any patient with history of electrolyte imbalance

**Advanced EMT:** Any patient with suspected heat exhaustion

# Hypothermia/ Frostbite

## History
- Age, very young and old
- Exposure to decreased temperatures but may occur in normal temperatures
- Past medical history / Medications
- Drug use: Alcohol, barbituates
- Infections/ Sepsis
- Length of exposure/ Wetness/ Wind chill

## Signs and Symptoms
- Altered mental status/ coma
- Cold, clammy
- Shivering
- Extremity pain or sensory abnormality
- Bradycardia
- Hypotension or shock

## Differential
- Sepsis
- Environmental exposure
- Hypothyroidism
- Hypoglycemia
- CNS dysfunction
  - Stroke
  - Head injury
  - Spinal cord injury

Temperature Measurement Procedure ***if available***

Temperature Measurement should NOT delay treatment of hypothermia

Remove wet clothing
Dry/ Warm Patient

Passive warming measures

Blood Glucose Analysis Procedure

Age Appropriate
Diabetic Protocol AM 2/ PM 2
***as indicated***

Hypothermia / Frost Bite

**Localized Cold Injury**

General Wound Care

DO NOT Rub Skin to warm
DO NOT Massage
Skin to warm

DO NOT allow refreezing

**Systemic Hypothermia**

**Awake with / without AMS**

Age Appropriate
Airway Protocol(s) AR 1 - 7
***as indicated***

Altered Mental Status
Protocol UP 4
***as indicated***

Active warming measures

**B** 12 Lead ECG Procedure

IV or IO Access Protocol UP 6

**A**
**Normal Saline Bolus**
**500 mL IV / IO**
Repeat to titrate SBP > 90 mmHg
**Maximum 2 L**
**Pediatric: 20 mL / kg IV / IO**
Repeat to titrate Age Appropriate
SBP ≥ 70 + 2 x Age
**Maximum 60 mL / kg**

**P** Cardiac Monitor

Age Appropriate
Hypotension/ Shock
Protocol AM 5/ PM 3
Multiple Trauma Protocol TB 6
***as indicated***

Monitor and Reassess

**Unresponsive**

Pulse

YES

NO

Exit to
Age Appropriate
Cardiac Protocol(s)
***See Pearls***

**Notify Destination or Contact Medical Control**

Toxic-Environmental Protocol Section

# Hypothermia/ Frostbite



## Pearls

- **Recommended Exam: Mental Status, Heart, Lungs, Abdomen, Extremities, Neuro**
- **NO PATIENT IS DEAD UNTIL WARM AND DEAD (Body temperature ≥ 93.2° F, 32° C.)**
- **Temperature measurement:**
  - **Obtain and document patient temperature if able.**
  - **Many thermometers and routes of measurement are available.**
  - **Order of preference for route of measurement: Rectal > oral > temporal > axillary.**
  - **Many thermometers do not register temperature below 93.2° F.**
- **Hypothermia categories:**
  - Mild 90 – 95° F ( 32 – 35° C)
  - Moderate 82 – 90° F ( 28 – 32° C)
  - Severe < 82° F ( < 28° C)
- **Mechanisms of hypothermia:**
  - Radiation: Heat loss to surrounding objects via infrared energy ( 60% of most heat loss.)
  - Convection: Direct transfer of heat to the surrounding air.
  - Conduction: Direct transfer of heat to direct contact with cooler objects (important in submersion.)
  - Evaporation: Vaporization of water from sweat or other body water losses.
- Contributing factors of hypothermia: Extremes of age, malnutrition, alcohol or other drug use.
- If the temperature is unable to be measured, treat the patient based on the suspected temperature.
- **CPR:**
  - **Severe hypothermia may cause cardiac instability and rough handling of the patient theoretically can cause ventricular fibrillation. This has not been demonstrated or confirmed by current evidence. Intubation and CPR techniques should not be with-held due to this concern.**
  - **Intubation can cause ventricular fibrillation, so it should be done gently by the most experienced provider(s).**
  - **Below 86°F (30° C) antiarrhythmics may not work and if given, should be given at increased time intervals. Contact medical control for direction. Epinephrine can be administered.**
  - **Below 86° F (30°C) pacing should not utilized.**
  - **Consider withholding CPR if patient has organized rhythm or has other signs of life. Contact Medical Control.**
  - **If the patient is below 86° F (30° C) then defibrillate 1 time if defibrillation is required. Deferring further attempts until more warming occurs is controversial. Contact medical control for direction.**
  - **Hypothermia may produce severe bradycardia so take at least 60 seconds to palpate a pulse.**
- **Active Warming:**
  - Remove from cold environment and into warm environment protected from wind and wet conditions.
  - Remove wet clothing and provide warm blankets/ warming blankets.
  - Hot packs can be activated and placed in the armpit and groin area if available. Care should be taken not to place the packs directly against the patient's skin.

## Dispositions

**Paramedic:** Any patient with Abnormal Vital Signs or Systemic Hypothermia

# Marine Envenomation/ Injury

## History
- Type of bite/ sting
- Identification of organism
- Previous reaction to marine organism
- Immunocompromised
- Household pet

## Signs and Symptoms
- Intense localized pain
- Increased oral secretions
- Nausea/ vomiting
- Abdominal cramping
- Allergic reaction / anaphylaxis

## Differential
- Jellyfish sting
- Sea Urchin sting
- Sting ray barb
- Coral sting
- Swimmers itch
- Cone Shell sting
- Fish bite
- Lion Fish sting

Call for help/ additional resources
Stage until scene safe

**Contact**
**Carolinas Poison Control**
**1-800-222-1222**
**Or**
**Agency Specific Number**

- General Wound Care Procedure
- IV or IO Access Protocol UP 6 ***if indicated***
- P Cardiac Monitor ***if indicated***
- Drowning Protocol TE 3 ***if indicated***
- Age Appropriate Allergy/ Anaphylaxis Protocol AM 1/ PM 1 ***if indicated***
- Age Appropriate Hypotension/ Shock Protocol AM 5/ PM 3 ***if indicated***
- Pain Control Protocol UP 11 ***if indicated***

Identification of Sea Creature

**Jelly Fish**
**Anemone**
**Man-O-War**

- Immobilize injury
- Lift away tentacles
  Do Not brush or rub
- Immerse in Hot Water
  110 – 114°F (43 - 46°C)
  ***if available***
- Apply Vinegar Rinse
  ***If available***
  Otherwise wash with clean seawater
  DO NOT
  use fresh water or ice

**Sting Ray**
**Lion Fish**
**Urchin / Starfish**

- Immobilize injury
- Remove Barb or Spine
  If large Barb in thorax or abdomen stabilize object
- Immerse in Hot Water
  110 – 114°F (43 - 46°C)
  ***if available***

**Large Organism**

- Immobilize injury
- Multiple Trauma Protocol TB 6 ***if indicated***
- Extremity Trauma Protocol TB 4 ***if indicated***

Monitor and Reassess

**Notify Destination or Contact Medical Control**

Toxic-Environmental Protocol Sectio



Revised
Apr 2023

Any local EMS System changes to this document must follow the NC OEMS Protocol Change Policy and be approved by OEMS

# Marine Envenomation/ Injury

## Pearls

- **Ensure your safety: Avoid the organism or fragments of the organism as they may impart further sting or injury.**
- **Priority is removal of the patient from the water to prevent drowning.**
- **Coral:**
  - Coral is covered by various living organisms which are easily dislodged from the structure.
  - Victim may swim into coral causing small cuts and abrasions and the coral may enter into cuts, causing little if any symptoms initially, but later causing inflammation, pain and/ or infection.
  - The next 24 – 48 hours may reveal an inflammatory reaction with swelling, redness, itching, tenderness, and ulceration.
  - Treatment is flushing with large amounts of fresh water or soapy water then repeating.
- **Jelly Fish/ Anemone/ Man-O-War:**
  - Wash the area with fresh seawater to remove tentacles and nematocysts.
  - Do not apply fresh water or ice as this will cause nematocysts firing as well.
  - Recent evidence does not demonstrate a clear choice of any solution that neutralizes nematocysts.
  - Vinegar (immersion for 30 seconds), 50:50 mixture of Baking Soda and Seawater, and even meat tenderizer may have similar effects.
  - Immersion in warm water for 20 minutes, 110 – 114°F (43 - 46°C), is effective in pain control.
  - Shaving cream may be useful in removing the tentacles and nematocysts with a sharp edge (card).
  - Stimulation of the nematocysts by pressure or rubbing cause the nematocyst to fire even if detached from the jellyfish.
  - Lift away tentacles as scrapping or rubbing will cause nematocysts firing.
  - Typically symptoms are immediate stinging sensation on contact, intensity increases over 10 minutes.
  - Redness and itching usually occur.
  - Papules, vesicles and pustules may be noted and ulcers may form on the skin.
  - Increased oral secretions and gastrointestinal cramping, nausea, pain, or vomiting may occur.
  - Muscle spasm, respiratory, and cardiovascular collapse may follow.
- **Lionfish:**
  - In North Carolina this would typically occur in a residence/ business as lionfish are often kept as pets in saltwater aquariums.
  - Remove any obvious protruding spines and irrigate area with copious amounts of saline.
  - The venom is heat labile so immersion in hot water, 110 – 114°F for 30 to 90 minutes is the treatment of choice but do not delay transport if indicated.
- **Stingrays:**
  - Typical injury is swimmer stepping on ray and muscular tail drives 1 – 4 barbs into victim.
  - Venom released when barb is broken.
  - Typical symptoms are immediate pain which increases over 1 – 2 hours.
  - Bleeding may be profuse due to deep puncture wound.
  - Nausea, vomiting, diarrhea, muscle cramping, and increased urination and salivation may occur.
  - Seizures, hypotension, and respiratory or cardiovascular collapse may occur.
  - Irrigate wound with saline. Extract the spine or barb unless in the abdomen or thorax, Contact Medical Control for advice.
  - Immersion in hot water, if available, for 30 to 90 minutes but do not delay transport.
- Patients can suffer cardiovascular collapse from both the venom and/ or anaphylaxis even in seemingly minor envenomation.
- Sea creature stings and bites impart moderate to severe pain.
- Arrest the envenomation by inactivation of the venom as appropriate.
- Ensure good wound care, immobilization and pain control.

## Dispositions

**Paramedic / EMT-Advanced:** All patients

# Overdose/ Toxic Ingestion

## History
- Ingestion or suspected ingestion of a potentially toxic substance
- Substance ingested, route, quantity
- Time of ingestion
- Reason (suicidal, accidental, criminal)
- Available medications in home
- Past medical history, medications

## Signs and Symptoms
- Mental status changes
- Hypotension / hypertension
- Decreased respiratory rate
- Tachycardia, dysrhythmias
- Seizures
- S.L.U.D.G.E.
- D.U.M.B.B.E.L.S

## Differential
- Tricyclic antidepressants (TCAs)
- Acetaminophen (Tylenol)
- Aspirin
- Depressants
- Stimulants
- Anticholinergic
- Cardiac medications
- Solvents, Alcohols, Cleaning agents
- Insecticides (organophosphates)

Inadequate Respirations / Oxygenation / Ventilation — YES →
- **Naloxone 0.4 – 2 mg IN / IM**
- **Peds: 0.1 mg/kg IN**
- *May repeat as needed*

NO ↓

**A**
- **Naloxone 0.4 – 2 mg**
- **Peds: 0.1 mg/kg**
- **IV / IO / IM / IN / ETT**
- *Titrate to adequate ventilation and oxygenation*
- **NOT GIVEN TO RESTORE CONSCIOUSNESS**

Age Appropriate Airway Protocol(s) ***as indicated***

Poor Perfusion Shock / Hypotension — YES → Age Appropriate Hypotension/ Shock Protocol AM 5/ PM 3

NO ↓

Alerted Mental Status — YES → Age Appropriate Diabetic Protocol AM 2/ PM 2, Behavioral Protocol UP 6, AMS Protocol UP 4 ***as indicated***

NO ↓

Normal Mental Exam
Normal Neurological Exam
Stable Condition
No other medical concerns — YES →

**Contact**
**Carolinas Poison Control**
**1-800-222-1222**
**Or**
**Agency Specific Number**

NO ↓

Follow Transport / Hospital Evaluation ARM

Poison Control Advises
Need for Transport/ Hospital Evaluation
Need for EMS Intervention — YES →

- **B** 12 Lead ECG Procedure
- IV or IO Access Protocol UP 6
- **P** Cardiac Monitor

See Page 2
For Specific Treatment Options

NO ↓

Following ALS Assessment and consultation with Poison Control

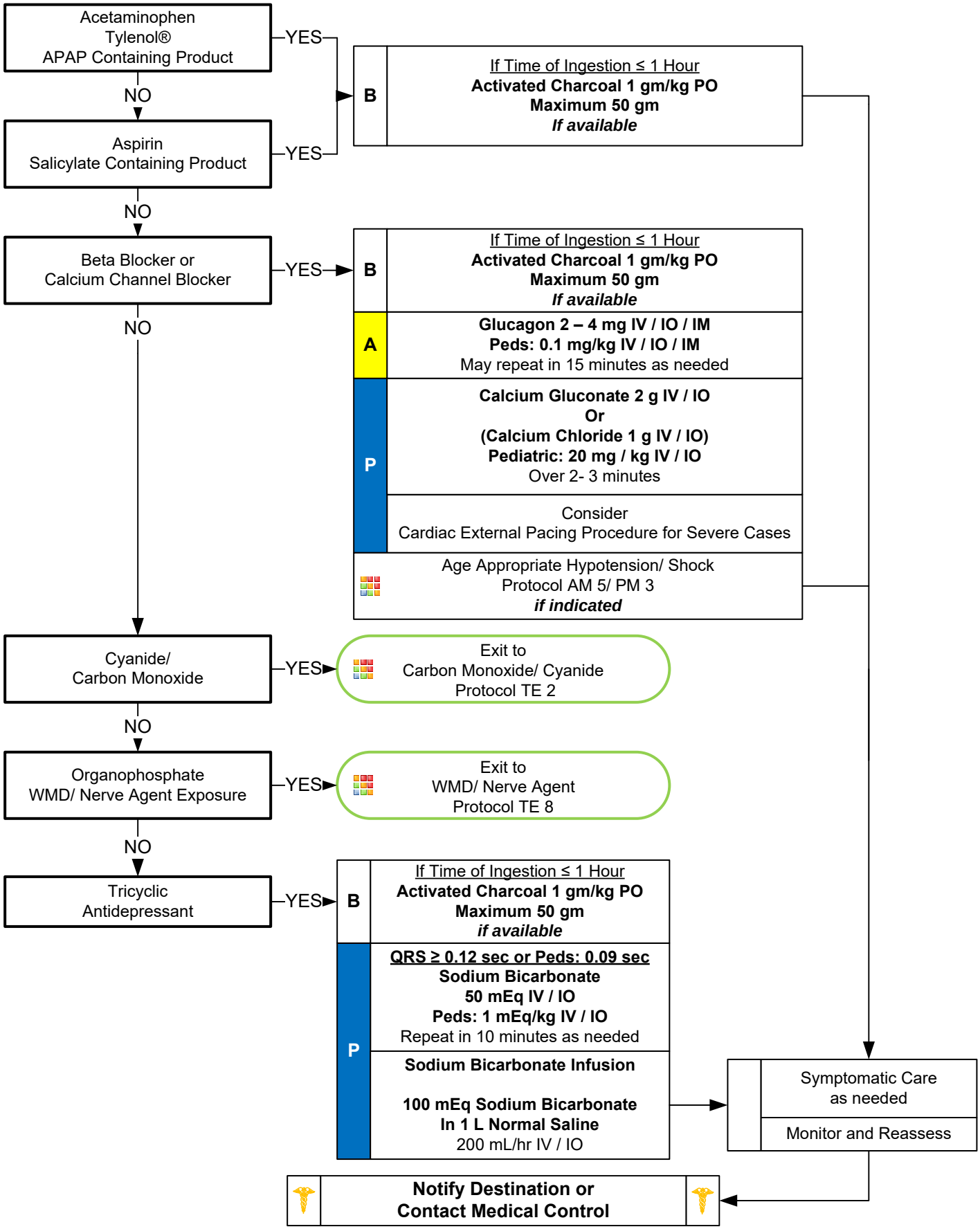
If patient is deemed suitable for home monitoring and telephone follow-up:

It is appropriate for patient to remain at home with close telephone follow-up provided by Poison Control.

Disposition per local agency policy

Toxin-Environmental Protocol Section

# Overdose/ Toxic Ingestion




Toxin-Environmental Protocol Section

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# Overdose/ Toxic Ingestion



**Pearls**

- **Recommended Exam: Mental Status, Skin, HEENT, Heart, Lungs, Abdomen, Extremities, Neuro**
- **Opioids and opiates may require higher doses of Naloxone to improve respiration, in certain circumstances up to 10 mg.**
- **Time of Ingestion:**
  1. **Most important aspect is the TIME OF INGESTION, the substance(s), amount ingested, and any co-ingestants.**
  2. **Every effort should be made to elicit this information before leaving the scene.**
- **Charcoal Administration:**
  **The American Academy of Clinical Toxicology DOES NOT recommend the routine use of charcoal in poisonings.**
  1. **Consider Charcoal within the FIRST HOUR after ingestion. If a potentially life threatening substance is ingested or extended release agent(s) are involved and ≥ one hour from ingestion, Contact Medical Control or NC Poison Control Center for direction.**
  2. **If NG would be necessary to administer Charcoal, then DO NOT administer unless known to be adsorbed, airway secured by intubation, and ingestion is less than ONE HOUR confirmed and potentially lethal.**
  3. **Charcoal in general, should only be given to a patient who is alert and awake such that they can self-administer the medication.**
- **Do not rely on patient history of ingestion, especially in suicide attempts. Make sure patient is still not carrying hiding other medications or has any weapons.**
- **Pediatric:**
  **Age specific blood pressure 0 – 28 days > 60 mmHg, 1 month - 1 age)mmHg and > 10 years > 90 mmHg.**
  **Pediatric IV Fluid maintenance rate:**
  **4 mL for the first 10 kg of weight +**
  **2 mL for the second 10 kg of weight +**
  **1 mL for every additional kg in weight after 20 kg**

| **Example: 34 kg pediatric** | |
|---|---|
| First 10 kg: | 4 mL/kg/hr = 40 mL/hr |
| Second 10 kg: | 2 mL/kg/hr = 20 mL/hr |
| Final 14 Kg: | 1 mL/kg//hr = 14 mL/hr |
| | Total: 74 mL/hr rate |

- **Bring bottles, contents, emesis to ED.**
- **S.L.U.D.G.E: Salivation, Lacrimation, Urination, Defecation, GI distress, Emesis.**
- **D.U.M.B.B.E.L.S: Diarrhea, Urination, Miosis, Bradycardia, Bronchorrhea, Emesis, Lacrimation, Salivation.**
- **Tricyclic:** 4 major areas of toxicity: seizures, dysrhythmias, hypotension, decreased mental status or coma; rapid progression from alert mental status to death.
- **Acetaminophen:** initially normal or nausea/ vomiting. If not detected and treated, causes irreversible liver failure.
- **Aspirin**: Early signs consist of abdominal pain and vomiting. Tachypnea and altered mental status may occur later. Renal dysfunction, liver failure, and or cerebral edema among other things can take place later.
- **Depressants:** decreased HR, decreased BP, decreased temperature, decreased respirations, non-specific pupils.
- **Stimulants:** increased HR, increased BP, increased temperature, dilated pupils, seizures.
- **Anticholinergic:** increased HR, increased temperature, dilated pupils, mental status changes.
- **Cardiac Medications:** dysrhythmias and mental status changes.
- **Solvents:** nausea, coughing, vomiting, and mental status changes.
- **Insecticides:** increased or decreased HR, increased secretions, nausea, vomiting, diarrhea, pinpoint pupils.
- **Nerve Agent Antidote kits** contain 2 mg of Atropine and 600 mg of pralidoxime in an autoinjector for self administration or patient care. These kits may be available as part of the domestic preparedness for Weapons of Mass Destruction.
- **EMR and EMT may administer naloxone by IN / IM route only and may administer from EMS supply. Agency medical director may require Contact of Medical Control prior to administration and may restrict locally.**
- **When appropriate contact the North Carolina Poison Control Center for guidance, reference Policy 18.**
- Consider restraints if necessary for patient's and/or personnel's protection per the Restraint Procedure.

## Dispositions

**Paramedic:** Any patient with abnormal vital signs or requiring interventions beyond naloxone

**Advanced EMT:** Any patient who is responsive to naloxone or confirmed Opiate Overdose

*These patients require an ECG with interpretation as part of evaluation; Prolonged QTC will have a normal HR and no other method for evaluation

*Transport Requires a Paramedic Evaluation, an ALS capable unit, and Poison Control Contact

# WMD-Nerve Agent Protocol

## History
- Exposure to chemical, biologic, radiologic, or nuclear hazard
- Potential exposure to unknown substance/hazard

## Signs and Symptoms
- **S**alivation
- **L**acrimation
- **U**rination; increased, loss of control
- **D**efecation / Diarrhea
- **G**I Upset; Abdominal pain / cramping
- **E**mesis
- **M**uscle Twitching
- Seizure Activity
- Respiratory Arrest

## Differential
- Nerve agent exposure (e.g., VX, Sarin, Soman, etc.)
- Organophosphate exposure (pesticide)
- Vesicant exposure (e.g., Mustard Gas, etc.)
- Respiratory Irritant Exposure (e.g., Hydrogen Sulfide, Ammonia, Chlorine, etc.)

Call for help/ additional resources
Stage until scene safe

**Obtain history of exposure**
**Observe for specific toxidromes**
**Initiate triage and/or decontamination as indicated.**

**Contact**
**Carolinas Poison Control**
**1-800-222-1222**
**Or**
**Agency Specific Number**

Symptom Severity

**Asymptomatic**

Monitor and Reassess
Every 15 minutes for symptoms
Initiate Treatment per Appropriate Arm

**Minor Symptoms:**
**Respiratory Distress + SLUDGEM**

IV or IO Access Protocol UP 6

**Nerve Agent Kit IM**
**2 Doses Rapidly**
***if available***

**Major Symptoms:**
**Altered Mental Status, Seizures, Respiratory Distress, Respiratory Arrest**

IV or IO Access Protocol UP 6

**Nerve Agent Kit IM**
**3 Doses Rapidly**
***if available***

P

**Atropine 2 mg IV / IO / IM**
**Pediatric: See Pearls**
**IV / IO / IM**
Repeat every 3 to 5 minutes until symptoms resolve

**Pralidoxime (2PAM)**
**600 mg IV / IO / IM**
**Pediatric: 15 – 25 mg / kg**
**IV / IO / IM**
Over 30 minutes
***if available***

Seizure Protocol UP 13

**CDC/ ASPR**
**CHEMPACK Program**
NC -57 EMS containers
-43 locations

Almost all citizens within 50 miles of CHEMPACK
*See Page 2 and Pearls*

Multiple Patients — YES

Consider
Activation and deployment of CHEMPACK
**CHEMPACK ACTIVATION:**
**PENDING**

**Healthcare Coalition Activation**
**(919) 883-8948 Randy Hoffman**

NO

**Notify Destination or Contact Medical Control**

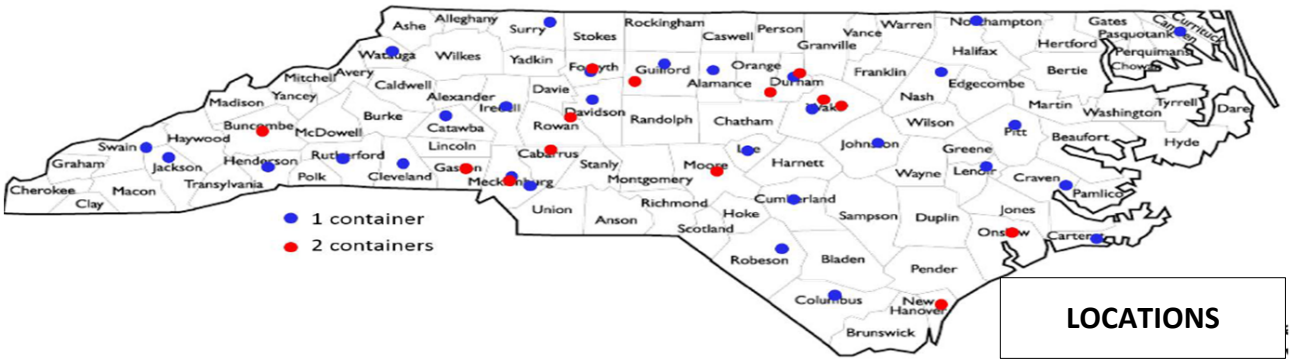
# WMD-Nerve Agent Protocol



## Pearls

- **Recommended Exam: Mental Status, Skin, HEENT, Heart, Lungs, Gastrointestinal, Neuro**
- **Follow local HAZMAT protocols for decontamination and use of personal protective equipment.**
- **Adult/ Pediatric Atropine Dosing Guides:**
  **Confirmed attack: Begin with 1 Nerve Agent Kit for patients less than 7 years of age, 2 Nerve Agent Kits from 8 to 14 years of age, and 3 Nerve Agent Kits for patients 15 years of age and over.**
  **If Triage/ MCI issues exhaust supply of Nerve Agent Kits, use pediatric atropines (if available).**
  **Usual pediatric doses: 0.5 mg ≤ 40 pounds (18 kg), 1 mg dose if patient weighs between 40 to 90 pounds (18 to 40 kg), and 2 mg dose ≥ 90 pounds (≥ 40 kg).**
- **Each Nerve Agent Kit contains 600 mg of Pralidoxime (2-PAM) and 2 mg of Atropine.**
- **Seizure Activity: Any benzodiazepine by any route is acceptable.**
- For patients with major symptoms, there is no limit for atropine dosing.
- Carefully evaluate patients to ensure they do not have exposure to other agent(s) (e.g., narcotics, vesicants, etc.)
- The main symptom that the atropine addresses is excessive secretions, so atropine should be given until secretions improve/ dry.
- EMS personnel, public safety officers and EMR/ EMT may carry, self-administer, or administer atropine/ pralidoxime to others by protocol. Agency medical director may require Contact of Medical Control prior to administration.
- **CHEMPACK Program:**
  For multiple patients, call for **CHEMPACK** deployment per local emergency management and healthcare coalition plans.
  **1 EMS CHEMPACK supports 454 patients.**
  Medication in CHEMPACK may be used regardless of expiration date.

| EMS Type CHEMPACK Container 454 Person Treatment Capacity | | | |
|---|---|---|---|
| **Product** | **Cases** | **Units per case** | **Total Units** |
| Mark 1 Auto-injector | 5 | 240 | 1,200 |
| **-OR** | | | |
| ATNAA Auto-injector | 6 | 200 | 1,200 |
| **-OR-** | | | |
| Atropen 2mg Auto-injector | 9 | 136 | 1,224 |
| Pralidoxime 300mg Auto-injector | 5 | 240 | 1,200 |
| **-AND-** | | | |
| Diazepam 10mg Auto-injector | 2 | 300 | 600 |
| Seizalam (Midazolam) 5mg/ml vial 10ml | 1 | 100 | 100 |
| Atropen 0.5mg Auto-injector | 1 | 225 | 225 |
| Atropen 1mg Auto-injector | 1 | 225 | 225 |
| Atropine Sulfate 0.4mg/ml vial 20ml | 1 | 100 | 100 |
| Pralidoxime 1gm inj. 20ml | 1 | 276 | 276 |
| Sterile Water 20ml vials | 1 | 150 | 150 |




## Dispositions

**Paramedic:** All patients

# Suspected Viral Hemorrhagic Fever
# Ebola

**EMS Dispatch Center**

1. Use Emerging Infectious Disease (EID) Surveillance Tool with the following chief complaints:
   - **Typical Flu-Like Symptoms**
     and/or
   - **Unexpected Bleeding**
     (not trauma or isolated nose bleed related)

2. Use EID Card (or equivalent) with the following protocols (or equivalent)
   - EMD 6 Breathing Problem
   - EMD 10 Chest Pain
   - EMD 18 Headache
   - EMD 21 Hemorrhage (medical)
   - EMD 26 Sick Person

3. Ask the following:
   - In the past 21 days have you been to Africa or been exposed to someone who has?
   - If YES:
   - Do you have a fever?

**Evolving Protocol:**
Protocol subject to change at any time dependent on changing outbreak locations.

Monitor for protocol updates.

**Viral Hemorrhagic Fevers:**
Ebola is one of many.

YES → **DO NOT DISPATCH FIRST RESPONDERS**

Dispatch EMS Unit only
Discretely notify EMS Supervisor or command staff

NO

**EMS**

**Do not rely solely on EMD personnel to identify a potential viral hemorrhagic fever patient – constrained by time and caller information**

**Obtain a travel history / exposure history and assess for clinical signs and symptoms**

**EMS Immediate Concern**

1. Traveler from area with known VHR (Ebola) with or without symptoms
2. Traveler from Sierra Leone, Guinea, or Liberia within past 21 days

**AND**

| | | |
|---|---|---|
| Fever, Headache | Joint and Muscle aches | Weakness, Fatigue |
| Vomiting and/or Diarrhea | Abdominal Pain | Anorexia |
| Bleeding | | |

NO → Exit to Appropriate Protocol(s)

YES

EMS Personal Protective Equipment → Refer to page 2
Place surgical mask on patient
Use Non-rebreather mask if Oxygen Needed
Donning and Doffing Guidelines

NO Routine Aerosol Generating Procedures → Avoid aerosol generating procedures unless medically necessary
NIPPV / Nebulizer therapy / Intubation / BIAD / Suctioning

No Routine IV or IO Lines → Avoid routine IV or IO access unless medically necessary
If IV / IO necessary:
Stop vehicle to lessen exposure risk

EMS Personnel / Equipment / Transport Unit Requires Decontamination → Refer to Page 3

**Notify Destination as soon and as discretely as possible**
**DO NOT ENTER facility with patient until instructed**
**Follow entry directions from hospital staff**

Special Circumstances Section



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# Suspected Viral Hemorrhagic Fever
# Ebola

PARTICULAR ATTENTION MUST BE PAID TO PROTECTING MUCOUS MEMBRANES OF THE EYES, NOSE, and MOUTH FROM SPLASHES OF INFECTIOUS MATERIAL OR SELF INOCULATION FROM SOILED PPE / GLOVES.
THERE SHOULD BE NO EXPOSED SKIN

**DONNING PPE: BEFORE** you enter the patient area.

**Recommended PPE**

**PAPR:** A PAPR with a full face shield, helmet, or headpiece. Any reusable helmet or headpiece must be covered with a single-use (disposable)hood that extends to the shoulders and fully covers the neck and is compatible with the selected PAPR.

**N95 Respirator:** Single-use (disposable) N95 respirator in combination with single-use (disposable) surgical hood extending to shoulders and single-use (disposable) full face shield. If N95 respirators are used instead of PAPRs, careful observation is required to ensure healthcare workers are not inadvertently touching their faces under the face shield during patient care.

**Single-use (disposable) fluid-resistant or impermeable gown** that extends to at least mid-calf or coverall without integrated hood. Coveralls with or without integrated socks are acceptable.

**Single-use (disposable) nitrile examination gloves with extended cuffs.** Two pairs of gloves should be worn. At a minimum, outer gloves should have extended cuffs.

**Single-use (disposable), fluid-resistant or impermeable boot covers** that extend to at least mid-calf or single-use (disposable) shoe covers. Boot and shoe covers should allow for ease of movement and not present a slip hazard to the worker.

**Single-use (disposable) fluid-resistant or impermeable shoe covers** are acceptable only if they will be used in combination with a coverall with integrated socks.

**Single-use (disposable), fluid-resistant or impermeable apron that covers** the torso to the level of the mid-calf should be used if Ebola patients have vomiting or diarrhea. An apron provides additional protection against exposure of the front of the body to body fluids or excrement. If a PAPR will be worn, consider selecting an apron that ties behind the neck to facilitate easier removal during the doffing procedure

**DOFFING PPE: OUTSIDE OF PPE IS CONTAMINATED! DO NOT TOUCH**

1) PPE must be carefully removed without contaminating one's eyes, mucous membranes, or clothing with potentially infectious materials.

Use great care while doffing your PPE so as not to contaminate yourself (e.g. Do not remove your N-95 facemask or eye protection BEFORE you remove your gown). There should be a dedicated monitor to observe donning and doffing of PPE. It is very easy for personnel to contaminate themselves when doffing. A dedicated monitor should observe doffing to insure it is done correctly. Follow CDC guidance on doffing.

2) PPE must be double bagged and placed into a regulated medical waste container and disposed of in an appropriate location.
3) Appropriate PPE must be worn while decontaminating / disinfecting EMS equipment or unit.
3) Re-useable PPE should be cleaned and disinfected according to the manufacturer's reprocessing instructions.

Hand Hygiene should be performed by washing with soap and water with hand friction for a minimum of 20 seconds. Alcohol-based hand rubs may be used if soap and water are not available.
EVEN IF AN ALCOHOL-BASED HAND RUB IS USED, WASH HANDS WITH SOAP AND WATER AS SOON AS FEASIBLE.

THE USE OF GLOVES IS NOT A SUBSTITUTE FOR HAND WASHING WITH SOAP & WATER
For any provider exposure or contamination contact occupational health.
If the patient is being transported via stretcher then a disposable sheet can be placed over them.




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# Suspected Viral Hemorrhagic Fever
# Ebola

EMS Personal
Requires Decontamination

**If EMS personnel are exposured to blood, bodily fluids, secretions, or excretions from a patient with suspected or confirmed Ebola should immediately:**

1) Stop working and wash the affected skin surfaces with soap and water.
2) Mucous membranes (e.g., conjunctiva) should be irrigated with a large amount of water or eyewash solution;

EMS Equipment / Transport Unit
Requires Decontamination

1) EMS personnel performing decontamination / disinfection should wear recommended PPE
   **When performing Decontamination EMS Personnel MUST wear appropriate PPE, which includes:**
   - •Gloves (Double glove)
   - •Fluid resistant (impervious) Tyvek Like Full length (Coveralls)
   - •Eye protection (Goggles)
   - •N-95 face mask
   - •Fluid resistant (impervious)-Head covers
   - •Fluid resistant (impervious)-Shoe / Boot covers
2) Face protection (N-95 facemask with goggles) should be worn since tasks such as liquid waste disposal can generate splashes.
3) Patient-care surfaces (including stretchers, railings, medical equipment control panels, and adjacent flooring, walls and work surfaces) are likely to become contaminated and should be decontaminated and disinfected after transport.
4) A blood spill or spill of other body fluid or substance (e.g., feces or vomit) should be managed through removal of bulk spill matter, cleaning the site, and then disinfecting the site. For large spills, a chemical disinfectant with sufficient potency is needed to overcome the tendency of proteins in blood and other body substances to neutralize the disinfectant's active ingredient. An EPA-registered hospital disinfectant with label claims for viruses that share some technical similarities to Ebola (such as, norovirus, rotavirus, adenovirus, poliovirus) and instructions for cleaning and decontaminating surfaces or objects soiled with blood or body fluids should be used according to those instructions. (Alternatively, a 1:10 dilution of household bleach (final working concentration of 500 parts per million or 0.5% hypochlorite solution) that is prepared fresh daily (i.e., within 12 hours) can be used to treat the spill before covering with absorbent material and wiping up. After the bulk waste is wiped up, the surface should be disinfected as described in the section above).
5) Contaminated reusable patient care equipment should be placed in biohazard bags (double-bagged) and labeled for decontamination and disinfection.
6) Reusable equipment should be cleaned and disinfected according to manufacturer's instructions by appropriately trained personnel wearing correct PPE.
7) Avoid contamination of reusable porous surfaces that cannot be made single use. Use only a mattress and pillow with plastic or other covering that fluids cannot get through.
8) To reduce exposure, all potentially contaminated textiles (cloth products) should be discarded. This includes non-fluid-impermeable pillows or mattresses. They should be considered regulated medical waste and placed in biohazard red bags. They must be double-bagged prior to being placed into regulated medical waste containers.

## Pearls

- Ebola Information: **For a complete review of Ebola EMS Vehicle Disinfection go to:**
  **http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-emergency-medical-services-systems-911-public- safety-answering-points-management-patients-known-suspected-united-states.html**

## Disposition:

**ALS: All patients**

Special Circumstances Section



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# Suspected Viral Hemorrhagic Fever
# Ebola

Special Circumstances Section

Decedent Known or suspected carrier of HVF / Ebola Requires Transportation

**Only personnel trained in handling infected human remains, and wearing full PPE, should touch, or move any Ebola-infected remains.**
**Handling human remains should be kept to a minimum.**

Donning / Doffing PPE

PPE should be in place **BEFORE** contact with the body

1) Prior to contact with body, postmortem care personnel must wear PPE consisting of: surgical scrub suit, surgical cap, impervious Tyvex-Coveralls, eye protection (e.g., face shield, goggles), facemask, shoe covers, and double surgical gloves.

2) Additional PPE (leg coverings,) might be required in certain situations (e.g., copious amounts of blood, vomit, feces, or other body fluids that can contaminate the environment).

PPE should be removed immediately after and discarded as regulated medical waste.

1) Use caution when removing PPE as to avoid contaminating the wearer.

2) Hand hygiene (washing your hands thoroughly with soap and water or an alcohol based hand rub) should be performed immediately following the removal of PPE. If hands are visibly soiled, use soap and water.

Preparation of Body Prior to Transport

1) At the site of death, the body should be wrapped in a plastic shroud. Wrapping of the body should be done in a way that prevents contamination of the outside of the shroud.
2) Change your gown or gloves if they become heavily contaminated with blood or body fluids.
3) Leave any intravenous lines or endotracheal tubes that may be present in place.
4) Avoid washing or cleaning the body.
5) After wrapping, the body should be immediately placed in a leak-proof plastic bag not less than 150 µm thick and zippered closed The bagged body should then be placed in another leak-proof plastic bag not less than 150 µm thick and zippered closed before being transported to the morgue.

Surface Decontamination

1) Prior to transport to the morgue, perform surface decontamination of the corpse-containing body bags by removing visible soil on outer bag surfaces with EPA-registered disinfectants which can kill a wide range of viruses.
2) Follow the product's label instructions. Once the visible soil has been removed, reapply the disinfectant to the entire bag surface and allow to air dry.
3) Following the removal of the body, the patient room should be cleaned and disinfected.
4) Reusable equipment should be cleaned and disinfected according to standard procedures.

Transportation of VHV / Ebola Remains

PPE is required for individuals driving or riding in a vehicle carrying human remains. DO NOT handle the remains of a suspected / confirmed case of Ebola The remains must be safely contained in a body bag where the outer surface of the body bag has been disinfected prior to the transport.

**Pearls**

- Ebola Information: **For a complete review of Handling Remains of Ebola Infected Patients go to:**
  http://www.cdc.gov/vhf/ebola/hcp/guidance-safe-handling-human-remains-ebola-patients-us-hospitals-mortuaries.html



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# Suspected Viral Hemorrhagic Fever
# Ebola



## Pearls

- **Transmission to another individual is the greatest after a patient develops fever. Once there is fever, the viral load in the bodily fluids appears to be very high and thus a heightened level of PPE is required.**
- **Patient contact precautions are the most important consideration.**
- **Incubation period 2-21 days**
- **Ebola must be taken seriously; however using your training, protocols, procedures and proper Personal Protective Equipment (PPE), patients can be cared for safely.**
- When an infection does occur in humans, the virus can be spread in several ways to others. The virus is spread through direct contact (through broken skin or mucous membranes) with a sick person's blood or body fluids (urine, saliva, feces, vomit, and semen) objects (such as needles) that have been contaminated with infected body fluids.
- Limit the use of needles and other sharps as much as possible. All needles and sharps should be handled with extreme care and disposed in puncture-proof, sealed containers. Safety devices must be employed immediately after use.
- Ebola Information: **For a complete review of Ebola go to:**
  **http://www.cdc.gov/vhf/ebola/index.html**
  **http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-emergency-medical-services-systems-911-public-safety-answering- points-management-patients-known-suspected-united-states.html**



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# High Consequence Pathogens
## (Respiratory Diseases, SARS, MERS-CoV, Coronavirus)

**Evolving Protocol:**
Protocol subject to change at any time dependent on changing outbreak locations.

Monitor for protocol updates.

### EMS Dispatch Center Screening

1. Use Emerging Infectious Disease (EID) Surveillance Tool with the following chief complaints:
Fever Typical Flu-Like Symptoms, Respiratory Illness (cough, difficulty breathing)

2. Use EID Card (or equivalent) with the following protocols (or equivalent):
Breathing Problem  Chest Pain  Headache  Sick Person

3. Ask the following Medical Director Approved questions:
- Has the patient had close contact with a person being evaluated for or who has been confirmed to have Coronavirus?
- Has the patient been in contact with anyone with flu-like symptoms? (If so, when?)
- (Medical Facility Only) Is this an identified COVID-19 patient?
- (Medical Facility Only) Is this transport for further evaluation of possible Coronavirus?
- Does anyone in the residence have any flu-like symptoms?

4. Ask the following additional question:
- Does the patient have any of the following symptoms:
  - Measured body temperature ≥ 100.4* F
  - Fever (warm to the touch in room temperature)
  - Chills
  - Difficulty breathing or shortness of breath
  - Persistent cough
  - Any other new respiratory problems (e.g. persistent sneezing, wheezing, congestion)

Positive EMD Screening

**DO NOT DISPATCH FIRST RESPONDERS**
- Dispatch EMS Unit only.
- Ask caller to place a mask on patient if available.
- Minimize initial responder contact when possible

Negative EMD Screening

### EMS Screening

**Do not rely solely on EMD personnel to identify a potential exposure patient:**
- EMD may be constrained by time and caller information
- First arriving provider (FR or EMS):
  **Place a surgical mask on all patients**
  Stand at a distance of ≥ 6 feet and perform screening questions
  Patients with Fever and/or Cough (or other respiratory symptoms are at risk of influenza and/or COVID-19).
  Chills, muscle aches, sore throat, or sudden loss of taste or smell.
  **If patient screens positive:**
  Provider dons appropriate PPE based on clinical situation
- First Responders should stage and limit number of providers entering scene only necessary to care to limit potential exposure and use of PPE.

Exit to Appropriate Protocol(s)

Negative EMS Screening

Positive EMS Screening

**Place Simple/Surgical Mask on source patient (if not already worn)**

**PPE Supply Chain Disruptions:**
- Prioritize Gowns to aerosol-generating procedures.

EMS PPE

**Patient:**
- Use Non-rebreather mask if Oxygen needed
- If unable to tolerate mask, have patient cover mouth and nose when coughing

**Providers utilize:**
- Follow PPE precautions listed below:
- Eye protection
- N95 Mask (or higher) or PAPR for aerosol-producing treatments
- Exam Gloves
- Goggles (for aerosol-producing)
- Disposable Gown
- Create negative pressure in care compartment (See Pearls)

**Personnel in ambulance cab utilize:**
- Surgical mask for driver and passenger

EMS General Treatment Considerations

**Aerosol generating procedures:**
(NIPPV / Nebulizer therapy / Intubation / BIAD / Suctioning) / CPR
**Use all PPE devices and strategies listed above**
- **Notify receiving facility of infection control requirements prior to arrival.**

Exit to Appropriate Protocol(s)

Special Circumstances Section



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# High Consequence Pathogens

## (Respiratory Diseases, SARS, MERS-CoV, Coronavirus)



**Pearls**

***** Any Provider performing the initial assessment should consider wearing an N95 or higher, with goggles, to determine risk for exposure. If the patient is negative on EMS screening, utilize universal precautions, including surgical mask (or higher), and goggles for provider. All patients should be wearing a face mask during care and evaluation.*****

- **Dispatch Screening:**
  **If caller interview results in positive screen this only means first responders should not be sent. Remember this screening process will result in many False Positive screens in order to be very sensitive.**
- **EMS Screening:**
  **Limit distance initially to ≥ 6 feet and one provider (when possible) should conduct a secondary screening using both the EMD specific questions and EMS specific questions. If this results in a positive screen, then ALL providers should don appropriate PPE.**
- **Close Contact Definition:**
  **Healthcare provider exposure is defined as being within 6 feet for ≥ 10 minutes in a patient with suspected illness.**
  **Unprotected (no or incorrect PPE) direct contact with body fluids, including respiratory generated body fluids.**
- **Place simple/surgical mask on ALL patients.**
- **Transport:**
  **Occupants in cab of vehicle all should wear at least a simple/surgical mask.**
  **Limit number of providers in vehicle required to provide patient care in order to limit exposures.**
  **Ensure use of all PPE for crew and passengers when aerosol-producing procedures utilized.**
- **Negative Pressure in care compartment:**
  **Door or window available to separate driver's and care compartment space:**
  **Close door/window between driver's and care compartment and operate rear exhaust fan on full.**
  **No door or window available to separate driver's and care compartment space:**
  **Open outside air vent in driver's compartment and set rear exhaust fan to full.**
  **Set vehicle ventilation system to non-recirculating to bring in maximum outside air.**
  **Use recirculating HEPA ventilation system if equipped.**
- **Airborne precautions:**
  Standard PPE with fit-tested N95 mask (or PAPR respirator) and utilization of a gown, change of gloves after every patient contact, and strict hand washing precautions. This level is utilized with Aspergillus, SARS/MERS/COVID-19, Tuberculosis, Measles (rubeola) Chickenpox (varicella-zoster), Smallpox, Influenza, disseminated herpes zoster, or Adenovirus/Rhinovirus.
- **Contact precautions:**
  Standard PPE with utilization of a gown, change of gloves after every patient contact, and strict hand washing precautions.
  This level is utilized with GI complaints, blood or body fluids, C diff, scabies, wound and skin infections, MRSA.
  Clostridium difficile (C diff) is not inactivated by alcohol-based cleaners and washing with soap and water is indicated.
- **Droplet precautions:**
  Standard PPE plus a standard surgical mask for providers who accompany patients in the treatment compartment and a surgical mask or NRB O2 mask for the patient.
  This level is utilized when Influenza, Meningitis, Mumps, Streptococcal pharyngitis, Pertussis, Adenovirus, Rhinovirus, and undiagnosed rashes.
- **All-hazards precautions:**
  Standard PPE plus airborne precautions plus contact precautions.
  This level is utilized during the initial phases of an outbreak when the etiology of the infection is unknown or when the causative agent is found to be highly contagious (e.g. SARS, MERS-CoV, COVID-19).
- COVID-19 (Novel Coronavirus): **For most current criteria to guide evaluations of patients under investigation:**
  http://www.cdc.gov/coronavirus/2019-nCoV/clinical-criteria.html

## Disposition:

**EMS Transport: BLS:** Pulse Ox >92% on room air with no signs of respiratory distress, with normal mentation, ETCO2 >26, and Systolic BP > 90.

**ALS:** All patients that do not meet BLS Criteria



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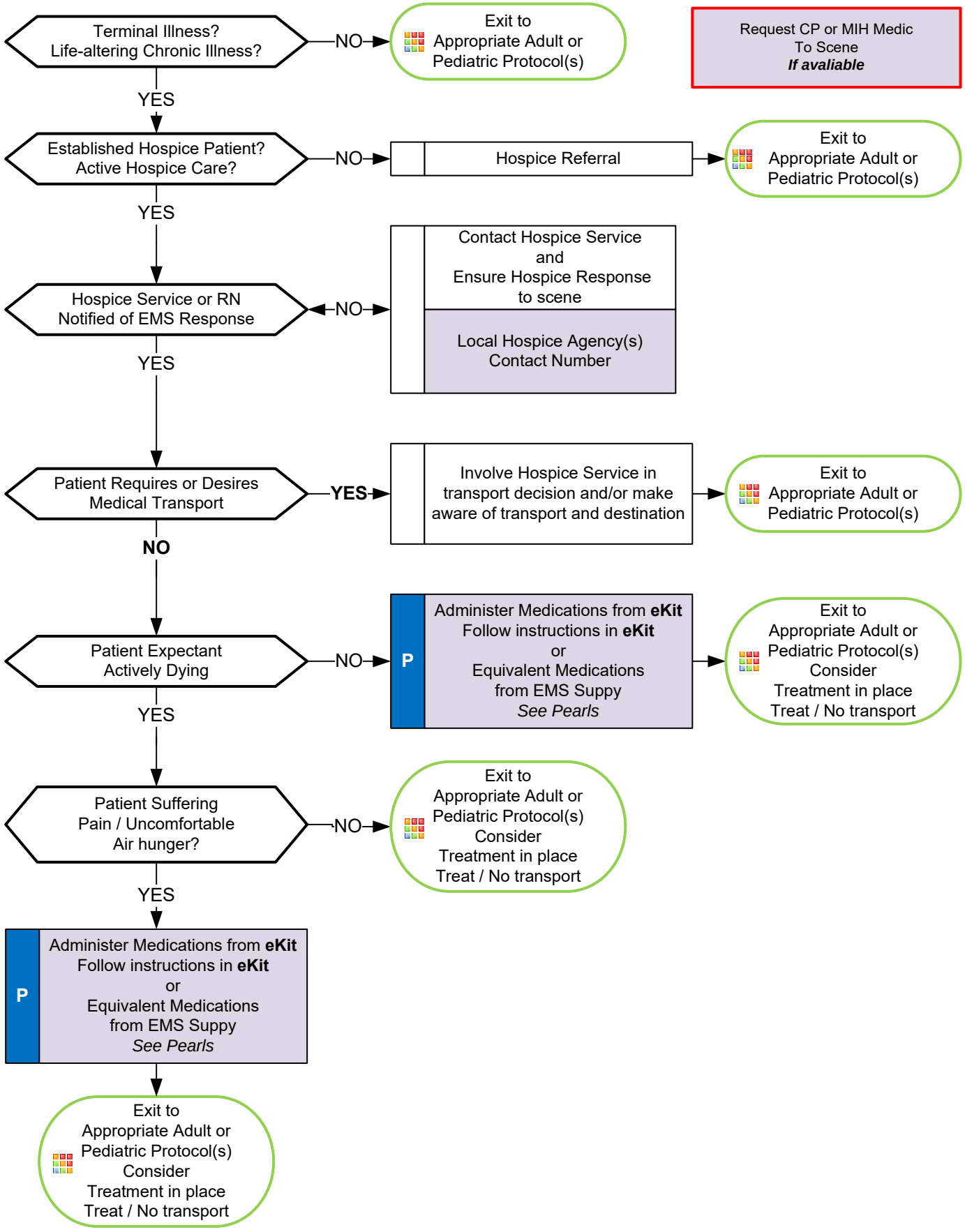
# Hospice or Palliative Care Patient



# Hospice or Palliative Care Patient

**Acute Pain / Air Hunger:**

| Severity | Medication | | |
|---|---|---|---|
| | Morphine (IV/IM/SQ) | Dilaudid (IV/IM/SQ) | Fentanyl (IV/IM/SQ) |
| Mild | 2 mg | 0.5 mg | 25 mcg |
| Moderate | 4 mg | 1 mg | 50 mcg |
| Severe | 8 mg | 2 mg | 100 mg |
| Titration | 2 mg q 15 minutes IV | 0.5 mg q 15 minutes IV | 25 mg q 15 minutes IV |

**Due to pain associated with IM injection, IM administration should only be used if alternative medications or routes of administration are not available. PICC lines may be accessed for use by EMS with sterile techniques. May access port-a-cath if appropriate equipment is available and provider is trained.**

**If using IM or SQ injections, delay repeat dosing by 30 minutes to prevent dose stacking.**

**Consider using moderate / severe dose in opiate tolerant patients:**

**Opiate tolerant patients have typical daily dose of narcotic is equivalent to ≥ 60 mg of oral Morphine per day (60 OME (Oral Morphine Equivalents).**

**Examples of opiate dosages equivalent to 60 mg of oral Morphine:**

- **40 mg/day of Oxycodone**
- **25 mcg/hr Fentanyl Transdermal**
- **200 mg/day of Tapentadol**
- **Suboxone**
- **60 mg/day Hydrocodone**
- **15 mg/day of Methadone**
- **16 mg/day of Oxymorphone**

**Consider total use of multiple types of opiates. If in doubt about the patient's level of opiate tolerance, or amount of total daily opiate use, treat with a lower initial dose of opiate.**

**Anxiety / Agitation:**

| Severity | Medication | | | |
|---|---|---|---|---|
| | Ativan (IV/IM/SQ) | Versed (IV/IM/SQ) | Valium (IV/IM/SQ) | Haldol (IV/IM/SQ) |
| Mild / Moderate | 0.5 mg | 1 mg | 2 mg | 2 mg |
| Severe | 1 mg | 2 mg | 5 mg | 4 mg |

**May repeat dose in 15 minutes for IV administration, or 30 minutes for IM or SQ injections.**

**Nausea / Vomiting:**

| Zofran IV / IM | Phenergan IV / IM | Haldol IV / IM / SQ | Ativan IV / IM / SQ |
|---|---|---|---|
| 4 mg | 25 mg | 2 mg | 0.5 mg |

Special Circumstances Section

## Pearls

- **MOST form Section A and DNR forms are equivalent – if valid, Do Not Resuscitate.**
- **MOST form and DNR forms may be revoked by Health Care Power of Attorney or other appropriate surrogate decision-makers.**
- **Palliative care is specialized care for patients with a chronic and/or terminal illness which focuses on managing symptoms exacerbation and the stress of illness.**
- **Hospice care is specialized care (similar to palliative care) for patients within the last 6 months of life.**
- **Hospice patient may not have a DNR or MOST form completed and still be enrolled in Hospice care.**
- **Emergency Kits (eKit):**
  **May be given to patient by Hospice to use at home for acute symptom exacerbation.**
  **Each eKit is individualized and will be different for each patient, but typically addresses pain, nausea/vomiting, anxiety, and/or secretions.** *(EMS is able to administer if within provider's scope of practice.)*
- **Interaction on-scene with Hospice personnel:**
  **Hospice nurses are valuable resources in helping patients/families make care/transport decisions.**
  **EMS should discuss care/transport decision with Hospice nurse.**
  **After medication administration, if not transport occurs, care may be transferred to Hospice nurse.**

# Pandemic CPR

## (Respiratory Diseases, SARS, MERS-CoV, COVID-19)

**AT ANY TIME**

**Return of Spontaneous Circulation**

**Go to Post Resuscitation Protocol AC 9**

**Criteria for Death / No Resuscitation**
**Review DNR / MOST Form**

YES

- Decomposition
- Rigor mortis
- Dependent lividity
- Blunt force trauma
- Injury incompatible with life
- Extended downtime with asystole

Do not begin resuscitation

NO

Don Full PPE to all Cardiac Arrest (gowns, gloves, goggles, and N95, SCBA or Particulate Respirator Mask)

### First Responders

***Begin Continuous CPR Compressions***
***Push Hard (≥ 2 inches)***
***Push Fast (110 - 120 / min)***
***Change Compressors every 2 minutes***
***(sooner if fatigued)***
***(Limit changes / pulse checks ≤ 10 seconds)***

Airway

If FR → Apply Non-Rebreather at 15 lpm

**CAUTION:**
**Stop compressions during placement of KING airway, for maximum of 30 seconds**

**DO NOT PERFORM BVM VENTILATIONS**

**Apply Viral Filter before ventilating**

If EMT → Place KING airway; If unable to place KING, then apply Non-Rebreather at 15 lpm

Apply Viral Filter to King airway

### EMS

Don Full PPE to all Cardiac Arrest (gowns, gloves, goggles, and N95 or Particulate Respirator Mask)

Airway

NRB Placed by FR →
- Place KING airway Apply Viral Filter (if not already applied)
- If KING placement is unsuccessful, perform ETI
- Once intubation is performed, attach viral filter and ETCO2 Monitoring PRIOR to ventilation

KING Placed by FR → Apply Viral Filter and End Tidal Monitoring to King Airway, then perform standard ventilation

**CAUTION:**
**Stop compressions during ETI, for maximum of 30 seconds**

**Minimize providers near head during intubation**

**If both King and ETI placement are unsuccessful, BVM Ventilations should be performed with an OPA and Viral Filter**

**Every attempt should be made to ensure a constant and tight mask seal to help prevent aerosolization**

LUCAS Device should be applied EARLY to limit First Responder presence; once applied, First Responders should leave the immediate area until such time as ROSC has been achieved to assist in moving the patient

Special Considerations Protocol Section



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**Pearls**

- **Team Focused Approach / Pit-Crew Approach recommended; assign responders to predetermined tasks. Refer to optional protocol or development of local agency protocol.**
- **Efforts should be directed at high quality and continuous compressions with limited interruptions and early defibrillation when indicated.**
- **DO NOT HYPERVENTILATE: If no advanced airway (BIAD, ETT) compression to ventilation ratio is 30:2. If advanced airway in place, ventilate 10 breaths per minute with continuous, uninterrupted compressions.**
- **Passive oxygenation optional in agencies practicing Team Focused Approach / Pit-Crew Approach.**
- Reassess and document BIAD and / or endotracheal tube placement and EtCO2 frequently, after every move, and at transfer of care.
- **IV / IO access and drug delivery is secondary to high-quality chest compressions and early defibrillation**.
- **Defibrillation:** Follow manufacture's recommendations concerning defibrillation / cardioversion energy when specified.
- **End Tidal CO2 (EtCO2)**
  If EtCO2 is < 10 mmHg, improve chest compressions.
  If EtCO2 spikes, typically > 40 mmHg, consider Return of Spontaneous Circulation (ROSC)
- **Special Considerations**
  **Maternal Arrest** - Treat mother per appropriate protocol with immediate notification to Medical Control and rapid transport preferably to obstetrical center if available and proximate. Place mother supine and perform Manual Left Uterine Displacement moving uterus to the patient's left side. IV/IO access preferably above diaphragm. Defibrillation is safe at all energy levels.
  **Renal Dialysis / Renal Failure** - Refer to Dialysis / Renal Failure protocol caveats when faced with dialysis / renal failure patient experiencing cardiac arrest.
  **Opioid Overdose** - Naloxone cannot be recommended in opioid-associated cardiac arrest. If suspected, attention to airway, oxygenation, and ventilation increase in importance. Naloxone is not associated with improved outcomes in cardiac arrest.
  **Drowning / Suffocation / Asphyxiation / Hanging / Lightning Strike** – Hypoxic associated cardiac arrest and prompt attention to airway and ventilation is priority followed by high-quality and continuous chest compressions and early defibrillation.
- **Transcutaneous Pacing:**
  Pacing is NOT effective in cardiac arrest and pacing in cardiac arrest does NOT increase chance of survival
- Success is based on proper planning and execution. Procedures require space and patient access. Make room to work.
- Discussion with Medical Control can be a valuable tool in developing a differential diagnosis and identifying possible treatment options.



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# Scene Rehabilitation: General (Optional)

Injury / Illness / Complaint should be treated using appropriate treatment protocol beyond need for oral or IV hydration.

**Initial Process**
1. Personnel logged into General Rehabilitation Section
2. VS Assessed / Recorded (If HR > 110 then obtain Temp)
   Carbon Monoxide monitoring if indicated
3. Personnel assessed for signs / symptoms
4. Remove PPE, Body Armor, Haz-Mat Suits, Turnout Gear, Other equipment as indicated

Significant Injury
Cardiac Complaint: Signs / Symptoms
Respiratory Complaint: Serious Signs / Symptoms
Respiratory Rate < 8 or > 40
Systolic Blood Pressure ≤ 80

YES → Exit to Scene Rehabilitation Responder Protocol

NO

Heat or Cold stress

YES → **HEAT STRESS**

**Active Cooling Measures**
Forearm immersion, cool shirts, cool mist fans etc.
Rest 10 – 20 Minutes

**Rehydration Techniques**
12 – 32 oz Oral Fluid over 20 minutes
*Oral Rehydration may occur along with Active Cooling Measures*
*Firefighters should consume 8 ounces of fluid between SCBA change-out*

YES → **COLD STRESS**

**Active Warming Measures**
Dry responder, place in warm area
Hot packs to axilla and / or groin
Rest 10 – 20 minutes

**Rehydration Techniques**
12 – 32 oz Oral Fluid over 20 minutes
*Oral Rehydration may occur along with Active Warming Measures*
*Firefighters should consume 8 ounces of fluid between SCBA change-out*

NO

Reassess responder after 20 Minutes in General Rehabilitation Section
Reassess VS

HR ≥ 110 — YES → Temp ≥ 100.6 — YES → Responder Cannot Wear Protective Gear

Extend Rehabilitation Time Until VS Improve

NO

Temp ≥ 100.6 — YES → HR ≥ 110 — YES → Extend Rehabilitation Time Until VS Improve

NO

Discharge Responder from General Rehabilitation Section

Reports for Reassignment

**VITAL SIGN CAVEATS**

***Blood Pressure:***
Prone to inaccuracy on scenes. Must be interpreted in context.

Firefighters have elevated blood pressure due to physical exertion and is not typically pathologic.

Firefighters with Systolic BP ≥ 160 or Diastolic BP ≥ 100 may need extended rehabilitation. However this does not necessarily prevent them from returning to duty.

***Temperature:***
Firefighters may have increased temperature during rehabilitation.

Special Operations Section



This protocol has been altered from the original NCCEP Protocol by the local EMS Medical Director

# Scene Rehabilitation: General (Optional)



Pearls

- **This protocol is optional and given only as an example. Agencies may and are encouraged to develop their own.**
- **Rehabilitation officer has full authority in deciding when responders may return to duty and may adjust rest / rehabilitation time frames depending on existing conditions.**
- **Rehabilitation goals:**
  - **Relief from climatic conditions.**
  - **Rest, recovery, and hydration prior to incident, during, and following incident.**
  - **Active and / or passive cooling or warming as needed for incident type and climate conditions.**
- **May be utilized with adult responders on fire, law enforcement, rescue, EMS and training scenes.**
- **Responders taking anti-histamines, blood pressure medication, diuretics or stimulants are at increased risk for cold and heat stress.**
- **General indications for rehabilitation:**
  - 20-minute rehabilitation following use of a second 30-minute SCBA, 45-minute SCBA or single 60-minute SCBA cylinder.
  - 20-minute rehabilitation following 40 minutes of intense work without SCBA.
- **General work-rest cycles:**
  - 10-minute self-rehabilitation following use of one 30-minute SCBA cylinder or performing 20 minutes of intense work without SCBA.
- **Serious signs / symptoms:**
  - Chest pain, dizziness, dyspnea, weakness, nausea, or headache.
  - Symptoms of heat stress (cramps) or cold stress.
  - Changes in gait, speech, or behavior.
  - Altered Mental Status.
  - Abnormal Vital Signs per agency SOP or Policy / Procedure.
- **Rehabilitation Section:**
  - Integral function within the Incident Management System.
  - Establish section such that it provides shelter / shade, privacy and freedom from smoke or other hazards
  - Large enough to accommodate expected number of personnel.
  - Separate area to remove PPE.
  - Accessible to EMS transport units and water supply.
  - Away from media agencies and spectators / bystanders.



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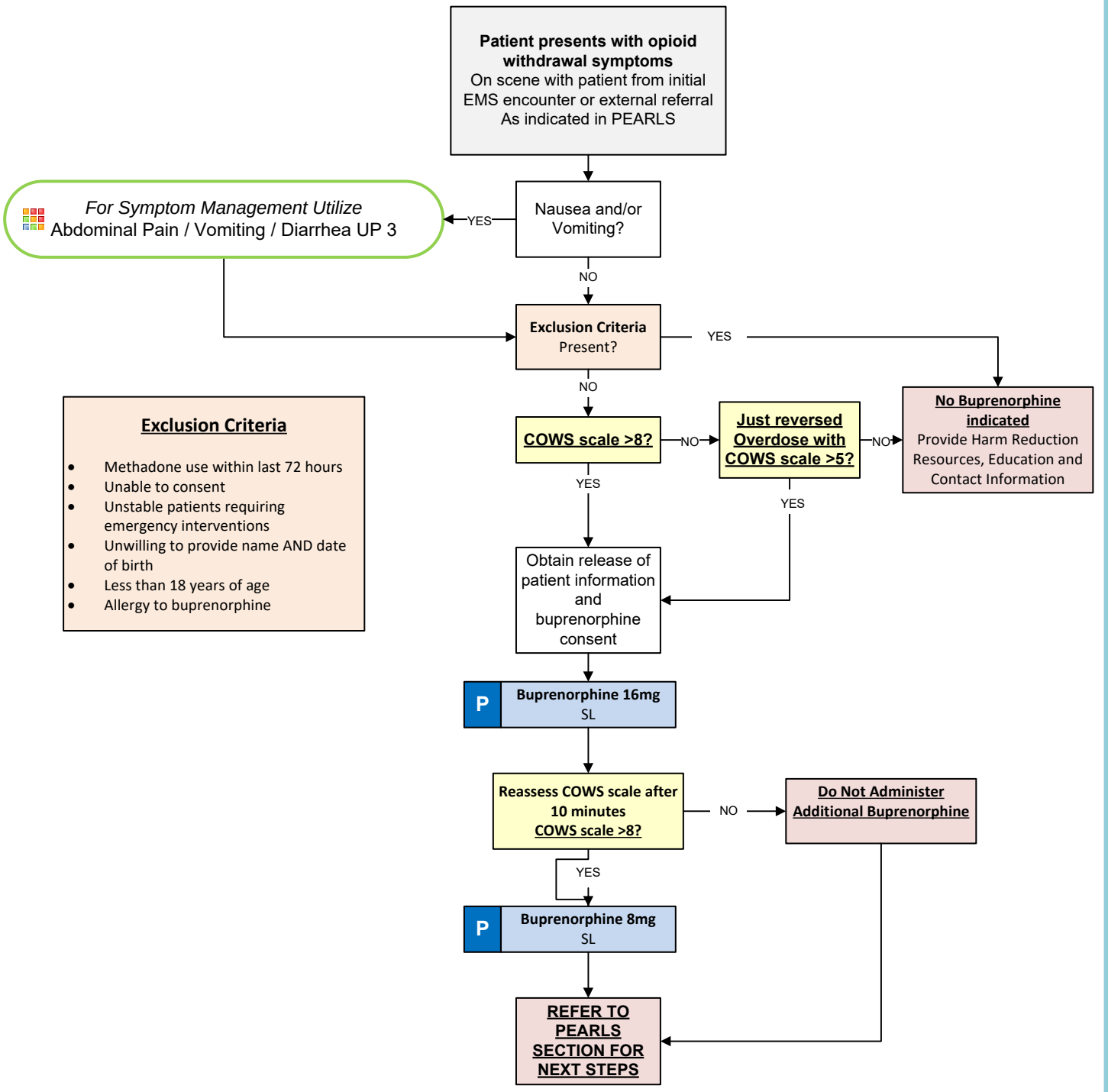
# MOUD Induction

## History
- Opiate use disorder
- Recent use of opiate (IV or oral)

## Signs and Symptoms
- Nausea/vomiting/diarrhea
- Chills
- Restlessness
- Mydriasis
- Body Aches
- Runny Nose

## Differential
- Viral of Bacterial Infection
- Opiate Withdrawal
- Alcohol Withdrawal




Community Paramedic Section

# COWS Clinical Opiate Withdrawal Scale

**Resting Pulse Rate** *Measured after patient is sitting or lying for one minute*

0 80 or less
1 81-100
2 101-120
4 Greater than 120

**GI Upset** *over last 1/2 hour*

0 No GI symptoms
1 Stomach cramps
2 Nausea or loose stool
3 Vomiting or diarrhea
5 Multiple episodes of diarrhea or vomiting

**Sweating** *over last 1/2 hour not accounted for by room temperature or patient activity*

0 No reports of chills or flushing
1 Subjective report of chills or flushing
2 Flushed or observable moistness on face
3 Beads of Sweat on brow or face
4 Sweat streaming off face

**Tremor** *observation of outstretched hands*

0 No tremor
1 Tremor can be felt, but not observed
2 Slight tremor observable
4 Gross tremor or muscle twitching

**Restlessness** *observation during assessment*

0 Able to sit still
1 Reports difficulty sitting still, but is able to do so
3 Frequent shifting or extraneous movements of legs/arms
5 Unable to sit still for more than a few seconds

**Yawning** *observation during assessment*

0 No yawning
1 Yawning once or twice during assessment
2 Yawning three or more times during assessment
4 Yawning several times/minute

**Pupil Size**

0 Pupils pinned or normal size for room light
1 Pupils possible larger than normal for room light
2 Pupils moderately dilated
5 Pupils so dilated that only the rim of iris is visible

**Anxiety or Irritability**

0 None
1 Patient reports increasing irritability or anxiousness
2 Patient obviously irritable or anxious
4 Patient so irritable or anxious that assessment participation is difficult

**Bone or Joint Aches** *If patient was having pain previously, only the additional component attributed to opiate withdrawal is scored*

0 Not present
1 Mild diffuse comfort
2 Patient reports severe diffuse aching of joints/muscles
4 Patient rubbing joints or muscles, unable to sit still because of discomfort

**Runny Nose or Tearing** *Not accounted for by cold symptoms or allergies*

0 Not present
1 Nasal stuffiness or unusually moist eyes
2 Nose running or tearing
4 Nose constantly running or tears streaming down cheeks

**Gooseflesh Skin**

0 Skin is smooth
3 Skin piloerection can be felt, or hairs standing up on arms
5 Prominent piloerection

**Total Score:** _____

*The total score is the sum of all 11 items*





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## MOUD Treatment Requests outside of active withdrawal

- **If a patient that is not in active withdrawal and is requesting MOUD continuation when a care gap occurs, confirmation of previous prescription details must be confirmed prior to initiating treatment.**

  **Due diligence must be conducted in an attempt to confirm this information.**

  - **If this information cannot be obtained or confirmed, ensure the patient is able to make contact with the PORT again when experiencing withdrawal.**
  - **Refer to the Community Risk Reduction – PORT policy for further details and treatment options.**
  - **If deviation from available increments of dosing is required to accommodate an existing prescription, contact the Medical Director directly for further guidance.**
  - **For patients who have abstained from opioids for several days and are no longer in opioid withdrawal, MOUD CAN be offered. The same exclusion criteria apply, and the induction dose for these patients is 8mg.**

# Childbirth

| | MR | |
|---|---|---|
| B | EMT | B |
| A | AEMT | A |
| P | PARAMEDIC | P |

**Clinical Indications:**

- Imminent delivery with crowning

**Procedure:**

1. Delivery should be controlled so as to allow a slow controlled delivery of the infant. This will prevent injury to the mother and infant.
2. Support the infant's head as needed.
3. Check the umbilical cord surrounding the neck. If it is present, slip it over the head. If unable to free the cord from the neck, double clamp the cord and cut between the clamps.
4. Suction the airway with a bulb syringe.
5. Grasping the head with hands over the ears, gently pull down to allow delivery of the anterior shoulder.
6. Gently pull up on the head to allow delivery of the posterior shoulder.
7. Slowly deliver the remainder of the infant.
8. Clamp the cord 2 inches from the abdomen with 2 clamps and cut the cord between the clamps.
9. Record APGAR scores at 1 and 5 minutes.
10. Follow the **Newly Born Protocol** for further treatment.
11. The placenta will deliver spontaneously, usually within 5 minutes of the infant. Do not force the placenta to deliver.
12. Massaging the uterus may facilitate delivery of the placenta and decrease bleeding by facilitating uterine contractions.
13. Continue transport to the hospital.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.



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# Irrigation

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Patient in need of irrigation for chemical exposure or limited thermal burns.

**Procedure (chemical exposure):**

1. Ensure appropriate personal protective equipment, including mask and gloves.
2. Remove as much dry chemical as possible by brushing and removing clothes.
3. While maintaining modesty and temperature of patient, flush chemical with copious water.
4. If the eyes are exposed, flush thoroughly and continuously with normal saline, flushing from the bridge of the nose outward toward the corner of the eye.
5. Monitor the patient for any possible effects of the exposure.
6. Notify ED as early as possible with chemical contaminate.

**Procedure (thermal or flame burn):**

1. Determine the approximate area burned (see appendix E).
2. Cover burned areas with a clean cloth dressing.
3. If body surface area burned is less than ten percent, apply cool water or saline to the burn dressings to cool the burned area.
4. Burned patients are susceptible to hypothermia. Use caution and maintain the patient's body temperature.
5. Monitor the patient for any adverse effects or signs of hypothermia.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate.

# North Carolina College of Emergency Physicians
## Standards Procedure (Skill)
# Decontamination

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Any patient who may have been exposed to significant hazardous materials, including chemical, biological, or radiological weapons.

**Procedure:**

1. In coordination with HazMAT and other Emergency Management personnel, establish hot, warm and cold zones of operation.
2. Ensure that personnel assigned to operate within each zone have proper personal protective equipment.
3. In coordination with other public safety personnel, assure each patient from the hot zone undergoes appropriate initial decontamination. This is specific to each incident; such decontamination may include:
    - Removal of patients from Hot Zone
    - Simple removal of clothing
    - Irrigation of eyes
    - Passage through high-volume water bath (e.g., between two fire apparatus) for patients contaminated with liquids or certain solids. Patients exposed to gases, vapors, and powders often will not require this step as it may unnecessarily delay treatment and/or increase dermal absorption of the agent(s).
4. Initial triage of patients should occur after step #3. Immediate life threats should be addressed prior to technical decontamination.
5. Assist patients with technical decontamination (unless contraindicated based on #3 above). This may include removal of all clothing and gentle cleansing with soap and water. All body areas should be thoroughly cleansed, although overly harsh scrubbing which could break the skin should be avoided.
6. Place triage identification on each patient. Match triage information with each patient's personal belongings which were removed during technical decontamination. Preserve these personnel affects for law enforcement.
7. Monitor all patients for environmental illness.
8. Transport patients per local protocol.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# Restraints: Physical

| | | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Any patient who may harm himself, herself, or others may be gently restrained to prevent injury to the patient or crew. This restraint must be in a humane manner and used only as a last resort. Other means to prevent injury to the patient or crew must be attempted first. These efforts could include reality orientation, distraction techniques, or other less restrictive therapeutic means. Physical or chemical restraint should be a last resort technique.

**Procedure:**

1. Attempt less restrictive means of managing the patient.
2. Request law enforcement assistance
3. Ensure that there are sufficient personnel available to physically restrain the patient safely.
4. Restrain the patient in a lateral or supine position. No devices such as backboards, splints, or other devices will be on top of the patient. The patient will never be restrained in the prone position.
5. The patient must be under constant observation by the EMS crew at all times. This includes direct visualization of the patient as well as cardiac and pulse oximetry monitoring.
6. The extremities that are restrained will have a circulation check at least every 15 minutes. The first of these checks should occur as soon after placement of the restraints as possible. This MUST be documented on the PCR.
7. Documentation on/with the patient care report (PCR) should include the reason for the use of restraints, the type of restraints used, and the time restraints were placed. Use of the Restraint Checklist is highly recommended.
8. If the above actions are unsuccessful, or if the patient is resisting the restraints, consider administering medications per protocol. (Chemical restraint may be considered earlier.)
9. If a patient is restrained by law enforcement personnel with handcuffs or other devices EMS personnel can not remove, a law enforcement officer must accompany the patient to the hospital in the transporting EMS vehicle.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

North Carolina College of Emergency Physicians
Standards Procedure (Skill)

# Gastric Tube Insertion

**Clinical Indications:**

P EMT- P P

- Gastric decompression in intubated patients

**Procedure:**

1. Estimate insertion length by superimposing the tube over the body from the nose to the stomach.
2. Flex the neck **if not contraindicated** to facilitate esophageal passage.
3. Liberally lubricate the distal end of the tube and pass through the patient's nostril along the floor of the nasal passage. Do not orient the tip upward into the turbinates. This increases the difficulty of the insertion and may cause bleeding.
4. In the setting of an intubated patient or a patient with facial trauma, oral insertion of the tube may be considered or preferred after securing airway.
5. Continue to advance the tube gently until the appropriate distance is reached.
6. Confirm placement by injecting 20cc of air and auscultate for the swish or bubbling of the air over the stomach. Additionally, aspirate gastric contents to confirm proper placement.
7. Secure the tube.
8. Decompress the stomach of air and food either by connecting the tube to suction or manually aspirating with the large catheter tip syringe.
9. Document the procedure, time, and result (success) on/with the patient care report (PCR).

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# Valsalva Manuever

**Clinical Indications:**

Patients with supraventricular tachycardia.

P EMT- P P

**Procedure:**

1. Oxygen and ECG monitoring must be established prior to performing Valsalva maneuvers. Emergency medications and equipment should be immediately available.
2. Record the ECG rhythm continuously while performing all vagal maneuvers.
3. Place the patient in a sitting or semi-sitting position with his or her head tilted down.
4. Instruct the patient to take a deep breath and to “bear down” as if to have a bowel movement.
5. The procedure may be repeated twice before moving to carotid sinus massage.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure.
  Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

North Carolina College of Emergency Physicians
Standards Procedure (Skill)

# Hyperthermia Cooling Procedure

| | MR | |
|---|---|---|
| B | EMT | B |
| A | AEMT | A |
| P | PARAMEDIC | P |

## Clinical Indications:

Rapid cooling with cold water immersion should be performed for patients with signs of heat stroke (core temperature > 104° F and altered mental status). Heat stroke is a time-sensitive diagnosis and rapid cooling is the definitive treatment. Rapid cooling takes priority over transport and aggressive cooling efforts should begin occur on-scene. This applies to both exertional heat stroke and classic heat stroke. This does not apply to potential medically-related causes of hyperthermia (thyroid storm, neuroleptic malignant syndrome, delirium tremens) which need urgent pharmacologic therapies for definitive treatment.

## Procedure:

1) Obtain core body temperature via rectal temperature. If 104° F or higher, proceed with cold water immersion procedure.
2) Remove patient's clothing as much as able while maintaining appropriate modesty.
3) Place patient inside disposable cooling bag (also known as a body bag) from the neck down, leaving the head outside of the bag. Placetowel roll or blanket under the head for comfort.
4) Fill bag with cool water and ice as available. Water can be sourced from a sink or hose on scene or potentially from fire hydrants if available and appropriate personnel are on hand to access.
5) Place patient on continuous EtCO2 measurement; place the monitor uphill to avoid any possibility of water exposure to the device.
6) If using water from fire hydrant, continuously flow water over the patient. If using a static supply of water, continuously stir the water by hand. Circulating the water helps maintain a water-to-skin temperature gradient and improves the rate of cooling.
7) Continue cool water immersion for 10 minutes.
8) After 10 minutes, remove patient from water immersion and recheck core temperature. Goal temperature is 102.5° or less. If goal temperature is met, dry the patient with towels and initiate transport. Drying the patient is important to help avoid over-correction, which can progress to hypothermia.
9) If core temperature remains above 102.5° after 10 minutes of immersion, contact medical control to discuss prolonged immersion versus transport. Do not transport patient while immersion procedure is ongoing.

## Certification Requirements:

Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# Nitronox (Nitrus Oxide) Procedure

| | | |
|---|---|---|
| B | EMT | B |
| A | AEMT | A |
| P | PARAMEDIC | P |

## Clinical Indications:

Nitrous oxide is an effective, fast-acting analgesic used in prehospital settings for managing pain in acute traumatic musculoskeletal injuries. Its self-administration mechanism allows patients to control their own pain relief without requiring invasive procedures like IV cannulation, making it especially useful in time-sensitive or resource-limited scenarios.

## Procedure:

1) **Unzip the case:** Open the top of the case and uncoil the oxygen inlet hose.
2) **Connect the external oxygen supply:** Attach the quick connect oxygen fitting to the external oxygen supply.
3) **Attach the gas supply hose:** Attach the mixture gas supply hose with demand valve and connect to the quick disconnect fitting on top of the mixer.
4) **Turn on oxygen and nitrous oxide supplies:** Turn on the oxygen supply and open the nitrous oxide cylinder valve by turning the knob counterclockwise.
5) **Check the pressure gauge:** Check the mixture pressure gauge. It should be between 30-35 PSI (within green band). Note: The pressure will decrease slightly during each breathing cycle.
6) **Attach mouthpiece:** Attach mouthpiece to the supply valve. Instruct the patient to breathe normally.
7) **Shut down after use:** After use, turn off all cylinder valves, disconnect the oxygen supply, clean the valve, and discard the mouthpiece.

## Contraindications:

Altered Mental Status, Inability to Follow Commands, Bowel obstruction, Hypotension, Pneumothorax, First Trimester Pregnancy, Significant respiratory compromise

## Warnings and Considerations:

- ***Patient may only self-administer inhaled medication***
- Discontinue use if ***patient reports worsening pain***, or if mixture pressure is continuously above or below the green band and / or if whistle alarm is heard continuously. This whistle is an indicator that the tank is empty, and needs to be changed.
- While unit is not in use, ensure that nitrous oxide cylinder is off and that the oxygen supply is disconnected or off.

## Documentation:

When documenting delivery, the dose value will be total time used by patient or total contact time after initiation of Nitrous Oxide.

## Certification Requirements:

Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

North Carolina College of Emergency Physicians
Standards Procedure (Skill)

# Airway: King® Airway

| | | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications for King® Airway:**

- Inability to adequately ventilate a patient with a Bag Valve Mask or longer EMS transport distances require a more advanced airway.
- Appropriate intubation is impossible due to patient access or difficult airway anatomy.
- Inability to secure an endotracheal tube in a patient who does not have a gag reflex where at least one failed intubation attempt has occurred.
- Patient must be unconscious.



Cuff Inflation by Size

**Size 3 – 50 mL**
**Size 4 – 70 mL**
**Size 5 – 80 mL**

**Contraindications**

- Responsive patients with an intact gag reflex
- Patients with known esophageal disease
- Patients who have ingested caustic substances

**Procedure:**

1. Preoxygenate and hyperventilate the patient.
2. Select the appropriate tube size for the patient.
3. Lubricate the tube.
4. Grasp the patient's tongue and jaw with your gloved hand and pull forward.
5. Gently insert the tube rotated laterally 45-90 degrees so that the blue orientation line is touching the corner of the mouth.
6. Once the tip is at the base of the tongue, rotate the tube back to midline. Insert the airway until the base of the connector is in line with the teeth and gums.
7. Inflate the pilot balloon with 45-90 ml of air depending on the size of the device used.
8. Ventilate the patient while gently withdrawing the airway until the patient is easily ventilated.
9. Auscultate for breath sounds and sounds over the epigastrium and look for the chest to rise and fall.
10. The large pharyngeal balloon secures the device.
11. Confirm tube placement using end-tidal $CO_2$ detector.
12. **It is strongly recommended that the airway be monitored continuously through Capnography and Pulse Oximetry.**
13. **It is strongly recommended that an Airway Evaluation Form be completed with any BIAD use.**

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System. Assessment should include direct observation at least once per certification cycle.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# North Carolina College of Emergency Physicians
## Standards Procedure (Skill)
# Airway: BLS Airway

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Patient with need for supplemental oxygenation, assisted ventilation, or basic airway protective measures.

**Procedure:**

- Provide supplemental oxygen to patients through a device appropriate for the desired concentration of oxygen: Nasal cannula for low-concentration, partial rebreather mask for high-concentration. Set the oxygen flow to a rate designed for the delivery device: 1-6 liters per minute for nasal cannula, 8 or more liters per minute for a mask.
- Assist ventilations for patients who are not adequately ventilating themselves or who are having difficulty adequately ventilating themselves.
- Use a bag-valve-mask device with a face mask of appropriate size for the patient.
- Connect the BVM to high-flow oxygen. Rescuer one should position themselves at the patient's head.
- Hold the mask securely over the mouth and nose of the patient by compressing the mask against the face using the heel of both hands while performing a jaw thrust with the fingers of both hands.
- If assisting a spontaneously breathing patient, match your rate of ventilations to the patient's intrinsic respiratory rate.
- If ventilating a non-breathing patient, ventilate at a rate of 8-10 full ventilations per minute for an adult patient or 20 full ventilations per minute (q 3 sec) for an infant or child.
- End tidal $CO_2$ (ETCO2) monitoring, when available, should be applied whenever patients are being ventilated. Target ETCO2 of 35-45.
- Protect the airway of patients that are unresponsive or have an altered level of consciousness.
- Attempt to place an appropriately sized oral airway, using an approved method of insertion. If the patient has a gag reflex, do not place the oral airway.
- Attempt to place an appropriately sized and lubricated nasal airway.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# North Carolina College of Emergency Physicians
## Standards Procedure (Skill)
# Airway: CPAP

| | | |
|---|---|---|
| B | EMT | B |
| A | EMT-A | A |
| P | EMT- P | P |

**Clinical Indications for Continuous Positive Airway Pressure (CPAP) Use:**

- CPAP is indicated in spontaneously breathing adult patients (and pediatrics large enough to obtain an adequate face mask seal) in whom inadequate ventilation is suspected. This could be as a result of pulmonary edema, pneumonia, COPD, asthma, etc.

**Clinical Contraindications for Continuous Positive Airway Pressure (CPAP) Use:**

- Decreased Mental Status.
- Facial features or deformities that prevent an adequate mask seal.
- Excessive respiratory secretions.

**Procedure:**

1. Ensure adequate oxygen supply to ventilation device.
2. Explain the procedure to the patient.
3. Place the delivery mask over the mouth and nose. Oxygen should be flowing through the device at this point. It is preferable to roll the mask from the chin to the nose for an optimal seal, allowing the patient to hold the mask until it is in the position of comfort with psychological reassurance.
4. Adjust the forehead bar and pull the mesh cap over the patient's head. Snap the mesh cap in place, adjusting one side at a time, for comfort and to ensure minimal air leakage.
5. If the Positive End Expiratory Pressure (PEEP) is adjustable on the CPAP device adjust the PEEP to 10 $cmH_20$ of pressure.
6. Evaluate the response of the patient assessing breath sounds, oxygen saturation, and general appearance.
7. Utilize End Tidal CO2 monitoring in all patients with CPAP use.
8. If indicated by protocol, attach in-line nebulizer to provide treatment.
9. Encourage the patient to allow forced ventilation to occur. Observe closely for signs of complications. If the patient does not tolerate CPAP, consider reducing PEEP.
10. Document time and response on patient care report (PCR).

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

# Airway: Cricothyrotomy-Surgical

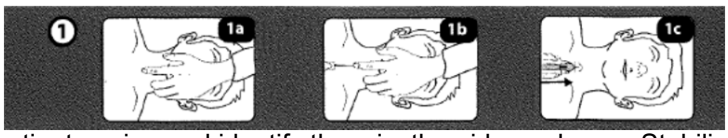
**Clinical Indications:**

P PARAMEDIC P

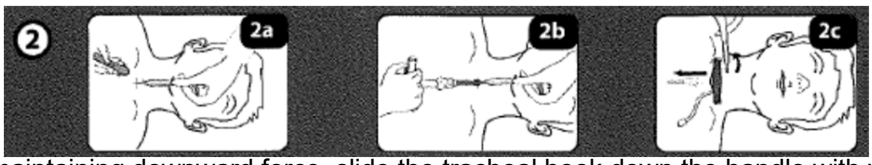
- Failed Airway Protocol
- Management of an airway when standard airway procedures cannot be performed or have failed in a patient ≥ 12 years old.

## Procedure:

A. Have suction and supplies available and ready.
B. Prep the area with an antiseptic swab (Betadine).




1a. Position patient supine and identify the cricothyroid membrane. Stabilize larynx with thumb and middle finger of non-dominant hand.
1b. Use the Cric-Knife to incise skin. A vertical skin incision from mid-thyroid cartilage to the cricoid cartilage is recommended (usually 2 finger widths). A horizontal skin incision may be used when landmarks are evident.
1c. After palpating the cricothyroid membrane, turn the cric-knife to a horizontal position over the cricothyroid membrane. Push the blade downward, perpendicular to the treachea, until the blade is fully inserted and the airway is entered.




2a. While maintaining downward force, slide the tracheal hook down the handle with your thumb until the hook is felt to enter the trachea, and it disengages from the handle. Grab the tracheal hook with the non-dominant hand, lifting up on the thyroid cartilage.
2b. Insert Cric-Key through incision. Confirm placement by moving the device along anterior wall of trachea to feel for the tracheal rings. Indicators of incorrect placement could be: tenting of skin, difficulty advancing Cric-Key tube, or lack of tactile feedback from tracheal rings.
2c. Once Placement has been confirmed, advance Cric-Key tue to the flange. Stabilize the Cric-Key tube and pivot the tracheal hook toward the patient's shoulder to remove from airway.




3a. While stabilizing the Cric-Key tube, remove the Cric-Key introducer. Inflate the cuff until resistance is met.
3b. Confirm Placement using the standard assessment techniques for insuring tube placement should be performed (auscultation, chest rise & fall, end-tidal $CO_2$ detector, etc.) Esophageal bulb devices are not accurate with this procedure. Then secure the tube
3c. Attach end tidal carbon dioxide monitoring (Capnography) and Bag-Valve-Mask. Ventilate.

**4. Capnography verification and monitoring is mandatory for this procedure**.
5. Document time, result (success), and placement location bon/with the patient care report (PCR). Document all devices used to confirm initial tube placement and after each movement of the patient.
6. Consider placing an NG or OG tube to clear stomach contents after the airway is secured.
**7. It is strongly recommended that an Airway Evaluation Form be completed with all intubations**

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

# North Carolina College of Emergency Physicians
## Standards Procedure (Skill)
# Airway: Endotracheal Tube Introducer (Bougie)

**Clinical Indications:**

- Patients meet clinical indications for oral intubation
- Initial intubation attempt(s) unsuccessful
- Predicted difficult intubation

| | | |
|---|---|---|
| I | EMT- I | I |
| P | EMT- P | P |

**Contraindications:**

- Three attempts at orotracheal intubation (utilize failed airway protocol)
- Age less than eight (8) or ETT size less than 6.5 mm

**Procedure:**

1. Prepare, position and oxygenate the patient with 100% oxygen;
2. Select proper ET tube without stylet, test cuff and prepare suction;
3. Lubricate the distal end and cuff of the endotracheal tube (ETT) and the distal 1/2 of the Endotracheal Tube Introducer (Bougie) (note: Failure to lubricate the Bougie and the ETT may result in being unable to pass the ETT);
4. Using laryngoscopic techniques, visualize the vocal cords if possible using Sellick's/BURP as needed;
5. Introduce the Bougie with curved tip anteriorly and visualize the tip passing the vocal cords or above the arytenoids if the cords cannot be visualized;
6. Once inserted, gently advance the Bougie until you meet resistance or "hold-up" (if you do not meet resistance you have a probable esophageal intubation and insertion should be re-attempted or the failed airway protocol implemented as indicated);
7. Withdraw the Bougie ONLY to a depth sufficient to allow loading of the ETT while maintaining proximal control of the Bougie;
8. Gently advance the Bougie and loaded ET tube until you have hold-up again, thereby assuring tracheal placement and minimizing the risk of accidental displacement of the Bougie;
9. While maintaining a firm grasp on the proximal Bougie, introduce the ET tube over the Bougie passing the tube to its appropriate depth;
10. If you are unable to advance the ETT into the trachea and the Bougie and ETT are adequately lubricated, withdraw the ETT slightly and rotate the ETT 90 degrees COUNTER clockwise to turn the bevel of the ETT posteriorly. If this technique fails to facilitate passing of the ETT you may attempt direct laryngoscopy while advancing the ETT(this will require an assistant to maintain the position of the Bougie and, if so desired, advance the ETT);
11. Once the ETT is correctly placed, hold the ET tube securely and remove the Bougie;
12. Confirm tracheal placement according to the intubation protocol, inflate the cuff with 3 to 10 cc of air, auscultate for equal breath sounds and reposition accordingly;
13. When final position is determined secure the ET tube, reassess breath sounds, apply end tidal CO2 monitor, and record and monitor readings to assure continued tracheal intubation.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System. Assessment should include direct observation at least once per certification cycle.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

North Carolina College of Emergency Physicians
Standards Procedure (Skill)

# Airway:
# Foreign Body Obstruction

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Sudden onset of respiratory distress often with coughing, wheezing, gagging, or stridor due to a foreign-body obstruction of the upper airway.

**Procedure:**

1. Assess the degree of foreign body obstruction
   - Do not interfere with a mild obstruction allowing the patient to clear their airway by coughing.
   - In severe foreign-body obstructions, the patient may not be able to make a sound. The victim my clutch his/her neck in the universal choking sign.
2. **For an infant**, deliver 5 back blows (slaps) followed by 5 chest thrusts repeatedly until the object is expelled or the victim becomes unresponsive.
3. **For a child**, perform a subdiaphragmatic abdominal thrust (Heimlich Maneuver) until the object is expelled or the victim becomes unresponsive.
4. **For adults**, a combination of maneuvers may be required.
   - First, subdiaphragmatic abdominal thrusts (Heimlich Maneuver) should be used in rapid sequence until the obstruction is relieved.
   - If abdominal thrusts are ineffective, chest thrusts should be used. Chest thrusts should be used primarily in morbidly obese patients and in the patients who are in the late stages of pregnancy
5. If the victim becomes unresponsive, begin CPR immediately but look in the mouth before administering any ventilations. If a foreign-body is visible, remove it.
6. **Do not perform blind finger sweeps in the mouth and posterior pharynx. This may push the object farther into the airway.**
7. In unresponsive patients, EMT-Intermediate and EMT-Paramedic level professionals should visualize the posterior pharynx with a laryngoscope to potentially identify and remove the foreign-body using Magil forceps.
8. Document the methods used and result of these procedures in the patient care report (PCR).

**Certification Requirements:**

Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# Airway: Infant Meconium Aspiration

| | | |
|---|---|---|
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

Meconium is present in the amniotic fluid of a baby being delivered and the infant is not vigorous.

**Procedure:**

1. If amniotic fluid is known to contain meconium prior to delivery, prepare all equipment beforehand.
2. If meconium is discovered at the time of delivery, you must work quickly to reduce the chance of meconium aspiration syndrome.
3. If the meconium is thick (pea soup) rather than thin (watery), then the infant should be orally intubated.
4. A meconium aspirator should be attached to the endotracheal tube and connected to suction. The hole in the aspirator should be covered to apply suction to the ETT, and the ET should be slowly withdrawn from the trachea under continuous suction.
5. If the infant has been intubated and suctioned, a repeat intubation and suction with an ETT may be necessary if there is copious thick meconium present.
6. When the infant's condition is unstable, it may not be possible to clear the trachea of all meconium before positive pressure ventilation must be initiated.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# North Carolina College of Emergency Physicians
# Standards Procedure (Skill)
# Airway Intubation Confirmation – End-Tidal $CO_2$ Detector

| | | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- The End-Tidal $CO_2$ detector shall be used with any Endotracheal Tube or Blind Insertion Airway Device use.

**It is strongly recommended that continuous Capnography be used in place of or in addition to the use of an End-Tidal $CO_2$ detector.**

**Procedure:**

1. Attach End-Tidal $CO_2$ detector to the Blind Insertion Airway Device or the Endotracheal Tube.
2. Note color change. A color change or $CO_2$ detection will be documented on each respiratory failure or cardiac arrest patient.
3. The $CO_2$ detector shall remain in place with the airway and monitored throughout the prehospital care and transport unless continuous Capnography is used. Any loss of $CO_2$ detection or color change is to be documented and monitored as procedures are done to verify or correct the airway problem.
4. Tube placement should be verified frequently and always with each patient move or loss of color change in the End-Tidal $CO_2$ detector.
5. Document the procedure and the results on/with the Patient Care Report (PCR) as well as on the Airway Evaluation Form.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# North Carolina College of Emergency Physicians
## Standards Procedure (Skill)
# Airway: Intubation Nasotracheal

| | | |
|---|---|---|
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- A spontaneously breathing patient in need of intubation (inadequate respiratory effort, evidence of hypoxia or carbon dioxide retention, or need for airway protection).
- Rigidity or clenched teeth prohibiting other airway procedures.
- Patient must be 12 years of age or older.

**Procedure:**

1. Don appropriate PPE.
2. Pre-medicate the patient with nasal spray.
3. Select the largest and least obstructed nostril and insert a lubricated nasal airway to help dilate the nasal passage.
4. Pre-oxygenate the patient. Lubricate the tube. The use of a BAAM device is recommended.
5. Remove the nasal airway and gently insert the tube keeping the bevel of the tube toward the septum.
6. Continue to pass the tube listening for air movement and looking for to and fro vapor condensation in the tube. As the tube approaches the larynx, the air movement gets louder.
7. Gently and evenly advance the tube through the glottic opening on the inspiration. This facilitates passage of the tube and reduces the incidence of trauma to the vocal cords.
8. Upon entering the trachea, the tube may cause the patient to cough, buck, strain, or gag. Do not remove the tube! This is normal, but be prepared to control the cervical spine and the patient, and be alert for vomiting.
9. Auscultate for bilaterally equal breath sounds and absence of sounds of the epigastrium. Observe for symmetrical chest expansion. The 15mm adapter usually rests close to the nostril with proper positioning.
10. Inflate the cuff with 5-10 cc of air.
11. **Confirm tube placement using end-tidal CO2 monitoring.**
12. Secure the tube.
13. Reassess airway and breath sounds after transfer to the stretcher and during transport. These tubes are easily dislodged and require close monitoring and frequent reassessment.
14. Document the procedure, time, and result (success) on/with the patient care report (PCR).
15. **It is strongly recommended that the airway (if equipment is available) be monitored continuously through Capnography and Pulse Oximetry.**
16. **It is strongly recommended that an Airway Evaluation Form be completed with all intubations**

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# Cardiac: Synchronized Cardioversion Checklist

**Clinical Indications:**

P EMT- P P

- Inability to adequately ventilate a patient with a Bag Valve Mask or longer EMS transport distances require a more advanced airway.
- An unconscious patient without a gag reflex who is apneic or is demonstrating inadequate respiratory effort.
- A component of Drug Assisted Intubation

**Procedure:**

1. Prepare, position and oxygenate the patient with 100% Oxygen.
2. Select proper ET tube (and stylette, if used), have suction ready.
3. Using laryngoscope, visualize vocal cords. (Use Sellick maneuver/BURP to assist you).
4. Limit each intubation attempt to 30 seconds with BVM between attempts.
5. Visualize tube passing through vocal cords.
6. **Confirm and document tube placement using an end-tidal $CO_2$ monitoring.**
7. Inflate the cuff with 3-to10 cc of air; secure the tube to the patient's face.
8. Auscultate bilaterally for equal breath sounds and absence of sounds over the epigastrium. If you are unsure of placement, remove tube and ventilate patient with bag- valve mask.
9. Consider using a Blind Insertion Airway Device if intubation efforts are unsuccessful.
10. If Available apply end tidal carbon dioxide monitor (Capnography) and record readings on scene, en route to the hospital, and at the hospital.
11. Document ETT size, time, result (success), and placement location by the centimeter marks either at the patient's teeth or lips on/with the patient care report (PCR). Document all devices used to confirm initial tube placement. Also document positive or negative breath sounds before and after each movement of the patient.
12. Consider placing an NG or OG tube to clear stomach contents after the airway is secured with an ET tube.
13. **Continuous End-tidal (EtCO2) monitoring is mandatory following placement of an endotracheal tube and document at least every 5 minutes.**
14. **It is strongly recommended that an Airway Evaluation Form be completed with all intubations**

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System. Assessment should include direct observation at least once per certification cycle.

North Carolina College of Emergency Physicians
Standards Procedure (Skill)

# Airway: Video Laryngoscopy

**P** EMT- P **P**

## Clinical Indications:

- Post Resuscitation Airway Management
- Inability to adequately ventilate a patient with a Bag Valve Mask or longer EMS transport distances require a more advanced airway.
- An unconscious patient without a gag reflex who is apneic or is demonstrating inadequate respiratory effort.
- Foreign Body Airway Obstruction which cannot be visualized with a laryngoscope blade in a patient with no gag reflex.
- Any intubation attempt under the Adult, Failed Airway protocol

## Contraindications:

- Pediatric patients and/or adult patients who require less than a 6.0 Endotracheal Tube (ETT) and/or have a mouth opening less than 17mm.
- Adequate ventilation/oxygenation is provided with a BVM without assistance of an advanced airway.
- Any patient with an intact gag reflex

## Procedure:

1. Prepare, position and oxygenate the patient with 100% Oxygen.
2. Select proper ET tube have suction ready.
3. Select the appropriate size laryngoscope blade based on the size of the ETT being used.
4. Turn on the light of the Airtraq Laryngoscope blade. The laryngoscope light will blink as it is warming and then will become steady once it is ready.
5. Remove the eyepiece from the laryngoscope blade and attach the camera to the proximal end of the laryngoscope blade. The camera will automatically turn on.
6. Ensure that the ETT does not have a stylet and lubricate the ETT with surgical lubricant before placing it into the lateral channel of the laryngoscope blade.
7. Align the tip of the ETT with the end of the lateral channel being careful not obstruct the view with the distal balloon.
8. Hold the laryngoscope camera by placing the thumb on the front of the blade just below where the camera attaches. Place the index and middle finger on the back of the blade just below the Airtraq logo. This is the three finger finesse technique.
9. Insert the laryngoscope blade into the midline of the patient's mouth being careful not to insert the blade too deeply.
10. Insert the blade until the epiglottis is visualized. The blade may then be placed in the vallecula (Macintosh Style) or under the epiglottis (Miller Style).
11. Gently lift up on the laryngoscope blade to expose the vocal cords.
12. Move the laryngoscope blade to align the vocal cords in the center of the visual field. Fluids in the oropharynx can distort or obscure the visual field of the camera. To clear the visual field attempt suction, if unsuccessful follow the Adult Airway Protocol (AR-1).

# Airway: Video Laryngoscopy

| P | EMT- P | P |
|---|---|---|

13.Gently advance the ETT through the lateral channel of the blade through the vocal cords and continue to advance the ETT to the appropriate depth.
14. Maintain ETT securely in position and inflate the distal balloon with 7–10ml of air.
15. Maintain ETT securely in position and remove the ETT from the lateral channel by pushing the ETT to the right corner of the mouth. Remove the blade following the midline.
16. Confirm ETT placement by auscultating for bilaterally equal breath sounds and the absence of breath sounds over the epigastrium and End-Tidal capnography waveform. If placement cannot be confirmed then remove the ETT and ventilate the patient with a bag-valve mask and follow the Adult-Failed Airway Protocol (AR-2).
**15. Monitor the airway with continuous waveform capnography and pulse oximetry.record readings on scene, en route, to the hospital, and at the hospital.**
16.Document ETT size, time, result (success), and placement location by the centimeter marks either at the patient's teeth or lips on/with the patient care report (PCR). Document all devices used to confirm initial tube placement. Also document positive or negative breath sounds before and after each movement of the patient.
17. Consider placing an NG or OG tube to clear stomach contents after the airway is secured with an ET tube.
18. All recordings shall be saved to the appropriate location as designated by the Quality Assurance (QA) Coordinator and/or their designee. Failure to record an attempt shall be reported to the QA Coordinator and/or their designee as soon as possible.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System. Assessment should include direct observation at least once per certification cycle.

# Airway – Nebulizer Inhalation Therapy

**Clinical Indications:**

| | | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

- Patients experiencing bronchospasm.

**Procedure:**

1. Gather the necessary equipment.
2. Assemble the nebulizer kit.
3. Instill the premixed drug (such as Albuterol or other approved drug) into the reservoir well of the nebulizer.
4. Connect the nebulizer device to oxygen at 4 - 6 liters per minute or adequate flow to produce a steady, visible mist.
5. Instruct the patient to inhale normally through the mouthpiece of the nebulizer. The patient needs to have a good lip seal around the mouthpiece.
6. The treatment should last until the solution is depleted. Tapping the reservoir well near the end of the treatment will assist in utilizing all of the solution.
7. Monitor the patient for medication effects. This should include the patient's assessment of his/her response to the treatment and reassessment of vital signs, ECG, and breath sounds.
8. Assess and document peak flows before and after nebulizer treatments.
9. Document the treatment, dose, and route on/with the patient care report (PCR).

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# Airway: Suctioning-Advanced

| | | |
|---|---|---|
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Obstruction of the airway (secondary to secretions, blood, or any other substance) in a patient currently being assisted by an airway adjunct such as a naso-tracheal tube, endotracheal tube, Combitube, tracheostomy tube, or a cricothyrotomy tube.

**Procedure:**

1. Ensure suction device is in proper working order.
2. Preoxygenate the patient as is possible.
3. Attach suction catheter to suction device, keeping sterile plastic covering over catheter.
4. Using the suprasternal notch and the end of the airway into the catheter will be placed as guides, measure the depth desired for the catheter (judgment must be used regarding the depth of suctioning with cricothyrotomy and tracheostomy tubes).
5. If applicable, remove ventilation devices from the airway.
6. With the thumb port of the catheter uncovered, insert the catheter through the airway device.
7. Once the desired depth (measured in #4 above) has been reached, occlude the thumb port and remove the suction catheter slowly.
8. A small amount of Normal Saline (10 ml) may be used if needed to loosen secretions for suctioning.
9. Reattach ventilation device (e.g., bag-valve mask) and ventilate the patient
10. Document time and result in the patient care report (PCR).

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# Airway: Suctioning-Basic

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Obstruction of the airway (secondary to secretions, blood, or any other substance) in a patient who cannot maintain or keep the airway clear.

**Procedure:**

1. Ensure suction device is in proper working order with suction tip in place.
2. Preoxygenate the patient as is possible.
3. Explain the procedure to the patient if they are coherent.
4. Examine the oropharynx and remove any potential foreign bodies or material which may occlude the airway if dislodged by the suction device.
5. If applicable, remove ventilation devices from the airway.
6. Use the suction device to remove any secretions, blood, or other substance.
7. The alert patient may assist with this procedure.
8. Reattach ventilation device (e.g., bag-valve mask) and ventilate or assist the patient
9. Record the time and result of the suctioning in the patient care report (PCR).

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# Airway: Tracheostomy Tube Change

| | | |
|---|---|---|
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Presence of Tracheostomy site.
- Urgent or emergent indication to change the tube, such as obstruction that will not clear with suction, dislodgement, or inability to oxygenate/ventilate the patient without other obvious explanation.

**Procedure:**

1. Have all airway equipment prepared for standard airway management, including equipment of orotracheal intubation and failed airway.
2. Have airway device (endotracheal tube or tracheostomy tube) of the same size as the tracheostomy tube currently in place as well as 0.5 size smaller available (e.g., if the patient has a #6.0 Shilley, then have a 6.0 and a 5.5 tube).
3. Lubricate the replacement tube(s) and check the cuff.
4. Remove the tracheostomy tube from mechanical ventilation devices and use a bag-valve apparatus to pre-oxygenate the patient as much as possible.
5. Once all equipment is in place, remove devices securing the tracheostomy tube, including sutures and/or supporting bandages.
6. If applicable, deflate the cuff on the tube. If unable to aspirate air with a syringe, cut the balloon off to allow the cuff to lose pressure.
7. Remove the tracheostomy tube.
8. Insert the replacement tube. Confirm placement via standard measures except for esophageal detection (which is ineffective for surgical airways).
9. If there is any difficultly placing the tube, re-attempt procedure with the smaller tube.
10. If difficulty is still encountered, use standard airway procedures such as oral bag-valve mask or endotracheal intubation (as per protocol). **More difficulty with tube changing can be anticipated for tracheostomy sites that are immature – i.e., less than two weeks old. Great caution should be exercised in attempts to change immature tracheotomy sites.**
11. Document procedure, confirmation, patient response, and any complications in the PCR

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System. Assessment for this skill should include direct observation at least once per certification cycle.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

Standard Procedure (Skill) Universal Care Section

# Nasopharyngeal Specimen Collection

| | |
|---|---|
| Agency Name: | |
| Provider Name: | Paramedic |
| Instructor Name: | EMT AEMT Paramedic Physician |

SATISFACTORY ☐

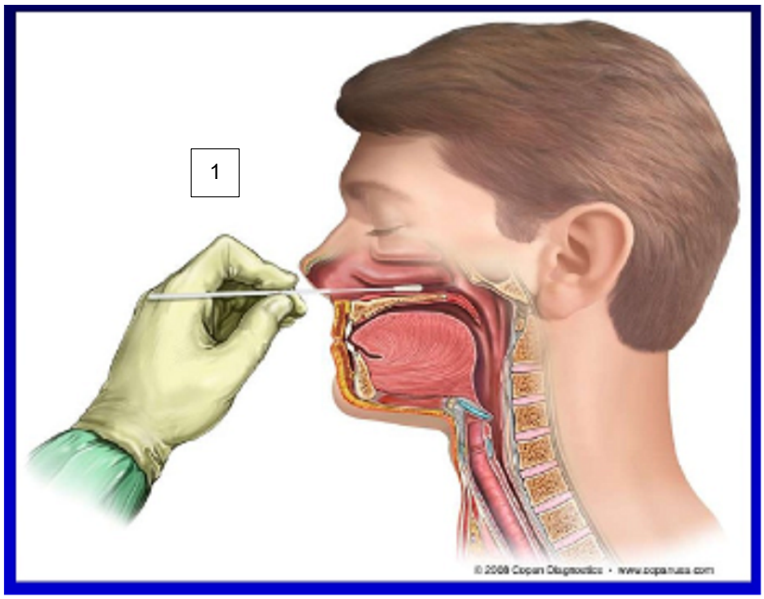
UNSATISFACTORY ☐

**Instructor:**
1. Evaluate providers skill performance using the check off list below.
2. Circle performance indicator.
   - YES = Provider completed skill with no assistance from instructor.
   - NO = Provider unable to complete skill satisfactorily following instructor intervention.
   - IL = Provider able to complete skill satisfactorily following Instructor Led (teaching) intervention.

**Satisfactory performance indicated with ≥ 8 YES / IL completions. (Combination of both YES and IL)**

| | | |
|---|---|---|
| B | Basic | B |
| A | Advanced | A |
| P | Paramedic | P |

| | |
|---|---|
| YES NO IL | <u>Verbalizes indications for Nasopharyngeal Specimen Collection:</u><br>1. Utilization in Pandemic Non-Transport Protocol |
| YES NO IL | Verbalizes contraindications: Prior History of Nasal Surgeries |
| YES NO IL | Verbalizes complications: Nosebleed |
| YES NO IL | Dons appropriate PPE |
| YES NO IL | Instructs the patient to blow their nose into a tissue to clear excess secretions from nasal passages |
| YES NO IL | Tilts the patient's head back slightly so that the nasal passages become more accessible |
| YES NO IL | Instructs the patient to close their eyes to lessen the discomfort of the procedure |
| YES NO IL | Gently inserts the swab along the nasal septum, directly back (not upward) and just above the floor of the nasal passage, into the nasopharynx until resistance is felt 1 |
| YES NO IL | Rotates the swab against the nasopharyngeal mucosa for 10-15 seconds |
| YES NO IL | Removes the swab, and places specimen into collection container |
| YES NO IL | Labels collection container with patient information |
| YES NO IL | Verbalizes coordination of collection and transport of specimen to receiving test facility |




**Instructor notes:**



Any local EMS System changes to this document must follow the NC OEMS Protocol Change Policy and be approved by OEMS

# Nasopharyngeal Specimen Collection

## Clinical Information for Nasopharyngeal Specimen Collection

**Objective of Procedure:**

Collection of Nasopharyngeal Specimen for laboratory testing

**Scope of Practice:** Paramedic, Basic, First Responder

**Indications:**

Pandemic Non-Transport Protocol

**Contraindications:**

Prior History of Nasal Surgeries.

**Clinical Presentation:**

Fever
Shortness of Breath
Body Aches
Cough
Flu Like Symptoms
GI Complaints

**Potential Complications:**

Nosebleed

**Procedure references:**

1. NEJM Procedure: Collection of Nasopharyngeal Specimens with the Swab Technique. (2009, November 23). Retrieved March 31, 2020, from https://www.youtube.com/watch?v=DVJNWefmHjE



Any local EMS System changes to this document must follow the NC OEMS Protocol Change Policy and be approved by OEMS

# Airway: iGel

| | | |
|---|---|---|
| B | EMT | B |
| A | AEMT | A |
| P | PARAMEDIC | P |

**Clinical Indications for Blind Insertion Airway Device (BIAD) Use:**

- Inability to adequately ventilate a patient with a Bag Valve Mask or longer EMS transport distances require a more advanced airway.
- Inability to secure an endotracheal tube in a patient who does not have a gag reflex.
- Appropriate intubation is impossible due to patient access or difficult airway anatomy.
- Do not leave in place for ≥ 4 hours.
- **This airway does not prevent aspiration of stomach contents.**

**Clinical Contraindications:**

- Deforming Facial Trauma
- Pulmonary Fibrosis
- Morbid Obesity

**Procedure:**

1. Pre-Oxygenate the patient with 100% Oxygen
2. Select the appropriate tube size for the patient.
3. Remove the device from the protective cradle and carefully for any signs of damage.
4. Place water-soluble jelly in the middle of the protective cradle.
5. Lubricate the back of the i-Gel on the non-inflatable cuff and ensure no lubricant is in the cuff.
5. Lubricate each side and the tip of the non-inflatable cuff.
6. Grasp along the integral bite block and face the cuff outlet toward the patient's chin.
7. Insert the i-Gel into the mouth in the direction of the hard palate.
8. Glide the device down and back along the hard palate with continuous, gentle pressure, until
9. Connect the i-Gel to an BVM and assess for breath sounds and air entry.
10. **Confirm tube placement using end-tidal $CO_2$ detector or esophageal bulb device.**
11. Monitor oxygen saturation with pulse oximetry and heart rhythm with ECG
12. **EtCO2 monitoring is mandatory following placement of a BIAD once available on scene**
13. Re-verify i-Gel placement after every move and upon arrival in the ED
43. Document the procedure, time, and result (success) on/with the patient care report (PCR)
15. **It is strongly recommended that an Airway Evaluation Form be completed with any BIAD use.**

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System. Assessment should include direct observation once per certification cycle.

# Airway: Post-Endotracheal Intubation Checklist

| | | |
|---|---|---|
| A | AEMT | A |
| P | EMT- P | P |

**Clinical Indication**:

- Immediately after Endotracheal Intubation Procedure is performed.

**Procedure**:

1. Ensure cuff of endotracheal tube is inflated per Endotracheal Intubation procedure.
2. Monitor continuous (EtCO2) waveform capnography to ensure that waveform is consistent with correct airway placement.
3. If no waveform capnography (ETCO2) is observed on the monitor, **IMMEDIATELY** remove endotracheal tube from airway and provide Bag Valve Mask ventilations with appropriate oxygen source connected and flowing.
    - Escalate per protocol and as needed with airway adjuncts and BIAD. If BIAD is utilized as a rescue device, immediately confirm placement with ETCO2 waveform capnography.
4. If cricothyrotomy procedure is being considered, follow protocol for procedure as indicated. After placement confirm that ETCO2 waveform is present.
5. Provide the patient with Bag Valve ventilations and ensure appropriate oxygen source is flowing.
6. Listen to the lungs for equal breath sounds in the upper and lower lung fields, bilaterally; also, check for the absence of sounds over the epigastrium / center of the upper abdomen.
7. Continue appropriate ventilation by bag ventilation or confirm clinically appropriate ventilator settings on the ventilator. Re-confirm Bag Valve ventilations or that ventilator is connected to appropriate oxygen source that is flowing.
8. Secure the airway device with a commercially available product. If ETT, document placement location by the centimeter mark either at the patient's teeth or lips on the patient care report (PCR).
9. If using a mechanical ventilator follow RSP 6 Procedure: Ventilator Operation
10. Document all devices used to confirm initial tube placement. Also, document presence or absence of breath sounds before and after each movement of the patient.
11. Re-check and document vital signs immediately after intubation and at least every 5 minutes.
12. Follow post-intubation protocol for analgesia, sedation and neuro-muscular blockade as indicated.
13. It is strongly recommended that an airway evaluation form be completed with all intubations.
14. **Continuous End-tidal (EtCO2) monitoring is mandatory following placement of an endotracheal tube and document at least every 5 minutes.**
15. Verify tube placement frequently and always with each movement of patient.
16. Consider placing an NG or OG tube to clear stomach contents after airway device is secured with ET tube or Supraglottic airway with a gastric tube port.
17. Assess for worsening abdominal distention with every delivered breath, or concern of aspiration of gastric contents.

**Certification Requirements:**

Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS system.

## Standards Procedure (Skill) Assessment / Screening Section

# Verbal De-escalation

| | |
|---|---|
| Agency Name: | SATISFACTORY ☐ |
| Provider Name: Paramedic | UNSATISFACTORY ☐ |
| Instructor Name: EMT AEMT Paramedic Physician | |

**Instructor:**
1. Evaluate providers skill performance using the check off list below.
2. Circle performance indicator:
   - YES = Provider completed skill with no assistance from instructor.
   - NO = Provider unable to complete skill satisfactorily following instructor intervention.
   - IL = Provider able to complete skill satisfactorily following Instructor Led (teaching) intervention.

**Satisfactory performance indicated with ≥ 8 YES / IL completions. (Combination of both YES and IL)**

| | | |
|---|---|---|
| | EMR | |
| B | EMT | B |
| A | AEMT | A |
| P | Paramedic | P |

| | |
|---|---|
| YES NO IL | Verbalizes indications for Verbal de-escalation techniques:<br>1. Behavioral Health Crisis 2. Behavior Activity Rating Score ≥ 5 |
| YES NO IL | Verbalizes contraindications: None |
| YES NO IL | **Demonstrates respect of patient's personal space**<br>• Maintain about 6 feet of distance and do not position yourself between the patient and only exit<br>• Both you and patient should be able to exit the room without feeing blocked-in |
| YES NO IL | **Does not provoke patient during interaction**<br>• Your body language must convey that you want to listen and that you do not want to inflict harm<br>Your hands should be visible and open<br>Do not face the patient head-on. Always stand at an angle<br>Avoid prolonged staring or direct eye contact<br>• Make sure others are not provoking the patient (providers, family members, bystanders, providers, police officers) |
| YES NO IL | **Establishes rapport, initiates and maintains verbal contact**<br>• One person should make and maintain verbal contact, introduce yourself and explain your role<br>Multiple providers talking to the patient will create confusion and may escalate patient's behavior<br>• Emphasize you are there to keep the patient safe<br>• Ask the patient their name and how they want to be addressed |
| YES NO IL | **Use concise statements when talking**<br>• Agitation creates problems in a patient's ability to process information<br>• Keep your conversation simple and short in nature allowing time for patient to process information<br>• Repeat your statements, requests, or commands to ensure understanding<br>This is called a loop, you may need to repeat 2 – 12 times before patient understands |
| YES NO IL | **Identify wants, feelings, and stress causing the crisis**<br>"When you called 911, how did you think we could help you?"<br>"I would like to know what caused you to become upset today so we can help you"<br>• Identifying a need can help to quickly de-escalate the situation |
| YES NO IL | **Listen closely to patient**<br>• You should be able to repeat back what is said by the patient<br>"Tell me if I have all this right"<br>"Let me make sure I understand what you said" |
| YES NO IL | **Agree or agree to disagree**<br>• If statements are truthful, then agree with the truth<br>• Agree in principle, maybe patient's statement is not true, but you can agree, that in general, the idea is true<br>• Agree with the odds, anyone may be upset by the same circumstances<br>• Do not agree with delusions, at that point you can agree to disagree |
| YES NO IL | **Set clear limits on acceptable behavior**<br>• Set limits in a positive, matter-of-fact manner, and not in a threatening manner<br>• Inform the patient that harm to self or other providers will not be tolerated<br>• If the patient's behavior is frightening to providers, tell the patient so<br>• Remind the patient you are there to help, keep them safe, but the providers cannot be abused in the process |
| YES NO IL | **Offer choices to patient (if available) and remain positive in your interactions**<br>• Offer choices that are realistic and that may provide comfort such as drinks, food, blankets, etc.<br>• If medication is needed, offer choice between PO and IM/IV, offer medication early in encounter |
| YES NO IL | **Debrief provider team following the incident (if restraints necessary, debrief patient as well)**<br>What went well? What could have gone better? What did we learn? Who needs to know? |

**Instructor notes:**

# Verbal De-escalation

## Clinical Information for Verbal De-escalation

**Objective of Procedure:**
Verbal engagement with patient and establishing collaborative relationship with patient
Preventing violent behavior
Avoiding use of restraintes
Reducing patient anger and frustration
Maintaining staff and patient safety
Enabling patients to manage their emotions and regain personal control

**Scope of Practice:** EMR EMT AEMT Paramedic

**Indications:**
1. Behavioral Health Crisis
2. Behavior Activity Rating Score ≥ 5

**Contraindications:**
None

**Clinical Presentation:**
Patient experiencing a behavioral crisis defined as:
- Significantly deviates from society's expectations and commonly held normal behavior
- Behavior that is unusual for patient's baseline
- Bizarre
- Threatening
- Dangerous to self and/or others
- Alarming to patient, family, or bystanders
- Interferes with the patients ability to perform basic life functions and activities of daily living

Behavior Activity Rating Score ≥ 5

**Potential Complications:**
Injury to patient, provider, or bystander
Need to move to restraint procedure
Exacerbation of agitated condition

**Procedure references:**
1. Palmer J. (2019). Joint Commission Issues De-escalation Guidebook for Healthcare Facilities and Workers. Patient Safety and Quality Healthcare (PSQH). https://www.psqh.com/analysis/joint-commission-issues-de-escalation-guidebook-for-healthcare-facilities-and-workers/
2. Richmond JS, Berlin JS, Fishkind AV, et al. (2012). Verbal De-escalation of the Agitated Patient: Consensus Statement of the American Association for Emergency Psychiatry Project BETA De-escalation Workgroup. West J Emerg Med 13(1):17-25. doi: 10.5811/westjem.2011.9.6864

# Assessment: Adult

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Any patient requesting a medical evaluation that is too large to be measured with a Broselow-Luten Resuscitation Tape.

**Procedure:**

1. Scene size-up, including universal precautions, scene safety, environmental hazards assessment, need for additional resources, by-stander safety, and patient/caregiver interaction
2. Assess need for additional resources.
3. Initial assessment includes a general impression as well as the status of a patient's airway, breathing, and circulation.
4. Assess mental status (e.g., AVPU) and disability (e.g., GCS).
5. Control major hemorrhage and assess overall priority of patient.
6. Perform a focused history and physical based on patient's chief complaint.
7. Assess need for critical interventions.
8. Complete critical interventions and perform a complete secondary exam to include a baseline set of vital signs as directed by protocol.
9. Maintain an on-going assessment throughout transport; to include patient response/possible complications of interventions, need for additional interventions, and assessment of evolving patient complaints/conditions.
10. Document all findings and information associated with the assessment, performed procedures, and any administration of medications on the PCR.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original 2012 NCCEP Procedure by the local EMS Medical Director

# North Carolina College of Emergency Physicians
## Standards Procedure (Skill)
# Pain Assessment and Documentation

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

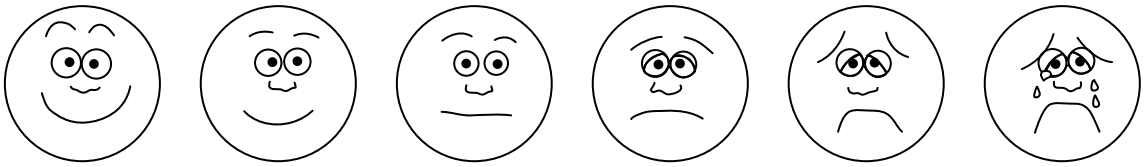
- Any patient with pain.

**Definitions:**

- Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage.
- Pain is subjective (whatever the patient says it is).

**Procedure:**

1. Initial and ongoing assessment of pain intensity and character is accomplished through the patient's self report.
2. Pain should be assessed and documented in the PCR during initial assessment, before starting pain control treatment, and with each set of vitals.
3. Pain should be assessed using the appropriate approved scale.
4. Three pain scales are available: the 0 – 10, the Wong - Baker "faces", and the FLACC.
   - 0 – 10 Scale: the most familiar scale used by EMS for rating pain with patients. It is primarily for adults and is based on the patient being able to express their perception of the pain as related to numbers. Avoid coaching the patient; simply ask them to rate their pain on a scale from 0 to 10, where 0 is no pain at all and 10 is the worst pain ever.
   - Wong – Baker "FACES" scale: this scale is primarily for use with pediatrics but may also be used with geriatrics or any patient with a language barrier. The faces correspond to numeric values from 0-10. This scale can be documented with the numeric value.



| 0 | 2 | 4 | 6 | 8 | 10 |
|---|---|---|---|---|---|
| No hurt | Hurts little bit | Hurts little more | Hurts even more | Hurts whole lot | Hurts worst |

From Hockenberry MJ, Wilson D, Winkelstein ML: Wong's Essentials of Pediatric Nursing, ed. 7, St. Louis, 2005, p. 1259. Used with permission. Copyright, Mosby.

   - FLACC scale: this scale has been validated for measuring pain in children with mild to severe cognitive impairment and in pre-verbal children (including infants).

| CATEGORIES | SCORING | | |
|---|---|---|---|
| | 0 | 1 | 2 |
| FACE | No particular expression or smile | Occasional grimace or frown, withdrawn, disinterested. | Frequent to constant quivering chin, clenched jaw. |
| LEGS | Normal position or relaxed. | Uneasy, restless, tense. | Kicking, or legs drawn up. |
| ACTIVITY | Lying quietly, normal position moves easily. | Squirming, shifting back and forth, tense. | Arched, rigid or jerking. |
| CRY | No cry, (awake or asleep) | Moans or whimpers; occasional complaint | Crying steadily, screams or sobs, frequent complaints. |
| CONSOLABILITY | Content, relaxed. | Reassured by occasional touching hugging or being talked to, distractable. | Difficulty to console or comfort |

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# North Carolina College of Emergency Physicians
# Standards Procedure (Skill)
## Assessment: Pediatric

**Clinical Indications:**

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

- Any child that can be measured with the Broselow-Luten Resuscitation Tape.

**Procedure:**

1. Scene size-up, including universal precautions, scene safety, environmental hazards assessment, need for additional resources, by-stander safety, and patient/caregiver interaction
2. Assess patient using the pediatric triangle of ABCs:
   - Airway and appearance: speech/cry, muscle tone, inter-activeness, look/gaze, movement of extremities
   - Work of breathing: absent or abnormal airway sounds, use of accessory muscles, nasal flaring, body positioning
   - Circulation to skin: pallor, mottling, cyanosis
3. Establish spinal immobilization if suspicion of spinal injury
4. Establish responsiveness appropriate for age (AVPU, GCS, etc.)
5. Color code using Broselow-Luten tape
6. Assess disability (pulse, motor function, sensory function, pupillary response)
7. Perform a focused history and physical exam. Recall that pediatric patients easily experience hypothermia and thus should not be left uncovered any longer than necessary to perform an exam.
8. Record vital signs (BP > 3 years of age, cap refill < 3 years of age)
9. Include Immunizations, Allergies, Medications, Past Medical History, last meal, and events leading up to injury or illness where appropriate.
10. Treat chief complaint as per protocol

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# North Carolina College of Emergency Physicians
# Standards Procedure (Skill)
## Blood Glucose Analysis

**Clinical Indications:**

- Patients with suspected hypoglycemia (diabetic emergencies, change in mental status, bizarre behavior, etc.)

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Procedure:**

1. Gather and prepare equipment.
2. Blood samples for performing glucose analysis can be obtained through a finger-stick or when possible simultaneously with intravenous access.
3. Place correct amount of blood on reagent strip or site on glucometer per the manufacturer's instructions.
4. Time the analysis as instructed by the manufacturer.
5. Document the glucometer reading and treat the patient as indicated by the analysis and protocol.
6. Repeat glucose analysis as indicated for reassessment after treatment and as per protocol.
7. Perform Quality Assurance on glucometers at least once every 7 days, if any clinically suspicious readings are noted, and/or as recommended by the manufacturer and document in the log.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# North Carolina College of Emergency Physicians
# Standards Procedure (Skill)
## Pulse Oximetry

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Patients with suspected hypoxemia.

**Procedure:**

1. Apply probe to patient's finger or any other digit as recommended by the device manufacturer.
2. Allow machine to register saturation level.
3. Record time and initial saturation percent on room air if possible on/with the patient care report (PCR).
4. Verify pulse rate on machine with actual pulse of the patient.
5. Monitor critical patients continuously until arrival at the hospital. If recording a one-time reading, monitor patients for a few minutes as oxygen saturation can vary.
6. Document percent of oxygen saturation every time vital signs are recorded and in response to therapy to correct hypoxemia.
7. In general, normal saturation is 97-99%. Below 94%, suspect a respiratory compromise.
8. Use pulse oximetry as an added tool for patient evaluation. Treat the patient, not the data provided by the device.
9. The pulse oximeter reading should never be used to withhold oxygen from a patient in respiratory distress or when it is the standard of care to apply oxygen despite good pulse oximetry readings, such as chest pain. Supplemental oxygen is not required if the oxyhemoglobin saturation is >= 94%, unless there are obvious signs of heart failure, dyspnea, or hypoxia to maintain to 94%.
10. Factors which may reduce the reliability of the pulse oximetry reading include but are not limited to:
    - Poor peripheral circulation (blood volume, hypotension, hypothermia)
    - Excessive pulse oximeter sensor motion
    - Fingernail polish (may be removed with acetone pad)
    - Carbon monoxide bound to hemoglobin
    - Irregular heart rhythms (atrial fibrillation, SVT, etc.)
    - Jaundice
    - Placement of BP cuff on same extremity as pulse ox probe.
    - Methyhemoglobinemia

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# North Carolina College of Emergency Physicians
# Standards Procedure (Skill)
## SpO2/CO/MET

| | | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

Clinical Indications:

- Per appropriate protocol for the non invasive monitoring of SPO2/CO/MetHgb levels

Procedure:

1. Use a dry and appropriately sized sensor.
2. Choose a site that is well perfused (ring finger preferred).
3. Choose a site that least restricts patient movement (finger of non-dominant hand).
4. Observe all warning and cautions noted in sensor's direction for use.
5. Connect Rainbow sensor to the SpO2 port on the monitor
6. Place patient's finger in sensor until tip of finger touches the "raised digit stop".
7. Ensure sensor is secure and properly aligned with fleshy part of the digit completely covering the detector.
8. Keep sensor site at the same level as the patient's heart.
9. Press ON
10. Observe the pulse bar for fluctuations (amplitude indicates relative signal quality)
11. Confirm that SpO2 reading appears and is stable. (See Procedure 45-Pulse Oximetry)
12. For SpCO and SpMET minimize patient movement and shield the sensor from ambient light.
13. Press PRINT – SpCO and SpMET levels appear at top of printout or use SPEED DIAL to select SpO2 area and selects PARAMETER and then SpCO or SpMET
14. For any SpCO reading > 5%, always check SpMET%

SpCO% Interpretation (carboxyhemoglobin)

| | |
|---|---|
| 0 – 5% | Normal in non-smokers |
| 5 – 10% | Normal in smokers<br>For non-smokers, assess for signs/symptoms, treat with high flow O2 if present |
| 10 – 15% | (In any patient) assess for signs/symptoms, treat with high flow O2 if present |
| > 15% | High flow O2 X 30 minutes then reassess<br>If SpCO remains > 10% or if signs/symptoms are present, consider transport |
| > 30%, or unconscious, or pregnant | Consider immediate transport to closest hyperbaric treatment facility |

**SpMET% Interpretation (methemoglobin)**

| | |
|---|---|
| 0 – 3% | Normal in all patients |
| > 3% | Elevated MET may falsely raise SpCO levels – interpret cautiously |
| > 5% | If MET levels are greater than 5%, SpCO readings will not be accurate |
| > 10% | Clinically significant MET |
| | Assess for signs/symptoms, consult medical control for direction |
| > 30% | Assess for signs/symptoms, provide high flow O2, and transport |

Certification Requirements:

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanism, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate.

# North Carolina College of Emergency Physicians
# Standards Procedure (Skill)
## Stroke Screen: LA Prehospital

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Suspected Stroke Patient

**Procedure:**

1. Assess and treat suspected stroke patients as per protocol.
2. The Los Angeles Prehospital Stroke Screen (LAPSS) form should be completed for all suspected stroke patients (see appendix). There are six screening criteria items on the LAPSS form.
3. Screen the patient for the following criteria:
   - Age over 45 years
   - No history of a seizure disorder
   - New onset of symptoms in last 24 hours
   - Patient ambulatory prior to event
   - Blood glucose between 60-400
4. The final criterion consists of performing a patient exam looking for facial droop, unilateral grip weakness/absence, or unilateral arm weakness. One of these exam components must be positive to answer "yes" on the screening form.
5. **If all of the LAPSS screening criteria are met ("yes" to all criteria OR if unknown), follow the EMS System Stroke Plan and alert the receiving hospital of a possible stroke patient as early as possible.**
6. All sections of the LAPSS form must be completed.
7. The completed LAPSS form should be attached or documented in the PCR.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# North Carolina College of Emergency Physicians
# Standards Procedure (Skill)
## Stroke Screen: Cincinnati Prehospital Stroke Screen

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Suspected Stroke Patient

**Procedure:**

1. Assess and treat suspected stroke patients as per protocol.
2. The Cincinnati Prehospital Stroke Screen form should be completed for all suspected stroke patients (see appendix). The CPSS evaluates for facial palsy, arm weakness, and speech abnormalities. Items are scored as either normal or abnormal.
3. Screen the patient for the following criteria:
   - **Facial Droop**

   The patient shows teeth or smiles

   **Normal:** Both sides of face move equally

   **Abnormal:** One side of face does not move as well as the other
   - **Arm Drift**

   The patient closes their eyes, and extends both arms straight out for 10 seconds

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

   **Abnormal:** One arm either does not move, or one arm drifts down compared to the other
   - **Speech**

   The patient repeats "the early bird catches the worm"

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

   **Abnormal:** The patient slurs words, says the wrong words, or is unable to speak
4. **Note that any abnormal findings constitutes a positive stroke screen.**
5. **If any of the CPSS screening criteria are met ("abnormal" to any criteria), follow the EMS System Stroke Destination Plan and alert the receiving hospital of a possible stroke patient as early as possible.**
6. All sections of the CPSS form must be completed in the ePCR.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# North Carolina College of Emergency Physicians
# Standards Procedure (Skill)
## Stroke Screen: EMS VAN

**Clinical Indications:**

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

- Patient with Positive LAPSS Stroke Assessment

**Procedure:**

1. Assess and treat suspected stroke patients as per protocol.
2. The VAN Stroke Assessment should be completed for all patients with a positive LAPSS Stroke Screen.
3. Use the following pathway to assess the VAN:

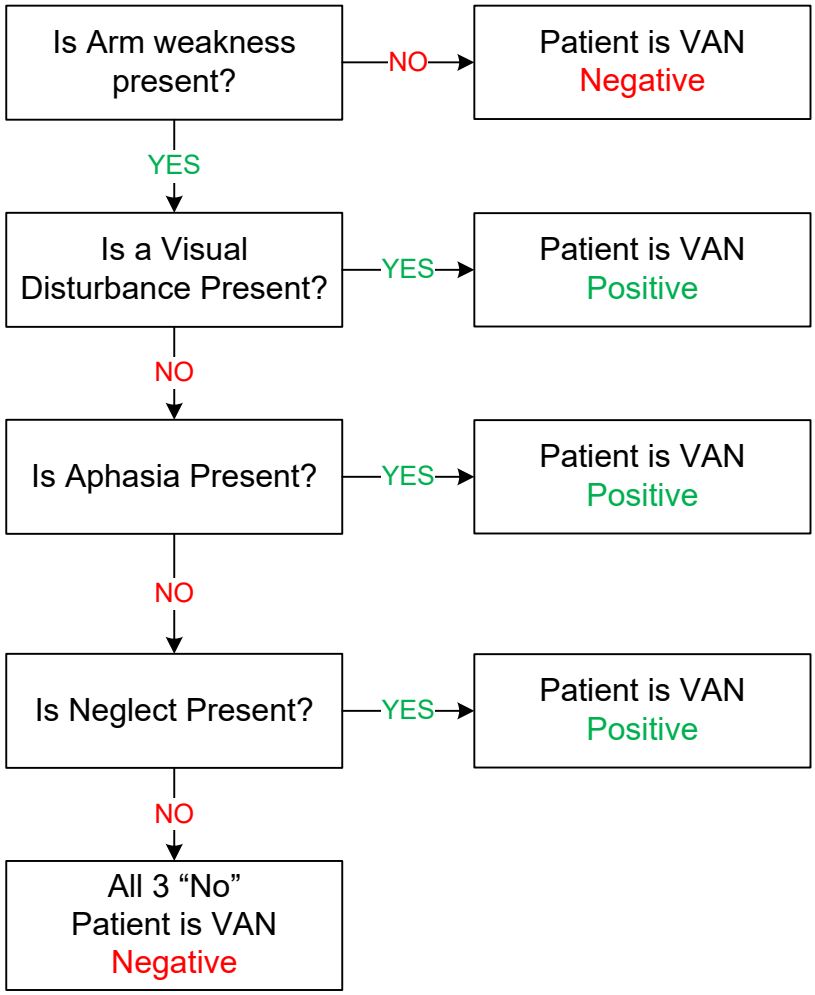
If a patient has any degree of weakness **PLUS** any one of the below:

**Visual Disturbance** (Assess field by cut by testing both sides, 2 fingers right, 1 left)

**Aphasia** (Inability to speak or understand. Repeat and name 2 objects, close eyes, make fist)

**Neglect** (Forced gaze to one side or ignoring one side, touching both sides)

This is likely a large arterial clot = **VAN Positive**




**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# North Carolina College of Emergency Physicians
# Standards Procedure (Skill)
## Temperature Measurement

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Monitoring body temperature in a patient with suspected infection, hypothermia, hyperthermia, or to assist in evaluating resuscitation efforts.

**Procedure:**

1. For adult patients that are conscious, cooperative, and in no respiratory distress, an oral temperature is preferred (steps 2 to 4 below). For infants or adults that do not meet the criteria above, a rectal temperature is preferred (steps 5 to 7 below).
2. To obtain an oral temperature, ensure the patient has no significant oral trauma and place the thermometer under the patient's tongue with appropriate sterile covering.
3. Have the patient seal their mouth closed around thermometer.
4. If using an electric thermometer, leave the device in place until there is indication an accurate temperature has been recorded (per the "beep" or other indicator specific to the device). If using a traditional thermometer, leave it in place until there is no change in the reading for at least 30 seconds (usually 2 to 3 minutes). Proceed to step 8.
5. Prior to obtaining a rectal temperature, assess whether the patient has suffered any rectal trauma by history and/or brief examination as appropriate for patient's complaint.
6. To obtain a rectal temperature, cover the thermometer with an appropriate sterile cover, apply lubricant, and insert into rectum no more than 1 to 2 cm beyond the external anal sphincter.
7. Follow guidelines in step 5 above to obtain temperature.
8. Record time, temperature, method (oral, rectal), and scale (C° or F°) in Patient Care Report (PCR).

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# North Carolina College of Emergency Physicians
# Standards Procedure (Skill)
# Vital Signs

Clinical Indications:

- Patient needing evaluation of vital signs.

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

Procedure:

1. If automated vital sign readings seem inconsistent with the patient's clinical \ presentation, manual assessment of vital signs should be conducted.
2. **Pulse rate:** Palpate the pulse rate at a convenient site by compressing the relevant artery against an underlying bone and counting the number of pulses in a fifteen or thirty second period. Multiply the count by either four (for fifteen seconds) or two (for thirty seconds) to determine the pulse rate (per minute).
3. **Respiratory rate:** Count the number of respirations in a thirty second period. Do not make the patient aware that you are observing their breathing, as this may cause the patient to alter their breathing rate or effort. Watch for subtle changes in neck muscles if chest rise and fall cannot be easily seen. Multiply the count of respirations in the thirty second period by two to determine the respiratory rate.
4. **Blood pressure:** Use an appropriately sized blood pressure cuff and a stethoscope to auscultate a blood pressure in the brachial artery. Apply the cuff above the elbow with the center of the bladder over the artery. Hold the stethoscope head over the artery just below the cuff. Inflate the cuff to 20mm Hg above the pressure at which you stop hearing beats. Slowly deflate the cuff, noting the pressure at which you first hear beats (systolic) and the pressure at which the beats disappear (diastolic). In an urgent situation, a blood pressure may be palpated or estimated based on the presence of palpable pulses.
5. **Pulse Oximetry:** (see ASP5)
6. **GCS:** Mandatory for all patients
7. **Capnography:** (see ASP12)
8. **Temperature:** (see ASP8)
9. **Broselow Color:** In pediatric patients, measure the length of the patient from the indicated end of the Broselow pediatric tape. Place the arrow end at one end of the patient, and read the color code at the other end of the patient.

Certification Requirements:

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# North Carolina College of Emergency Physicians
# Standards Procedure (Skill)
# Orthostatic Blood Pressure Measurement

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Patient situations with suspected blood, fluid loss, or dehydration with no indication for spinal immobilization. Orthostatic vital signs are not routinely recommended.
- Patients ≥ 8 years of age, or patients larger than the Broselow-Luten tape

**Procedure:**

1. Gather and prepare standard sphygmomanometer and stethoscope.
2. With the patient supine, obtain pulse and blood pressure.
3. If possible have the patient stand.
4. After one minute, obtain blood pressure and pulse.
5. If the systolic blood pressure falls more than 20 mmHg or the pulse rises more than 20 bpm, the patient is considered to be orthostatic.
6. If a patient experiences dizziness upon sitting or is obviously dehydrated based on history or physical exam, formal orthostatic examination should be omitted and fluid resuscitation initiated.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# North Carolina College of Emergency Physicians Standards Procedure (Skill)

## Reperfusion Checklist

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

Rapid evaluation of a patient with suspected acute stroke and/or acute myocardial infarction (STEMI) to:

- Determine eligibility and potential benefit from fibrinolysis..
- Rapid identification of patients who are not eligible for fibrinolysis and will require interventional therapy.

**Procedure:**

1. Follow the appropriate protocol for the patient's complaint to assess and identify an acute condition which could potentially benefit from fibrinolysis. If a positive finding is noted on one of the following assessments, proceed to step 2.
   - Perform a 12-lead ECG to identify an acute ST elevation myocardial infarction (STEMI).
   - Perform the Cincinnati Stroke Screen to identify an acute stroke
2. Complete the Reperfusion Check Sheet to identify any potential contraindications to fibrinolysis. (See Appendix)
   - Systolic Blood Pressure greater than 180 mm Hg
   - Diastolic Blood Pressure greater than 110 mm Hg
   - Right vs. Left Arm Systolic Blood Pressure difference of greater than 15 mm Hg
   - History of structural Central Nervous System disease (age >= 18, history of aneurysm or AV-malformation, tumors, masses, hemorrhage, etc.)
   - Significant closed head or facial trauma within the previous 3 months
   - Recent (within 6 weeks) major trauma, surgery (including laser eye surgery), gastrointestinal bleeding, or severe genital-urinary bleeding
   - Bleeding or clotting problem or on blood thinners
   - CPR performed greater than 10 minutes
   - Currently Pregnant
   - Serious Systemic Disease such as advanced/terminal cancer or severe liver or kidney failure.
3. Identify if the patient is currently in heart failure or cardiogenic shock. For these patients, a percutaneous coronary intervention is more effective.
   - Presence of pulmonary edema (rales greater than halfway up lung fields)
   - Systemic hypoperfusion (cool and clammy)
4. If any contraindication is noted using the check list and an acute Stroke is suspected by exam or a STEMI is confirmed by ECG, activate the EMS Stroke Plan or EMS STEMI Plan for fibrinolytic ineligable patients. This may require the EMS Agency, an Air Medical Service, or a Specialty Care Transport Service to transport directly to a specialty center capable of interventional care within the therapeutic window of time.
5. Record all findings in the Patient Care Report (PCR).

**Certification Requirements:**

Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

# North Carolina College of Emergency Physicians
# Standards Procedure (Skill)
# Capnography

| | | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Capnography shall be used when available with the use of all invasive airway procedure including endotracheal, nasotracheal, cricothyrotomy, or Blind Insertion Airway Devices (BIAD).
- Capnography should also be used when possible with CPAP.

**Procedure:**

1. Attach capnography sensor to the BIAD, endotracheal tube, or oxygen delivery device.
2. Note $CO_2$ level and waveform changes. These will be documented on each respiratory failure, cardiac arrest, or respiratory distress patient.
3. The capnometer shall remain in place with the airway and be monitored throughout the prehospital care and transport.
4. Any loss of $CO_2$ detection or waveform indicates an airway problem and should be documented.
5. The capnogram should be monitored as procedures are performed to verify or correct the airway problem.
6. Document the procedure and results on/with the Patient Care Report (PCR) and the Airway Evaluation Form.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.


This procedure has been altered from the original NCCEP Procedure by the local EMS Medical Director

# North Carolina College of Emergency Physicians
# Standards Procedure (Skill)
## Assessment: Capacity

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- If an individual (or the parent or legal guardian of the individual) refuses secondary care and/or ambulance transport to a hospital after prehospital providers have been called to the scene, providers should determine the patient's capacity to make decisions. Competency is generally a legal status of a person's ability to make decisions.

**Procedure:**

1. For any patient that is refusing medical care or transport, a capacity exam should be performed.
2. Assess if the patient is oriented to: Person, Place, Time and Event
3. Perform CRAM assessment:
   - Can the individual **C**ommunicate a clear choice?
   - Is **R**elevant information understood?
   - Is there an **A**ppreciation of the situation?
     - In other words, does the person understand what is wrong, and the implications for their medical decisions (If I don't go, I may die…)
   - Can they **M**anipulate the information in a rational manner?
     - In other words, can they use the information provided to make a rational decision
4. Key questions to ask patient:
   **Ask** them to echo back the information you provide, including:
   - The lack of a complete evaluation
   - The risks of undiagnosed illness

   Can they believe the information provided?
   - **Ask** them to state in their own words your concerns about their medical conditions and the possible consequences of refusing

   Can they use the information to make a choice?
   - **Ask** them to state in their own words their reason for refusing care despite your recommendations

5. An individual determined to lack decision-making capacity by EMS providers **should not be allowed to refused care** against medical advise or to be released at the scene.
6. If there are any questions about your patient's capacity, contact your Supervisor and/or Online Medical Control.

**NOTE:** The individual's judgment must also not be significantly impaired by illness, injury, or drugs / alcohol intoxication. Individuals who have attempted suicide, verbalized suicidal intent, or have other factors that lead EMS providers to suspect suicidal intent, should not be regarded as having decision-making capacity and **may not** decline transport to a medical facility.


This procedure has been created by the Orange County EMS Medical Director

# Standards Procedure (Skill)
## Medication Administration: Cross Check (MACC)

Clinical Indications:

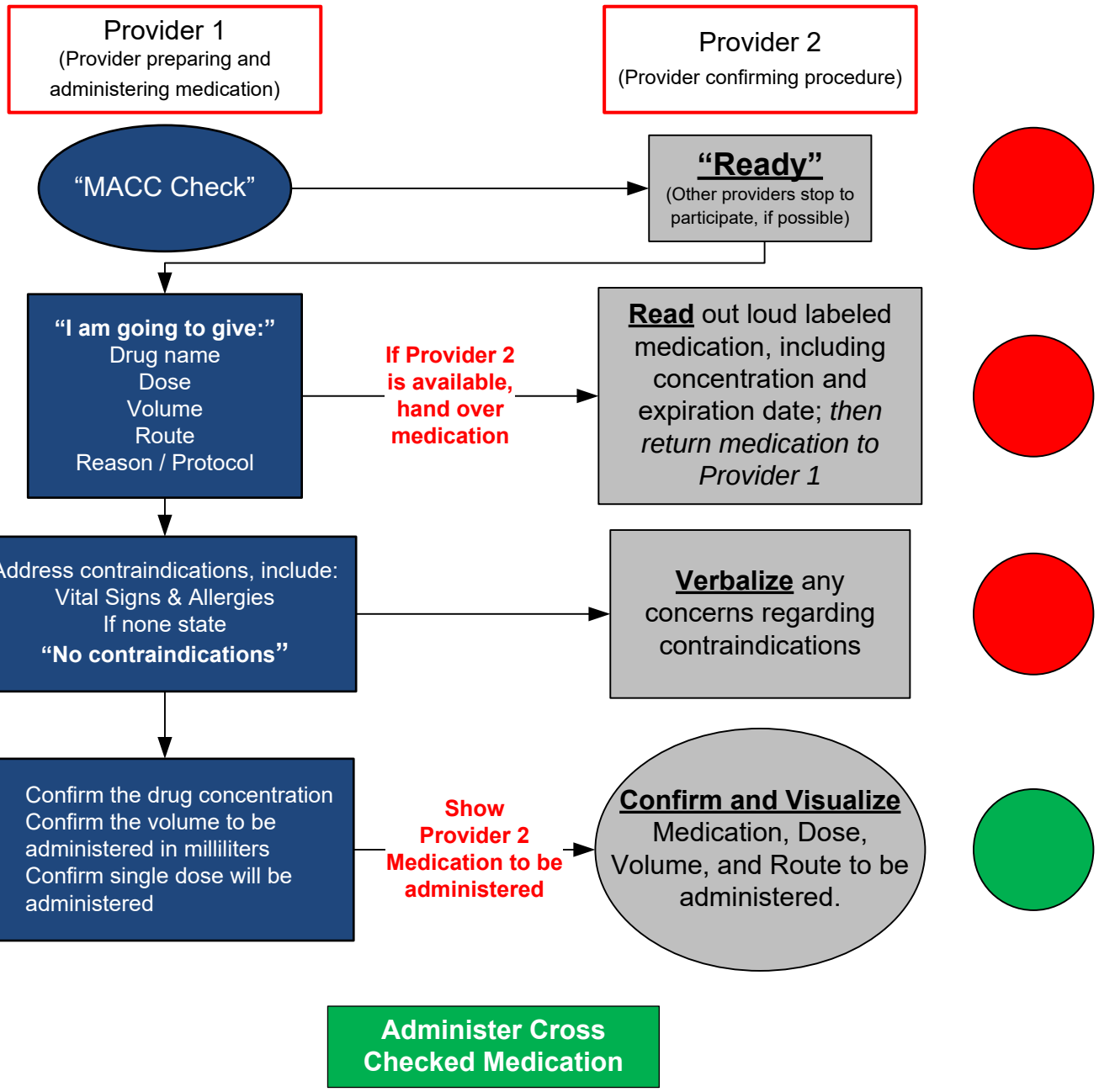
Any patient needing medication administration

| | | |
|---|---|---|
| | EMR | |
| B | EMT | B |
| A | AEMT | A |
| P | PARAMEDIC | P |

Contraindication:

None

Procedure:




**If NO second provider is available, Provider 1 should perform Cross-check with Protocols, Patient, or Bystander (as available)**

# Standards Procedure (Skill)

## Medication Administration: Cross Check (MACC)

| | |
|---|---|
| Agency Name: | **SATISFACTORY** ☐ |
| Provider Name: | |
| Instructor Name: EMT AEMT Paramedic Physician | **UNSATISFACTORY** ☐ |

**Instructor:**
1. Evaluate providers skill performance using the check off list below.
2. Circle performance indicator.
   - YES = Provider completed skill with no assistance from instructor.
   - NO = Provider unable to complete skill satisfactorily following instructor intervention.
   - IL = Provider able to complete skill satisfactorily following Instructor Led (teaching) intervention.

**Satisfactory performance indicated with ≥ 10 YES / IL completions. (Combination of both YES and IL)**

| | |
|---|---|
| YES NO IL | **Provider 1:** Verbalizes "MACC Check"<br>1. Effectively communicated the need to perform a medication check to other participant |
| YES NO IL | **Provider 2:** States "Ready", acknowledges request, and stops other task<br>1. Stops performing other tasks<br>2. Engages with provider performing MACC check |
| YES NO IL | **Provider 1:** Verbalizes details of the medication they intend to administer<br>1. States the Medication Name<br>2. States the Dose of the Medication to be delivered<br>3. States the Volume required to reach the desired Dose<br>4. States the Route of medication administration<br>5. States the Reason / Protocol / Indication for the chosen medication |
| YES NO IL | **Provider 1:** Hand over of medication to Provider 2 for confirmation<br>1. Provider 1 physically hands intended medication to Provider 2 for review<br>2. This includes original packaging, and any current preparations |
| YES NO IL | **Provider 2:** Inspects medication, and reads labeling aloud<br>1. Reads out loud the Medication Name<br>2. Reads out loud the Concentration and Volume available<br>3. Reads out loud the Expiration Date<br>4. Returns the medication to Provider 1 |
| YES NO IL | **Provider 1:** Verbalizes what contraindications exist for chosen medication<br>1. States any Vital Sign contraindications<br>2. States any Allergy contraindications<br>3. States any Complaint / Concern contraindications |
| YES NO IL | **Provider 2:** Verbalizes any additional concerns for contraindications<br>1. Discuss any considerations regarding contraindications |
| YES NO IL | **Provider 1:** Confirms concentration, and prepares medication for administration<br>1. Confirms drug concentration<br>2. Confirms volume to be administered<br>3. Confirms single dose to administer |
| YES NO IL | **Provider 1:** Shows medication to be administered to Provider 2 for confirmation<br>1. Provider 1 shows Provider 2 the final medication that will be administered |
| YES NO IL | **Provider 2:** Visualizes and confirms the medication prior to final administration<br>1. Confirms the Medication Name<br>2. Confirms the Dose of Medication to be delivered<br>3. Confirms the Volume to reach desired Dose<br>4. Confirms the Route of administration<br>5. Confirms the Reason / Protocol / Indication for chosen medication |
| YES NO IL | **Provider 1:** Administers the Medication<br>1. Administration of medication as intended, following associated route / procedure as indicated |

# Medication Administration: Intranasal

| LE | Law Enforcement | LE |
|---|---|---|
| | MR | |
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Patient needing medication administration when the specific medication must be given via the intranasal route or as an alternative route in selected medications.

**Contraindication:**

- Lack of a nose
- Destruction of nasal mucosa from surgery or cocaine abuse



**Procedure:**

1. Confirm the correct medication, expiration date, and dosage. Read the label to verify the drug is intended for nasal administration (okay if labeled for intravenous use). Check to see if the dose to be administered is dependent upon the patient's weight or other variable factors.
2. Assess the patient to be sure they are not allergic to the drug.
3. Recheck the order/dose for milliliters and verify that you have correctly calculated and drawn up the appropriate volume dose.
4. Attach the MAD (Mucosal Atomizer Device) nasal atomizer.
5. Place the atomizer 1.5 cm into the patient's nostril.
6. Briskly compress the syringe to administer ½ of the medication.
7. Remove and repeat into the other nostril until all of the medication has been administered.
8. Volumes greater than 1ml are too large and will lead to failure because the drug cannot be absorbed by the nasal mucosa quickly enough.
9. Factors that negatively affect mucosal absorption of medication may include recent use of vasoconstrictors, i.e. cocaine or afrin, epistaxis, nasal congestion and/or discharge.
10. Monitor the patient for the desired therapeutic effects as well as any possible side effects.

Certification Requirements:

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanism, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate.

# Medication Administration:
# Intravenous and Intraosseous

| | | |
|---|---|---|
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Patient in need of medication which should be given intravenously.

**Procedure:**

1. Confirm the correct medication, expiration date, and dosage. Read the label to verify the drug is intended for intravenous administration. Check to see if the dose to be administered is dependent upon the patient's weight or other variable factors.
2. Assess the patient to be sure they are not allergic to the drug.
3. Recheck the order / dose for milliliters and verify that you have correctly calculated and drawn up the appropriate volume dose.
4. Assure patency of IV
5. Cleanse the port w/ an alcohol prep pad if sterility is in question.
6. Insert the needle or needleless device into the injection port.
7. Pinch the IV tubing above the injection port and push the syringe plunger to inject the correct volume of medication into the tubing while observing for infiltration. Remove the syringe from the injection port.
8. Release the pinched tubing flush the medication into the vein.
9. Readjust the IV / IO flow rate as appropriate.
10. Document the medication, dosage, route and time of administration.
11. Monitor the patient for any adverse or allergic reactions.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations,

# Medication Administration: Oral

| | | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Patient in need of medication which should be given orally.

- **Procedure:**

1. Confirm the correct medication, expiration date, and dosage. Read the label to verify the drug is intended for oral administration. Check to see if the dose to be administered is dependent upon the patient's weight or other variable factors.
2. Assess the patient to be sure they are conscious and sufficiently alert to tolerate the oral administration, and that they are not allergic to the drug.
3. Recheck the order / dose for milliliters, ounces, teaspoons or tablespoons. Make sure you have calculated the dose correctly.
4. Transfer the correct dose of the medication into the appropriate container (spoon, cup, or patient's hand for tablets). If the medication is for a child, a syringe or dose measuring spoon may be appropriate. For pills or tablets, examine them to assure they are intact and unspoiled.
5. Give the medication to the patient and instruct them to drink the liquid or swallow the tablets. Have a small amount of water available for patients taking pills or tablets.
6. For oral glucose, if the patient is conscious but has AMS, you may be able to have them squeeze the medication into their mouth and swallow. If not, you may need to assist the patient. Using a tongue blade to make a pocket between the patient's cheek and gum and squeezing the glucose into this area in small amounts best does this. Care should be taken to avoid placing the glucose deep into the patient's mouth. If the patient is not able to protect their airway, this may not be appropriate. Discretion is left with the individual paramedic.
7. Document the medication, dosage, route and time of administration.
8. Monitor the patient for reactions.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate.

# Medication Administration: Rectal

**Clinical Indications:**

P EMT- P P

- Treatment of status seizures in pediatric patients (< 5 yo) where IV access is unobtainable

**Procedure:**

1. Attach an injection cap to a #8 French (15 inches in length) feeding tube.
2. Insert the diazepam syringe into the injection cap. Make sure the needle does not puncture the lumen of the feeding tube.
3. Insure that the needle attached to the diazepam syringe is not near the rectum.
4. Do not lubricate the tube prior to insertion. The lubrication may occlude the openings on the distal end of the tube and prevent administration of the diazepam.
5. Advance the feeding tube **2 inches** into the rectum. Do not force the tube. The tube should advance with little or no resistance.
6. Administer the correct dose of diazepam.
7. Flush the injection cap and feeding tube using a syringe filled with 1 cc of normal saline to insure delivery of the diazepam. Do not use > 1 cc to flush the feeding tube as additional flush solution may cause the patient to expel the solution and the diazepam.
8. Hold the buttocks together for 1-2 minutes to prevent leakage of the medication.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate.

# Medication Administration: Sublingual

| | | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Administration of nitroglycerine

**Procedure:**

1. Confirm the correct medication, expiration date, and dosage. Read the label to verify the drug is intended for sublingual administration.
2. Assess the patient to be sure they are not allergic to the drug.
3. Avoid Nitroglycerin in any patient who has taken an erectile disfunction medication such as Viagra (sildenafil) or Levitra (vardenafil) in the past 24 hours or Cialis (tadalafil) in the past 36 hours due to potential severe hypotension.
4. Ask the patient to hold their tongue up and spray one squirt of the drug onto the tissue beneath the patient's tongue.
5. Advise the patient that they may experience some signs or symptoms because of the medication, including dizziness, headache, or a "rush." Ask the patient to report any of these symptoms to you.
6. Document the procedure, including time of administration and patient response.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate.

# Medication Administration: Transdermal

| I | EMT- I | I |
|---|---|---|
| P | EMT- P | P |

**Clinical Indications:**

- Administration of nitroglycerine paste

**Procedure:**

1. Confirm the correct medication, expiration date, and dosage. Read the label to verify the drug is intended for transdermal administration. Check to see if the dose to be administered is dependent upon the patient's weight or other variable factor.
2. Assess the patient to be sure they are not allergic to the drug.
3. Avoid Nitroglycerin in any patient who has taken an erectile disfunction medication such as Viagra (sildenafil) or Levitra (vardenafil) in the past 24 hours or Cialis (tadalafil) in the past 36 hours due to potential severe hypotension.
4. Measure out the appropriate dose by length onto the applicator paper.
5. Apply the applicator paper to the patient's skin, medication side down.
6. Advise the patient that they may experience signs and symptoms in response to the medication. Ask them to report any burning at the site, headache, dizziness, or blurred vision.
7. Monitor the patient for appropriate response to the medication.
8. Document the procedure, including time of administration and patient response.
9. Be prepared to stop medication administration by removing the applicator paper and wiping off all remaining medication.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate.

# Injections: Autoinjector

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

Patient needing urgent medication administration when the specific medication may be given via an autoinjector.

**Procedure:**

1. Receive and confirm medication order or perform according to standing orders.
2. Prepare equipment and medication.
3. Explain the procedure to the patient and reconfirm patient allergies.
4. The most common site for autoinjector injection is the thigh.
5. Expose the selected area and cleanse the injection site with alcohol.
6. Remove the cap of the autoinjector. This releases the safety catch.
7. Firmly press the autoinjector against the anterior face of the thigh.
8. Hold the autoinjector in place for fifteen seconds to allow the full injection of the medication.
9. Withdraw the needle quickly and dispose of properly without recapping.
10. Apply pressure to the site.
11. Monitor the patient for the desired therapeutic effects as well as any possible side effects.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate.

# Injections: Subcutaneous and Intramuscular

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- When medication administration is necessary and the medication must be given via the SQ (not auto-injector) or IM route or as an alternative route in selected medications.

**Procedure:**

1. Receive and confirm medication order or perform according to standing orders.
2. Prepare equipment and medication expelling air from the syringe.
3. Explain the procedure to the patient and reconfirm patient allergies.
4. The most common site for subcutaneous injection is the arm.
    - Injection volume should not exceed 1 cc.
5. The possible injection sites for intramuscular injections include the arm, buttock and thigh.
    - Injection volume should not exceed 1 cc for the arm
    - Injection volume should not exceed 2 cc in the thigh or buttock.
6. The thigh should be used for injections in pediatric patients and injection volume should not exceed 1 cc.
7. Expose the selected area and cleanse the injection site with alcohol.
8. Insert the needle into the skin with a smooth, steady motion

    **SQ: 45-degree angle skin pinched** **IM: 90-degree angle skin flattened**

9. Aspirate for blood
10. Inject the medication.
11. Withdraw the needle quickly and dispose of properly without recapping.
12. Apply pressure to the site.
13. Monitor the patient for the desired therapeutic effects as well as any possible side effects.
14. Document the medication, dose, route, and time on/with the patient care report (PCR).

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

# CHARTE Documentation

| | | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

Clinical Indications:

- All patient encounters shall be documented on approved OCEM patient care reports and the documentation method used by all personnel should follow the CHARTE narrative method, as outlined below.

Procedure:

1. [C] Chief complaint: what the patient tells you, i.e. their description of the incident or problem.
   (a) What the patient reports. Patient quotes are useful here.
2. [H] History: the immediate history and any precipitating events. Medications and allergies are included here.
   (a) What lead up to this event
   (b) Past medical history
   (c) Medications and allergies
3. [A] Assessment: the full assessment, including initial assessment and focused history / physical exam.
   (a) Focus on the key findings – pertinent positive and negative findings that justify your treatment and protocol selection. Why you did or did not do something.
4. [R] Treatment: any treatment given to the patient, including FR and all on scene procedures.
   (a) Focus on the patient's response to treatment and procedures performed.
5. [T] Transport: the treatment that was given enroute to the ED and the mode of transport.
6. [E] Exceptions: the problems that were encountered during the incident.
   (a) Unusual events or problems such as I would consider carefully what is required to be put in a chart versus an incident report.:
   (b) Prolonged response time
   (c) Prolonged scene time
   (d) Partial refusal of care
   (e) Extrication
   (f) Confusion about DNR status
   (g) Law enforcement involvement
   (h) Any other impediments while on the call
7. Note the section of the CHARTE on the PCR with a circle, quotes or parentheses around the letter. Examples: "C" (H) "A" ® "T" (E)
8. PCR completion instructions are included in appendix A .

# North Carolina College of Emergency Physicians
# Standards Procedure (Skill)
# Refusal

| | | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Any patient who refuses EMS care after EMS has explained the necessity of transport to the Emergency Department.

**Procedure:**

1. If patient refuses care, or insists on being transported to a facility other than the destination recommended by the ambulance personnel, utilize “Patient Refusal Section of the ePCR” approved by Orange County Emergency Services.
2. Conduct assessment as outlined in the Refusal Policy.
3. Contact Medical Control, if necessary
4. Determine who may sign refusal form as outlined in the Refusal Policy
5. Complete all sections of Refusal Section
6. Review form with patient or authorized signer
7. Provide detailed explanation of possible risks and danger signs to patient or other authorized signer
8. Inform the patient to call 911, call their doctor or go to an emergency department if symptoms persist or get worse or any of the danger signs you inform them of appear.
9. Read the “Patient Advice” section of the electronic referral form to patient or authorized signer.
10. Complete the “Patient Advice” section on the electronic referral form by filling in the appropriate blanks and by documenting the advice or instructions you gave to the patient on the appropriate line.
11. Obtain the signature of the patient or authorized signer. If the patient refuses to sign, document this fact on the Refusal section as well as the narrative of the ePCR.
12. Obtain signature of a witness; preferably the witness should be someone who witnessed your explanation of risks and benefits to the patient, heard you read the “Patient Advice” to the patient, and who watched the patient sign the form.
13. If no witness is a available, a crew member may sign as a last resort.
14. Witnesses may include law enforcement personnel.
15. All witnesses should be 18 years of age (with proof of age) or older if possible.
16. If no witnesses are available, leave blank. Write the witnesses’ address and telephone number in the refusal section.
17. Complete ePCR in addition to Refusal section. ePCR narrative must include the following documentation:
    a) Competency assessments (listed above).
    b) Results of history and physical exam.
    c) The clinical symptoms upon which the need for transport was based.
    d) Information provided to fully inform the patient and/or other authorized individual of the consequences of their refusal of treatment/transport.
    e) The patient’s understanding of the risk and complications of his/her choice to refuse.
    f) Medical Control instructions, if any
    g) Alternatives offered
    h) Crew signatures
18. Patients not transported via EMS will be given written discharge instructions.

# 12 Lead ECG

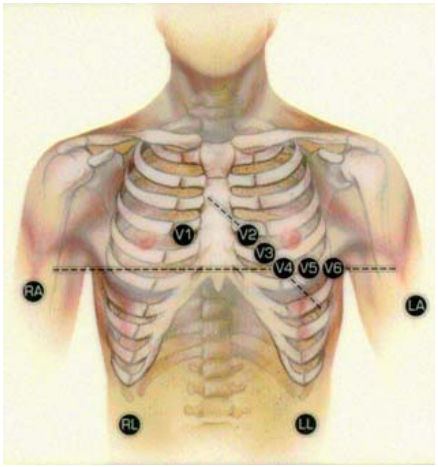
| | | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Suspected cardiac patient
- Suspected tricyclic overdose
- Electrical injuries
- Syncope

**Procedure:**

1. Assess patient and monitor cardiac status.
2. Administer oxygen as patient condition warrants.
3. If patient is unstable, definitive treatment is the priority. If patient is stable or stabilized after treatment, perform a 12 Lead ECG.
4. Prepare ECG monitor and connect patient cable with electrodes.
5. Enter the required patient information (patient name, etc.) into the 12 lead ECG device.
6. Expose chest and prep as necessary. Modesty of the patient should be respected.
7. Apply chest leads and extremity leads using the following landmarks:
   - RA -Right arm
   - LA -Left arm
   - RL -Right leg
   - LL -Left leg
   - V1 -4$^{th}$ intercostal space at right sternal border
   - V2 -4$^{th}$ intercostal space at left sternal border
   - V3 -Directly between V2 and V4
   - V4 -5$^{th}$ intercostal space at midclavicular line
   - V5 -Level with V4 at left anterior axillary line
   - V6 -Level with V5 at left midaxillary line




8. Instruct patient to remain still.
9. Press the appropriate button to acquire the 12 Lead ECG.
10. If the monitor detects signal noise (such as patient motion or a disconnected electrode), the 12 Lead acquisition will be interrupted until the noise is removed.
11. Once acquired, transmit the ECG data by fax to the appropriate hospital.
12. Contact the receiving hospital to notify them that a 12 Lead ECG has been sent.
13. Monitor the patient while continuing with the treatment protocol.
14. Download data as per guidelines and attach a copy of the 12 lead to the ACR.
15. Document the procedure, time, and results on/with the patient care report (PCR)

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

# 12 Lead ECG - LifeNET®

**Clinical Indications:**

- STEMI
- Post Resuscitation 12 Leads
- Any ECG constituting a call to the “bat phone”

| | | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**The transmission of the 12 lead does not replace the call to the “bat phone”.**

Paramedics are expected to accurately interpret the 12 lead and to communicate with the attending ED physician. Modems have been installed in all fourteen LIFEPAK 12’s. These modems are securely housed in a side pocket of the monitor and will not be moved. The modems plug into the same connector as the data cable and should be plugged in prior to and during transmission.

1. Perform a 12 lead within 5 minutes of patient contact (patient care permitting)
2. Ensure the patient’s last and first name are entered in the machine.
3. Select Transmit
4. Select Data
5. You Must select the appropriate 12-Lead report even if there is only one. (DO NOT Send any other report as this may render the system non functional)
6. Select **UNC** as the appropriate site
7. Unplug the data upload cable
8. Plug in the modem
9. When lights are illuminated the modem is working (The modems have cellular wireless data transmission capability and will continuously search for wireless signal)
10. Press the send button
11. Press the home button to return to the monitoring screen
12. The transmission will continue to run in the background and will be visible at bottom of the screen
13. No further action is required unless a failure message is received after transmission
14. After transmission is complete a transmission report will print
15. Once a 12 lead is transmitted, OCES administration and OCES medical directors will receive real-time notification.
16. Report any transmission failure or problem via webEOC and to the on-duty supervisor.

# Cardiac: External Pacing

P EMT- P P

**Clinical Indications:**

- Patients with symptomatic bradycardia (less than 60 per minute) with signs and symptoms of inadequate cerebral or cardiac perfusion such as:
  - Chest Pain
  - Hypotension
  - Pulmonary Edema
  - Altered Mental Status, Confusion, etc.
  - Ventricular Ectopy
- Asystole, pacing must be done early to be effective.
- PEA, where the underlying rhythm is bradycardic and reversible causes have been treated.

**Procedure:**

1. Attach standard four-lead monitor.
2. Apply defibrillation/pacing pads to chest and back:
   - One pad to left mid chest next to sternum
   - One pad to mid left posterior chest next to spine.
3. Select pacing option on monitor unit.
4. Adjust heart rate to 70 BPM for an adult and 100 BPM for a child.
5. Note pacer spikes on EKG screen.
6. Slowly increase output until capture of electrical rhythm on the monitor.
7. If unable to capture while at maximum current output, stop pacing immediately.
8. If capture observed on monitor, check for corresponding pulse and assess vital signs.
9. Consider the use of sedation or analgesia if patient is uncomfortable.
10. Document the dysrhythmia and the response to external pacing with ECG strips in the PCR.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System. Assessment should include direct observation at least once per certification cycle.

# North Carolina College of Emergency Physicians
## Standards Procedure (Skill)
# Cardiopulmonary Resuscitation (CPR)

**Clinical Indications:**

- Basic life support for the patient in cardiac arrest

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Procedure:**

1. Assess the patient's level of responsiveness (shake and shout)
2. If no response, check for pulse (carotid for adults and older children, brachial for infants) for at least 10 seconds. If no pulse, begin chest compressions based on chart below.
3. Open the patient's airway with the head-tilt, chin-lift and look, listen, and feel for respiratory effort. If the patient may have sustained C-spine trauma, use the modified jaw thrust while maintaining immobilization of the C-spine. For infants, positioning the head in the sniffing position is the most effective method for opening the airway. *for suspected trauma patients this step occurs prior to number 2.

| Age | Location | Depth | Rate |
|---|---|---|---|
| **Infant** | Over sternum, between nipples (inter-mammary line), 2-3 fingers | 1.5 inches | At least 100/minute |
| **Child** | Over sternum, just cephalad from xyphoid process, heel of one hand | 2 inches | At least 100/minute (3 compressions Every 2 seconds) |
| **Adult** | Over sternum, just cephalad from xyphoid process, hands with interlocked fingers | At least 2 inches | At least 100/minute (3 compressions Every 2 seconds) |

4. Attempt to give two ventilations. If air moves successfully, go to step 5. If air movement fails, proceed to the Airway Obstruction Procedure.
5. If no advanced airway (BIAD, ETT) compressions to ventilations are 30:2 for adults, children, and infants.
6. If advanced airway is in place ventilate provide 8 - 10 breaths per minute with the BVM with uninterrupted, continuous chest compressions. Use EtCO2 to guide your ventilations as directed in the Cardiac Arrest Protocol.
7. Chest compressions should be provided in an uninterrupted manner. Only brief interruptions ( < 5 seconds with a maximum of 10 seconds) are allowed for rhythm analysis, defibrillation, and performance of procedures.
8. Document the time and procedure in the Patient Care Report (PCR).

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by system.

# Cardioversion

P EMT- P P

## Clinical Indications:

- Unstable patient with a tachydysrhythmia (rapid atrial fibrillation, supraventricular tachycardia, ventricular tachycardia)
- Patient is not pulseless (the pulseless patient requires unsynchronized cardioversion, i.e., defibrillation)

## Procedure:

1. Ensure the patient is attached properly to a monitor/defibrillator capable of synchronized cardioversion.
2. Have all equipment prepared for unsynchronized cardioversion/defibrillation if the patient fails synchronized cardioversion and the condition worsens.
3. Consider the use of pain or sedating medications.
4. Set energy selection to the appropriate setting.
5. Set monitor/defibrillator to synchronized cardioversion mode.
6. Make certain all personnel are clear of patient.
7. Press and hold the shock button to cardiovert. Stay clear of the patient until you are certain the energy has been delivered. NOTE: It may take the monitor/defibrillator several cardiac cycles to “synchronize”, so there may be a delay between activating the cardioversion and the actual delivery of energy.
8. Note patient response and perform immediate unsynchronized cardioversion/defibrillation if the patient’s rhythm has deteriorated into pulseless ventricular tachycardia/ventricular fibrillation, following the procedure for Defibrillation-Manual.
9. If the patient’s condition is unchanged, repeat steps 2 to 8 above, using escalating energy settings.
10. Repeat until maximum setting or until efforts succeed. Consider discussion with medical control if cardioversion is unsucessful after 2 attempts.
11. Note procedure, response, and time in the patient care report (PCR).

## Certification Requirements:

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System. Assessment should include direct observation at least once per certification cycle., or other mechanisms as deemed appropriate by the local EMS System.

# Defibrillation: Automated

**Clinical Indications:**

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

- Patients in cardiac arrest (pulseless, non-breathing).
- Age < 8 years, use Pediatric Pads if available.

**Contraindication:**

- Pediatric patients who are so small that the pads cannot be placed without touching one another.

**Procedure:**

1. **If multiple rescuers available, one rescuer should provide uninterrupted chest compressions while the AED is being prepared for use.**
2. Apply defibrillator pads per manufacturer recommendations. Based on 2010 guidelines, place pads preferably in AP or AL position when implanted devices (pacemakers, AICDs) occupy preferred pad positions and attempt to avoid placing directly over device.
3. Remove any medication patches on the chest and wipe off any residue.
4. If necessary, connect defibrillator leads: white to the anterior chest pad and the red to the posterior pad.
5. Activate AED for analysis of rhythm.
6. **Stop CPR and clear the patient** for rhythm analysis. Keep interruption in CPR as brief as possible.
7. Defibrillate if appropriate by depressing the "shock" button. **Assertively state "CLEAR" and visualize that no one, including yourself, is in contact with the patient prior to defibrillation.** The sequence of defibrillation charges is preprogrammed for monophasic defibrillators. Biphasic defibrillators will determine the correct joules accordingly.
8. Begin CPR (chest compressions and ventilations) immediately after the delivery of the defibrillation.
9. After 2 minutes of CPR, analyze rhythm and defibrillate if indicated. Repeat this step every 2 minutes.
10. If "no shock advised" appears, perform CPR for two minutes and then reanalyze.
11. Transport and continue treatment as indicated.
12. **Keep interruption of CPR compressions as brief as possible. Adequate CPR is a key to successful resuscitation.**
13. **If pulse returns please use the Post Resuscitation Protocol**

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System. Assessment should include direct observation at least once per certification cycle.

# Defibrillation: Manual

P EMT- P P

**Clinical Indications:**

- Cardiac arrest with ventricular fibrillation or pulseless ventricular tachycardia

**Procedure:**

1. **Ensure that Chest Compressions are adequate and interrupted only when absolutely necessary.**
2. Clinically confirm the diagnosis of cardiac arrest and identify the need for defibrillation.
3. After application of an appropriate conductive agent if needed, apply defibrillation hands free pads (recommended to allow more continuous CPR) or paddles to the patient's chest in the proper position
   - Paddles: right of sternum at 2nd ICS and anterior axillary line at 5th ICS
   - Pads: anterior-posterior position

   For patients with implanted pacers/defibrillators, paddles or pads can be in AP or AL positions. The presence of implanted pacers/defibrillators should not delay defibrillation. Attempt to avoid placing paddles or pads directly above device.
4. Set the appropriate energy level
5. Charge the defibrillator to the selected energy level. **Continue chest compressions while the defibrillator is charging.**
6. If using paddles, assure proper contact by applying 25 pounds of pressure on each paddle.
7. **Hold Compressions, assertively state, "CLEAR" and visualize that no one, including yourself, is in contact with the patient.**
8. Deliver the countershock by depressing the discharge button(s) when using paddles, or depress the **shock button** for hands free operation.
9. Immediately resume chest compressions and ventilations for 2 minutes. After 2 minutes of CPR, analyze rhythm and check for pulse only if appropriate for rhythm.
10. Repeat the procedure every two minutes as indicated by patient response and ECG rhythm.
11. Keep interruption of CPR compressions as brief as possible. Adequate CPR is a key to successful resuscitation.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System. Assessment should include direct observation at least once per certification cycle.

# Cardiac: Mechanical CPR (Lucas Device)

**Clinical Indications:**

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**The LUCAS Device can be considered:**

- During the management of a cardiac arrest when there is an insufficient number of providers to continue high quality CPR.
- When the patient must be moved or transported and effective CPR can not be maintained or is impossible.
- If the use or set up of the device **WILL NOT** delay Manual Compressions or Defibrillations. In the event of a delay manual compressions will be continued without hesitation.
- In the event of mechanical failure Manual Compressions will be resumed immediately.

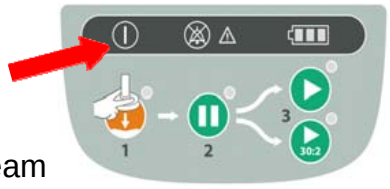
**Do not use the LUCAS Device if;**

- The patient is a pediatric patient as defined by Orange County EMS System Guidelines. **Age less than or equal to 15 years old**
- It is not possible to position the LUCAS safely or correctly on the patient's chest.
- The patient is too small; if the LUCAS alerts with 3 fast signals when lowering the suction cup, it will not enter the "activate" mode.
- The patient is too large. If you cannot lock the upper part of the LUCAS to the back plate without compressing the patient's chest.

**Procedure:**

**LUCAS does not initially take the place of good, high quality chest compressions**

1. **A MINIMUM of 3 cycles of compressions must be performed before the LUCAS Device can be considered for utilization.**
2. Manual high quality Chest Compressions will be administered according to current protocols.
3. Defibrillation / Pacing Pads must be positioned so that the pads and cables are not under the suction cup.
4. Open the LUCAS case and push the On/Off button on the control panel for one (1) second and it will start the self test.
5. Remove the back plate from the case. Communicate with other team members as to when and how the back plate will be deployed on the next rhythm check.



# Cardiac: Mechanical CPR (Lucas Device)

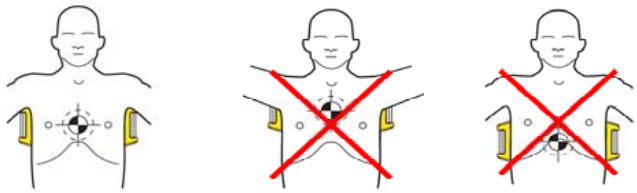
**Procedure (Continued):**

6. On the next pulse check (end of 5 cycle or 2 minutes of CPR), make sure the patients head is supported and carefully place the back plate under the patient, immediately below the armpits.

   Use one of these procedures:

   - Raise the patient up by lifting the shoulders or pulling their arms a small distance to get the board under OR Roll the patient, insert board and roll back

   - . If indicated Immediately defibrillate otherwise resume manual chest compressions immediately.



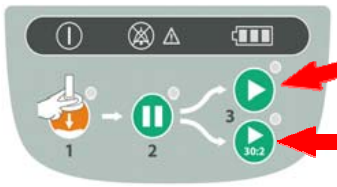
8. Using the handles on the support legs, remove the LUCAS from the case. Pull the release rings to open the claw locks. Then let go of the release rings.

9. Attach the support leg to the back plate opposite of the compressor. During the last thirty (30) seconds of the 2 minute cycle, bring the LUCAS over the chest and lock it into position while manual compressions continue.

10. At the end of the compression cycle, assure the LUCAS is in “adjust” mode (button 1), with 2 fingers, push down the suction cup until the pressure pad touches the patient’s chest.




11. Press the pause button (button 2) to lock the start position.

12. 


If there is a BIAD (King) or other advanced airway in place press button 3 (Active) to activate continuous compressions

If no advanced airway is in place press button 3 (30:2) for the 30 compressions to 2 breaths cycle.

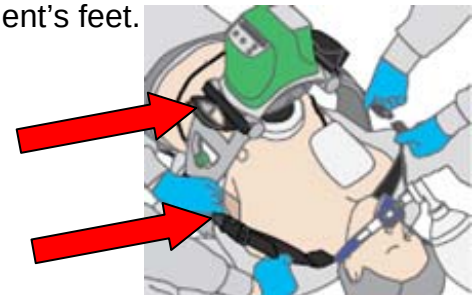
13. Pause for rhythm / pulse checks no less than every 2 minutes for no longer than 5 seconds. LUCAS compressions should continue during defibrillations.

14. Place the LUCAS Stabilization Strap behind head/neck and attach straps to the LUCAS device. This will prevent the LUCAS from migrating toward the patient’s feet.

15. Place the patients arms in the Wrist Straps provided at the top of the LUCAS device arms.

**Wrist Straps**

**LUCAS Stabilization Strap**



# Cardiac: Dual Sequential Defibrillation

**Clinical Indications:**

P PARAMEDIC P

- Cardiac arrest with persistent ventricular fibrillation or pulseless ventricular tachycardia.
- Refractory ventricular fibrillation or pulseless ventricular tachycardia where ≥ 3 shocks delivered.

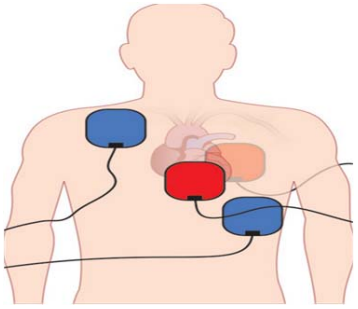
**Procedure:**

**1. Ensure that Chest Compressions are adequate and interrupted only when absolutely necessary.**

2. Clinically confirm the diagnosis of cardiac arrest and identify the need for defibrillation.

3. Prepare sites for second pad set attachment and apply defibrillation hands free pads:

- Pads: First defibrillator pads in anterior-posterior position
- Pads: Second defibrillator pads in anterior-lateral position:
- Ensure pads are not in contact with one another.



For patients with implanted pacers/defibrillators:
Avoid placing paddles or pads directly above device.

4. Set the appropriate energy level and assure controls for both defibrillator / monitors are accessible to provider performing defibrillation.

5. At next pulse / rhythm check, if refractory or persistent VF/VT continues:

**Charge the defibrillator to the selected energy level.**
**Continue chest compressions while the defibrillator is charging.**

6. Optional: Agencies may provide a single shock at this point with the second defibrillator / monitor to provide a change in energy vector delivered to the heart then move to step 7 if VF / VT persists.

**7. When both monitor / defibrillators have reached selected energy setting:**

**Hold Compressions, assertively state, "CLEAR" and visualize that no one, including yourself, is in contact with the patient.**

**2 options at this point:**

**Option 1 (double simultaneous): Provider depresses both defibrillator shock buttons simultaneously.**

**Option 2 (dual sequential): Provider depresses monitor 1 shock button and then immediately following, depresses monitor 2 shock button.**

8. Immediately resume chest compressions and ventilations for 2 minutes. After 2 minutes of CPR, analyze rhythm and check for pulse only if appropriate for rhythm.

9. Repeat the procedure every two minutes as indicated by patient response and ECG rhythm.

10. Keep interruption of CPR compressions as brief as possible. Adequate CPR is a key to successful resuscitation.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System. Assessment should include direct observation at least once per certification cycle.

# Venous Access: Blood Draw

| | | |
|---|---|---|
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Collection of a patient's blood for laboratory analysis

**Procedure:**

1. Utilize universal precautions as per OSHA.
2. Select vein and prep as usual.
3. Select appropriate blood-drawing devices.
4. Draw appropriate tubes of blood for lab testing.
5. Assure that the blood samples are labeled with the correct information (a minimum of the patients name, along with the date and time the sample was collected).
6. Deliver the blood tubes to the appropriate individual at the hospital.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

# Venous Access: Central Line Maintenance

**Clinical Indications:**

P EMT- P P

- Transport of a patient with a central venous pressure line already in place

**Procedure:**

1. Prior to transportation, ensure the line is secure.
2. Medications and IV fluids may be administered through a central venous pressure line. Such infusions must be held while the central venous pressure is transduced to obtain a central venous pressure, but may be restarted afterwards.
3. Do not manipulate the central venous catheter.
4. If the central venous catheter becomes dysfunctional, does not allow drug administration, or becomes dislodged, contact medical control.
5. Document the time of any pressure measurements, the pressure obtained, and any medication administration in the patient care report (PCR).

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

# Venous Access: Existing Catheters

**Clinical Indications:**

P EMT- P P

- Inability to obtain adequate peripheral access.
- Access of an existing venous catheter for medication or fluid administration.
- Central venous access in a patient in cardiac arrest.

**Procedure:**

1. Clean the port of the catheter with alcohol wipe.
2. Using sterile technique, withdraw 5-10 ml of blood and discard syringe in sharps container.
3. Using 5cc of normal saline, access the port with sterile technique and gently attempt to flush the saline.
4. If there is no resistance, no evidence of infiltration (e.g., no subcutaneous collection of fluid), and no pain experienced by the patient, then proceed to step 4. If there is resistance, evidence of infiltration, pain experienced by the patient, or any concern that the catheter may be clotted or dislodged, do not use the catheter.
5. Begin administration of medications or IV fluids slowly and observe for any signs of infiltration. If difficulties are encountered, stop the infusion and reassess.
6. Record procedure, any complications, and fluids/medications administered in the Patient Care Report (PCR).

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

# Venous Access: External Jugular Access

| | | |
|---|---|---|
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- External jugular vein cannulation is indicated in a critically ill patient ≥ 8 years of age who requires intravenous access for fluid or medication administration and in whom an extremity vein is not obtainable.
- External jugular cannulation can be attempted initially in life threatening events where no obvious peripheral site is noted.

**Procedure:**

1. Place the patient in a supine head down position. This helps distend the vein and prevents air embolism.
2. Turn the patient's head toward the opposite side if no risk of cervical injury exists.
3. Prep the site as per peripheral IV site.
4. Align the catheter with the vein and aim toward the same side shoulder.
5. Compressing the vein lightly with one finger above the clavicle, puncture the vein midway between the angle of the jaw and the clavicle and cannulate the vein in the usual method.
6. Attach the IV and secure the catheter avoiding circumferential dressing or taping.
7. Document the procedure, time, and result (success) on/with the patient care report (PCR).

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

# Venous Access: Extremity

| | | |
|---|---|---|
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Any patient where intravenous access is indicated (significant trauma, emergent or potentially emergent medical condition).

**Procedure:**

1. Saline locks may be used as an alternative to an IV tubing and IV fluid in every protocol at the discretion of the ALS professional.
2. Paramedics can use intraosseous access where threat to life exists as provided for in the Venous Access-Intraosseous procedure.
3. Use the largest catheter bore necessary based upon the patient's condition and size of veins.
4. Fluid and setup choice is preferably:
   - Normal Saline with a macro drip (10 gtt/cc) for medical conditions, trauma or hypotension
   - Normal Saline with a micro drip (60 gtt/cc) for medication infusions
5. Inspect the IV solution for expiration date, cloudiness, discoloration, leaks, or the presence of particles.
6. Connect IV tubing to the solution in a sterile manner. Fill the drip chamber half full and then flush the tubing bleeding all air bubbles from the line.
7. Place a tourniquet around the patient's extremity to restrict venous flow only.
8. Select a vein and an appropriate gauge catheter for the vein and the patient's condition.
9. Prep the skin with an antiseptic solution.
10. Insert the needle with the bevel up into the skin in a steady, deliberate motion until the bloody flashback is visualized in the catheter.
11. Advance the catheter into the vein. **Never** reinsert the needle through the catheter. Dispose of the needle into the proper container without recapping.
12. Draw blood samples when appropriate.
13. Remove the tourniquet and connect the IV tubing or saline lock.
14. Open the IV to assure free flow of the fluid and then adjust the flow rate as per protocol or as clinically indicated.

    **Rates are preferably:**
    - Adult: KVO: 60 cc/hr (1 gtt/ 6 sec for a macro drip set)
    - Pediatric: KVO: 30 cc/hr (1 gtt/ 12 sec for a macro drip set)

    **If shock is present:**
    - Adult: 500 cc fluid boluses repeated as long as lungs are dry and BP < 90. Consider a second IV line.
    - Pediatric: 20 cc/kg blouses repeated PRN for poor perfusion.
15. Cover the site with a sterile dressing and secure the IV and tubing.
16. Label the IV with date and time, catheter gauge, and name/ID of the person starting the IV.
17. Document the procedure, time and result (success) on/with the patient care report (PCR).

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

# Parenteral Access: Intraosseous

| A | AEMT | A |
|---|---|---|
| P | PARAMEDIC | P |

## Clinical Indications:

- Rapid, regular IV access is unavailable with any of the following:
- Cardiac arrest.
- Multisystem trauma with severe hypovolemia.
- Severe dehydration with vascular collapse and/or loss of consciousness.
- Respiratory failure / Respiratory arrest.
- Burns.

## Contraindications:

- Fracture proximal to proposed intraosseous site.
- History of Osteogenesis Imperfecta
- Current or prior infection at proposed intraosseous site.
- Previous intraosseous insertion or joint replacement at the selected site.

## Procedure:

1. Don personal protective equipment (gloves, eye protection, etc.).
   - **Proximal tibia:** Identify anterior-medial aspect of the proximal tibia (bony prominence below the knee cap). The insertion location will be 1-2 cm (2 finger widths) below this.
   - **Distal tibia:** If above site is not suitable, and patient is an adult, identify the anterior-medial aspect of the distal tibia (2 cm proximal to the medial malleolus).
   - **Distal femur:** If this site is not suitable, and patient is a pediatric, identify the patella with the leg out-stretched to prevent bending of the knee. The insertion site is approximately 1 cm above the patella and approximately 1 – 2 cm medially.
   - **Proximal humerus:** Acceptable insertion site for adult patients. Locate the insertion site 1 – 2 cm above the surgical neck on the most prominent aspect of the greater tubercle. This is located on the lateral aspect of the ball of the humerus. Direct the needle at a 45 degree angle or toward the opposite hip.
3. Prep the site recommended by the device manufacturer with an antiseptic solution.
4. For manual pediatric devices, hold the intraosseous needle at a 90 degree angle to bone surface, aimed away from the nearby joint and epiphyseal plate, twist the needle handle with a rotating grinding motion applying controlled downward force until a “pop” or “give” is felt indicating loss of resistance. Do not advance the needle any further.
5. For the EZ-IO intraosseous device, hold the intraosseous needle at a 90 degree angle to bone surface, aimed away from the nearby joint and epiphyseal plate, power the driver until a “pop” or “give” is felt indicating loss of resistance. Do not advance the needle any further. Blue (25mm) IO needle is typically recommended for tibial IO placement (adults and children), Yellow (45 mm) IO needle is typically utilized for proximal humerus, and Pink (15 mm) should only be utilized in neonates. IO needle choice may vary based on a patients body habitus, or abnormal weight for age.
6. For the Bone Injection Gun (BIG), find and mark the manufacturers recommended site. Position the device and pull out the safety latch. Trigger the BIG at 90° to the bone surface and remove the injection device.
7. Remove the stylette and place in an approved sharps container.
8. Attach a syringe filled with at least 5 ml NS; For IO manual devices only, verify placement by aspirating bone marrow. Inject at least 5 ml of NS to clear the lumen of the needle. Look for infiltrations around site.
9. Attach the IV line and adjust flow rate. A pressure bag may assist with achieving desired flows.
10. Stabilize and secure the needle with dressings and tape.
11. Paramedics may administer 20 to 50 mg (1 to 2.5 ml ) of 2% Lidocaine in adult patients who experience infusion-related pain. This may be repeated prn to a maximum of 60 mg (3 ml).
    For infant/child dose is 0.5mg/kg, Not to exceed 40mg.
12. Following the administration of any IO medications, flush the IO line with 10 ml of IV fluid.
13. Document the procedure, time, and result (success) on/with the patient care report (PCR).

## Certification Requirements:

Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System. Assessment should include direct observation at least once per certification cycle.

# Arterial Access: Line Maintenance

**Clinical Indications:**

P EMT- P P

- Transport of a patient with an existing arterial line.

**Procedure:**

1. Make certain arterial line is secured prior to transport, including intersection of arterial catheter and IV/Monitoring lines.
2. Use available equipment for monitoring of arterial pressures via arterial line.
3. Do not use the arterial line for administration of any fluids or medications.
4. If there is any question regarding dislodgement of the arterial line and bleeding results, remove the line and apply direct pressure over the site for at least five minutes before checking to ensure hemostasis.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

# CNS Catheter: Epidural Catheter Maintenance

**Clinical Indications:**

P EMT- P P

- Presence of an epidural catheter in a patient requiring transport

**Procedure:**

1. Prior to transport, ensure catheter is secure and that transport personnel are familiar with medication(s) being delivered and devices used to control medication administration.
2. No adjustments in catheter position are to be attempted.
3. No adjustments in medication dosage or administration are to be attempted without direct approval from on-line medical control.
4. Report any complications immediately to on-line medical control.
5. Document the time and dose of any medication administration or rate adjustment in the patient care report (PCR).

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

# Wound Care-General

**Clinical Indications:**

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

- Protection and care for open wounds prior to and during transport.

**Procedure:**

1. Use personal protective equipment, including gloves, gown, and mask as indicated.
2. If active bleeding, elevate the affected area if possible and hold direct pressure. Do not rely on "compression" bandage to control bleeding. Direct pressure is much more effective.
3. Once bleeding is controlled, irrigate contaminated wounds with saline as appropriate (this may have to be avoided if bleeding was difficult to control). Consider analgesia per protocol prior to irrigation.
4. Cover wounds with sterile gauze/dressings. Check distal pulses, sensation, and motor function to ensure the bandage is not too tight.
5. Monitor wounds and/or dressings throughout transport for bleeding.
6. Document the wound and assessment and care in the patient care report (PCR).

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

# Wound Care-Hemostatic Agent

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Serious hemorrhage that can not be controlled by other means.

**Contraindications:**

- Wounds involving open thoracic or abdominal cavities.

**Procedure:**

1. Apply approved non-heat-generating hemostatic agent per manufacturer's instructions.
2. Supplement with direct pressure and standard hemorrhage control techniques.
3. Apply dressing.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

North Carolina College of Emergency Physicians
Standards Procedure (Skill)

# Wound Care-Taser® Probe Removal

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Patient with uncomplicated conducted electrical weapon (Taser®) probes embedded subcutaneously in non-sensitive areas of skin.
- Taser probes are barbed metal projectiles that may embed themselves up to 13 mm into the skin.

**Contraindications:**

- Patients with conducted electrical weapon (Taser®) probe penetration in vulnerable areas of body as mentioned below should be transported for further evaluation and probe removal
- Probes embedded in skin above level of clavicles, female breasts, or genitalia
- Suspicion that probe might be embedded in bone, blood vessel, or other sensitive structure.

**Procedure:**

- Ensure wires are disconnected from weapon.
- Stabilize skin around probe using non-dominant hand.
- Grasp probe by metal body with pliers or hemostats to prevent puncture wounds to EMS personnel.
- Remove probe in single quick motion.
- Wipe wound with antiseptic wipe and apply dressing.

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

# Wound Care-Tourniquet

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Life threatening extremity hemorrhage that can not be controlled by other means.
- Serious or life threatening extremity hemorrhage and tactical considerations prevent the use of standard hemorrhage control techniques.

**Contraindications:**

- Non-extremity hemorrhage
- Proximal extremity location where tourniquet application is not practical

**Procedure:**

1. Place tourniquet proximal to wound
2. Tighten per manufacturer instructions until hemorrhage stops and/or distal pulses in affected extremity disappear.
3. Secure tourniquet per manufacturer instructions
4. Note time of tourniquet application and communicate this to receiving care providers
5. Dress wounds per standard wound care protocol
6. If delayed or prolonged transport and tourniquet application time > 45 minutes: consider reattempting standard hemorrhage control techniques and removing tourniquet

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

# Chest Decompression

**Clinical Indications:**

P EMT- P P

- Patients with hypotension (SBP <90), clinical signs of shock, and at least one of the following signs:
  - Jugular vein distention.
  - Tracheal deviation away from the side of the injury (often a late sign).
  - Absent or decreased breath sounds on the affected side.
  - Hyper-resonance to percussion on the affected side.
  - Increased resistance when ventilating a patient.

- Patients in traumatic arrest with chest or abdominal trauma for whom resuscitation is indicated. These patients may require bilateral chest decompression even in the absence of the signs above.

**Procedure:**

1. Don personal protective equipment (gloves, eye protection, etc.).
2. Administer high flow oxygen.
3. Identify and prep the site:
   - Locate the second intercostals space in the mid-clavicular line on the same side as the pneumothorax.
   - If unable to place anteriorly, lateral placement may be used at the fourth ICS mid-axillary line.
   - Prepare the site with providone-iodine ointment or solution.
4. Insert the catheter (14 gauge for adults) into the skin over the third rib and direct it just over the top of the rib (superior border) into the interspace.
5. Advance the catheter through the parietal pleura until a “pop” is felt and air or blood exits under pressure through the catheter, then advance catheter only to chest wall.
6. Remove the needle, leaving the plastic catheter in place.
7. Secure the catheter hub to the chest wall with dressings and tape.
8. Consider placing a finger cut from an exam glove over the catheter hub. Cut a small hole in the end of the finger to make a flutter valve. Secure the glove finger with tape or a rubber band. (Note – don’t waste much time preparing the flutter valve; if necessary control the air flow through the catheter hub with your gloved thumb.)

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System. Assessment should include direct observation once per certification cycle.

# Splinting

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

**Clinical Indications:**

- Immobilization of an extremity for transport, either due to suspected fracture, sprain, or injury.
- Immobilization of an extremity for transport to secure medically necessary devices such as intravenous catheters

**Procedure:**

1. Assess and document pulses, sensation, and motor function prior to placement of the splint. If no pulses are present consider reduction of the fracture after discussion and authorization by Medical Control.
2. Remove all clothing from the extremity.
3. Select a site to secure the splint both proximal and distal to the area of suspected injury, or the area where the medical device will be placed.
4. Do not secure the splint directly over the injury or device.
5. Place the splint and secure with Velcro, straps, or bandage material (e.g., kling, kerlex, cloth bandage, etc.) depending on the splint manufacturer and design.
6. Document pulses, sensation, and motor function after placement of the splint. If there has been a deterioration in any of these 3 parameters, remove the splint and reassess
7. If a femur fracture is suspected and there is no evidence of pelvic fracture or instability, the following procedure may be followed for placement of a femoral traction splint:
    - Assess neurovascular function as in #1 above.
    - Place the ankle device over the ankle.
    - Place the proximal end of the traction splint on the posterior side of the affected extremity, being careful to avoid placing too much pressure on genitalia or open wounds. Make certain the splint extends proximal to the suspected fracture. If the splint will not extend in such a manner, reassess possible involvement of the pelvis
    - Extend the distal end of the splint at least 6 inches beyond the foot.
    - Attach the ankle device to the traction crank.
    - Twist until moderate resistance is met.
    - Reassess alignment, pulses, sensation, and motor function. If there has been deterioration in any of these 3 parameters, release traction and reassess.
8. Document the time, type of splint, and the pre and post assessment of pulse, sensation, and motor function in the patient care report (PCR).

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

# Spinal Immobilization

**Clinical Indications:**

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

- Need for spinal immobilization as determined by protocol

**Procedure:**

1. Gather a backboard, straps, C-collar appropriate for patient's size, tape, and head rolls or similar device to secure the head.
2. Explain the procedure to the patient
3. Place the patient in an appropriately sized C-collar while maintaining in-line stabilization of the C-spine. This stabilization, to be provided by a second rescuer, should not involve traction or tension but rather simply maintaining the head in a neutral, midline position while the first rescuer applied the collar.
4. Once the collar is secure, the second rescuer should still maintain their position to ensure stabilization (the collar is helpful but will not do the job by itself.)
5. Place the patient on a long spine board with the log-roll technique if the patient is supine or prone. For the patient in a vehicle or otherwise unable to be placed prone or supine, place them on a backboard by the safest method available that allows maintenance of in-line spinal stability.
6. Stabilize the patient with straps and head rolls/tape or other similar device. Once the head is secured to the backboard, the second rescuer may release manual in-line stabilization.
7. NOTE: Some patients, due to size or age, will not be able to be immobilized through in-line stabilization with standard backboards and C-collars. Never force a patient into a non-neutral position to immobilize them. Such situations may require a second rescuer to maintain manual stabilization throughout the transport to the hospital. Special equipment such as football players in full pads and helmet may remain immobilized with helmet and pads in place.
8. Document the time of the procedure in the patient care report (PCR).

**Certification Requirements:**

- Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.

# Cardiac Arrest

## EMS Triage and Destination Plan

### Cardiac Arrest Patient

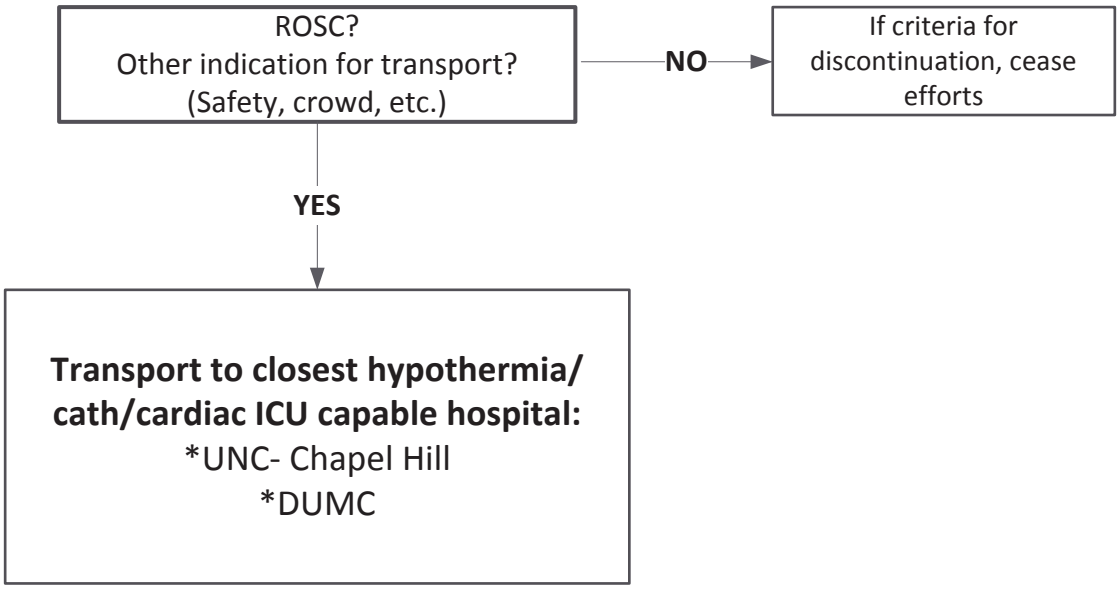
*Resuscitation was attempted by 911 provider

**And/Or**

* CPR performed prior to EMS arrival and pulses restored

**The Purpose of this plan is to:**

*Transport cardiac arrest and post resuscitation patients to the appropriate receiving facility




### Pearls and Definitions

*All Cardiac Arrest Patients who are being transported must be triaged and transported using this plan, except under director order from EMS System Medical Control. This plan is in effect 24/7/365

*All patient care is based on the appropriate protocol

*This protocol and the destinations in it have been approved by the Orange County EMS System Peer Review Committee

*UNC-Chapel Hill and DUMC are appropriate facility for all presumed etiology of cardiac arrest. Additionally, both are pediatric centers and appropriate for transport of those < 18 in the setting of cardiac arrest.

*UNC-Chapel Hill and DUMC are appropriate facilities for traumatic arrest as they are Level 1 trauma facilities.

Cardiac Arrest EMS Triage and Destination Plan

# Pediatric
## EMS Triage and Destination Plan

### Pediatric Patient

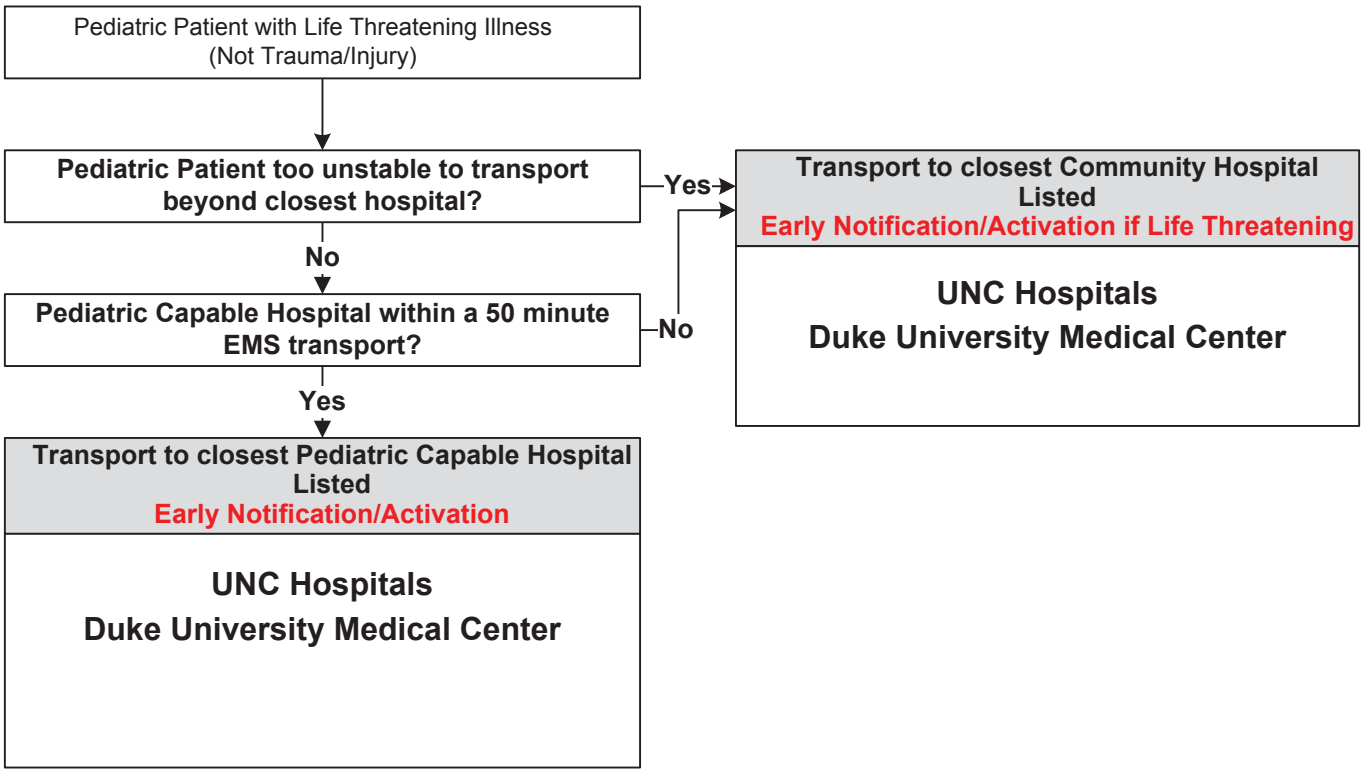
- **Any patient less than 16 years of age with a life-threatening illness (Not Trauma)**

### Life Threatening Illness

- **Decreased Mental Status (GCS<13)**
- **Non-Responsive Respiratory Distress**
- **Intubation**
- **Post Cardiac Arrest**
- **Non-Responsive Hypotension (shock)**
- **Severe Hypothermia or Hyperthermia**
- **Status Epilepticus**
- **Potential Dangerous Envenomation**
- **Life Threatening Ingestion/Chemical Exposure**
- **Children with Special Healthcare Needs** (and destination choice based on parental request)

### The Purpose of this plan is to:

- Rapidly identify pediatric patients who call 911 or present to EMS with a life-threatening illness
- Minimize the time from EMS contact to definitive care
- Quickly diagnose patients with pediatric life-threatening illness for EMS treatment and stabilization
- Rapidly identify the best hospital destination based on symptom onset time, vital signs, response to treatment, and predicted transport time
- Early activation/notification to the hospital prior to patient arrival
- Minimize scene time with a “load and go” approach
- Provide quality EMS service and patient care to the EMS community
- Continuously evaluate the EMS System based on North Carolina’s EMS performance measures




### Pearls and Definitions

- **All Pediatric Patients with a life-threatening illness must be triaged and transported using this plan. This plan is in effect 24/7/365.**
- **The Trauma and Burn Triage and Destination Plan should be used for all injured patients regardless of age.**
- **All Patient Care is based on the EMS Pediatric Protocol**
- **Pediatric Capable Hospital** = a hospital with an emergency and pediatric intensive care capability including but not limited to:
  - Emergency Department staffed 24 hours per day with board certified Emergency Physicians
  - An inpatient Pediatric Intensive Care Unit (with a physician pediatric intensivist available in-house or on call 24/7/365)
  - Accepts all EMS patients regardless of bed availability
  - Provides outcome and performance measure feedback to EMS including case review
- **Community Hospital** = a local hospital within the EMS System’s service area which provides emergency care but does not meet the criteria of a Pediatric Capable Hospital
- **Pediatric Specialty Care Transport Program** = an air or ground based specialty care transport program that has specific pediatric training and equipment addressing the needs of a pediatric patient that can assume care of a pediatric patient from EMS or a Community Hospital and transport the patient to a Pediatric Capable Hospital.

# Sepsis

## EMS Triage and Destination Plan

### Sepsis Patient

***Obvious or suspected infection AND any of these SIRS criteria:**

**SBP < 90 mmHg**
**Heart rate > 90/min**
**Respiratory Rate > 20**
**Temperature ≥ 100.4° F or < 96.0° F**
**New onset altered mental status - GCS< 15**

**And**

**End tidal CO < 26 mmHg**
**OR**

**SBP < 90 mmHg after fluid resuscitation**

### The Purpose of this plan is to:

* Rapidly identify Sepsis patients who call 911 or present to EMS
* Rapidly identify the best hospital destination based on symptom onset time, vital signs, response to treatment, and patient presentation
* Early activation/notification to the hospital prior to patient arrival
* Minimize scene time to 15 minutes or less
* Provide quality EMS service and patient care to the EMS System's citizens
* Continuously evaluate the EMS System based on North Carolina s Sepsis EMS performance measures

SIRS criteria with suspected infection and
EtC02 < 26 mmHg OR SBP < 90 mmHg after fluid resuscitation
(or pressor administration)

↓

**Transport to Hospital**
**Early Sepsis Notification/Activation**

**SEPSIS EMS Triage and Destination Plan**

### Pearls and Definitions

*All Sepsis Patients must be triaged and transported using this plan. This plan is in effect 24/7/365
*All Patient Care is based on the EMS Sepsis/Fever Protocol
*This protocol and the destinations in it have been approved by the Orange County EMS System peer Review Committee
*Obtain the following information before your radio call in: Patient age and gender, clinical presentation, history, symptoms that suggest this is a septic event (See Sepsis/Fever Protocol)
*If the patient meets the criteria above call a CODE SEPSIS
*If concern for sepsis, but do not meet criteria do NOT call "Code Sepsis." Instead, consult physician due to concern for possible Septic infection.

# STEMI
## EMS Triage and Destination Plan

**STEMI Patient**
**(ST Elevation Myocardial Infarction)**
* **Cardiac symptoms greater than 15 minutes and less than 12 hours**
**And**
* **12 lead ECG criteria of 1 mm ST elevation in 2 or more contiguous leads**

**(SEE BELOW or CHEST PAIN/STEMI PROTOCOL or CODE STEMI Procedure for CODE STEMI Criteria)**

**The Purpose of this plan is to:**
* Rapidly identify STEMI patients who call 911 or present to EMS
* Minimize the time from onset of STEMI symptoms to coronary reperfusion
* Quickly diagnose a STEMI by 12 lead ECG
* Rapidly identify the best hospital destination based on symptom onset time, and predicted transport time
* Early activation/notification to the hospital prior to patient arrival
* Minimize scene time to 10 minutes or less (including a 12 lead ECG)
* Provide quality EMS service and patient care to the EMS Systems citizens
* Continuously evaluate the EMS System based on North Carolina's STEMI EMS performance measures

Active Symptoms of Cardiac Chest Pain
12 Lead ECG Findings = STEMI

↓

**Early STEMI Notification/Activation of closest PCI capable Hospital with transmission of 12 lead when possible (with respect to patient preference)**

**UNC Chapel Hill**
**Duke University Medical Center**

STEMI EMS Triage and Destination Plan

**Pearls and Definitions**
* **All STEMI Patients must be triaged and transported using this plan.**
* **All Patient Care is based on the EMS Chest Pain and STEMI Protocol**
* Obtain the following information *before* radio call in:
* Patient age and gender, clinical presentation, history, symptoms that suggest this is an acute cardiac event, and what are the 2 or more anatomically contiguous leads with 1 + mm ST elevation
*** **If there is concern for STEMI in the setting of ANY of the following:**
* **LBBB not known to be old?**
* **Presence of LVH**
* **Presence of profound tachycardia (heart rate >129)**
* **Presence of pacemaker activity**
* **Resuscitated from cardiac arrest but does not have obvious STEMI?**
*** **THEN** transmit 12-lead for **ED Physician Consultation** instead of calling a "Code STEMI". Be sure to communicate the need for physician consult due to concern for possible STEMI or AMI.

# Stroke
## EMS Triage and Destination Plan

### Stroke Patient

* **A patient with symptoms of an acute Stroke as identified by the EMS Stroke Screen**

### Time of Symptom Onset

* **Defined as the last witnessed time the patient was symptom free (i.e. the time of onset for a patient awakening with stroke symptoms would the last time he/she was known to be symptom free before the sleep period)**

**The Purpose of this plan is to:**

* Rapidly identify acute Stroke patients who call 911 or present to EMS
* Minimize the time from onset of Stroke symptoms to definitive care
* Quickly diagnose a Stroke using validated EMS Stroke Screen
* Rapidly identify the best hospital destination based on symptom onset time, reperfusion checklist, and predicted transport time
* Early activation/notification to the hospital prior to patient arrival
* Minimize scene time to 10 minutes or less
* Provide quality EMS service and patient care to the EMS Systems citizens
* Continuously evaluate the EMS System based on North Carolina's Stroke EMS performance measures

**Symptoms of Acute Stroke?**
**Positive Stroke Screen?**

**Yes**

**VAN Assessment**

| Van Positive – LKN < 6 hrs | VAN Positive – LKN > 6 hrs | VAN Negative |
|---|---|---|
| **Transport to closest Primary Stroke Center** | **Transport to closest Primary Stroke Center** | **Transport to closest Primary Stroke Center** |
| **UNC Chapel Hill**<br>**Duke University Medical Center** | **UNC Chapel Hill**<br>**Duke University Medical Center** | **UNC Chapel Hill**<br>**Duke University Medical Center** |
| **Pre-Arrival Notification:**<br>**"Code Stroke – VAN Positive, Last Known Normal Less than 6 Hours"** | **Pre-Arrival Notification:**<br>**"Code Stroke – VAN Positive, Last Known Normal Greater than 6 Hours"** | **Pre-Arrival Notification:**<br>**"Code Stroke – VAN Negative"** |

Stroke EMS Triage and Destination Plan

### Pearls and Definitions

* **All Stroke Patients must be triaged and transported using this plan. This plan is in effect 24/7/365**
* **All Patient Care is based on the EMS Suspected Stroke Protocol**
* **Primary Stroke Center** = a hospital that is currently accredited by the Joint Commission as a Primary Stroke Center. Free standing emergency departments and satellite facilities are not considered part of the Primary Stroke Center.
* **Stroke Capable Hospital** = a hospital which provides emergency care with a commitment to Stroke and the following capabilities:
  * CT availability with in-house technician availability 24/7/365
  * Ability to rapidly evaluate an acute stroke patient to identify patients who would benefit from thrombolytic administration
  * Ability and willingness to administer thrombolytic agents to eligible acute Stroke patients
  * Accepts all patients regardless of bed availability
  * Provides outcome and performance measure feedback to EMS including case review
* **Community Hospital** = a local hospital within the EMS System's service area which provides emergency care but does not meet the criteria for a Primary Stroke Center or Stroke Capable Hospital
* **Specialty Care Transport Program** = an air or ground based specialty care transport program which can assume care of an acute Stroke patient from EMS or a Hospital and transport the patient to a Primary Stroke Center.



This protocol has been altered from the original 2009 protocol developed by the North Carolina Office of EMS

# Trauma and Burn
## EMS Triage and Destination Plan

**Trauma and Burn Patient** = Any patient less (regardless of age) with a significant injury or burn

**The Purpose of this plan is to:**

- Rapidly identify Trauma patients who call 911 or present to EMS
- Rapidly identify the best hospital destination based on symptom onset time, vital signs, response to treatment, and patient presentation
- Early activation/notification to the hospital destination based on time of injury, severity of injury, and predicted transport time
- Minimize scene time to 10 minutes or less
- Provide quality EMS service and patient care to the EMS System's citizens
- Continuously evaluate the EMS System based on North Carolina's Trauma EMS performance measures

**Acutely Injured or Burned Patient**

**Evidence of extreme shock or un-manageable airway**

Yes → **Transport to the Nearest Hospital for Stabilization Unless Minimal Additional Time to a Trauma Center**

No

**Any Abnormal Vital Signs?**

- Glasgow Coma Score: <13 or intubated
- Systolic Blood Pressure: <90 mmHg
  **<100 mmHg in age 55+**
- Pulse Oximetry: <90% (with Chest Injury)
- EtCO2: <26 mmHg
- Respiratory Rate: <10 or >29 breaths per min. (<20 in infant aged <1 year)

Yes

No

**Critical Injury by Assessment?**

- Penetrating injury to head, neck, torso, or extremities proximal to elbow and knee
- Flail Chest or Pneumothorax
- 2 or more Rib Fractures in patients >55 years old
- Two or more proximal long-bone fractures
- Crushed, degloved, or mangled extremity
- Amputation proximal to wrist and ankle
- Pelvic fractures
- Visibly Open or depressed skull fracture
- Paralysis
- Critical or Serious Burns (per EMS Burn Protocol)

Yes

No

**Special Considerations?**

- Anticoagulation and bleeding disorders
- Pregnancy >20 weeks
- Patient Age > 55

Yes

No

**Significant Mechanism?**

- Falls: Adults >20 ft, Children >10 ft.
- MVC: Intrusion >12 inches occupant side
  >18 inches any site
  Ejection
  Death in same vehicle
  Vehicle Telemetry with high risk injury
- Auto vs. pedestrian/bicyclist thrown, run over
- Motorcycle crash >20 mph

Yes

**Transport to closest Trauma Center (Burn Center for isolated Burn)**
**Early Notification/Activation**

**UNC Chapel Hill (Trauma and ALL BURNS)**
**Duke University Medical Center (Trauma only)**

Trauma and Burn EMS Triage and Destination Plan

**Pearls and Definitions**

- **All Injury and Burn Patients must be triaged and transported using this plan. This plan is in effect 24/7/365**
- **All Patient Care is based on the EMS Trauma Protocols**
- **Multiple rib fractures in the elderly is associated with high mortality and therefore benefit from transportation to a Trauma Center**
  - For each additional rib fracture after 2, the patient's mortality rate increases by around 20%
- **Designated Trauma Center** = a hospital that is currently designated as a Trauma Center by the North Carolina Office of Emergency Medical Services. Trauma Centers are designated as Level 1, 2, or 3 with Level 1 being the highest possible designation. Free standing emergency departments and satellite facilities are not considered part of the Trauma Center.
- **Burn Center** = a ABA verified Burn Center co-located with a designated Trauma Center
- **Community Hospital** = a local hospital within the EMS System's service area which provides emergency care but has not been designated as a Trauma Center
- **Specialty Care Transport Program** = an air or ground based specialty care transport program which can assume care of an acutely injured patient from EMS or a Community Hospital and transport the patient to a designated Trauma Center

Revised 10/16/2019

Orange County EMS System

2019

This protocol has been altered from the original 2009 protocol developed by the North Carolina Office of EMS

# Pandemic
## EMS Triage and Destination Plan

**Suspected Pandemic Patient**

**The Purpose of this plan is to:**

* Prevent transmission of pandemic illnesses to facilities that do not have proper isolation procedures or capabilities.
* Limit the number of receiving facilities treating pandemic patients

Active Symptoms of Illness meeting Special Circumstance protocol(s)

↓

Early notification to receiving hospital.

**UNC Chapel Hill**
**Duke University Medical Center**

Pandemic EMS Triage and Destination Plan

**Pearls and Definitions**

* See associated PPE recommendations based on the associated SC Protocol
* Do not enter hospital until directed to do so
* Follow all hospital guidance.

# Behavioral Health and Detox / Withdrawal

## EMS Triage and Destination Plan

**Behavioral Health and Substance Abuse Patients:** Any patient experiencing a behavioral health emergency, or experiencing the effects of substance abuse from alcohol or opiates

**Recovery Response Center (RRC) only accepts Adult patients ≥ 18**

**Call RCC to give patient report while en route: (919) 371-0235**

**For all Behavioral Health or Substance Use Disorder Crises, consider contacting:**

- Patient's current mental health provider or ACTT
- Chapel Hill Mobile Crisis Team or the Orange County Mobile Crisis Team (866) 275-9952

Mental Health Crisis **OR** Detoxification / Withdrawal Request

No → **Exit to appropriate Medical or Trauma Protocol,** *as indicated*

Yes

Patient is stable **AND** meets acceptance criteria for Recovery Resource Center (RRC)

No → **Exit to appropriate Medical or Trauma Protocol,** *as indicated*

↔ **See RRC Exclusion Criteria** On UP 22

Opiate Withdrawal or Request for Detox

No → Behavioral Emergency

No → Involuntary Commitment (LEO on Scene) **OR** Patient requests transport to Emergency Department

No → Patient refuses all transport options **and** **is *not* a danger to self or others**

No → *Return to Behavioral Destination Exclusion Protocol UP 22*

Yes → **Contact PORT**

Unavailable? → **Transport to RRC or any ED**

Yes → **Contact CARE Team**

Unavailable? → **Transport to UNC, DRH, or RRC**

Yes → Determine EMS or LEO Transport → **Transport to UNC, DRH, or RRC**

Yes → Follow Refusal of treatment/transport Clinical Standard → **Consider referral to:** Orange County Mobile Crisis Team (866) 275-9552 **OR** HOPE / MORES Mobile Crisis (*3 – 20yo*) (484) 215-6756

**Contact Destination or Medical Control**

Triage and Destination Plan



This protocol was altered from the original NCCEP Protocol by the Durham County EMS Medical Director.

# Criteria for Death / Withholding Resuscitation

**Policy:**

CPR, BLS and ALS treatment are to be withheld only if the patient is obviously dead (see procedure section) or a valid (*properly completed, signed, dated, and unexpired*) **North Carolina Do Not Resuscitate (DNR)** form and/or **Medical Orders for Scope of Treatment (MOST)** form is present (Disposition Policy 5).

EMS personnel shall also honor a valid **POLST (Physician Orders for Life Sustaining Treatment), POST (Physician Orders for Scope of Treatment), MOST and/or DNR** (*properly completed, signed, dated, and unexpired*) from another state or US military form. NCGS Article 23: 90-320.

**Purpose:**

The purpose of this policy is to:

- Honor those who have obviously expired prior to EMS arrival.
- To honor the terminal wishes of the patient
- To prevent the initiation of unwanted resuscitation

**Procedure:**

1. If a patient is in complete cardiopulmonary arrest (clinically dead) and meets one or more of the criteria below, CPR and ALS therapy need not be initiated:

    - Body decomposition
    - Rigor mortis
    - Dependent lividity
    - Injury not compatible with life (i.e., decapitation, burned beyond recognition, massive open or penetrating trauma to the head or chest with obvious organ destruction)
    - Extended downtime (> 15 minutes) with Asystole on ECG (or no shock advised on AED) and End Tidal < 20 mmHg
    - Meets criteria established in AC 12 Termination of CPR Protocol
    - Meets criteria established in TB 10 Traumatic Arrest Protocol

2. If a bystander or first responder has initiated CPR or automated defibrillation prior to ALS personnel (Paramedic) arrival and any of the above criteria (signs of obvious death) are present, the ALS provider may discontinue CPR / resuscitation efforts. All other EMS personnel levels must communicate with medical control prior to discontinuation of the resuscitative efforts unless specifically addressed in AC 12 Termination of CPR Protocol and/ or TB 10 Traumatic Arrest Protocol.

3. If doubt exists, start resuscitation immediately. Once resuscitation is initiated, continue resuscitation efforts until either:
    a) Resuscitation efforts meet the criteria for implementing the **Discontinuation of Prehospital Resuscitation Policy** (Disposition Policy 3).
    b) Patient care responsibilities are transferred to the destination hospital staff.

# Deceased Subjects

**Policy:**
EMS will handle the disposition of deceased subjects in a uniform, timely, and consistent manner.

**Purpose:**
The purpose of this policy is to:
- Organize a timely disposition of any deceased subject
- Maintain respect for the deceased and family
- Allow EMS to return to service in a timely manner.

**Procedure:**
1. Do not remove lines or tubes placed by EMS from the patient unless directed below.

2. Notify the law enforcement agency within jurisdiction.

3. If subject was found deceased by EMS or if resuscitation in the field is unsuccessful, the scene and the decedent are turned over to law enforcement.

4. EMS will not initiate contact with the medical examiner or family physician, but will talk with either at the request of law enforcement on the scene to provide medical details about resuscitative efforts or physical findings.

5. Transport arrangements should be made by law enforcement in concert with family wishes. Normally, transport will be by contracted Medical Examiners Office contract transporter.

6. If the deceased subject's destination is other than the county morgue, any line(s) or tube(s) placed by EMS should be removed prior to transport.

7. Document the situation, investigating law enforcement agency, law enforcement officer's name, and anticipated destination of the decedent on the patient care report form (PCR).

8. If requested by Law Enforcement, include a toe tag with the deceased subject for morgue transport.

9. Responsibility for determining the identification of a deceased subject falls to the law enforcement agency. EMS will not initiate a search for identification or attempt to identify a decedent except to assist a law enforcement officer at the officer's request.

10. On the direction of Law Enforcement, EMS will move the deceased subject to a nearby appropriate location to await transport to the Medical Examiner's Office.

11. If the decedent is in the ambulance, the remains will be transferred directly to the transport agency's vehicle unless specifically directed otherwise by law enforcement.

12. In unusual circumstance, and with Watch Officer approval, EMS may transport the decedent to the County's facility.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# Difficult Airway Evaluation

**Purpose:** Between 1 – 3% of patients who require endotracheal intubation have airways that make intubation difficult. Recognizing those patients who may have a difficult airway allows the paramedic to proceed with caution and to keep as many options open as possible. It also allows the paramedic to prepare additional equipment (such as a cricothyrotomy kit) that may not ordinarily be part of a standard airway kit.

**Procedure:**

1. The pneumonic LEMON is useful in evaluating patients for signs that may be consistent with a difficult airway and should raise the paramedic's index of suspicion.
   - Look externally
     External indicators of either difficult intubation or difficult ventilation include: presence of a beard or moustache, abnormal facial shape, extreme cachexia, edentulous mouth, facial trauma, obesity, large front teeth or "buck teeth", high arching palate, receding mandible, short bull neck.
   - Evaluate 3-3-2 Rule
     3 fingers between the patient's teeth (patient's mouth should open adequately to permit three fingers to be placed between the upper and lower teeth) 3 fingers between the tip of the jaw and the beginning of the neck (under the chin) 2 fingers between the thyroid notch and the floor of the mandible (top of the neck)
   - Mallampati
     This scoring system is based on the work of Mallampati et al published in the Canadian Anaesthesia Society Journal in 1985. The system takes into account the anatomy of the mouth and the view of various anatomical structures when the patient opens his mouth as wide as possible. This test is performed with the patient in the sitting position, the head held in a neutral position, the mouth wide open, and the tongue protruding to the maximum. Inappropriate scoring may occur if the patient is in the supine position (instead of sitting), if the patient phonates or if the patient arches his or her tongue.

Class I (easy) = visualization of the soft palate, fauces, uvula, anterior and posterior pillars.
Class II = visualization of the soft palate, fauces and uvula.
Class III = visualization of the soft palate and the base of the uvula.
Class IV (difficult) = soft palate is not visible at all.


Class I


Class II


Class III


Class IV



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

- Obstruction?
  Besides the obvious difficulty if the airway is obstructed with a foreign body, the paramedic should also consider other obstructers such as tumor, abscess, epiglottis, or expanding hematoma.

- Neck Mobility
  Ask the patient to place their chin on their chest and to tilt their head backward as far as possible. Obviously, this will not be possible in the immobilized trauma patient.

# Discontinuation of Prehospital Resuscitation

**Policy:**

Unsuccessful cardiopulmonary resuscitation (CPR) and other advanced life support (ALS) interventions may be discontinued prior to transport or arrival at the hospital when this procedure is followed.

**Purpose:**

The purpose of this policy is to:

- Allow for discontinuation of prehospital resuscitation after the delivery of adequate and appropriate ALS therapy.

**Procedure:**

1. Discontinuation of CPR and ALS intervention may be implemented **prior to contact with Medical Control if <u>ALL</u>** of the following criteria have been met:

    - Patient must be 18 years of age or older
    - Adequate CPR has been administered
    - Airway has been successfully managed with verification of device placement. Acceptable management techniques include orotracheal intubation, nasotracheal intubation, Blind Insertion Airway Device (BIAD) placement, or cricothyrotomy
    - IV or IO access has been achieved
    - No evidence or suspicion of any of the following:
        **-Drug/toxin overdose** **-Active internal bleeding**
        **-Hypothermia** **-Preceding trauma**
    - Rhythm appropriate medications and defibrillation have been administered according to local EMS Protocols for a total of 3 cycles of drug therapy without return of spontaneous circulation (palpable pulse)
    - All EMS paramedic personnel involved in the patient's care agree that discontinuation of the resuscitation is appropriate

2. If all of the above criteria are not met and discontinuation of prehospital resuscitation is desired, **contact Medical Control**.

3. The **Deceased Subjects Policy** should be followed.

Document all patient care and interactions with the patient's family, personal physician, medical examiner, law enforcement, and medical control in the EMS patient care report (PCR).



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# Patient Medication Self-Administration

**Policy:**

A patient who wishes to take his or her own medication or prescription should do so only in conjunction with the care provided by EMS personnel. If the patient medication is not an approved EMS medication and the patient is being transported by EMS, then the specific situation should be approved by Medical Control.

**Purpose:**

To protect patients health and wellbeing and the safety of the EMS System.

**Procedure:**

1. If a patient wishes to take a personal medication that is related to the reason for which EMS was called, and that medication is indicated for the situation, then the paramedic may approve of the patient taking the medication. For example, a diabetic patient who has high blood sugar and has not taken their own insulin may take it as prescribed in consultation with the paramedic.

2. If a patient wishes to take a personal medication that is not known to the EMS personnel, then **Medical Control** should be contacted to discuss the situation and medication.

3. EMS should restrict medication advice offered to patients to basic over-the-counter medications for common maladies, such as ibuprofen or acetaminophen.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# Patient Without a Protocol

**Policy:**

Anyone requesting EMS services will receive a professional evaluation, treatment, and transportation (if needed) in a systematic, orderly fashion regardless of the patient's problem or condition.

**Purpose:**

- To ensure the provision of appropriate medical care for every patient regardless of the patient's problem or condition.

**Procedure:**

1. Treatment and medical direction for all patient encounters, which can be triaged into an EMS patient care protocol, is to be initiated by protocol.

2. When confronted with an emergency or situation that does not fit into an existing EMS patient care protocol, the patient should be treated by the **Universal Patient Care Protocol** and a **Medical Control Physician** should be contacted for further instructions.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# State Poison Center

**Policy:**

The state poison center should be utilized by the 911 centers and the responding EMS services to obtain assistance with the prehospital triage and treatment of patients who have a potential or actual poisoning.

**Purpose:**

The purpose of this policy is to:

- Improve the care of patients with poisonings, envenomations, and environmental/biochemical terrorism exposures in the prehospital setting.
- Provide for the most timely and appropriate level of care to the patient, including the decision to transport or treat on the scene.
- Integrate the State Poison Center into the prehospital response for hazardous materials and biochemical terrorism responses

**Procedure:**

1. The 911 call center will identify and if EMD capable, complete key questions for the Overdose/ Poisoning, Animal Bites/Attacks, or Carbon Monoxide/Inhalation/HazMat emergency medical dispatch complaints and dispatch the appropriate EMS services and/or directly contact the State Poison Center for consultation.
2. If no immediate life threat or need for transport is identified, EMS personnel may conference the patient/caller with the Poison Center Specialist at the **State Poison Center at 800-222-1222**. If possible, dispatch personnel should remain on the line during conference evaluation.
3. The Poison Center Specialist at the State Poison Center will evaluate the exposure and make recommendations regarding the need for on-site treatment and/or hospital transport in a timely manner. If dispatch personnel are not on-line, the Specialist will recontact the 911 center and communicate these recommendations.
4. If the patient is determined to need EMS transport, the poison center Specialist will contact the receiving hospital and provide information regarding the poisoning, including treatment recommendations. EMS may contact medical control for further instructions or to discuss transport options.
5. If the patient is determined not to require EMS transport, personnel will give the phone number of the patient/caller to the Poison Center Specialist. The Specialist will initiate a minimum of one follow-up call to the patient/caller to determine the status of patient.
6. Minimal information that should be obtained from the patient for the state poison center includes:
    - Name and age of patient
    - Time of exposure
    - Signs and symptoms
    - Substance(s) involved
    - Any treatment given
7. Minimal information which should be provided to the state poison center for mass poisonings, including biochemical terrorism and HazMat, includes:
    - Substance(s) involved
    - Signs and symptoms
    - Time of exposure
    - Any treatment given



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# Transports to UNC ED Hillsborough

**Purpose:**
To identify which patients are appropriate to transport to UNC Hillsborough Campus

**Policy:**
1. Paramedics will adhere to the Triage Destination Plans contained in the protocol manual.

2. Based upon the limited capabilities of the UNC Hillsborough Campus, no patients in any of the following categories will be transported to the UNC Hillsborough Campus:
   - Patients meeting the Pediatric, STEMI, Stroke, Trauma and Burn, Sepsis, or Cardiac Arrest Destination Plan
   - CVA/TIA symptoms not meeting alert criteria
   - Pregnancy related complaint or active labor > 20 weeks
   - Open fractures
   - Unstable pediatric patients
   - Renal/Dialysis
   - Psychiatric
   - Seizure

3. In rare instances of a failed airway, impending arrest, difficult childbirth or other circumstances when the EMS crew needs urgent assistance AND they are in the close proximity of the Hillsborough Campus, crews should consider diverting for stabilization. In these instances the EMS crew should remain in the ED and be prepared to continue transport to the UNC Medical Center Campus as the patient is stabilized. The Quality Assurance Coordinator will review the case closely following the diversion.

4. Providers shall use the Hillsborough Campus radio talk group only when transporting to the Hillsborough Campus ED.

5. Providers may obtain medical control orders from either campus but should always call medical control at the UNC Facility where they intend to transport the patient.

6. The paramedic is ultimately responsible for the best care of the patient including the appropriate destination decision.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# Women's Birth and Wellness Center

**Policy:**

The Women's Birth and Wellness Center of Chapel Hill has certified nurse midwives on staff. Orange County is routinely called to the Women's Birth Center.

The Role of the Midwife

A) Carrying out examinations necessary to establish and monitor normal pregnancies.
B) Advising mothers-to-be on securing the examinations necessary for the earliest possible diagnosis of pregnancies at risk.
C) Providing education and preparation of clients for childbirth, including advice on exercise and nutrition.
D) Caring for and assisting the mother during labor and monitoring the condition of the fetus by the appropriate clinical and technical means.
E) Supervising and assisting with spontaneous vaginal deliveries.
F) Recognizing the warning signs of abnormality in the mother or infant that necessitates referral to a physician.
G) Taking necessary emergency measures in the event of a crisis.
H) Examining and caring for the newborn infant.
I) Caring for the mother in the postpartum period and advising her on infant care and family planning.

**Purpose:**

- To identify a chain of command to allow field personnel to adequately care for the patient
- To assure the patient receives the maximum benefit from pre-hospital care
- To provide a mechanism for which the certified nurse mid wife may continuing treatment of the patient(s)
- To minimize the liability of the EMS system as well as the Women's Birth and Wellness Center.

**Procedure:**

1. Upon being dispatched on a request for ambulance service to an out-of-hospital birth scene, paramedics will obtain from dispatch all pertinent information related to the call and specific instructions.

2. Upon arrival at the scene of an out-of-hospital birth where a person is assisting the mother, the paramedic will determine the following;
    a) Confirm the nature of the request for ambulance service and who requested the service.
    b) The condition of the patient(s) and the progression of the labor and/or delivery.
    c) The capacity in which the person assisting with the birth is acting (i.e. trained midwife, nurse, person of non-medical background).

3. When a person assisting with the out-of-hospital birth identifies themselves as a midwife, the paramedic will confirm with the patient that this person has been retained by them to assist with the birth.

4. The paramedic will work cooperatively with the midwife in providing quality care to the patient and/or neonate at the scene and throughout transportation to the hospital. If conflict occurs, the paramedic and midwife should attempt to work together for the mutual benefit of the patient. If agreement is unable to be reached, the paramedic should consult with Medical Control.

5. With the patient's consent for care and transport, the paramedic is ultimately responsible for the welfare of the patient, regardless of whether or not the paramedic utilizes the midwife's expertise and assistance.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

6. Medical direction of pre-hospital care is the responsibility of those most appropriately trained in providing such care. Only UNC Emergency Department Physicians are eligible to provide on line medical direction when applicable. All care should be provided within the rules and regulations of the state of North Carolina and Orange County EMS Protocols.

7. If birth has occurred, EMS will notify UNC ED with a “code stork” alert. The neonate will be evaluated in the emergency department and EMS should not transfer directly to NICU.

8. EMS shall bring all appropriate neonatal resuscitation equipment when transporting the neonate or the patient in active labor to labor and delivery or NICU.

9. Upon completion of a call to an out-of-hospital birth scene with a midwife present, the paramedic will note in the electronic patient care report, the midwife’s presence and involvement, (including the name of the midwife).

10. Oxytocin* (Pitocin) is a medication that is commonly utilized for post-partum hemorrhage or induction; this medication can be continued in an infusion as long as the Nurse Midwife is able to accompany the patient to the hospital.

11. Any other medications or procedures that the Midwife feels are appropriate can be administered by the Midwife under their own license during transport.

* Oxytocin (Pitocin) is a hormone that is important for controlling bleeding in post-partum patients by contracting the uterus and should be continued when possible for patients with significant post-partum hemorrhage.


This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

# Mandated Medical Direction Contact

**Purpose:**

This policy is intended to provide assistance to Emergency Medical Service personnel and provide secondary consultation during critical events for better patient outcome.

**Policy:**

1. All airway complications or use of surgical cricothyrotomy require discussion with the Medical Director as soon as medically feasible.

2. If a medication error occurs the personnel responsible is to contact the Medical Director after transferring patient care where they notify the attending physician and on-duty Supervisor.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# Opiate Overdose

**Policy:**

Patients who have experienced an isolated IV opiate overdose should be offered a variety of options to more appropriately manage their addiction.

**Purpose:**

The purpose of this policy is to:

- Ensure that the patient is offered various options for treatment of substance abuse.
- Provide harm reduction measures.

**Procedure:**

1. All patients must be over 18 years of age and must not have been in cardiac arrest during the incident.

2. The patient must regain a normal mental status and respiratory effort after the administration of Naloxone.

3. Transport to the Emergency Department should be offered to all patients.

4. For patients who decline transport to the Emergency Department, alternative destinations should be offered when possible. These options could include assistance with inpatient treatment centers such as Freedom House, outpatient facilities, mobile crisis solutions, addiction specialists, other local treatment options.

5. In order to decline transport, the patient must meet the following criteria:
    a) Be 18 years or older
    b) Maintain a GCS of 15
    c) Fully alert and oriented
    d) Be able to understand the risk of refusing transport, as described in Universal Protocol 1 (UP 1)

6. If the patient declines transport to the Emergency Department, an additional dose of 2mg Naloxone should be administered **IM** by EMS. A Naloxone kit should be left with the patient, family, and/or friends on the scene. EMS will provide education on how to use these kits.

7. In addition to the medication, the following items should be utilized when possible:
    a) Offer to dispose of any dirty needles
    b) Provide clean needles/syringes when possible
    c) Refer to a community peer support team if available
    d) Leave literature on resources for substance abuse treatment
    e) Notification of policy utilization should be made to the EMS Operations Manager via email after any naloxone kits are distributed.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

# Ketamine Program Requirements

**Policy:**

When administered, an EMS System or Agency must be approved by the State Medical Director and follow the guidelines below when administering Ketamine.

**Purpose:**

The purpose of this policy is to:

- Ensure that Ketamine is administered in a safe and effective manner
- Facilitate use of Ketamine in appropriate patients
- Establish a reporting mechanism for state review

**Procedure:**

1. The EMS system or Agency must adopt NCCEP protocols unchanged or submit equivalent protocols for review.

2. Letters of support must be obtained from all receiving hospitals where patients will be delivered after administration. These letters must be submitted to the OEMS prior to approval.

3. All personnel must be trained prior to implementation.

4. All administrations must be reviewed through the established PI/QA Medical Oversight process to include hospital outcome feedback. Concerns identified must be reviewed by the Peer Review/QA committee.

5. NCOEMS reporting:

   a. The EMS system or agency must submit to the OEMS a Ketamine Adverse Outcome Reporting Form and ePCR within 14 days for administrations that result in any of the following;
      1) Cardiac Arrest (pre-hospital or ED)
      2) Unanticipated intubation required after administration (pre-hospital or ED).

*Contact your Regional OEMS Systems Specialist for link to submit adverse outcome reports.

# Air Transport

**Policy:**

Air transport should be utilized whenever patient care can be improved by decreasing transport time or by giving advanced care not available from ground EMS services, but available from air medical transport services (i.e. blood).

**Purpose:**

The purpose of this policy is to:

- Improve patient care in the prehospital setting.
- Allow for expedient transport in serious, mass casualty settings.
- Provide life-saving treatment such as blood transfusion.
- Provide more timely access to interventional care in acute Stroke and ST-elevation myocardial infarction (STEMI) patients

**Procedure:**

Patient transportation via ground ambulance will not be delayed to wait for helicopter transportation. If the patient is packaged and ready for transport and the helicopter is not on the ground, or within a reasonable distance, the transportation will be initiated by ground ambulance.

Air transport should be considered if any of the following criteria apply**:**

- High priority patient with > 20 minute transport time
- Entrapped patients with > 10 minute estimated extrication time
- Multiple casualty incident with red/yellow tag patients
- Multi-trauma or medical patient requiring life-saving treatment not available in prehospital environment (i.e., blood transfusion, invasive procedure, operative intervention)
- Time dependent medical conditions such as acute ST-elevation myocardial infarctions (STEMI) or acute Stroke that could benefit from the resources at a specialty center as per the EMS System's Stroke and STEMI Plans.

If a potential need for air transport is anticipated, but not yet confirmed, an air medical transport service can be placed on standby.

If the scene conditions or patient situation improves after activation of the air medical transport service and air transport is determined not to be necessary, paramedic or administrative personnel may cancel the request for air transport.

Minimal Information which should be provided to the air medical transport service include:

- Number of patients
- Age of patients
- Sex of patients
- Mechanism of injury or complaint (MVC, fall, etc)



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

# Blood Draw on Law Enforcement Request

The Orange County Emergency Services – EMS Division fully supports the Law Enforcement community efforts to remove impaired drivers from the roads. In that effort, all paramedics credentialed by the Medical Director to perform as independent practice paramedics are authorized to draw blood under subject's consent or by court order for reasons of suspicion as stipulated by the appropriate law enforcement agency involved. At any point in the process, EMS personnel may have to either begin transportation or respond to additional emergencies based on the paramedics discretion, no matter where in the process of the evidence collection they may be.

Purpose:

The purpose is to provide a standard policy for performing forensic blood draw at the request of law enforcement in accordance with NCGS § 20.16.2, *Implied consent to chemical analysis; mandatory revocation of license in event of refusal; right of driver to request analysis* and NCGS § 20-139.1, *Procedures governing chemical analyses; admissibility; evidentiary provisions; controlled-drinking programs.*

Procedure:

Only credential paramedics (not student, cadet, EMT- Intermediate or phase eligible paramedics) are authorized to draw blood for evidence collection under this policy for Forensic Blood Draw:

1) Paramedics should perform blood draws when requested by law Enforcement Officers (LEO) due to the suspicion of a subject Driving Under the Influence (DUI).

2) The paramedic shall determine if the subject is a patient by direct observation, professional instinct, or if a non-solicited general medical or traumatic complaint is offered by the subject.

3) Transportation of a critical or "trauma" patient shall not be delayed for a blood draw.

4) EMS shall not draw blood from a deceased subject.

5) The subject must be in custody and the LEO must pesent an appropriate Biological Blood Specimen Kit.

6) The Subject must consent OR be under subpoena at the time of procedure. Uncooperative subjects and inappropriate manpower will never be combined with sharp needles and blood borne pathogens for the safety of the patient, EMS personnel and the LEOs.

7) Documentation:

If called by LEO only for a forensic blood draw, the patient category must be listed as "Law Enforcement Blood Draw" and the outcome as "Law Enforcement Response." The Subject's Name, Date of Birth , and Social Security Number, if available, shall be documented and be placed in the Patient demographic tab. Please note that no other "patient" information is required if this solely a forensic blood draw. The blood draw should be entered in the treatment tab as a blood draw, documenting the serial number of the evidence cantainer and time of needle insertion. A narrative documenting the evidence collection is required but does not have to be in D-CHARTE format unless the subject is determined to be a patient.

If the subject is declared a patient at any point in the process, a complete assessment is required and the ePCR shall be completed including the use of the D-CHARTE method of documentation. A person in custody may decline care and assessment, but the refusal process must be followed according to the Orange County Emergency Services – EMS Division Advanced Life Support Protocols and Policies.

If the subject is uncooperative and you fear that either you, your crew, the LEO, or the subject may be injured as a result of their behavior, you may refuse. However, you must inform the LEO of the refusal and reason for the refusal. A written statement may be required. If so, provide a statement and maintain a copy to be submitted with the ePCR.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# Back In Service Time

**Policy:**

All EMS Units transporting a patient to a medical facility shall transfer the care of the patient and complete all required operational tasks to be back in service for the next potential EMS event within 30 minutes of arrival to the medical facility, 90% of the time.

**Definition:**

The EMS Back in Service Time is defined as the time interval beginning with the time the transporting EMS Unit arrives at the medical facility destination and ending with the time the EMS Unit checks back in service and available for the next EMS event.

**Purpose:**

The purpose of this policy is to:

- Assure that the care of each EMS patient transported to a medical facility is transferred to the medical facility staff in a timely manner.
- Assure that the EMS unit is cleaned, disinfected, restocked, and available for the next EMS event in a timely manner.
- Assure that an interim or complete EMS patient care report (PCR) is completed and left with the receiving medical facility documenting, at a minimum, the evaluation and care provided by EMS for that patient (It is acceptable to leave the PreMIS Preliminary Report or equivalent if the final PCR cannot be completed before leaving the facility).
- Provide quality EMS service and patient care to the county's citizens.
- Provide a means for continuous evaluation to assure policy compliance.

**Procedure:**

The following procedures shall be implemented to assure policy compliance:

1. The EMS Unit's priority upon arrival at the medical facility will be to transfer the care of the patient to medical facility staff as soon as possible.

2. EMS personnel will provide a verbal patient report on to the receiving medical facility staff.

3. EMS personnel will provide an interim (PreMIS Preliminary Report or equivalent) or final Patient Care Report (PCR) to the receiving medical facility staff, prior to leaving the facility, that documents at a minimum the patient's evaluation and care provided by EMS prior to arrival at the medical facility. A complete PCR should be completed as soon as possible but should not cause a delay in the EMS Back in Service Time.

4. The EMS Unit will be cleaned, disinfected, and restocked (if necessary) during the EMS Back in Service Time interval.

5. Any EMS Back in Service Time delay resulting in a prolonged EMS Back in Service Time will be documented in Patient Care Report (PCR) as an "EMS Turn-Around Delay" as required and defined in the North Carolina College of Emergency Physicians (NCCEP) EMS Dataset Standards Document.

6. All EMS Turn-Around Delays will be reviewed regularly within the EMS System Peer Review Committee.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

# EMS Dispatch Center Time

**Policy:**

The EMS Dispatch Center Time will be less than 90 seconds, 90% of the time, for all events identified and classified as an emergent or hot (with lights and siren) response.

**Definition:**

The EMS Dispatch Center Time is defined as the time interval beginning with the time the initial 911 phone call rings at the 911 Communications Center requesting emergency medical services and ending with the dispatch time of the EMS Unit responding to the event.

**Purpose:**

The purpose of this policy is to:

- Provide the safest and most appropriate level of response to all EMS events within the EMS System.
- Provide a timely and reliable response for all EMS events within the EMS System.
- Provide quality EMS service and patient care to the county's citizens.
- Provide a means for continuous evaluation to assure policy compliance.

**Procedure:**

The following procedures shall be implemented to assure policy compliance:

1. A public calls into the 911 Communications Center requesting emergency medical assistance will never be required to speak with more than two persons before a formal EMS Unit is dispatched.

2. In EMS Dispatch Centers where Emergency Medical Dispatch (EMD) has been implemented, EMS Units will be dispatched by EMD certified personnel in accordance with the standards developed by the Medical Director and the Emergency Medical Dispatch Protocols.

3. EMS Units will be dispatched hot (with lights and sirens) or cold (no lights and sirens) by the 911 Call Center based on predetermined criteria. If First Responders are dispatched as a component of the EMS response, they should typically be dispatched hot (with lights and sirens).

4. Without question, exception, or hesitation, EMS Units will respond as dispatched (hot or cold). This includes both requests to respond on active calls and requests to "move-up" to cover areas of the System that have limited EMS resources available.

5. EMS Units may, at their discretion, request for a First Responder on Non-First Responder calls in situations where additional resources are required such as manpower, extreme response time of the EMS Unit, need for forcible entry, etc.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# EMS Dispatch Center Time

6. EMS Units dispatched with a cold (no lights and sirens) response, will not upgrade to a hot (with lights and sirens) response **UNLESS**:
   - Public Safety personnel on-scene requests a hot (with lights and sirens) response.
   - Communications Center determines that the patient's condition has changed, and requests you to upgrade to a hot (with lights and sirens) response.

7. An EMS Unit may divert from a current cold (no lights and sirens) call to a higher priority hot (with lights and sirens) call **ONLY IF:**
   - The EMS Unit can get to the higher priority call before it can reach the lower priority call. Examples of High Priority Calls: Chest Pain, Respiratory Distress, CVA, etc.
   - The diverting EMS Unit must notify the EMS Dispatch Center that they are diverting to the higher priority call.
   - The diverting EMS Unit ensures that the EMS Dispatch Center dispatches an EMS Unit to their original call.
   - Once a call has been diverted, the next EMS Unit dispatched must respond to the original call. A call cannot be diverted more than one (1) time.

8. Any EMS Dispatch Center Time delays resulting in a prolonged EMS Dispatch Center Time for emergent hot (with lights and sirens) events will be documented in Patient Care Report (PCR) as an "EMS Dispatch Delay" as required and defined in the North Carolina College of Emergency Physicians (NCCEP) EMS Dataset Standards Document.

9. All EMS Dispatch Delays will be reviewed regularly within the EMS System Peer Review Committee.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# EMS Wheels Rolling Turn-Out Time

**Policy:**

The EMS Wheels Rolling (Turn-out) Time will be less than 90 seconds, 90% of the time, for all events identified and classified as an emergent or hot (with lights and siren) response.

**Definition:**

The EMS Wheels Rolling (Turn-out) Time is defined as the time interval beginning with the time the EMS Dispatch Center notifies an EMS Unit to respond to a specific EMS event and ending with the time the EMS Unit is moving en route to the scene of the event.

**Purpose:**

The purpose of this policy is to:

- Provide a timely and reliable response for all EMS events within the EMS System.
- Provide quality EMS service and patient care to the county's citizens.
- Provide a means for continuous evaluation to assure policy compliance.

**Procedure:**

The following procedures shall be implemented to assure policy compliance:

1. In EMS Dispatch Centers where Emergency Medical Dispatch (EMD) has been implemented, EMS Units will be dispatched by EMD certified personnel in accordance with the standards developed by the Medical Director and the Emergency Medical Dispatch Protocols.
2. The EMS Unit Wheels Rolling (Turn-out) time will be less than 90 seconds from time of dispatch, 90% of the time. If a unit fails to check en route within 2:59 (mm:ss), the next available EMS unit will be dispatched.
3. Without question, exception, or hesitation, EMS Units will respond as dispatched (hot or cold). This includes both requests to respond on active calls and requests to "move-up" to cover areas of the System that have limited EMS resources available.
4. An EMS Unit may divert from a current cold (no lights and sirens) call to a higher priority hot (with lights and sirens) call **ONLY IF:**
    - The EMS Unit can get to the higher priority call before it can reach the lower priority call. Examples of High Priority Calls: Chest Pain, Respiratory Distress, CVA, etc.
    - The diverting EMS Unit must notify the EMS Dispatch Center that they are diverting to the higher priority call.
    - The diverting EMS Unit ensures that the EMS Dispatch Center dispatches an EMS Unit to their original call.
    - Once a call has been diverted, the next EMS Unit dispatched must respond to the original call. A call cannot be diverted more than one (1) time.
5. Any EMS Wheels Rolling (Turn-out) Time delay resulting in a prolonged EMS Response Time for emergent hot (with lights and sirens) events will be documented in Patient Care Report (PCR) as an "EMS Response Delay" as required and defined in the North Carolina College of Emergency Physicians (NCCEP) EMS Dataset Standards Document.
6. All EMS Response Delays will be reviewed regularly within the EMS System Peer Review Committee.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# Equipment Failure

**Policy:**

All equipment failures which could or are impacting patient care should be reported immediately to the communications center so that appropriate remedial actions can be taken. All other equipment failures should be reported as soon as possible to the on-duty EMS Supervisor.

**Purpose:**

To minimize the impact of equipment failure on patient care.

**Procedure:**

1. Each crew shall complete a daily equipment and vehicle check sheet to document the readiness of all equipment and to minimize the risk of such failures. Electronic equipment such as monitors, glucose machines, and thermometers must be checked at the start of every shift.

2. When a critical failure is recognized, contact the appropriate emergency communications center, advise them of the failure, and have the nearest, appropriate EMS resource dispatched. This may be a supervisor, an ambulance, or some other resource, depending upon patient need.

3. Based on the condition of the patient, advise the communications center to send the resource either emergency traffic or non-emergency traffic.

4. Closely monitor and treat the patient to the best of your ability with the remaining functional equipment.

5. Except in unusual circumstances, the original attending provider should continue to provide for the patient until arrival at the hospital, regardless of which unit is actually transporting the patient.

6. While it is appropriate to notify supervisory personnel of the failure at the conclusion of patient care activities, care and transport should not be delayed while awaiting the arrival of a supervisor.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# Failure to Locate

**Policy:**

Medical care delays caused by difficulties in finding a dispatch location must be minimized. Personnel who are having trouble finding a dispatch location should immediately ask for assistance. Safeguards are in place to reduce the chances that an unrecognized location failure would have a negative impact on patient care.

**Purpose:**

To minimize the impact of geographic response difficulties on patient care.

**Procedure:**

1. Each response vehicle is equipped with an up-to-date countywide map book or GPS unit. Each crew shall be familiar with the use of this equipment to accurately plan and execute a response.

2. All field units will acknowledge all radio traffic with their current physical location, and will include the specific location at which they are checking “on scene.”

3. When a responder is having trouble finding a dispatch location, they should immediately ask for assistance via radio from the communications center. If other responders are aware of the correct location, they should provide this information via radio.

4. Communications will check on responding units when the response time seems out of proportion to the known response distance.

5. A field unit that is having problems finding a dispatch location should safely pull over to the side of the road and consult their map book. They should not continue to drive, particularly with lights and siren still activated.

6. In extreme circumstances, a field unit should ask for help from other response agencies in finding a dispatch location.

7. If a unit or units have been dispatched to an approximate location for a suspected patient (i.e. a reported crash near mile marker 168 on I-85 Southbound), and they are unable to find an incident or patient, at least two passes by two separate response units should be conducted to make sure the incident or patient has not been missed. These will be documented by verbal report to the communications center.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# Fire Rescue Rehab

**Purpose:**
To aid in the recognition of the significant exertion of responders operating in environmental extremes and to establish a guide for the rest and recuperation of responders during periods of physical exertion when working at emergency scenes or during training evolutions.

**Procedure:**
**Establishment of the Rehab function**

1. For multi-company incidents, the incident commander (IC) is responsible for ensuring a rehab area is established.
2. The IC should be aware of additional rehab resources and should make the request for the resource as early into the incident as possible.
3. If the EMS unit leaves the scene to transport a patient to the hospital, another unit is to be called to the scene.

**Rehab location**

4. For warm weather, the rehab area should be set up in a shady area, under a tent, or in an air-conditioned environment.
5. For cold weather, the rehab area should be selected that is out of the wind and provides personnel an opportunity to be dry and warm.
6. A seating area should be provided.
7. The rehab area should be located far enough from scene operations to allow personnel to physically and mentally relax. It should also be free of from products of combustion and engine exhaust.
8. The use of tobacco products is prohibited in the rehab area.
9. Consider the use of multiple rehab areas if a geographic feature prevents access to the rehab area by all personnel.
10. The rehab function should be staffed with a minimum of BLS personnel equipped with AED capability. ALS personnel are preferred. An EMS transport unit should be on scene.

**Rehab Guidelines –See Protocol 7**



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# Infant Abandonment

**Policy:**

Article 5A, “Safe Surrender of Infants”, of the North Carolina General Statute provides a mechanism for unwanted infants to be taken under temporary custody by a law enforcement officer, social services worker, healthcare provider, or EMS personnel if an infant is presented by the parent and are no more than 30 days old. Emergency Medical Services will accept and protect infants who are presented to EMS in this manner, until custody of the child can be released to the Department of Social Services. The provisions of this Article apply exclusively to safely surrendered infants as defined in G.S. 7B-101(19a).

A first responder, including a law enforcement officer, a **certified emergency medical services worker**, or a firefighter shall, without a court order, take into temporary custody an infant reasonably believed to be not more than 30 days of age that is voluntarily delivered to the individual by the infant's parent who does not express an intent to return for the infant.

“An individual who takes an infant into temporary custody under this subsection shall perform any act necessary to protect the physical health and well-being of the infant and shall immediately notify the department of social services. Any individual who takes an infant into temporary custody under this subsection may inquire as to the parents' identities and as to any relevant medical history, but the parent is not required to provide this information.”

**Purpose:**

To provide:

- Protection to infants that are placed into the custody of EMS under this law
- Protection to EMS systems and personnel when confronted with this issue

**Procedure:**

1. Initiate the Pediatric Assessment Procedure.
2. Initiate Newly Born Protocol as appropriate.
3. Initiate other treatment as appropriate and transport to medical facility as per local protocol.
4. Keep infant warm.
5. Call local Department of Social Services or the county equivalent as soon as infant is stabilized.
6. Document protocols, procedures, and agency notifications in the PCR.

# Physician On-Scene

**Policy:**

The medical direction of prehospital care at the scene of an emergency is the responsibility of those most appropriately trained in providing such care. All care should be provided within the rules and regulations of the state of North Carolina.

**Purpose:**

- To identify a chain of command to allow field personnel to adequately care for the patient
- To assure the patient receives the maximum benefit from prehospital care
- To minimize the liability of the EMS system as well as the on-scene physician

**Procedure:**

1. When a non medical-control physician offers assistance to EMS or the patient is being attended by a physician with whom they do not have an ongoing patient relationship, EMS personnel must review the On-Scene Physician Form with the physician. All requisite documentation must be verified and the physician must be approved by on-line medical control.

2. When the patient is being attended by a physician with whom they have an ongoing patient relationship, EMS personnel may follow orders given by the physician if the orders conform to current EMS guidelines, and if the physician signs the PCR. Notify medical control at the earliest opportunity. Any deviation from local EMS protocols requires the physician to accompany the patient to the hospital.

3. EMS personnel may accept orders from the patient's physician over the phone with the approval of medical control. The paramedic should obtain the specific order and the physician's phone number for relay to medical control so that medical control can discuss any concerns with the physician directly.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# Safe Transport of Pediatric Patients

**Policy:**

Without special considerations children are at risk of injury when transported by EMS. EMS must provide appropriate stabilization and protection to pediatric patients during EMS transport.

**Purpose:**

To provide:

- Provide a safe method of transporting pediatric patients within an ambulance.
- Protect the EMS system and personnel from potential harm and liability associated with the transportation of pediatric patients.

**Procedure:**

1. Drive cautiously at safe speeds observing traffic laws.
2. Tightly secure all monitoring devices and other equipment.
3. Insure that all pediatric patient less than 40 lbs are restrained with an approved child restraint device secured appropriately to the stretcher or captains chair.
3. Insure that all EMS personnel use the available restraint systems during the transport.
4. Transport adults and children who are not patients, properly restrained, in an alternate passenger vehicle, whenever possible.
5. Do not allow parents, caregivers, or other passengers to be unrestrained during transport.
6. NEVER attempt to hold or allow the parents or caregivers to hold the patient during transport.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

# Terrorism Response

**Policy:**

EMS providers will respond to every call for assistance with eyes open and heightened awareness of the possibility of terrorist threats.

**Purpose:**

The purpose of this policy is to increase awareness of possible terrorist incidents as EMS responds to calls for assistance.

**Procedure:**

1. Terrorism is defined in the *Code of Federal Regulations* as "...the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives." (28 C.F.R. Section 0.85)

2. Domestic terrorism refers to activities that involve acts dangerous to human life that are a violation of the criminal laws of the United States or of any state; appear to be intended to intimidate or coerce a civilian population; to influence the policy of a government by mass destruction, assassination, or kidnapping; and occur primarily within the territorial jurisdiction of the United States. [18 U.S.C. § 2331(5)]

3. A terrorist *incident* is a violent act or an act dangerous to human life, in violation of the criminal laws of the United States, or of any state, to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives.

4. The recognition of a terrorist incident depends on alert field providers.

5. There are several types of terrorist incidents:
    a. Biological: Several types of biological agents exist but these can be grouped into bacteria, viruses, and toxins.
        1. Indicators:
            i. Unusual number of sick or dying people or animals
            ii. Dissemination of unscheduled and unusual sprays, especially outdoors or at night
            iii. Abandoned spray devices with no distinct odors
    b. Nuclear: There major types of radiation particles are of concern – alpha, beta, and gamma. Time, distance, and shielding are most important in determining cumulative dose.
        1. Indicators:
            i. Recognition of DOT placards and labels
            ii. Obvious accident or actual detonation
            iii. Use of monitoring devices



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

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c. Incendiary: Fire-starting devices of a mechanical, electrical, or chemical nature
    1. Indicators:
        i. Multiple fires
        ii. Remains of incendiary device components
        iii. Odors of accelerants
        iv. Heavy burning or high fire volume

d. Chemical: Five basic categories exist – nerve agents, blister agents, blood agents, choking agents, and irritant agents.
    1. Indicators:
        i. Rapid onset of similar symptoms in large groups of people
        ii. Clammy skin and pinpoint pupils
        iii. Mass fatalities without other signs of trauma
        iv. Hazardous materials or lab equipment not relevant to occupancy
        v. Unscheduled dissemination of unusual sprays
        vi. Abandoned spray devices
        vii. Numerous dead animals, fish, and birds, absence of insect life
        viii. Distinct pattern of casualties and common symptoms

e. Explosive
    1. Indicators
        i. Usually obvious large scale damage to structure
        ii. Blown-out windows and widely scattered debris
        iii. Usually many civilian casualties and fatalities

2. It is critical that EMS personnel be alert to the potential for terrorist incidents and be prepared to respond appropriately.

**Note: this policy was derived from and closely follows the Iowa Department of Public Health Bureau of EMS Guidelines for EMS Response to Terrorist


This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

# Transport

**Policy:**

All individuals served by the EMS system will be evaluated, treated, and furnished transportation (if indicated) in the most timely and appropriate manner for each individual situation.

**Purpose:**

To provide:

- Rapid emergency EMS transport when needed.
- Appropriate medical stabilization and treatment at the scene when necessary
- Protection of patients, EMS personnel, and citizens from undue risk when possible.

**Procedure:**

1. All trauma patients with significant mechanism or history for multiple system trauma will be transported as soon as possible. The scene time should be 10 minutes or less.

2. All acute Stroke and acute ST-Elevation Myocardial Infarction patients will be transported as soon as possible. The scene time should be 10 minutes or less for acute Stroke patients and 15 minutes or less (with 12 Lead ECG) for STEMI patients

2. Other Medical patients will be transported in the most efficient manner possible considering the medical condition. Advanced life support therapy should be provided at the scene if it would positively impact patient care. Justification for scene times greater than 20 minutes should be documented.

3. No patients will be transported in initial response non-transport vehicles.

4. In unusual circumstances, transport in other vehicles may be appropriate when directed by EMS administration.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

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# Transport Destination

**Purpose:**
To establish where Orange County 911-system ambulance crews can transport all patients regardless of pick-up location.

**Policy:**

1. EMS will only transport patients directly to these facilities regardless of pick-up location:

- Emergency Departments
- Catheterization lab
- Labor and delivery
- NICU
- An approved alternative destination

2. Please consult the Alternative Destination Protocol for approved alternative destination locations.

3. Providers are to consult with the EMS Supervisor if necessary. EMS Supervisors will be notified if an Orange County system ambulance is requested to respond to the UNC Hillsborough campus.

4. Quality Assurance will review 100% of patients that are transported from UNC Hillsborough ED, or to an approved alternative destination, or catheterization lab.

4. EMS providers will be expected to provide care inside their scope of practice as documented in the NCEP Standards EMS Medication and Skill Use.

5. In the setting of an interfacility transfer the provider may deem the patient care has occurred beyond their scope of practice, a clear communication between the attending physician and provider should occur. A discussion between physician and provider of alternative means of transport or additional resources should occur. The paramedic will ensure that the physician understands their scope of practice and the physician can assume care while in transport.

6. The paramedic shall complete a full PCR on the transferred patient and shall select the appropriate pick up and destination.

7. The paramedic shall provide a radio report to the receiving facility.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# UNC ED Interfacility Transfer

**Purpose:**
To establish the role of an Orange County 911-system ambulance crews in the event of an interfacility transfer from UNC Hillsborough ED to UNC Main Campus ED

**Policy:**
1. Carolina Air Care is the primary transport agency for transfers from the UNC Hillsborough Campus to the UNC Main Campus.

2. In critical need or resource deficiency, an Orange County System ambulance will be requested.

3. UNC Hillsborough ED and UNC Main Campus ED are part of the same integrated healthcare system and provide medical control for the Orange County EMS System.

4. EMS Supervisors will be notified if an Orange County system ambulance is requested to respond to the UNC Hillsborough campus.

5. The Quality Assurance Officer will be notified regarding any transfer from the Hillsborough campus ED to the main campus ED.

6. EMS providers will be expected to provide care inside their scope of practice as documented in the NCEP Standards EMS Medication and Skill Use.

7. In the event that the provider deems the patient too unstable or care has occurred beyond their scope of practice, a clear communication between the attending physician and provider should occur. The paramedic will ensure that the physician understands their scope of practice and resource limitations.

8. The paramedic shall complete a full PCR on the transferred patient and shall select the appropriate pick up and destination.

9. The paramedic shall provide a radio report to the receiving facility.

10. Orange County EMS system ALS ambulances will not be utilized to transport patients from the UNC Main Campus to the UNC Hillsborough Campus.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

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# Service Animal Transport

### History

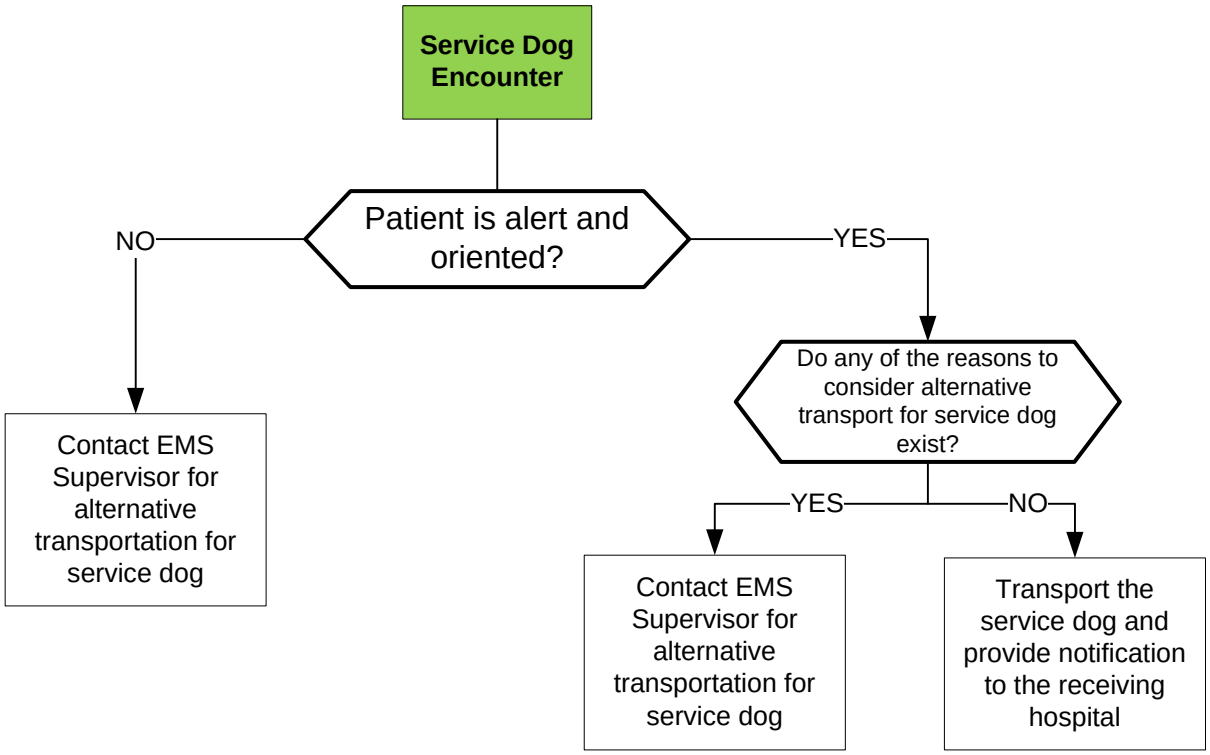
- The American with Disabilities ACT requires that all entities must allow service animals to accompany people with disabilities in all areas of the facility where the public is normally allowed to go
- The ADA only recognizes dogs and miniature horses as service animals

### Glossary

- Service Animal = any dog that is individually trained to do work or perform tasks for the benefit of an individual with a disability, including a physical, sensory, psychiatric, intellectual or other mental disability.
- Work or Tasks = specific actions when needed to assist the person with a disability

### Reasons to consider alternative transport for service dog

- Patient is unconscious or is unable to care for the service dog
- Service dog is demonstrating aggressive or destructive behavior
- If space in the ambulance is crowded and/or the dog's presence would interfere with the ability to treat the patient
- If the handler does not have the dog under control of a harness, leash or tether and one is not available.




## Pearls

- When you are unsure if the dog is a service animal, you may ask two questions: (1) is the dog a service animal required because of a disability, and (2) what work or task has the dog been trained to perform. We cannot ask about the person's disability, require medical documentation, require a special identification card or training documentation for the dog, or ask that the dog demonstrate its ability to perform the work or task.
- EMS crews must document disposition of the service animal in patient care report
- Regardless of who transports the dog, the owner and the service animal should arrive at the hospital at the same time
- Ambulances are only required to accommodate service dogs, and ambulance crews can legally deny transporting all other types of animals
- The decision to allow the patient and animal to remain together ultimately rests with the crew, and is based on the patient's need and ability to control the animal, as well as the crew's ability to transport the dog safely.
- Alternative mechanisms of transporting the service dog are police, animal control, EMS Supervisor, a friend, family member, or neighbor
- If transporting the service dog, the dog should be tethered to a stationary object in the ambulance, i.e. the stretcher, bench seat seatbelt, etc.
- Cover sharp object in perforated running boards to ensure dogs paws are not injured
- If a care provider for the patient has a service dog and requests to ride with a patient, use the same considerations as above to make decisions regarding transport. It is preferable to have the care provider's service animal in cab under the control of the care provider.
- For further information please review: www.ADA.gov



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

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# CODE: OR

**Policy:**

To provide a unique policy related to the UNC Code OR.

**Purpose:**

"Code OR" cases occur when a patient is evaluated by a UNC Physician, usually in a clinic or other outpatient setting, who determines a condition requires immediate surgery. They will arrange an immediate OR opening with UNC Chapel Hill, and confirm transportation from the ER to the OR for the patient.

**Procedure:**

1. EMS is notified by the transferring Physician that the patient will be treated as a "Code OR"

2. EMS will call the UNC Chapel Hill ED Charge Nurse and advise that they are transporting a "Code OR" patient – similar to other pre-notifications, such as STEMI / Stroke / Trauma.

3. On arrival at the ED, the EMS crew will await the arrival of the OR team, who will transport the patient to the OR. Transfer of care will occur at that point in the ER, with report given to the receiving OR team.

**NOTE:** If there are significant delays at the ER of greater than 20 minutes from time of arrival, then EMS will transfer care of the patient to ER staff as normal to return to service.

# EMS Offload / Facility Transition of Care

**Policy:**

The purpose of this policy is to:

- Ensure timely transfer of patient care to the receiving medical facility.
- Provide for the transfer of appropriate care information to the receiving facility.
- Ensure adequate number of transport units available to the community is not delayed due to prolonged Turn Around Times at receiving facilities.
- Promote teamwork and collegiality in transferring care of patients between EMS and hospital personnel with the goal of optimal patient care in focus.

Procedure:

1. EMS will provide an oral report to hospital personnel prior to EMS arrival describing patient status, mechanism of injury or illness, vital signs, therapies provided, procedures performed, and response to treatment.
2. Verbal patient report, paper transition of care/ written hand-off report, PCR copy, or ePCR transmission of patient care is provided to hospital personnel at time of transition of care.
   - Demographic information.
   - Summary of care provided.
   - Vital sign summary.
   - Procedures performed summary.
3. Assist in moving patient from EMS manner of conveyance to designated hospital area identified by hospital personnel.
4. Obtain the name and title of the receiving hospital personnel and document in the EMS PCR or ePCR.
5. Attempt to obtain the signature of the receiving hospital personnel and document in the EMS PCR or ePCR.
   - In the event hospital personnel refuse to sign acknowledging receipt of the patient, document the name and title of the hospital personnel and note hospital personnel refused to sign in the narrative portion of the PCR or ePCR or other area designated by agency.

# Child Abuse Recognition and Reporting

**Policy:**

Child abuse is the physical and mental injury, sexual abuse, negligent treatment, or maltreatment of a child under the age of 18 by a person who is responsible for the child's welfare. The recognition of abuse and the proper reporting is a critical step to improving the safety of children and preventing child abuse.

**Purpose:**

Assessment of a child abuse case based upon the following principles:

- **Protect** the life of the child from harm, as well as that of the EMS team from liability.
- **Suspect** that the child may be a victim of abuse, especially if the injury/illness is not consistent with the reported history.
- **Respect** the privacy of the child and family.
- **Collect** as much evidence as possible, especially information.

**Procedure:**

1. With all children, assess for and document psychological characteristics of abuse, including excessively passivity, compliant or fearful behavior, excessive aggression, violent tendencies, excessive crying, fussy behavior, hyperactivity, or other behavioral disorders

2. With all children, assess for and document physical signs of abuse, including especially any injuries that are inconsistent with the reported mechanism of injury.

3. With all children, assess for and document signs and symptoms of neglect, including inappropriate level of clothing for weather, inadequate hygiene, absence of attentive caregiver(s), or physical signs of malnutrition.

4. Immediately report any suspicious findings to both the receiving hospital (if transported) and to agency responsible for Social Services in the county. After office hours, the child protective services worker on call can be contacted by the EMS System's 911 communications center. While law enforcement may also be notified, North Carolina law requires the EMS provider to report the suspicion of abuse to DSS. EMS should not accuse or challenge the suspected abuser. This is a legal requirement to report, not an accusation. In the event of a child fatality, law enforcement must also be notified.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# Children with Special Healthcare Needs (NC Kidbase)

**Policy:**

Medical technology, changes in the healthcare industry, and increased home health capabilities have created a special population of patients that interface with the EMS system. It is important for EMS to understand and provide quality care to children with special health care needs.

**Purpose:**

The purpose of this policy is to:

- Provide quality patient care and EMS services to children with special health care needs.
- Understand the need to communicate with the parents and caregivers regarding healthcare needs and devices that EMS may not have experience with.
- Promote, request, and use the "Kidbase" form, which catalogs the health care problems, needs, and issues of each child with a special healthcare need.

**Procedure:**

1. Caregivers who call 911 to report an emergency involving a child with special health care needs may report that the emergency involves a "Kidbase child" (if they are familiar with the NC Kidbase program) or may state that the situation involves a special needs child.

2. Responding EMS personnel should ask the caregiver of a special needs child for a copy of the "Kidbase Form", which is the North Carolina terminology for the Emergency Information Form (EIF).

3. EMS personnel may choose to contact the child's primary care physician for assistance with specific conditions or devices or for advice regarding appropriate treatment and/or transport of the child in the specific situation.

4. Transportation of the child, if necessary, will be made to the hospital appropriate for the specific condition of the child. In some cases this may involve bypassing the closest facility for a more distant yet more medically appropriate destination.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

ToC

# Disposition (Patient Instructions)

**Policy:**

All patient encounters responded to by EMS will result in the accurate and timely completion of:

- The Patient Care Report (PCR) for all patients transported by EMS
- The Patient Disposition Form for all patients not transported by EMS

**Purpose:**

To provide for the documentation of:

- The evaluation and care of the patient
- The patient's refusal of the evaluation, treatment, and/or transportation
- The patient's disposition instructions
- The patient's EMS encounter to protect the local EMS system and its personnel from undue risk and liability.

**Procedure:**

1. All patient encounters, which result in some component of an evaluation, must have a Patient Care Report completed.

2. All patients who refuse any component of the evaluation or treatment, based on the complaint, must have a Disposition Form completed.

3. All patients who are NOT transported by EMS must have a Disposition (patient instruction) Form completed including the Patient Instruction Section.

4. A copy of the Patient Disposition Form should be maintained with the official Patient Care Report (PCR)



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

# Do Not Resuscitate and Most Form

**Policy:**

Any patient presenting to any component of the EMS system with a completed **North Carolina *Do Not Resuscitate* (DNR)** form (yellow form) and/or **MOST (Medical Orders for Scope of Treatment)** form (bright pink form) shall have the form honored. Treatment will be limited as documented on the DNR or MOST form.

**Purpose:**

- To honor the terminal wishes of the patient
- To prevent the initiation of unwanted resuscitation

**Procedure:**

1. When confronted with a patient or situation involving the NC DNR and/or MOST form(s), the following form content must be verified before honoring the form(s) request.

    - The form(s) must be an original North Carolina DNR form (yellow form - not a copy) and/or North Carolina MOST form (bright pink – not a copy)
    - The effective date and expiration date must be completed and current
    - The DNR and/or MOST Form must be signed by a physician, physician's assistant, or nurse practitioner.

2. A valid DNR or MOST form may be overridden by the request of:

    - The patient
    - The guardian of the patient
    - An on-scene physician

    If the patient or anyone associated with the patient requests that a NC DNR and/or MOST form not be honored, EMS personnel should contact **Medical Control** to obtain assistance and direction

3. A living will or other legal document that identifies the patient's desire to withhold CPR or other medical care may be honored with the approval of **Medical Control**. This should be done when possible in consultation with the patient's family and personal physician.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

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# EMS Documentation and Data Quality

**Policy:**

The complete EMS documentation associated with service delivery and patient care shall be electronically recorded into a Patient Care Report (PCR) within 24 hours of the completion of the EMS event, with an EMS Data Score at/or below the state average.

**Definition:**

EMS documentation of a Patient Care Report (PCR) is based on the appropriate and complete documentation of the EMS data elements as required and defined within the North Carolina College of Emergency Physician's EMS Standards. Since each EMS event and/or patient scenario is unique, only the data elements relevant to that EMS event and/or patient scenario should be completed.

The EMS Data Score is calculated on each EMS PCR as it is electronically processed into the North Carolina Office of EMS Repository Data Quality Scores are provided within the Repository. The best possible scores is a 100 and with each missing data element a point is deducted from thr data quality score.

A complete Patient Care Report (PCR) must contain the following information (as it relates to each EMS event and/or patient):

- Service delivery and crew information regarding the EMS Agency's response
- Dispatch information regarding the dispatch complaint, and EMD card number
- Patient care provided prior to EMS arrival
- Patient assessment as required by each specific complaint based protocol
- Past medical history, medications, allergies, and DNR/MOST status
- Trauma and cardiac arrest information if relevant to the EMS event or patient
- All times related to the event
- All procedures and their associated time
- All medications administered with their associated time
- Disposition and/or transport information
- Communication with medical control
- Appropriate signatures (written and/or electronic)

**Purpose:**

The purpose of this policy is to:

- Promote timely and complete EMS documentation.
- Promote quality documentation that can be used to evaluate and improve EMS service delivery, personnel performance, and patient care to the county's citizens.
- Promote quality documentation that will decrease EMS legal and risk management liability.
- Provide a means for continuous evaluation to assure policy compliance.

# EMS Documentation and Data Quality

**Procedure:**

The following procedures shall be implemented to assure policy compliance:

1. All patient encounters, which result in an evaluation, must have an EMS Patient Care Report (PCR) completed and documented.

2. The EMS Patient Care Report (PCR) shall be completed as soon as possible after the time of the patient encounter. **Documentation should be completed prior to leaving the destination facility, unless call demand dictates otherwise. Documentation must be completed prior to end of shift.**

3. Verbal patient report, paper transition of care/ written hand-off report, PCR copy, or ePCR transmission of patient care is provided to hospital personnel at time of transition of care.

4. The PCR must be electronically submitted to the Repository within 24 hours of the EMS event or patient encounter's completion. The EMS data quality feedback provided at the time of the electronic submission should be reviewed and when possible, any identified errors will be corrected within each PCR. Each PCR may be electronically resubmitted as many times as needed.

5. The North Carolina OEMS Repository uses errors and warnings as data validity checks to ensure complete and high-quality data during the collection, reporting and submission process. Errors will cause records to fail submission, while warnings will result in point deductions from the EMS Data Quality Score. In case of failed submissions, the agency must try to resolve the reason for the failure as soon as possible. The EMS Data Quality Scores for the EMS system, EMS agency and the individual EMS personnel will be reviewed regularly within the EMS System Peer Review Committee. The EMS Data Quality Scores for the EMS System, EMS Agency, and individual EMS personnel will be reviewed regularly within the EMS System Peer Review Committee.

6. Agencies that are required to submit data elements to the North Carolina Office of EMS should only use vendors that have achieved National Medical Services Information System (NEMSIS) compliance for the current version of elements. The current version of elements that OEMS accepts can be found at https://oems.nc.gov/data.

# Documentation of Vital Signs

**Policy:**

Every patient encounter by EMS will be documented. Vital signs are a key component in the evaluation of any patient and a complete set of vital signs is to be documented for any patient who receives some assessment component.

**Purpose:**

To insure:

- Evaluation of every patient's volume and cardiovascular status
- Documentation of a complete set of vital signs

**Procedure:**

1. An **initial** complete set of vital signs includes:
    - Pulse rate
    - Systolic **AND** diastolic blood pressure
    - Respiratory rate
    - Pain / severity (when appropriate to patient complaint)
    - GCS for Injured Patients

2. When no ALS treatment is provided, palpated blood pressures are acceptable for **REPEAT** vital signs.

3. Based on patient condition and complaint, vital signs may also include:
    - Pulse Oximetry
    - Temperature
    - End Tidal CO2 (If Invasive Airway Procedure)
    - Breath Sounds
    - Level of Response

4. If the patient refuses this evaluation, the patient's mental status and the reason for refusal of evaluation must be documented. A patient disposition form must also be completed.

5. Document situations that preclude the evaluation of a complete set of vital signs.

6. Record the time vital signs were obtained.

7. Any abnormal vital sign should be repeated and monitored closely.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

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# Domestic Violence (Partner and/or Elder Abuse) Recognition and Reporting

**Policy:**

Domestic violence is physical, sexual, or psychological abuse and/or intimidation, which attempts to control another person in a current or former family, dating, or household relationship. The recognition, appropriate reporting, and referral of abuse is a critical step to improving patient safety, providing quality health care, and preventing further abuse.

Elder abuse is the physical and/or mental injury, sexual abuse, negligent treatment, or maltreatment of a senior citizen by another person. Abuse may be at the hand of a caregiver, spouse, neighbor, or adult child of the patient. The recognition of abuse and the proper reporting is a critical step to improve the health and wellbeing of senior citizens.

**Purpose:**

Assessment of an abuse case based upon the following principles:

- **Protect** the patient from harm, as well as protecting the EMS team from harm and liability.
- **Suspect** that the patient may be a victim of abuse, especially if the injury/illness is not consistent with the reported history.
- **Respect** the privacy of the patient and family.
- **Collect** as much information and evidence as possible and preserve physical evidence.

**Procedure:**

1. Assess the/all patient(s) for any psychological characteristics of abuse, including excessive passivity, compliant or fearful behavior, excessive aggression, violent tendencies, excessive crying, behavioral disorders, substance abuse, medical non-compliance, or repeated EMS requests. This is typically best done in private with the patient.
2. Assess the patient for any physical signs of abuse, especially any injuries that are inconsistent with the reported mechanism of injury. Defensive injuries (e.g. to forearms), and injuries during pregnancy are also suggestive of abuse. Injuries in different stages of healing may indicate repeated episodes of violence.
3. Assess all patients for signs and symptoms of neglect, including inappropriate level of clothing for weather, inadequate hygiene, absence of attentive caregiver(s), or physical signs of malnutrition.
4. Immediately report any suspicious findings to both the receiving hospital (if transported). If an elder or disabled adult is involved, also contact the Department of Social Services (DSS) or equivalent in the county. After office hours, the adult social services worker on call can be contacted by the 911 communications center.
5. EMS should contact the Department of Social Services if children are in the home and domestic violence is suspected, even if the child does not appeared involved.
6. EMS personnel should attempt in private to provide the patient with the phone number of the local domestic violence program, or the **National Hotline, 1-800-799-SAFE**.
7. Immediately report any suspicious findings to both the receiving hospital (if transported) and to the Department of Social Services at 919-968-2000. After office hours, the adult service social worker on call can be contacted by the 9-1-1 communications center.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

# Protocol Adherence

**Policy:**

Protocols are treatment guidelines that provide a framework for patient care. Personnel are expected to apply their training to provide excellent care for patients. No written guideline can address every possible situation or patient condition, and Orange County EMS personnel are expected to put the patient's interest first. Deviation from established protocol should be documented and discussed with the Medical Director at the earliest convenience.

Protocols are designed to enable provision of the most appropriate EMS care based on the each patient's needs. The advanced differential and disposition components of each protocol are based on a defined program of initial training, continuing education, and ongoing quality management. Use of these protocols in any system outside of Orange County Emergency Medical Services is unproved and may result in an undue risk to the patient and to the EMS system as well as personnel involved.

**Purpose:**

The purpose of this policy is to:

- Improve patient care in the prehospital setting
- Improve quality management
- Ensure compliance to protocols

**Procedure:**

1. Assessment and Treatment for all patient encounters should be initiated based on the Orange County EMS Protocols.
2. All treatment should include the Universal Patient Care Protocol (protocol 01).
3. When possible, there should be discussion with Medical Control prior to any deviation from established protocols. If not immediately possible, the technician(s) should thoroughly document the situation, notify their supervisor, and discuss the incident with the Medical Director at the earliest possible time.
4. Unless otherwise authorized by the Medical Director, the Orange County NC EMS Protocols are for the use of personnel practicing as part of the Orange County NC EMS System. The use of these protocols outside of the scope of the Orange County EMS System is illegal and potentially dangerous.
5. Failure to comply with this policy may result in disciplinary action as described in the Orange County NC EMS Medical Disciplinary procedure.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

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# Referral

**Policy:**

All patients who are evaluated and not transported by Orange County EMS must be provided with an appropriate referral. A disposition (patient discharge instruction form) form including the patient instruction section will be completed for these patients.

**Purpose:**

The purpose of this policy is to:

- Provide for appropriate referral of patients
- Protect against liability for the EMS system

**Procedure:**

1. After completing a thorough medical evaluation of the patient, appropriate referrals are made with compliance to the corresponding protocol.
2. Appropriate documentation of the referral form includes the following:
    a. Time frame in which the patient should see a physician.
    b. To whom the patient is being released.
    c. Patient Discharge instructions.
    d. Any other pertinent instructions relating to referral decision.
3. Decision to refer a patient to alternative destinations should be medically directed and follow established Orange County protocols. The decision not to transport a patient to the emergency department should never be financially motivated or system-driven.
4. Any suggestion or discussion of alternatives that results in a destination other than the emergency department is a referral.
5. When a referral is indicated, EMS will offer to the patient all available options for the disposition according to protocols. Patients electing EMS transport will be transported.
6. Patients who are not transported via EMS will be given written instructions.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

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# Refusal

**Policy:** Refusal of Care, Transportation, or Recommended Destination

**Purpose:** To establish guidelines for the management and documentation of situations where patients refuse treatment or transportation, or insist on transportation to a destination other than that recommended by the ambulance personnel.

**Procedure:**

I. Patient Assessment

A. Providers should attempt to obtain a history and physical, in as much detail as is permitted by the patient.

B. Conduct Three Assessments: Providers should attempt to assess three major areas prior to permitting a patient to refuse care and/or transportation:

1. Legal competence
   a. Ensure that patients is at least 18 years of age in order to refuse care
   b. Or, if a minor, patient may refuse care if he or she is an emancipated minor, has a military ID, or is pregnant
   c. Patients subject to a court decree of incapacity are not legally competent to refuse care
2. Mental competence
   a. Start with the presumption that all patients are mentally competent unless your assessment clearly indicates otherwise
   b. Ensure that patient is oriented to person, place, time and purpose
   c. Establish that patient is not a danger to himself or others
   d. Ensure that patient is capable of understanding the risks of refusing care or transportation and any proposed alternatives
   e. Check to be sure that patient is exhibiting no other signs or symptoms of potential mental incapacity as defined in the altered mental status protocol (19).
3. Medical or situational competence
   a. Ensure that patient is suffering from no acute medical conditions that might impair his or her ability to make an informed decision to refuse care or transportation
   b. If possible, rule out conditions described in the altered mental status protocol (19).
   c. Attempt to determine if patient lost consciousness for any period of time.
   d. If any conditions in (a) – (c) impair patient's decision making ability, patient may not be competent to refuse care and your documentation should clearly establish that the patient understood the risks, benefits and advice given to him.



This policy has been altered from the original NCCEP Policy by the local EMS Medical Director

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# Refusal

II. Medical Control

A. Contact medical control if you believe patient is in need of further medical attention yet refuses care; medical control may be able to help persuade patient

III. Who May Refuse Care

A. The patient

1. If patient is legally, mentally and situationally competent, the patient has a right to refuse care. Obtain refusal signature.
2. Implied consent -- if patient is unconscious or otherwise unable to refuse care due to conditions listed in section I and they are in need of further medical attention, treat and transport patient

B. Parent

1. A custodial parent (i.e. A parent with a legal right to custody of a minor child) may refuse care on behalf of a minor child. Obtain refusal signature from parent.
2. A parent of a patient who is 18 years of age or older may not refuse care on behalf of his or her child (unless the parent also happens to be a legal guardian – see below)
3. A minor (i.e., under 18 years of age) may refuse care for his or her child. Obtain refusal signature from the minor parent.
4. If a person indicates they are the parent of the patient, an attempt should be made to obtain identification or proof of kinship. If no such documentation is available, you may obtain refusal signature from the guardian as long as you do so in good faith and do not have any evidence or knowledge that the person is misrepresenting himself as a legal guardian of the patient.

C. Guardian

1. A legal guardian is one who is appointed by a court to act as “guardian of the person” of an individual who has been found by a court to be incapacitated
2. Legal guardian may also be appointed in lieu of parents for a minor
3. If a person indicates they are a legal guardian to the patient, attempt to obtain documentation of this fact (court order, etc.) to be attached to the ePCR. If no such documentation is available, you may obtain refusal signature from the guardian as long as you do so in good faith and do not have any evidence or knowledge that the person is misrepresenting himself as a legal guardian of the patient.

D. Health Care Agent

1. A person appointed by the patient in a durable power of attorney document may refuse care on behalf of the patient if the power of attorney contains such authorization.
2. Attempt to obtain a copy of the durable power of attorney document to be attached to the ePCR. If no such documentation is available, you may obtain refusal signature from a health care agent as long as you do so in good faith and do not have any evidence or knowledge that the person is misrepresenting himself as the health care agent of the patient.



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# Refusal

E. Incompetent Patient

1. If patient is incompetent, and no other authorized individual is available to provide a refusal signature, patient may be treated and transported as long as you act in good faith and without knowledge that the patient or authorized individual would refuse care.
2. Take all reasonable steps to secure treatment or transportation for a patient who is legally or mentally incompetent to refuse care, but do not put yourself or your crew in jeopardy.

# ESO Disposition Guidelines

## Definition of a Patient:

A patient is any individual requesting or potentially needing medical evaluation, treatment, or assistance – obvious or perceived. The patient – provider relationship is established at the request for service, regardless of medium or scope of request. It is the provider's responsibility to ensure all potential patients, regardless of the size of the incident, are offered assistance, and the opportunity for evaluation, treatment, and/or transport.

*What is NOT a patient?*

In situations where a third party calls and a person states they do not require EMS or are refusing an evaluation. This is particularly relevant on MVCs. Blood Draws without complaints are regarded as non-patient contacts, but require PCR documentation.

**Providers in the OCEMS System are expected to obtain basic demographic information and vital signs when encountering a potential patient, even for a simple "Lift Assist" call.** While not all people encountered will be patients, all patients require a complete evaluation.

| What Requires an ePCR? | What does NOT Require an ePCR? |
|---|---|
| • When any form of clinical assessment or evaluation of a patient or potential patient occurred<br>• When any treatment or transportation was rendered<br>• On any dispatch call that resolves in cancellation, and providers made an effort to respond, or arrived on scene<br>• Any Standby Event, including community outreach events | • If you are dispatched to an incident, but another unit assumes the incident<br>• If you are responding to an in County "Move Up" for coverage<br>• If you are not responding to an incident<br>• If you are assisting another unit on scene, and do not encounter additional patients |

**Additional Definitions:**

**Vital Signs:** *At a minimum*, this term refers to obtaining a patient's **GCS, level of responsiveness, heart rate, respiratory rate, pulse oximetry, and blood pressure.** Vital signs may also include: Blood Glucose, Temperature, End Tidal CO2, and Pain Score if indicated. Omission of any vital sign(s) must be documented and explained in the narrative.

# ESO Disposition Guidelines

## Patient Transport Dispositions

| ESO Disposition | Definition | Example(s) | Signature(s) Required | Vital Signs Required? |
|---|---|---|---|---|
| **TRANSPORTED NO LIGHTS / SIREN** | Used when a patient is transported to the emergency department without emergency lights and sirens. | Medic 4 has emergency warning signals off while enroute to the hospital. | **Provider AND Billing Authorization (Sections I, II, or III)** | **YES** |
| **TRANSPORTED LIGHTS / SIREN** | Used when a patient is transported to the emergency department with emergency lights and sirens. | Medic 6 has emergency warning signals on while enroute to the hospital. | **Provider AND Billing Authorization (Sections I, II, or III)** | **YES** |
| **TRANSPORTED NO LIGHTS / SIREN, UPGRADED** | Used when a patient is transported to the emergency department begins without lights and sirens, but ends with emergency lights and sirens. | Medic 9 begins transport with emergency lights and siren off, but turns emergency warning signals on while enroute to the hospital. | **Provider AND Billing Authorization (Sections I, II, or III)** | **YES** |
| **PATIENT REFUSED EVALUATION / CARE (WITH TRANSPORT)** | Used when a patient is transported, but refuses specific procedures, medications, or destination. | Medic 1 is transporting a patient to the hospital, but the patient refuses OCEMS destination plans or protocol interventions. Trauma patient refusing appropriate destination. STEMI patient refusing Aspirin. | **Provider AND Billing Authorization (Sections I, II, or III) AND Refusal Form** | **YES** |



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# ESO Disposition Guidelines

## Patient Non-Transport Dispositions

| ESO Disposition | Definition | Example(s) | Signature Type | Vital Signs Required? |
|---|---|---|---|---|
| **PATIENT REFUSED EVALUATION / CARE (WITHOUT TRANSPORT)** | The patient has declined any or all components of EMS Care or Evaluation **AND** Transportation in the setting of a potential traumatic injury or medical problem. | Medic 3 is with a potential patient who refuses and declines any EMS care, including an assessment. Especially useful on MVA scenes. | **Provider AND Refusal Form** | **Attempt** |
| **PATIENT TREATED, RELEASED AMA** | This disposition is for the patient that has received EMS care and evaluation, but refuses subsequent EMS treatment **AND** transportation **against the EMS provider's strong recommendation.** | The Against Medical Advice Patient receives an assessment or intervention, but refuses additional care and / or transportation. **EMS Supervisors and Medical Direction should be consulted with these High Risk Refusals.** | **Provider AND Refusal Form** | **YES** |
| **PATIENT TREATED, RELEASED (PER PROTOCOL)** | Used when a patient is treated and released per an **OCEMS Referral protocol.** | Patient fulfills an OCEMS referral pathway, and no transport is recommended or requested. | **Provider AND Billing Authorization (Section I)** | **YES** |
| **PATIENT TREATED, TRANSFERRED CARE TO OTHER EMS PROFESSIONAL** | This disposition is used when a provider initiates care, then patient care is turned over to another unit **from another System** for transport and further treatment. | Patient cared for on scene, and care is transferred to Air Medical. Unit breaks down enroute to Duke, and Durham completes transport. | **Provider** | **YES** |
| **PATIENT DEAD ON SCENE - RESUSCITATION ATTEMPTED (WITHOUT TRANSPORT)** | This disposition is used if any attempt is made at resuscitation, and the attempt is subsequently discontinued on scene. | Typical Code worked and called on scene after ALS resuscitation has been terminated. | **Provider** | **YES** |



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# ESO Disposition Guidelines

| | | | | |
|---|---|---|---|---|
| **PATIENT DEAD ON SCENE - NO RESUSCITATION ATTEMPTED (WITHOUT TRANSPORT)** | This disposition is used if there is no attempt made at resuscitation. | Patient found pulseless / apneic, resuscitation attempts are deemed futile, and patient meets Policy 4, "Criteria for Death / Withholding Resuscitation". | **Provider** | **N/A** |

## Non-Patient Dispositions

| ESO Disposition | Definition | Example(s) | Signature Type | Vital Signs Required? |
|---|---|---|---|---|
| **ASSIST, PUBLIC** | Request for Service that are not medical in nature. Persons must be offered and decline medical evaluation **with documentation**, and have a non-medical request. | BLS 3 is dispatched to the non-traumatic lift assist that denies injury and declines assessment. | **Provider** | **Attempt** |
| **CANCELLED (PRIOR TO ARRIVAL AT SCENE)** | Use this disposition when the EMS response is cancelled by dispatch or another unit (Fire, Law Enforcement, or other EMS unit) already on scene prior to arrival at the scene. | Medic 2 is cancelled enroute, 911 advises the caller does not need EMS. | **Provider** | **N/A** |
| **CANCELLED (NO PATIENT CONTACT)** | Used when the EMS unit arrives on scene, but is cancelled prior to making any patient contact, or when no patient can be found. | Medic 1 arrives on scene, but no patient can be found, or there is no patient contact on scene. | **Provider** | **N/A** |
| **STANDBY - PUBLIC SAFTEY, FIRE OR EMS OPERATIONAL SUPPORT PROVIDED** | The disposition used for any Public Safety Standby - Fire, Law Enforcement or Emergency Management Standby. | Structure Fires, Police, or Emergency Management lead incident standby. **AND** **An EMS Supervisor documenting a Blood Draw** | **Provider** | **N/A** |
| **STANDBY (NO SERVICE OR SUPPORT PROVIDED)** | Use this disposition if the EMS unit provided standby coverage for a public or sporting event. | UNC or High School Sporting events, Races, Educational "Touch-a-Truck" events, or Community Outreach | **Provider** | **N/A** |



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# Pediatric Color Coded Drug List

## Weight 3-5 Kg (Avg 4.0 Kg)

Length < 59.5 cm

**Vital Signs**

| | |
|---|---|
| Heart Rate | 120-150 |
| Respirations | 24-48 |
| BP Systolic | 70 (+/-25) |

**Equipment**

| | |
|---|---|
| ET Tube | 2.5 - 3.5 |
| Blade Size | 0 - 1 |

**Defibrillation**

| | |
|---|---|
| Defibrillation | 8 J, 15 J |
| Cardioversion | 2 J,4 J |

**Normal Saline** 80 ml

| | | |
|---|---|---|
| Acetaminophen | | 64 mg |
| Adenosine | 1st Dose- | 0.3 mg |
| | Repeat Dose- | 0.6 mg |
| Afrin Nasal Spray | | HOLD |
| Albuterol | | 2.5mg |
| Amiodarone | | 20 mg |
| Atropine | | 0.10 mg |
| Calcium Chloride | | 80 mg |
| Charcoal | | N/A |
| Dextrose 10% | | 20 ml |
| Diazepam | (IV) | 0.8 mg |
| | (Rectal) | 2.0 mg |
| Dilaudid | | HOLD |
| Diphenhydramine | | 6.5 mg |
| Dopamine (800 mg in 500 cc) | | |
| 2 | mcg/kg/min | 0.3 ml/hr |
| 5 | mcg/kg/min | 0.9 ml/hr |
| 10 | mcg/kg/min | 1.7 ml/hr |
| 20 | mcg/kg/min | 3.3 ml/hr |

| | |
|---|---|
| Epinephrine 1:10,000 | 0.04 mg |
| Epinephrine 1:1000 Nebulized | 2.0 mg |
| Epinephrine 1:1000 IM | 0.05 mg |
| Fentanyl | 8.0 mcg |
| Glucagon | 0.5 mg |
| Ibuprofen | N/A |
| Ipratropium | 500 mcg |
| Levalbuterol | 0.31 mg |
| Lidocaine | 4 mg |
| Lorazepam | 0.2 mg |
| Magnesium Sulfate | 200 mg |
| Methylprednisolone | 6.25 mg |
| Midazolam | 0.5 mg |
| Morphine Sulfate | 0.4 mg |
| Naloxone | 0.4 mg |
| Ondansetron | 0.6 mg |
| Prednisone | 4.0 mg |
| Sodium Bicarbonate | 4 mEq |

Gray (0-3 months)

## Weight 6-7 Kg (Avg 6.5 Kg)

Length 59.5-66.5 cm

**Vital Signs**

| | |
|---|---|
| Heart Rate | 120-125 |
| Respirations | 24-48 |
| BP Systolic | 85 (+/-25) |

**Equipment**

| | |
|---|---|
| ET Tube | 3.5 |
| Blade Size | 1 |

**Defibrillation**

| | |
|---|---|
| Defibrillation | 10 J, 20 J |
| Cardioversion | 2 J, 5 J |

**Normal Saline** 130 ml

| | | |
|---|---|---|
| Acetaminophen | | 96 mg |
| Adenosine | 1st Dose- | 0.6 mg |
| | Repeat Dose- | 1.2 mg |
| Afrin Nasal Spray | | HOLD |
| Albuterol | | 2.5 mg |
| Atropine | | 0.13 mg |
| Amiodarone | | 30 mg |
| Calcium Chloride | | 130 mg |
| Charcoal | | HOLD |
| Dextrose 10% | | 35 ml |
| Diazepam | (IV) | 1.3 mg |
| | (Rectal) | 3.2 mg |
| Dilaudid | | HOLD |
| Diphenhydramine | | 5 mg |
| Dopamine (800 mg in 500 cc) | | |
| 2 | mcg/kg/min | 0.5 ml/hr |
| 5 | mcg/kg/min | 1.3 ml/hr |
| 10 | mcg/kg/min | 2.5 ml/hr |
| 20 | mcg/kg/min | 5.0 ml/hr |

| | |
|---|---|
| Epinephrine 1:10,000 | 0.06 mg |
| Epinephrine 1:1000 Nebulized | 2.0 mg |
| Epinephrine 1:1000 IM | 0.06 mg |
| Fentanyl | 13.0 mcg |
| Glucagon | 0.5 mg |
| Ibuprofen | N/A |
| Ipratropium | 500 mcg |
| Levalbuterol | 0.31 mg |
| Lidocaine | 6 mg |
| Lorazepam | 0.33 mg |
| Magnesium Sulfate | 300 mg |
| Methylprednisolone | 12.5 mg |
| Midazolam | 0.5 mg |
| Morphine Sulfate | 0.6 mg |
| Naloxone | 0.6 mg |
| Ondansetron | 1.0 mg |
| Prednisone | 6.5 mg |
| Sodium Bicarbonate | 6 mEq |

Pink (3-6 Months)

## Weight 8-9 Kg (Avg 8.5 Kg)

Length 66.5-74 cm

**Vital Signs**

| | |
|---|---|
| Heart Rate | 120 |
| Respirations | 24-32 |
| BP Systolic | 92 (+/-30) |

**Equipment**

| | |
|---|---|
| ET Tube | 3.5-4.0 |
| Blade Size | 1 |

**Defibrillation**

| | |
|---|---|
| Defibrillation | 20 J, 40 J |
| Cardioversion | 5 J, 9 J |

**Normal Saline** 170 ml

| | | |
|---|---|---|
| Acetaminophen | | 128 mg |
| Adenosine | 1st Dose- | 0.9 mg |
| | Repeat Dose- | 1.8 mg |
| Afrin Nasal Spray | | HOLD |
| Albuterol | | 2.5 mg |
| Atropine | | 0.17 mg |
| Amiodarone | | 40 mg |
| Calcium Chloride | | 170 mg |
| Charcoal | | HOLD |
| Dextrose 10% | | 43 ml |
| Diazepam | (IV) | 1.7 mg |
| | (Rectal) | 4.25 mg |
| Dilaudid | | HOLD |
| Diphenhydramine | | 10 mg |
| Dopamine (800 mg in 500 cc) | | |
| 2 | mcg/kg/min | 0.7 ml/hr |
| 5 | mcg/kg/min | 1.6 ml/hr |
| 10 | mcg/kg/min | 3.2 ml/hr |
| 20 | mcg/kg/min | 6.5 ml/hr |

| | |
|---|---|
| Epinephrine 1:10,000 | 0.08 mg |
| Epinephrine 1:1000 Nebulized | 2.0 mg |
| Epinephrine 1:1000 IM | 0.08 mg |
| Fentanyl | 17.0 mcg |
| Glucagon | 0.5 mg |
| Ibuprofen | 4.0 ml |
| Ipratropium | 500 mcg |
| Levalbuterol | 0.31 mg |
| Lidocaine | 8 mg |
| Lorazepam | 0.43 mg |
| Magnesium Sulfate | 400 mg |
| Methylprednisolone | 12.5 mg |
| Midazolam | 0.85 mg |
| Morphine Sulfate | 0.8 mg |
| Naloxone | 0.8 mg |
| Ondansetron | 1.2 mg |
| Prednisone | 8.5 mg |
| Sodium Bicarbonate | 8 mEq |

Red (7-10 Months)



ToC

# Pediatric Color Coded Drug List

## Weight 10-11 Kg (Avg 10.5 Kg)

Length 74-84.5 cm

**Vital Signs**

| | |
|---|---|
| Heart Rate | 115-120 |
| Respirations | 22-30 |
| BP Systolic | 96 (+/-30) |

**Equipment**

| | |
|---|---|
| ET Tube | 4.0 |
| Blade Size | 1 |

**Defibrillation**

| | |
|---|---|
| Defibrillation | 20 J, 40 J |
| Cardioversion | 5 J, 10 J |

**Normal Saline** 210 ml

| | | |
|---|---|---|
| Acetaminophen | | 160 mg |
| Adenosine | 1st Dose- | 0.9 mg |
| | Repeat Dose- | 1.8 mg |
| Afrin Nasal Spray | | HOLD |
| Albuterol | | 2.5 mg |
| Atropine | | 0.2 mg |
| Amiodarone | | 50 mg |
| Calcium Chloride | | 210 mg |
| Charcoal | | HOLD |
| Dextrose 10% | | 50 ml |
| Diazepam | (IV) | 1.0 mg |
| | (Rectal) | 5.0 mg |
| Dilaudid | | HOLD |
| Diphenhydramine | | 10 mg |
| Dopamine | | |
| (800 mg in 500 ml Normal Saline) | | |
| 2 | mcg/kg/min | 0.8 ml/hr |
| 5 | mcg/kg/min | 2.0 ml/hr |
| 10 | mcg/kg/min | 4.0 ml/hr |
| 20 | mcg/kg/min | 8.0 ml/hr |

| | |
|---|---|
| Epinephrine 1:10,000 | 0.1 mg |
| Epinephrine 1:1000 IM | 0.1 mg |
| Epinephrine 1:1000 Nebulized | 2.0 mg |
| Fentanyl | 21.0 mcg |
| Glucagon | 1.0 mg |
| Ibuprofen | 5.0 ml |
| Ipratropium | 500 mcg |
| Levalbuterol | 0.63 mg |
| Lidocaine | 10 mg |
| Lorazepam | 0.53 mg |
| Magnesium Sulfate | 500 mg |
| Methylprednisolone | 18.75 mg |
| Midazolam | 1.0 mg |
| Morphine Sulfate | 1.0 mg |
| Naloxone | 1.0 mg |
| Ondansetron | 1.6 mg |
| Prednisone | 10.5 mg |
| Sodium Bicarbonate | 10 mEq |

Purple (11-18 Months)

## Weight 12-14 Kg (Avg 13 Kg)

Length 84.5-97.5 cm

**Vital Signs**

| | |
|---|---|
| Heart Rate | 110-115 |
| Respirations | 20-28 |
| BP Systolic | 100(+/-30) |

**Equipment**

| | |
|---|---|
| ET Tube | 4.5 |
| Blade Size | 2 |

**Defibrillation**

| | |
|---|---|
| Defibrillation | 30 J, 50 J |
| Cardioversion | 6 J, 15 J |

**Normal Saline** 260 ml

| | | |
|---|---|---|
| Acetaminophen | | 192 mg |
| Adenosine | 1st Dose- | 1.2 mg |
| | Repeat Dose- | 2.4 mg |
| Afrin Nasal Spray | | 1 spray |
| Albuterol | | 2.5 mg |
| Atropine | | 0.26 mg |
| Amiodarone | | 65 mg |
| Calcium Chloride | | 260 mg |
| Charcoal | | 15 gms |
| Dextrose 10% | | 60-80 ml |
| Diazepam | (IV) | 2.6 mg |
| | (Rectal) | 6.5 mg |
| Dilaudid | | HOLD |
| Diphenhydramine | | 10 mg |
| Dopamine | | |
| (800 mg in 500 ml Normal Saline) | | |
| 2 | mcg/kg/min | 0.8 ml/hr |
| 5 | mcg/kg/min | 2.5 ml/hr |
| 10 | mcg/kg/min | 5.0 ml/hr |
| 20 | mcg/kg/min | 10 ml/hr |

| | |
|---|---|
| Epinephrine 1:10,000 | 0.10 mg |
| Epinephrine 1:1000 IM | 0.10 mg |
| Epinephrine 1:1000 Nebulized | 2.0 mg |
| Fentanyl | 26.0 mcg |
| Glucagon | 0.5 mg |
| Ibuprofen | 6.5 ml |
| Ipratropium | 500 mcg |
| Levalbuterol | 0.63 mg |
| Lidocaine | 14 mg |
| Lorazepam | 0.65 mg |
| Magnesium Sulfate | 650 mg |
| Methylprednisolone | 25.0 mg |
| Midazolam | 1 mg |
| Morphine Sulfate | 1.0 mg |
| Naloxone | 1.3 mg |
| Ondansetron | 2.0 mg |
| Prednisone | 13.0 mg |
| Sodium Bicarbonate | 13 mEq |

Yellow (19-35 Months)

## Weight 15-18 Kg (Avg 16.5 Kg)

Length 97.5-110 cm

**Vital Signs**

| | |
|---|---|
| Heart Rate | 100-15 |
| Respirations | 20-26 |
| BP Systolic | 100(+/-20) |

**Equipment**

| | |
|---|---|
| ET Tube | 5.0 |
| Blade Size | 2 |

**Defibrillation**

| | |
|---|---|
| Defibrillation | 30 J, 70 J |
| Cardioversion | 8 J, 15 J |

**Normal Saline** 330 ml

| | | |
|---|---|---|
| Acetaminophen | | 240 mg |
| Adenosine | 1st Dose- | 1.8 mg |
| | Repeat Dose- | 3.6 mg |
| Afrin Nasal Spray | | 1 spray |
| Albuterol | | 2.5 mg |
| Atropine | | 0.32 mg |
| Amiodarone | | 80 mg |
| Calcium Chloride | | 330 mg |
| Charcoal | | 15-30 gms |
| Dextrose 10% | | 80 ml |
| Diazepam | (IV) | 3.3 mg |
| | (Rectal) | 8.25 mg |
| Dilaudid | | HOLD |
| Diphenhydramine | | 15 mg |
| Dopamine | | |
| (800 mg in 500 ml Normal Saline) | | |
| 2 | mcg/kg/min | 1.2 ml/hr |
| 5 | mcg/kg/min | 3.0 ml/hr |
| 10 | mcg/kg/min | 6.0 ml/hr |
| 20 | mcg/kg/min | 12 ml/hr |

| | |
|---|---|
| Epinephrine 1:10,000 | 0.16 mg |
| Epinephrine 1:1000 IM | 0.20 mg |
| Epinephrine 1:1000 Nebulized | 2.0 mg |
| Fentanyl | 33.0 mcg |
| Glucagon | 0.5 mg |
| Ibuprofen | 8.0 ml |
| Ipratropium | 500 mcg |
| Levalbuterol | 0.63 mg |
| Lidocaine | 15 mg |
| Lorazepam | 0.83 mg |
| Magnesium Sulfate | 800 mg |
| Methylprednisolone | 31.25 mg |
| Midazolam | 1.5 mg |
| Morphine Sulfate | 1.0 mg |
| Naloxone | 1.6 mg |
| Ondansetron | 2.4 mg |
| Prednisone | 16.5 mg |
| Sodium Bicarbonate | 16 mEq |

White (3-4 yrs)



ToC

# Pediatric Color Coded Drug List

## Weight 19-22 Kg (Avg 20.75 Kg)

Length 110-122 cm

**Vital Signs**

| | |
|---|---|
| Heart Rate | 100 |
| Respirations | 20-24 |
| BP Systolic | 100(+/-15) |

**Equipment**

| | |
|---|---|
| ET Tube | 5.5 |
| Blade Size | 2 |

**Defibrillation**

| | |
|---|---|
| Defibrillation | 40 J, 85 J |
| Cardioversion | 10 J, 20 J |

**Normal Saline** 410 ml

| | | |
|---|---|---|
| Acetaminophen | | 288 mg |
| Adenosine | 1st Dose- | 2.1 mg |
| | Repeat Dose- | 4.1 mg |
| Afrin Nasal Spray | | 1 spray |
| Albuterol | | 2.5 mg |
| Atropine | | 0.4 mg |
| Amiodarone | | 100 mg |
| Calcium Chloride | | 420 mg |
| Charcoal | | 20-40 gms |
| Dextrose 10% | | 100 ml |
| Diazepam | (IV) | 4.0 mg |
| | (Rectal) | 10.0 mg |
| Dilaudid | | 0.31 mg |
| Diphenhydramine | | 25.0 mg |
| Dopamine | | |
| (800 mg in 500 ml Normal Saline) | | |
| 2 | mcg/kg/min | 1.6 ml/hr |
| 5 | mcg/kg/min | 3.9 ml/hr |
| 10 | mcg/kg/min | 7.8 ml/hr |
| 20 | mcg/kg/min | 16 ml/hr |

| | |
|---|---|
| Epinephrine 1:10,000 | 0.2 mg |
| Epinephrine 1:1000 IM | 0.2 mg |
| Epinephrine 1:1000 Nebulized | 2.0 mg |
| Fentanyl | 40.0 mcg |
| Glucagon | 1.0 mg |
| Ibuprofen | 10.0 ml |
| Ipratropium | 500 mcg |
| Levalbuterol | 0.63 mg |
| Lidocaine | 20 mg |
| Lorazepam | 1.0 mg |
| Magnesium Sulfate | 1000 mg |
| Methylprednisolone | 37.5 mg |
| Midazolam | 2.0 mg |
| Morphine Sulfate | 2.0 mg |
| Naloxone | 2.0 mg |
| Ondansetron | 3.0 mg |
| Prednisone | 20.0 mg |
| Sodium Bicarbonate | 20 mEq |

Blue (5-6 yrs)

## Weight 24-30 Kg (Avg 27 Kg)

Length 122-137 cm

**Vital Signs**

| | |
|---|---|
| Heart Rate | 90 |
| Respirations | 18-22 |
| BP Systolic | 105(+/-15) |

**Equipment**

| | |
|---|---|
| ET Tube | 6.0 |
| Blade Size | 2-3 |

**Defibrillation**

| | |
|---|---|
| Defibrillation | 50 J, 100 J |
| Cardioversion | 15 J, 30 J |

**Normal Saline** 540 ml

| | | |
|---|---|---|
| Acetaminophen | | 384 mg |
| Adenosine | 1st Dose- | 2.7 mg |
| | Repeat Dose- | 5.4 mg |
| Afrin Nasal Spray | | 1 spray |
| Albuterol | | 2.5 mg |
| Atropine | | 0.5 mg |
| Amiodarone | | 135 mg |
| Calcium Chloride | | 540 mg |
| Charcoal | | 25-50 gms |
| Dextrose 10% | | 135 ml |
| Diazepam | (IV) | 4.0 mg |
| | (Rectal) | 10.0 mg |
| Dilaudid | | 0.4 mg |
| Diphenhydramine | | 25 mg |
| Dopamine | | |
| (800 mg in 500 ml Normal Saline) | | |
| 2 | mcg/kg/min | 2 ml/hr |
| 5 | mcg/kg/min | 5 ml/hr |
| 10 | mcg/kg/min | 10 ml/hr |
| 20 | mcg/kg/min | 20 ml/hr |

| | |
|---|---|
| Epinephrine 1:10,000 | 0.27 mg |
| Epinephrine 1:1000 IM | 0.3 mg |
| Epinephrine 1:1000 Nebulized | 2.0 mg |
| Fentanyl | 54.0 mcg |
| Glucagon | 1.0 mg |
| Ibuprofen | 13 ml |
| Ipratropium | 500 mcg |
| Levalbuterol | 0.63 mg |
| Lidocaine | 20 mg |
| Lorazepam | 1.35 mg |
| Magnesium Sulfate | 1350 mg |
| Methylprednisolone | 54.0 mg |
| Midazolam | 2.0 mg |
| Morphine Sulfate | 2.0 mg |
| Naloxone | 2.0 mg |
| Ondansetron | 4.0 mg |
| Prednisone | 27.0 mg |
| Sodium Bicarbonate | 27 mEq |

Orange (7-9 yrs)

## Weight 32-40 Kg (Avg 36 Kg)

Length 137-150 cm

**Vital Signs**

| | |
|---|---|
| Heart Rate | 85-90 |
| Respirations | 16-22 |
| BP Systolic | 115(+/-20) |

**Equipment**

| | |
|---|---|
| ET Tube | 6.5 |
| Blade Size | 3 |

**Defibrillation**

| | |
|---|---|
| Defibrillation | 60 J, 150 J |
| Cardioversion | 15 J, 30 J |

**Normal Saline** 720 ml

| | | |
|---|---|---|
| Acetaminophen | | 544 mg |
| Adenosine | 1st Dose- | 3.6 mg |
| | Repeat Dose- | 7.2 mg |
| Afrin Nasal Spray | | 2 spray |
| Albuterol | | 2.5 mg |
| Atropine | | 0.5 mg |
| Amiodarone | | 180 mg |
| Calcium Chloride | | 700 mg |
| Charcoal | | 25-50 gms |
| Dextrose 10% | | 180 ml |
| Diazepam | (IV) | 4.0 mg |
| | (Rectal) | 10.0 mg |
| Dilaudid | | 0.54 mg |
| Diphenhydramine | | 35 mg |
| Dopamine | | |
| (800 mg in 500 ml Normal Saline) | | |
| 2 | mcg/kg/min | 2.7 ml/hr |
| 5 | mcg/kg/min | 7.0 ml/hr |
| 10 | mcg/kg/min | 14.0 ml/hr |
| 20 | mcg/kg/min | 28.0 ml/hr |

| | |
|---|---|
| Epinephrine 1:10,000 | 0.3 mg |
| Epinephrine 1:1000 IM | 0.3 mg |
| Epinephrine 1:1000 Nebulized | 2.0 mg |
| Fentanyl | 62.0 mcg |
| Glucagon | 1.0 mg |
| Ibuprofen | 18 ml |
| Ipratropium | 500 mcg |
| Levalbuterol | 0.63 mg |
| Lidocaine | 36 mg |
| Lorazepam | 1.8 mg |
| Magnesium Sulfate | 1800 mg |
| Methylprednisolone | 62.5 mg |
| Midazolam | 2.0 mg |
| Morphine Sulfate | 3.0 mg |
| Naloxone | 2.0 mg |
| Ondansetron | 4.0 mg |
| Prednisone | 36.0 mg |
| Sodium Bicarbonate | 36 mEq |

Green (10-12 yrs)



ToC

# Dopamine Drip Chart

Calculations valid for a **1600 mcg/mL** premixed solution of dopamine AND a **60 gtt (Micro Drip)** setup.

| Patient Weight (Kilograms) | 5 mcg/kg/min Drops per Minute | 10 mcg/kg/min Drops per Minute | 15 mcg/kg/min Drops per Minute | 20 mcg/kg/min Drops per Minute |
|---|---|---|---|---|
| 10 | 2 | 4 | 6 | 8 |
| 15 | 3 | 6 | 8 | 11 |
| 20 | 4 | 8 | 11 | 15 |
| 25 | 5 | 9 | 14 | 19 |
| 30 | 6 | 11 | 17 | 23 |
| 35 | 7 | 13 | 20 | 26 |
| 40 | 8 | 15 | 23 | 30 |
| 45 | 8 | 17 | 25 | 34 |
| 50 | 9 | 19 | 28 | 38 |
| 55 | 10 | 21 | 31 | 41 |
| 60 | 11 | 23 | 34 | 45 |
| 65 | 12 | 24 | 37 | 49 |
| 70 | 13 | 26 | 39 | 53 |
| 75 | 14 | 28 | 42 | 56 |
| 80 | 15 | 30 | 45 | 60 |
| 85 | 16 | 32 | 48 | 64 |
| 90 | 17 | 34 | 51 | 68 |
| 95 | 18 | 36 | 53 | 71 |
| 100 | 19 | 38 | 56 | 75 |
| 105 | 20 | 39 | 59 | 79 |
| 110 | 21 | 41 | 62 | 83 |

This drip chart is intended only for use by approved EMT-P providers within Orange County, NC.

ToC

# ADULT Epinephrine Drip Chart (1:1,000,000)

Calculations valid for **1 mg Epinephrine mixed into 1000 ml of Normal Saline**.
Adminsiter with a **10 gtt (Macro gtt)** setup.

| Epinephrine Infusion Rate (mcg/min) | Seconds per 1 Drop | Drops per Minute | Use the 10 gtt (Macro gtt) chamber! |
|---|---|---|---|
| **1** | 6 | 10 | |
| **2** | 3 | 20 | |
| **3** | 2 | 30 | |
| **4** | 1.5 | 40 | |
| **5** | 1.2 | 50 | |
| **6** | 1 | 60 | |
| **7** | 0.9 | 67 | |
| **8** | 0.8 | 75 | |
| **9** | 0.7 | 86 | |
| **10** | 0.6 | 100 | |

This drip chart is intended only for use by approved EMT-P providers within Orange County, NC.

ToC

# Levophed / Norepinephrine Drip Chart

## Norepinephrine (Levophed) Drip Rates

For the following chart, add **4mg** norepinephrine to **250mL** NS or D5W. Use **60 gtts/mL** IV Set

| **Desired Dose (mcg/min)** | 4 mcg/min | 8 mcg/min | 12 mcg/min | 16 mcg/min | 20 mcg/mi | 24 mcg/min | 28 mcg/min | 30 mcg/min |
|---|---|---|---|---|---|---|---|---|
| **Drip Rate (drops/min)** | 15 gtts/min | 30 gtts/min | 45 gtts/min | 60 gtts/min | 75 gtts/min | 90 gtts/min | 105 gtts/min | 113 gtts/min |

## Norepinephrine Infusion Preparation

1) **Draw 4mL off and discard from a 250 mL bag** of NS or D5W
2) **Add 4mg** (1mg/mL) **norepinephrine** (Levophed) resulting in 250mL of a 16 microgram/milliliter solution of norepinephrine.
3) Connect and prime a **60 gtts/mL IV set** for medication administration.
4) Using high contrast sticker, label IV bag with medication name, amount added, date/time added, resulting concentration and provider initials

This drip chart is intended only for use by approved EMT-P providers within Orange County, NC.

ToC

# CMS Level Definitions

**DISPATCH NATURE**: This is the EMD of the call

**IMMEDIATE or ROUTINE**: OCEMS is **ALWAYS IMMEDIATE** for our system

- Per Medicare: "An *immediate* response is one in which the ambulance provider/supplier begins as quickly as possible to take the steps necessary to respond to the call."

## We should be utilizing one of the following: BLS EMERGENCY, ALS 1 EMERGENCY, ALS 2

**BLS EMERGENCY**: Providing BLS services within an emergency response

- Emergency response is defined by Medicare as a level of service in response to a 911 call
- All BLS EMD calls default to BLS emergency, barring an identified need for ALS assessment

**ALS 1 EMERGENCY**: Providing an ALS assessment by ALS personnel **OR** at least one ALS intervention

- This level is for emergency responses, All ALS EMDs are at least ALS 1 emergency

**ALS intervention:** a procedure required to be performed by an AEMT or a paramedic

- Ex: IVs, ALS medications, fluids, etc.

**ALS assessment**: an assessment performed by an ALS provider, deemed necessary by the EMD

- BLS EMDs **do not require** an ALS assessment
- ALS EMDs **require** an ALS assessment from an ALS provider

***IF AN ALS ASSESSMENT IS PERFORMED THE CALL IS CONSIDERED AT LEAST ALS 1 EMERGENCY***

**ALS 2**: Ambulance services providing **EITHER**:

- 3 separate administrations of IV push/bolus medications or infusion, can be one medication administered 3 times or multiple medications with at least 3 administrations total
- One of the following procedures:
    - Manual defibrillation or cardioversion
    - Endotracheal intubation
    - Cardiac pacing
    - Chest decompression
    - Surgical airway
    - IO access

Source: https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleId=56468

# *Hydrant Access for Cooling Procedure*

Purpose: To provide the necessary equipment to perform a cooling procedure for a hyperthermic patient utilizing a fire hydrant. To provide an organized manner in which the procedure can be set up. To provide instructions on how to conduct the cooling procedure.

Equipment Needed:

- 1 Gate Valve
- 1 Reduction Fitting to 1 ¾”
- Appropriate length of 1 ¾” hose line
- 1 Cooling Bag
- 2-3 Blankets or like materials that can elevate a patient’s head out of the water.

Procedure:

1. Identify the location for cooling, preferably a flat place with a nearby hydrant.
2. Place gate valve on the hydrant.



3. Place reduction fitting on to the gate valve.



4. Place hose line on the reduction fitting.
5. Flow the hydrant to ensure adequate pressure and clean out the line/hydrant.

6. Lay out cooling bag, completely open. Feet should be downhill (if needed) and the hose line should be placed so that it enters by the head and the opening in by the feet.



7. Place the blankets under the cooling bag where the patient's head will be located.
8. Place patient in the cooling bag and zip it until it is at shoulder level, do not cover the patient's face.

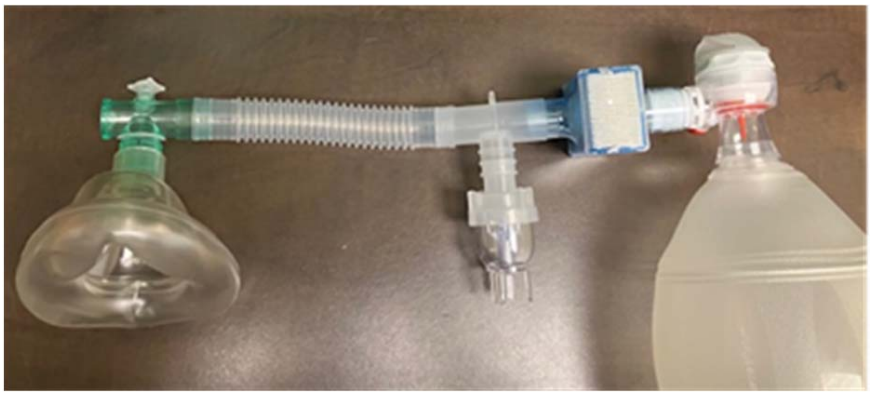


9. Slowly open the gate valve and flow water into the cooling bag. Water flow should be adequate but not forceful, and very little opening is needed on the valve.
10. Once filled, continue to flow water through the bag for 10 minutes.
11. Once 10 minutes has elapsed, close the valve and allow for assessment of the patient.

# In-Line Nebulizer Set-up

**Set Up**: This is the set up for an In-line Nebulizer to BVM

## Completed View:



## Parts View:

BVM -> Viral Filter -> **Clear T** from Handheld -> **Corrugated Tubing** -> **Elbow** -> Mask / ET Tube



## UNUSED Parts View:



# Orange County Emergency Services
# Exposure Control Policy

## Approved Disinfectant(s)

Department Requirment:

- Betco fight bac 392 (spray and wipes) will be used as directed to disinfect surfaces, clean blood spills, and for disinfection of medical equipment such as laryngoscope blades or portable suction equipment.




- 
- Dwell time is 60 seconds (surface shall be wet for 60 seconds prior to wiping).
- Bottles containing the approved disinfectant will be kept on each unit (EMS) for use away from the stations.
- The manufacturers' recommended guidelines will be used for mixing, storing and usage.
- The appropriate SDS will be on hand for all personnel.

**Revised August, 2025**

# Behavioral Health and Crisis Resources*

## Available to Orange County Residents

ORANGE COUNTY
NORTH CAROLINA

### BEHAVIORAL HEALTH CRISIS SERVICES

| LOCATION | CONTACT INFO | OTHER INFO |
|---|---|---|
| **Freedom House Recovery Center** | 833-800-1505<br>104 New Stateside Drive, Chapel Hill | Walk-in Clinic Hours:<br>Monday – Thursday 8:30am – 3:30pm |
| **Freedom House Mobile Crisis Unit** | 866-275-9552 | 24/7 Mobile crisis response unit |
| **Freedom House Facility Based Crisis** | Call ahead to see if bed is available:<br>919-967-8844 | 24/7 Walk-In Crisis Stabilization Services |
| **Chapel Hill Police Department Crisis Unit** | 919-968-2806 | Serves Chapel Hill<br>Monday – Friday, 6:00am – 10:30pm<br>Afterhours: Some on-call availability |
| **CARE Team Mobile Crisis Unit** | 911 | Non-law enforcement response to 911 behavioral health calls and community crisis needs in Chapel Hill: Monday – Friday, 8:30am – 4:30pm |
| **Post-Overdose Response Team (PORT)** | EMS_PORT@orangecountync.gov<br>www.orangecountync.gov/PORT | Provides mobile opioid use treatment and harm reduction services.<br>Responds to community requests and 911 calls in Orange County.<br>365 days/yr<br>Hours: 7:00am – 7:00pm |
| **PORT Community Paramedic** | cell: 919-407-2654 | |
| **Peer Support Specialist** | cell: 919-407-9707 | |
| **UNC Hospitals Emergency Departments** | 101 Manning Drive, Chapel Hill and<br>430 Waterstone Drive, Hillsborough | |
| **Duke Hospital Emergency Department** | 2301 Erwin Rd, Durham | |
| **Duke Regional Emergency Department** | 3643 N. Roxboro Rd, Durham | |
| **Durham Recovery Response Center** | 309 Crutchfield Street, Durham<br>919-560-7305 | 24/7 Walk-In Crisis Stabilization |
| **Hope Center for Youth and Family Crisis** | 400 W. Ransom St, Fuquay-Varina | Behavioral health urgent care and facility-based crisis for youth<br>24/7 walk-ins |
| **Youth Mobile Crisis Response (MORES)** | 1-484-215-6756 | Mobile crisis response for youth ages 3-20;<br>10:00am – 10:30pm, 7 days/wk |
| **Carolina Outreach** | 2670 Durham-Chapel Hill Blvd., Durham<br>919-251-9009 | Crisis and case management behavioral health services for youth and adults<br>Behavioral Health Urgent Care Hours:<br>Monday: 8 a.m. – 7 p.m.<br>Tuesday: 8 a.m. – 7 p.m.<br>Wednesday: 8 a.m. – 7 p.m.<br>Thursday: 8 a.m. – 7 p.m.<br>Friday: 8 a.m. – 3 p.m.<br>Saturday: 9 a.m. - Noon<br>Sunday: Closed |
| **Alliance Health Behavioral Health Crisis Line** | 877-223-4617 | 24/7 |
| **988 Suicide and Crisis Line** | 988 | 24/7 |
| **911 for any life-threatening emergency** | 911 | 24/7 |
| **Veteran's Crisis Line** | 1-800-273-8255 ext. 1 | |

### NON-EMERGENCY BEHAVIORAL HEALTH RESOURCES

| LOCATION | CONTACT INFO | OTHER INFO |
|---|---|---|
| **Freedom House Recovery Center Walk-In Clinic** | 919-442-1844<br>104 New Stateside Drive, Chapel Hill | Monday – Thursday 8:30am – 3:30pm |
| **Piedmont Health** | Text 704-471-6008 to schedule | Multiple Clinic locations in Orange County. Providing behavioral health treatment needs. |
| **UNC Substance Treatment and Recovery (STAR)** | 1101 Weaver Dairy Rd, Suite 102, Chapel Hill<br>984-974-6320 | Substance use and co-occurring treatment services |
| **El Futuro** | 2020 Chapel Hill Rd, Suite 23, Durham<br>919-688-7101 | Youth and Adult bilingual behavioral health services.<br>Walk-in hours Tuesday, Wednesday and Thursday from 9:00 – 11:30am |
| **NC Peer Warmline** | 1-855-PEERS-NC | Speak to a peer support specialist with lived experience, 24/7 |
| **Alliance Health** | 1-800-510-9132 | 24 Hour Access and Information Line |
| **NAMI National Helpline** | 1-800-950-NAMI | |
| **NAMI Local NC Helpline** | 1-800-451-9682 | |

***Please note that this is not an exhaustive list.***

# Disposition Instruction Form

## Instructions

The EMS Patient Disposition Information (PDI) form has been designed to be used by EMS personnel to legally document a variety of situations. This duplicate form consists of a single page. The front of the page is used to describe the situation and the back lists a variety of specific patient instructions by complaint.

The form should be used to document any refusal of care by a patient (complete refusal or refusal of specific aspects of care) and to document the patient / guardian's understanding of medical instructions.

To understand the intent of this form, it is probably simplest to walk through several common patient encounter situations.

1. Complete refusal of EMS care or transport: The first box "Patient Refusal" should be marked. In the first section, the appropriate blocks for "paramedic recommendation" should also be marked. This section should be explained to the patient or guardian, who should understand that their refusal may result in complications up to and including death. The patient or guardian should be asked to sign the form, indicating that he/she understands the seriousness of the situation and the information provided. If the situation warrants, the paramedic should explain the risks of the refusal using the patient instructions section and the back of the form for assistance. If the instructions section is used, the appropriate blocks should also checked.

2. Refusal of a specific procedure (IV therapy, for example): The first box "Patient Refusal" should be marked. In the first section, the specific refused procedure should be marked. The first section should be explained to the patient or guardian, who should understand the potential consequences of their refusal. The patient or guardian should be asked to sign the form, indicating that he/she understands the seriousness of the situation.

3. The box "Patient Instructions" and the appropriate blocks in that section should be marked. This section and the specific instructions (on the back) should all be carefully explained to the patient and/or guardian, who must understand them. The patient or guardian should be asked to sign the form, indicating that he/she understands the instructions and the seriousness of the situation.

In all situations, the top part of the form should be completed, and as much of the signature portion as necessary. It is preferable to have witnesses, particularly if the patient or guardian refuses to sign. The original form should be kept on file, while a duplicate copy should be provided for the patient or guardian.

PCR Number

# Emergency Medical Services (EMS)
# Patient Disposition Information

| Patient's name | Date of Birth | Date |
|---|---|---|
| Patient's Address | Phone | EMS Professionals Name No. |

## PATIENT REFUSAL

☐ *This section only applies if this box is marked*

**The Paramedic has recommended**:

- ☐ Measuring the patient's blood pressure
- ☐ A backboard and neck collar for the patient
- ☐ Ambulance transportation for the patient
- ☐ A complete physical exam of the patient
- ☐ Giving the patient oxygen
- ☐ Starting an IV for the patient
- ☐ Giving the patient medicine _____
- ☐ Other _____

I refuse the care that the Paramedic has recommended. I understand that my refusal may result in serious injury or death to the patient. I accept full responsibility for this decision. I assume all risks and consequences resulting from my refusal of care. I will not hold the EMS service or its officers, agents, or employees responsible for any bad things that happen to the patient because of my refusal.

My signature below attests that I understand what has been recommended, what the consequences may be if that is not done, and I still refuse to have the recommended care provided by the EMS service.

## PATIENT INSTRUCTIONS

☐ *This section only applies if this box is marked*

**You have not been evaluated by a doctor.**

**You should contact or see your doctor immediately.**

**The patient is being released to:**

- ☐ Family member
- ☐ Guardian
- ☐ Law Enforcement Officer
- ☐ Other: _____

**Follow the instructions (printed on the back of this form) indicated:**

- ☐ Abdominal Pain
- ☐ Back Pain
- ☐ Fever
- ☐ Head Injury
- ☐ Insect Bite/Sting
- ☐ Respiratory Distress
- ☐ Extremity Injury
- ☐ Vomiting / Diarrhea
- ☐ Wound Care
- ☒ Universal

**Other instructions:** _____

| Guardian's name (printed) | ☐ Patient ☐ Guardian ☐ Refused to Sign | Patient / Guardian Signature | |
|---|---|---|---|
| Guardian's address ☐ Same as Patient | | Date of Signatures | EMS Personnel's Signature |
| Witness Signature | Witness Signature | Patient's Physician Name / Phone Number | |



ToC

# Discharge Instructions

## UNIVERSAL INSTRUCTIONS:

**• YOU HAVE NOT RECEIVED A COMPLETE MEDICAL EVALUATION. SEE A PHYSICIAN AS SOON AS POSSIBLE.**

**• IF AT ANY TIME AFTER YOU HAVE TAKEN ANY MEDICATION, YOU HAVE TROUBLE BREATHING, START WHEEZING, GET HIVES OR A RASH, OR HAVE ANY UNEXPECTED REACTION, CALL 911 IMMEDIATELY.**

**• IF YOUR SYMPTOMS WORSEN AT ANY TIME, YOU SHOULD SEE YOUR DOCTOR, GO TO THE EMERGENCY DEPARTMENT OR CALL 911.**

## ABDOMINAL PAIN:

- Abdominal pain is also called belly pain. Many illnesses can cause abdominal pain and it is very difficult for EMS to identify the cause.
- Take your temperature every 4 hours.

**Call or see a physician, go to the emergency department, or call 911 immediately if:**

- Your pain gets worse or is now only in 1 area
- You vomit (throw up) blood or find blood in your bowel movement
- You become dizzy or faint
- Your abdomen becomes distended or swollen
- You have a temperature over 100° F
- You have trouble passing urine
- You have trouble breathing

## BACK PAIN:

- Apply heat to the painful area to help relieve pain. You may use a warm heating pad, whirlpool bath, or warm, moist towels for 10 to 20 minutes every hour.
- Stay in bed as much as possible the first 24 hours.
- Begin normal activities when you can do them without causing pain.
- When picking things up, bend at the hips and knees. Never bend from the waist only.

**Call or see a physician, go to the emergency department, or call 911 immediately if:**

- You have shooting pains into your buttocks, groin, legs, or arms or the pain increases.
- You have trouble urinating or lose control of your stools or urine.
- You have numbness or weakness in your legs, feet, arms, or hands.

## FEVER:

- Always take medications as directed. Tylenol and Ibuprofen can be taken at the same time.
- If you are taking antibiotics, take them until they are gone, not until you are feeling better.
- Drink extra liquids (1 glass of water, soft drink or gatorade per hour of fever for an adult)
- If the temperature is above 103° F, it can be brought down by a sponge bath with room temperature water. Do not use cold water, a fan, or an alcohol bath.
- Temperature should be taken every 4 hours .

**Call or see a physician, go to the emergency department, or call 911 immediately if:**

- Temperature is greater than 101° F for 24 hours
- A child becomes less active or alert.
- The Temperature does not come down with Acetaminophen (Tylenol) or Ibuprofen with the appropriate dose.

## HEAD INJURY:

- Immediately after a blow to the head, nausea, and vomiting may occur.
- Individuals who have sustained a head injury must be checked, and if necessary awakened, every 2 hours for the first 24 hours.
- Ice may be placed on the injured area to decrease pain and swelling.
- Only drink clear liquids such as juices, soft drinks, or water the first 12 hours after injury..
- Acetaminophen (Tylenol) or Ibuprofen only may be used for pain.

**Call or see a physician, go to the emergency department, or call 911 immediately if:**

- The injured person has persistent vomiting, is not able to be awakened, has trouble walking or using an arm or leg, has a seizure, develops unequal pupils, has a clear or bloody fluid coming from the ears or nose, or has strange behavior.

## INSECT BITE/STING:

- A bite or sting typically is a red lump which may have a hole in the center. You may have pain, swelling and a rash. Severe stings may cause a headache and an upset stomach (vomiting).
- Some individuals will have an allergic reaction to a bite or sting. Difficulty breathing or chest pain is an emergency requiring medical care.
- Elevation of the injured area and ice (applied to the area 10 to 20 minutes each hour) will decrease pain and swelling.
- Diphenhydramine (Benadryl) may be used as directed to control itching and hives.

**Call or see a physician, go to the emergency department, or call 911 immediately if:**

- You develop any chest pain or difficulty breathing.
- The area becomes red, warm, tender, and swollen beyond the area of the bite or sting.
- You develop a temperature above 101° F.

## RESPIRATORY DISTRESS:

- Respiratory Distress is also known as shortness of breath or difficulty breathing.
- Causes of Respiratory Distress include reactions to pollen, dust, animals, molds, foods, drugs, infections, smoke, and respiratory conditions such as Asthma and COPD. If possible avoid any causes which produce respiratory distress.
- If you have seen a physician for this problem, take all medication's as directed.

**Call or see a physician, go to the emergency department, or call 911 immediately if:**

- Temperature is greater than 101° F.
- The cough, wheezing, or breathing difficulty becomes worse or does not improve even when taking medications.
- You have Chest Pain.
- Sputum (spit) changes from clear to yellow, green, grey, or becomes bloody.
- You are not able to perform normal activities.

## EXTREMITY INJURY:

- Extremity Injuries may consist of cuts, scrapes, bruises, sprains, or broken bones (fractures).
- Apply ice on the injury for 15 to 20 minutes each hour for the first 1 to 2 days.
- Elevate the extremity above the heart as possible for the first 48 hours to decrease pain and swelling.
- Use the extremity as pain allows.

**Call or see a physician, go to the emergency department, or call 911 immediately if:**

- Temperature is greater than 101° F.
- The bruising, swelling, or pain gets worse despite the treatment listed above.
- Any problems listed on the **Wound Care instructions** are noted.
- You are unable to move the extremity or if numbness or tingling is noted.
- You are not improved in 24 to 48 hours or you are not normal in 7 to 10 days.

## VOMITING/DIARRHEA:

- Vomiting (throwing up) can be caused by many things. It is common in children, but should be watched closely.
- Diarrhea is most often caused by either a food reaction or infection.
- Dehydration is the most serious problem associated with vomiting or diarrhea.
- Drink clear liquids such as water, apple juice, soft drinks, or gatorade for the first 12 hours or until things improve. Adults should drink 8 to 12 glasses of fluids per day with diarrhea. Children should drink 1 cup of fluid for each loose bowel movement.

**Call or see a physician, go to the emergency department, or call 911 immediately if:**

- Temperature is greater than 101° F.
- Vomiting or Diarrhea lasts longer than 24 hours, gets worse, or blood is noted.
- You cannot keep fluids down or no urination **is** noted in 8 hours.

## WOUND CARE:

- Wounds include cuts, scrapes, bites, abrasions, or puncture wounds.
- If the wound begins to bleed, apply pressure over the wound with a clean bandage and elevate the wound above the heart for 5 to 10 minutes.
- Unless instructed otherwise, clean the wound twice daily with soapy water, and keep the wound dry. It is safe to take a shower but do not place the wound in bath or dish water.
- See a physician for a tetanus shot if it has been 10 years or more since your last one.

**Call or see a physician, go to the emergency department, or call 911 immediately if:**

- See the **Extremity Injury instructions**.
- Temperature is greater than 101° F.
- Bruising, swelling, or pain gets worse or bleeding is not controlled as directed above.
- Any signs of infection, such as redness, drainage of yellow fluid or pus, red streaks ex... from the wound, or a bad smell is n...

ToC

# On-Scene Physician Form

This EMS service would like to thank you for your effort and assistance. Please be advised that the EMS Professionals are operating under strict protocols and guidelines established by their medical director and the State of North Carolina. As a licensed physician, you may assume medical care of the patient. In order to do so, you will need to:

1. Receive approval to assume the patient's medical care from the EMS Agencies Online Medical Control physician.
2. Show proper identification including current North Carolina Medical Board Registration/ Licensure.
3. Accompany the patient to the hospital.
4. Carry out any interventions that do not conform to the EMS Agencies Protocols. EMS personnel cannot perform any interventions or administer medications that are not included in their protocols.
5. Sign all orders on the EMS Patient Care Report.
6. Assume all medico-legal responsibility for all patient care activities until the patient's care is transferred to another physician at the destination hospital.
7. Complete the "Assumption of Medical Care" section of this form below.

## Assumption of Medical Care

I, _____, MD; License #: _____,
**(Please Print your Name Here)**

have assumed authority and responsibility for the medical care and patient management for

_____.
**(Insert Patient's Name Here)**

I understand that I must accompany the patient to the Emergency Department. I further understand that all EMS personnel must follow North Carolina EMS Rules and Regulations as well as local EMS System protocols.

_____, MD Date: _____/_____/_____Time: _____AM/PM
**(Physician Signature Here)**

_____, EMS _____ Witness
**(EMS Lead Crew Member Signature Here)** **(Witness Signature Here)**

# Apgar Score

**The Apgar score should be obtained and recorded initially and at 5 minutes with the birth of delivery of any infant.**

- Each of the 5 parameters should be scored and then totaled.
- The Minimum score is 0
- The Maximum score is 10

| Sign | 0 | 1 | 2 |
|---|---|---|---|
| Heart Rate | Absent | <100 min. | >100 min. |
| Respiratory Effort | Absent | Weak Cry | Strong Cry |
| Muscle Tone | Limp | Some Flexion | Good Flexion |
| Reflex Irritability (when feet stimulated) | No Response | Some Motion | Cry |
| Color | Blue; Pale | Body Pink Extremities Blue | Pink |

# Los Angeles Prehospital Stroke Screen (LAPSS)

1. Patient Name: _____ (last name) _____ (first name)

2. Information/History from: [ ] Patient [ ] Family Member [ ] Other

_____ (name - if other than patient) _____ (phone)

3. Last known time patient was at baseline or deficit free and awake:

_____ (military time) _____ (date)

**SCREENING CRITERIA**

| | Yes | Unknown | No |
|---|---|---|---|
| 4. Age > 45 | [ ] | [ ] | [ ] |
| 5. History of seizures or epilepsy absent | [ ] | [ ] | [ ] |
| 6. Symptom duration less than 24 hours | [ ] | [ ] | [ ] |
| 7. At baseline, patient is not wheelchair bound or bedridden | [ ] | [ ] | [ ] |
| 8. Blood glucose between 60 and 400 | [ ] | [ ] | [ ] |

9. Exam: **LOOK FOR OBVIOUS ASYMMETRY**

| | Normal | Right | Left |
|---|---|---|---|
| Facial smile/grimace | [ ] | [ ] Droop | [ ] Droop |
| Hand grip | [ ] | [ ] Weak | [ ] Weak |
| | | [ ] No grip | [ ] No grip |
| Arm strength | [ ] | [ ] Drifts dn | [ ] Drifts dn |
| | | [ ] Falls fast | [ ] Falls fast |

Based on exam, patient has only unilateral (not bilateral) weakness: [ ] **YES** [ ] **NO**

10. **Items 4, 5, 6, 7, 8, 9 all YES's (or unknown) --- LAPSS screening criteria met**:

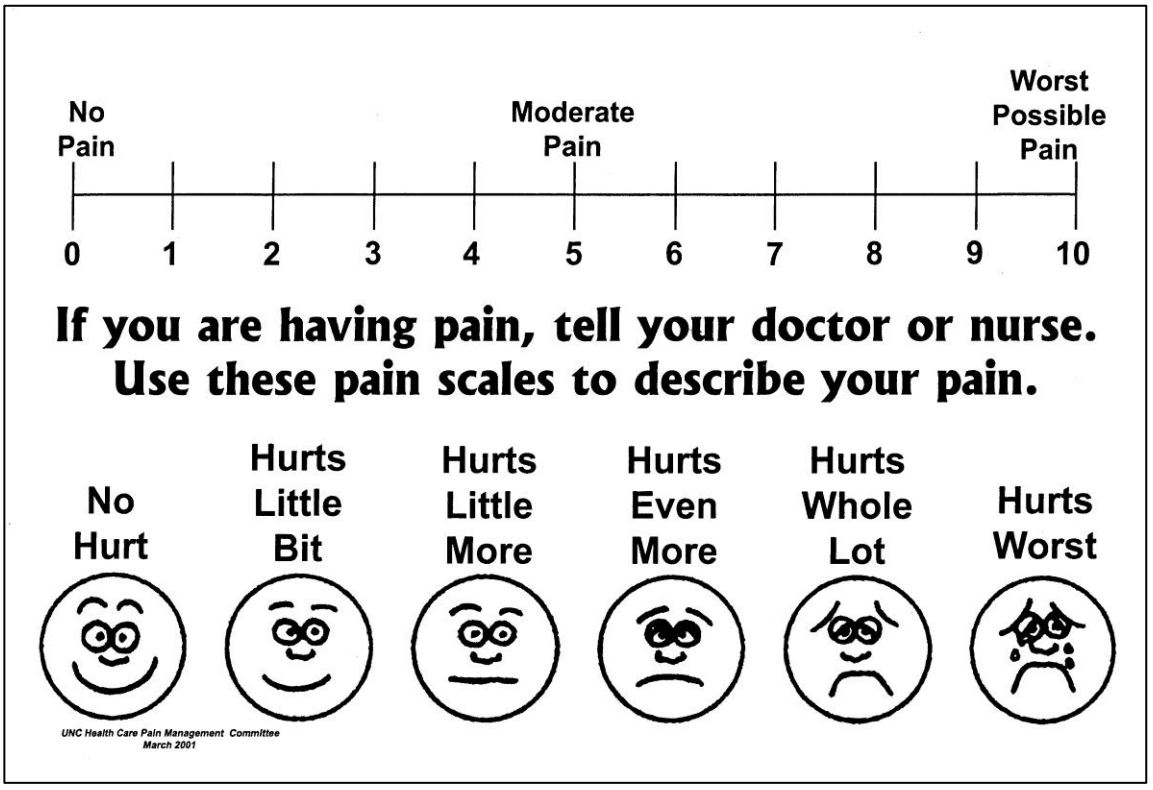
[ ] **YES** [ ] **NO**

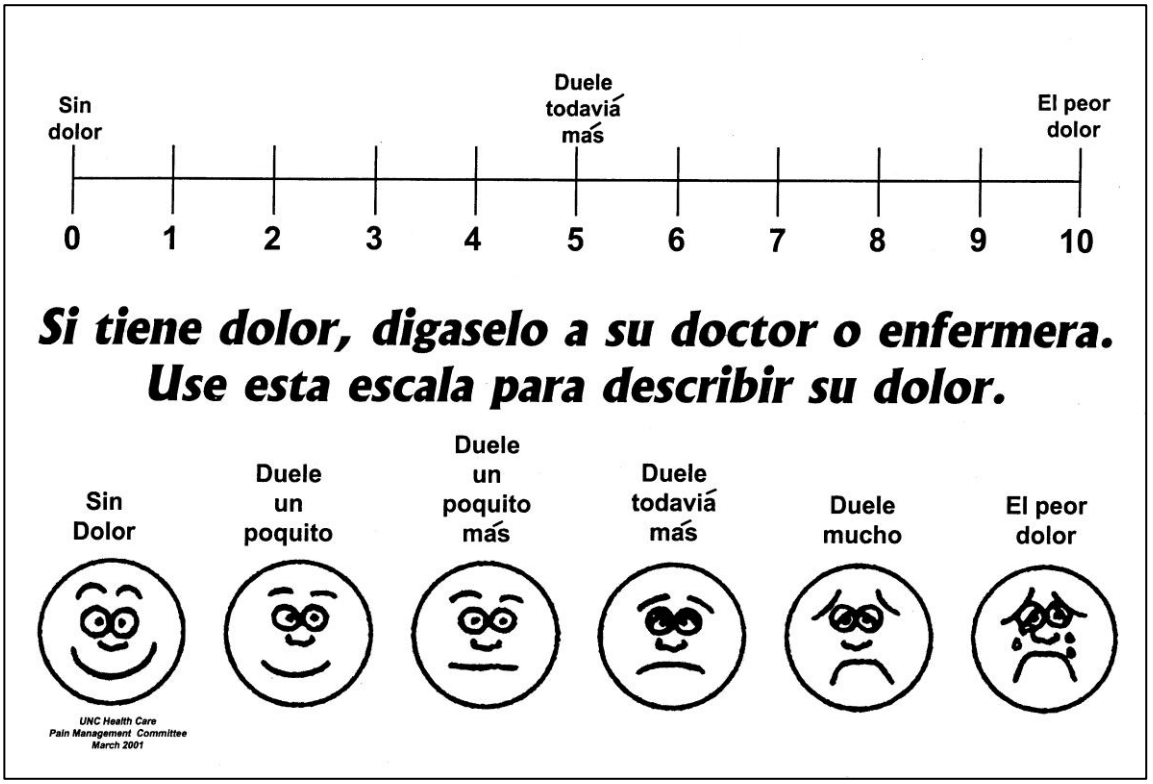
11. If LAPSS criteria for stroke are met, alert the receiving hospital of a possible stroke patient. If not, then return to the appropriate treatment protocol.

(Note: the patient may be experiencing a stroke even if the LAPSS criteria are not met.)

12. Time LAPSS Exam Performed: Military Time:_____

13. Form Completed by:_____




From Hockenberry MJ, Wilson D, Winkelstein ML; Wong's Essentials of Pediatric Nursing, ed. 7, St. Louis, 2005, p. 1259. Used with permission. Copyright, Mosby.



ToC

# Restraint Checklist

**Patient's Name:** _____

**PCR Number:**_____ **Date:** _____

**It is recommended that a Restraint Checklist be completed with any restraint use.**

**1. Reason for restraint (check all that apply):**

- ☐ Patient attempting to hurt self
- ☐ Patient attempting to hurt others
- ☐ Patient attempting to remove medically necessary devices

**2. Attempted verbal reassurance / redirection?**

- ☐ Yes
- ☐ No

**3. Attempted environmental modification? (i.e. remove patient from stressful environment)**

- ☐ Yes
- ☐ No

**4. Received medical control order for restraints?**

- ☐ Yes _____, MD
- ☐ No **(Medical Control Physician Name Here)**

**5. Time and Type of restraint applied (check all that apply):**

Date: _____/_____/_____Time: _____AM/PM

**Limb restraints:**

- ☐ LUE
- ☐ RUE
- ☐ LLE
- ☐ RLE

**Chemical Restraint:**

- ☐ Yes
- ☐ No

If Yes: Drug Used: _____

Total Dose: _____

**6. Vital signs and extremity neurovascular exam should be taken every 10 minutes.**

**7. Transport Position (Patient should NOT be in prone position)**

- ☐ Supine position for transport
- ☐ Lateral recumbent position for transport

Signature: _____

**(EMS Lead Crew Member)**

# Approved Medical Abbreviations

The following is a list of approved medical abbreviations. In general, the use of abbreviations should be limited to this list.

| | |
|---|---|
| A&O x 3 | - alert and oriented to person, place and time |
| A&O x 4 | - alert and oriented to person, place, time and event |
| A-FIB | - atrial fibrillation |
| AAA | - abdominal aortic aneurysm |
| ABC | - airway, breathing, circulation |
| ABD | - abdomen (abdominal) |
| ACLS | - advanced cardiac life support |
| AKA | - above the knee amputation |
| ALS | - advanced life support |
| AMA | - against medical advice |
| AMS | - altered mental status |
| AMT | - amount |
| APPROX | - approximately |
| ASA | - aspirin |
| ASSOC | - associated |
| BG | - blood glucose |
| BILAT | - bilateral |
| BKA | - below the knee amputation |
| BLS | - basic life support |
| BM | - bowel movement |
| BP | - blood pressure |
| BS | - breath sounds |
| BVM | - bag-valve-mask |
| C-SECTION | - caesarean section |
| C-SPINE | - cervical spine |
| C/O | - complaint of (complains of) |
| CA | - cancer |
| CABG | - coronary artery bypass graft |
| CAD | - coronary artery disease |
| CATH | - catheter |
| CC | - chief complaint |
| CEPH | - cephalic |
| CHF | - congestive heart failure |
| CNS | - central nervous system |
| COPD | - chronic obstructive pulmonary disease |
| CP | - chest pain |
| CPR | - cardiopulmonary resuscitation |
| CSF | - cerebrospinal fluid |
| CT | - cat scan |
| CVA | - cerebrovascular accident (stroke) |

# Approved Medical Abbreviations

| | |
|---|---|
| D5W | - 5% dextrose in water |
| DKA | - diabetic ketoacidosis |
| DNR | - do not resuscitate |
| DOA | - dead on arrival |
| DT | - delirium tremens |
| Dx | - diagnosis |
| | |
| ECG | - electrocardiogram |
| EEG | - electroencephelogram |
| ET | - endotracheal |
| ETOH | - ethanol (alcohol) |
| ETT | - endotracheal tube |
| EXT | - external (extension) |
| | |
| FB | - foreign body |
| FLEX | - flexion |
| Fx | - fracture |
| | |
| g | - gram(s) |
| GI | - gastrointestinal |
| GSW | - gunshot wound |
| gtts | - drops |
| GU | - gastrourinary |
| GYN | - gynecology (gynecological) |
| | |
| H/A | - headache |
| HEENT | - head, eyes, ears, nose, throat |
| HR | - heart rate (hour) |
| HTN | - hypertension |
| Hx | - history |
| | |
| ICP | - intracranial pressure |
| ICU | - intensive care unit |
| IM | - intramuscular |
| IV | - intravenous |
| | |
| JVD | - jugular vein distension |
| | |
| kg | - kilogram |
| KVO | - keep vein open |

# Approved Medical Abbreviations



| | |
|---|---|
| L-SPINE | - lumbar spine |
| L/S-SPINE | - lumbarsacral spine |
| L&D | - labor and delivery |
| LAT | - lateral |
| lb | - pound |
| LLQ | - left lower quadrant |
| LMP | - last mestrual period |
| LOC | - level of consciousness (loss of consciousness) |
| LR | - lactated ringers |
| LUQ | - left upper quadrant |
| | |
| MAST | - military anti-shock trousers |
| mcg | - microgram(s) |
| MED | - medicine |
| mg | - milligram(s) |
| MI | - myocardial infarction (heart attack) |
| min | - minimum / minute |
| MS | - mental status |
| MS | - mental status change |
| MSO4 | - morphine |
| MVC | - motor vehicle crash |
| | |
| N/V | - nausea/vomiting |
| N/V/D | - nausea/vomiting/diarrhea |
| NAD | - no apparant distress |
| NC | - nasal cannula |
| NEB | - nebulizer |
| NKDA | - no known drug allergies |
| NRB | - non-rebreather |
| NS | - normal saline |
| NSR | - normal sinus rhythm |
| | |
| OB/GYN | - obstetrics/gynecology |
| | |
| PALP | - palpation |
| PAC | - premature atrial contraction |
| PE | - pulmonary embolus |
| PEARL | - pupils equal and reactive to light |
| PMHx | - past medical history |
| PO | - orally |
| PRB | - partial rebreather |
| PRN | - as needed |
| PT | - patient |
| PVC | - premature ventricular contraction |

# Approved Medical Abbreviations

| | |
|---|---|
| RLQ | - right lower quadrant |
| RUQ | - right upper quadrant |
| Rx | - medicine |
| RXN | - reaction |
| | |
| S/P | - status post |
| SOB | - shortness of breath |
| SQ | - subcutaneous |
| ST | - sinus tachycardia |
| SVT | - supraventricular tachycardia |
| Sx | - symptom |
| SZ | - seizure |
| | |
| T-SPINE | - thoracic spine |
| T | - temperature |
| TIA | - transient ischemic attack |
| TKO | - to keep open (refers to IV's - same as KVO) |
| Tx | - treatment |
| | |
| UOA | - upon our arrival |
| URI | - upper respiratory infection |
| UTI | - urinary tract infection |
| | |
| VF | - ventricular fibrillation |
| VS | - vital signs |
| VT | - ventricular tachycardia |
| | |
| WAP | - wandering atrial pacemaker |
| WNL | - within normal limits |
| | |
| YO (YOA) | - years old (years of age) |
| | |
| M or ♂ | - male |
| F or ♀ | - female |
| + | - positive |
| - | - negative |
| ? | - questionable |
| | |
| Ψ | - psychiatric |
| ~ | - approximately |
| > | - greater than |
| < | - less than |
| = | - equal |

# Approved Medical Abbreviations

| | |
|---|---|
| $\overline{\uparrow}$ | - upper (increased) |
| $\overline{a}$ | - before |
| $\overline{p}$ | - after |
| $\overline{c}$ | - with |
| s | - without |
| | |
| $\Delta$ | - change |
| L | - left |
| R | - right |
| $\downarrow$ | - lower (decreased) |
| 1° | - primary |
| 2° | - secondary |

# Reperfusion Checklist

The Reperfusion Checklist is an important component in the initial evaluation, treatment, and transport of patients suffering from an acute ST-elevation myocardial infarction (STEMI) or acute Stroke. Both of these conditions can be successfully treated using fibrinolysis (thrombolytics) if the patient arrives at the appropriate hospital within the therapeutic window of time.

This form should be completed for all acute STEMI and acute Stroke patients.

Patient's Name: _____

PCR Number:_____ Date: _____

**1. Has the patient experienced chest discomfort for greater than 15 minutes and less than 12 hours?**

☐ Yes ☐ No

**2. Has the patient developed a sudden neurologic deficit with a positive Los Angeles Prehospital Stroke Screen?**

☐ Yes ☐ No

**3. Are there any contraindications to fibrinolysis?**

If any of the following are checked "Yes", fibrinolysis MAY be contraindicated.

☐ Yes ☐ No Systolic Blood Pressure greater than 180 mm Hg
☐ Yes ☐ No Diastolic Blood Pressure greater than 110 mm Hg
☐ Yes ☐ No Right vs. Left Arm Systolic Blood Pressure difference of greater than 15 mm Hg
☐ Yes ☐ No History of structural Central Nervous System disease (tumors, masses, hemorrhage, etc.)
☐ Yes ☐ No Significant closed head or facial trauma within the previous 3 months
☐ Yes ☐ No Recent (within 6 weeks) major trauma, surgery (including laser eye surgery), gastrointestinal bleeding, or severe genital-urinary bleeding
☐ Yes ☐ No Bleeding or clotting problem or on blood thinners
☐ Yes ☐ No CPR performed greater than 10 minutes
☐ Yes ☐ No Currently Pregnant
☐ Yes ☐ No Serious Systemic Disease such as advanced/terminal cancer or severe liver or kidney failure.

**4. (STEMI Patients Only) Does the patient have severe heart failure or cardiogenic shock?**
These patients may benefit more from a percutaneous coronary intervention (PCI) capable hospital.

☐ Yes ☐ No Presence of pulmonary edema (rales greater than halfway up lung fields)
☐ Yes ☐ No Systemic hypoperfusion (cool and clammy)

**<u>If any contraindication is checked as "Yes" and an acute Stroke is suspected by exam or a STEMI is confirmed by ECG, activate the EMS Stroke Plan or EMS STEMI Plan for fibrinolytic ineligible patients.</u> This may require the EMS Agency, an Air Medical Service, or a Specialty Care Transport Service to transport directly to an specialty center capable of interventional care within the therapeutic window of time.**

# Difficult Airway Evaluation



## Evaluating for the difficult airway

Between 1 – 3% of patients who require endotracheal intubation have airways that make intubation difficult. Recognizing those patients who may have a difficult airway allows the paramedic to proceed with caution and to keep as many options open as possible. It also allows the paramedic to prepare additional equipment (such as a cricothyrotomy kit) that may not ordinarily be part of a standard airway kit. The pneumonic LEMON is useful in evaluating patients for signs that may be consistent with a difficult airway and should raise the paramedic's index of suspicion.

### **L**ook externally

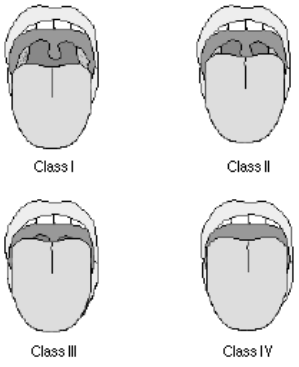
External indicators of either difficult intubation or difficult ventilation include: presence of a beard or moustache, abnormal facial shape, extreme cachexia, edentulous mouth, facial trauma, obesity, large front teeth or "buck teeth", high arching palate, receding mandible, short bull neck.

### **E**valuate 3-3-2 Rule

3 fingers between the patient's teeth (patient's mouth should open adequately to permit three fingers to be placed between the upper and lower teeth)
3 fingers between the tip of the jaw and the beginning of the neck (under the chin)
2 fingers between the thyroid notch and the floor of the mandible (top of the neck)

### **M**allampati

This scoring system is based on the work of Mallampati et al published in the Canadian Anaesthesia Society Journal in 1985. The system takes into account the anatomy of the mouth and the view of various anatomical structures when the patient opens his mouth as wide as possible. This test is performed with the patient in the sitting position, the head held in a neutral position, the mouth wide open, and the tongue protruding to the maximum. Inappropriate scoring may occur if the patient is in the supine position (instead of sitting), if the patient phonates or if the patient arches his or her tongue.




Class I (easy) = visualization of the soft palate, fauces, uvula, anterior and posterior pillars.
Class II = visualization of the soft palate, fauces and uvula.
Class III = visualization of the soft palate and the base of the uvula.
Class IV (difficult) = soft palate is not visible at all.

### **O**bstruction?

Besides the obvious difficulty if the airway is obstructed with a foreign body, the paramedic should also consider other obstructers such as tumor, abscess, epiglottis, or expanding hematoma.

### **N**eck Mobility

Ask the patient to place their chin on their chest and to tilt their head backward as far as possible. Obviously, this will not be possible in the immobilized trauma patient.

# North Carolina EMS Airway Evaluation Form

## 1. Patient Demographic Information

Date: ___/___/___ Dispatch Time: ___:___ am/pm

PCR # _____

EMS Agency Name:_____

Patient Age (yr): _____ Patient Sex: ❑ M ❑ F

**The NC EMS Airway Evaluation Form is required to be completed with all Drug Assisted Intubations.**

- It is recommended that this form be completed with all invasive airway procedures.

## 2. Indication for invasive airway management

- ❑ Apnea or agonal respirations
- ❑ Airway reflex compromised
- ❑ Ventilatory effort compromised
- ❑ Injury/illness involving airway
- ❑ Adequate airway reflexes/effort, potential for compromise
- ❑ Other _____

## 3. Was endotracheal intubation (ETI) attempted?

❑ Yes ❑ No

## 4. If ETI not attempted, alternate method of airway support

- ❑ Bag-Valve-Mask (BVM)
- ❑ Needle Jet Ventilation
- ❑ Open Cricothyrotomy
- ❑ CPAP/BiPAP
- ❑ Not Applicable (ETI Attempted)
- ❑ Combitube
- ❑ LMA
- ❑ Other Cricothyrotomy
- ❑ King LT-D
- ❑ Other _____

## 5. Glasgow Coma Score (GCS) before intubation

| | | | | | |
|---|---|---|---|---|---|
| **Eye** | ❑ (1) none | ❑ (2) pain | ❑ (3) verbal | ❑ (4) spontaneous | |
| **Verbal** | ❑ (1) none | ❑ (2) incomprehensible | ❑ (3) inappropriate words | ❑ (4) disoriented | ❑ (5) oriented |
| **Motor** | ❑ (1) no response | ❑ (2) extends to pain | ❑ (3) flexes to pain | ❑ (4) withdraws from pain | ❑ (5) localizes pain | ❑ (6) obeys commands |

## 6. Level of training of each rescuer attempting intubation

| Rescuer A | Rescuer B | Rescuer C |
|---|---|---|
| **State ID:** | **State ID:** | **State ID:** |
| ❑ Paramedic | ❑ Paramedic | ❑ Paramedic |
| ❑ EMT-I | ❑ EMT-I | ❑ EMT-I |
| ❑ Medic Student | ❑ Medic Student | ❑ Medic Student |
| ❑ Nurse | ❑ Nurse | ❑ Nurse |
| ❑ Phys. Assist | ❑ Phys. Assist | ❑ Phys. Assist |
| ❑ MD/DO | ❑ MD/DO | ❑ MD/DO |
| ❑ Other: _____ | ❑ Other: _____ | ❑ Other: _____ |

## 7. Indicate drugs given to facilitate intubation

- ❑ Atropine _____ mg
- ❑ Diazepam _____ mg
- ❑ Etomidate _____ mg
- ❑ Lidocaine _____ mg
- ❑ Midazolam _____ mg
- ❑ Morphine _____ mg
- ❑ Succinylcholine _____ mg
- ❑ Topical Anesthetic Spray
- ❑ Other–Specify _____–_____ mg
- ❑ Other–Specify _____–_____ mg

## 8. Times and Vital Signs

| | Time | Heart Rate | Resp. Rate | Blood Pressure | Pulse Oximetry | ECTO$_2$ |
|---|---|---|---|---|---|---|
| **Decision to Perform Airway Procedure** | : | | | | | |
| **Pre-Airway Procedure Value** | : | | | / | | |
| **Lowest Value During Airway Procedure** | : | | | / | | |
| **Highest Value During Airway Procedure** | : | | | / | | |
| **Successful Airway Obtained** | : | | | | | |
| **Post-Airway Procedure Value** | : | | | / | | |
| **Airway Procedure Abandoned Unsuccessfully** | : | | | | | |



ToC

# North Carolina EMS Airway Evaluation Form

## 9. Provide information for each laryngoscopy attempt.

| Attempt | ETI Method | Rescuer | Attempt Successful? |
|---|---|---|---|
| 1 | ❑ Oral ❑ Nasal ❑ Sedation ❑ RSI | ❑ A ❑ B ❑ C | ❑ Yes ❑ No |
| 2 | ❑ Oral ❑ Nasal ❑ Sedation ❑ RSI | ❑ A ❑ B ❑ C | ❑ Yes ❑ No |
| 3 | ❑ Oral ❑ Nasal ❑ Sedation ❑ RSI | ❑ A ❑ B ❑ C | ❑ Yes ❑ No |
| 4 | ❑ Oral ❑ Nasal ❑ Sedation ❑ RSI | ❑ A ❑ B ❑ C | ❑ Yes ❑ No |

**FOR ORAL ROUTE:** Each Insertion of Blade (Laryngoscope) is one "Attempt"

**FOR NASAL ROUTE:** Each Pass of Tube Past the Nares is One "Attempt"

## 10. Endotracheal tube confirmation

| | Tracheal Placement | Esophogeal Placement | Indeterminate | Not Assessed | Tube Not Placed |
|---|---|---|---|---|---|
| Auscultation | ❑ | ❑ | ❑ | ❑ | ❑ |
| Bulb/Syringe Aspiration | ❑ | ❑ | ❑ | ❑ | ❑ |
| Colorimetric $ETCO_2$ | ❑ | ❑ | ❑ | ❑ | ❑ |
| Digital $ETCO_2$ | ❑ | ❑ | ❑ | ❑ | ❑ |
| Waveform $ETCO_2$ | ❑ | ❑ | ❑ | ❑ | ❑ |
| Other _____ | ❑ | ❑ | ❑ | ❑ | ❑ |

## 11. Who determined the final placement (location) of ET Tube?

- ❑ Rescuer performing intubation
- ❑ Another rescuer on the same team
- ❑ Receiving helicopter/EMS crew
- ❑ Receiving hospital team
- ❑ Other: _____

## 12. Was ETI successful for the overall encounter (on transfer of care to ED or helicopter)?

❑ Yes ❑ No

## 13. If all intubation attempts FAILED, indicate suspected reasons for failed intubation (Check *all* that apply)

- ❑ Inadequate patient relaxation
- ❑ Inability to expose vocal cords
- ❑ Difficult patient anatomy
- ❑ Orofacial Trauma
- ❑ Secretions/blood/vomit
- ❑ Unable to access patient
- ❑ ETI attempted, but arrived at destination facility before accomplished
- ❑ Not Applicable – Successful field ETI
- ❑ Other _____

## 14. Critical complications encountered during airway management (Check *all* that apply)

- ❑ Failed intubation effort
- ❑ Injury or trauma to patient from airway management effort
- ❑ Adverse event from facilitating drugs
- ❑ Esophogeal intubation – delayed detection (after tube secured)
- ❑ Esophogeal intubation – detected in ED
- ❑ Tube dislodged during transport/patient care
- ❑ Tube was not in the correct position when assumed care of the patient
- ❑ Other: _____

## 15. If all intubation attempts FAILED, indicate secondary (rescue) airway technique used (Check *all* that apply)

- ❑ Bag-Valve-Mask (BVM) Ventilation
- ❑ Needle/Jet Ventilation
- ❑ Combitube
- ❑ Open Cricothyroidotomy
- ❑ Not Applicable – Successful field ETI
- ❑ King LT-D
- ❑ Other _____

## 16. Did secondary (rescue) airway result in satisfactory ventilation?

❑ Yes ❑ No ❑ Not Applicable

## 18. Endotracheal tube placement

34. ❑ Size (mm) _____ ❑ Unknown
35. ❑ Depth (cm, at lateral corner of mouth) _____ ❑ Unknown
36. Secured with: ❑ Adhesive tape ❑ Umbilical/cloth tape ❑ Tube holder ❑ Other ❑ Unknown
37. Placement reassessed after patient movement ❑ Yes ❑ No ❑ Unknown
38. Placement reassessed after patient transfer of care ❑ Yes ❑ No ❑ Unknown

## 19. Signature of Receiving Physician/Healthcare Provider (Confirming Destination/Transfer Tube Placement)

**Date and Time:** ____ : ____ am/pm

## 20. Signature of EMS Medical Director (Confirming Review of Completed Form)

**Date:**

**HIPAA PERMITS DISCLOSURE OF MOST TO OTHER HEALTH CARE PROFESSIONALS AS NECESSARY**

# Medical Orders for Scope of Treatment (MOST)

This is a Physician Order Sheet based on the person's medical condition and wishes. Any section not completed indicates full treatment for that section. **When the need occurs, first follow these orders, then contact physician.**

| Patient's Last Name: | Effective Date of Form: _____ *Form must be reviewed at least annually.* |
|---|---|
| Patient's First Name, Middle Initial: | Patient's Date of Birth: |

## Section A
*Check One Box Only*

**CARDIOPULMONARY RESUSCITATION (CPR): Person has no pulse and is not breathing.**

☐ **Attempt Resuscitation (CPR)** ☐ **Do Not Attempt Resuscitation (DNR/no CPR)**

When not in cardiopulmonary arrest, follow orders in **B, C**, and **D**.

## Section B
*Check One Box Only*

**MEDICAL INTERVENTIONS: Person has pulse and/or is breathing.**

☐ **Full Scope of Treatment:** Use intubation, advanced airway interventions, mechanical ventilation, cardioversion as indicated, medical treatment, IV fluids, etc.; also provide comfort measures. **Transfer to hospital if indicated.**

☐ **Limited Additional Interventions:** Use medical treatment, IV fluids and cardiac monitoring as indicated. Do not use intubation or mechanical ventilation; also provide comfort measures. **Transfer to hospital if indicated.** **Avoid intensive care.**

☐ **Comfort Measures:** Keep clean, warm and dry. Use medication by any route, positioning, wound care and other measures to relieve pain and suffering. Use oxygen, suction and manual treatment of airway obstruction as needed for comfort. **Do not transfer to hospital unless comfort needs cannot be met in current location.**

*Other Instructions* _____

## Section C
*Check One Box Only*

**ANTIBIOTICS**

☐ **Antibiotics if life can be prolonged.**
☐ **Determine use or limitation of antibiotics when infection occurs.**
☐ **No Antibiotics** (use other measures to relieve symptoms).

*Other Instructions* _____

## Section D
*Check One Box Only in Each Column*

**MEDICALLY ADMINISTERED FLUIDS AND NUTRITION: Offer oral fluids and nutrition if physically feasible.**

| | |
|---|---|
| ☐ **IV fluids long-term if indicated** | ☐ **Feeding tube long-term if indicated** |
| ☐ **IV fluids for a defined trial period** | ☐ **Feeding tube for a defined trial period** |
| ☐ **No IV fluids** (provide other measures to ensure comfort) | ☐ **No feeding tube** |

*Other Instructions* _____

## Section E
*Check The Appropriate Box*

**DISCUSSED WITH AND AGREED TO BY:**

*Basis for order must be documented in medical record.*

| | |
|---|---|
| ☐ Patient | ☐ Majority of patient's reasonably available parents and adult children |
| ☐ Parent or guardian if patient is a minor | ☐ Majority of patient's reasonably available adult siblings |
| ☐ Health care agent | ☐ An individual with an established relationship with the patient who is acting in good faith and can reliably convey the wishes of the patient |
| ☐ Legal guardian of the person | |
| ☐ Attorney-in-fact with power to make health care decisions | |
| ☐ Spouse | |

| **MD/DO, PA, or NP Name** (Print): | **MD/DO, PA, or NP Signature** (Required): | **Phone #:** |
|---|---|---|
| | | |

**Signature of Person, Parent of Minor, Guardian, Health Care Agent, Spouse, or Other Personal Representative**
(Signature is required and must either be on this form or on file)

I agree that adequate information has been provided and significant thought has been given to life-prolonging measures. Treatment preferences have been expressed to the physician (MD/DO), physician assistant, or nurse practitioner. This document reflects those treatment preferences and indicates informed consent.

*If signed by a patient representative, preferences expressed must reflect patient's wishes as best understood by that representative. Contact information for personal representative should be provided on the back of this form.*

**You are not required to sign this form to receive treatment.**

| Patient or Representative Name (print) | Patient or Representative Signature | Relationship (write "self" if patient) |
|---|---|---|
| | | |

**SEND FORM WITH PATIENT/RESIDENT WHEN TRANSFERRED OR DISCHARGED**

**HIPAA PERMITS DISCLOSURE OF MOST TO OTHER HEALTH CARE PROFESSIONALS AS NECESSARY**

Contact Information

| Patient Representative: | Relationship: | Phone #:<br>Cell Phone #: | |
|---|---|---|---|
| Health Care Professional Preparing Form: | Preparer Title: | Preferred Phone #: | Date Prepared: |

## Directions for Completing Form

**Completing MOST**

- MOST must be reviewed and prepared by a health care professional in consultation with the patient or patient representative.
- MOST is a medical order and must be reviewed and signed by a licensed physician (MD/DO), physician assistant, or nurse practitioner to be valid. **Be sure to document the basis for the order in the progress notes of the medical record.** Mode of communication (e.g., in person, by telephone, etc.) also should be documented.
- The signature of the patient or their representative is required; however, if the patient's representative is not reasonably available to sign the original form, a copy of the completed form with the signature of the patient's representative must be placed in the medical record and "on file" must be written in the appropriate signature field on the front of this form or in the review section below.
- Use of original form is required. **Be sure to send the original form with the patient.**
- MOST is part of advance care planning, which also may include a living will and health care power of attorney (HCPOA). If there is a HCPOA, living will, or other advance directive, a copy should be attached if available. **MOST may suspend any conflicting directions in a patient's previously executed HCPOA, living will, or other advance directive.**
- **There is no requirement that a patient have a MOST.**
- MOST is recognized under N.C. Gen. Stat. 90-21.17.

**Reviewing MOST**

This MOST must be reviewed at least annually or earlier if:

- The patient is admitted and/or discharged from a health care facility;
- There is a substantial change in the patient's health status; or
- The patient's treatment preferences change.

If MOST is revised or becomes invalid, draw a line through Sections A – E and write "VOID" in large letters.

**Revocation of MOST**

This MOST may be revoked by the patient or the patient's representative.

### Review of MOST

| Review Date | Reviewer and Location of Review | MD/DO, PA, or NP Signature (Required) | Signature of Patient or Representative (Required) | Outcome of Review |
|---|---|---|---|---|
| | | | | ☐No Change<br>☐FORM VOIDED, new form completed<br>☐FORM VOIDED, **no** new form |
| | | | | ☐No Change<br>☐FORM VOIDED, new form completed<br>☐FORM VOIDED, **no** new form |
| | | | | ☐No Change<br>☐FORM VOIDED, new form completed<br>☐FORM VOIDED, **no** new form |
| | | | | ☐No Change<br>☐FORM VOIDED, new form completed<br>☐FORM VOIDED, **no** new form |
| | | | | ☐No Change<br>☐FORM VOIDED, new form completed<br>☐FORM VOIDED, **no** new form |

**SEND FORM WITH PATIENT/RESIDENT WHEN TRANSFERRED OR DISCHARGED**

**DO NOT ALTER THIS FORM!**

DRAFT

**STOP**
**DO NOT**
**Resuscitate**

Effective Date: _____

Expiration Date, if any _____

☐ Check box if no expiration

# DO NOT RESUSCITATE ORDER

SAMPLE

Patient's full name _____

In the event of cardiac and/or pulmonary arrest of the patient, efforts at cardiopulmonary resuscitation of the patient SHOULD NOT be initiated. This order does not affect other medically indicated and comfort care.

I have documented the basis for this order and the consent required by the NC General Statute 90-21.17(b) in the patient's records.

_____

Signature of Attending Physician/Physician Assistant/Nurse Practitioner

_____

Printed Name of Attending Physician

_____

Address

_____

City, State, Zip

Telephone Number (office) _____

Telephone Number (emergency) _____

**Do Not Copy** **Do Not Alter**

# Emergency Medical Dispatch (EMD) System Description

Orange County EMS utilizes the Medical Priority Dispatch System™ (MPDS™) version 12.1 from Priority Dispatch Corporation (formerly Medical Priority Consultants, Inc.).

## Manufacturer Description

Priority Dispatch Corporation is a unique research company that was recently evolved from Medical Priority Consultants, Incorporated. Medical Priority Consultants was the pioneer in developing medical dispatch systems, having introduced the Medical Priority Dispatch System™ over 25 years ago. Priority Dispatch Corporation is based in Salt Lake City, Utah, at 139 E. South Temple, Suite 500, and can be reached via telephone at (801) 363-9127.

## Version Information

Orange County has used the MPDS™ system since 1993, and currently operates under Priority Dispatch Corporation license number 90-10620 using version 12.1 of the MPDS™, with all center telecommunicators certified to NAEMD standards. Telecommunicators access the MPDS via the ProQA computer system, which is integrated with the computer aided dispatch system.

# Stat Pack Med Module

**Open Area**

| | |
|---|---|
| | MR |
| B | EMT B |
| I | EMT- I I |
| P | EMT- P P |



# Stat Pack Med Module

## Inside Pouches

| | MR | |
|---|---|---|
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

2 x 18g safety needle
2 x 21g safety needle
2 x 18g blunt needle




2 x 1cc Syringe
2 x 3cc Syringe
2 x 10cc Syringe

1 x 60gtts/ml IV Set
1 x 10gtts/ml IV Set

# Stat Pack Med Module

| | |
|---|---|
| | MR |
| B | EMT B |
| I | EMT- I I |
| P | EMT- P P |

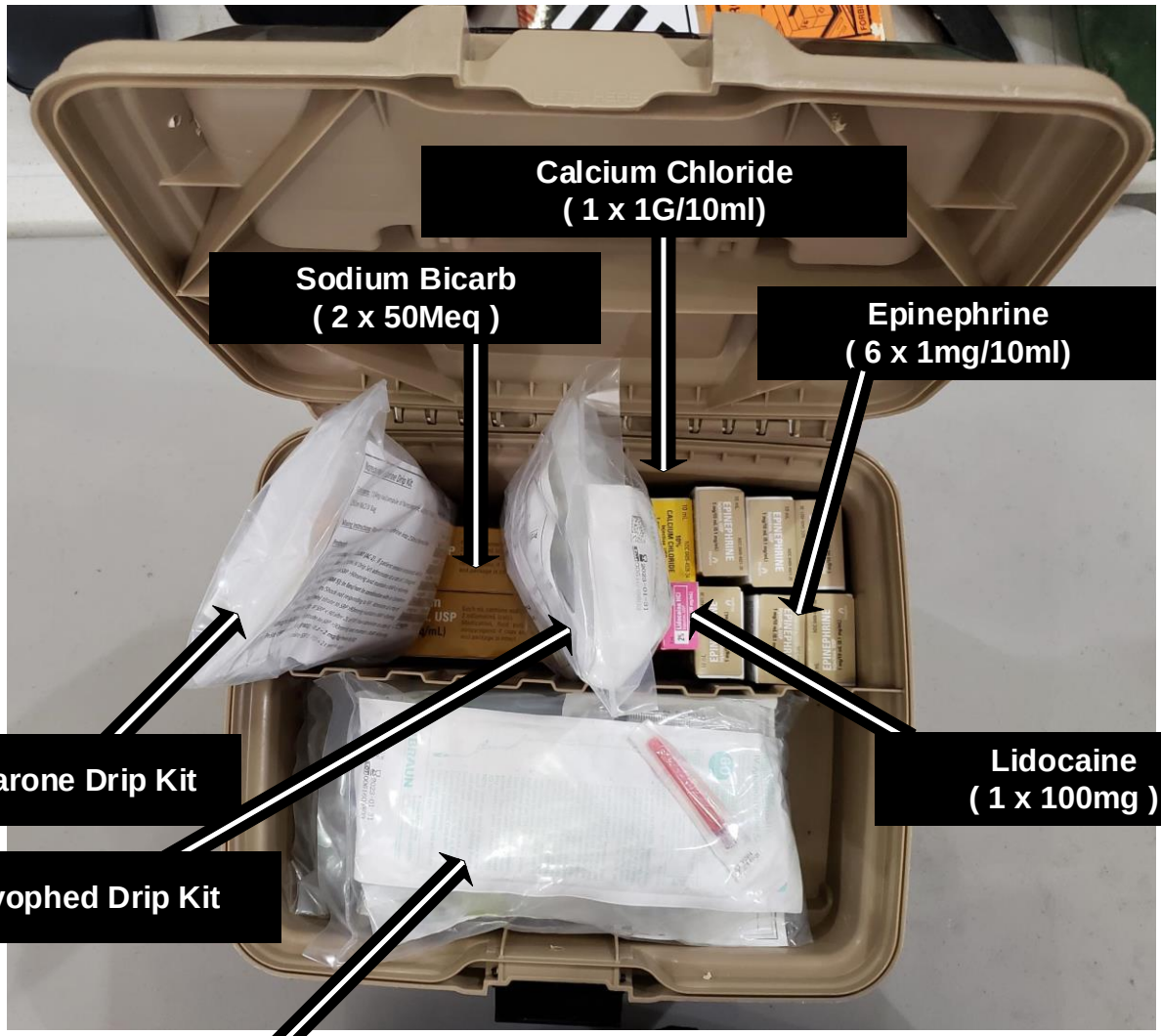
**Vial and Mesh Area**



# Cardiac (Tackle) Box

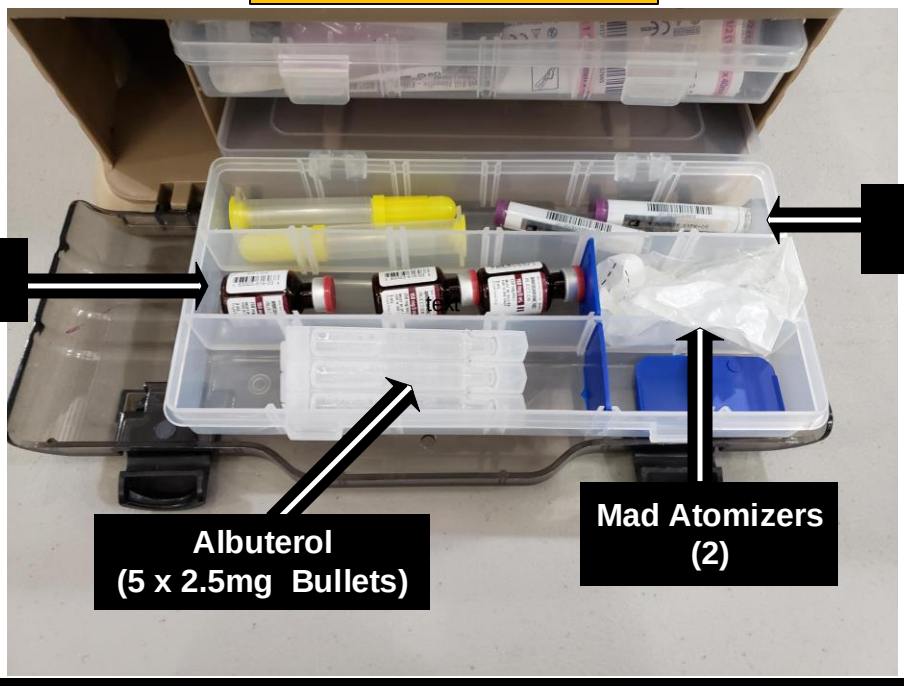
**Open Top Area**

| | |
|---|---|
| | MR |
| B | EMT |
| I | EMT- I |
| P | EMT- P |



# Cardiac (Tackle) Box

## Bottom Front Tray




| | | |
|---|---|---|
| | MR | |
| B | EMT | B |
| I | EMT- I | I |
| P | EMT- P | P |

## Top Front Tray



**Orange County Emergency Services**

**Standard Operating Guidelines**

| | |
|---|---|
| **SOG Name:** | **Ambulance Securing Policy** |
| **SOG Number:** | **EMS-002** |
| **Submitted By:** | **Darshan Patel** |
| **Approved By:** | **F.R. Montes de Oca** |
| **Date Effective:** | **06/20/2011** |

## I. GOAL

1. Ambulances are important equipment that are essential to achieving effective and efficient operations of an EMS system. Ambulances must be protected from unauthorized access and/or theft. Emergency Services uses a variety of control measures to ensure ambulances are secure from unauthorized access and/or theft. These measures include manual locking of doors and Electronic Anti-Theft systems.
2. The goal of this policy is to establish guidelines for securing and protecting ambulances from unauthorized access and/or theft.

## II. OBJECTIVE

1. All tactical EMS staff that operate in and around Orange County Emergency Services' ambulances are responsible for taking appropriate steps to secure the ambulance.

## III. SCOPE

1. All Orange County Emergency Services employees that work in or around a county owned ambulance.

## IV. POLICY

1. Ambulance Key Assignments. There will be two sets of keys assigned to each medic unit. The primary paramedic and EMT shall be responsible for holding one set of keys each.
2. Locking Units. Whenever exiting an ambulance, the driver of the unit will be responsible for ensuring the vehicle is locked after all occupants have exited the ambulance.
    a. This applies for all locations where the ambulance is not secured within a locked building.
    b. For units that require a key to idle on a scene, the driver's keys will be left in the ignition to allow for idling. The second set of keys and/or the unlock button on the exterior of the ambulance will be used to unlock the ambulance upon re-entry into the vehicle.
    c. This section of the policy applies to all ambulances in the Orange County Emergency Services' Fleet.
3. Electronic Anti-Theft (EAT) Systems. In situations where a truck must idle and there is no crew inside or in the immediate vicinity of the vehicle and an EAT System is installed in

the vehicle, the crew must activate the EAT System and remove the key from the ignition prior to exiting the vehicle. Per IV.2, the unit must also be locked upon exit.

a. An EAT System, allows the driver to remove the key from the ignition without turning off the engine but will not allow the vehicle to be put into gear without re-inserting the key into the ignition.
b. As of May 2011, this feature is only available on and only applies to Orange County Emergency Services' Excellance Ambulances.

**Orange County Emergency Services**

**Standard Operating Guidelines**

| | |
|---|---|
| **SOG Name:** | **Driver Education and Qualification** |
| **SOG Number:** | **EMS 004** |
| **Submitted By:** | **Kim Woodward** |
| **Approved By:** | **F.R. Montes de Oca** |
| **Date Effective:** | **April 13, 2012** |

## I. OBJECTIVE

1. To ensure the appropriate education and qualification of persons who operate Orange County Emergency Services (OCES) vehicles.

## II. SCOPE

1. This guideline applies to all Orange County Emergency Services staff and those who drive and operate Orange County Emergency Services vehicles.

## III. PROCEDURE

1. Policy
    a. No person shall operate an Orange County EMS vehicle unless they have received initial Emergency Vehicle Driver Training and a familiarization to the specific vehicle.
2. Initial Education
    a. OCES provides initial driver education to new employees and volunteers.
    b. OCES utilizes a local adaptation of the Green Cross CEVO certification program for ambulance drivers.
    c. The program includes a classroom portion, a driving range portion, and a field observation and qualification component.
    d. OCES requires an additional 8 hours of driver education specific to the Excellance medium duty ambulances, North Carolina Law, and system guidelines.
    e. OCES requires 10 hours of documented geographic study and the successful completion of general geography test prior to initiation of field driving experience.
3. Outside Program Acceptance
    a. OCES accepts the NC Department of Insurance driver-Operator Certification (VFIS), Emergency Vehicle Driver Course, and Emergency Vehicle Operation Course, in-lieu of mandatory attendance at the OCES CEVO class, or other equivalent approved class.
    b. These certifications greater than three years of age will not be accepted.

    c. No exemptions will be made for the OCES Excellance medium duty ambulance training.
4. Ongoing Driver Education
    a. OCES provides yearly refresher classroom training on driving laws, policies, and practices to all personnel.
    b. The OCES Safety Committee reviews on-duty driver history through direct observation and documented incidents.
    c. The OCES Safety Committee may recommend remedial driver training for any EMS drivers found to have deficiencies in practices.

**Orange County Emergency Services**

**Standard Operating Guidelines**

| | |
|---|---|
| **SOG Name:** | **Daily Vehicle Checkout and Re-supply** |
| **SOG Number:** | **EMS-011** |
| **Submitted By:** | **Kim Woodward** |
| **Approved By:** | **F.R. Montes de Oca** |
| **Date Effective:** | **October 27, 2010** |

## I. OBJECTIVE

1. To ensure that all Orange County EMS system units are properly equipped and stocked to respond to any anticipated emergency and/or non-emergency situations.

## II. SCOPE

1. This guideline applies to all Orange County EMS staff and staff operating OCES system units.

## III. PROCEDURE

1. Assign positions:
    a. 0 = paramedic
    b. 1 = EMT
    c. 2 = Third/Cadet
2. EMT Responsibilities include vehicle and non-ALS equipment.
3. Paramedic responsibilities include ALS equipment and supplies.
4. Third-person responsibilities falls under EMT:
    a. Cleanliness and sanitation
    b. Vehicle Systems
    c. Non-ALS equipment
5. Start-of-Shift Checkout:
    a. Each crew, paramedic and/or EMT, will conduct a daily check-off of their assigned vehicle and equipment using the appropriate vehicle form.
        i. Diagram of equipment placement is clearly labeled on check-sheets
        ii. Diagram of supplies
    b. The checkout includes both the presence of the correct amount of the items and that the stock is prior to its expiration date.
    c. Any deficient equipment or supplies will be either immediately corrected or reported to the EMS Supervisor for re-supply.
    d. Any mechanical deficiency with the vehicle will be reported as soon as possible to the EMS Supervisor and will be documented in webEOC. Providers will document the deficiency as thoroughly as possible.

6. ALS Package Compartment Sealing:
    a. Some segments of each package of ALS equipment may be sealed by paramedics to expedite the daily checkout of the equipment.
        - When this is done, the specific compartment will be inventoried against the printed compartment label or checkout sheet, and the earliest expiration date of any dated materials will be written clearly on the seal.
7. Restocking After Use:
    a. Each crew is responsible for restocking the specific supplies and equipment used during response incidents.
    b. Inventories of commonly used supplies are located at assigned EMS stations to expedite the re-supply of on-duty units.

# System Provider Reentry

**Purpose**:
Providers engaging in patient care are responsible for demonstrating competency in both skills and knowledge of OCEMS protocols and procedures. This policy ensures that all providers who are unable to function in their primary role because of, but not limited to: illness, injury, military leave, reassignment, FMLA, or other condition during which the practitioner remained employed or has employment reinstated by Orange County, has a smooth transition back to independent practice, and to give structure to individualized reentry plans. The purpose of this policy is to assure excellence in patient care for the residents and visitors in Orange County.

**Policy**:
Providers must meet these criteria (determined by the elapsed time the provider was separated from Orange County EMS in a response capacity) before being reinstated as an independent practitioner:

3 months or less: Completion of all classroom lecture, Continuing Education, and Target Solutions Assignments that were missed or assigned prior to return to work.

Greater than 3 months to 6 months: Completion of all classroom lecture, Continuing Education, and Target Solutions Assignments that were missed. Complete a minimum of 72 - 144 hours, with an assigned Preceptor. During that time, the Preceptor is responsible for ensuring that the provider is competent in their role as a practitioner. The assigned Preceptor will make a recommendation to the EMS Training Bureau when the provider has demonstrated competency and is ready to return to independent duty.

Greater than 6 months to 12 months: Completion of all classroom lecture, Continuing Education, and Target Solutions Assignments that were missed. Complete all annual competency skills. Complete, at a minimum, 168 - 336 hours with an assigned Preceptor. During that time, the Preceptor is responsible for ensuring that the provider is competent in their role as a practitioner. The assigned Preceptor will make a recommendation to the EMS Training Bureau when the provider has demonstrated competency and is ready to return to independent duty. Upon recommendation from the assigned Preceptor, a meeting will be held with the EMS Training Bureau, primary Preceptor, and the Provider. Upon completion of the meeting, the provider must successfully complete the current protocol test assigned by the EMS Training Bureau.

Greater than 12 months: Full reentry into the FTEP program; including skills, scenario testing, TSOPs and Oral Boards. During that time, an assigned Preceptor is responsible for ensuring that the provider is competent in their role as a practitioner. The assigned Preceptor will make a recommendation to the EMS Training Bureau when the provider has demonstrated competency and is ready to return to independent duty.

*Providers who require supervised practice with an assigned Preceptor are only permitted to engage in patient care under the direct supervision of a preceptor, and will have documentation of their performance completed in a Daily Observation Report.*

**Procedure:**
When the authorization to return to work is received, the EMS Training Bureau determines what credentialing requirements must be completed prior to returning to duty. The EMS Training Bureau will verify the provider's State certification and official time separated from OCEMS in a response capacity. EMS Training Bureau will then develop the provider's reentry plan in conjunction with the EMS Quality Assurance in accordance with this policy and meet with the provider to review and enact the plan.

Inability to complete the assigned reentry plan, or related job performance conduct, will result in disciplinary action in accordance with the Orange County Personnel Ordinance.

**Orange County Emergency Services**

**Standard Operating Guidelines**

**SOG Name:** Response to EMS Calls
**SOG Number:** EMS-048
**Submitted By:** Kim Woodward
**Approved By:** F.R. Montes de Oca
**Date Effective:** 12/01/2010

## I. OBJECTIVE

1. This policy is to ensure that all personnel answer calls in a consistent manner and to help in cutting down unnecessary radio chatter. Use your common sense and do what sounds right.

## II. SCOPE

1. This guideline applies to all EMS personnel.

## III. PROCEDURE

1. EMS calls are dispatched by zones for EMS.
2. Your Ambulance is assigned to an area or zone i.e. station 1 (North), station 2 (south), station 3 (middle) so when a call goes out in this area communications will contact the ambulance in that area.
3. The areas are designated by zones drawn out on a County map in the communications room.
4. In general, EMS station 2 will be the base location for 1 or 2 units (depending on the time of day) and they will work together to cover South of I-40.
5. In general, EMS station 3 will cover areas north of I-40 and assist the north side unit in covering the remainder of the County. If no truck is available south, then the station 3 unit will move south to Weaver Dairy Rd to cover. It no truck is available north, then the station 3 unit will move to EMS station 1.
6. All personnel will learn their area by doing map study periodically during the shift.
7. When dispatched to a call the assigned unit(s) should acknowledge the call and report their location on the radio.
8. If another unit recognizes that they are closer to the call they will ask communications for reassignment stating their current location.
9. Units will not inquire as to the location or status of other units. This includes inquiries over the radio, personal cell phones, or any other communication device. The EMS Supervisor or Assistant Supervisor may redirect units based on system need.
10. The supervisor will direct units to relocate throughout the county as call volume changes to provide the most effective coverage possible.
11. Unless directed by a supervisor, units will not respond to calls unless dispatched to the call.

12. Units will ensure knowledge of the location of the call prior to leaving the station or parking space.
13. Responding EMTs or Medics will not check enroute to a call until they are in their vehicle.
14. Units will include their location with every radio traffic acknowledgment.
15. Units will report the call location when checking en route and again when checking on scene.
16. If an ambulance is dispatched to a call then the ambulance that is closer should take the call regardless of the zone the truck is assigned to. The ambulance crew will say ambulance number, location and then check en route. Do not call the ambulance crew you think is closer on the phone.
17. The EMS Supervisor or the Paramedic will re-direct the ambulance on some occasions for various reasons. The ambulance that is closer always takes the call.
18. The EMS supervisor will be dispatched to calls only if all medics are on calls.
19. The EMS supervisor will be assisting medics on bad calls in order to provide proper ALS care.
20. When a Paramedic is dispatched to a "medic only" call it is the EMT's responsibility to look up the address and to be familiar with the location in the event that the medic requests a transport unit.

| **Guideline Name:**<br><br>10-Minute Bag | | **Division**<br>Emergency Medical Services |
|---|---|---|
| **Effective Date:**<br>05/01/2018 | **Issued:**<br>04/23/2018<br>**Revised:** | **Approval:** |

## Purpose

The purpose of this policy and procedure is to establish guidelines for the utilization of the 10-Minute Bag. The 10-Minute bag was developed to help reduce the risk of shoulder and or back injuries by decreasing the weight stress for equipment not commonly needed for most 9-1-1 responses.

## Scope

This policy and procedure shall apply to all personnel assigned to EMS Operations. The authority to deviate from this guideline rests solely on the EMS Supervisors.

## Policy

The 10-Minute Bag may be used as a first line piece of equipment for most EMS calls as defined below. The bag is designed to sustain any EMS provider for 10 minutes. It shall only contain the items listed below and will not contain any cardiac arrest medications. It shall hold the following equipment:

| Item | PAR Level |
|---|---|
| NaCl 1000cc Bag | 1 |
| Adult BP Cuff (Regular) | 1 |
| Adult Stethoscope | 1 |
| Emesis Bag | 1 |
| Non-Rebreather Mask (Adult) | 1 |
| Nasal Cannula (Adult) | 1 |

| | |
|---|---|
| Nebulizer Hand Held (Adult) | 1 |
| Albuterol | 5 |
| King Size 4.0 | 1 |
| 10 Drop Set (Macro Drip) | 1 |
| IV Extension Set | 1 |
| NS 10 cc Flush | 2 |
| Veni-Gard | 1 |
| 2 X 2 Dressing | 2 |
| Tape 1” | 1 |
| Alcohol Prep Pads | 5 |
| IV Tourniquet | 1 |
| IV Catheters (size 16, 18, 20, 22, 24) | 2 ea |
| Drug Module (See Separate Order) | 1 |
| Adult BVM | 1 |
| C-A-T Tourniquet | 1 |
| Glucometer (*) | 1 |
| Glucose Test Strips (Bottle) | 1 |
| Lancets | 8 |
| 2 X 2 Gauze | 5 |
| Alcohol Prep Pads | 5 |
| Band-Aids | 5 |
| OPA 80 mm | 1 |
| OPA 90 mm | 1 |
| OPA 100 mm | 1 |
| OPA 110 mm | 1 |
| Lubricating Jelly | 2 |
| NPA 26 Fr | 1 |
| NPA 30 Fr | 1 |
| NPA 32 Fr | 1 |
| NPA 34 Fr | 1 |

The glucometer (*) comes as a kit and the contents shall be counted separate [indented] as part of the kit and be self-contained in its carrying device.

The lead provider shall be charged with the responsibility in making the decision for the best equipment needed for a particular patient based on this procedure.

## Procedure

1. All Orange County emergency ambulances and supervisor vehicles shall maintain one 10-Minute Bag as stocked above.

2. The 10-Minute bag shall be inspected at the beginning of every operational period. This shall be recorded in Operative IQ under the appropriate medic unit and vehicle. In

addition, any deficiencies shall be reported to your supervisor if you are unable to solve the issue and shall be recorded in Operative IQ.

3. Upon dispatch and after review of the Call For Service (CFS) "notes", determine what equipment you may need upon arrival. If the patient is within 100 yards of the ambulance, and it is highly suggestive of a low acuity injury or illness or the first responders advise of a non-critical patient, the 10-Minute Bag shall be used. It is important that you have the 10-Minute Bag, portable oxygen, a monitor / manual defibrillator and patient transfer device on ALL calls.

4. However, the Meret Pack shall be mandated for the following responses and situations and may be used in conjunction with the 10-Minute Bag.

    a. Confirmed or Unconfirmed Cardiac Arrest or Choking
    b. Report from First Responders with patient contact of Difficulty in Breathing
    c. Multi-level / multi dwelling structures including Office Buildings, Dorms and Apartment Complexes where the patient is beyond the second floor
    d. Scenes that require you to be more than 100 Yards from the Ambulance such as Greenway trails or public parks
    e. Multiple Patients
    f. Multi-Trauma
        i. Penetrating trauma situations will require the shooting and stabbing bag

NOTE: A Supervisor may use the 10-Minute bag if they are the first EMS unit onscene, even in cardiac arrest as they may be relegated to performing CPR. However, if there is a high suspicion of a critical patient AND other First Responders are onscene, the Meret Pack with monitor / manual defibrillator will be required.

5. If it determined that more than the 10-Minute bag is needed for any given patient, the lower level of care provider must return to the ambulance and retrieve the Meret Pack. The highest level patient care provider shall remain with the patient. If available, first responders may be used as well to retrieve the Meret Pack.

6. All 10-Minute bags shall be restocked after any call where equipment was used based on the required equipment stated above.

NOTE: Good judgement is the most important factor in determining what equipment is needed.

| Guideline Name: | | Department: |
|---|---|---|
| Appearance and Uniform<br>Revision 06.01.2023 | | Orange County<br>Emergency Services |

| Effective Date: | Revised: | Approval(s): |
|---|---|---|
| 10/20/2023 | 10/02/2023 | Kim Woodward, EMS Division Chief |

**Scope**

This guideline is applicable to each member of the EMS Division.

**Purpose**

It is the intention of OCES that each employee's dress, grooming and personal hygiene be Appropriate to their work environment. All employees are expected to present a professional uniformed appearance to the public.

**Definitions**

Approved uniforms will be those issued by the Department, required accessories, and approved options.

**Guidance**

I. **General Provisions for EMS Field Operations Staff**

Issuance of uniforms and personal equipment will be based on available funding. Enforcement of uniform compliance is the responsibility of every EMS crewmember. Escalating disciplinary action for employee non-compliance will reside with the Shift Supervisors.

a. EMS personnel must wear their issued uniform when on-duty and when in public throughout their assigned shift. Personnel shall not wear partial uniforms in public when on-duty.
b. Personal opinion, advertising, or slang buttons or pins are not allowed. Supportive pins/buttons (i.e.; cancer awareness) may be worn as approved by the Department. Any pins issued by the Department may also be worn.
c. Any jewelry and or body piercing that poses a hazard, could be grabbed or caught in machinery or equipment shall not be worn. Piercings that dangle shall not be worn. Stretched ear piercings require flesh tone gauges to be worn while on duty.
d. No more than one necklace will be worn while in uniform. If a necklace is worn it cannot be outside of the tee shirt and must not interfere with equipment or patient care.

II. **EMS Daily Operation Uniform: EMT's and Paramedic's**

a. Grey tactical short sleeve polo with department issued adornment. No pins of any kind shall be worn on the polo.
b. Black "cargo" style pants as the standard, field operation uniform pants.
c. Belts will be black; buckles will be plain, and both unadorned as issued by the Department.

d. EMS personnel will wear solid black, protective-toe, safety shoes (issued or approved by the department) which will be maintained in a clean and polished condition. If a legitimate medical reason prevents the wearing of issued shoes, substitutes must be in a style approved by EMS Administration and County Risk Management.
e. EMS personnel will wear solid black socks. Any other color of socks are permitted if worn with 8" or higher boots or they are not visible.
f. Solid White or Black undershirts may be worn under the issued uniform shirt. Employees shall wear appropriate supportive undergarments.
g. The Departmental Identification Card (ID card) shall be worn at all times. The ID card shall be worn between the neck and the navel for visibility. Only department issued lanyards or clip style retractable hardware is acceptable.
h. Radio Straps, Utility pouches, etc. (for scissors, instruments, radios, etc.) will be solid black, leather or nylon.
i. Uniforms, Quarter Zip (Job Shirt), and departmental issued accessories are not to be worn off duty (excludes work travel from home to work or work to home, EMS functions and/or special assignments) except as otherwise noted by department policy.

**III. Hard Shirt Uniform: EMT's and Paramedics**

a. EMS hard shirts will be Grey and adorned with the state certification patch. EMS personnel choosing to wear a national registry patch shall incur the expense of changing the state certification patch.
b. EMS hard shirts shall be worn at the discretion of EMS Administration.
c. Nametags will be worn on uniform shirts. Nametags shall be attached with the bottom of the nametag meeting the top of the right pocket, and center above, the right pocket. Lettering will be limited to block letters and consist of last name. A "Serving Since…" rocker may be worn below the nametag. The nametag color shall be silver.
d. Field training officers will wear silver sergeant collar pins and FTO pins worn one half inch above the name tag.
e. EMS personnel may wear department approved pins on uniform shirt.
f. Unless issued by the department, collar pins will be limited to EMS Officers and shall be worn on the collar.

**IV. EMS Daily Operation Uniform: EMS Battalion Chief**

a. EMS hard shirts will be White and adorned with the state certification patch. EMS personnel choosing to wear a national registry patch shall incur the expense of changing the state certification patch.
b. Nametags will be worn on uniform shirts. Nametags shall be attached with the bottom of the nametag meeting the top of the right pocket, and center above, the right pocket. Lettering will be limited to block letters and consist of last name. The nametag color shall be gold .A "Serving Since…" rocker may be worn below the nametag and shall be gold.
c. EMS Battalion Chief collar pins shall be worn on the collar and shall be gold in color.
d. EMS Battalion Chief will wear hard shirts during the week days from 0600-1800. White polo shirts may be worn weekdays from 1800-0600, weekends from 0600-0600 and holidays from 0600-0600. Any deviation from the stated times will be at the discretion of EMS Administration.

**V. Training and Meeting Attire**

Unless otherwise directed by the EMS Bureau Chief of Training, Deputy EMS Division Chief, or EMS Division Chief Operations. Personnel will represent the Department in a professional appearance with the following guidance.

a. EMS personnel may wear business casual attire such as, knit shirts, khaki, black or blue pants (including non-ripped up jeans). Because hands on training may include heavy equipment and physical activity, closed toed shoes with socks are required. Clothing should cover undergarments appropriately. No printed t-shirts (although OCES T-Shirts are allowed), skirts, shorts, kilts, dresses or shoes with heels posing potential balance issues. Clean tennis shoes are permitted.
b. EMS personnel may wear daily operational uniform. If duty uniform is worn it must be worn in accordance to Section II of this policy.

**VI. Grooming and Appearance**

The EMS crewmembers shall be neat and well-groomed at all times.

a. Hair:
    1. Hair must be worn in such a way that it does not interfere with personal protective equipment or other equipment used in the delivery of emergency care.
    2. Long hair that poses the risk of dangling over the face or creating a safety hazard shall be pulled back behind the head in a controlled manner. Hair shall be clean and neatly groomed. Styles presenting a "fly-away" or uncontrolled appearance will not be accepted
b. Facial hair and makeup:
    1. In compliance with department standards for respiratory protection mustaches/ beards/goatees may be worn. Hair below the chin shall not pose a pulling hazard and must be neatly trimmed. Mustaches shall be nearly groomed and not extend beyond the plane of the lower lip. All facial hair must be neatly trimmed and groomed at all times.
    2. Sideburns shall not extend below the ear lobe.
    3. Any expectations must be approved by the ES Safety Committee and Orange County Risk Manager.

c. Miscellaneous:
    1. Fingernails will be clean, short, and well-manicured.
    2. Tattoos of an offensive or explicit nature are not allowed to be visible when in uniform. If necessary, employees will be required to wear long sleeves to cover offensive tattoos while in uniform. Tattoos of the head, neck or face are not permitted.
    3. Perfumes, lotions and other fragrances decrease the possibility of a patient or co-worker having an adverse reaction, no perfumes, fragranced lotions or any other fragrances shall be worn while on duty.

**VII. Uniform Options - General**

a. A baseball style cap displaying the OCES insignia may be worn. It must be solid black (issued or approved by the department) and in good condition. Frayed or faded caps must be replaced.
b. The department approved job shirt (quarter zip) shall be worn with approved uniform shirt on underneath at all times. At no time shall a job shirt be worn with the undershirt only. All approved job shirts must display the approved OCES insignia.

**VIII. Uniform Weather Options**

a. Cold Weather Option

1. During cold weather a solid black turtleneck shirt, long sleeve, or thermal underwear may be worn under the uniform shirt. EMS Battalion Chief are permitted to wear solid white or black.
2. During extreme cold or severe weather, a (black) department issued or approved knitted hat may be worn it must display the approved OCES insignia. The Full face (ski mask types) or "jeep" caps are not allowed. Employees may also wear approved black earmuffs/headbands.

B. Warm Weather Option

1. Appropriate solid white or black T shirt style undershirts shirts may be worn without a uniform shirt while at EMS stations when performing training, clean-up, or maintenance. T-Shirts, without uniform shirts, shall not be worn during paid standbys, public education events or in the presence of the general public, and other activities outside of normal shift work.

XI. **Uniform - Miscellaneous**

1. On-duty field personnel are required to maintain one (1) change of uniform at all times while on duty. Soiled uniforms are to be laundered per Exposure Control guidelines.
2. Orange County Emergency Services is a visible symbol of the County organization, and as such, employees must use discretion at all times when in or out of uniform, whether on official County time or not (i.e. traveling to/from work, etc.)
3. The wearing of Orange County Emergency Services logos while off-duty, unless driving home/work or work/home, is prohibited for the protection of the County and the individual.
4. All employees are reminded that they are not allowed to "trade" logo items/patches with other members of the public without the express consent of administration.
5. Supervisors will be responsible for notifying all separating employees to return issued uniforms and equipment to the Logistics Support Officer.
6. The Logistics Support Officer / Supervisor will verify all issued uniforms and equipment has been returned and paperwork has been filed with Office administration before final paycheck is submitted.
7. The New Hire Academy personnel will be issued blue T-shirts to wear during their Academy and for field training and will be expected to wear regulation pants, boots, belt and remaining uniform items. New hires will be issued regulation uniform shirts upon release to independent practice.

| | |
|---|---|
| **Policy Number:** 5.1 | **Effective Date:** 1 SEPTEMBER 2025 |
| **Chapter:** Emergency Medical Services | |
| **Name:** Schedule and Attendance | |
| **Rescinds/Replaces:** 100.2 EMS Attendance | **Revision Date:** 1 AUGUST 2025 |
| **Approved by Director:** | |

# SCHEDULE AND ATTENDANCE

## POLICY

It shall be the policy of the Emergency Services Department that all personnel arrive on-time and prepared to perform their assigned duties as assigned by the published EMS schedule. Personnel unable to meet these expectations are required to provide adequate notice in order to mitigate impacts to essential operations.

## PURPOSE

The purpose of this policy is to clearly define the expectations for attendance, the methods of utilizing the various forms of leave to which staff members have access, and the fair, clear and consistent application of corrective actions, including disciplinary action, related to attendance. Regardless of the reason, an employee not able to work a scheduled shift will be considered tardy or absent as set forth in this policy.

## SCOPE

These standards apply to all non-exempt EMS Division personnel.

## DEFINITIONS

**Absent** - Employee misses a full or partial shift. If a tardy extends further than 1 hour after start of shift, this becomes an absence.

**Clock in/out** - Creating a timestamp in the time tracking application via phone or internet for arriving to work, going to and returning for lunch and leaving work.

**Coaching** - Coaching is the first step in intervening in workplace performance. This is non-disciplinary and provides a space for the supervisor and employee to meet to mitigate future performance problems.

**Counseling** - Counseling is non-disciplinary and provides a final space for the supervisor and employee to meet to mitigate advancing to disciplinary action.

**Early Departure** - Employee leaves prior to end of scheduled shift end time.

**No Call, No Show** - An employee misses a Scheduled operational shift with improper or no notification to an EMS Battalion Chief. This falls under personal conduct as defined in Orange County handbook.

**Notification** – The employee contacting the EMS Battalion Chief by direct phone call. Other forms of communicating an absence or tardy are not acceptable.

**Occurrence** - Any unscheduled absence, tardiness, or early departure. Each occurrence lasts one year.

**On Time** - Between 10-15 minutes prior to the start of shift. (I.e. For an 0600 hours shift, arrival between 0545-0550 hours is considered on time.)

**Tardy** - An employee will be considered tardy if they fail to clock in 10 minutes prior to the start of shift but less than 1 hour after the start of shift. (If you are later than 1 hour from the start of shift, this becomes an absence.)

## I. PROCEDURE

1. EMS SCHEDULE

It is the employee's responsibility to check the approved EMS Schedule on a regular basis. It is advised that this is accomplished during each shift and prior to the start of the employee's next shift. In the event of a scheduling change for a full-time employee by an EMS Battalion Chief, the employee will be notified as soon as possible. Temporary or Managed Self-Scheduled employees should check the EMS Schedule on a regular and frequent basis. Any discrepancies must be sent to their EMS Battalion Chief immediately.

2. COMPLIANCE MONITORING

1. EMS Battalion Chiefs shall monitor all assigned employees' attendance on a regular basis and address unsatisfactory attendance in a timely and consistent manner with documentation.
2. If the Battalion Chief recognizes a pattern of unscheduled usage of leave or tardiness, this shall be discussed with the employee. Battalion Chiefs will engage in documented discussion with employees regarding options to improve attendance.
3. The goals of the discussion are to: 1) communicate the EMS Battalion Chief's concern to the employee; 2) determine the cause of the employee's noncompliance; 3) identify avenues for improvement and/or development; and 4) improve the employee's performance.

3. SHIFT EXPECTATIONS

1. All personnel are expected to arrive on time to shift. The official EMS schedule reflects the shift times.
2. Clock-ins prior to fifteen minutes before the shift start time will be adjusted by the EMS Battalion Chief unless the employee is given an assignment by an EMS Battalion Chief or takes an early EMS call.
3. Unless held over by a late call or by an EMS Battalion Chief, providers are expected to clock out no later than fifteen minutes from the end of their assigned shift.
4. Personnel are expected to email the Battalion Chief with the CFS number if they receive a late call and have a late clock out.
5. Battalion Chiefs are expected to address patterns of late clock outs with employees and to document on the timecard the reason for the late clock out. Unauthorized late punches shall be adjusted by the EMS Battalion Chiefs.
6. Shift overlap time between oncoming and off going crews allows for exchange of equipment, documentation and briefing between crews. This time shall be utilized for official work duties only.
7. 24-hour personnel may be held over for a maximum of 2 hours at the Battalion Chief's discretion.
8. 12-hour personnel may be held over for a maximum of 3 hours at the Battalion Chief's discretion.

4. TARDIES

1. An employee will be considered tardy if they arrive at work less than 10 minutes prior to the start of shift but less than 1 hour after the start of shift.
2. An employee may have 4 tardies in a rolling 12-month period without initiating any disciplinary process. At 4 tardies, the Battalion Chief shall meet with the employee to have a Coaching Session to notify the employee of the tardies. The Battalion Chief may

recommend options including Employee Assistance Programs, change in shift assignments and referral to FMLA process.

3. If an employee has another tardy (total of 5), a Counseling Session shall be conducted with their Battalion Chief to discuss options to improve attendance or meet employee needs
4. If an employee has another tardy (total of 6), documentation will be reviewed by the Battalion Chief and Division leaders. A meeting shall occur with the Battalion Chief and employee which may constitute an Oral Warning with Written Confirmation.
5. If an employee has another tardy (total of 7), a meeting shall occur with the Battalion Chief and employee which may constitute a First Written Warning.
6. If an employee has another tardy (total of 8), a meeting shall occur with the Battalion Chief and employee which may constitute a Final Written Warning.
7. If an employee has another tardy (total of 9), the Battalion Chief may recommend continued disciplinary action up to and including dismissal.

5. NO CALL, NO SHOW
   1. No Call, No Show is a most serious violation of OCES standards, professionalism and of this attendance policy.
   2. The Department considers this “Absence without authorized leave and/or notice”, a serious personal conduct violation under the County’s personnel ordinance (§ 28A1-2).
   3. These personal conduct violations will be evaluated on an individual basis and the department will follow the personnel ordinance to address (the progressive discipline approach or an employee may be dismissed, demoted, or issued disciplinary suspension without pay without progressive warning for serious misconduct).

6. USE OF SICK LEAVE
   1. All employees are entitled to use sick leave however the employee must have the sick leave balance equal to or greater than their request. As defined by the Orange County Handbook (pg. 29), Sick Leave may be granted for the following reasons:
      - Physical or mental illness, injury or pregnancy-related disability, which prevents an employee from performing their normal duties.
      - Care of a spouse, parent, or child who is ill.
      - Medical or dental appointments, including those necessary for a spouse, parent, or child.
      - Appointments with the Employee Assistance Program provider
   2. Battalion Chiefs shall track and document each employee's amount of sick leave in a manner that is accessible to both the Battalion Chief and the employee.
   3. As per the Orange County Handbook , Employees are expected to give their supervisor reasonable notice of any expected Sick Leave absence. It is recommended that EMS employees provide at least a 2-hour notification when notifying the Battalion Chief of their need for Sick Leave.
   4. In the event of an unexpected absence, employees are responsible for notifying their supervisor as soon as possible.
   5. An employee may use up to 96 hours of Sick Leave in a rolling 12-month period without initiating any disciplinary process.
   6. At 96 hours, the Battalion Chief shall meet with the employee to have a documented Coaching Session to notify the employee of their total use of Sick Leave. The Battalion Chief may recommend options including Employee Assistance Programs, change in shift assignments and referral to FMLA process.

7. If an employee utilizes another 24 hours of Sick Leave (total: 120 hours), a Counseling Session shall be conducted with their Battalion Chief to discuss options to improve attendance or meet employee needs
8. If an employee uses an additional 24 hours of Sick Leave (total: 144 hours), documentation will be reviewed by the Battalion Chief and Division leads. A meeting shall occur with the Battalion Chief and employee which may constitute an Oral Warning with Written Confirmation.
9. If an employee uses an additional 24 hours of Sick Leave (total: 168 hours), a meeting shall occur with the Battalion Chief and employee which may constitute a First Written Warning.
10. If an employee uses an additional 24 hours of Sick Leave (total: 192 hours), a meeting shall occur with the Battalion Chief and employee which may constitute a Final Written Warning.
11. If an employee uses an additional 24 hours of Sick Leave (total: 216 hours), the Battalion Chief may recommend continued disciplinary action up to and including dismissal.
12. At any time, the Battalion Chief may require a physician's statement documenting the necessity for an absence, continued absence, and the capacity to resume work.
13. The Department reserves the right to require employees to provide a note from a doctor verifying that extended absence was caused by a medical situation.
14. If any employee's illness lasts more than two (2) consecutive 24-hour shifts or three (3) consecutive 12 hour shifts, a doctor's note shall be required.
15. If the employee will miss more than three consecutive shifts or requests to use leave, the EMS Battalion Chief will refer the employee to the County's FMLA Management System (Unum) to determine FMLA eligibility.
16. Administration may refer an employee to Orange County Human Resources for a fitness for duty evaluation following extended Sick Leave and/or signs that employee is having difficulties performing the physical duties and/or mental focus required of the position.
17. Sick leave requests falling on County Holidays shall be accompanied by a physician's note indicating the absence was due to illness.
18. Sick Leave requests shall be entered in KRONOS by the employee unless sick leave occurs near the pay period end date. The EMS Battalion Chief has the authority to enter leave with notation.

7. USE OF ANNUAL LEAVE
    1. EMS battalion Chiefs shall follow the Orange County Personnel Ordinance when granting or denying leave requests.
    2. The employee shall have enough hours of leave to cover the request prior to EMS Battalion Chiefs approving leave.
    3. If an employee is scheduled to work a shift that falls the day before, the day of, or the day after a County Holiday, the staff member must arrange for their own coverage regardless of how far in advance the request is made.
    4. Annual leaves requests for extraordinary circumstances for the above shall not be approved by EMS Battalion Chief without authorization from the EMS Division Chief or designee.
    5. Annual leave requests shall be entered into Kronos prior to the 10th day of the month proceeding the annual leave request.
        a) Entering the request into the timekeeping software provides notification to the staff member's EMS Battalion Chief.
        b) The employee will then email the EMS Battalion Chief email list (Emergency_Services_EMS_Battalion_Chief@orangecountync.gov) with the subject as "Leave Request" and the date requested, notifying all supervisors the request has been made.

6. Once submitted, the staff member's direct Battalion Chief shall approve or deny the annual leave request within 5 days (No later than the 15th of the month proceeding the annual leave request).
    a) Battalion Chiefs must remove the approved provider from their shift assignment and document the annual leave in the appropriate scheduling software vacation section along with the date the employee requested off
    b) Battalion Chiefs shall confirm that the scheduling software is accurate by the 15th of each month.
7. Annual leave request approval and or denial shall be based on the following:
    a) Requests will be granted or denied based on the subsection Adequate Staffing.
    b) The employee must have an annual leave balance equal to or greater than the annual leave hours requested prior to the requested day off.
    c) EMS Battalion Chiefs are responsible for assuring adequate staffing of their shifts in accordance with the subsection Adequate Staffing.
    d) Short notice requests (requests made less than the 10th day of the month proceeding the annual leave request) will be reviewed on a case-by-case basis by the assigned EMS Battalion Chief in consultation with the EMS Division Chief (or designee)
8. Candidates (trainees) shall submit the initial annual leave request to the EMS Training Officer via email.
    a) Once the initial annual leave request has been submitted via email to the EMS Training Officer, the EMS Training Officer shall provide a written email response denying or approving the annual leave request to the Candidate within (5) days.
    b) The candidate shall enter their annual leave requests into the timekeeping software prior to the 10th day of the month proceeding the annual leave request, unless special arrangements were made at the time of hire.
    c) Entering the request into the timekeeping software provides notification to the EMS Training Officer.
    d) Once the annual leave request has been submitted by the candidate, the EMS Training Officer shall approve or deny the annual leave request within 5 days (No later than the 15th of the month proceeding the annual leave request).
    e) Candidates are subject to the same annual leave request guidelines as "Operational Staff (Released EMT or Paramedic)" however candidates operating in third rider position do not require the shift to be backfilled.
9. Adequate Staffing
    a) The first paramedic and EMT who request off per shift (A,B,C,D,E, and F) requesting the use of annual leave shall be granted.
    b) The second paramedic and EMT requesting the use of annual leave shall find their own coverage. Once coverage is obtained, the leave shall be approved.
    c) Any subsequent paramedic and/or EMT requesting the use of annual leave shall be denied.
    d) Managed Self-scheduled permanent personnel and temporary personnel shall be utilized for all natural vacancies or vacancies created from annual leave.

8. EMS BATTALION CHIEF ANNUAL LEAVE
    1. Annual leave requests shall be entered into the time reporting software prior to the 10th day of the month proceeding the annual leave request. Entering the request provides notification to the EMS Battalion Chief's direct supervisor.
    2. The scheduling software shall be updated with vacancies prior to the 15th of the month proceeding any requests.

3. If less notice is given than outlined in the operational staff section, EMS Battalion Chiefs are required to fill their own annual leave request with a qualified replacement (Relief Battalion Chief).
4. Once the requesting EMS Battalion Chief has covered their requested annual leave with qualified replacement(s) using the process outlined below, the EMS Battalion Chief shall send an email to the Deputy Chief of EMS Operations indicating they have found coverage. The email shall contain the names of the qualified replacement(s) and the dates they are covering.
5. The EMS Battalion Chief's direct supervisor shall provide a written email response denying or approving the "annual leave" request within (5) days.
6. EMS Battalion Chiefs shall not remove themselves from the official EMS schedule until they have received written approval from their direct supervisor.
7. Adequate Staffing
    a) One EMS Battalion Chief or acting EMS Battalion Chief is required for each shift. The first EMS Battalion Chief who requests the use of annual leave shall be backfilled coverage based on the following order of preference.
    b) Relief Battalion Chief assigned to their shift.
    c) Relief Battalion Chief assigned to another shift
    d) EMS Battalion Chief assigned to another shift

## II. EXCEPTIONS TO THIS POLICY

1. Rare and extenuating personal circumstances will always be considered and evaluated on an individual basis by supervisory personnel. The Division Chief of EMS, or designee, will have final authority to allow for exceptions in these situations.
2. Absence and Tardy arrivals that are on the EMS Schedule and approved (including approved annual leave, FMLA, ADA worker's compensation leave, bereavement, jury duty, military service, and/or any other absences permitted by federal, state and local laws) are not subject to this policy unless used fraudulently.
3. All Emergency Services Department personnel are subject to emergency callbacks during emergencies including, but not limited to, during Declared States of Emergency. The department and the County reserve the right to amend the published schedule, including rescinding approved annual leave, if necessary, to ensure the provision of statutorily required services. Any such action may only be authorized by the Director of Emergency Services.

| Guideline Name: | | Department: |
|---|---|---|
| Biennial Shift Bid and Shift Change Request Process | | Orange County Emergency Services |

| Effective Date: | Issued: | Approval(s): Pending |
|---|---|---|
| July 27, 2023 | July 27, 2023 | Kim Woodward, EMS Division Chief |

**PURPOSE**

To establish a standard for a biennial shift bid process and a shift change request process. This policy provides personnel the opportunity to apply for a different shift based on vacancies. Filling short-term vacancies caused by light duty, military leave, etc. are not covered in this policy.

**SCOPE**

This policy applies to all Paramedic and EMT's of the Emergency Medical Services (EMS) Division.

**DEFINITIONS**

- Bid – The process where the employee communicates their request for reassignment to another shift. This is not a request for a specific partner or station.
- Biennial Shift Bid – an event that occurs every two years, starting in 2023, in which providers may bid on any shift.
- Shift Change Request – The process by which an opening is filled when the Deputy Chief of EMS determines that a long-term opening exists.
- Seniority - the number of years of uninterrupted full-time service at Orange County Emergency Medical Services (OCEMS), as determined by Orange County Human Resources. In the event there are two or more personnel with the same seniority, their ranking for seniority will be determined in order of the following criteria: highest last annual performance rating, total service time in Orange County regardless of position, length of certification at the requested position.
- Good Standing - An employee in good standing will meet the following criteria:
    - No disciplinary action at the written warning level or higher in the last 6 months, as described in Chapter 28 Articles IX Sec. 28-92(c)
    - NOT currently operating under a Development Plan and proficient or greater rating on last annual evaluation, if applicable.
    - Has attended/completed all required trainings.
    - Less than 4 attendance points at the time of bid submission, as per the EMS Attendance Policy.
- System Need - the requirements deemed by OCEMS administration to most efficiently and effectively carry out the mission, vision, and values of OCEMS.

**POLICY**

I) OCEMS allows personnel in good standing to participate in biennial shift bids and shift change requests. Each process (Biennial Shift Bids and Shift Change Requests) requires the following:

1) The Deputy Chief of EMS will open the process by notifying the entire department via email. A notice will be placed on the shift bid tab of WebEOC and in the daily 214. Reminders of an open process shall be discussed at daily shift briefings.

2) The process will open for the entire division for at least one calendar week but no more than two calendar weeks.

3) Prior to applying for any process, the employee shall read this SOG in full. The employee shall insure that they meet the qualifications prior to submitting a bid or request. By submitting a bid or request, the employee agrees to a timely schedule change at the sole discretion of the Deputy Chief of EMS if the request is approved.

4) Eligibility of application will be confirmed by the Deputy Chief of EMS or designee based on:
   a) Employee meets the qualification of "good standing."
   b) Employee is limited to 1 approved shift change request under this SOG within the last twelve (12) months. Changes made for system needs by the Deputy Chief of EMS do not apply.

5) All eligible bid or request will be ranked in order of approval based on:
   a) System Need
   b) Seniority

6) Once a shift change request has been approved by the Deputy Chief of EMS, the employee has seventy-two (72) hours to accept or reject the shift. If that employee rejects the awarded shift change request, the next qualified applicant on the list will be offered the opening. If the employee rejects the shift change request after it is awarded, they shall be ineligible to submit a shift change request for a period of six (6) months. Employees may request, in writing, an eligibility exemption from the Deputy Chief of EMS in the event they are ineligible. Biennial shift bid awards are assignments, and therefore cannot be rejected.

7) When the shift change request has been accepted by both the employee and the Deputy Chief of EMS, the new assignments will begin when Deputy Chief of EMS updates the schedule.

II) Biennial Shift Bids

1) The Biennial Shift Bid process shall begin on October 1st and close at 1159pm on October 8th during applicable years.
2) All employees in good standing shall submit a bid during this process in WebEOC and rank their preferences by first, second, and third.
3) An employee who is not in good standing shall receive an assignment by the Deputy Chief of EMS, under advisement from the previous EMS Supervisor, and are not eligible to submit bids.
4) Any bids submitted are for assignment to a shift, not to a station or partner.
5) Shift assignments will be sent out by the Deputy Chief of EMS on the first business day of November each year.
6) New shift assignments will be effective January 1st of each year.

III) Shift Change Requests

1) Shift Change Requests may occur at the discretion of the Deputy Chief of EMS or their designee when a long-term opening is determined to exist.
2) An Employee may submit a request to change shifts during this process on WebEOC and rank their choices by first, second, and third preferences in the event of multiple openings.
3) Any requests submitted are for assignment to a shift, not to a station or partner.
4) Notification will be given to the employee within a calendar week of the close of the request process.

IV) Exceptions

1) The Deputy Chief of EMS shall assign all cadets released from FTEP or System Reentry to a shift. These initial assignments are not subject to the EMS Shift Change Request Process.
2) Permanent shift trades are not subject to the EMS Shift Change Request process and are to be approved by the Deputy Chief of EMS.

| Guideline Name: | | Department: |
|---|---|---|
| Basic Life Support Ambulances | | Orange County Emergency Services |

| Effective Date: | Issued: | Approval(s): |
|---|---|---|
| October 1, 2018<br>Revised:<br>October 3, 2024 | September 1, 2018 | Kim Woodward<br>EMS Division Chief |

## SCOPE

This policy applies to all members of the Emergency Medical Services (EMS) Division and all prehospital providers franchised to provide 9-1-1 Basic Life Support Response and Transport services within Orange County Emergency Medical Services System.

## PURPOSE

To set forth policy and procedure for the proper dispatch, service coverage, safe and consistent operations, and quality assurance of 9-1-1 use of basic life support ambulances within the Orange County EMS System.

## DEFINITIONS

**Basic Life Support (BLS)** is transportation by a ground ambulance vehicle and the provision of medically necessary supplies and services, including BLS ambulance services as defined by the State Office of Emergency Medical Services (OEMS). The ambulance shall be staffed by an individual who is credentialed in accordance with 10A NCAC 13P .0502 and G.S. 131E-159 as an Emergency Medical Technician (EMT).[1]

**Basic Life Support (BLS) Units** in Orange County working under the 9-1-1 Service Contract will consist of two North Carolina certified Emergency Medical Technicians who also must be credentialed to practice independently by Medical Direction.

## DISPATCH

**Unit Designations** – BLS Unit Designations will be defined by Orange County Emergency Services' Emergency Communications Division. The BLS unit with be named "BLS" plus the number of the initially assigned district of coverage. BLS units may be collocated with an Advanced Life Support unit or in a district in place of an Advanced Life Support unit.

For example, if BLS 1 is assigned in District 1, their response district will be "BLSN"

| BLS Unit Designated | May Substitute or Enhance | 20-Minute Dispatch Area |
|---|---|---|
| BLS 1 | Medic 1 | BLSN |
| BLS 2 | Medic 2 | BLSS |
| BLS 3 | Medic 3 | BLSS |
| BLS 4 | Medic 4 | BLSN |
| BLS 5 | Medic 5 | BLSN |
| BLS 6 | Medic 6 | BLSS |
| BLS 7 | Medic 7 | BLSN |
| BLS 8 | Medic 8 | BLSS |

**Call Types** are medical priority codes as part of Medical Priority Dispatch System used to determine appropriate resources. Medical Direction, in cooperation with EMS Administration and the Communications Division, have approved the following call determinants for automatic dispatch of BLS units.

| Dispatch Protocol Number | Determinant Descriptor | Determinant Level |
|---|---|---|
| **EMS EMD** | | |
| **1** | Abdominal Pain | Alpha |
| **5** | Back Pain | Alpha / Charlie |
| **13** | Diabetic Emergency | Alpha |
| **17** | Falls | Alpha / Bravo **(except 17A04A and 17B02G)** |
| **21** | Hemorrhage / Lacerations | Alpha / Bravo |
| **26** | Sick Person | Alpha / Omega |
| **29** | Traffic/Transportation Incident | Alpha / Bravo |
| **30** | Traumatic Injury | Alpha / Bravo |
| **32** | Unknown Problem | Bravo **(except 32B03)** |
| **FIRE EFD** | | |
| **69** | Structure Fire | All |
| **77** | Traffic/Transportation Accident | 77C02, 77D02, 77D03, 77O01, 77O02 |

**Geo-Fencing** - The CAD system will recommend BLSS and/or BLSN if the geo-fencing based on AVL is within 25-minutes of the call within either the North side or South side. Any estimated response time greater than 25-minutes will be dispatched to the closest ambulance resource regardless of call type or level of service.

**Free-Lancing –** BLS units may request to respond to any call that they are the closest to regardless of the determinant level.

## REQUEST AND RESPONSE

**General Response –** An Advanced Life Support (ALS) ambulance shall not request a BLS unit to substitute or dual respond without permission of an EMS Battalion Chief. BLS units shall not request an ALS unit prior to arrival on scene without the permission of the EMS Battalion Chief.

**BLS Determinant Response** - During responses to the call determinants listed above, the BLS unit shall respond to the scene and provide patient evaluation. If the patient requires an ALS intervention within a BLS disposition, the BLS unit may request advance life support to respond, perform the required intervention, and the ALS unit may return to service.

If a BLS unit requests an ALS assessment of a patient of uncertain disposition, the responding ALS provider will assume care of the patient. If the responding ALS unit has transport capability, they will become the primary transport unit and return the BLS unit to service. The ALS provider will determine the disposition of the patient and transport accordingly.

**NOTE:** If the responding ALS resource lacks transport capability, the ALS provider must determine what disposition the patient requires. If the patient meets a BLS disposition, then the ALS provider may elect to have the BLS unit transport the patient after the ALS evaluation. If the patient meets an ALS disposition, the ALS provider may elect to transport in the BLS unit, or request an ALS transport unit

Should additional information be obtained after initial EMD that the call indicates a need for ALS level response, an EMS Battalion Chief will be notified.

**Response Outside BLS Determinant** – If a BLS unit is dispatched to a call outside the BLS Determinants **and** there are no ALS Transport units available, the standard response will include the closest EMS Battalion Chief.

If the BLS unit is the first EMS unit on scene, they shall provide an initial patient evaluation. If the patient meets a BLS Disposition within protocol, the BLS unit may cancel the ALS resource. If the patient is of an Unknown or ALS Disposition requiring advanced life support assessment and/or treatment, the BLS unit **shall** request ALS assistance. As above, the responding ALS provider will then assume care of the patient. If the responding ALS unit has transport capability, they will become the primary transport unit and return the BLS unit to service. The ALS provider will determine the disposition of the patient and transport accordingly.

In some cases, it will be appropriate for the BLS crew to initiate transport to the most appropriate hospital. Prior to leaving the call location, alert the ALS responding unit to determine if transport to the appropriate hospital is closer than the arrival time of the ALS provider or if an intercept would be a better option.

The EMS Battalion Chief must be aware of all multi-unit dispatches. In situations where an ALS Transport unit is not available, the closest EMS Battalion Chief will respond to serve as the ALS provider.

## REFUSAL OF CARE / TRANSPORTATION

The BLS unit may accept and tender patient care and transport refusals.

If under any circumstance both crew members do not agree with the appropriateness of refusal, do not agree with the patient's refusal, if the patient meets an ALS disposition, or if the patient is considered a high-risk refusal as defined by their experience, they should contact the EMS Battalion Chief. The EMS Battalion Chief should respond to the scene for this request. If unavailable, they may choose to dispatch an advanced life support unit or converse with the patient and/or family to remedy the situation after consultation with the BLS crew.

Should the patient ultimately refuse care and/or transport of the criteria above, the ALS provider on scene shall assume care of the patient, and ensure completion of the appropriate documentation within the ePCR and that all signatures are obtained.

## DOCUMENTATION

BLS Units are expected to complete an ePCR for each of their responses to calls for service.

If an ALS unit or EMS Battalion Chief arrives on the call as part of a request for an ALS intervention on a patient from a BLS determinant with a BLS disposition, the ALS provider shall be added to the BLS unit's patient care report. In order to properly account for unit utilization, the ALS unit will create an ePCR for their response with a unit disposition of "No patient contact" and crew disposition of "Incident Support Services Provided".

If an ALS unit is requested **and** there is a transfer of patient care, both units will complete an ePCR with patient contact. The crew disposition will reflect if care was transferred (Initiated Primary Care and Transferred to another EMS Crew) or assumed (Assumed Primary Care from another EMS Crew). These dispositions apply to transfer of care to units inside and outside the Orange County EMS System.

If the patient refuses care or transport and required ALS, the ALS provider on scene shall ensure completion of the refusal. This requires a transfer of patient care, and both units will complete an ePCR with patient contact. The BLS crew disposition will reflect that care was transferred (Initiated Primary Care and Transferred to another EMS Crew) and the ALS unit will assume care (Assumed Primary Care from another EMS Crew). These dispositions apply to transfer of care to units inside and outside the Orange County EMS System. Transport disposition will reflect refusal of transport on the ALS record.

## EQUIPMENT

When a basic life support ambulance is placed in service, the crew shall use the equipment appropriate to their scope of practice and may only use medication or equipment that they are qualified to use.

**LifePak 15** – The LifePak 15 monitor / defibrillator can be used in Automatic External Defibrillation mode. If a patient presents with a complaint requiring ALS evaluation and ECG, the BLS crew shall take the ECG and simultaneously request an ALS level resource to respond to the scene or rendezvous. BLS crews should not take an ECG unless indicated by the patient's complaint.

**AED** – If a LifePak 15 is unavailable, an AED is required.

**Meret Pack** – The Meret Pack contains appropriate airway and respiratory equipment suitable for use at the BLS level.

CPAP
BVM
Capnography
Colorimetric Device
King Airway
Oral and Nasal Airways
Manual Blood Pressure Cuff and Stethoscope
Diabetic Kit (Oral Glucose only)
Tourniquet
Thermometer
Isolation Kit
Limb Restraints

In addition, the Meret Bag carries the drug module that contains the following medication that may be used by EMTs in specific protocols.

Oxymetazoline (Afrin®)
Ibuprofen
Acetaminophen
Aspirin
Nitroglycerin Spray (if prescribed)
Diphenhydramine PO
Epinephrine 1:1,000 IM
Albuterol
Naloxone

**Pediatric Bag** (Handtevy®)

Pediatric Blood Pressure Cuff and Stethoscope
Childbirth Kit
Oral and Nasal Airway
iGel / King Airway / Blind Airway Insertion Device

**SAS Bag** – With the exception of the chest decompression needles, the bag contains all BLS material.

**Spare Medication Box** – The spare medication box contains similar medication as listed above.

## REFERENCES

1. NC Division of Medical Assistance Medicaid and Health Choice Ambulance Services Clinical Coverage Policy No: 15 Effective Date: February 1, 2016

| Guideline Name: | | Division: |
|---|---|---|
| Controlled Substances | | EMS |

| Effective Date: | Revised | Approval(s): |
|---|---|---|
| June 23, 2017 | February 22, 2024 | Kim Woodward<br>Division Chief |

**I. Objectives**

- To insure proper handling of controlled substance in compliance with State and Federal Law.
- To maintain strict chain of custody of controlled substances.
- To ensure all forms, inventory and documentation of controlled substances is accurately and properly documented.

II. **Scope:** The scope of this SOG includes all system employees, and designees.

**III. Procedure**

**1. General**

A. The EMS Division Chief shall ensure that the State and Federal DEA licenses are valid.

i. The DEA Certificate of Registration (DEA Form 223) shall be kept in the administration office and shall be readily accessible for official inspection

ii. There must be a separate registration for each storage location where controlled substances are distributed.

iii. Practitioner registrations must be renewed every three years. Renewal registrations use DEA Form 224a, renewal Application for DEA Registration. The cost of the registration is indicated on the application form.

B. A modification of registration must be completed if there are any address changes.

**2. Annual Inventory of Controlled Substances**

A. EMS Administrators shall perform an inventory of controlled substances by counting all controlled substances on a semi-annual basis.

i. This shall be completed by matching the central stock located in the Control Room with the recorded inventory; and

ii. Physically opening all controlled substances boxes checking the expiration dates and confirming all counts are correct.

iii. All medication shall be examined for signs of tampering.

iv. All information shall be recorded on a semi-annual inventory control sheet (attached) and shall be kept with the licenses as above.

v. Inventory documentation shall be maintained for at least two years from the date that the inventory was conducted.

vi. Each inventory must contain the following information:

a. Time of inventory
b. Actual names of the controlled substances
c. Each finished form of the substances, i.e. injectable liquid
d. The number of dosage units
e. Disposition of the controlled substances.

B. The controlled substances stock shall be kept secured with at RFID Access panel, key access and RFID into the controlled substances safe.

**3. Ordering and Restocking of Controlled Substances**

A. Ordering- The logistics staff officer shall in coordination with EMS Administration will establish stocking requirements, and shall submit the order to the OCES Division Chief who will order replacement stock from the designated source.

B. A par level shall be established, with a minimum and a maximum.

C. Logistics Manager notifies the EMS Division Chief and OCES Administrative Assistant when par levels reach the minimum.

D. Fentanyl orders require completion of The U.S. Official Order Form (Form 222) schedules I & II, and shall be signed by the EMS Division Chief. The Order Form may be submitted via the CESOS process electronically by the EMS Division Chief.

E. The Form 222 is sent certified mail to the appropriate vendor or submitted electronically. Copies of the completed form are filed separately in the "DEA forms completed folder" and the remaining blank forms are filed in the appropriate vendor's folder. Forms are kept secure and in a locked box.

F. Acquiring Supply – The person receiving the controlled substances shipment must initial the appropriate line of form 222 and is returned to the folder.

G. All deliveries of controlled substances shall be inspected, the packing slip or invoice initialed and retained in the office of the Administrative Assistant. Schedule II orders require that Form 222 is initialed and is retained in the appropriate folder.

H. Controlled substances shall be locked, securely in the Administrative Assistant's office until they are entered into stock. No other tasks shall be performed until supplies are securely locked away.

I. Stocking – Controlled substances shall be entered into stock with a dual verification and the inventory count shall reflect the following, at the time of stocking:

   i. Amounts entered into stock and
   ii. Finished form of substances
   iii. The number of dosage units of each finished form
   iv. Expiration dates

J. After verifying a proper accounting of stock, all controlled substances shall be locked securely in the controlled substance box located in the secure storage room in the Control Room.

K. Logistics or EMS Administrator shall complete and sign the appropriate drug inventory form attesting that the information listed therein is correct and the form is retained in the electronic asset inventory system.

**4. Restocking and Routine Inventory Procedure**

A. In addition to documenting the administration of the controlled substance on the electronic patient care report, Paramedics shall accurately and completely document every controlled substance administration on the "Controlled Substance Administration" Form.

B. Paramedics shall document the drug box identifier in the electronic patient care report in the appropriate field for every controlled substance administration.

C. After the administration of a controlled substance the Paramedic will reseal the controlled substance box with a "red tag" seal that is electronically documented through Operative IQ. The "red tag" is a visual cue that the controlled substance box is missing the normal contents.

D. Upon transferring the controlled substance box to an EMS Battalion Chief both parties will conduct a dual verification that the documentation pertaining to the disposition of controlled substance is complete and bearing the appropriate signatures on the "Controlled Substance Administration" Form.

E. In the instance that an EMS Battalion Chief is unable to access the necessary documentation he or she shall initiate investigation into the chain of custody of the drug box and notify the EMS Division Chief or designee.

F. An electronic report of the usage/waste forms shall be generated and emailed to all EMS Battalion Chiefs and Administrators on a weekly basis through Operative IQ.

   i. The EMS Administrator and Logistics personnel shall perform a count of the specific controlled substance confirming documented inventory. This is conducted every time a controlled substance box is restocked.

   ii. The EMS Administrator and Logistics Officer shall then restock the controlled substance, and document:
      a. CFS number
      b. Box identifier
      c. Date

   iii. The Quality Assurance Coordinator will ensure all information is correct and accurate for complete quality assurance tracking of controlled substances. An electronic report named "Controlled Substance Master Log" will be generated weekly and compared with Patient Care Records for accuracy. This report will be signed and uploaded as a PDF and placed in a folder on the EMS Shared Drive under "Controlled Substance QA."

G. Controlled substance boxes shall be refilled with the standard amounts of medication and shall be identical except for their unique identification label, verified by the EMS Administrator or Logistics Officer restocking the individual box.

H. The individually labeled controlled substance boxes will be sealed with a unique seal number confirmed by an EMS Administrator and Logistics personnel.

I. Spare boxes not assigned to field personnel shall be stored under double lock in the controlled substance cabinet, with exception of the spares carried by the on duty Battalion Chief. (See K. below)

J. Every Monday an EMS Administrator or Logistics personnel shall count all drug boxes that are kept in the controlled substance safe, verifying the boxes' security seal integrity is not in question and boxes are not expired.

K. Every shift the on duty Battalion Chief shall generate an electronic report named "Controlled Substance Box Location Report" that identifies the controlled substance box carried by each paramedic in the system. This report should be utilized to assure that all controlled substances boxes in the system are accounted for and has all appropriate documentation has been completed. After this has been completed the report can be discarded.

L. Battalion Chiefs may carry up to four controlled substances boxes in the double locked Battalion Chief's vehicle. Battalion Chiefs must maintain electronic accounting of these boxes at all times.

M. If the electronic system is not functioning, documentation for controlled substances will be completed utilizing written forms that shall be maintained as a backup system. These documents will be logged electronically when the electronic system regains full function.

**5. Wastage and/or Breakage Procedure**

A. If there is breakage, spillage, or routine wastage of the controlled substances a "Controlled Substance Administration" Form must be accurately and thoroughly completed. This form is located electronically in the electronic asset system.

B. Expired controlled substances shall be removed from stock and placed in the expired drugs receptacle in the controlled substances inventory box. The Drug Destruction unit of DHHS shall be notified by calling 919-733-1765. Documentation created upon the DHHS visit shall be maintained for a period of two years.

C. When there is medication left over after administration, the medic shall dispose of the drug in front of a second medical professional in the sink with running water or in a sharps box filled with absorbent. The wastage shall be documented and must have the witness's electronic signature through the electronic asset system.

**6. Loss or Theft of Controlled Substances**

A. Upon discovery of loss or theft of controlled substances, the paramedic shall notify the on-duty Battalion Chief. The EMS Operations Manager and the Department Director must also be notified.

B. If Loss or Theft occurs an Incident Report form must accompany the "Controlled Substance Administration" Form explaining all details of the occurrence. This form is located electronically in the electronic asset system.

C. The Division Chief shall notify Human Resources for the administration of an employee drug test and follow-up with notification to the Department Director.

D. Law enforcement shall be notified if theft is suspected.

E. The Operations Manager shall complete all required DEA loss report documentation (Federal form 106). This form shall be submitted to DEA and to the DHHS office in Greensboro. The forms shall be attached to any police report and shall be maintained in the administrative office.

F. If the controlled substances are found after the filing of the form 106, then a letter stating the outcome shall be attached to the 106 and sent to both agencies. The reporting law enforcement agency shall also be notified.

G. The Department Director will be kept current on all available information pertaining to said loss or theft, via the chain of command.

**7. Daily Operations Transfer Procedures**

A. Daily operation ambulances may be assigned two controlled substance boxes.

B. The off-going Paramedic shall transfer their controlled substances over to the oncoming paramedic or the oncoming paramedic may initiate a "pick up" in the electronic inventory system. Peak load paramedics may transfer the controlled substance box back into stock on the "Transfer Form". The paramedic is responsible for the documentation of the disposition of the box at the beginning and end of every shift. The documentation shall include the following:
   i. date of transfer;
   ii. time;
   iii. location of transfer;
   iv. box identification;
   v. contents of the box;
   vi. whether or not the box was sealed;
   vii. Seal number and
   viii. Paramedic's electronic password and pin serving as their signature.

C. The controlled substance "Transfer Form" shall be kept electronically through electronic inventory asset system. EMS Battalion Chiefs shall be responsible for assuring that personnel complete the "Transfer Form" correctly and in a timely manner through generating the "Controlled Substance Box Location Report." These forms can be found in the electronic asset system.

   i. When transferring from person to person on shift change, a timely manner is considered within 30 minutes.

D. When possible, controlled substances shall be signed over to the on-coming paramedic and witnessed by the off-going paramedic. In rare instances, the shift Battalion Chief may authorize an EMT-Basic to accept and sign for controlled substances or may accept possession of same.

E. Upon receipt of a controlled substances box, paramedics shall inspect the assigned box to ensure that the medications are intact, within their expiration date and the box is sealed with the correct seal number. The paramedic shall record the findings on the "Transfer Form." Any discrepancies are to be reported immediately to the EMS Battalion Chief who shall then notify the EMS Division Chief or designee. An "Incident Form" is to be filled out in detail.

F. It is the paramedic's discretion whether to keep a controlled substance box on their person or locked in a double locked compartment of the ambulance. Ultimately, it is the responsibility of the paramedic to ensure the availability of medication during patient contact.

G. The EMS Battalion Chief will be automatically notified when a controlled substance is used via electronic submission from the inventory system documentation. At a minimum the paramedic shall have in their position adequate controlled substances for one patient per current EMS Protocols.

H. Paramedic shall not have an unsealed controlled substance box in the field except in extreme circumstances and the, only with prior arrival from the on duty Battalion Chief. The Battalion Chief should make every attempt to deliver additional seals to the Paramedics to assure that controlled substance boxes are always sealed.

I. If the off-going paramedic fails to physically transfer the controlled substances, the EMS Battalion Chief shall be notified by the incoming medic and the off-going paramedic shall be contacted and shall return the controlled substances box immediately.

**8. Special Event Transfer and Volunteer Medic Transfer Procedure**

A. The on-duty Battalion Chief shall make arrangements for controlled substances transfer for special events to ensure security is maintained and proper accounting of boxes is ensured.
B. Based on the amount needed, the EMS Battalion Chief will obtain the proper number of boxes from the safe, conduct a documented transfer, and physically hand off the box to the receiving paramedic.
C. Following conclusion of the special event, the EMS Battalion Chief ensures the boxes are sealed and medication accounted for. The Battalion Chief conducts a documented transfer and transfers the box physically to the safe and documents transfer to the safe in the electronic inventory system.

| Guideline Name: | | Department: |
|---|---|---|
| Temporary to Permanent Employment Transition | | Orange County Emergency Services |

| Effective Date: | Issued: 11/01/2020 | Approval(s): Kim Woodward, EMS Operations Manager |
|---|---|---|
| 11/01/2020 | Revised: 11/08/2020 | |

**Purpose**

Orange County Emergency Services provides EMS coverage 24/7/365. Vacant positions can cause increased burden on our workforce and every effort must be taken to fill vacancies as quickly as possible. The OCES EMS Division ensures that all providers entering into the EMS Workforce participate in the same recruitment process whether they are applying for a temporary or permanent position. The recruitment process includes open recruitment through advertising, participation in the assessment center, conducting back ground investigation, undergoing evaluation through LESI, successfully completing a job readiness physical assessment, and participating in required testing for safety sensitive positions. Because temporary and permanent employees are hired in exactly the same pathway, Orange County Human Resources has granted approval to allow transition of temporary EMS providers to permanent status as permanent positions become vacant provided the EMS providers have completed an application through the current Orange County Application System through the official recruitment process.

**Scope**

This policy covers the EMS division and is executed by the ES Recruitment and Outreach Coordinator, the HR Recruitment and Support Systems Manager, and the EMS Operations Manager (hiring manager). Only temporary employees in the EMS division are eligible to participate in this process. The temporary EMS employee must be in good standing (not in any investigative status) and compliant with all EMS con-ed.

**Process**

- Eligibility list is managed by the ES Recruitment and Outreach Coordinator.
- When a vacancy occurs, the eligibility list is transmitted to the hiring manager for review and corrections if necessary. The hiring manager will send the corrected list back to the ES Recruitment and Outreach Coordinator within 24 hours.
- The hiring manager requests that an offer or offers be made based upon the corrected* eligibility list.
- The eligibility list should have the following listed: name, hire date, interview score, and independent practice status (hiring manager will complete this last entry during the review) and telephone number for each person.
- Eligibility ranking is as follows:
  1) Independent practice status – independently practicing temp employees have fully completed local credentialing requirements and have undergone all required training.

2) Start date
3) Interview score

- Temporary employees may request to be removed from the eligibility list by submitting an Employment Status Change Request Form to the EMS Operations Manager.
- The ES Recruitment and Outreach Coordinator transmits the eligibility list to the Recruitment and Support Systems Manager in HR who will make the offer. They will proceed down the list should a candidate decline the offer. Candidates should only be provided until close of business the following day.
- The transitioning hire must undergo pre-employment testing as determined by Orange County policy and complete the New Hire Orientation based on the employees original hire date.

**Forms and Documentation**

- The Employment Status Change Request Form will be available on the Department Use Website.
    - Eligible temporary employees unless described below are automatically on the list.
    - Temporary employees who transitioned from permanent to temporary will not appear on the eligibility list unless they submit an Employment Status Change Request Form.
    - Eligible temporary employees who decline a permanent offer must submit an Employment Status Change Request Form to remain or be removed from the list.
    - Completed forms should be submitted to the EMS Operations Manager.
    - The form will be kept in the official Personnel File housed at Human Resources.

*Corrected = updated phone number, employment status, independent practice status

| Guideline Name: | | Department: |
|---|---|---|
| Training Requests | | Orange County Emergency Services |

| Effective Date: | Issued: | Approval(s): |
|---|---|---|
| September 1, 2016 | September 1, 2016 | Kim Woodward<br>EMS Operations Manager |

**PURPOSE**

- To outline the process that must be followed when an employee wishes to attended a training session that is not department mandated.
- To encourage professional development.
- To enable employees to attend classes and trainings conducted by outside agencies and organizations.
- To ensure trainings are distributed fairly across the division.
- To provide for more advanced planning as far out as the next fiscal year.
- To better plan and control costs associated with training, including but not limited to over-time for backfilling shifts.

**SCOPE**

This guideline applies to all members of the Emergency Medical Services (EMS) Division.

**DEFINITIONS**

- **Training -** a class, seminar, or workshop that enhances knowledge, skills, or proficiencies related to an employee's position

**PROCEDURE**

a. The employee must complete a *Training Request form*. This must be submitted to their immediate supervisor for review. Employees are encouraged to submit requests as early as possible, as much as a year in advance. Requests must be submitted a MINIMUM of eight (8) weeks prior to the training.
b. The Training Request form will require signatures of both the Training Coordinator and the Deputy Operations Manager.
c. Exception to the eight week notice will be reviewed on a case-by-case basis and will require the additional approval of the Operations Manager or their designee.
d. Any request that creates overtime for any reason (including back-filling a position) will require the additional approval of the Operations Manager.
e. Requests shall be reviewed for the following before approval and booking:
    i. Cost and budget availability/constraints
    ii. Scheduling and continuity of operations
    iii. Personnel history
    iv. Training History
    v. Relevance of the training to job duties
    vi. Applicability of requested training to advancement of employee and goals and needs of OCES

vii. Limitations as noted below

f. Limitations to requests:
   i. EMS administrative staff will work on planning training a year in advance for anticipated travel needs. This planning will be limited by annual budget allowances and its overtime constraints.
   ii. The County mandates that all Agency sponsored training (both mandated and non-mandated) must be paid-time. This imposes limitations based on the payroll and overtime budgets.
   iii. These limitations will mean there will be a limited pool of non-mandated training opportunities available each year. It will be the responsibility of Administrative staff to balance requests against that year's pool of non-mandated training opportunities available.
g. The participant must submit a summary of their training to the Training Coordinator upon their return. They must be prepared to present that summary to their peers. This is intended to facilitate the dissemination of knowledge throughout the system. Failure to meet this obligation may result in suspension of future training.
h. If the training is approved, it is the responsibility of the supervisor to inform the EMS Scheduler. Shifts must be covered and approved prior to travel. Until the employee is removed from the schedule it is still the responsibility of the individual listed on the schedule to man that shift.
i. If a request is denied at any point in the process, the person denying the request will document the reason on the form and return the request to the employee.
j. The County does not pay for the time it takes to travel.
k. Employee may only be reimbursed for actual time of training; no overtime will be generated during training.

**CONDUCT**

a. During the course of training, all staff members shall conduct themselves in a manner consistent with Orange County Emergency Medical Services SOGs and ETHOS.
b. Failure to conduct oneself appropriately during training is grounds for disciplinary action and may result in the declination of future travel training requests and disciplinary action.

| Guideline Name: | | Department: |
|---|---|---|
| Powered Air Purifying Respirators | | Orange County Emergency Services<br>EMS Division |

| Effective Date: | Issued: | Approval(s): |
|---|---|---|
| July 24, 2023<br>**Revised Date:** | July 19, 2023 | Kim Woodward, EMS Division Chief<br>Chris Pope, EMS Deputy Division Chief/ Infection Control Officer |

## Scope

This procedure applies to all Orange County Emergency Services EMS Division personnel whose work assignment requires the use of a powered air-purifying respirator (PAPR).

## Purpose

This policy is intended to describe how the Orange County Emergency Services EMS Division safely and effectively utilizes PAPRs to protect against exposure to airborne and respiratory hazards in accordance with 29 CFR 1910.134 OSHA Respiratory Protection Standard.

## Permissible Practice

### Indications

- As directed by Orange County Emergency Services SOG GEN-029 Respiratory Protection Policy or other departmental directives and/or applicable policies.
- Any instance where an employee should utilize respiratory protection against airborne and respiratory hazards.
- Most commonly in the EMS setting the use of a respirator is indicated for patients who require airborne precautions based on guidelines from the CDC or who exhibit signs and symptoms consistent with the potential for airborne transmission.
- Airborne precautions apply, but are not limited to, the following airborne-transmitted diseases when either suspected or confirmed:
    - Pulmonary or laryngeal tuberculosis/*Mycobacterium tuberculosis*
    - Primary varicella/chickenpox
    - Disseminated herpes zoster/varicella/shingles involving more than two dermatomes and/or in an immune suppressed patient
    - Measles (rubella)
    - Aerosolizable spore-containing powders such as Anthrax/*Bacillus anthracis*

- Aspergillosis (if massive soft tissue infection with copious drainage and repeated irrigation required)
- Monkeypox/Monkeypox virus
- Smallpox (variola)/Variola virus
- Severe acute respiratory syndrome/SARS-associated coronavirus (SARS-CoV)
- Novel or emerging pathogens and any other disease for which public health guidelines recommend airborne infection isolation

**Limitations of Use**

- Do not wear this respirator system to enter areas where:
  - Atmospheres that are oxygen deficient.
  - Contaminant concentrations are unknown.
  - Contaminant concentrations are Immediately Dangerous to Life or Health.
  - Contaminant concentrations exceed the maximum use concentration determined by the Assigned Protection Factor (APF) for the specific respirator system.
- Atmospheres that are flammable or explosive.
- Immediately exit the contaminated area if any of the PAPR assembly alarms activate.
- Do not use in environments subject to high magnetic fields (ex. MRI).

**Specifications**

| | |
|---|---|
| Air flow | Greater than 6 cfm (170 lpm) |
| Respirator System Operating Temperature<br><br><br><br><br>Operating Altitude Range | 23ºF to 129ºF (-5 to 54ºC). Motor blower battery alarm will activate when battery pack internal temperature exceeds 130ºF (55ºF). Motor blower will shut down if the battery pack temperature reaches 140ºF (60ºC).<br>Approximately sea level to 2600 feet (800 meters). |
| Storage Temperature (RH < 90%)<br>TR-300 motor blower, HE filter, Battery pack | -22ºF to 122ºF (-30 to 50ºC)<br>NOTE: 40ºF to 95ºF (4 to 35ºC) suggested storage temperature range if product will be stored for an extended period of time before first use. Optimal storage temperature for the battery pack is 59ºF (15ºC). |
| Shelf Life-Prior to use, when stored in original 3M packaging:<br>1. Motor/blower<br>2. Battery pack<br>3. HE filter | <br><br>1. 5 years<br>2. 9 months<br>3. 5 years |

| | |
|---|---|
| Battery Pack Chemistry<br>Run Time:<br>Standard – TR-330<br>High capacity – TR-332<br><br>Time to recharge:<br>Standard – TR-330<br>High capacity – TR-332<br><br>Internal charging temperature | Lithium-ion<br><br>Approximately 4-6 hours<br>Approximately 8-12 hours<br><br><br>< 3.0 hours<br>< 3.5 hours<br><br>Optimal: 60ºF (20ºC) to 95ºF (35ºC)<br>Range: 32ºF (0ºC) to 104ºF (40ºC) |
| Motor/blower Alarms:<br>Low air flow<br><br><br><br><br><br>Low battery pack voltage | <br>Activates when airflow falls below 6 CFM (170 lpm) for greater than approximately 30 seconds. If alarm condition continues (airflow remains below 6 CFM) for approximately 15 minutes, the TR-300 system will automatically shut down.<br><br>Activate when approximately 10-15 minutes of power remains. Power down the motor/blower and replace the battery pack and replace the battery pack to reset alarm. This alarm will also activate if the battery pack temperature reaches 130ºF (55ºC). |
| System Alarm | Audible alarms – 85 dBA at 4 inches (10 cm). |
| Intrinsic Safety | The TR-300 assembly is not an intrinsically safe system. |
| Latex | The TR-300 assembly does not contain dry or natural rubber latex. |

## **Definitions & Acronyms**

Aerosol generating procedure (AGP): procedures that stimulate coughing and promote the generation of aerosols include such procedures as intubation, manual ventilation, suctioning of the respiratory tract and noninvasive ventilation (CPAP).

Assign protection factor (APF): the workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when the employer implements a continuing, effective respiratory protection program.

CDC: Centers for Disease Control and Prevention.

Cleaning: removal of all soil (organic and inorganic) and foreign material from objects and surfaces which is typically accomplished with water and mechanical action and sometimes with assistance from detergents.

Disinfection: a process of inhibiting or destroying disease-producing microorganisms (but may not kill bacterial spores) usually involving the use of chemicals, heat, and/or ultraviolet light.

EMS: Emergency Medical Services.

Fit test: the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual.

High efficiency particulate air (HE or HEPA) filter: a filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.

NEMO: New Employee Orientation.

NIOSH: National Institute for Occupational Safety & Health.

OCES: Orange County Emergency Services.

Operative IQ: A web-app utilized by OCES personnel to document daily equipment inspections and check offs.

OSHA: Occupational Safety and Health Administration.

PHLCP: Licensed Health Care Professional.

Positive pressure respirator: a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

Powered air-purifying respirator (PAPR): an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

Service life: the period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer.

Shared use respirator: A PAPR assembly that is used by more than a single individual.

## Respiratory Protection Program

- This policy is intended to supplement the Orange County Emergency Services SOG GEN-029 Respiratory Protection Policy which is located on the private departmental internet website.
- The designated Respiratory Protection Officer is responsible for addressing any discrepancies noted between this policy and GEN-029 Respiratory Protection Policy.

## Selection of Respirators

- The 3M TR-300 PAPR assembly, as described in this policy, is the primary respiratory protection provided to employees of the EMS Division.
- If used following all manufacturer recommendations, this PAPR assembly provides an APF of at least 25 and when utilized with alternative headcovers, may provide an APF of up to 1,000.
- This PAPR assembly requires the use of a HEPA filter which is selected based on the most common respiratory hazards found in the healthcare setting. Applications such as decontamination, or environments with fumes, vapors or gases are not suitable for this filter and are not considered in the scope of this policy.
- This PAPR assembly is NIOSH-certified and the respirator shall be used in compliance with the conditions of its certification.

## Medical Evaluation

- In accordance with 1910.134(e), OCES shall provide a medical evaluation to determine the employee's ability to use a respirator. All employees are required to complete a medical evaluation, performed by a physician or PLHCP, before using a PAPR.
- New employees hired into the EMS Division will complete a medical evaluation during NEMO or before beginning Field Training and Evaluation.
- Employees must receive approval for use from the designated Respiratory Protection Officer after completing a medical evaluation.

## Fit Testing

- The selected PAPR is a positive pressure assembly that does not utilize a tight-fitting facepiece.
- There are no fit testing requirements associated with the use of the department-issued PAPR assembly.

## Use of Respirators

Daily & Before Use Inspections

- Employees are required to arrive to work each shift prepared with their issued headcover in its protective case. This is a job performance expectation as defined in EMS SOG Safety and Personal Protective Equipment Policy. Failure to have an issued headcover readily available for each patient encounter is considered a disregard of departmental safety precautions, can result in a delay to the provision of patient care and place the employee, patient and organization at risk and is considered unacceptable job performance.
- Employees are required to inspect each PAPR assembly during daily equipment checkoffs and to document findings in Operative IQ.
- It is recommended that employees repeat some parts of the inspection before and after each entry into a contaminated area.

PAPR Inspection

1. PAPR system: Visually inspect the entire PAPR system including the motor blower, cover, filter, breathing tube, battery pack, belt, issued headgear. If parts are missing or damaged, contact an EMS Supervisor.
2. Battery pack: Confirm that the battery pack is fully charged and charge is sufficient for duration of the work period. The battery pack must be securely latched to the motor/blower.
3. Breathing tube: Examine the entire breathing tube for tears, holes or cracks. Bend the tube to verify that it is flexible. Ensure the o-rings, located at both ends of the breathing tube (i.e. headgear and air source connections) are present and not damaged. The breathing tube should fit firmly into the air source connection.
4. HE filter (employee must wear gloves when handling; filter should be treated as contaminated):
    a. Inspect filter and seal for dirt, tears, cuts, distortion or indentations. Replace HE filter if any damage is noted or suspected.
    b. Ensure the HE filter is properly installed in the PAPR unit and that the cover latch is secure.
5. Airflow check:
    a. Ensure ball in the air flow indicator moves freely in its tube and the seal at the bottom end of the tube is in place.
    b. Insert the air flow indicator into the outlet on the motor/blower unit. If the breathing tube is in place, it must be removed to allow the air flow indicator to be inserted.
    c. Turn the motor/blower unit on by pushing and holding the power button. Run the TR-300 for 1 minute to allow the air flow to stabilize.
    d. With the airflow indicator in a vertical position, ensure that the bottom of the floating ball rests at, or above, the minimum flow mark. Airflow indicator must be in the vertical position for an accurate reading.
    e. If the airflow indicator ball fails to rise at or above the minimum flow level, do not use the unit. Notify an EMS Supervisor.
6. Check the low airflow alarm by simulating a low airflow condition. With the motor/blower on:
    a. Remove the air flow indicator and tightly cover the outlet of the motor/blower with the palm of your hand. The motor should automatically speed up, attempting to compensate for the low airflow condition.
    b. Continue to press your palm tightly against the end of the outlet, making a tight seal. After approximately 30 seconds, the unit will sound an audible alarm and the red fan shape LED on the top of the motor/blower unit will flash.
    c. Remove your hand from the end of the breathing tube; the audible alarm and the flashing red LED should both stop when the motor returns to a slower speed.

Donning & Doffing: Entering and Exiting the Contaminated Area

1. Turn the motor/blower on.
2. Perform donning procedures based on CDC guidelines.
3. Check airflow and alarms.
4. Don the PAPR assembly and headgear. Enter the work area.
5. Leave the contaminated area immediately if any of the following conditions occur:
    a. Any part of the system becomes damaged.
    b. Airflow into the respirator decreases or stops.
    c. The low airflow or low battery alarms trigger. In the event only an audible or only a visual alarm triggers, the user should immediately leave the contaminated area.
    d. Breathing becomes difficult.
    e. You feel dizzy or your vision is impaired.
    f. You taste or smell contaminants.
    g. Your face, eyes, nose or mouth become(s) irritated.
    h. You suspect that the concentration of contaminants may have reached levels at which this respirator may no longer provide adequate protection.
6. Do not remove the respirator or reach your hand into the headgear in areas where the air is contaminated.
7. Follow specific exiting, doffing and decontamination procedures for turning off the motor/blower and removing the PAPR assembly based on CDC guidelines.

Considerations During Patient Care

- Noise generated by motor blower
- Difficulty communicating
- Battery life
- Kinking or compression of breathing tube
- Maintaining sufficient inlet airflow
- Air inlet position while wearing seatbelt in patient compartment

## **Maintenance and Care of Respirators (Cleaning and Storage)**

Cleaning & Decontamination

- At a minimum, employees must wear gloves when cleaning respirators and should perform hand hygiene upon completion.
- Shared use respirators, which are respirators issued to more than one individual, shall be cleaned and disinfected before and after being worn by different individuals.
- Respirators, and all components, shall be cleaned and disinfected after each use.
- Issued PAPR headcovers should be cleaned after each use.

- All cleaned or disinfected assembly components should be thoroughly dried before being stored.
- Headcovers should not be soaked, placed in a washing machine, sterilized with steam or disinfected with unapproved chemicals.
- Motor/blower: Clean the outer surfaces of the PAPR assembly and battery pack with a soft cloth dampened in a solution of water and mild, pH neutral detergent. Do not immerse the motor/blower or battery pack in water. Do not use solvents or abrasive cleaners. Do not attempt to clean the interior of the motor/blower with compressed air or vacuum. Ensure the electrical contracts of the motor/blower and battery pack are dry.
- Breathing tube: Clean the connection sites on the breathing tube with the water and detergent solution. The breathing tube can be immersed in water for cleaning. The inside of the tube must be completely dried prior to use or storage. Air dry, or dry by connecting the motor/blower and use it to force air through the tube until dry.
- HE filter: Open the filter cover and inspect the HE filter. Replace if excessively dirty, wet or damaged. The filter cannot be cleaned and should be considered dirty and contaminated.
- Battery pack: Solvents should not be used to clean the battery pack or charger. Wipe the housing of the battery pack with a soft cloth dipped in a mild cleaning solution or a pre-wetting cleaning wipe.
- If cleaning to remove gross soil before disinfection, clean all parts of the PAPR assembly with a clean soft cloth dampened with warm water containing a mild pH neutral (pH 6-8) detergent. While the breathing tube is still attached to the blower, begin cleaning with the exterior of the breathing tube, then the exterior of the blower/battery. Avoid allowing liquid to enter the breathing tube. Remove the battery, and wipe the top of the battery and the battery cavity of the blower. Avoid wiping the blower pins and battery pads. Wipe the belt and headcover/hood.
- Disinfect the PAPR assembly with the disinfectant cleaner. Surfaces must be visibly wet with disinfectant for the full specified contact time. With breathing tube attached, start by wiping the exterior of the breathing tube and the top of the blower outlet. Remove the breathing tube. Then, taking care not to allow liquid to drip into the blower, disinfect the rest of the blower body, battery, belt, and headcover/hood, avoiding the blower pins and battery pads.
- Acceptable disinfectants
    - 70% isopropyl alcohol
    - 1:10 ratio of bleach to water
    - Hydrogen peroxide 30%
    - Sanicloth Bleach Germicidal Disposable Wipe - Orange Top
    - Stryker Medical SideKick Disinfecting Wipes
- Rinse and remove disinfection solution from the PAPR assembly by wiping with a clean cloth dampened with clean water. Rise the cloth often to help ensure

effective removal of the disinfectant solution. Do not allow liquid to enter the air outlet port. Do not submerge components.

- Dry all components by air completely prior to reuse or storage. Air dry in an uncontaminated atmosphere, temperature not to exceed 120ºF. Breathing tube drying can be accelerated by connecting it to the motor/blower unit and using it to force air through the tube until dry. If using this method, orient the blower and breathing tube in such a way that prevents liquid from entering the blower.

Storage

- All respirators shall be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they shall be packed or stored to prevent deformation of the facepiece and exhalation valve.
- Respirators should be kept accessible to the work area.
- Respirators should be stored in compartments that are clearly marked as containing emergency respirators.
- Respirators should be stored in accordance with manufacturer instructions.
- Respirators should be stored in temperatures between 40ºF and 95ºF and settings with less than 90% humidity. Batteries perform optimally in temperatures between 68ºF and 77ºF.
- If motor blower will not be used on a regular basis, the motor must be run for 5 minutes annually to ensure proper lubrication and operation. On a monthly basis, the motor blower should be run.
- HE filters should be stored inside the motor blower under conditions that are suitable for the motor blower.
- Belts and air hoses should be stored in provided containers and carefully packaged to avoid compression or kinking.
- Battery packs should be charged before storage including fully recharged after each use and at least monthly. Optimal storage conditions for battery packs include a temperature of 59ºF and dry conditions with relative humidity < 85%. Battery packs may be stored indefinitely on the charger. Battery packs should be disconnected from the motor/blower during storage.
- PAPR headcovers should be labeled with the employee’s name and stored individually in an issued rigid container that is also labeled with the employee’s name. Headcovers should be carefully rolled horizontally across the face shield to prevent unnecessary wear or damage to the face shield. Headcovers should not be folded or crushed in storage. Do not store headcovers near sources of heat.

Repairs

- If a PAPR assembly is found to be in a state of disrepair, the employee should notify an on-duty EMS Supervisor and create a work order in WebEOC

documenting the problem. The PAPR assembly should be removed from service and returned to EMS Logistics for repair.

- The employer shall ensure that respirators that fail an inspection or are otherwise found to be defective are removed from service, and are discarded or repaired by persons appropriately trained to perform such operations and shall use only the respirator manufacturer's NIOSH-approved parts designed for the respirator.
- Repairs shall be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed.

## Service Life

- The HE filter must be changed if the low airflow alarm is activated, the air flow as shown by the air flow indicator falls below 6 CFM or the HE filter becomes damaged or wet. Additionally, the HE filter should be replaced as a first step to troubleshooting reduced battery pack run time. HE filters have a shelf life of 5 years.
- Factors that reduce filter/cartridge service life include:
    - Exertion level (work rate)
    - Cartridge variability
    - Temperature
    - Humidity
    - Multiple contaminants
- Battery service life is dependent upon use and storage conditions. If a battery after receiving a full charge only indicates 80% capacity, it should be considered for replacement. A battery pack, under ideal storage conditions, provides 250 charge cycles.
- Headcovers have a shelf life of 3 years when stored in original packaging under recommended storage conditions.

## Breathing Air Quality and Use

- The selected PAPR assembly is not an atmosphere-supplying respirator.

## Identification of Cartridges, Filters and Canisters

- Orange County Emergency Services utilizes a 3M Versaflo TR-300 PAPR assembly.
- Each PAPR assembly is typically configured using the following components:

| Item Description | Part # |
|---|---|
| HE Filter | TR-3712N |
| Headcover | S-133 |
| Battery | TR-332 |
| Battery Charger | TR-340 |
| Belt | TR-327 |
| Motor Blower | TR-301N+ |

| | |
|---|---|
| Air Flow Indicator | TR-971 |

- There are alternative 3M Versaflo TR-300 configurations that may be utilized without changes to this policy.
- Any alternative PAPR assembly configuration utilized must provide an equivalent or an enhanced level of respiratory protection.

**Training and Information**

- Prior to use: Employees must participate in a Medical Evaluation and receive approval for use from the Respiratory Protection Officer.
- Initial education: Employees during NEMO must receive demonstration and hands-on practice, as well as successfully complete LMS assignment consisting of video demonstration, receipt of policy, and quiz. Initial education must be completed before being released to field training.
- Ongoing education: On an annual basis, employees must successfully complete a LMS assignment consisting of video demonstration, receipt of policy and quiz.
- Additional information about the PAPR assembly is readily available on the manufacturer's website. There are general use PAPR resources available on the CDC, NIOSH and OSHA websites.

**Program Evaluation**

- This policy should be reviewed in conjunction with review of GEN-029 Respiratory Protection Policy.
- This policy may be reviewed on a more frequent basis through a request from the OCES Safety Committee or the Respiratory Protection Officer.

**Recordkeeping**

- The Respiratory Protection Officer, or designee, will maintain initial and on-going records documenting each employee's approval for use and continued compliance with PAPR training.
- Employees are responsible for completing daily checkoffs of each assigned PAPR assembly in Operative IQ. EMS Supervisors are responsible for ensuring that employees have completed daily checkoffs of each assigned PAPR assembly.
- Employees should document any issue preventing a PAPR assembly from operating normally by competing a work order in WebEOC and notifying an on-duty EMS Supervisor.
- Employees should document each use of a PAPR assembly during patient encounters by selecting the appropriate PPE in ESO.
- If a PAPR is used in a setting that is not documented in ESO, the user should notify the designated Respiratory Protection Officer by email of the PAPR # used, the circumstances of use, the date of use and the duration of use.

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| Guideline Name: | | Department: |
|---|---|---|
| Paramedic Academy | | Orange County Emergency Services |

| Revision Date: | Issued: | Approval(s): |
|---|---|---|
| July 26, 2024 | June 6, 2022 | Kimberly K. Woodward<br>EMS Division Chief |

**Scope**

This policy applies to all Emergency Medical Technician - Basics in the EMS division (permanent and temporary). Preference will be given to existing permanent trainees.

**Purpose**

The purpose of this policy is to provide for the implementation of a contracted career transition pathway for Emergency Medical Technicians (EMT) employed by Orange County. This policy will outline the process for the Emergency Services Paramedic Academy to assist current EMTs (temporary or full-time) in obtaining their Paramedic credential. The "academy" providers the opportunity for personnel to 1) maintain their employment in a permanent capacity and 2) receive a commensurate pay increase while completing the academy process. In exchange for assisting in this career transition, the trainee would be contractual obligated for a period of two (2) years following successful completion of the OCES-EMS FTEP process and oral boards.

**Definitions**

DTCC- Durham Technical Community College
EMT – Emergency Medical Technician
FRPA - Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99) is a Federal law that protects the privacy of student education records.
FTE – Full time trainee, funding has been allotted for these positions in the Orange County Budget
FTEP – Field Training Evaluation Program
Permanent- A full time trainee that has completed the probationary process
Temporary- A "part-time" trainee that is not receiving benefits

**Guidance**

Selection Process:

Pre-requisites for acceptance into the ES Paramedic Academy:

1. Must have successfully completed Phase 1 of the Field Training Evaluation Program (FTEP) and permitted to independently practice as an Orange County Emergency Medical Technician without restrictions.

2. Must obtain one EMS supervisor Recommendation (does not have to be current supervisor)
3. EMT has not received any disciplinary actions within the past 12 months.
4. EMT is current on all continuing education requirements
5. Must be in compliance with Orange County Practice Policy (See Orange County System Plan).
6. EMT has submitted a completed Paramedic Academy Application by the specified deadline (see appendix 1)
7. Successful completion of Administrative Panel Interview *(required if there are more qualified candidates than there are positions available)*

Guidelines for Participation in Paramedic Academy:

For selected academy recruits:

1. Trainee must sign a Paramedic Academy Contractual Agreement and the Agreement must be fully executed in order to transition to paramedic trainee position. (Appendix 2)
2. Offers for Paramedic Academy promotion must be initiated by Orange County Human Resources (HR).
3. Candidates must complete all post offer requirements as required by HR.

DTCC Enrollment:

1. Trainee must sign a FRPA release so that grades and affective evaluations may be accessed by employer.
4. Trainee must complete all matriculation (enrollment forms, assessment testing, etc.) requirements of Durham Technical Community College.
5. Failure to submitted required documentation prior to the start date of the paramedic class the college will result in being dropped from the class and will nullify the paramedic academy agreement with Orange County.
6. The college will require background checks in the system they so choose.
7. The trainee must have a valid CPR credential of an agency approved by the College.
8. Trainees are expected to have all required books, materials and college uniform shirts prior to the first day of class.

Tuition, Fees and Financial Responsibility:

1. Trainees of Emergency Services are considered affiliated with Orange County and are therefore exempt from DTCC tuition associated with the paramedic program listed in the continuing education program.

2. The Trainee is responsible for all cost associated with the background checks, uniform, books, and lab fees.
3. Trainees are eligible to apply for reimbursement of fees and expenses related to the program. The website for tuition assistance from Orange County: http://intranet.orangecountync.gov/HR/TuitionRefund.asp .
4. Expenses incurred by the trainee or reimbursed from the Orange County tuition assistance program are not included in the Paramedic Academy Contractual Agreement.
5. The trainee under Paramedic Academy contract is paid as a full time employee during class, clinical, and paramedic testing. Only the salary paid to the trainee during the trainee timeframe is counted toward payout should there be a breach of contract.
6. Any time where the trainee staffs an ambulance as a primary EMT (second provider) will not be counted toward the salary payout for school should there be a breach of contract. Only class, program clinicals, testing and field internship (third rider trainee status) are counted.

Agency Responsibilities:

1. All Paramedic Academy students are directly supervised by the EMS FTEP Coordinator.
2. Scheduling of weekly EMS unit ride times will be handled through the trainee's direct supervisor in conjunction with the EMS Scheduler and Shift Supervisors.
3. All attempts to ensure the same number of scheduled hours as any other EMS FTEP trainee on a 24/72 or 12 hour rotating schedule will occur however the trainee may not work an EMS shift the night before class, tests, or hospital clinical. Trainees may not be scheduled for more than 24 consecutive hours.
4. Paramedic trainees may be allowed to sign up for overtime associated with special events that do not conflict with class, clinical or assignments only as a last resort. Paramedic trainees may also work in the EMS system as a last resort EMT when the system would fall below the minimum number of ambulances as long as the shift is not the night before class, tests or hospital clinicals. Trainees may not work more than 24 hours consecutively. Overtime shall be avoided so the trainee may focus on all education requirements.
5. The trainee may not count any primary EMT time towards their clinical hours.
6. The trainee shall be assigned a primary preceptor for the duration of the class and is expected to work the same rotation as their preceptor with the *exception of hours entering overtime status*.
7. During the first semester any approved annual leave will correspond with the college's break schedule. No other annual leave will be approved while school is in session.
8. No annual leave will be approved during the second semester due to the class schedule and increased clinical requirements.
9. Trainees shall be expected to remain on campus should class be dismissed early (with the exception of evacuation or severe weather). Trainees shall utilize the time to study or practice skills in the lab.

10. Leave without pay will not be recommended by the Emergency Services Director during the paramedic academy (extended leave requests or needs will be handled following the County's existing Family Medical Leave Act/extended leave policies).

Responsibilities of the Trainee

1. It is vital that the trainee communicates with their direct supervisor to ensure that weekly work hour requirements are met. Early notification to the trainee's direct supervisor is required if there is any alteration of the scheduled class room, hospital clinical shifts, or ambulance ride time.
2. The paramedic trainee will clock in utilizing the County's approved time keeping process at the class or clinical start time. The trainee shall clock out for lunch breaks unless lunch is provided as part of the class or clinical. The trainee shall clock out at the end of class or clinical.
3. The trainee should attend all continuing education opportunities to maintain agency standards. Any conflict due to unavoidable school schedule shall be reported to the trainee's direct supervisor in advance.
4. Trainees will be required to display a positive and professional demeanor, professional appearance when representing Orange County Emergency Services. Adherence to the department's ETHOS at all times is also required.
5. Trainees are required to turn in all assignments and successfully pass all modules to remain in the program.
6. Trainees are required to arrive on time, in proper uniform and be well rested for all classes, clinicals, and field internship.
7. Trainees shall follow all program rules and shall also complete clinical documentation within the deadline set forth by the college.
8. Trainee shall follow college requirements for absence notification as well as make notification to their direct supervisor of any absence or tardy arrival.
9. Trainee shall sign the daily college roster.
10. Trainees shall adhere to all Department policies and represent the Department's ETHOS at all times.

<u>State Testing and FTEP</u>

1. Upon successful completion of the program, trainee shall sign up for a NC State Credentialing Exam within two weeks of course completion.
2. Trainees may under the direct approval of the EMS Division Chief utilize a County Vehicle to commute to the State testing site if necessary. Trainees may clock in upon arrival at the testing site and clock out upon completion of the testing.
3. Trainees may not engage in any patient care above the EMT level during the period between graduation from the college paramedic program and receiving their State credential.

4. Should the trainee be unsuccessful with obtaining State Credential on the first attempt a meeting with Instructor and FTEP coordinator or Training coordinator shall take place with the trainee to create a study guide for deficient areas. Failure on second attempt results in a performance improvement plan with more detail. Failure to pass the exam on third attempt will result nullification of the Paramedic Academy Contract.
5. Once the State credential has been obtained, the trainee is assigned to an available FTO and enters FTEP Phase 2.
6. Trainee is required to successful complete all remaining phases of the FTEP process.
7. The successful completion of the Medical Boards marks the end of the FTEP process, documentation of this successful completion will be provided to the Division Chief of Finance and Administration so that a personnel action form is completed. This step allows for the promotion of the trainee from ES Grade 8 to ES Grade 12. This will become effective on the first day worked in the new pay period.

| Guideline Name: | | Department: |
|---|---|---|
| Post-Overdose Response Team Operating Guidelines | | Orange County Emergency Services |

| Effective Date: | Issued: | Approval(s): |
|---|---|---|
| July 1, 2024 | June 28, 2024 | Kim Woodward, EMS Division Chief |

**Scope**
EMS System

**Purpose**
To outline all components of the Post Overdose Response Team regarding operation and function within the EMS system. In addition to this document, PORT staff must adhere to all applicable policies and SOGs within the Orange County EMS system including but not limited to Attendance Policy, Vehicle Checkout and Resupply unless program specific direction differs from those policies are indicated in this document.

**Definitions**
PORT: Post-Overdose Response Team
MOUD: Medication for Opioid-Use Disorder
PSS: Peer Support Specialist
CP: Community Paramedic
CHS: Community Health & Safety
'PORT Primary Program Functions' definition:

i. MOUD administration
ii. MOUD patient transport to treatment facility

## Guidance

# I. Daily Shift Responsibilities

Client contact and navigation is primarily the responsibility of the Peer Support Specialist (PSS). However, as there are shift days and hours in which the PSS is not in-service, and as daily responsibilities and duties will be dynamic, achieving these objectives should always be a team effort. Both staff designations (PORT Community Paramedic and Peer Support Specialist) have the capability of conducting any of the contact, navigation and follow-up actions related to clients. Only the CP or designated staff filling in for the CP may document any medication administration items or manage narcotics.

**1) Program expectations prior to checking in-service:**

a) Manually import all PCR referrals and Overdose Incidents since last upload into case management software
b) Determine and document priority level for each newly added referral
c) Determine any active clients who require action and ensure plans are in place for at least one contact attempt to all viable referrals within 72 hours of referral submission
   *i) Action items include scheduled visits, post-MOUD follow-up, providing referrals to treatment locations, or any other related core program objectives.*
d) All ALS non-transport inventory must be present prior to checking online
   *i) This includes standard narcotic kits and CP MOUD narcotics kits*
e) Check in-service via radio-silent route when possible
f) Participate in EMS shift briefing and convey any applicable PORT1 events or other pertinent information for the day

2) **Program expectations prior to shift conclusion**:

a) Ensure any items that will affect the following shift's operations have been adequately documented throughout the shift and are up to date (i.e. medication dosing visits, outgoing referral status, details directly related to client care, etc.)
b) Attempt to adjust time of checking offline to allow for anticipated documentation needs
c) Ensure all daily events have been documented in Apricot and ESO prior to shift conclusion
d) Return all narcotics to secure storage and complete associated narcotic transfer documentation
e) Contact Communications directly by phone or radio to request the PORT be marked offline
f) Restock the unit's medical inventory to par and leave vehicle keys, radios, computers and gas card within PORT office

# II. Referral and Client Management

**1) New Referrals**

a) All incoming referrals should have a minimum of one contact attempt made within 24 hours, not to exceed 72 hours from referral creation.
*b) Contact examples include a phone call, a text message or an unscheduled visit*
c) New referrals should remain in the new referral status report until at least one of the following criteria are met:

i) Referral is determined to have no intervention or contact needed based on available information
ii) At least three referral contact attempts have been made with no successful contact, or without indication that the individual has interest in services
iii) Referral has resulted in '*MOUD treatment*' status or '*ongoing services required*' status

**2) <u>Active MOUD Patients</u>**

Daily responsibilities of active MOUD patients should include the following:

a) <u>Prioritizing daily PORT primary program functions over all other daily activities</u>
   *i) Exception to system surge status as referenced in EMS System Surge Status section*
*b)* Scheduling ongoing MOUD appointments for the following shift
*c)* Ensuring all appropriate documentation has been obtained for outgoing treatment referrals
*d)* Management and coordination of outgoing treatment referrals
*e)* Ensuring that confirmed outgoing referrals are scheduled and all logistical details and needs are documented

**3) <u>Non-MOUD Patients Receiving Services</u>**

PORT responsibilities for clients who are non-MOUD program service recipients should include the following until determined to no longer need services or until enrolled in MOUD services:

a) At least one weekly contact attempt to determine needs and schedule services accordingly
b) Efforts made to accommodate harm-reduction needs that are requested or offered to the client

**4) <u>Post-MOUD Services Follow-up</u>**

PORT responsibilities for clients who have concluded receiving program MOUD services directly from the PORT should include follow up at the following intervals

a) 1 week, 1 month, 3 months, 6 months, 1 year, 2 years
   i) This should include 1 successful contact attempt. If unable to successfully make contact, at least three attempts should be made in total.

# III. Dispatch and Response

A. The PORT must always report '*Crew A*' or '*Crew B*' to differentiate whether PSS is present on unit. This information should be conveyed upon any radio communication in which the unit is checking en-route to an incident.

   i. When utilizing radio silent means of communication, this information must be documented in the notes section.

B. Any Orange County Emergency Services employee that is not credentialed as an EMS provider may operate the PORT response vehicle for general transportation purposes but is restricted from operating the vehicle with emergency lights or sirens in any situation.

C. With exception of being the closest unit to an ECHO level call or adhering to EMD dispatch guidelines when assigned as an ALS independent response vehicle during surge status; the response vehicle is not permitted to travel with emergency lights or sirens engaged under any condition.

D. With the exception of being the closest unit to an ECHO level incident, the PORT may decline or elect to not initiate response to any of items a. and b. listed below in 'Active EMS Incidents' provided any of the following justifications:

   i. Response would impact a previously scheduled PORT primary program function
   ii. Response could result in considerable overtime accrual of a staff member
   iii. Excessive response distance to incident in relation to primary responding unit

   *These justifications are meant to serve as appropriate suggestions and the decision to decline an incident in which the unit has been dispatched to should be determined on a case-by-case basis with patient care, and program-level responsibilities of the highest consideration.*

**1) <u>ACTIVE EMS INCIDENTS</u>**

The Following are the four scenarios in which the PORT will or may respond to an active EMS incident when in-service. <u>Direct contact with, and approval from Northside or Southside EMS Battalion Chief is required prior to response to any incident not described below, with first attempt to be made to the EMS Battalion Chief associated with the location of the incident within the county.</u>

**a) <u>The PORT will be automatically dispatched as a secondary unit to all of the following EMDs:</u>**

i) **Overdose** – *All variants*
*ii)* **Mental Disorder/Behavioral** – *Only incidents that triggered an EMS response*
iii) **Public Assist** – *Only incidents which trigger/warrant an EMS response*

b) The PORT will be notified via CAD text for the following incident types. Response will be determined by the team based upon proximity and additional dispatch information determination:

   i) Unconscious/Fainting
   ii) Unknown Medical Problem
   iii) Falls (*Alpha/Bravo*)
   iv) All ECHO level incidents
      (1) *The PORT is expected to only respond to ECHO level incidents in which they are available and can reasonably determine to be the closest unit.*
      (2) *The PORT should remain on scene in these situations until at least the time that the minimum EMS units required per the associated determinant have arrived.*

c) Manual attachment to an active EMS dispatch of a PORT client or Program Client

   i) Examples include a perceived high-risk patient in which program staff has been unable to contact, a currently enrolled MOUD client, etc.

d) Manual attachment to any EMS incident in which secondary information or dispatch details indicate potential for call type to be related to program purpose.

   i) The PORT may self-initiate attachment to any EMS incident with reasonable impression that the incident is program related.

**2) SCHEDULED FOLLOW UP VISITS**

a) The PORT shall self-initiate a response to any pre-scheduled patient visits within Orange County. *Refer to 'self-initiated dispatch' section for further process guidance.*
   *i.) Examples of these incidents include post-overdose follow up, daily buprenorphine administration, in-person assessment, etc.*

**3) UNSCHEDULED VISITS**

a) The PORT may initiate an unscheduled visit at any location within Orange County that is believed to benefit a referred or imported potential client. This may include, but is not limited to, a referral received with no contact information provided, a referral where the team has been unable to make contact after repeat attempts, or a current program enrollee who is suddenly unable to be contacted.

b) Each of the following items must be in place or occur for an unscheduled visit to be initiated:

   i) Location is within geographic constraints of Orange County
   ii) Location address has been manually searched in Freedom and Apricot to rule out any documented safety-related premise alerts (Freedom) or client alerts (Apricot)
   iii) The PORT self-initiates incident over radio upon arrival on scene in place of silent dispatch

# IV. EMS System Utilization and Requests

A. With the exception of 'EMS System Surge Status', all of the following pathways shall occur as a conversation between the EMS Battalion Chief and the PORT Community Paramedic
B. With the exception of 'EMS System Surge Status' should any of the following requests be determined to have a high likelihood of impact on PORT primary functions or result in additional overtime pay of PORT staff, the PORT community paramedic reserves the ability to decline the request
C. With the exception of 'EMS System Surge Status', any of the following service requests should take place through direct phone contact with the PORT when possible, not as a request passing through communications.

**1) <u>GENERAL REQUEST FOR SERVICE</u>**

a) EMS Battalion Chiefs may request medical or program services of the PORT for any active EMS incident in which there is reason to believe that their presence would be advantageous to the incident or patient. The PORT cannot be utilized to replace a dispatched ambulance under any circumstances.

**2) <u>HIGH-RISK REFUSALS</u>**

a) EMS Battalion Chiefs may request the PORT in place of themselves for high-risk refusal scene response.

**3) EMS SYSTEM SURGE STATUS**

a) In the event that the EMS system consists of no available ALS units during any period in which the PORT is online, EMS Battalion Chiefs may utilize the PORT resource as an ALS non-transport unit until additional ALS units are available.
b) When requested in this situation, the PORT will transition to this role regardless of any scheduled primary program functions that this may impact and will become a system asset for the duration that no ALS unit is available.
c) If the PORT unit is reassigned in this manner, the PORT members are responsible for utilizing all available options to ensure that any scheduled dosing appointment occurring during that duration is addressed. This should include:

i. Initiating urgent contact to any scheduled patient that may be impacted
ii. Assessment of the urgency of the patient's needs to determine if further efforts are indicated
iii. Direct contact to EMS5 if there is no other option available to successfully supply the patient with their scheduled dose and a determination is made that the duration of time in which they will be without a dose will cause potential for harm

**4) ADDITIONAL RIDER REQUEST**

1) A PORT staff member (CP or PSS) may accompany an EMS unit within the ambulance in transport to the hospital as requested, provided all the following criteria are in place:
   a) PORT is present on the scene of the incident at time of transport departure
   b) Accompanying the EMS unit is not anticipated to impact any previously scheduled PORT primary program functions.
2) PORT is in 'Crew B' staffing at time of request
3) When this occurs, the second PORT member shall follow the transport unit to the destination in the PORT vehicle.

**5) ASSISTANCE WITH OTHER CHS PROGRAMS**

1) CP units may request assistance from PORT1 for daily services such as scheduled lift assist or transfer requests. These requests should be accepted as able and only if accepting the request will not be anticipated to interfere with any core PORT services.

# V. Self-Initiated Dispatch Standards

1) As it pertains to PORT program services, self-initiated dispatch shall only be utilized for scheduled visits within Orange County. This process is to be utilized in these situations to limit system radio traffic.

2) When utilizing this method, the PORT shall adhere to the following practices:

   a) Create the incident with advanced notice prior to the scheduled event to decrease the likelihood of being dispatched to another incident.
   b) Utilization of Freedom as follows:
      i) Create an event through the 'Self Init' button
      ii) Manually enter the address details of the event location
      iii) Select 'Community Paramedic Visit' in nature code section
      iv) Document applicable 'crew' status and any other pertinent information directly in the 'notes' section
      v) Check the 'Enroute' box prior to sending the notification as applicable
      vi) Upon arrival at the scheduled visit, mark on-scene via Freedom
      vii) Keep portable radio on-person and isolated to 'OPS 1' channel for duration of event
      viii) Utilize Freedom to clear from the event

# VI. Documentation

1) PORT 1 will utilize ESO PCR software and/or Apricot case management software for all client and patient interactions. This section is meant to define when the PORT CPs are to utilize ESO for documentation. ***See the Apricot PORT manual for details on Apricot documentation.***

2) An ESO incident shall be created anytime buprenorphine is induced or administered. If the PORT initiates buprenorphine on the scene of an active EMS incident in which the patient disposition of that incident is not transport, an additional incident number should be generated for PORT services.
   a) Utilize the 'MIH Visit' option for the run type section
   b) Utilize 'PORT Team' for the shift section
   c) Utilize 'non-transport-medical treatment (ALS Equipped)' for unit capability
   d) Utilize 'ALS-Community Paramedicine' for level of care
   e) Utilize 'EMS Special Service' for EMD Complaint

# VII. Narcotics and Secured Storage

1) PORT CPs will utilize badge access to retrieve narcotics at the beginning of each shift and to return narcotics to secured storage at the conclusion of each shift. In addition to the procedures outlined in this section, the CP must also adhere to the EMS Controlled Substances SOG.
2) Under no circumstances should PORT staff utilize their access to retrieve medical equipment for any other EMS units apart from EMS5 or EMS Battalion Chiefs unless

approved by direct supervisor or EMS-1 or EMS-2. Access to this area is limited to those with badge access.

3) When the PORT is online and narcotics are not on the CP's person, all narcotics kits must be locked in the glove compartment of the response vehicle.
4) PORT CPs must be in possession of at least one par 'CP MOUD' kit while in service. Possession and release of these kits must be documented in Operative IQ and shall be utilized according to the following inventory levels:
   a) Full Inventory Kit:
      i) (*10*) 8 mg buprenorphine + naloxone strips
      ii) (*5*) 4 mg buprenorphine + naloxone strips
   *b)* Minimum Par Kit (*minimum requirement for a PORT unit to remain in service):*
      *i)* ≥(5) 8 mg buprenorphine+naloxone strips
      *ii)* ≥(2) 4mg buprenorphine+naloxone strips
5) If a consultation with medical control dictates administration of a dose that is smaller than that available in current available inventory, medical direction will advise procedures for modifying a dose.

# VIII. MOUD Administration

In addition to all items present in the MOUD administration protocol, the following treatment requirements must be taken into consideration when providing induction, initiating gap coverage and administering ongoing MOUD:

1) Upon induction or initial dose of gap treatment, PORT1 must clearly communicate to the patient that PORT MOUD is a temporary service and that accepting this treatment implies commitment to engaging with and accepting ongoing treatment.

2) A maximum of seven consecutive days of MOUD treatment can be administered to each patient including the initial dose date.
   a) This is valid for induction or gap coverage treatment pathways
   b) If ongoing treatment services have not been established by the conclusion of that seven-day period, contact the Medical Director for further instruction
3) The following must occur during each MOUD administration:
   a) Confirmation of ongoing treatment dose for the patient is confirmed using all associated forms in case management software
   b) Standard baseline vital signs captured before and after each medication administration
   c) Administration event is documented in ESO in addition to case management software

4) With the exception of gap treatment clients in which another agency has agreed to provide ongoing treatment referrals in lieu of PORT, a concerted and urgent effort must be made to connect the client with ongoing treatment providers within the 7-day window of treatment.

# IX. MOUD Protocol – Additional Items

1) **Patients Under 18 Years of Age**
   These situations will be reviewed on a case-by-case basis. Direct contact with the Medical Director is required for this determination to be made.

2) **MOUD Treatment Requests Outside of Active Withdrawal**
   a) For any patient that is not in active withdrawal to be initiated on MOUD treatment, previously prescribed dose must be confirmed from the previous organization responsible for treatment and/or pharmacy.
   b) If a confirmed gap dose cannot be achieved with the current available medication inventory, utilize the next highest dose capable of being administered.
      i) i.*e. if the patient has a confirmed prescription of 10 mg and the PORT only has access to 8 mg and 4 mg films, 12 mg should be administered to the patient at their normal interval.*
   c) If the confirmed previous patient prescription consisted of dosing twice per day, contact the Medical Director for further guidance on whether to attempt to continue at this interval, or combine the two daily doses into one daily dose.

3) **Suboxone Induction - Second Daily Interval Request**
   In the event that a patient who was initiated on MOUD requests additional treatment within the same day of induction, the PORT must contact the Medical Director for guidance.

# X. Transport

1) The PORT may transport a client to any treatment location within Orange County as needed and available, never as a replacement in an EMS disposition pathway on an EMS incident.
2) Out-of-county transport will be reviewed on a case-by-case basis. Should a need for out-of-county transport arise, approval from EMS5 must be obtained.
3) *Any PORT staff member may decline transport if safety is of concern. Should any active member refuse, transport by either party shall not be initiated.*

# XI. Station Utilization

The PORT has designated space reserved at the Philip Nick Waters Building and at New Hope Fire Station 2. For geographic response proximity to all areas of the county, the expectation is for the unit to utilize one of these two locations during the majority of daily operations as able.

## XII. Staffing Coverage

1) If a designated PORT CP is unable to be present for a shift for any reason, the unit will adjust to a limited capacity operation with daily operations shifting to only satisfy primary program functions and continuation of these program functions.
2) The CHS Bureau Chief and appropriate staff will maintain an up to date on-call calendar for this purpose and will be the primary staff to fill this role as needed with the EMS Division Chief and EMS Deputy Chief reserved for secondary utilization.
3) PORT Community Paramedic Staff may also fill this on-call role, or the entirety of the vacant shift by direct approval from the CHS Bureau Chief or EMS Division Chief.

## XIII. Continuing Education

PORT CPs may attend continuing education during dates in which they are not assigned to a PORT shift.

## XIV. Ambulance Utilization for PORT EMS Staff

The PORT Community Paramedics may work additional EMS shifts if all of the following criteria are met:

- PORT CPs may only place a bid within 48 hours of the shift start time
- The assignment would not impact that staff members PORT schedule (directly or as an accumulation of maximum consecutive hours worked)
- The assignment would not result in the total number of hours worked during the week exceeding 72 hours.

If a PORT CP works a standard EMS shift, they are required to document the hours in which these shifts are worked and provide that detailed information to EMS5 at the conclusion of the pay period in order for those hours to be appropriately designated in KRONOS.

| Guideline Name: | | Department: |
|---|---|---|
| Safety and Personal Protective Equipment Policy | | **Orange County Emergency Medical Services** |

| Effective Date: | Issued: | Approval(s): Kim Woodward, EMS Division Chief |
|---|---|---|
| 1/15/2022 | 12/30/2022 | |

**Purpose**: To establish EMS Department expectations regarding safety in operations and the issuance, expected utilization, and required maintenance of employee issued Personal Protective Equipment (PPE).

**Scope**: This procedure applies to all members of the Emergency Medical Services (EMS) Division, including EMS Officers and Supervisors.

**Policy Statement:** EMS recognizes that employee safety is always the priority in operations, in particular the importance of PPE for the health and safety of personnel. EMS will provide, through a phased roll-out template, PPE in accordance with all directives from the Occupational Safety and Health Administration (OSHA), Orange County Risk Management, Orange County Human Resources, The North Carolina Office of EMS (NCOEMS), and other applicable agencies, to all personnel prior to assignment of emergency response duties.

## A. Employee Safety

It is expected that each and every employee approach every situation with the primary emphasis being on safety. Each employee should always maintain situational awareness as it pertains to their current activity in order to actively monitor for possible unsafe practices either by themselves or others, in each and every dimension of the job. To facilitate this, the following requirements established are:

1. All employees are authorized to stop any practice they witness and/or have received knowledge that the practice is likely to result in injury, liability, or other unfavorable outcome.

2. While on duty, every employee issued PPE under this policy is required to have in their possession all assigned PPE without exception. This includes any time that an employee is actively engaged in field operations, including, but not limited to, special event stand-by coverage, off-duty activation, and other like events.

3. All PPE shall be properly maintained, cleaned, and kept in sound working order in accordance to manufacturer guidelines at all times by the individual employee. These guidelines and the necessary materials or equipment to follow these

guidelines will be provided by the agency. This is to include the maintenance of any required records for respiratory protection equipment.

**B. Employer Issued PPE:**

Each employee will be provided the following equipment, with any quantity greater than 1 as noted:

1. Regular duty boots compliant with ANSI standards and OSHA 1910.136.
2. A jumpsuit type garment that is compliant to a minimum of the NFPA 1999 standard.
3. Protective helmet compliant at a minimum with NFPA 1971 (available on each ambulance).
4. Leather work gloves, approved by EMS leadership, for hand protection that are compliant to a minimum of the NFPA 1999 standard (available on each ambulance).
5. HexArmor EXT 4012 cut resistant heavy duty rescue gloves. ANSI/ISEA approved.
6. ANSI Level 2 traffic vest (available on each ambulance).
7. Eye protection compliant to NFPA 1999 and ANSI Z87.1 (available on each ambulance).
8. Gear bag for the storage and transportation of all PPE.
9. Other equipment as required for assignment to a specialty team.
10. The security and accountability of PPE is the responsibility of the employee.

**C. Employee Furnished PPE:**

1. Personnel are not permitted to wear protective clothing not issued to them by Orange County Emergency Medical Services without specific permission from the EMS Operations Chief or their designee [OSHA 1910.132(b)].

2. Employees wishing permission to use equipment not issued by OCES, shall place a written request to the Orange County Emergency Medical Services Operations Manager, via the chain of command, completely describing the need, the piece of equipment and its specifications in compliance with Section B.

3. This request to wear non-issued EMS equipment will be evaluated to determine if the equipment meets adopted standards and is a viable substitute. These requests will be evaluated in a timely manner and on a case by case basis.

4. Approved non-issued EMS equipment damaged due to circumstances of assigned duties shall be evaluated for replacement on a case by case basis.

## D. Intended Use of PPE

1. The protective jumpsuits are for use in any situation where the employee may reasonably come in contact with sharp edges, when the danger for abrasion or exposure supersedes the duty uniform, or when the potential for burn or fire exists. If any of these perceived or actual circumstances are in place the employee shall don personal protective clothing prior to initiating patient contact. Examples may include, but are not limited to, MVC's, construction/industrial emergencies, farm equipment emergencies, etc.

2. Protective helmets are for use in any situation where the employee may reasonably come in contact with sharp edges, in confined or congested spaces where the employee is subject to impact, when the potential for falling objects or projectiles exists, or when the potential for impact with moving objects exists [OSHA 1910.135]. Examples may include, but are not limited to, MVC's, construction/industrial emergencies, farm equipment emergencies, etc.

3. Protective eyewear is for use in any situation where there exists a potential for flying objects or for splashes from blood, body fluids, or other hazardous material and/or any other situation that threatens the eyes.

4. Protective footwear will be provided by EMS and be in compliance with OSHA 1910.136. The uniform boot will serve as the primary protective footwear measure for routine operations.

5. Leather gloves are for use in all situations where the reasonable expectation of sharp edges is present, compliant to NFPA 1999 standard.

6. HexArmor Gloves are used for vehicle extrication and in all situations where metal and glass hazards are present, to prevent the provider from suffering a hand injury.

7. Exam type non-latex gloves are for use in **all** patient contact scenarios and whenever blood or bodily fluids are present

8. Reflective traffic vests are for use at all incidents in or immediately near any area designated for the traffic flow of moving vehicles, including streets, highways, parking lots, and medians or other areas immediately adjacent to highways (23 C.F.R. Part 634) or in any circumstances directed by the operations manager.

9. An issued N95 face mask, or other appropriate respiratory protection device shall be donned and utilized as required by all EMS personnel compliant to OSHA Standard 1910.134

10. The training of the above equipment will be conducted or managed by the Orange County EMS Training Division.

E. Maintenance of PPE

1. Personnel shall maintain all assigned personal protective equipment in a deployable state of readiness at all times and in accordance with the manufacturer's guidelines. These guidelines will be made available from the Orange County Emergency Medical Services Training Division.

2. As required, the EMS jumpsuit and/or turnout gear shall be laundered per the manufacturers specifications (attached), never using chlorine bleach, in approved washers and dryers at approved locations.

Related Publications:
OSHA 1910.132 and 1910.136

| Guideline Name: | | Department: |
|---|---|---|
| Radio Discipline Guidance<br>Revision 01.00 | | Orange County Emergency Services |

| Effective Date: | Issued: | Approval(s): |
|---|---|---|
| January 21, 2014 | New | J. Groves<br>D. Jeffries |

Radio discipline is the process of using handheld, mobile and base station radios in a proper manner that will limit the amount of radio traffic, omit redundant radio traffic, and reduce radio transmission time.

## PURPOSE

The purpose of this guidance document is to have all OCES personnel understand and enforce good radio discipline. It provides a common radio use protocol to be used by all OCES employees for communication between field units (regardless of the agency), with supervisors, and with 9-1-1 Communications.

## INTENT

The intent of this guidance document is for all radio transmissions to be **clear, accurate, and brief.** Being brief will free the TalkGroup to enable other responding units to communicate with each other, and with 9-1-1 Communications. Note that being brief does not mean talking fast. Talking fast creates radio traffic that is difficult to understand, often having to be repeated. It also can excite or panic other responders and Telecommunicators. Be calm, be specific & accurate, be brief, and be done.

## GUIDANCE

A. Only use the National Incident Management System (NIMS) resource status indicators: Available, Assigned, or Out-of-Service.

B. When a Medic or EMT is in the passenger seat, the driver of the vehicle should not be using the radio or any other controls such as the emergency lights, sirens or horns. Full attention should be given to defensive driving and the passenger should perform these functions.

C. Radio discipline must be used to think through what is to be said before keying the microphone. Time is wasted and confusion is created when people talk over the radio without knowing what they want to say. Use and reinforce the ABC's of radio broadcasting:

   1. Accuracy – Provide correct and realistic information
   2. Brevity – Transmit only pertinent information
   3. Clarity – The message must be clear and understandable to the receiver

D. Chiefs, supervisors and EMS units should be the only radios making transmissions when acknowledging calls and responding to incidents.

   1. All other users should stay off the radio until they are on-scene and working on the assigned TalkGroup or TAC channel.

E. Radio transmissions should be clear and concise. It should provide just enough information to make sense to the person receiving the transmission. Useless traffic should be kept off of the radio.

   1. **Transmit only when needed**. Radio transmissions that do not provide or request critical information just create useless chatter. This creates additional noise for the end users to filter through and can quickly become a safety issue when communications or other units cannot be heard because there is too much non-critical radio traffic.

F. Radio transmissions should be professional and made with composure. Verbal tones and expressions should not be used.

      i. Speak in a clear, normal voice across the face of the microphone. Do not yell, become excited, or become agitated over the radio.

         1. Calmness will breed calmness and excitement/panic will breed excitement/panic. Keeping your composure will help instill calmness and confidence in your partner and others responding to the incident.

   2. Use plain text for all transmissions. Do not use 10 codes unless operationally specific information must be transmitted that way (i.e., Rape, Help, Bomb, etc.). Examples of 10-codes that staff should be familiar with include:

      10-18 Urgent

      10-33 Help Me (emergency)

      10-36 Secure the Radio

      10-45 Bomb threat/Suspicious Package

      10-66 Medical Examiner

      10-82 Rape/Sexual Assault

      10-96 Domestic Violence

G. If a transmission attempt is made over the radio and the unit/agency does not respond to your request immediately, wait *15 seconds* before trying to raise them over the radio again. They may be pre-occupied with operations, busy on another TalkGroup, dealing with another incident, or in the middle of a 9-1-1 call.

## PROCESS

"Blind" transmissions occur when someone calls another unit/officer on the radio without any previous contact. The receiving unit will probably not be expecting your transmission. When conducting blind transmissions, the unit making the request should use the "Hey you this is me," method of communication. Using the radio designator of the unit you wish to speak with first, before giving your unit designator alerts them that radio traffic will be coming their way. Example, if EMS-1 wants EMS-10 to change to the Admin Talk Group, the conversation would be:

| | |
|---|---|
| EMS-1 | "EMS-10 from EMS-1" |
| EMS-10 | "EMS-10" |
| EMS-1 | "Switch to EMS Admin and ..." |
| EMS-10 | "Copy" |

A. **RESPONSE**. When dispatched to an emergency call or other event, it is no longer a blind transmission. The "Hey you this is me" method is not necessary because Communications is expecting your radio transmission. Dispatch conversations would be:

| | |
|---|---|
| Communications | <dispatches Medic 1 to a call and assigns an Ops TalkGroup> |
| Medic 1 | "Medic 1 responding to (address) from (location)" |
| | NOTE: the location may be "quarters" if responding from a station, or address, or intersection. Keep it short. |
| Communications | "Medic 1 responding to (address) at (time)" |

B. **CLOSEST UNIT.** If 9-1-1 dispatches an EMS unit and you are the closer unit, you must advise 9-1-1 within 30 seconds that you will take the call, or **do not take the call at all.** There should be **NO** conversation on the radio about who is closer. Example, if Medic 5 is dispatched, but Medic 1 is closer:

| | |
|---|---|
| Medic 1 | "Communications from Medic 1" |
| Communications | "Medic 1" |
| Medic 1 | "Medic 1 responding to (location) for Medic 5" |
| Communications | "Medic 1 responding to (location) at (time)" |
| Medic 5 | "Medic 5 available" |
| Communications | "Medic 5 available at (time) |

C. **ARRIVAL**. When arriving at the scene, always specify the address to enable communications to validate your location.

| | |
|---|---|
| Medic 1 | "Medic 1 on-scene at (address)" |
| Communications | "Medic 1 on-scene at (time)" |

D. **TRANSPORT**. When departing the scene for the hospital, always specify the hospital you are transporting to in order for communications to validate that location.

| | |
|---|---|
| Medic 1 | "Medic 1 enroute to (hospital), (routine or hot)" |
| Communications | "Medic 1 enroute to (hospital) at (time)" |

E. **CLEARING THE CALL.** When clearing from the scene or clearing from the hospital, there may have been a significant time laps since the last radio transmission, which could lead to a blind transmission. When clearing, revert back to the "hey you this is me" communication method.

In addition, the words "clear and available" have been used when clearing a call. Consider that if a unit is "available" it should be obvious that it is "clear". *Omit the word "clear"*. Also, if the unit is Out-of-Service for any reason, briefly state the reason when clearing (decon, restocking, equipment, end of shift, etc.). Don't give a long narrative…keep it simple and short.

| | |
|---|---|
| Medic 1 | "Communications from Medic 1" |
| Communications | "Medic 1"" |
| Medic 1 | "Medic 1 available" or "Medic 1 Out-of-Service (reason) |
| Communications | "Medic 1 available or Out-of-Service at (time)" |

F. **START OF SHIFT/END OF SHIFT.** When beginning and ending a shift of duty, keep radio traffic short and simple and stick with the NIMS compliant resource status indicators.

**Start of Shift**

| | |
|---|---|
| Medic 5 | "Communications from Medic 5" |
| Communications | "Medic 5" |
| Medic 5 | "Medic 5 available in District 5" |
| Communications | "Medic 5 available at (time)" |

**End of Shift**

| | |
|---|---|
| Medic 5 | "Communications from Medic 5" |
| Communications | "Medic 5" |
| Medic 5 | "Medic 5 Out-of-Service…end of shift" |
| Communications | "Medic 5 Out-of-Service at (time)" |

G. **MAINTENANCE/TRAINING/OTHER.** When the truck is not available for assignment due to maintenance, staffing, or training, it is Out-of-Service. The reason is not important to announce over the radio as these conversations should have already taken place with the supervisor.

| | |
|---|---|
| Medic 1 | “Communications from Medic 1” |
| Communications | “Medic 1” |
| Medic 1 | “Medic 1 Out-of-Service for maintenance (or training)” |
| Communications | “Medic 1 Out-of-Service at (time)” |

| Guideline Name: | | Department: |
|---|---|---|
| Relief Battalion Chief Qualification, Roles and Responsibilities | | Orange County Emergency Services |

| Effective Date: | Issued: | Approval(s): |
|---|---|---|
| 02/05/2024 | 02/05/2024 | Kim Woodward, EMS Division Chief |

## Scope

Independent practicing paramedics who have met the minimum qualifications

## Purpose

The Relief Battalion Chief designator is classified as an additional Paramedic function. Having EMS Relief Battalion Chiefs will provide adequate coverage for the EMS Battalion Chief when long standing or urgent vacancies exist in the EMS Battalion Chief ranks. In addition, it will also open the opportunity for the Division to provide leadership, mentoring and career ladder for our paramedics.

## Definitions

Relief Battalion Chief: Paramedic working in the role of acting EMS Battalion Chief at the discretion of Chief of EMS and the Director of Emergency Services.

I. Qualifications
- **a.** Required:
  - **i.** Minimum of 2 years of experience as a released paramedic within the Orange County EMS System.
  - **ii.** No Disciplinary Action at the written warning level or higher in the last calendar year.
  - **iii.** Proficient or above on last annual evaluation
  - **iv.** Supervisor Recommendation (Current supervisor or former supervisor if moved to a new shift within six months)
- **b.** Required after Selection:
  - **i.** Successful completion of Supervisor Competency Training in FT Software
  - **ii.** Attend any offered professional development trainings
  - **iii.** Maintain good standing as a paramedic in our system.

II. Roles and Responsibilities of the Relief Battalion Chief:
Relief Battalion Chiefs shall:
- a. Communicate all activities within their work environment to the EMS Battalion Chief and/or EMS Chief or Deputy Chief upon request.
- b. Monitor the prompt update of unit status and system compliance by monitoring the CAD system and Automatic Vehicle Locator (AVL) mapping program.

Report any deficiencies identified to the Communications Division Supervisor or the EMS Battalion Chief.

c. Ensure in good order, a safe, secure and clean work space and vehicle. Report any deficiencies identified to the EMS Battalion Chief.
d. Complete any and all documentation, audits, surveillance and reporting of missing or deficient Orange County assets. In addition, ensure that staff are provided with the appropriate equipment and/or material, safety and medical/ clinical items to complete their assignments.
e. Respond proactively to incidents within the response area or as directed, including but not limited to:
    i. Potential or Actual Multiple Casualty Incidents (MCI)
    ii. Cardiac Arrests and Trauma assignments to coordinate the activities of all resources to optimize patient outcome/unit availability
    iii. Dual ambulance responses
    iv. Requests for assistance
    v. High Risk Refusals
    vi. Lift Assistance with or without first Responders
    vii. ALS Assists for BLS units where No Unit Available (NUA) exists
f. Support and expedite field units on assignments and in hospital emergency departments to reduce cycle times and emergency department turnaround times.
g. Perform Hospital site visits to assist in equipment retrieval
h. Participate in On-Shift training, when appropriate.
i. Respond to employee injuries and department vehicle accidents and incidents to ensure scene management and gathering of information.
j. Report any inappropriate actions as defined by County Ordinance and/or Department Policies to the Battalion Chief.
k. Coordinate the emergency scene, including EMS crews, rescue personnel, volunteers, transportation personnel, etc.
l. Establish Medical Branch/Group/Division at major incidents, as required.
m. Review patient care reports and other records for accuracy, completeness, and compliance with procedures.
n. Provide guidance, direction, and support to EMS personnel to assist them with difficult situations.
o. Participate in professional development activities.
p. Maintain all certifications to perform duties of subordinates as required to maintain competency in all EMS positions.
q. Ensure all written reports for the Division are complete, accurate, and compliant with applicable policies and procedures.
r. Use computer applications or other automated systems such as spreadsheets, word processing, calendar, e-mail and database software in performing work assignments.
s. Adhere to the department’s safety rules and regulations. Monitor and correct unsafe behaviors of staff.

Relief Battalion Chief shall not:

t. Maintain or change schedules. They may assist the EMS Battalion Chief with canvasing activities for shift vacancies.
u. Conduct formal employee meetings to discuss important issues or general work performance.
v. Assist with evaluating, counseling, and disciplining Emergency Medical Service staff.
w. Investigate complaints of unacceptable behavior or medical care provided by assigned personnel.

Revocation of the Relief Battalion Chief Assignment Privileges:

As this assignment is at the discretion of the Chief of EMS and the Director of Emergency Services, any action deemed inappropriate or any violations of personal conduct may result in immediate revocation from this assignment.

Loss of the privilege of Relief Battalion Chief for a minimum of 12 months shall occur for the following:

- Disciplinary Action at the Written warning level or higher
- Receiving an overall Needs Improvement evaluation rating.
- Substantiated Patient Care Complaints resulting in the medical disciplinary process
- Failing to Cover a Committed Shift

| Guideline Name: | | Department: |
|---|---|---|
| Relief CARE EMT | | Orange County Emergency Services |

| Effective Date: | Issued: | Approval(s): |
|---|---|---|
| July 1, 2025 | July 1, 2025 | Kim Woodward, EMS Division Chief |

## Scope

Independent practicing Emergency Medical Technicians (EMT) who have met the minimum qualifications defined herein.

## Purpose

The Relief Crisis Assistance, Response and Engagement team Emergency Medical Technician (CARE EMT) designator is classified as an additional EMT function. This designation will function to ensure medical services provided by the CARE team are maintained when standard CARE EMT staffing is unavailable.

## Definitions

CARE EMT: EMT working in the role of acting CARE EMT at the discretion of the Chief of EMS and the Director of Emergency Services.

## Qualifications

1. Required:
    a. Minimum of 1 year of experience as a released full-time EMT within the Orange County EMS system.
    b. Rating of proficient or above on most recent annual evaluation.
    c. Written recommendation from direct supervisor (Current supervisor or former supervisor if employee has been relocated to a new shift within six months).
    d. Current CIT certification **OR** ability to obtain CIT certification within 6 months of designation.
    e. No Disciplinary Action at the written warning level or higher within twelve months prior to designation posting.
    f. No revocation from prior Relief CARE EMT designation within the past twelve months of designation posting.

2. Required after Selection:
    a. Once candidates are selected, scheduling of the following requirements shall take place through the Bureau Chief of Community Health and Safety or designee.
    b. The following components shall be completed on the candidate's own time or on scheduled duty shift with prior approval from the on duty battalion chief as applicable.
        i. (1) 8-hour ride-along shift with a current CARE EMT

ii. In-person meeting with the Police Crisis Unit Supervisor of the Chapel Hill Police Department (CARE Team Supervisor)
iii. In-person meeting with EMS Bureau Chief of Community Health and Safety

**Roles and Responsibilities of the Relief CARE EMT:**

1. Relief CARE EMTs shall adhere to all standards and procedures defined within the CARE EMT SOG.

**Revocation of the Relief CARE EMT Assignment Privileges:**

1. As this assignment is at the discretion of the Chief of EMS and the Director of Emergency Services, any action deemed inappropriate, or any violations of personal conduct may result in immediate revocation from this assignment.

2. Loss of the privilege of Relief CARE EMT and an inability to re-apply for the position for a minimum of twelve months shall occur for any of the following:
    a. Disciplinary Action at the written warning level or higher
    b. Receiving an annual evaluation rating below 'proficient'
    c. Substantiated patient care complaints resulting in the medical disciplinary process

| Guideline Name: | | Department: |
|---|---|---|
| Shift Expectations | | Orange County Emergency Services |

| Effective Date: | Issued: | Approval(s): |
|---|---|---|
| July 1, 2017 | June 9, 2017 | Kim Woodward<br>EMS Operations Manager |

**PURPOSE**

To give guidance for the minimum shift requirements during the first ten (10) hours of each shift. The need for this guidance arises in part from our co-location with various Fire Department agencies. It lays out the minimum requirements and responsibilities that should be accomplished during the daytime portion of the shift. This SOG is designed to bring us more in line with the expected level of professionalism among our partner agencies. It should provide for consistency across shifts.

Many of our ambulances are co-located with our partner agencies. Sleeping during business hours can be perceived as unprofessional, unmotivated, and uncomfortable for our partner agencies, the general public and County officials.

**SCOPE**

This guideline applies to all operational members of the Emergency Medical Services (EMS) Division.

**POLICY**

**24 Hour Shifts**

All 24 hour shifts **between the hours of 0600 - 1600** there will be no sleeping while on duty. Those hours should be occupied by the following checklist in addition to daily operations. **There is no required time to stay up after 1600**.

**12 Hour Shifts**

There will be no sleeping.

If there are extenuating circumstances for the above requirements providers should address it with the Supervisor.

EMS supervisors and field personnel are to be held to the same standard.

The following is intended to lay out the current shift expectations but is by no means exclusive:

- Truck Check Off
- Wash Truck inside and out
- Check 214
- Check ePCR System Inbox for Rerouted Tickets
- Station Duties
- Map Study
- Training/Target Solutions
- Check eSchedule
- Partner Agency Outreach
- Check county email
- Check Kronos
- Police outside station (i.e. pick up trash and/orlitter)
- Completion of Special Assignments
- Other Duties as assigned for that shift

| Guideline Name: | | Department: |
|---|---|---|
| Shift Trades | | Orange County Emergency Services |

| Effective Date: | Issued: | Approval(s): Kim Woodward EMS Operations Manager |
|---|---|---|
| August 1, 2016 | August 15, 2016 | |

**PURPOSE**
To set forth policy and procedure for establishing a standard for notification, approval and scheduling implementation of shift trades in the Emergency Medical Service Division.

**SCOPE**
This procedure applies to all members of the Emergency Medical Services (EMS) Division including EMS Officers and Supervisors.

**DEFINITIONS**
**Shift Trade** – This is an agreement between two individuals of the same Position wishing to mutually change shifts within a given pay week.

**Position** - Refers to the provider level of care associated with employee.

**RESPONSIBILITY**
The responsibility of the shift trade lies with both individuals involved. Until a trade is approved, it is still the responsibility of the individual listed on eSchedule to man that shift. If approved and once eSchedule is updated, the assignment is now owned by the traded member.

**PROCEDURE**
The member wishing to trade shifts must find an equally positioned member within the same pay week. Once the two members agree, the member requesting the trade must write an email to his/her EMS Officer copying the other affected member and their EMS Officer. It MUST be documented via email. The request

a. Must be done no less than 5 days prior to the requested trade shift.
b. Must include the dates and times of shifts, medic unit, and providers involved.
c. The shift trade must be in the same pay week.
d. The shift trade cannot create overtime:
    i. No overtime shall be paid out outside the standard schedule (long week of 48-hours).
    ii. This includes trades that occur for the Friday into Saturday change of payroll week.
    iii. Partial trades can be put in place on either side but must be requested in separate emails.
e. The member accepting the trade shall reply by email in agreement.
f. Trades will be limited to one trade per month.
g. If approved, the members will carry out their shift responsibilities as agreed upon.

***NOTE:*** *If a trade involves a preceptor, the preceptee is NOT obligated to change shifts. If the preceptee wishes to move with their preceptor, this may be approved as long as there is a vacancy in the third position. FTEP is responsible for determining responsibilities if a preceptor is filling in.*

Once a shift trade email is received, the EMS Officers shall:

a. Review the schedule to ensure that no overtime is being accrued.
b. Make a determination to accept or deny the shift trade within 48 hours.
    - This allows the employee ample time to find a replacement.
    - If the denial is within the 5 day period the employee is given an additional 24 hours to find an appropriate trade. This is a one-time allowance in a given trade.
c. If approved
    - Ensure a follow-up email is sent to all parties involved.
    - Send the Scheduling Coordinator a copy with "Schedule (Shift Trade)" in the subject line.
    - Make the appropriate changes to eSchedule and note the request in the subject area.
    - ***NOTE:*** *BOTH EMS Officers of the individuals requesting trade MUST agree to the shift trade.*
d. The EMS Officer may deny and/or suspend shift trade shifts. If denied, the EMS Officer shall:
    - Reply to all members involved, stating reason for denial.
    - Copy the Deputy Operations Manager on all denials.
    - If denial is made within 5 day window, notify employee they have an additional 24 hours to find an approve trade.

EMS Operations Manager or Deputy Operation Manager shall:

i. Monitor the scheduling activities.
ii. Assume the role of EMS Officer for all shift trades involving EMS Officer Positions.
iii. Assure that all members regardless of title are held to this policy.
iv. Officiate over any disputes should there be a denial of a shift trade.
v. Be available as a resource and assist in areas of schedule concerns.

| Guideline Name: | | Department: |
|---|---|---|
| Temporary Provider Expectations | | Orange County Emergency Services |

| Effective Date: | Issued: | Approval(s): |
|---|---|---|
| June 1, 2023 | April 30, 2023 | |

**Scope**

All temporary Paramedics
All temporary Emergency Medical Technicians (EMTs)

**Purpose**

Paramedics operating in the system must, maintain certifications, be aware of changes in protocols, procedures and systems, and must practice regularly to maintain the knowledge and skills necessary to provide the level of care expected by Orange County Emergency Services.

**Definitions**

| | |
|---|---|
| Temporary Employee | A provider employed by Orange County Emergency Services EMS Division under the HR Classification of temporary employee, commonly referred to as a Part-Time or PRN Employee. Temporary employees do not earn benefits. |
| EMS System Plan | An overarching group of policies defining minimum requirements of the Orange County EMS System. The System Plan covers any agency providing ALS care or EMS Ground Transport. |

**Guidance**

I. **Training**
   a. Each temporary provider, wishing to be re-credentialed by OCEMS, must attend 100% of Orange County offered EMS continuing education at the required credential level, except where make up assignments are completed to the satisfaction of the training department as described below.
      I. Any absences must be made up through the training division
   b. Each temporary provider must attend 100% of Medic Director update Con-Ed
      I. Any absences must be made up through the training division
   c. Each temporary provider, regardless of certification level, must attend any other training deemed mandatory by EMS administration or Medical Direction.

II. **Credentials**

a. Paramedics
    I. Each temporary Paramedic must maintain compliance with the practice policy in the EMS system plan
    II. Each temporary Paramedic must maintain North Carolina Driving privileges through a North Carolina Driver's license or another appropriate driver's license with reciprocity in North Carolina.

b. EMT's
    I. Each temporary EMT must remain compliant with the practice policy in the EMS system plan
    II. Each temporary EMT must maintain North Carolina Driving privileges through a North Carolina Driver's license or another appropriate driver's license with reciprocity in North Carolina.

III. **Field Practice**

a. Availability and scheduling
    I. In an attempt for our department to remain compliant with the EMS system plan, all temporary field personnel must provide, on or before the 15th of the month prior, an availability of a minimum of **48 hours** for the following month. Failure to submit the minimum hours will result in administrative action up to and including separation.
    II. Availability submissions will be reviewed by the Temporary Employee supervisor between the 15th and 20th of the month for shift assignment.
    III. Temporary staff are expected to review the EMS Calendar and to notify their immediate supervisor with any conflict prior to the start of each month.
    IV. There is no expectation of temporary staff holding availability for unscheduled days after the 21st of the month.
    V. Scheduled leave of absences must be approved by the EMS Division Chief or their designee. Upon return from leaves of absence, the returning temporary provider will be subject to the System Provider Rentry Policy

**IV. Administrative Expectations**

a. Temporary Paramedic and EMTs must maintain access to Orange County Email as well as ensure that contact information is up to date in the required software. Changes to contact information should be brought to the attention of their direct supervisor.
b. Corrections to timesheets must be sent to the assigned supervisor as closely to the end of the pay period as possible. (Timesheets are pulled in and locked on Monday mornings following the end of the pay period, corrections sent in after this time will result in correct payment delay).
c. Uniform needs should be sent through the assigned supervisor.
d. Temporary providers are expected to meet with their direct supervisor bi-annually to discuss performance. Any temporary field personnel wishing to meet with their assigned supervisor should request such meeting via email.
e. No temporary employee may be scheduled more than 36 hours in one pay week. Accumulation of overtime is strictly prohibited. Pay weeks are calculated from Friday at midnight to the following Friday at midnight.

| Guideline Name: | | Department: |
|---|---|---|
| Non-Mandated Travel Training Requests | | Orange County Emergency Services |

| Effective Date: | Issued: | Approval(s): |
|---|---|---|
| August 1, 2016 | August 15, 2016 | Kim Woodward<br>EMS Operations Manager |

**PURPOSE**

- To outline the process that must be followed when an employee wishes to attended a training session that is not department mandated.
- To encourage professional development.
- To enable employees to attend classes and trainings conducted by outside agencies and organizations.
- To ensure trainings are distributed fairly across the division.
- To provide for more advanced planning as far out as the next fiscal year.
- To better plan and control costs associated with training, including but not limited to over-time for backfilling shifts.

**SCOPE**

This guideline applies to all members of the Emergency Medical Services (EMS) Division.

**DEFINITIONS**

- **Training -** a class, seminar, or workshop that enhances knowledge, skills, or proficiencies related to an employee's position

- **Travel** -
  - as defined in the Orange County Travel Policy
    - http://intranet.co.orange.nc.us/finance/documents/ORANGECOUNTYTRAVELPOLICYreviseddc10-30-2014a.pdf
  - any training that requires the use of a County vehicle
  - any training that requires any level of approved reimbursement by the County
  - any training that requires authorization from the Chief of the division or Department.

**PROCEDURE**

a. The employee must complete a *Training Request form*. This must be submitted to their immediate supervisor for review. Employees are encouraged to submit requests as early as possible, as much as a year in advance. Requests must be submitted a MINIMUM of eight (8) weeks prior to the training.
b. The Training Request form will require signatures of both the Training Coordinator and the Deputy Operations Manager.
c. Exception to the eight week notice will be reviewed on a case-by-case basis and will require the additional approval of the Operations Manager or their designee.

d. Any request that creates overtime for any reason (including back-filling a position) will require the additional approval of the Operations Manager.
e. Travel Requests shall be reviewed for the following before approval and booking:
    i. Cost and budget availability/constraints
    ii. Scheduling and continuity of operations
    iii. Personnel history
    iv. Training History
    v. Relevance of the training to job duties
    vi. Applicability of requested training to advancement of employee and goals and needs of OCES
    vii. Limitations as noted below
f. Limitations to requests:
    i. EMS administrative staff will work on planning training a year in advance for anticipated travel needs. This planning will be limited by annual budget allowances and its overtime constraints.
    ii. The County mandates that all Agency sponsored training (both mandated and non-mandated) must be paid-time. This imposes limitations based on the payroll and overtime budgets.
    iii. These limitations will mean there will be a limited pool of non-mandated training opportunities available each year. It will be the responsibility of Administrative staff to balance requests against that year's pool of non-mandated training opportunities available.
g. The participant must submit a summary of their training to the Training Coordinator upon their return. They must be prepared to present that summary to their peers. This is intended to facilitate the dissemination of knowledge throughout the system. Failure to meet this obligation may result in suspension of future travel training.
h. If the training is approved, it is the responsibility of the supervisor to inform the EMS Scheduler. Shifts must be covered and approved prior to travel. Until the employee is removed from the schedule it is still the responsibility of the individual listed on the schedule to man that shift.
i. If a request is denied at any point in the process, the person denying the request will document the reason on the form and return the request to the employee.
j. The County does not pay for the time it takes to travel.
k. Employee may only be reimbursed for actual time of training; no overtime will be generated during travel training.
l. For procedure and policy concerning reimbursement after travel please refer to the Orange County Travel Policy.

**CONDUCT**

a. During the course of travel and training, all staff members shall conduct themselves in a manner consistent with Orange County Emergency Medical Services SOGs and ETHOS.
b. Failure to conduct oneself appropriately during travel and training is grounds for disciplinary action and may result in the declination of future travel training requests and disciplinary action.

| **Policy Name:** | | **Department:** |
|---|---|---|
| Video Laryngoscopy | | Orange County Emergency Services |
| **Effective Date:** | **Issued:** | **Approval:** |
| 01/14/2019 | 08/06/2018 **Revised:** 01/14/2019 | |

**Policy:**

EMS providers should use video laryngoscopy in a manner consistent with the Adult Airway and Adult Failed Airway Protocols. The EMS provider shall follow the video laryngoscopy procedure to facilitate appropriate and timely airway management when Bag Valve Mask (BVM) management is inadequate. This policy provides guidance to the inventory and maintenance of the video laryngoscopy device.

**Scope:**

This policy shall apply to all credentialed personnel within the Orange County Emergency Services system whose scope of practice allows for the use of video laryngoscopy.

**Clinical Indications**

Refer to Procedure: "Airway: Video Laryngoscopy" for specific indications and contraindications. Indications and contraindications shall be used in conjunction with Orange County Emergency Services policies, procedures, and protocols.

**Recording and Uploading:**

- Prior to insertion of the blade into the mouth of the patient, the provider shall ensure that the video laryngoscope is recording the intubation attempt. The Airtraq Cameras are set to automatically record when attached to the laryngoscope blade, however providers shall ensure that the **REC** is visible at the top of the screen and that the Airtraq Camera is recording. All recordings shall be saved to the appropriate location as designated by the Quality Assurance/Quality Management (QA/QM) officer and/or their designee. Failure to record an attempt shall be reported to the QA/QM officer and/or their designee as soon as possible.

- Each Sunday, the video laryngoscope device shall be inspected to ensure adequate operation and the device charged completely.

**Disassembly and Disposal:**

- The Airtraq Laryngoscope Blade is a single use device.
- Separate the Airtraq Camera from the blade by gently pulling up on the Airtraq Camera.
- Remove the battery cover by pulling it away from the main body of the blade.
- Remove the batteries so that they may be properly recycled.
- Discard the Airtraq Laryngoscope Blade as any other potentially contaminated waste.

**Cleaning:**

- The Airtraq Camera shall be cleaned after every use. At a minimum, and with proper body substance isolations, remove all visible contaminant or foreign matter from the outside of the silicon case using only 70% Isopropyl Alcohol (Alcohol Wipes). You cannot use germicidal wipes on the silicon case. Allow the alcohol to evaporate completely.
- In the event that the Airtraq Camera is contaminated below the silicon case use proper body substance isolations and gently remove the silicon case from the Airtraq Camera.
- As above use only 70% Isopropyl Alcohol (Alcohol Wipes) to clean the silicon case. The Airtraq Camera can only be cleaned with PDI Sani-Cloth disposable germicidal wipes that are currently carried on the EMS units. Blot the Airtraq Camera dry with a clean towel.
- Do not rinse the Airtraq Camera under running water.
- Do not soak the Airtraq Camera in liquids.
- Avoid liquid or moisture from entering the Airtraq Camera.
- Avoid touching or contaminating the Airtraq Camera lens. If contaminated use a lens/eyeglass cloth to clean.
- Clean the Airtraq Camera touchscreen periodically with a lens/eyeglass cloth.

| Guideline Name: EMS Station: Waterstone Station Duties Revision 01.00 | | Department: Orange County Emergency Services |
|---|---|---|
| **Revision Date:** July 10, 2025 | **Issued:** September 8, 2023 | **Approval(s):** Kim Woodward, EMS Division Chief |

**Scope**
This Guideline applies to all Orange County EMS staff and staff operating in the OCES System.

**Purpose**
This policy is intended to describe how the Orange County Emergency Services EMS Division will maintain a clean and safe environment for all of their staff and visitors. Our stations are owned by the public and shall be maintained in a state of readiness at all times.

**Definitions**

**Daily Station Duties:** Station Duties that must be completed daily by every shift that are assigned to the station.

**Weekly/Monthly Station Duties:** These are station duties that must be completed in addition to the daily duties as scheduled in the policy.

**Daily Station Duties:**

- Sweep/Vacuum and mop all floors (hallway, sleep rooms, living room, bathrooms, and office) * See moping instructions under General Guidelines.
- Clean all countertops, stove, microwave, and exterior fridge.
- Clean all bathrooms, including lobby (toilets, sink and showers)
- Clean and put away all dishes/cookware.
- Inspect and if needed, wipe out all window sills
- Make sure all trash is taken out at beginning and/or end of each shift.
- Make there is no trash around exterior of station and parking lot.
- Complete ambulance check off in OP IQ
- Check washer and dryer
    - fold and store towels.
- Wash and Decon Ambulance
    - It is important to note that the Town of Hillsborough prohibits front apron vehicle washing as this is a stormwater violation and allows runoff to enter the creek.
    - Vehicles may be washed inside the bay or behind the station because runoff goes into the bio retention system. Either of these options are approved by the stormwater plan.

**Weekly Duties/Monthly Duties:**

**Sunday: Weekly Duties**

Deep Clean Kitchen

- Clean out refrigerator (remove all items that are not labeled or out of date)
- Wipe down all kitchen cabinets.
- Clean under the microwave and other moveable appliances.

**Saturday: Weekly Duties**

Deep Clean Ambulance Bay

- Sweep ambulance bay floor.
- Wash down ambulance bay floor with mild detergent and water.
- Squeegee excess water into drains due to oil trap in center of bay.

Wash all bed covers.

**Sunday: Monthly Duties**

- 1st Sunday: Wash accessible windows on EMS Ambulance Bay doors. Use of ladders to access windows is not permitted.
- 2nd Sunday: Wipe down all exterior of the lockers and chair rail down hallway.
- 3rd Sunday: Clean out Laundry/Decon room and mop floor.
- 4th Sunday: Clean all interior window seals.

**General Guidelines:**

- No personal foot lockers or storage containers. All personal items are to be placed into lockers.
- Only nonperishable food that is sealed or in a lock tight container are permitted in lockers.
- No personal appliances or donated items are to be brought to the station without approval of administration. Any non-approved items are subject to be removed without notification.
- No stickers or adhesive items are to be placed on lockers. Magnets or other non-adhesive require EMS supervisor approval.
- Nothing is to be mounted or hung on walls without the approval of administration and asset management services.
- Floor Care and Mopping Instructions:

    a) **Important Tips**
        i. Use only tribase multipurpose cleaner(#17) on the LVP Flooring.
        ii. LVP should be damp mopped utilizing microfiber pads
        iii. ***Do not use*** abrasive pads and cleaners including nylon scouring pads, steel wool, Comet TM, Soft Scrub, Fabuloso, etc., which will damage the finish.
        iv. Footprints and dirt easily wipe away with a moist cloth. Just wring cloth well before use.

v. It is recommended to remove any wet spills immediately to avoid liquid penetration into the joints.

vi. Use felt protectors, tennis balls, or approved nylon pads under furniture and replace all hard plastic or metal rollers on furniture with soft rubber rollers.

vii. Use caution when moving large appliances such as refrigerators, ranges, etc.

viii. Use protective mats at exterior entrances and in heavy traffic areas.

ix. Don't use "mop and shine" products. They will leave a dull film. The floors shall not be waxed or polished.

**b) Maintenance**

x. Laminate Flooring is extremely hygienic, and the easy care makes the floor virtually maintenance-free compared to another flooring.

xi. Routine cleaning only requires vacuuming, dust mopping or damp mopping. Utilized only the supplied floor cleaners provided by the logistics team. Larger marks and difficult stains can be easily removed with Acetone TM (nail polish remover) or other solvents containing alcohol.

- Floor Care and Mopping Instructions: Bathrooms
  - Bathroom floors are tile so you may use the Spartan Clean N Go Products located in the decon/laundry room.

**<u>Documentation</u>**

Station Duties as listed in this document shall be documented in the inventory software under the "questionnaire" section. The assignment will not be considered complete unless it is documented. Crews are responsible for completion of assignment including documentation by end of shift.

| Guideline Name: | | Department: |
|---|---|---|
| Efland Station Duties | | Orange County Emergency Services |

| Effective Date: | Issued Date: | Approval(s): |
|---|---|---|
| August 1, 2025 | July 14, 2025 | Kim Woodward, EMS Division Chief |

**Scope**

This Guideline applies to all Orange County EMS staff and staff operating in the OCES System.

**Purpose**

This policy is intended to describe how the Orange County Emergency Services EMS Division will maintain a clean and safe environment for all of their staff and visitors. Our stations are owned by the public and shall be maintained in a state of readiness at all times.

**Definitions**

**Daily Station Duties:** Station Duties that must be completed daily by every shift that are assigned to the station.

**Weekly/Monthly Station Duties:** These are station duties that must be completed in addition to the daily duties as scheduled in the policy.

**Daily Station Duties:**

- Sweep/Vacuum and mop all floors (hallway, sleep rooms, living room, bathrooms, and office) * See moping instructions under General Guidelines.
- Clean all countertops, stove, microwave, and exterior fridge.
- Clean all bathrooms, including lobby (toilets, sink and showers)
- Clean and put away all dishes/cookware.
- Inspect and if needed, wipe out all window sills
- Make sure all trash is taken out at beginning and/or end of each shift.
- Make there is no trash around exterior of station and parking lot.
- Complete ambulance check off in inventory management software.
- Wash and Decon Ambulance
    - Vehicles may be washed inside the bay rear pads
- Blow off area around front entrance door, front and rear pads.

EMS Station:
Efland Station Duties

**Weekly Duties/Monthly Duties:**

**Sunday: Weekly Duties**

Deep Clean Ambulance Bay

- Sweep or blow out ambulance bay floor.
- *Wash down ambulance bay floor with mild detergent and water.*
- *Squeegee excess water into drains due to oil trap in center of bay.*
- Wash all bed covers.

**Commented [KW1]:** Can we do these things with the new bay floor.

**Saturday: Weekly Duties**

Deep Clean Kitchen

- Clean out fridge (remove all items that are not labeled or out of date)
- Wipe down all kitchen cabinets
- Wipe under small appliances, including the microwave.

**Sunday: Monthly Duties**

Various

- 1st Sunday of the Month: Wash accessible windows on EMS Ambulance Bay doors. Use of ladders to access windows is not permitted.
- 2nd Sunday of the Month: Wipe down all exterior of the lockers and wipe down washer and dryer in the hallway laundry room.
- 3rd Sunday of the Month: Clean out Laundry/Decon room and mop floor.
- 4th Sunday of the Month: Clean all interior window seals which includes window that extends behind kitchen counter.

**General Guidelines:**

- No personal foot lockers or storage containers. All personal items are to be placed into lockers.
- Only nonperishable food that is sealed or in a lock tight container are permitted in lockers.
- No personal appliances or donated items are to be brought to the station without approval of administration. Any non-approved items are subject to be removed without notification.
- No stickers or adhesive items are to be placed on lockers. Magnets or other non-adhesives require EMS Battalion Chief approval.
- Nothing is to be mounted or hung on walls without the approval of administration and asset management services.

- Floor Care and Mopping Instructions: Kitchen and Hallways

**a) Important Tips**

i. Use only tribase multipurpose cleaner(#17) on the LVP Flooring.

ii. LVP should be damp mopped utilizing microfiber pads

iii. ***Do not use*** abrasive pads and cleaners including nylon scouring pads, steel wool, Comet TM, Soft Scrub, Fabuloso, etc., which will damage the finish.

iv. Footprints and dirt easily wipe away with a moist cloth. Just wring cloth well before use.

v. It is recommended to remove any wet spills immediately to avoid liquid penetration into the joints.

i. Use felt protectors, tennis balls, or approved nylon pads under furniture and replace all hard plastic or metal rollers on furniture with soft rubber rollers.

ii. Use caution when moving large appliances such as refrigerators, ranges, etc.

iii. Use protective mats at exterior entrances and in heavy traffic areas.

iv. Don't use "mop and shine" products. They will leave a dull film. The floors shall not be waxed or polished.

**b) Maintenance**

- Laminate Flooring is extremely hygienic, and the easy care makes the floor virtually maintenance-free compared to another flooring.

- Routine cleaning only requires vacuuming, dust mopping or damp mopping. Larger marks and difficult stains can be easily removed with Acetone TM (nail polish remover) or other solvents containing alcohol.

- Bathrooms and Secured Hallway
  These floors are tile so you may use any of the Spartan Clean N Go Products located in the janitorial closet.

**Documentation**

Station Duties as listed in this document shall be documented in the inventory software under the “questionnaire” section. The assignment will not be considered complete unless it is documented. Crews are responsible for completion of assignment including documentation by end of shift.

| **Guideline Name:** | | **Department:** |
|---|---|---|
| Experienced Paramedic FTEP Policy | | Orange County Emergency Services |
| **Effective Date:** | **Issued:** | **Approval:** |
| 01/05/2021 | 01/05/2021 **Revised:** 09/08/2021 | Kim Woodward, EMS Operations Manager |

## Purpose

Orange County Emergency Services EMS system recognizes that experienced paramedic providers do not require the same amount of training as newer personnel. These experienced paramedics often require less field training, but no pathway currently exists to accelerate their release process. Orange County Emergency Services EMS system shall use a different pathway for these providers to accelerate their release process into the field to resolve staffing problems while confirming their level of competency and meeting existing training requirements.

The purpose of this document is to provide a guideline for the process by which an experienced paramedic who:

1. Has 5 years of experience as a paramedic in North Carolina and;
2. Has spent a total of 5 years in EMS system(s) with no fewer than 15,000 calls per year; shall proceed through the Field Training and Evaluation Process (FTEP).

## Scope

This guideline applies to:

- All Paramedic cadets of the Orange County Emergency Services EMS system that meet the criteria above.
- All Orange County Emergency Services EMS personnel involved in Field Training.

## Definitions

**Cadet** – Any person who is hired into the Orange County Emergency Services EMS system who has not received a Release to Independent Practice Letter at the level of paramedic.
**Field Training Officer (FTO)** – A paramedic level provider who holds the position of Field Training Officer in Orange County.
**Field Training and Evaluation Program (FTEP) Coordinator** – Role assigned to an employee of the Orange County Emergency Services EMS division who supervises the cadets during the field training process.
**Indirect Precepting** – Precepting that takes place in which the cadet assumes patient care during transport of an ALS patient under the indirect guidance of a preceptor or FTO.
**New Employee Orientation (NEMO)** – An introductory instructional period for employees who have not previously been an employee of Orange County Emergency Services Emergency Medical Services division.
**Paramedic** – Any person who is hired as a paramedic, be it full time or temporary.
**Preceptor** – Any released person at the paramedic level who has been approved to train cadets in accordance with the EMS Preceptor Qualifications and Responsibilities policy. The preceptor shall not be in a medical investigative status or have received any disciplinary actions in the past 12 months.
**Probationary Indirect Precepting** – The first 72 hours of Indirect Precepting. Any patient who falls under a destination plan in which the hospital is notified of an alert is exempted from probationary indirect precepting.
**Remediation** – A course of action issued by the FTEP Coordinator or FTO to remedy a known deficit or problem.
**Third Rider Precepting** – Precepting under the direct oversight of an FTO or preceptor.

## Process

The Cadet will begin the Experienced Paramedic process after:

a. Successfully completing an Orange County Emergency Services NEMO class and;
b. Validation of required experience has been confirmed by the FTEP Coordinator or their designee.

The Cadet shall be issued a Field Training Officer (FTO) and an alternative preceptor of similar experience to the Cadet. Shift assignments shall be issued and approved by the FTEP Coordinator and posted on eSchedule.

*Timeframe*

The cadet will be initially scheduled for the following:

- Phase 1/2 – 120 hours (5 24 hour shifts or 10 12 hours shifts) total
- Phase 3 – 144 hours (6 24 hour shifts or 12 12 hour shifts)

Phase 1 and 2 are combined, with competencies and tasks for both phases being completed concordantly. Benchmarks for Phase 1/2 are as follows:

- 72 Hours – Completed required driving competencies, mileage, and transports. Schedule driver testing.
- 120 Hours – Completed Phase 2 competencies. Schedule Phase 2 Testing.

Phase 3 shall consist of 144 hours of training in the second provider role. The initial 72 hours shall be completed with the cadet leading any ALS calls that do not meet destination criteria and with approval of the preceptor. Final 72 hours shall consist of the cadet leading all calls with approval of the preceptor. Benchmarks are as follows:

- 72 Hours – Completed Probationary Indirect Precepting with a positive recommendation by FTO.
- 144 Hours – Completed FTEP. Schedule mock oral boards and oral boards with the Medical Director.

*Testing*

Upon recommendation of FTO, the cadet shall be eligible and complete the following testing:

Phase 1/2:

- Driver Testing
- Phase 1 Scenario Testing
- Protocol and Pharmacology Test
- ECG Test including rhythm and 12 Lead recognition
- Medical Director administered Integrated Out-of-Hospital Scenario.

Phase 3:

- Mock Oral Boards
- Oral Boards

*Remediation*

Phase 1/2:

- The FTO may extend the cadet's training by no more than 120 hours after consultation with the FTEP coordinator without placing a cadet on a Performance Improvement Plan (PIP). Further extensions of Field Training shall include a Performance Improvement Plan, the time of which is subject to approval by EMS administration.

Phase 3:

- No extensions are given without the written approval of the FTEP Coordinator. Failure to successfully complete any portion of testing or achieve the benchmarks noted above shall result in remediation of the Cadet. The Cadet shall be issued a Performance Improvement Plan, the time of which is subject to approval by EMS administration.

The Cadet may be issued a Performance Improvement Plan at the discretion of the FTEP Coordinator or their designee at any point in their Field Training.

| **Guideline Name:** | | **Department:** |
|---|---|---|
| FTEP Phase 2 and 3 | | Orange County Emergency Services |
| **Effective Date:** | **Issued:** | **Approval:** |
| 11/09/2020 | 11/05/2020 **Revised:** 06/04/2021 | Kimberly K. Woodward |

## Purpose

To provide a guideline for the process by which paramedic cadets may transition from third rider to second rider in the Orange County Emergency Services Emergency Medical Services system.

This process includes, but is not limited to:

- The steps that shall be accomplished prior to testing.
- Testing prior to trainee being allowed to operate with indirect oversight during transport of ALS patients.
- Transition of cadet from “third person” precepting to probationary indirect precepting to indirect precepting.

## Scope

This guideline applies to:

- All cadets of the Orange County Emergency Services EMS system who are within a training role as a paramedic.
- All Orange County Emergency Services EMS personnel involved in Field Training.

## Definitions

**Cadet** – Any person who is hired into the Orange County Emergency Services EMS system who has not received a Release to Independent Practice Letter at the level of paramedic.
**Field Training Officer (FTO)** – A paramedic level provider who holds the position of Field Training Officer in Orange County.
**Field Training and Evaluation Program (FTEP) Coordinator** – Role assigned to an employee of the Orange County Emergency Services EMS division who supervises the cadets during the field training process.
**Indirect Precepting** – Precepting that takes place in which the cadet assumes patient care during transport of an ALS patient under the indirect guidance of a preceptor or FTO.
**Paramedic** – Any person who is hired as a paramedic, be it full time or temporary.
**Preceptor** – Any released person at the paramedic level who has been approved to train cadets by the FTEP Coordinator or their designee and has two (2) years of paramedic level experience within the Orange County Emergency Services EMS system. The preceptor shall not be in a medical investigative status or have received any disciplinary actions in the past 12 months.
**Probationary Indirect Precepting** – The first 72 hours of Indirect Precepting. Any patient who falls under a destination plan in which the hospital is notified of an alert is exempted from probationary indirect precepting.
**Remediation** – A course of action issued by the FTEP Coordinator or FTO to remedy a known deficit or problem.
**Third Rider Precepting** – Precepting under the direct oversight of an FTO or preceptor.

## Process

The Cadet will begin the Phase 2 process after:

a. Successfully completing the Orange County Emergency Services Phase 1 while hired directly into a paramedic position or;
b. After entry into the FTEP process after successfully obtaining a paramedic credential from the State of North Carolina for paramedic academy participants.

- After entering Phase 2 of FTEP, the paramedic will be required to complete, at minimum, the following:

  a. 120 hours of Third Rider Precepting and;

  b. Completion of Second Rider Competencies.

- After the cadet completes the requirements above, their FTO shall render a recommendation to the FTEP coordinator as to eligibility Phase 2 testing.

- Phase 2 Testing for probationary indirect precepting shall take place after an affirmative FTO recommendation.

- After successfully completing all requirements cadet will begins probationary indirect precepting for ALS patients. After 72 hours of probationary indirect precepting, the FTO shall make a recommendation to the FTEP Coordinator to remove the probationary indirect precepting designation.

- Upon FTEP Coordinator approval, the probationary indirect precepting restrictions shall be removed, and the cadet shall assume the indirect precepting designation. The cadet shall be allowed to transport any ALS patient to the ED as lead provider with FTO and/or preceptor approval under the indirect precepting designation. The FTO or preceptor shall use good judgement of the paramedic cadet's abilities to perform acceptable patient care in compliance with Orange County EMS protocols before giving approval for indirect precepting for each ALS patient.

  *Testing*

  Upon recommendation of FTO according to the criteria noted above, the cadet shall be eligible for probationary indirect precepting testing. The test shall consist of the following:
  - Protocol and Pharmacology Test
  - ECG Test including Rhythm and 12 Lead recognition
  - Medical Director administered Integrated Out-of-Hospital Scenario.

  *Remediation*

  The FTO may extend the cadet's training by no more than 120 hours after consultation with the FTEP coordinator without placing a cadet on a Performance Improvement Plan (PIP). Further extensions of Field Training shall include a PIP, the time of which is subject to approval by EMS administration.

  Failure to successfully complete any portion of testing shall result in remediation of the Cadet. The Cadet shall be issued the following:
  - Probationary Indirect Precepting Testing

- Scenario Improvement Plan and\or
- Performance Improvement Plan

The Cadet may be issued a Performance Improvement Plan at the discretion of the FTEP Coordinator or their designee at any point in their Field Training.

| Phase 2 | Testing | Probationary Indirect Precepting | Indirect Precepting | | |
|---|---|---|---|---|---|
| Minimum 120 Hours, Second Rider Competencies | Protocol and Pharmacology Testing, 12 Lead and Rhythm Strip Testing, Integrated Out of Hospital Scenario | Minimum 72 Hours, No Destination Plan Criteria | Time Per FTO Training Plan, All Patients per FTO/Preceptor Discretion, must complete ALS Check Sheets and Scenario List before Oral Boards | Oral Board Prep | Oral Boards |

## Phase 2:

Minimum 120 Hours Third Rider

Second Rider Competencies Completed




## Testing:

Protocol and Pharmacology Test

12 Lead and Rhythm Strip Test

Medical Director Integrated Out-of-Hospital Scenario



## Probationary Indirect Precepting

Minimum 72 Hours

No Patients who meet Destination Plan Criteria




## Indirect Precepting

Time as per FTO Training Plan

All patients with the approval of FTO/Preceptor

Completion of ALS Checksheets and Scenario List prior to Oral Boards



# Oral Boards

| **Guideline Name:** | | **Department:** |
|---|---|---|
| FTEP Phase One | | Orange County Emergency Services |
| **Effective Date:** | **Issued:** | **Approval:** |
| 11/01/2019 | 10/17/2019 **Revised:** 07/18/2022 | Kim Woodward, EMS Division Chief |

## Purpose

To provide a guideline for the process by which all new cadets to the Orange County Emergency Services Emergency Medical Services system shall be either:

A. If hired as an Emergency Medical Technician – Basic (EMT), released to Independent Practice as an EMT.

B. If hired as a Paramedic, progress through Phase 1 of the process for release to Independent Practice as a Paramedic.

This process includes, but is not limited to:

- The steps that shall be accomplished prior to testing.
- Remediation process for areas of improvement.
- How the cadets shall either be released to:
  - Independent Practice as an EMT.
  - Released to Phase 2.

## Scope

This guideline applies to:

- All cadets of the Orange County Emergency Services EMS system who's Phase One start date is on or after the Effective Date noted above.
- All Orange County Emergency Services EMS personnel involved in Field Training.

## Definitions

**Cadet** – Any provider selected into the EMS System who has not completed all the requirements of the field training evaluation program and is not in independent practice. This provider requires medical supervision by a qualified independently practicing provider at or above their credential.
**Emergency Medical Technician (EMT)** – Any person who is hired as an Emergency Medical Technician – Basic, be it full time or temporary.
**Field Training Officer (FTO)** – A paramedic level provider who holds the position of Field Training Officer in Orange County.
**Field Training and Evaluation Program (FTEP) Coordinator** – Roles assigned to an employee of the Orange County Emergency Services EMS division who provides guidance to the FTOs and supervises the Cadets during the field training process.
**Full Time** – Any cadet who is hired by Orange County Emergency Services under a full time position as defined by Orange County policy.
**New Employee Orientation (NEMO)** – An introductory instructional period for employees who have not previously been an employee of Orange County Emergency Services Emergency Medical Services division.
**Paramedic** – Any credentialed person who is hired as a Paramedic, be it full time or temporary.
**Part Time** – Any cadet who is hired as part time or temporary, as defined by Orange County policy.
**Preceptor** – Any released person at the EMT or Paramedic level who has been approved to train Cadets by the FTEP Coordinator or their designee and meets the requirements of the FTEP Preceptor Qualifications policy.
**Remediation** – A course of action issued by the FTEP Coordinator or FTO to remedy a known deficit or problem.
**Similar EMS System** – An EMS system whose call volume is close to or exceeds the previous year's call volume in Orange County.
**Work Week** – Saturday at 0000 to Friday at 2359.

## Process

The Cadet will begin the Phase 1 process after successfully completing New Employee Orientation (NEMO). Upon completion of NEMO, the Cadet shall then be assigned to a Field Training Officer (FTO) and assigned a Preceptor(s) by the FTO or their designee. The Cadet will then begin their Field Training under the Preceptor(s) and begin accomplishing assigned tasks as set forth by the FTEP Coordinator or their designee, utilizing the FTEP Phase One Policy for guidance.

*Scheduling*

Full time cadets will be assigned to a shift-based schedule and accrue full time hours. Full time cadets will follow their assigned preceptors' schedule, except for:

- Time Trades
- Sick/Annual/Other Leave

Any schedule deviations require the advance approval of the FTEP Coordinator, in consultation with the FTO, in the event of time trades or leave requests.

Part Time cadets shall submit their availability no later than the 10th day of the third month prior, i.e. 3 months in advance, and are required to submit their availability prior to the completion of New Employee Orientation (NEMO) to the FTEP Coordinators. Cadets shall submit no less than 12 hours of availability per work week, defined as Saturday to Friday, within their designated preceptor's schedule. Failure to do so may, at the discretion of the FTEP Coordinator, be a violation of Orange County's work performance standards. (Chapter 28, Article IX, Section 28A1-2, a3, "Failure to meet established deadlines.") Work schedules shall be input into eSchedule by the FTEP Coordinator by the 20th day of the prior month of which the employee is to work. Any further changes after the prior listed date require the approval of the FTEP Coordinator. Part time employees shall not incur overtime, as per Orange County policy, without the approval of the EMS Division Chief.

Schedules shall begin at the start times listed on the official EMS schedule and shall consist of either 12 or 24 hour shifts. There shall be no shifts that start outside of the listed shift start times unless superseded by law, Orange County ordinance, or Orange County policy.

*Timeframe*

The Cadet's time in Phase One shall be of adequate length for the Cadet to complete their eligibility for all testing. The Cadet shall be initially scheduled for the 240 hours of training time as a 3rd rider after completion of NEMO.

These time frames are minimum requirements and may be extended. The following extensions may occur in any order:

- One (1) extension, to exceed no more than 168 hours of additional field training time, by the FTO during Phase One training.
- Any additional extensions are to be approved by the EMS Division Chief or designee with documentation and guidance from the FTEP Coordinator.

A cadet hired at the paramedic level with a minimum of one year of paramedic experience in a similar EMS system may, at the discretion of the FTEP Coordinator and FTO, complete Phase One in 120 hours so long as all other

requirements are met. This may be reverted to the 240 hour minimum requirement at the discretion of the FTEP Coordinator and FTO.

*Tasks*

Phase One shall consist of the following items during Field Training time but may be completed or started during NEMO. These items shall be finished prior to the completion of Phase 1:

- Completion of Phase One Skill Competencies
- EMT Protocol Test
- Non-Emergency Driver Testing
- Phase One TSOP

*Eligibility for Driver Testing*

To be eligible for Non-Emergency Driver testing, the Cadet shall have the following items completed and/or validated by the FTO:

- Emergency vehicle driver training as approved by Orange County, to include the classroom and practical portion.
- Verification from Preceptor that the Cadet can perform all tasks as noted on the Driver Competencies checklist in FT Software.
- Completion of the Driver's Log, meeting the minimum mileage as noted on the Driver's Log.

Once assignments are completed, the FTEP Coordinator shall receive notification of eligibility for testing from the FTO in writing, which shall state the test(s) in which the Cadet may participate. Testing prior to the notification of the FTEP Coordinator or validation by the FTEP Coordinator of their eligibility shall count towards the Cadets testing process.

*Eligibility for Phase One TSOP Testing*

To be eligible to test the Phase One TSOP testing, the Cadet shall have the following items completed and/or validate by the FTO:

- Completion of the EMT Skills Checkoff in FT Software.
- Successful completion of 10 documented scenarios given by the preceptor.
- EMT Protocol Test
- Written approval for Phase One TSOP from their preceptor and FTO.
- Additional tasks assigned by the FTEP Coordinator and/or FTO to the Cadet, whereas the Cadet was directed to complete the tasks prior to their eligibility for Phase One TSOP.

*Additional Testing*

Additional testing may be added at the request of the FTEP Coordinator or their designee. The Cadet shall receive written notice, with reasonable time no less than 24 scheduled field training hours, from the FTEP Coordinator or their designee prior to any additional testing.

*Process Notes*

The Phase One TSOP may be given by the FTEP Coordinator or their designee at any point in training once an Eligibility to Test Letter has been issued. The Medical Director or their designee may attend or lead the scenario at their discretion.

*Remediation*

Failure to successfully complete any portion of testing shall result in remediation of the Cadet. The Cadet shall be issued the following:

- Non-Emergency Driver Testing
    - Driver Improvement Plan
- Phase One TSOP
    - Scenario Improvement Plan

The Cadet may be issued a Performance Improvement Plan at the discretion of the FTEP Coordinator or their designee at any point in their Field Training.

The time and content of the remediation shall be issued by the FTEP Coordinator or their designee in writing.

*Completion of Phase 1*

The Cadet shall be considered to have successfully completed the Phase 1 process when all testing is completed, and the following shall occur:

EMT: The Cadet shall be issued a Release to Independent Practice Letter and be considered to have successfully completed Field Training.

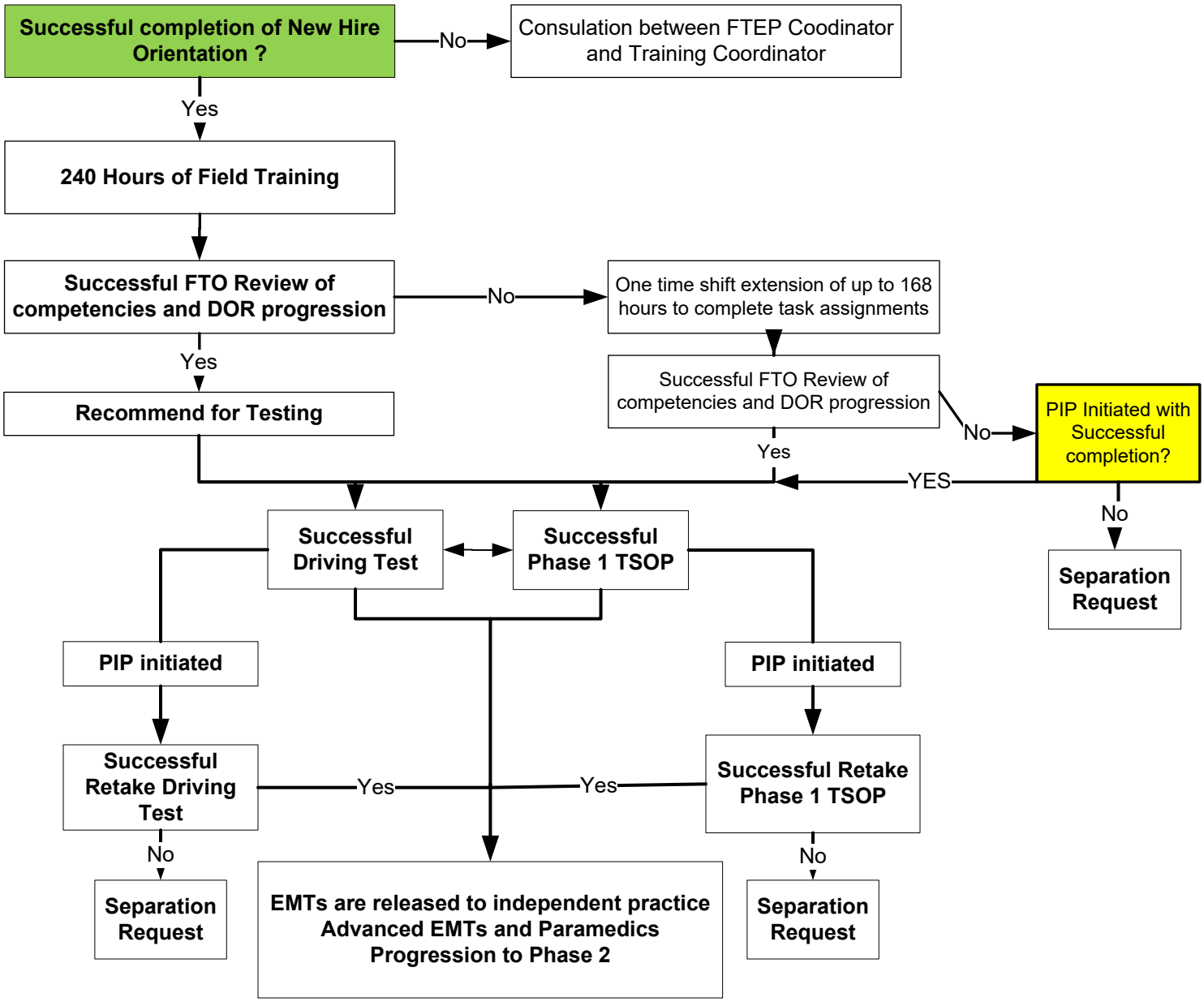
Paramedic: The Cadet shall be considered to successfully passed Phase 1 of Field Training and progress to Phase 2. The Cadet shall not be issued a Release to Independent Practice Letter at the EMT level.

# FTEP Phase 1

**History**

- Successful completion of assessment center
- Successful completion of all new hire requirements

- **Glossary**
- FTEP – Field Training Evaluation Program
- DOR – Daily Observation Report found in the Field Training Online Software
- PIP – Performance Improvement Plan




**Pearls**

- Cadets who are not able to complete new hire orientation due to circumstances beyond their control may be assigned tasks through target solutions, FTO or preceptors tasks with consultation of the Training Coordinator and FTEP coordinator. Failure to complete New Hire Orientation due to unexcused absenteeism, or tardiness, poor performance or personal conduct issues will result in separation requests.
- Competencies can be found in the Field Training Online software under the requirements tab.
- If it is deemed impossible to complete competencies in the 168 shift extension, the FTO may initiate a PIP and the FTEP Coordinator may request a further extension to the EMS Division Chief.
- At any time through out the process, the FTO may initiate a PIP
- Any extension beyond 168 hours requires the advanced approval of the EMS Division Chief
- Paramedics who complete Phase 1 advance to Phase 2 and are not to be cut loose as EMTs

| Guideline Name: | | Department: |
|---|---|---|
| EMS Preceptor Qualifications and Responsibilities | | Orange County Emergency Services |
| **Effective Date:** 05/01/2021 | **Issued:** 04/15/2021 **Revised:** | **Approval(s):** Kim Woodward, EMS Operations Manager |

**Purpose**

In an effort to provide a quality prehospital experience to the EMS Student/Cadet, the EMS preceptor will assist with the prehospital training, supervision and evaluation of skills performed by students enrolled in affiliated training programs and providers participating in the Field Training Evaluation Program. A preceptor demonstrates critical thinking in initiating patient care protocols, leadership and clinical proficiency; and serves as a mentor to the Student/Cadet.

**Scope**

Independently practicing Paramedics and EMTs who have met the minimum qualifications who provide training to paramedic students, paramedic and EMT new hires. EMT Students are not covered by this guidance and may ride on any ambulance in the system.

**Qualifications**

Required:

- Minimum of six months of fully released experience within the Orange County EMS System with at least six additional months of independent practice experience at the same level in any EMS System.
- Letter of recommendation co-signed by the shift supervisor and FTO.
- Current in all required trainings.

Required within 6 months after selection:

- Completion of Orange County Preceptor I Course.

Recommended with in the first six months after selection:

- One year of fully released experience with the Orange County EMS System
- On-line preceptor/FTO course completion

Recommended within first year:

- Instructor Methodology completion

**Responsibilities**

1. Assists the Student/Cadet in the development of patient assessment techniques, communications, and documentation practices, overall patient management and other technical skills, while they make the transition to the team lead role.
2. Maintains an ongoing awareness of the EMS Student's/Cadet advancing skill level and communicates the need for remediation to the FTO.
3. Working knowledge of the goals and objectives of the FTEP program and/or student syllabus.
4. Communicates feedback of skills, scene management, and operational knowledge to Student/Cadet in both written and verbal summary.
5. Responsible at all times for the quality of patient care delivered. The preceptor is expected to assume management of the patient at any time the Student/Cadet does not provide appropriate care in a timely manner.
6. Responsible for knowledge of the Orange County Ambulance driving policy.
7. Responsible for demonstrating our Department's ETHOS through actions and ensuring student/Cadet adheres to our ETHOS.
8. Responsible for reviewing EMS protocols, procedures, and policies.
9. Responsible for reviewing all EMS Standard Operating Guidelines.
10. Responsible for completion of the Cadet/Student's required daily documentation.

| Guideline Name: | | Department: |
|---|---|---|
| **Medical Disciplinary Procedure** | | Orange County Emergency Services |
| **Effective Date:** | **Revised:** | **Approval(s):** |
| March 1st 2020 | August 10th, 2020 | Kim Woodward, EMS Operations Manager |

**Medical Disciplinary Procedure**

**I. Objective**

- To define the process and procedure for medical disciplinary actions of Orange County Emergency Medical Services System personnel in an effort to improve individual and EMS System performance.

**II. Scope**

- This guideline is applicable to all clinical care providers of the Orange County EMS System.

**III. Policy Requirements**

- To review medical practice related items, not job performance
- In Orange County, a provider's right to practice medicine is supervised under the Medical Director's license to practice medicine. For the purposes of this policy, a "provider" is any individual practicing in the Orange County EMS system at the level of Medical Responder or higher.

**IV. Purpose**

V. To establish guidelines for conducting a Medical Review Board and a Medical Disciplinary Review of all potential violations of Orange County Emergency Medical Services Protocols, Procedures, Policies, and / or Standard Operating Guidelines.

VI. To ensure that any person or entity who is the subject of the Medical Disciplinary Process is afforded a fair, thorough and impartial procedure.

**VII. Just Culture**

- **Orange County EMS employs a "Just Culture" approach to medical errors. Incidents involving human error are expected to occur as part of the practice of medicine. When such incidents are identified, the goal is to provide a fair and consistent approach towards investigation of adverse events. These incidents may also provide opportunity to identify system-wide improvements to ensure safer and appropriate patient care.Self reporting of incidents is encouraged and expected.**

## VIII. Medical Disciplinary Process Procedure

If, in the opinion of the Medical Director, an action (or failure to act) on the part of a provider is of such a nature that the action or failure to act is inconsistent with, or a violation of, the protocols, or the practice standard generally accepted in the medical community, the actions described below shall occur.

1. Upon completion of a Medical Inquiry Review, once an event has come to the attention of the Medical Director and the decision to convene a Medical Review Board is indicated, the provider will be notified in writing of the issue/concern that merits attention, and a Medical Review Board process will be initiated.
    a. Notice to the provider will include a written description of the case involved, the level of concern, the policies/protocols that were involved, and the date of the Medical Review Board. A minimum of 2 days notice will be provided between notice to provider and the date of the Medical Review Board. **See Appendix 1 the standard notification memo they will receive.**
    b. Notwithstanding this written-notice provision, based on the severity and nature of the act (or failure to act), the Medical Director may suspend a providers credential to practice in Orange County upon receipt of information sufficient in the judgment of the Medical Director to support immediate suspension in the interests of patient safety. If the Medical Director invokes an immediate suspension, this shall be followed by written notice within three (3) working days of such immediate suspension.

2. A written explanation by the individual explaining the incident shall be presented to the Medical Director within five (5) working days of receipt of the Medical Director's issues/concerns, prior to the meeting of the Medical Review Board. If no written explanation of the incident is sent to the Medical Director by that deadline, the Medical Director may base his decision upon such preexisting documentation and what is discussed at the Medical Review Board.

3. The Medical Review Board
   The purpose of the Medical Review Board is to review significant events as recommended through the Medical Review process; however, the Medical Director has ultimate authority for the medical care provided by OCEMS personnel.
    a. Activation:
        i. Once the decision has been made to activate a Medical Review Board, it will be convened within 10 business days after completion of initial inquiry (baring extenuating circumstances).
    b. Composition of the Review Board:
        i. A minimum of three (3) Orange County EMS System Personnel (who may be):
            1. *The Medical Director or designee (Chair)
            2. *A Paramedic, EMT, or Medical Responder Peer (from appropriate agency)
            3. *Orange County Emergency Services EMS Administrator as designated by the Orange County EMS System Administrator
            4. Agency Quality Assurance or Training Coordinator

        * indicates it is a mandatory position that must be filled

ii. A panel member may request to the Chair to be recused from a specific review for extenuating circumstances.

c. Leveling:
    i. Level 1
        1. This level typically indicates an outcome of no additional action required by the provider.
            a. Recommendations may include protocol revision and/or system wide training.
        2. An example of Level 1 review board would be:
            a. Protocol noncompliance where there is determination that system protocol "drift" may be the root cause.
    ii. Level 2
        1. This level typically indicates an outcome of remediation plan with a possibility of medical director action.
        2. An example of Level 2 review board would be:
            a. Treating a patient's condition in the scope of a protocol, however misidentifying the proper differential. I.e. giving a calcium channel blocker to a septic patient with narrow complex tachycardia.
    iii. Level 3
        1. This level is for the most serious actions and may necessitate investigatory suspension recommendation upon EMS Operations Manager (or designee) consultation with the Emergency Services Director and Medical Director.
        2. An example of Level 3 review board would be:
            a. Engaging in any deliberate act of commission or omission that could have an adverse effect on a patient. I.e. giving a patient versed for a behavioral emergency and then allowing the patient to refuse transport.

d. Duties of the Review Board:
    i. Review all material gathered during the inquiry
    ii. Request any additional material as needed
    iii. Meet as a panel with the Orange County System person involved
    iv.
    v. The Medical Review Board will have the opportunity to ask any relevant questions to assist them in determining the appropriateness of the provider's actions.
    vi. The role of the peer is to provide insight into whether the actions of the provider represent the standard prehospital medical practice of the system at that provider level, and whether there are systemic errors that may have contributed to the case.
    vii. Once all case information is presented, the MRB will discuss the case privately. A consensus decision will be made based on a majority vote. Recommendations on disciplinary action and or remediation will be included in the summary, along with a timeframe for completion of remediation.
    viii. The Medical Review Board will issue a disposition on the matter including:

1. No action required
2. System Improvement Plan
3. Individual Remediation Plan
    a. The QA Coordinator, Training Coordinator, and Provider's direct Supervisor (or appropriate Officer) will work together to enact the plan
    b. The definition of a Remediation Plan is included in the Medical Inquiry Process Policy
4. Referral to EMS Operations Manager (or appropriate Officer) regarding Work Performance Concerns
5. Medical Director Action
    a. Medical Practice Warning
    b. Require re-precepting at the approved level
    c. Temporary suspension of all practice privileges or suspension of specific practice privileges with an associated remediation to return privileges
    d. Permanent suspension of practice privileges

ix. All final decisions for medical issues will be made by the Medical Director

e. A formal written summary of the findings of the panel shall be provided within 5 business days after the Medical Review Panel meeting.

i. An additional three (3) business days can be utilized for edits or amendments by the EMS System Administrator or Medical Director for final written report.
ii. Within five (5) business days of finalized written report, the OCEMS Operations Manager shall provide a report to the OCES Director with a recommended outcome
iii. All finalized documentation will be signed by the Medical Review Board Panel and then reviewed by the EMS System Administrator, Medical Director, OCES Director, and appropriate officer of affiliated organization.

4. If the findings are exceptionally concerning, the NC Office of EMS may be notified in writing of the circumstances and decision within seven (7) business days of the final determination.

5. After the individual is notified of the Medical Review Board decision, he/she may appeal to the Orange County Peer Review Committee's Appeal Committee (PRAC) any decision **related to suspension or revocation of the providers' credential.** The purpose of this committee is to review any action taken against a provider's credential- it is not of the purpose of the committee to discuss remediation plans. This appeal request must be presented within five (5) business days of the decision by the Medical Director, to the Medical Director for referral to the Peer Review Committee.
    a. The Peer Review Appeal Committee will meet within five (5) business days after the receipt of the written appeal request.
        i. Composition of the Peer Review Appeal Committee (PRAC): A minimum of five (5) people will sit on the appeal committee.

1. A Senior Assistant Medical Director who was not present in the original Medical Review Board, who will be designated as the chair of the Appeal Committee.
2. Two Orange County EMS Peers at the same training level as the provider in question
3. Two other member of the Peer Review Committee, who were not part of the original Medical Review Board

6. Discussion of the Findings of the Medical Review Board
    a. Medical Review Boards are considered part of the Peer Review Process
    b. As part of the Peer Review, the investigation, findings, discussion, is considered confidential and protected by North Carolina General Statute 90-21.22A.
    c. Discussion of any Medical Review Board outside of the processes described here is prohibited.
7. Suspension of Credentials
    a. The Medical Director may suspend the provider's credentials if it is determined that continued practice by the provider would pose a threat or danger to the public.
    b. Suspension of local credentials is **NOT** a revocation of the North Carolina Office of EMS certification.
    c. Suspension of credentials may be temporary or permanent.
    d. Any suspension of credentials may be appealed via the process described herein.
    e. In any case of the suspension of local credentials, the EMS System Administrator and the Agency Director/Chief will be notified.
    f. The Medical Director is not involved with Human Resource processes, such as hiring or dismissal.

8. Peer Review Appeal Committee Process:

    a. Once the PRAC session begins, the provider will have a maximum of 30 minutes to present their case.
        i. Presentation may include documentation, witnesses, exhibits, etc.
        ii. Legal counsel may be present but may not participate in the hearing.
    b. Once the provider concludes, or after 30 minutes, whichever comes first, the PRAC may ask questions of the provider.
    c. After the provider has discussed their case and been asked questions by the PRAC, the Medical Director will have a maximum of 30 minutes to present their case.
        i. Presentation may include documentation, witnesses, exhibits, etc.
    d. Once the Medical Director concludes, or after 30 minutes, whichever comes first, the PRAC members may ask questions of the Medical Director.
    e. Once both the provider and Medical Director are heard, the PRAC will discuss the case in a closed session.
    f. After discussion of the case, the PRAC will discuss and vote one of the following options. A simple majority vote will make the recommendation to the medical director to:
        i. Overturn the penalty on the EMS provider
        ii. Accept the MRB decision as indicated

iii. Accept the findings of the MRB, but consider a lesser penalty
iv. Accept the findings of the MRB, but consider a greater penalty

g. The final recommendation of the PRAC will be provided in a written format with the justifications for their decision to the medical director.
h. The ultimate decision over credentialing will be made by the EMS System Medical Director.
i. Failure to attend the scheduled meeting will result in affirmation of the original decision and terminate any right to further appeal.

Definitions:

1. **Medical Inquiry Review-** review performed by the Quality Assurance Officer related to any issue brought to his attention that raises concerns about the quality of care provided.
2. **Medical Review Board-** Panel made up of a minimum of 3 individuals (Provider Peer, Medical Director, and OCES Administrator) who will review significant events as recommended through the Medical Review process to determine best actions to be taken.
3. **Self-Reporting-** the reporting of any incident/error by the provider(s) involved. This report must be made to the employee's chain of command, QA officer, Medical Director, or any combination thereof immediately following the incident in question. Incidents discovered in any other manner will not be considered as "self -reported".
4. **Credential-** the right for a provider to practice in any medical capacity involving patient care in Orange County.
5. **Standard prehospital medical practice**- the care a reasonable and prudent EMS practitioner of like experience and credentialing would provide in a similar situation.
6. **Peer**- any other field EMS provider in the OCEMS System. Peers may not be supervisory to the provider(s) subject to the investigation.
7. **Peer Review Appeal Committee**- A committee that is made up of a senior Assistant Medical Director not present in the original Medical Review Board, two Orange County EMS peers, and two other members of the Peer Review Committee, whose responsibility is to review any action taken against a provider's credential should the provider request an appeal.

APPENDIX 1: Notice of Medical Review Board Memorandum

*CONFIDENTIAL MEMORANDUM*

TO:
FROM:
Date:
SUBJECT: Notice of Medical Review Board

This is to confirm _____ oral notice to you on (Date), that a Medical Review Board (MRB) will be held on (Date at Location at Time), in accordance with Orange County EMS Medical Disciplinary Procedure. The reason for this MRB is to complete an investigation of the following allegation(s):

- 

A medical inquiry was conducted for the following run number(s):

- 

It has been determined that after review of the incident If, there may be an action (or failure to act) on your part is of such a nature that the action or failure to act is inconsistent with, or a violation of, the protocols, or the practice standard generally accepted in the medical community.

The following Protocols, Policies or Procedures applying to this inquiry.

- 

You will need to provide a written explanation describing the incident to the quality assurance coordinator who will present your statement to the Medical Director within five (5) working days of receipt of this notice or prior to the meeting of the Medical Review Board. If no written explanation of the incident is sent to the quality assurance coordinator prior to the MRB, the Medical Director may base their decision upon such preexisting documentation and what is discussed at the MRB.

Based upon review of the medical inquiry findings the Level of this MRB has been determined to be:
(Choose one of these)
Level 1
Level 2
Level 3

Thank you for your cooperation in this matter. If you have any questions regarding your status, please feel free to talk with Kim Woodward, EMS Operations Manager at 919-245-6133, or me.

By my signature here, I am acknowledging that I have received the foregoing Notice of Medical Review Board, dated _____.

_____

Signature Date

cc: Dr. Joseph Grover
Kim Woodward, EMS Operations Manager
Chris Pope, Deputy EMS Operations Manager

| Guideline Name: | | Department: |
|---|---|---|
| **Medical Inquiry Procedure** | | Orange County Emergency Services |
| **Effective Date:** | **Revised:** | **Approval(s):** |
| March 1st, 2020 | November 17th, 2022 | Kim Woodward, EMS Operations Manager |

**Medical Inquiry Procedure**

## I. Objective

- To define the process and procedure for inquiry actions of Orange County Emergency Medical Services System personnel in an effort to improve individual and EMS System performance.

## II. Scope

- This guideline is applicable to all clinical care providers of the Orange County EMS System.

## III. Policy Requirements

- To review medical practice related items, or identify job performance items
- Practicing within the authority delegated by the Orange County Emergency Services Medical Director is the individual responsibility of each medical practitioner.
- The Medical Director has ultimate authority for the medical care provided by Orange County Emergency Services Personnel.

## IV. Purpose

- To establish guidelines for conducting administrative inquiry of commendations and / or potential violations of Orange County Emergency Medical Services System Protocols, Procedures, Policies, and / or Standard Operating Guidelines.
- To ensure that any person or entity who is the subject of an administrative inquiry is afforded appropriate recognition, and a fair, thorough and impartial inquiry.

## V. Review Process Procedure

1. The review process begins with identification of actions such as (but not limited to):
    - commendable actions or care provided
        - patient praise, partner agency compliment, or OCES kudos
    - innovative initiatives benefiting the System or Agency
    - non-compliance with protocol
    - deviation from medical care policy
    - practicing outside scope of practice
    - patient abandonment or neglect
    - falsification of patient records
    - adverse patient outcome, resultant from provider care
    - poor medical decision-making
    - complaint about medical care
    - routine QA reviews

2. Once a need for review and inquiry is established, the official request must come from either the System Administrator or the Medical Director in writing. Inquiry suggestions may be recommended or requested by any provider within the system

3. Once initiated, the Orange County EMS Quality Assurance Coordinator or, in their absence, a member of the EMS Administrative Team, will perform an inquiry and review available information as noted below:
    - Review ePCR
    - Review of incident reports by all personnel involved (if applicable)
    - Review of documented accounts from patient or public
    - Review outcome or hospital data (if available)
    - Review first person accounts of those involved (including outside agencies on scene)
    - Review any other relevant information that pertains to the event
    - Notification and Consultation with Direct Supervisor or applicable Officer

4. Within five (5) business days of the inquiry initiation, the EMS Quality Assurance Coordinator will provide a written brief for review by the Medical Director and EMS System Administrator to include (but not limited to):
    - Crew members involved
    - Event description
    - Call Review and Outcome Findings
    - Root cause analysis
    - Recommendations

5. Once the inquiry is complete, the outcome may include one or more of the following as decided by the Medical Director and EMS System Administrator:
    - Commendation
    - No action required
    - Case / Call Review, which may include
        - Non-disciplinary coaching
        - Performance improvement recommendations not requiring a remediation plan
        - Additional discussion of even in detail
    - A System Improvement Plan
    - Individual Remediation Plan without Medical Review Board
        - QA Coordinator, Training Coordinator, and Provider's direct Supervisor (or applicable Officer) will work together to draft appropriate, opportunity specific plan
        - The Medical Director will approve this plan prior to execution
        - The definition of a Remediation Plan is included at the end of this policy
    - Work performance concern - referral to EMS Operations Manager or applicable Officer
    - Medical Review Board

6. After completion of the Inquiry and an outcome has been rendered, providers – and their direct supervisor – will be notified, in writing, of the decision within five (5) business days.

7. Definition of a Remediation Plan
    - Remediation is a “deliberate educational activity designed to correct deficits identified during formal and informal evaluations” per National Guidelines for Educating EMS Instructors
    - A Remediation Plan:
        - Must identify error or deficiencies
        - Must identify factors that lead to the issue
        - Consequences or potential consequences of action
            - How the issue can be prevented in the future?
        - Actions to be completed
            - Timeline and deadline
        - Identify the opportunity for improvement
        - Establish a corrective plan of action
        - Execute the plan with deadlines
            - Measure the outcome
        - Approval from Medical Director

Orange County
Emergency Services
A Prepared, Coordinated, and Integrated Emergency Services System
E-911 | Fire Marshal | EMS | Emergency Management

**DIRECTOR**

**DATE:** June 21, 2024

**TO:** All Emergency Services Personnel

**FROM:** W. Kirby Saunders, Emergency Services Director WKS

**SUBJECT:** **INTERIM DIRECTIVE – FIRE/EMS EMERGENCY, EVACUATION, MAYDAY**

---

The Public Safety Communications Division has finalized division policy (C607) to implement changes to the procedures for emergency activations, emergency requests for assistance, mayday situations, and emergency evacuations. These changes were made collaboratively with the Orange County Fire/EMS Chiefs to implement best practices and uniform handling of emergency situations involving Fire/EMS units.

This interim directive is to provide guidance to all ES personnel who utilize a departmental 800 mhz. radio (field personnel) while a department-wide policy is in final development. Public Safety Communications staff should refer to latest version of SOP C607.

**RADIO EMERGENCY BUTTON ACTIVATIONS**

Mobile and portable radios on the VIPER system are equipped with an emergency button that may be activated during life-threatening situations. The button is located on the mobile and portable radio chassis as well as the portable radio remote speaker/microphone. Emergency button activations will be treated as actual emergencies until verified to be otherwise.

**Emergency Button activations where Command is not established**

a. Whenever possible, communicate the need for emergency assistance using plain language. The emergency button should only be activated when in distress and plain language communication is not possible (trapped, unable to communicate, unsafe scene, held hostage, etc.).

b. When pressed, OCES radios will revert to the “Emergency” talkgroup.

c. ONE ATTEMPT at contact will be made by communications to unit to obtain a status check.

d. If the activation is inadvertent/accidental, the unit will reply **“(Unit Number), accidental activation”** (or similar).

e. If the reply from the unit is anything other than verbiage indicating the activation was accidental, law enforcement will immediately be dispatched to the unit’s location (if known). If the location is unknown, communications will attempt to confirm the unit’s

location using all available means. If unable to locate, the unit's Battalion Chief/Department Officer will be contacted for further direction.

f. Once the situation is determined to be resolved, Communications will announce the return to normal radio traffic.

**Verbal Emergency Requests for Assistance**

A verbal emergency request for assistance denotes fire and/or EMS personnel transmitting a verbal mayday or other emergency request for assistance with or without the activation of their radio emergency button.

a. If conditions prohibit plain language transmissions, the responder will verbally transmit their unit number and "SIGNAL 33" as an indication emergency assistance is needed.

b. Communications will acknowledge the receipt of the request while refraining from using terminology that may indicate an emergency in an unsecured environment.

c. Communications will follow their procedures to immediately dispatch law enforcement to the unit location or last known/AVL location. If unknown, Communications will attempt to confirm the location. If unable to locate, the unit's Battalion Chief/Department Officer will be contacted for further direction.

**Emergency Evacuation Signal**

The Emergency Evacuation Signal will be transmitted at the request/direction of the IC when the IC determines all personnel must evacuate a structure or hazardous area.

a. Upon request of the IC to activate the Emergency Evacuation signal, the Telecommunicator assigned to the Fire/EMS OPS position will simulcast Alert Tone 2 for three (3) seconds, and;

b. Broadcast **"All personnel operating at (incident location) – an emergency evacuation has been ordered. Apparatus on scene sound air horns according to procedure."**

c. The IC will ensure that Personnel Accountability Report (PAR) is conducted.

d. Upon completion, the telecommunicator will announce the all-clear by issuing an alert tone and broadcasting **"The Emergency Evacuation is complete. All personnel accounted for."**

e. If the PAR indicates all personnel are not accounted for, the telecommunicator will revert to the mayday procedures outlined in their policy.

**Resetting an Activated OCES Radio**

Once the emergency situation is determined to be resolved, Communications will announce the return of normal radio traffic. The end radio user will need to deactivate their emergency signal.

a. To reset an activated radio, the user should press and hold the emergency button on the activated radio for at least two seconds until the radio is reset or power cycle the unit.

b. Changing talkgroups or transmitting on an OCES activated radio may result in additional activations.

| CODE | PROTOCOL | Status? | Adopt / Changes? |
|---|---|---|---|
| UP0 | well person | | Unchanged |
| UP1 | universal PT care | | Unchanged |
| UP2 | triage | | Unchanged |
| UP3 | abdo pain | | Ondansetron now AEMT level |
| UP4 | AMS | | Unchanged |
| UP5 | back pain | | Unchanged |
| UP6 | IV/IO access | | Unchanged |
| UP7 | dental problems | | Unchanged |
| UP8 | central lines | | Unchanged |
| UP9 | epistaxis | | Unchanged |
| UP10 | fever/infection | | Unchanged |
| UP11 | pain control | | Ketamine and Nitrus added! |
| UP12 | police custody | | Unchanged |
| UP13 | seizure | | Unchanged |
| UP14 | suspected stroke | | replaced lapss with CSS |
| UP15 | suspected sepsis | | Unchanged |
| UP16 | syncope | | Unchanged |
| UP17 | behavioral health crisis | | Unchanged |
| UP18 | behavioral health sedation | | added BLS perscription medication |
| UP19 | excited delirium | | ketamine removed |

| | CODE | PROTOCOL | Status? | Adopt / Changes? |
|---|---|---|---|---|
| y | AC1 | adult asystole/PEA | | epi changes |
| | AC2 | brasycardia with pulse | | ketamine or fentanyl for pacing, now BP dependant |
| | AC3 | cardiac arrest adult | | Unchanged |
| | AC4 | chest pain cardiac /STEMI | | Unchanged |
| | AC5 | CHF /pulmonary edema | | ketamine with medical direction for CPAP |
| | AC6 | adult narrow complex tachy | | BP dependant, Fentanyl for cardioversion |
| | AC7 | adult monomorphic wide tachy | | BP dependant, Fentanyl for cardioversion |
| | AC8 | adult polymorphic tachy wide | | BP dependant, Fentanyl for cardioversion, added considerations |
| | AC9 | v-fib /pulseless v-tach | | epi changes, lido added |
| | AC10 | post ROSC | | Unchanged |
| | AC11 | team CPR | | Unchanged |
| | AC12 | termination of CPR | | Unchanged |
| | AC13 | temperature management | | Unchanged |
| | AC14 | VAD/LVAD | | Unchanged |
| u | AC15 | mechanical circulation | | Unchanged |
| | AC16 | wearabe cardiovert /defib vest | | Unchanged |
| | AM1 | allergic rxn /anaphylaxis | | steroid now AEMT |
| | AM2 | diabetic adult | | glucogon now EMT |
| u | AM3 | dialysis/renal failure | | Unchanged |
| y | AM4 | hypertension | | Unchanged |

| CODE | PROTOCOL | Status? | Adopt / Changes? |
|---|---|---|---|
| AR1 | adult airway | | Unchanged |
| AR2 | adult failed airway | | Unchanged |
| AR3 | airway drug assisted | | NOT ADOPTED |
| AR4 | adult COPD, asthma, resp distress | | added ketamine, made steroid AEMT |
| AR5 | peds airway | | Unchanged |
| AR6 | peds failed airway | | Unchanged |
| AR7 | peds asthma/resp distress | | Steroids for AEMT |
| AR8 | post intubation /BIAD management | | ketamine removed |
| AR9 | ventilator emergencies | | Unchanged |
| AR10 | tracheostomy tube emergencies | | Unchanged |
| AR11 | adult mechanical ventilation | | NOT ADOPTED |
| TB1 | blast injury /incident | | Unchanged |
| TB2 | chemical /electrical burn | | Unchanged |
| TB3 | crush syndrome | | Unchanged |
| TB4 | extremity trauma | | Unchanged |
| TB5 | head trauma | | Unchanged |
| TB6 | multiple trauma | | increased TXA dose |
| TB7 | radiation incident | | Unchanged |
| TB8 | selective spinal motion restriction | | Unchanged |
| TB9 | thermal burn | | Unchanged |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| UP20 | inebriate person | | Unchanged | AM5 | hypotension /shock | | changed levophed to norepienphrine | TB10 | traumatic cardiac arrest | NOT ADOPTED |
| UP21 | mobile crisis | | Unchanged | AM 6 | suspected stroke, activte TPA | | NOT ADOPTED | | | |
| UP22 | fall risk | | Unchanged | | | | | | | |
| UP23 | alternate destination | | Unchanged | | | | | | | |

| CODE | PROTOCOL | Status? | Adopt / Changes? |
|---|---|---|---|
| AO1 | childbirth/labor | | added pitocin |
| AO2 | newly born | | Unchanged |
| AO3 | OB emergency | | removed med control for txa |
| PC1 | peds asystole /PEA | | Unchanged |
| PC2 | peds brady with poor perfusion | | Unchanged |
| PC3 | peds pulmonary edema /CHF | | Unchanged |
| PC4 | peds cardiac arrest | | Unchanged |
| PC5 | peds tachy narrow | | versed removed |
| PC6 | peds tachy wide | | versed removed |
| PC7 | peds v-fib /pulseless v-tach | | Unchanged |
| PC8 | peds post ROSC | | Unchanged |
| PM1 | peds allergic rxn | | steroid now AEMT |
| PM2 | peds diabetic | | unchanged |
| PM3 | peds hypotension /shock | | Unchanged |

| CODE | PROTOCOL | Status? | Adopt / Changes? |
|---|---|---|---|
| TE1 | bites and envenomations | | Unchanged |
| TE2 | carbon monoixde /cyanide | | Unchanged |
| TE3 | drowning | | Unchanged |
| TE4 | hyperthermia | | Unchanged |
| TE5 | hypothermia /frostbite | | Unchanged |
| TE6 | marine envenomations /injury | | Unchanged |
| TE7 | OD/toxic ingestion | | Unchanged |
| TE8 | WMD-nerve agent | | Unchanged |
| SC1 | viral hemorrhagic fever /ebola | | Unchanged |
| SC2 | high consequence pathogens | | Unchanged |
| SC3 | hospice /palliative care | | Unchanged |
| SC4 | pandemic CPR | | Retired |
| SO1 | scene rehabd general | | Unchanged |

| CODE | PROTOCOL | Status? | Adopt / Changes? |
|---|---|---|---|
| UP0 | well person | | New |
| UP1 | universal PT care | | Adopted, pulse ox manditory |
| UP2 | triage | | Not adopted, maintained previous version |
| UP3 | abdo pain | | Adopted, added "as indicated" for 12 lead EKG |
| UP4 | AMS | | Adopted, No change |
| UP5 | back pain | | Adopted, No change |
| UP6 | IV/IO access | | Adopted, No change |
| UP7 | dental problems | | Adopted, No change |
| UP8 | central lines | | Adopted, No change |
| UP9 | epistaxis | | Adopted, No change |
| UP10 | fever/infection | | Adopted, re-organized peds / adult doses |
| UP11 | pain control | | Adopted, reduced fentanyl and toradol maximums |
| UP12 | police custody | | Adopted, No change |
| UP13 | seizure | | Adopted, reduced versed doses |
| UP14 | suspected stroke | | Not adopted, maintained previous version |
| UP15 | suspected sepsis | | Not adopted, maintained previous version |
| UP16 | syncope | | Adopted, No change |
| UP17 | behavioral health crisis | | Adopted, No change |
| UP18 | behavioral health sedation | | Adopted, No change |
| UP19 | excited delirium | | Adopted, No change |
| UP20 | inebriate person | | No changes |
| UP21 | mobile crisis | | No changes |
| UP22 | fall risk | | No changes |

| CODE | PROTOCOL | Status? | Adopt / Changes? |
|---|---|---|---|
| AC1 | adult asystole/PEA | | No changes |
| AC2 | brasycardia with pulse | | No changes |
| AC3 | cardiac arrest adult | | No changes |
| AC4 | chest pain cardiac /STEMI | | No changes |
| AC5 | CHF /pulmonary edema | | No changes |
| AC6 | adult narrow complex tachy | | Adjusted initial sychronized recommendations and adjusted initial diltiazem dose - consideration for metoprolol |
| AC7 | adult monomorphic wide tachy | | Adopted, changed verbage for unstable, |
| AC8 | adult polymorphic tachy wide | | No changes |
| AC9 | v-fib /pulseless v-tach | | No changes |
| AC10 | post ROSC | | No changes |
| AC11 | team CPR | | No changes |
| AC12 | termination of CPR | | No changes |
| AC13 | temperature management | | No changes |
| AC14 | VAD/LVAD | | No changes |
| AC15 | mechanical circulation | | No changes |
| AC16 | wearabe cardiovert /defib vest | | No changes |
| AM1 | allergic rxn /anaphylaxis | | Merged Moderate and Severe flow charts, adopted pearls |
| AM2 | diabetic adult | | Adopted, added note on Metformin |
| AM3 | dialysis/renal failure | | Adopted, added albuterol back to hyperK symptoms |
| AM4 | hypertension | | Adopted, added "as indicated" for 12 lead EKG |
| AM5 | hypotension /shock | | Used Stokes County template - included push dose pressors |
| AM 6 | suspected stroke, activte TPA | | NOT ADOPTED |

| CODE | PROTOCOL | Status? | Adopt / Changes? |
|---|---|---|---|
| AR1 | adult airway | | Adopted, No change |
| AR2 | adult failed airway | | Adopted, added medical control contact |
| AR3 | airway drug assisted | | NOT ADOPTED |
| AR4 | adult COPD, asthma, resp distress | | Adopted, removed medical direction contact requirement in pearls |
| AR5 | peds airway | | Adopted, No change |
| AR6 | peds failed airway | | Adopted, No change |
| AR7 | peds asthma/resp distress | | Adopted, No change |
| AR8 | post intubation /BIAD management | | Adopted, No change |
| AR9 | ventilator emergencies | | Adopted, No change |
| AR10 | tracheostomy tube emergencies | | Adopted, No change |
| AR11 | adult mechanical ventilation | | NOT ADOPTED |
| TB1 | blasdt injury /incident | | No changes |
| TB2 | chemical /electrical burn | | No changes |
| TB3 | crush syndrome | | Adopted, No change |
| TB4 | extremity trauma | | No changes |
| TB5 | head trauma | | Adpoted, added previous recommendations for EtCO2 and SBP |
| TB6 | multiple trauma | | Adopted, Adjusted TXA perameters |
| TB7 | radiation incident | | No changes |
| TB8 | selective spinal motion restriction | | No changes |
| TB9 | thermal burn | | Adopted, No change |
| TB10 | traumatic cardiac arrest | | NOT ADOPTED |

| CODE | PROTOCOL | Status? | Adopt / Changes? |
|---|---|---|---|
| AO1 | childbirth/labor | | Adopted, added viability and cord clamping |
| AO2 | newly born | | Adpoted, removed hyperventilation rate |
| AO3 | OB emergency | | Adopted, increased mag dose, TXA requires med control |
| PC1 | peds asystole /PEA | | Not updated |
| PC2 | peds brady with poor perfusion | | Not updated |
| PC3 | peds pulmonary edema /CHF | | Not updated |
| PC4 | peds cardiac arrest | | Not updated |
| PC5 | peds tachy narrow | | Not updated |
| PC6 | peds tachy wide | | Adopted, removed amioderone in Pearls, adjusted versed dose |
| PC7 | peds v-fib /pulseless v-tach | | Not updated |
| PC8 | peds post ROSC | | Not updated |
| PM1 | peds allergic rxn | | Merged Moderate and Severe flow charts, adopted pearls |
| PM2 | peds diabetic | | Adopted, Simiplified Hypoglycemia arm |
| PM3 | peds hypotension /shock | | Adopted, added vasporessors |

| CODE | PROTOCOL | Status? | Adopt / Changes? |
|---|---|---|---|
| TE1 | bites and envenomations | | Adopted, No change |
| TE2 | carbon monoixde /cyanide | | Adopted, No change |
| TE3 | drowning | | Adopted, No change |
| TE4 | hyperthermia | | Adopted |
| TE5 | hypothermia /frostbite | | Adopted, No change |
| TE6 | marine envenomations /injury | | Adopted, No change |
| TE7 | OD/toxic ingestion | | Adopted, No change |
| TE8 | WMD-nerve agent | | Adopted, No change |
| SC1 | viral hemorrhagic fever /ebola | | Adopted, No change |
| SC2 | high consequence pathogens | | Adopted, No change |
| SC3 | hospice /palliative care | | Adopted, No change |
| SC4 | pandemic CPR | | Retired |
| SO1 | scene rehabd general | | Adopted, No change |
| PAS 11 | Parenteral Access: Intraosseous | | Adopted, No change |
| GP 7 | Hyperthermia Cooling Procedure | | New |

**October 2022 Changes**

| Protocol / Procedure / Policy | Change |
|---|---|
| UP 5 - Back Pain | Removed age for ALS Disposition requirement |
| UP 13 - Seizure | Added back Dispositions, corrected IM initial dose |
| UP 21 - Mobile Crisis | Minor Edits, re-enabled |
| UP 22 - Fall Risk Assessment | Minor Edits, re-enabled |
| OP 17 - CODE OR | Added from previous announcements |

**November 2022 Changes**

| Protocol / Procedure / Policy | Change |
|---|---|
| SC 3. Hospice or Palliative Care I | Added to App |
| Folder - Agency SOG | Added some agency SOGs from website to App |
| Folder - System Documents | Added some EMS System documents to App |

**January 2023 Changes**

| Protocol / Procedure / Policy | Change |
|---|---|
| UP 20 - Inebriated Person | Updated Paramedic to EMT-B Decision (In line with current practice) |
| UP 23 - Mental Health / Substance Abuse Alternate Destination | Updated from previous version - training available on Target Solutions and January 2023 Medical Director Updates |

| Number | Name | Status | Changes |
|---|---|---|---|
| AC 1 | Asystole / PEA | | No Changes |
| AC 2 | Bradicardia | | No Changes |
| AC 3 | Cardiac Arrest | | Added recommendations to checklist |
| AC 4 | Chest Pain and STEMI | | Overhaul to address ACO and STEMI Equivalents |
| AC 5 | CHF / Pulmonary Edema | | No Changes |
| AC 6 | Narrow Tachicardia | | Imported OCEMS' previous medications schema, and definition for unstable, adopted new state flow |
| AC 7 | Wide Monomorphic | | Imported OCEMS' previous medications schema, and definition for unstable, adopted new state flow. Updated Amioderone Dose |
| AC 8 | Wide Polymorphic | | Imported OCEMS' previous medications schema, and definition for unstable, adopted new state flow. Updated Amioderone Dose |
| AC 9 | VF / VT | | No Changes |
| AC 10 | Post ROSC | | Added recommendations to checklist |
| AC 11 | Team Focused CPR | | No Changes |
| AC 12 | Termination of CPR | | New, Adopted from State Adds Organ procurement direction |
| AC 13 | Targeted Temp Management | | No Changes |
| AC 14 | LVAD | | Updated from State, with UNC and Duke contact |
| AC 15 | Total Mechanical | | New, Adopted from State |
| AC 16 | Wearable Device | | New, Adopted from State |
| AM 1 | Allergic Reaction | | No Changes |
| AM 2 | Diabetic | | Improved BLS Disposition information |
| AM 3 | Dialysis / Renal | | No Changes |
| AM 4 | Hypertension | | Improved BLS Disposition information |
| AM 5 | Hypotension / Shock | | No Changes |
| AO 1 | Childbirth / Labor | | No Changes |
| AO 2 | Newly Born | | No Changes |
| AO 3 | Obstetric Emergency | | No Changes |
| AR 1 | Adult Airway | | No Changes |
| AR 2 | Adult Failed Airway | | No Changes |
| AR 3 | Drug Assisted Intubation | XXXX | Not an adopted protocol |
| AR 4 | COPD / Asthma | | Improved BLS Disposition information |
| AR 5 | Pediatric Airway | | No Changes |
| AR 6 | Pediatric Failed Airway | | No Changes |
| AR 7 | Pediatric Resp Distress | | Improved BLS Disposition information |
| AR 8 | BIAD Management | | No Changes |
| AR 9 | Ventilator Emergencies | | No Changes |
| AR 10 | Tracheostomy Tube Emergency | | No Changes |

| Number | Name | Status | Changes |
|---|---|---|---|
| PC 1 | Pediatric Asystole / PEA | | Adopted state recommendations, kept advanced airway ventilation rate |
| PC 2 | Pediatric Bradycardia | | Old medications, new formating |
| PC 3 | Pediatric CHF | | Old medications, new formating |
| PC 4 | Pediatric Pulseless Arrest | | Adopted state recommendations, kept advanced airway ventilation rate |
| PC 5 | Pediatric Tachycardia Narrow | | Separated Narrow and Wide for Peds |
| PC 6 | Pediatric Tachycardia Wide | | Separated Narrow and Wide for Peds |
| PC 7 | Pediatric VF / VT | | Adopted state recommendations, kept advanced airway ventilation rate |
| PC 8 | Pediatric Post ROSC | | Adopted state recommendations, kept advanced airway ventilation rate |
| PM 1 | Pediatric Allergic Reaction | | Consolidated Moderate and Severe, mirroring Adult |
| PM 2 | Pediatric Diabetic | | No Changes |
| PM 3 | Pediatric Hypotension | | No Changes |
| SC 1 | Suspected Ebola | | Adopted State Protocol layout, no clinical changes |
| SC 2 | Respiratory Disease | | No Changes |
| SC 3 | Hospice or Palliative Care | | New, Adopted from State |
| SC 4 | Vaccination | | No Changes |
| SC 5 | Monoclonal Antibodies | | No Changes |
| SO 1 | Scene Rehab General | | No Changes |
| SO 2 | Scene Rehab Responder | | No Changes |
| TB 1 | Blast Injury | | No Clinical changes, but adopted new state format |
| TB 2 | Chemical / Electrical Burn | | No Clinical changes, but adopted new state format |
| TB 3 | Crush Syndrome | | No Changes |
| TB 4 | Extremity Trauma | | No Changes |
| TB 5 | Head Trauma | | No Changes |
| TB 6 | Multiple Trauma | | No Changes |
| TB 7 | Radiation | | No Changes |
| TB 8 | Selective Spinal Immobilization | | No Changes |
| TB 9 | Thermal Burn | | No Clinical changes, but adopted new state format |
| TB 10 | Traumatic Arrest | | No Changes |
| TE 1 | Bites / Envenomations | | No Changes |
| TE 2 | Carbon Monoxide / Cyanide | | No Changes |
| TE 3 | Drowning / Submersion | | No Changes |
| TE 4 | Hyperthermia | | No Changes |
| TE 5 | Hypothermia | | No Changes |
| TE 6 | Marine Envenomations | | No Changes |
| TE 7 | Overdose / Toxic Ingestion | | No Changes |
| TE 8 | WMD Nerve Agent | | No Changes |

| Number | Name | Status | Changes |
|---|---|---|---|
| UP 1 | Universal Patient | | No Changes |
| UP 2 | Triage | | No Changes |
| UP 3 | Abdominal Pain / Vomiting | | No Changes |
| UP 4 | Altered Mental Status | | No Changes |
| UP 5 | Back Pain | | No Changes |
| UP 6 | IV / IO | | New, Adopted from State |
| UP 7 | Dental Problems | | No Changes |
| UP 8 | Indwelling Central Lines | | No Changes |
| UP 9 | Epistaxis | | No Changes |
| UP 10 | Fever | | No Changes |
| UP 11 | Pain Control | | No Changes |
| UP 12 | Police Custody | | No Changes |
| UP 13 | Seizure | | No Changes |
| UP 14 | Suspected Stroke | | No Changes |
| UP 15 | Suspected Sepsis | | No Changes |
| UP 16 | Syncope | | No Changes |
| UP 17 | Behavioral Health Crisis | | New, Adopted from State |
| UP 18 | Agitation Sedation | | New, Adopted from State |
| UP 19 | Excited Delerium | | New, Adopted from State |
| UP 20 | Inebriated Person | | |
| UP 21 | Mobile Crisis | * | |
| UP 22 | Fall Assessment | * | |

Key

| | |
|---|---|
| No Clinical Change from Current | |
| Adopted State Protocol | |
| Clinical Changes, Attached | |
| Not Adopted, no equivilent | XXXX |

**Global Changes**

Some protocols have been renumbered, based on NCOEMS schema to be codifed.

Standard Versed dose has changed to 2.5mg, up from 2 mg. This is based on "ease of use" needs.

Adult Respiratory protocols had capnography recommendations added, but no changes to the range

Formatting Changes - Added back revision dates to help confirm most recent version