



NYC REMAC			
Advisory No.	2008-03		
Title:	Revisions / Updates to REMAC Prehospital Treatment & Transport Protocols		
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		Page:	1 of 43

The Regional Emergency Medical Advisory Committee (REMAC) of New York City has revised and updated the regional prehospital treatment and transport protocols. All protocols have been approved by the New York State Emergency Medical Advisory Committee for use in the NYC region.

A list of all revised protocols summarizing changes is attached, along with actual protocols identifying specific changes. New Language is **underlined and bold**. Deleted Language is **~~struck-out~~**.

***PROTOCOLS ARE TO BE IMPLEMENTED BEGINNING JANUARY 1, 2009. ALL EMS PERSONNEL MUST BE UPDATED BY JULY 1, 2009.***

Current and Updated Protocols can be accessed at the Regional EMS Council website:  
[www.nycremsco.org](http://www.nycremsco.org).

Owners/operators of Ambulance and ALS First Response Services providing prehospital medical treatment within the five boroughs of the City of New York are responsible to provide copies of the NYC REMAC Prehospital Treatment Protocols to their personnel, and to ensure that Service Medical Directors and EMS personnel are informed of all changes/updates to the NYC REMAC Prehospital Treatment Protocols.

**In order to provide evidence that all EMS personnel have been updated in current protocols, the EMS Agency must provide a list of updated personnel accompanied by a letter of affirmation signed by the service medical director and Chief Executive Officer no later than FOUR (4) weeks after completion of training/in-service.**

Lewis W. Marshall, Jr., MD, JD  
Chair, Regional Emergency Medical Advisory Committee of New York City

# THE REGIONAL EMERGENCY MEDICAL SERVICES COUNCIL OF NEW YORK CITY, INC.

Revision/Update of REMAC Prehospital Treatment & Transport Protocols - GOP

## **List of GENERAL OPERATING PROCEDURES Revisions**

STEMI (ST Elevation) / Myocardial Infarction	Clarification only
Other Care: Ten Minute Rule	Clarification only
Airway Management	<p>Mandates Continuous End-Tidal Waveform Capnography for ALL intubated patients, whether the patient is in arrest or not.</p> <p><u>Clarifies wherever the term 'intubated' appears it includes any advanced airway device (i.e. endotracheal tube, combitube, etc.)</u></p>
Definition Of Compensated Shock	Deletes: Pale conjunctiva
Definition Of Decompensated Shock	<p>Deletes: Pale conjunctiva</p> <p>Deletes: Orthostatic vital sign changes for both EMT &amp; Paramedic</p>
Prehospital Sedation	<p>Removed from specific protocols</p> <p>Add: IN route for Midazolam</p> <p>Change: Diazepam must be administered after Etomidate</p>
Endotracheal Drug Administration	Endotracheal drug administration is no longer standard of care in this region
Intranasal (IN) Drug Administration	<p>New section added:</p> <p>Clarifies in the absence of IV access, Lorazepam, Midazolam, and Naloxone are approved for intranasal administration</p> <p>Contraindicated in patients with epistaxis</p>
Pharmacology Table	Add Note: stating nitroglycerine shall not be administered to patients who have used erectile dysfunction medications within the past 72 hours

# THE REGIONAL EMERGENCY MEDICAL SERVICES COUNCIL OF NEW YORK CITY, INC.

*Revision/Update of REMAC Prehospital Treatment & Transport Protocols - GOP*

<u>Drug Advisory Guidelines</u>	<u>Bullets Deleted:</u> <ul style="list-style-type: none"><li>• <u>Epinephrine</u></li><li>• <u>Lidocaine</u></li></ul>
<u>Controlled Substances</u>	<u>Clarified</u>
<u>Pediatric Drug Dosage And Fluid Administration</u>	<u>Reference to Broselow Tape removed and replaced with generic information</u> <u>Endotracheal drug administration is no longer standard of care in this region</u>

Deleted language is BOLD RED AND STRUCK-OUT --- ~~**DELETED**~~

New language is BOLD BLUE AND UNDERLINED --- **NEW**

## TRANSPORTATION PROCEDURES AND DECISIONS

### STEMI (ST Elevation) / Myocardial Infarction

For all adults, if the historical / physical findings indicate an acute myocardial infarction, and the 12 lead EKG reveals 1 mm ST elevation in 2 or more contiguous leads ~~they have the following: ST segment elevation on 12 lead EKG in 2 contiguous leads (1 mm in leads)~~, or new left bundle branch block; transport the patient to the closest 24 hour NYS certified interventional cardiac catheterization facility, as per medical control, unless one of the following conditions is met:

- The patient is in extremis;
- The patient has an unmanageable airway;
- The patient has other medical conditions (Trauma, Burn, CVA) that warrant transport to the closest appropriate hospital emergency department as per protocol.

### Other Care

If the mechanism of illness/injury and/or historical/physical findings do **NOT** indicate major trauma or burns or a need for these other types of specialty care, transport the patient to the nearest New York City 911 System Ambulance Destination Emergency Department (see Appendix I), unless **one** of the following conditions is met:

- The patient remains stable or potentially unstable throughout transport, **AND** the patient requests treatment or receives regular medical/surgical care at an alternative destination, **AND** the estimated additional transport time to the alternative destination is LESS THAN OR EQUAL TO AN ADDITIONAL TEN MINUTES;
- The patient requires specialty care available at the alternative destination that is unavailable at the nearest New York City 911 System Specialty Referral Center;
- An on-line medical control physician so directs.

**NOTE: PATIENTS WHO BECOME CRITICAL OR UNSTABLE MUST BE TRANSPORTED TO THE NEAREST NEW YORK CITY 911 SYSTEM AMBULANCE DESTINATION EMERGENCY DEPARTMENT.**

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## AIRWAY MANAGEMENT

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All patients require continuous monitoring of their airways to ensure airway patency. Wherever the term "Monitor Airway" is used throughout these protocols, the following elements shall be utilized:

Position of the patient's head

Need for airway adjuncts

Need for oropharyngeal suctioning

Need for Advanced Life Support airway management techniques

Use of Pulse Oximetry ( $S_pO_2$ ):

- **Mandatory for Advanced Life Support (Effective date: July 1, 2005)**
- Optional for Basic Life Support

Use of End Tidal Capnography (ETCO<sub>2</sub>) (Effective date: January 1, 2009)

**NOTE: ALL INTUBATED PATIENTS REQUIRE CONTINUOUS END-TIDAL WAVEFORM CAPNOGRAPHY TO CONFIRM ADVANCED AIRWAY DEVICE PLACEMENT AND CONTINUED MONITORING.**

**NOTE: WHEREVER THE TERM 'INTUBATED' APPEARS IT INCLUDES ANY ADVANCED AIRWAY DEVICE (i.e. ENDOTRACHEAL TUBE, COMBITUBE, ETC.)**

- **For ALL intubated patients (arrest or not), waveform Capnography is MANDATORY. Wherever the term 'monitor airway' is used throughout the protocols, the following elements shall be utilized:**
  - Use of secondary form of Endotracheal Tube confirmation **is mandatory.** *(Example: ~~End Tidal Capnography (ETCO<sub>2</sub>)~~—Secondary confirmation devices are not a substitute for primary confirmation techniques that rely upon direct visualization and auscultation, but serve as an additional method of documenting proper endotracheal tube placement.*

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**NOTE: NASAL INTUBATION IS CONSIDERED TO BE AN UNACCEPTABLE FORM OF AIRWAY MANAGEMENT WITHIN THE NEW YORK CITY REGION.**

### DEFINITION OF COMPENSATED SHOCK

Any adult patient having a **systolic** blood pressure **ABOVE** 90 mm Hg **AND** exhibiting signs of inadequate perfusion, which may include:

- Altered mental status (e.g., agitation, confusion);
- Increased Pulse Rate (Tachycardia);
- Pale Skin (Pallor);
- Cool, Clammy Skin (Diaphoresis);
- ~~Pale conjunctiva;~~
- **Orthostatic vital sign changes (EMT and AEMT only)**

Any pediatric patient with signs of inadequate **peripheral** (distal) perfusion, which may include:

- Altered mental status (e.g., agitation, confusion);
- Increased Pulse Rate (Tachycardia);
- Pale Skin (Pallor);
- Cool, cyanotic lower extremities;
- Delayed capillary refill;
- "Blotchy" Skin (Mottling);
- Weak or absent **peripheral** (distal) pulses (radial, tibial, pedal).

**NOTE: THE DEFINITION OF SHOCK IN THE PEDIATRIC PATIENT DOES NOT DEPEND UPON BLOOD PRESSURE.**

### DEFINITION OF DECOMPENSATED SHOCK

Any adult patient having a **systolic** blood pressure **BELOW** 90 mm Hg **AND** exhibiting signs of inadequate perfusion, which may include:

- Altered mental status (e.g., lethargy, coma);
- Increased Pulse Rate (Tachycardia);
- Pale Skin (Pallor);
- Cool, Clammy Skin (Diaphoresis);
- ~~Pale conjunctiva;~~
- ~~Orthostatic vital sign changes (EMT and AEMT only)~~

Any pediatric patient having a **systolic** blood pressure **BELOW** 70 mm/Hg + 2x age in years], **OR** the following signs of inadequate **central** (proximal) perfusion:

- Altered mental status (e.g., lethargy, coma);
- Extensive cyanosis of all extremities;

- Weak or impalpable **central** (proximal) pulses (femoral, brachial, carotid).

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### PREHOSPITAL SEDATION

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#### Definition of Prehospital Sedation:

Prehospital sedation is a fully monitored pharmacologic intervention applied in instances where conscious patients may need short-term analgesic and/or anxiolytic therapy for procedures that may be painful or anxiety producing, such as Endotracheal Intubation, Synchronized Cardioversion, and Transcutaneous Pacing. **Prior Permission from Medical Control Is Required.**

#### Indications for Prehospital Sedation:

##### Conscious patients requiring Endotracheal Intubation

- a) Administer Diazepam 5 – 10 mg, IV/Saline Lock bolus. Repeat doses of Diazepam 5 – 10 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 20 mg.)  
OR
- b) Administer Midazolam 1 – 2 mg, IV/**IN**/Saline Lock bolus. Repeat doses of Midazolam 1 mg, IV/**IN**/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 5 mg.)  
OR
- c) Administer Etomidate 0.3 mg/kg, IV/Saline Lock bolus, over 30-60 seconds. (Maximum total dose is 20 mg.) After successful intubation, **consider administer** Diazepam 5 mg IV/Saline Lock bolus or Lorazepam 2 mg, IV/Saline Lock or IM, for continued sedation.

##### Conscious patients requiring Synchronized Cardioversion OR Transcutaneous Pacing

- a) Administer Diazepam 5 – 10 mg, IV/Saline Lock bolus. Repeat doses of Diazepam 5 – 10 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 20 mg.)  
OR
- b) Administer Midazolam 1 – 2 mg, IV/**IN**/Saline Lock bolus. Repeat doses of Midazolam 1 mg, IV/**IN**/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 5 mg.)

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**NOTE: PATIENTS RECEIVING PREHOSPITAL SEDATION MUST BE CONTINUOUSLY ADMINISTERED HIGH CONCENTRATION OXYGEN AND MUST BE CONTINUOUSLY MONITORED USING CARDIAC MONITORING AND PULSE OXIMETRY ~~(IF AVAILABLE)~~.**

## ENDOTRACHEAL DRUG ADMINISTRATION

Endotracheal drug administration is no longer standard of care in this region.

~~If no IV or Saline Lock is in place and the patient is intubated, Lidocaine, Epinephrine, Atropine, and Naloxone may be administered via the endotracheal route. In the adult patient, the dosage for these medications should be DOUBLED, and diluted to 10 ml total drug volume with Normal Saline (0.9 NS). The patient must be hyperventilated prior to drug administration. CPR must be halted while administering any drug via the endotracheal route. After administration the patient should be hyperventilated at the rate of 20-30 breaths/min for 2-3 minutes to facilitate absorption of drug from the lungs; CPR should also be resumed.~~

## INTRANASAL (IN) DRUG ADMINISTRATION

~~In the absence of intravenous access, Naloxone (Narcan) may be administered via the intranasal (IN) route when an appropriate atomizer device is available. The route of administration is contraindicated in patients with epistaxis.~~

In the absence of intravenous access, the following medications are approved for intranasal administration when an appropriate atomizer device is available: lorazepam, midazolam, and naloxone. The route of administration is contraindicated in patients with epistaxis.

## PHARMACOLOGY TABLE

The following are recommended doses for **adult** patients fourteen (14) years of age and **older** and **under** 40 kg in weight:

Amiodarone	5 mg/kg
Atropine Sulfate	0.02 mg/kg (minimum dose 0.1 mg)
Epinephrine	0.01 mg/kg/dose
Furosemide (Lasix)	1 mg/kg/dose
Lidocaine (bolus)	1.5 mg/kg/dose
Sodium Bicarbonate	1 mEq/kg/dose

**NOTE: THE DOSE OF EPINEPHRINE 1:1,000 SHOULD NOT EXCEED 0.3 MG, IM.**

**NOTE: NITROGLYCERINE SHALL NOT BE ADMINISTERED TO PATIENTS WHO HAVE USED ERECTILE DYSFUNCTION MEDICATIONS WITHIN THE PAST 72 HOURS.**



## DRUG ADVISORY GUIDELINES

- Aspirin should **NOT** be administered to patients with known hypersensitivity to aspirin. Gastrointestinal complaints are **NOT** a contraindication to aspirin administration.
- Diphenhydramine Hydrochloride has an atropine-like action and must be used with caution in patients with a history of increased intraocular pressure, hyperthyroidism, cardiovascular disease, and/or hypotension.
- ~~Epinephrine must be used in a 1:1,000 solution instead of a 1:10,000 solution when doubling the initial dose or subsequent doses of standard dose Epinephrine for administration via the endotracheal route in patients 14 years of age or older, then diluted to 10 ml total fluid volume with Normal Saline (0.9 NS).~~
- ~~Lidocaine must be used with caution in patients 70 years of age or older, and in patients with liver disease, congestive heart failure, and/or hypotension. The initial dose should be 1.5 mg/kg with a single repeated dose of 0.75 mg/kg. The IV drip (maintenance dose) should be reduced to 0.5 mg/min—2 mg/min.~~
- Normal Saline (0.9 NS) may be used interchangeably with Ringer's Lactate (RL) for intravenous or intraosseous infusion.
- Diltiazem must be used with caution in patients with liver or kidney disease, congestive heart failure, atrioventricular conduction abnormalities, and/or hypotension. Medical Control should be alerted to these conditions, and the dose should be reduced to **HALF** the normal dose.

## CONTROLLED SUBSTANCES

Refer to individual protocols for directions regarding the administration of controlled substances.

~~The administration of controlled substances by AEMTs in the field is permitted only as a Medical Control Option, with the exception of Protocols #513 and #529, where administration of a benzodiazepine is permitted under Standing Orders for control of ongoing seizures and pain management, respectively.~~

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## PEDIATRIC PROTOCOLS

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### 5. PEDIATRIC DRUG DOSAGE AND FLUID ADMINISTRATION

For drug dosage and fluid administration, refer to ~~both the Broselow Tape and the Pediatric Schedule in Appendix J~~ Length Based Dosing Device.

~~If no IV/Saline Lock, or IO is in place and the patient is intubated, Lidocaine, Epinephrine, Atropine, and Naloxone may be administered via the Endotracheal Tube. Initial drug dosage of these medications via the Endotracheal Tube is the SAME as the IV/Saline Lock or IO dose for all drugs but Epinephrine, which is TEN TIMES HIGHER than the initial IV/Saline Lock or IO dose except in~~

~~Pediatric Anaphylactic Reaction (Protocol #555) where it remains the same as the initial IV/Saline Lock or IO dose; these medications should be diluted to 3-5 ml total drug volume with Normal Saline (0.9 NS), instilled through a catheter passed beyond the tip of the Endotracheal Tube, and followed by several positive pressure ventilations via a bag-valve device attached to the Endotracheal Tube.~~

Endotracheal drug administration is no longer standard of care in this region.

Initial fluid administration should not exceed 20 ml/kg.

# THE REGIONAL EMERGENCY MEDICAL SERVICES COUNCIL OF NEW YORK CITY, INC.

Revision/Update of REMAC Prehospital Treatment & Transport Protocols – BLS

## **List of BLS Protocols Revised**

400	<u>WEAPONS OF MASS DESTRUCTION NERVE AGENT EXPOSURE PROTOCOL</u>	Change: Table 1-Initial Treatment, 2-Pam dose changed
404	<u>NON-TRAUMATIC CHEST PAIN</u>	Add: Note stating NTG be with-held from patients using ED medications within 72 hours  Change age from 35 to 33 to be consistent with AHA guidelines
407	<u>ASTHMA</u>	Title changed to “Wheezing” Clarification
414	<u>POISONING OR DRUG OVERDOSE</u>	Delete: Activated Charcoal
421	<u>HEAD AND SPINE INJURIES</u>	Changed to be consistent with new NYS DOH protocol
432	<u>COLD-RELATED EMERGENCIES</u>	Changed time for vital signs to be consistent with NYS DOH protocol

Deleted language is BOLD RED AND STRUCK-OUT --- ~~DELETED~~

New language is BOLD BLUE AND UNDERLINED --- NEW

## WEAPONS OF MASS DESTRUCTION NERVE AGENT EXPOSURE PROTOCOL

Authorization for the use of the Nerve Agent Antidote kits comes ONLY from the FDNY Office of Medical Affairs (OMA) through a class order\* issued by a FDNY-OMA Medical Director who is on-scene or as relayed by an FDNY-OMA Medical Director through On-Line Medical Control (Telemetry) or through FDNY Emergency Medical Dispatch.

**NOTE: THE ISSUANCE OF ANY CLASS ORDER SHALL BE CONVEYED TO ALL REGIONAL MEDICAL CONTROL FACILITIES FOR RELAY TO UNITS IN THE FIELD.**

**TREATMENT WITHIN THE “HOT” AND “WARM” ZONES MAY BE PERFORMED ONLY BY APPROPRIATELY TRAINED PERSONNEL WEARING APPROPRIATE CHEMICAL PROTECTIVE CLOTHING (CPC) AS DETERMINED BY THE FDNY INCIDENT COMMANDER.**

- Those triaged as **RED Tag** may be treated simultaneously with decontamination.
- Those triaged as **YELLOW Tag** will be treated as soon as possible following decontamination.
- Those who are **GREEN Tag** (asymptomatic) will be decontaminated and receive close observation.

**NOTE: Nerve Agent Kit contains one (1) each: 2 mg Atropine auto-injector, and 600 mg 2-PAM (Pralidoxime chloride) auto-injector.**

Initial Treatment (Table 1)

Tag Color	Signs & Symptoms	Atropine Dose Monitor Interval	2-Pam Dose
<b>RED</b>	Severe Respiratory Distress, Agitation <b>SLUDGEM</b>	3 Auto-injectors (6 mg) Monitor every 5 minutes	3 Auto-injectors (1.8 gm)
<b>YELLOW</b>	Respiratory Distress, <b>SLUDGEM</b>	2 Auto-injectors (4 mg) Monitor every 10 minutes	<del>2</del> 1 Auto-injector <del>(600-mg)</del> <b>1.2 gm</b>
<b>GREEN</b>	Asymptomatic None	Monitor for signs & symptoms Monitor every 15 minutes	None

**NOTE: DO NOT GIVE MORE THAN THREE (3) 2-PAM (~~GRAY TOP~~) AUTO-INJECTORS TO ANY PATIENT. THE MAXIMUM TOTAL DOSE OF 2-PAM IS 1.8 GRAMS.**

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

# THE REGIONAL EMERGENCY MEDICAL SERVICES COUNCIL OF NEW YORK CITY, INC.

## Revision/Update of REMAC Prehospital Treatment & Transport Protocols – BLS

**All treatment subsequent to the initial doses shall follow Table 2.** This will include extended on-scene operations, transport to ambulance destinations, and treatment at casualty collection points. The end point of treatment is drying of secretions and resolution of other symptoms.

**Extended Re-Evaluation & Treatment (Table 2)**

Tag Color	Signs & Symptoms	Atropine Dose Monitor Interval	2 Pam Dose	Atropine Repeat Dosing Frequency
<b>RED</b>	Severe Respiratory Distress, Agitation, <b>SLUDGEM</b>	2 mg Monitor every 5 minutes	Up to a maximum of 1.8 gm (3 auto-injectors)	2 mg every 3-5 minutes as needed
<b>YELLOW</b>	Respiratory Distress <b>SLUDGEM</b>	2 mg Monitor every 5 to 15 minutes	Up to a maximum of 600 mg (1 auto-injector)	2 mg every 5-10 minutes as needed
<b>GREEN</b>	Asymptomatic	None Monitor every 15 minutes	None	None

**NOTE: DO NOT GIVE MORE THAN THREE (3) 2-PAM (GRAY TOP) AUTO-INJECTORS TO ANY PATIENT. THE MAXIMUM TOTAL DOSE OF 2-PAM IS 1.8 GRAMS.**

- Record on the Triage Tag the number of Atropine and 2-PAM Auto-injectors used
- **ASYMPTOMATIC PATIENTS DO NOT REQUIRE TREATMENT**
  - monitor every 15 minutes

## PEDIATRIC PATIENTS

Tag Color	Exposure (and/or Signs of Respiratory Distress, Agitation, SLUDGEM)	Atropine and 2-Pam Doses Monitor Interval		Atropine Repeat Dosing Frequency
RED (Peds)	Yes	Age <1 years	1 <b>Peds</b> Atropine Auto-injector (0.5 mg) No 2-PAM Monitor every 3 minutes	Atropine every 3 minutes as needed
		Age 1-8 years	1 Atropine Auto-injector (2 mg) 1 2-PAM Auto-injector (600 mg) Monitor every 3 minutes	
GREEN (Peds)	No	None Monitor every 10 minutes for evidence of exposure		

**NOTE: NOTE: PEDIATRIC PATIENTS OLDER THAN 8 YEARS OLD SHOULD BE TREATED VIA THE ADULT PROTOCOL.**

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404

NON-TRAUMATIC CHEST PAIN

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1. Monitor the airway.
2. Administer oxygen.
3. Do **NOT** permit physical activity.
4. Request Advanced Life Support assistance, if available. Do NOT delay transport.
5. Monitor breathing for adequacy.
6. Place patient in a position of comfort.
7. If chest pain is still present, assist the patient with self-administration of the patient's own previously prescribed Nitroglycerin, if available. One tablet or spray may be taken provided that the patient's **systolic** pressure is at least 120 mm Hg.

**NOTE: UNLESS OTHERWISE DIRECTED BY ON-LINE MEDICAL CONTROL, PATIENTS WHO HAVE USED ERECTILE DYSFUNCTION MEDICATIONS IN THE PREVIOUS 72 HOURS SHALL NOT BE GIVEN NITROGLYCERIN.**

8. If the patient is **35** **33** years of age or older, or a patient of any age who has a cardiac history, administer two (2) Chewable Aspirins, 162 mg, by mouth, unless the patient has any of the following contraindications:
  - a. Known Aspirin allergy or hypersensitivity
  - b. Recent gastrointestinal bleeding
  - c. Bleeding disorder
  - d. Is taking Warfarin (Coumadin).
9. Transport.

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407

**ASTHMA WHEEZING**

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***For patients over one (1) year of age who are experiencing ~~an exacerbation of their previously diagnosed asthma~~ exacerbation or wheezing.***

1. Assess the airway
2. Administer oxygen
3. Monitor breathing

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NOTE: IF PATIENT EXHIBITS SIGNS OF IMMINENT RESPIRATORY FAILURE, REFER TO PROTOCOL #401 – ADULT RESPIRATORY DISTRESS/FAILURE OR #450 – PEDIATRIC RESPIRATORY DISTRESS/FAILURE.

4. Do not permit physical activity
5. Place the patient in a Fowler's or Semi-Fowler's position
6. Assess the following prior to administration of the first nebulized treatment:
  - Vital signs
  - Patient's ability to speak in complete sentences
  - Accessory muscle use
  - Wheezing
7. Administer Albuterol Sulfate 0.083%, one (1) unit dose or 3 cc via nebulizer at a flow rate that will deliver the solution over 5 minutes to 15 minutes. Do not delay transport to complete medication administration.
8. Begin transport.

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NOTE: FOR PATIENTS IN SEVERE RESPIRATORY DISTRESS, CALL FOR ADVANCED LIFE SUPPORT ASSISTANCE. DO NOT DELAY TRANSPORT.

9. If symptoms persist, Albuterol Sulfate 0.083% may be repeated twice for a total of three (3) doses, with the third occurring during transport.
10. Upon completion of patient treatment or transfer of patient care to an ALS Provider or a 911 Receiving Hospital, reassess the patient. See Step # 6.

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NOTE: MEDICAL CONTROL MUST BE CONTACTED FOR ANY PATIENT REFUSING MEDICAL ASSISTANCE OR TRANSPORT.

414

POISONING OR DRUG OVERDOSE

1. Monitor the airway.
2. Administer oxygen.
3. Request Advanced Life Support assistance for patients with respiratory distress/failure or altered mental status, or if so directed by Medical Control.
4. For Special Considerations, see below.
5. Bring a sample of the substance or the container(s) to the hospital.
6. Transport.

SPECIAL CONSIDERATIONS

**INGESTED SUBSTANCES:**

1. Do **NOT** induce vomiting.
2. Do **NOT** attempt to neutralize the substance.
3. If patient is potentially unstable or stable, transport after contacting Medical Control with the following information:
  - Name of substance (if prescribed medication, note usual dosage);
  - Amount taken;
  - Time it was taken;
  - Age and weight of patient;
  - Whether the patient has vomited;
  - Whether any antidote has been given.
4. Follow the directions provided by Medical Control.
  - If directed by Medical Control, but **ONLY** if the patient is conscious, is able to swallow, and is able to drink without assistance, dilute the ingested substance with water.
  - ~~If directed by Medical Control, but ONLY if the patient is conscious, is able to swallow, and is able to drink without assistance, bind the substance by the administration of Activated Charcoal in 70% Sorbitol solution, as follows:~~

<del>6 months to 1 year old</del>	<del>5 gm</del>
<del>1 year or older</del>	<del>15 gm</del>
<del>10 years or older</del>	<del>50 gm</del>



## **INHALED SUBSTANCES:**

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**NOTE: ENSURE THAT THE SCENE IS SAFE TO ENTER.**

1. Remove the patient from the contaminated environment.
2. Administer oxygen, especially if carbon monoxide poisoning is suspected.

## **ENVENOMATIONS:**

1. Insect stings:
  - Remove stinger by scraping.
  - Cover with a sterile dressing.
  - Apply cold compresses to the site.
2. Marine:
  - Remove stinging bristles by patting the area with adhesive tape, then wipe with alcohol.
  - Remove stinging spine.
  - Cover with a sterile dressing.

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**NOTE: TRANSPORT SHOULD NOT BE DELAYED FOR THIS TREATMENT.**

3. Snakebite:
  - Keep injection site lower than the level of the heart.
  - Cover with a sterile dressing.
  - Immobilize the area and restrict patient activity.
  - Transport to Venomous Bite Center. (See Appendix H.)

## **ABSORPTIONS:**

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**NOTE: TAKE PRECAUTIONS TO AVOID CONTAMINATION OF YOURSELF AND OTHERS.**

1. Remove all contaminated clothing.
2. Brush away any dry agents or blot away any excess liquids from the skin.
3. Flush the area with sterile saline, sterile water, or plain water for at least 10 minutes.
4. Bandage any contact burns with a **saline-moistened**, sterile dressing.

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421

HEAD AND SPINE INJURIES

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1. Establish and maintain airway control while stabilizing the cervical spine.

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NOTE: DO NOT USE A NASOPHARYNGEAL AIRWAY IN PATIENTS WITH FACIAL INJURIES OR IF SEVERE HEAD INJURY HAS OCCURRED.

2. Patients meeting one or more of the following criteria must be immobilized:
  - a. Altered mental status for any reason, including possible intoxication due to drugs or alcohol.
  - b. GCS <15
  - c. Complaint of, or inability of the provider to assess for, neck and/or spine pain or tenderness.
  - d. Weakness, paralysis, tingling, or numbness of the trunk or extremities at any time since the injury.
  - e. Deformity of the spine not present prior to the injury.
  - f. Distracting injury or circumstances, including anything producing an unreliable physical exam or history.
  - g. High risk mechanism (axial load such as diving or tackling, high-speed motor vehicle accidents, rollover accidents, falls greater than standing height).
  - h. Provider concern for potential spinal injury.

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NOTE: ONCE SPINAL IMMOBILIZATION HAS BEEN INITIATED, IT MUST BE COMPLETED. SPINAL IMMOBILIZATION MAY NOT BE REMOVED IN THE PREHOSPITAL SETTING.

3. If necessary to initiate spinal immobilization, utilize the Rapid Takedown technique **ONLY** if the patient is standing.
4. Administer oxygen.
5. Monitor breathing for adequacy.

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NOTE: MONITOR BREATHING CONTINUOUSLY. BE ALERT FOR SIGNS OF HYPOXIA AND/OR INCREASING RESPIRATORY DISTRESS.

6. Control external bleeding.
7. If the patient meets any of the criteria described in #2, is not awake or is unstable, immobilize the patient's head and spine with a rigid collar and appropriate immobilization device.
8. Assess and monitor the Glasgow Coma Score. (See Appendix E.)

## *Revision/Update of REMAC Prehospital Treatment & Transport Protocols – BLS*

- If the Glasgow Coma Scale (GCS) score is less than 8, ventilate the patient with high concentration oxygen at a rate of 12 breaths per minute for an adult patient, and up to 20 breaths per minute for a pediatric patient.
- If the Glasgow Coma Scale (GCS) score is less than 8, and active seizures or one or more of the following signs of brain herniation are present, hyperventilate the patient with high concentration oxygen at a rate of 20 breaths per minute for an adult patient and up to 25 breaths per minute for a pediatric patient.
  - Fixed or asymmetric pupils
  - Abnormal flexion or extension (neurologic posturing)
  - Hypertension and bradycardia (Cushing's Reflex)
  - Intermittent apnea (periodic breathing)
  - Further decrease in GCS score of 2 or more points (neurologic deterioration)

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**NOTE: DO NOT HYPERVENTILATE UNLESS THE ABOVE CRITERIA ARE MET.**

9. Assess for shock and treat, if appropriate. (See Protocol #415.)

10. Transport. (See Appendix F.)

432

**COLD-RELATED EMERGENCIES**

1. Warm the environment or move the patient to a warmer environment.
2. Prevent further loss of body heat.
3. Do **NOT** allow the patient to smoke or drink either alcohol or caffeinated beverages.
4. For Special Considerations, see below.
5. Transport.

**SPECIAL CONSIDERATIONS**

**FROSTNIP, FROSTBITE, FREEZING (Local):**

1. Remove clothing from the affected area.
2. Wrap the area in dry, bulky dressings.
3. Do **NOT** rub the area or rupture blisters.

**HYPOTHERMIA (General):**

1. Monitor the airway.
2. Begin Basic Cardiac Life Support procedures, if appropriate. (See Protocol #403.)

**NOTE: VITAL SIGNS MAY BE EXTREMELY DEPRESSED. ALLOW AT LEAST ~~15~~ 30-45 SECONDS TO CHECK FOR A CAROTID PULSE. HYPOTHERMIC PATIENTS REMAIN VIABLE FOR A LONGER PERIOD OF TIME. THEREFORE, CPR SHOULD BE INITIATED ON ALL PULSELESS AND APNEIC HYPOTHERMIC PATIENTS.**

3. Administer oxygen.
4. Monitor breathing for adequacy.
5. Gently remove any wet clothing.
6. Wrap the patient in dry blankets.

**NOTE: AVOID ROUGH HANDLING OF THE HYPOTHERMIC PATIENT SO AS TO REDUCE THE RISK OF INDUCING CARDIAC ARREST.**

7. If the patient is conscious, is able to swallow, and is able to drink without assistance, give warm liquids slowly by mouth.
8. If the patient has an altered mental status, request Advanced Life Support assistance.

# THE REGIONAL EMERGENCY MEDICAL SERVICES COUNCIL OF NEW YORK CITY, INC.

## Revision/Update of REMAC Prehospital Treatment & Transport Protocols – ALS

### **List of ALS Protocols Revised**

501	RESPIRATORY ARREST	Global Change: Prehospital Sedation moved to General Operating Procedures
502	OBSTRUCTED AIRWAY	Clarification
503A	VENTRICULAR FIBRILLATION/PULSELESS VENTRICULAR TACHYCARDIA	IO access added to all cardiac arrest protocols Change order of medication administration
503B	PULSELESS ELECTRICAL ACTIVITY (PEA)/ASYSTOLE	Clarification IO access added to all cardiac arrest protocols Change order of medication administration
504	SUSPECTED MYOCARDIAL INFARCTION	12 lead EKG to be performed on all chest pain patients
504A	DRUG THERAPY OF MYOCARDIAL ISCHEMIA	Add Note: No NTG to patients with BP under 100 mmHg Add: Note stating NTG be with-held from patients using ED medications within 72 hours MS dosage now weight based
506	ACUTE PULMONARY EDEMA	Add: Note stating NTG be with-held from patients using ED medications within 72 hours Add to Note: No NTG to patients with BP under 100 mmHg MS dosage now weight based Add new MCO: Lorazepam and Midazolam
507	ASTHMA	Delete: Metaproterenol from SO and MCO Add: Ipratrotium Bromide to SO Clarification of administration and contraindications
508	CHRONIC OBSTRUCTIVE PULMONARY DISEASE	Delete: Metaproterenol from SO and MCO Add: Ipratrotium Bromide to SO Clarification of administration and contraindications

# THE REGIONAL EMERGENCY MEDICAL SERVICES COUNCIL OF NEW YORK CITY, INC.

## Revision/Update of REMAC Prehospital Treatment & Transport Protocols – ALS

511	ALTERED MENTAL STATUS	Delete Thiamine
513	SEIZURES	Add IN route for Lorazepam and Midazolam
521	HEAD INJURIES	Clarification regarding sedation MCO deleted
528	BURNS	Clarification regarding sedation Pulse Oximetry added MS administration moved from MCO to SO
529	PAIN MANAGEMENT FOR ISOLATED EXTREMITY INJURY	Clarifications
530	EMOTIONALLY DISTURBED PATIENT	Clarifications IN added as route of administration for Midazolam
554	PEDIATRIC ASTHMA/WHEEZING	Reference to Broselow Tape removed and replaced with generic information Delete: Terbutaline Move: Ipratropium Bromide from MCO to SO
557	PEDIATRIC SEIZURES	Reference to Broselow Tape removed and replaced with generic information Add IN add route of administration for Midazolam

Green sections have changes

Deleted language is BOLD RED AND STRUCK-OUT --- **DELETED**

New language is BOLD BLUE AND UNDERLINED --- **NEW**

MCO = Medical Control Order

SO = Standing Order

501

RESPIRATORY ARREST

For patients in actual or imminent respiratory arrest:

NOTE: IF OVERDOSE IS SUSPECTED, REFER TO PROTOCOL 511 (Altered Mental Status)

1. Begin Basic Life Support Respiratory Distress procedures.
2. If a tension pneumothorax is suspected, perform Needle Decompression. (See Appendix O.)
3. Perform Endotracheal Intubation\*.
4. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
5. Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
6. If the patient requires sedation, ~~contact Medical Control~~ refer to General Operating Procedures: Prehospital Sedation. ~~for implementation of one or more of the following MEDICAL CONTROL OPTIONS:~~
7. Transportation Decision.

~~MEDICAL CONTROL OPTIONS:~~

~~OPTION A: Transportation Decision.~~

~~\* PREHOSPITAL SEDATION PROCEDURE: Prior Permission from Medical Control Is Required~~  
~~If the patient is alert prior to performing Endotracheal Intubation, consider prehospital sedation as follows:~~

~~a. Administer Diazepam 5—10 mg, IV/Saline Lock bolus. Repeat doses of Diazepam 5—10 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 20 mg.)~~

~~OR~~

~~b. Administer Midazolam 1—2 mg, IV/Saline Lock bolus. Repeat doses of Midazolam 1 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 5 mg.)~~

~~OR~~

~~c. Administer Etomidate 0.3 mg/kg, IV/Saline Lock bolus, over 30-60 seconds. (Maximum total dose is 20 mg.) After successful intubation, **consider administer** Diazepam 5 mg IV/Saline Lock bolus or Lorazepam 2 mg, IV/Saline Lock or IM, for continued sedation.~~

The PREHOSPITAL SEDATION PROCEDURE will be deleted from each individual protocol and kept only in the General Operating Procedures

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502

OBSTRUCTED AIRWAY

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1. Begin Basic Life Support Obstructed Airway procedures.
2. Perform Direct Laryngoscopy. Attempt to remove the foreign body with Magill Forceps.
3. Perform Endotracheal Intubation.
4. If unable to perform endotracheal intubation and the airway remains obstructed, perform Needle Cricothyroidotomy. (See Appendix N)
5. Transportation Decision.



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503-A

VENTRICULAR FIBRILLATION/PULSELESS VENTRICULAR TACHYCARDIA

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1. Continue CPR with minimal interruption.

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NOTE: IN ARRESTS WITNESSED BY EMS, PERFORM CPR UNTIL DEFIBRILLATOR IS ATTACHED

IN ARRESTS NOT WITNESSED BY EMS, PERFORM TWO (2) MINUTES OF CPR PRIOR TO DEFIBRILLATOR USE

2. Defibrillate using 360 joules, or equivalent biphasic.

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NOTE: IF PATIENT HAS A PERMANENT PACEMAKER IN PLACE, POSITION THE PADDLES OR AUTOMATED DEFIBRILLATOR PADS AT LEAST ONE (1) INCH AWAY FROM THE PACEMAKER DEVICE.

3. Continue CPR. If after two minutes of additional CPR if there is no change in the rhythm, Defibrillate a 2<sup>nd</sup> time as previously stated.-
  4. Continue CPR. If after two minutes of additional CPR if there is no change in the rhythm, Defibrillate a 3<sup>rd</sup> time as previously stated.-
  5. Perform Endotracheal Intubation.
  6. If, after every two minute interval of additional CPR, there is no change in the rhythm, Defibrillate\* as previously stated.
  7. Begin an IV/IO infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
  8. Administer Vasopressin 40 unit IV/IO/Saline Lock Bolus, single dose.
- OR**
- ~~Administer Epinephrine 1 mg (10 ml of a 1:10,000 solution), IV/Saline Lock bolus.~~**
9. If there is no change in the rhythm, administer Amiodarone 300mg, diluted up to a total of 20mL of D<sub>5</sub>W, IV / IO / Saline Lock bolus.
  10. If there is no change in the rhythm within 3 – 5 minutes after the administration of Vasopressin, administer Epinephrine 1 mg (10 ml of a 1:10,000 solution), IV/IO/Saline Lock bolus, every 3 – 5 minutes.
  - ~~11. Administer Amiodarone 300 mg, diluted up to a total of 20 ml of D<sub>5</sub>W, IV/Saline Lock Bolus~~**
  12. If there is insufficient improvement in hemodynamic status, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:-

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**MEDICAL CONTROL OPTIONS:**

- OPTION A:** If Ventricular Fibrillation or Pulseless Ventricular Tachycardia recurs, a repeat dose of 150 mg Amiodarone diluted up to a total of 10 ml D<sub>5</sub>W, IV/IO/Saline Lock Bolus may be given.
- OPTION B:** Administer Sodium Bicarbonate 44-88 mEq IV/IO/Saline Lock bolus. Repeat doses of Sodium Bicarbonate 44 mEq, IV/IO/Saline Lock bolus, may be given every 10 minutes.

# THE REGIONAL EMERGENCY MEDICAL SERVICES COUNCIL OF NEW YORK CITY, INC.

## *Revision/Update of REMAC Prehospital Treatment & Transport Protocols – ALS*

- OPTION C:** Administer Magnesium Sulfate 2 gm, IV/IO/Saline Lock bolus, diluted in 10 ml of Normal Saline (0.9% NS), over 2 minutes.
- OPTION D:** In cases of hyperkalemia or Calcium Channel Blocker overdose administer Calcium Chloride ( $\text{CaCl}_2$ ) 1 gm, SLOWLY, IV/IO/Saline Lock bolus. Follow with a Normal Saline (0.9% NS) flush.
- OPTION E:** Transportation Decision.

503-B

PULSELESS ELECTRICAL ACTIVITY (PEA)/ASYSTOLE

NOTE: CONSIDER THE POSSIBILITY OF CONDITIONS MASQUERADING AS PEA/ASYSTOLE WHICH REQUIRE IMMEDIATE ~~IN-HOSPITAL~~ TREATMENT ~~SUCH AS SEVERE SHOCK, TRAUMATIC CARDIAC ARREST, PERICARDIAL TAMPONADE, HYPOVOLEMIA, TENSION PNEUMOTHORAX, ETC.~~

1. Continue CPR with minimal interruption.
2. If a tension pneumothorax is suspected, perform Needle Decompression. (See Appendix O.)
3. Perform Endotracheal Intubation.
4. Begin an IV/IO infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
5. Administer Vasopressin 40 unit IV/IO/Saline Lock Bolus, single dose.

**OR**

~~Administer Epinephrine 1 mg (10 ml of a 1:10,000 solution), IV/Saline Lock bolus.~~

6. If there is no change in the rhythm within 3 – 5 minutes after administration of Vasopressin, administer Epinephrine 1 mg (10 ml of a 1:10,000 solution), IV/IO/Saline Lock bolus, every 3 – 5 minutes.
7. If the patient has a heart rate (based on rhythm strip) less than 60 beats/min, administer Atropine Sulfate 1 mg, IV/IO/Saline Lock bolus. If ~~there is no change in~~ the heart rate ~~within 3–5 minutes~~, remains less than 60 bpm, repeat Atropine Sulfate 1 mg, IV/IO/Saline Lock bolus, every 3 – 5 minutes. (Maximum total dosage is 3 mg.)
8. If there is insufficient improvement in hemodynamic status, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

**MEDICAL CONTROL OPTIONS:**

- OPTION A:** Administer Sodium Bicarbonate 44-88 mEq IV/IO/Saline Lock bolus. Repeat doses of Sodium Bicarbonate 44 mEq, IV/IO/Saline Lock bolus, may be given every 10 minutes.
- OPTION B:** In cases of hyperkalemia or Calcium Channel Blocker overdose administer Calcium Chloride (CaCl<sub>2</sub>) 1 gm, SLOWLY, IV/IO/Saline Lock bolus. Follow with a Normal Saline (0.9% NS) flush.
- OPTION C:** Begin rapid IV/IO/Saline Lock infusion of Normal Saline (0.9% NS), up to three (3) liters.
- OPTION D:** Transportation Decision.

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504

SUSPECTED MYOCARDIAL INFARCTION

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1. Begin Basic Life Support Chest Pain procedures.
2. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
3. Perform, record, and evaluate a 12 Lead EKG **on any patient hemodynamically stable (i.e., systolic blood pressure greater than 90 mmHg).**

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NOTE: AN UNSTABLE DYSRHYTHMIA MUST BE TREATED PRIOR TO INITIATION OF A 12 LEAD EKG.

4. Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
5. Monitor vital signs every 2 - 3 minutes.

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Sub-Protocols

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504-A Drug Therapy of Myocardial Ischemia

504-B Cardiogenic Shock

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504-A

DRUG THERAPY OF MYOCARDIAL ISCHEMIA

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1. If chest pain persists, administer a Nitroglycerin Tablet 1/150 gr. or Spray 0.4 mg, sublingually, every 5 minutes, for a total of 3 doses. Before each administration, check the patient's pulse and blood pressure to ensure the patient is hemodynamically stable.

**NOTE: UNLESS OTHERWISE DIRECTED BY ON-LINE MEDICAL CONTROL, NITROGLYCERIN AND/OR NITROPASTE MAY NOT BE ADMINISTERED TO PATIENTS WITH A SYSTOLIC BLOOD PRESSURE OF LESS THAN 100 mmHg.**

**UNLESS OTHERWISE DIRECTED BY ON-LINE MEDICAL CONTROL, PATIENTS WHO HAVE USED ERECTILE DYSFUNCTION MEDICATIONS IN THE PREVIOUS 72 HOURS SHALL NOT BE GIVEN NITROGLYCERIN AND/OR NITROPASTE.**

2. If chest pain still persists, apply Nitropaste 1½ inches (if available).

**~~NOTE: NITROGLYCERIN AND/OR NITROPASTE MAY NOT BE ADMINISTERED TO PATIENTS WITH A SYSTOLIC BLOOD PRESSURE OF LESS THAN 100 mmHg, UNLESS AN IV/SALINE LOCK IS IN PLACE.~~**

3. Administer two (2) chewable Aspirin Tablets, 162 mg.
4. If chest pain or other evidence of myocardial ischemia still persists, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

---

**MEDICAL CONTROL OPTIONS:**

**OPTION A:** Administer Morphine Sulfate 0.1mg/kg (not to exceed 5mg) 2–5 mg, IV/Saline Lock bolus. Repeat doses of Morphine Sulfate 0.1mg/kg (not to exceed 5mg) 2–5 mg IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 15 mg.)

**NOTE:** IF HYPOVENTILATION DEVELOPS, ADMINISTER NALOXONE UP TO 2 MG, IV/SALINE LOCK BOLUS.

**OPTION B:** Repeat Nitroglycerin Tablet 1/150 gr. or Spray 0.4 mg, sublingually, every 5 minutes (if transport is delayed or extended).

**OPTION C:** Transportation Decision.

---

**NOTE:** FOR PATIENTS EXHIBITING ST ELEVATION, REFER TO GENERAL OPERATING PROCEDURES – TRANSPORTATION DECISIONS AND PROCEDURES: STEMI PATIENTS.

ACUTE PULMONARY EDEMA

1. Begin Basic Life Support Respiratory Distress procedures.
2. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
3. Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
4. Monitor vital signs every 2-3 minutes.
5. Administer Nitroglycerin Tablet 1/150 gr or Spray 0.4 mg, sublingually, every 5 minutes, for a total of 3 doses. Before each administration, check the patient's pulse and blood pressure to ensure the patient is hemodynamically stable.

**NOTE:** UNLESS OTHERWISE DIRECTED BY ON-LINE MEDICAL CONTROL, PATIENTS WHO HAVE USED ERECTILE DYSFUNCTION MEDICATIONS IN THE PREVIOUS 72 HOURS SHALL NOT BE GIVEN NITROGLYCERIN AND/OR NITROPASTE.

6. Administer Nitropaste 1½ inches (if available).

**NOTE:** UNLESS OTHERWISE DIRECTED BY ON-LINE MEDICAL CONTROL, NITROGLYCERIN AND/OR NITROPASTE MAY NOT BE ADMINISTERED TO PATIENTS WITH A SYSTOLIC BLOOD PRESSURE OF LESS THAN 100 mm Hg, ~~UNLESS AN IV/SALINE LOCK IS IN PLACE.~~

7. Administer Furosemide 20 – 80 mg, IV/Saline Lock bolus. (Maximum combined total dosage is 80 mg.)
8. Initiate CPAP Therapy, if available, (see Appendix P)
9. Contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

**MEDICAL CONTROL OPTIONS:**

**OPTION A:** Administer Morphine Sulfate 0.1mg/kg (not to exceed 5mg) 2--5 mg, IV/Saline Lock bolus. Repeat doses of Morphine Sulfate 0.1mg/kg (not to exceed 5mg) 2--5 mg IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 15 mg.)

**NOTE:** IF HYPOVENTILATION DEVELOPS, ADMINISTER NALOXONE UP TO 2 MG, IV/SALINE LOCK BOLUS

**OPTION B:** Administer Lorazepam 1 – 2 mg, IV/IN Saline Lock bolus.

OR

Administer Midazolam 1 – 2 mg, IV/IN Saline Lock bolus.

**OPTION B C:** Repeat Nitroglycerin Tablet 1/150 gr. or Spray 0.4 mg, sublingually.

**OPTION C D:** Transportation Decision.

MANDATORY QUALITY ASSURANCE COMPONENT: FOR EVERY APPLICATION OF A CPAP ON A PATIENT, THE ACR/PCR DOCUMENTATION MUST BE REVIEWED BY THE SERVICE MEDICAL DIRECTOR, WHO IS THEN RESPONSIBLE FOR FORWARDING A COPY OF THE ACR/PCR TO THE NYC REMAC FOR SYSTEM-WIDE QA PURPOSES.

FOR THE PURPOSES OF PATIENT CONFIDENTIALITY, COPIES OF THE PCR/ACR CAN BE MAILED TO: THE REGIONAL EMS COUNCIL OF NYC, 475 RIVERSIDE DRIVE, SUITE 1929, NEW YORK, NEW YORK 10115. PLEASE LABEL THE ENVELOPE "CONFIDENTIAL QA".

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507

ASTHMA

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In patients with acute asthma and/or active wheezing:

1. Begin Basic Life Support Respiratory Distress procedures.
2. Administer Albuterol Sulfate 0.083% (one unit dose bottle of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 to 15 minutes. May be repeated twice (total of 3 doses).

**OR**

~~Administer Metaproterenol 5% (0.3 ml in 2.5 – 5 ml of Normal Saline (0.9% NS)), by nebulizer, at a flow rate that will deliver the solution over 5 – 15 minutes. May be repeated twice (total of 3 doses).~~

3. Administer Ipratropium Bromide 0.5 mg (1 unit dose), by nebulizer, in conjunction with each Albuterol Sulfate dose.

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**NOTE: ALBUTEROL SULFATE AND IPRATROPIUM BROMIDE MAY BE MIXED AND ADMINISTERED SIMULTANEOUSLY, IF APPROVED BY THE AGENCY MEDICAL DIRECTOR.**

**NOTE: IPRATROPIUM BROMIDE IS CONTRAINDICATED IN CASES OF SUSPECTED 'NUT' OR 'SOY' ALLERGY.**

**NOTE: DO NOT DELAY TRANSPORT TO ADMINISTER ADDITIONAL NEBULIZER TREATMENTS.**

4. In patients with signs of impending respiratory failure, administer Epinephrine 0.3 mg (0.3 ml of a 1:1,000 solution), IM.
5. Begin Cardiac Monitoring, record and evaluate EKG rhythm, in patients in severe respiratory distress with history of dysrhythmia or cardiac disease.
6. In patients in severe respiratory distress, begin an IV/Saline Lock infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
7. In patients with persistent severe respiratory distress, administer Magnesium Sulfate, 2 gm, IV/Saline lock, diluted in 50-100 ml Normal Saline (0.9% NS) over 10-20 minutes.
8. In patients with persistent severe respiratory distress, administer Methylprednisolone 125 mg, IV/Saline lock bolus, or IM,

**OR**

Administer Dexamethasone, 12 mg, IV/Saline Lock bolus, or IM.

9. If the patient develops or remains in severe respiratory distress, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

---

**MEDICAL CONTROL OPTIONS:**

**OPTION A:** Repeat Albuterol Sulfate 0.083% (one unit dose bottle of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 to 15 minutes.

**OR**

# THE REGIONAL EMERGENCY MEDICAL SERVICES COUNCIL OF NEW YORK CITY, INC.

*Revision/Update of REMAC Prehospital Treatment & Transport Protocols – ALS*

**~~Repeat Metaproterenol 5% (0.3 ml in 2.5 – 5 ml of Normal Saline (0.9% NS)), by nebulizer, at a flow rate that will deliver the solution over 5 – 15 minutes.~~**

**OPTION B:** Administer Epinephrine 0.3 mg (0.3 ml of a 1:1,000 solution), IM.

**OPTION C:** Transportation Decision.



## CHRONIC OBSTRUCTIVE PULMONARY DISEASE

In patients in severe respiratory distress due to chronic obstructive pulmonary disease:

1. Begin Basic Life Support Respiratory Distress procedures.
2. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
3. Administer Albuterol Sulfate 0.083% (one unit dose bottle of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 - 15 minutes. May be repeated twice (total of 3 doses).

**OR**

~~Administer Metaproterenol 5% (0.3 ml in 2.5 – 5 ml of Normal Saline (0.9% NS)), by nebulizer, at a flow rate that will deliver the solution over 5 – 15 minutes. May be repeated twice (total of 3 doses).~~

4. Administer Ipratropium Bromide 0.5 mg (1 unit dose), by nebulizer, in conjunction with each Albuterol Sulfate dose.

**NOTE:** ALBUTEROL SULFATE AND IPRATROPIUM BROMIDE MAY BE MIXED AND ADMINISTERED SIMULTANEOUSLY, IF APPROVED BY THE AGENCY MEDICAL DIRECTOR.

**NOTE:** IPRATROPIUM BROMIDE IS CONTRAINDICATED IN CASES OF SUSPECTED 'NUT' OR 'SOY' ALLERGY.

**NOTE:** DO NOT DELAY TRANSPORT TO ADMINISTER ADDITIONAL NEBULIZER TREATMENTS.

4. Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open, or Saline Lock.
5. In patients with persistent severe respiratory distress, administer Methylprednisolone 125 mg, IV/Saline lock bolus, or IM,

**OR**

Administer Dexamethasone, 12 mg, IV/Saline Lock bolus, or IM.

6. If the patient remains in severe respiratory distress, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

**MEDICAL CONTROL OPTIONS:**

**OPTION A:** Repeat Albuterol Sulfate 0.083% (one unit dose bottle of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 - 15 minutes.

**OR**

~~Repeat Metaproterenol 5% (0.3 ml in 2.5 - 5 ml of Normal Saline (0.9% NS)), by nebulizer, at a flow rate that will deliver the solution over 5 - 15 minutes.~~

**OPTION B:** Transportation Decision.

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511

ALTERED MENTAL STATUS

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1. Begin Basic Life Support Altered Mental Status procedures.
2. Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open, or Saline Lock.
3. Administer Dextrose 25 gm (50 ml of a 50% solution), IV/Saline Lock bolus.

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**NOTE: A GLUCOMETER (IF AVAILABLE) MAY BE USED TO DOCUMENT BLOOD GLUCOSE LEVEL PRIOR TO DEXTROSE ADMINISTRATION.**

**IF THE GLUCOMETER READING IS ABOVE 120 mg/dl, DEXTROSE MAY BE WITHHELD.**

**4. ~~Administer Thiamine 100 mg, IV/Saline Lock bolus.~~**

5. In patients with diabetic histories where an IV/Saline Lock route is unavailable, administer Glucagon 1 mg, IM. **(Thiamine need not be administered to these patients).**
6. If there is no change in mental status, administer Naloxone up to 2 mg, IV/Saline Lock bolus. If IV/Saline Lock access has not been established, administer Naloxone up to 2 mg, IM or IN.

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**NOTE: IF AN OVERDOSE IS STRONGLY SUSPECTED, ADMINISTER NALOXONE PRIOR TO DEXTROSE ~~AND THIAMINE.~~**

7. If there still is no change in mental status or it fails to improve significantly, repeat Dextrose 25 gm (50 ml of a 50% solution), IV/Saline Lock bolus.
8. If there still is no change in the patient's mental status or it fails to improve significantly, repeat Naloxone up to 2 mg, IV/Saline Lock bolus. If IV/Saline Lock access has not been established, administer Naloxone up to 2 mg, IM or IN.
9. If there is still no change in mental status, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

---

**MEDICAL CONTROL OPTIONS:**

**OPTION A:** Repeat Naloxone, up to 2 mg, IV/Saline Lock bolus (IM or IN if IV/Saline Lock access has not been established), up to 3 additional doses. (Maximum total dosage is 10 mg.)

**OPTION B:** Transportation Decision.

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513  
SEIZURES

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For patients experiencing seizures that are ongoing or recurring:

1. Begin Basic Life Support Seizures procedure.
2. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
3. Begin an IV/Saline Lock infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
4. Administer Dextrose 25 gm (50 ml of a 50% solution), IV/Saline Lock bolus.
5. Administer Lorazepam 2 mg, IV/Saline Lock bolus, or, if IV access is unavailable, IN or IM. A single repeat dose of Lorazepam 2 mg, ~~IV/Saline Lock bolus, or, if IV access is unavailable, IM,~~ may be given after 5 minutes if seizure activity persists or recurs.

OR

Administer Diazepam 5 mg, IV/Saline Lock bolus. A single repeat dose of Diazepam 5 mg, IV/Saline Lock bolus, may be given if seizure activity persists or recurs. (Rate of administration may not exceed 5 mg/min.)

OR

Administer Midazolam 10 mg, IM or IN, if IV access is unavailable.

**6. Administer Thiamine 100 mg, IV/Saline Lock bolus.**

7. If seizure activity persists, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

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**MEDICAL CONTROL OPTIONS:**

**OPTION A:** Repeat Lorazepam 2 mg, IV/Saline Lock bolus, or, if IV access is unavailable, IN or IM.

OR

Repeat Diazepam 5 mg, IV/Saline Lock bolus. (Rate of administration may not exceed 5 mg/min.)

OR

Repeat Midazolam 10 mg, IN or IM, if IV access is unavailable.

**OPTION B:** Transportation Decision.

### HEAD INJURIES

In patients with head trauma who have a Glasgow Coma Scale (GCS) score of 13 or lower

1. Begin Basic Life Support Head and Spine Injuries procedures.
2. Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
3. Begin Cardiac Monitoring, record and evaluate EKG rhythm.
4. Perform Endotracheal Intubation in patients with a Glasgow Coma Scale score of less than 8, if less invasive methods of airway management are not effective. If the patient requires sedation refer to General Operating Procedures: Prehospital Sedation.

NOTE: ADMINISTER LIDOCAINE 1.5 mg/kg, IV/SALINE LOCK BOLUS, IMMEDIATELY PRIOR TO INTUBATION TO MINIMIZE THE INCREASE IN INTRACRANIAL PRESSURE. (MAXIMUM DOSE IS 1.5 mg/kg.)

5. If a seizure is witnessed, see Protocol 513. ~~contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:~~

#### 6. Transportation Decision.

#### ~~MEDICAL CONTROL OPTIONS:~~

~~OPTION A: Administer Diazepam 5-10 mg, IV/Saline Lock bolus. Repeat doses of Diazepam 5-10 mg, IV/Saline Lock bolus, may be given if seizure activity persists or recurs. (Rate of administration may not exceed 5 mg/min)~~

~~OR~~

~~Administer Lorazepam 2-4 mg, IV/Saline Lock or IM. Repeat doses of Lorazepam 2-4 mg, IV/Saline Lock, or IM, may be given every 5 minutes, if seizure activity persists or recurs. (Maximum total dosage is 8 mg.)~~

~~OPTION B: Transportation Decision.~~

#### ~~\* PREHOSPITAL SEDATION PROCEDURE: Prior Permission from Medical Control Is Required~~

~~If the patient is alert prior to performing Endotracheal Intubation, consider prehospital sedation as follows:~~

- ~~a) Administer Diazepam 5-10 mg, IV/Saline Lock bolus. Repeat doses of Diazepam 5-10 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 20 mg.)~~

~~OR~~

- ~~b) Administer Midazolam 1-2 mg, IV/Saline Lock bolus. Repeat doses of Midazolam 1 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 5 mg.)~~

~~OR~~

- ~~c) Administer Etomidate 0.3 mg/kg, IV/Saline Lock bolus, over 30-60 seconds. (Maximum total dose is 20 mg.) After successful intubation, consider Diazepam 5 mg IV/Saline Lock bolus or Lorazepam 2 mg, IV/Saline Lock or IM, for continued sedation.~~

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528

BURNS

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1. Begin Basic Life Support Burns procedures.
2. If there is evidence of burns to the upper airway or upper airway compromise is anticipated, perform Endotracheal Intubation. If the patient requires sedation refer to General Operating Procedures: Prehospital Sedation.
3. For patients with electrical burns, begin Cardiac Monitoring, record and evaluate the EKG rhythm.
4. Begin Pulse Oximetry monitoring
5. Begin an IV infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL) to keep vein open, or a Saline Lock.
6. Begin a rapid IV/Saline Lock infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL), up to 3 liters, via a macro-drip, if transport is delayed or extended.
7. For patients who are experiencing severe pain due to the burn injury:
  - a) For patients with a systolic blood pressure greater than 110mmHg, administer Morphine Sulfate 0.1mg/kg (not to exceed 5mg), IV / Saline Lock bolus. For continued pain, repeat dose of 0.1mg/kg (not to exceed 5mg) may be repeated five minutes following the initial dose. (Maximum total dose is 10mg.)

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NOTE: IF HYPOVENTILATION DEVELOPS, ADMINISTER NALOXONE UP TO 2 MG, IV/IN/SALINE LOCK BOLUS.

THE ADMINISTRATION OF NARCOTIC ANALGESICS IS CONTRAINDICATED IN PATIENTS WITH BURNS INVOLVING THE FACE AND/OR AIRWAY.

8. If the patient requires sedation, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

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**MEDICAL CONTROL OPTIONS:**

~~OPTION A: For the purposes of analgesia, Morphine Sulfate 2 – 5 mg, IV/Saline Lock bolus, may be administered. Repeat doses of Morphine Sulfate 2 – 5 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 15 mg).~~

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~~NOTE: IF HYPOTENSION, HYPOVENTILATION, OR STUPOR DEVELOPS, WITHHOLD MORPHINE SULFATE, ELEVATE THE LEGS, AND ADMINISTER NALOXONE UP TO 2 mg, IV/SALINE LOCK BOLUS.~~

~~OPTION A:~~ A: Transportation Decision.

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~~\* PREHOSPITAL SEDATION PROCEDURE: Prior Permission from Medical Control Is Required~~  
~~If the patient is alert prior to performing Endotracheal Intubation, consider prehospital sedation as follows:~~

# THE REGIONAL EMERGENCY MEDICAL SERVICES COUNCIL OF NEW YORK CITY, INC.

## *Revision/Update of REMAC Prehospital Treatment & Transport Protocols – ALS*

~~a) Administer Diazepam 5 – 10 mg, IV/Saline Lock bolus. Repeat doses of Diazepam 5 – 10 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 20 mg.)~~

~~OR~~

~~b) Administer Midazolam 1 – 2 mg, IV/Saline Lock bolus. Repeat doses of Midazolam 1 mg, IV/Saline Lock bolus, may be given as necessary. (Maximum total dosage is 5 mg.)~~

~~OR~~

~~c) Administer Etomidate 0.3 mg/kg, IV/Saline Lock bolus, over 30-60 seconds. (Maximum total dose is 20 mg.) After successful intubation, consider Diazepam 5 mg IV/Saline Lock bolus or Lorazepam 2 mg, IV/Saline Lock or IM, for continued sedation.~~

PAIN MANAGEMENT FOR ISOLATED EXTREMITY INJURY

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For patients with isolated extremity injury, if there is severe pain

1. Begin Basic Life Support Procedures.
2. Begin cardiac monitoring. Record and evaluate rhythm **strip**.
3. Begin pulse Oximetry monitoring **(if-available)**.
4. Begin an IV/Saline Lock infusion of Normal Saline (0.9% NS) at a KVO rate.
5. Monitor vital signs every 5 minutes.
6. For patients with a systolic blood pressure greater than 110 mmHg, administer Morphine Sulfate 0.1 mg/kg (not to exceed 5 mg), IV/Saline lock bolus. For continued pain, repeat dose of 0.1 mg/kg (not to exceed 5 mg) may be administered. (Maximum total dose is 10 mg).

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NOTE: IF HYPOVENTILATION DEVELOPS, ADMINISTER NALOXONE UP TO 2 MG, IV/SALINE LOCK BOLUS.

530

## EMOTIONALLY DISTURBED PATIENT

1. Begin Basic Life Support procedures.

**~~NOTE: EMOTIONALLY DISTURBED PATIENTS MUST BE PRESUMED TO HAVE AN UNDERLYING MEDICAL OR TRAUMATIC CONDITION CAUSING AN ALTERED MENTAL STATUS.~~**

ASSESS SUCH PATIENTS FOR AN UNDERLYING MEDICAL OR TRAUMATIC CONDITION CAUSING AN ALTERED MENTAL STATUS AND TREAT AS NECESSARY.

2. Contact medical control if patient agitation inhibits treatment.
3. POST IM or IN SEDATION: Begin an IV/Saline Lock infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock.
4. Begin cardiac monitoring, record and evaluate EKG rhythm ~~strip~~.
5. Apply Pulse Oximetry, ~~if available~~.

**NOTE: IN ORDER TO PROTECT PATIENT'S AIRWAY, CONSIDER PLACING PATIENT IN A LATERAL RECUMBENT POSITION.**

6. If patient is at risk for respiratory or cardiac arrest by continuing to struggle while being physically restrained by the police, contact medical control for implementation of one of the following MEDICAL CONTROL OPTIONS:

### MEDICAL CONTROL OPTIONS:

#### Prehospital Chemical Restraint Procedure

**NOTE: IF PATIENT IS AGITATED, THE INITIAL ROUTE OF CHOICE IS IM OR IN. ONCE THE PATIENT IS SEDATED, IV ACCESS SHOULD BE ESTABLISHED IN THE EVENT ADDITIONAL SEDATION IS NECESSARY.**

**OPTION A:** Administer Diazepam, 5 – 10 mg, IV/Saline Lock bolus.

OR

Administer Midazolam, 1 – 2 mg, IV/Saline Lock bolus or if IV access is unavailable, administer Midazolam, 10 mg IM or IN.

OR

Administer Lorazepam, 2 – 4 mg, IV/Saline Lock bolus or if IV access is unavailable, administer Lorazepam, 4 mg IM or IN.

**OPTION B:** Transportation Decision.



## PEDIATRIC ASTHMA/WHEEZING

For pediatric patients with acute asthma and/or active wheezing:

1. Begin Basic Life Support Pediatric Respiratory Distress/Failure procedures.
2. Administer Albuterol Sulfate 0.083% (one unit dose vial of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 – 15 minutes. ~~(See Broselow Tape or Appendix J.)~~ (Refer to Length Based Dosing Device) May be repeated twice during transport (total of 3 doses).
3. Ipratropium Bromide 0.02% (one unit dose vial of 0.5mL in children 6 years of age or older, one half unit dose vial of 0.5mL in children under 6 years of age), by nebulizer, may be mixed with Albuterol Sulfate. (See Broselow Tape)
4. In patients one (1) year of age or older with severe respiratory distress, respiratory failure, and/or decreased breath sounds, administer Epinephrine 0.01 mg/kg (0.01 ml/kg of a 1:1,000 solution), IM. Maximum dose is 0.3 ml. ~~(See Broselow Tape or Appendix J.)~~ (Refer to Length Based Dosing Device)

NOTE: SEVERE RESPIRATORY DISTRESS IN A CHILD IS CHARACTERIZED BY MARKEDLY INCREASED RESPIRATORY EFFORT, I.E., SEVERE AGITATION, DYSPNEA, TRIPOD POSITION, AND SUPRASTERNAL AND SUBSTERNAL RETRACTIONS.

A SILENT CHEST IS AN OMINOUS SIGN THAT INDICATES RESPIRATORY FAILURE AND ARREST ARE IMMINENT.

During transport, or if transport is delayed:

4. If the patient develops or remains in severe respiratory distress or respiratory failure, and/or continues to have decreased breath sounds, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

### MEDICAL CONTROL OPTIONS:

**OPTION A:** Repeat Albuterol Sulfate 0.083% (one unit dose bottle of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 to 15 minutes. ~~(See Broselow Tape or Appendix J.)~~ (Refer to Length Based Dosing Device)

**OPTION B:** ~~Ipratropium Bromide 0.02% (one unit dose vial of 0.5 ml in children 6 years of age or older, one half unit dose vial of 0.5 ml in children under 6 years of age), by nebulizer, may be mixed (if available) with Albuterol Sulfate. (See Broselow Tape or Appendix J.)~~

**OPTION C:** Repeat Epinephrine 0.01 mg/kg (0.01 ml/kg of a 1:1,000 solution), IM, ~~or Terbutaline 0.01 mg/kg, SC~~, 20 minutes after the initial dose. ~~(See Broselow Tape or Appendix J.)~~ (Refer to Length Based Dosing Device)

**OPTION D:** Begin an IV infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock. Attempt IV no more than twice.

**OPTION E:** Transportation Decision.

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557  
PEDIATRIC SEIZURES

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For patients experiencing seizures that are ongoing or recurring:

1. Begin Basic Life Support Seizures procedures.

During transport, or if transport is delayed:

2. Administer Glucagon 1 mg, IM.
3. Begin an IV or IO infusion of Normal Saline (0.9% NS) to keep vein open, or a Saline Lock. Attempt vascular access no more than twice.
4. Administer Dextrose 0.5 gm/kg, IV/Saline Lock or IO bolus. Use 10% Dextrose in patients less or equal to one (1) month of age. Use 25% Dextrose in patients greater than one (1) month of age and less than 14 years of age. ~~(See Broselow Tape or Appendix J.)~~ [\(Refer to Length Based Dosing Device\)](#)
5. If seizures persist, contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:

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**MEDICAL CONTROL OPTIONS:**

**OPTION A:** Administer Lorazepam 0.05 mg/kg, IV/IN/Saline Lock or IO bolus, slowly, over 2 minutes. Repeat doses of Lorazepam 0.05 mg/kg, IV/IN/Saline Lock or IO bolus, slowly, over 2 minutes, may be given if seizures persist. ~~(See Broselow Tape or Appendix J.)~~ [\(Refer to Length Based Dosing Device\)](#)

OR

Administer Diazepam 0.1mg/kg, IV/Saline Lock or IO bolus, slowly, over 2 minutes. Repeat doses of Diazepam 0.1 mg/kg, IV/Saline Lock or IO bolus, slowly, over 2 minutes, may be given if seizures persist. ~~(See Broselow Tape or Appendix J.)~~ [\(Refer to Length Based Dosing Device\)](#)

**OPTION B:** If IV/Saline Lock or IO access has not been established, administer Midazolam 0.1 mg/kg, IM [or IN](#). (Maximum dose is 5 mg.) ~~(See Broselow Tape or Appendix J.)~~ [\(Refer to Length Based Dosing Device\)](#)

OR

If IV/Saline Lock or IO access has not been established, administer Diazepam 0.5 mg/kg, via rectum. ~~(See Broselow Tape or Appendix J.)~~ [\(Refer to Length Based Dosing Device\)](#)

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**NOTE: DO NOT ADMINISTER LORAZEPAM, DIAZEPAM, OR MIDAZOLAM IF THE SEIZURES HAVE STOPPED.**

**OPTION C:** Transportation Decision.

**List of Appendix Revisions**

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**APPENDIX J**  
**PEDIATRIC VITAL SIGNS**

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**Appendix J has been deleted.**

**For Pediatric equipment and dosing values, refer to  
Length Based Dosing Device.**