

# Nassau Regional Emergency Medical Services



2017

12/01/17

# Nassau Regional EMS Council

## **ADULT - Advanced Life Support**

### Policy – Procedure - Protocol Manual

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The Nassau County EMS Advanced Life Support Protocols serve as a reference for emergency prehospital patient care within the regional EMS system. They are a single set of ALS protocols used by AEMTs, EMT-CCs, and Paramedics, with *Standing orders* that may be performed by each level of Advanced certification, followed by *Medical Control options*. Providers must be credentialed by the Nassau County REMSCO prior to practicing. This requires the Agency Medical Director to approve skills and treatments performed by the provider.

Although not detailed in each protocol, NYS DOH EMS **BLS protocols** are the foundations of all advanced care. BLS care should almost always precede the advanced care specified within these protocols.

**Standing orders** identify actions that may be taken by field personnel under specific medical protocols, based on level of certification of the provider treating the patient, prior to contacting Medical Control.

**STOP lines** indicate the end of standing orders for each level.

- AEMT, EMT-CC, and Paramedic **standing orders**

#### AEMT STOP

- EMT-CC and Paramedic **standing orders**

#### EMT-CC STOP

- Paramedic **standing orders** ONLY after this line

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### Medical Control Options:

- Options listed in this section are common considerations that medical control may choose to order as the situation warrants.
- Medical control may give any order within the scope of practice of the provider. The Medical Control doctor must be made aware of the level of the provider prior to ordering treatments.
- **STOP lines** indicate the limitations of Medical Control options for each level of care.

### Special Notes:

- AEMT defibrillation- (and cardiac monitoring) shall be performed using an AED.
- Nasal route of administration is preferred when the patient is violent, with seizures, or if provider safety is compromised.
- Complete vitals must be assessed prior to the administration of any vaso-active medications.
- Not **ALL** controlled substances are required by agencies.
- Agencies may stock **either** Dexamethasone **OR** Methylprednisolone
- If D50 is unavailable - D10<sub>w</sub> may be used
- Hydroxocobalamine & Pralidoxime (2 PAM) are **optional** medications.

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# Nassau Regional Emergency Medical Services



	<b>Airway Management / Respiratory Arrest</b>	<b>Protocol III. A</b>
		<b>Revised: 10/4/17</b>
		<b>Effective:</b>

## Standing Orders:

- BLS airway management
- BLS foreign body obstruction techniques as appropriate
- Oxygen with pulse oximetry – to maintain a saturation of  $\geq 94\%$
- Establish IV access
- Naloxone (Narcan) up to 2.0 mg IV/IO/ IN - *for suspected narcotic overdose*
- Supraglottic airway

### AEMT STOP

- Use a Magill forceps to remove possible obstruction
- Endotracheal intubation \*
  - monitor waveform capnography throughout transport.
  - use a colorimetric CO2 detector as a secondary device.
  - 2 attempts only - consider alternate supraglottic airway device.
- Cardiac monitor as appropriate

### EMT-CC STOP

- Needle decompression - *for suspected tension pneumothorax*

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## Medical Control Options:

- Naloxone (Narcan) IV/IO/ IN

### AEMT STOP

- Needle decompression - *for suspected tension pneumothorax*

### EMT-CC STOP

- Needle cricothyroidotomy

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# Nassau Regional Emergency Medical Services



	<b>Continuous Positive Airway Pressure (CPAP)</b>	<b>Protocol III. A-1</b>
		<b>Approved:</b> 8/05/15
		<b>Effective:</b> 9/01/15

- Oxygen administration / assist ventilations with bag valve mask
- Initiate CPAP for a spontaneously breathing patient, if credentialed by medical director
- Indications for use (must have all three)
  - Age > 10 years old
  - Signs of severe respiratory distress defined as the patient does not improve after oxygen administration & at least two of the following:
    - Respiratory rate > 24 / min
    - SaO<sub>2</sub> < 92%
    - Significantly decreased air movement
    - Pulmonary edema or frothy sputum, rales or severe wheezes all fields
    - Significantly increased work of breathing (e.g. retractions tripodding, mottled skin, pallor, or cyanosis)
  - Awake patient who can cooperate with CPAP
- Contraindications for use: (any one)
  - Altered mental status (GCS < 14)
  - Systolic BP < 90
  - Respiratory arrest or agonal respirations
  - Blunt or penetrating trauma
  - Suspected pneumothorax
  - Subcutaneous emphysema
  - Facial trauma inhibiting mask seal
  - High risk of vomiting or aspiration
  - Tracheostomy
  - Stridor or suspected airway obstruction
- If indications are present and contraindications are absent"
  - Position patient in semi-fowler position and apply a proper fitting CPAP mask at 10 cm H<sub>2</sub>O pressure.
- May increase by 5 cm H<sub>2</sub>O every 5 minutes if no improvement, as long as the patient tolerates the increased pressure (max 15 cm H<sub>2</sub>O). May decrease by 5 cm H<sub>2</sub>O immediately if patient is unable to tolerate the pressure

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## Medical Control Options:

- Increase CPAP pressure

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<b>Paramedic ONLY</b>	<b>Medication Facilitated <u>Intubation</u></b>	<b>Protocol III. B</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

**AEMT STOP**

**EMT-CC STOP**

**Standing Orders:**

**Paramedic only**

- BLS Airway management
- Obtain vascular access as appropriate
- Cardiac monitor as appropriate
- Pre-oxygenate, position the patient appropriately
- Contact Medical Control for sedation medications.
- Post - Endotracheal intubation
  - monitor waveform capnography throughout transport.
  - use a colorimetric CO2 detector as a secondary device.
  - 2 attempts only - consider alternate airway device.

**Medical Control Options:** (if available)

- If the patient is conscious prior to performing endotracheal intubation, contact medical control for prehospital sedation (if available)
    - Diazepam (Valium) 5-10 mg IV/IO *(if hemodynamically stable)*  
repeat dose may be given as necessary *(max total dose 20 mg)*  
**or**
    - Midazolam (Versed) 1-5 mg IV/IO/IN  
repeat dose may be given as necessary *(max total dose 5 mg)*  
**or**
    - Lorazepam (Ativan) 2-4 mg IV/IO/IN  
repeat dose may be given as necessary *(max total dose 4 mg)*  
**or**
    - Etomidate (Amidate) 0.3 mg/kg rapid IV/IO push *(max dose 40mg)*  
**or**
    - Ketamine 2-5 mg/kg IV/IO
- After intubation.
- Diazepam (Valium) 5mg IV/IO for continued sedation.

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# Nassau Regional Emergency Medical Services



	<b>Vascular Access / Fluid &amp; Medication Management</b>	<b>Protocol III. C</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

## Standing Orders:

- **Saline lock** or KVO I.V. line with normal saline may be used.
- Patients that require rapid volume IV drip, at least one (1) large bore IV line with normal saline should be established.
- Peripheral veins should be used as a primary site. The **external jugular vein (EJ)** may be used *in extremis* for adult patients if no other site is accessible.
- An **intraosseous (IO)** device may be used for patients in complete vascular collapse via proximal Tibia or proximal Humerus. Drug administration via this route utilizes doses identical to those used for IV administration.
- In the absence of intravenous access, **intranasal (IN)** with an appropriate atomizer device may be used if available.

The **only** AEMT drugs approved for this route are Naloxone (Narcan), Glucagon

## AEMT STOP

The **only** drugs approved for the IN route are Naloxone (Narcan), Glucagon, Lorazepam (Ativan), Midazolam (Versed) and Fentanyl.

*(this is the preferred route for violent patients, seizures, or if provider safety is compromised)*

Note: KVO = 20 - 30 ml per hour

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	<b>Hypoperfusion / Shock</b>	<b>Protocol III. D</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

*Do Not delay transport*

**Standing Orders:**

- Airway management
- Vascular access
- IV fluid bolus (AEMT limited to 500 ml)

**AEMT STOP**

- Cardiac monitor
- IV fluid bolus - titrate to SBP 90  
*(No more than 2 liters unless ordered by medical control)*  
*If adrenal cortical insufficiency (Addison's) / hyperplasia is confirmed \**
- Hydrocortisone Sodium Succinate (Solu-Cortef) 2mg/kg IV/IO (*max.100mg*)

**EMT-CC STOP**

- Needle Decompression - *for suspected tension pneumothorax*

**Medical Control Options:**

- Additional normal saline bolus
- Hospital Diversion

**AEMT STOP**

- Dopamine drip 5-20 mcg/kg/min IV/IO
- Norepinephrine (Levophed) (2-4 mcg/min- initial dose) IV/IO (*max 30 mcg/min*) - large vein if possible
- Needle Decompression - *for suspected tension pneumothorax*
- Hydrocortisone Sodium Succinate (Solu-Cortef) 2mg/kg IV/IO (*max.100mg*)

*NOTE: Adrenal insufficiency / hyperplasia is confirmed by patient record, family or medic alert tag*

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# Nassau Regional Emergency Medical Services



EMT-CC & Paramedic ONLY	Pain Management (Non-cardiac)	Protocol III. E
		Revised: 8/2/17
		Effective:

## AEMT STOP

*To provide relief from severe pain for patients with:*

- Burns without hemodynamic compromise
- Isolated extremity fractures/dislocations with severe pain and long transport or disentanglement time
- Any other condition deemed appropriate by Medical control.

### Standing Orders:

- Airway management
- Vascular access
- Cardiac monitor
- Ketorolac (Toradol) 30 mg IV (over 1 minute) / IM (ages 14- 65 only)

## EMT-CC STOP

- Morphine sulfate 2-10 mg (0.1 mg/kg) IV/IM (if available)
- Fentanyl 1mcg/kg IV/IO/IM/IN (*max 100 mcg*)
- Ketamine 0.2-0.3 mg/kg IV/IO
- Naloxone (Narcan) 0.4 - 2.0 mg (titrated) IV/IO/IM/ IN - *for respiratory depression*  
*If nausea or vomiting occurs - refer to protocol III. G*

### Medical Control Options:

- Morphine sulfate 2-10 mg (0.1 mg/kg) IV/IM (*max 20mg total*) (if available)
- Fentanyl 1mcg/kg IV/IO/IM/IN (*max 100 mcg*)
- Ketorolac (Toradol) 30 mg IV (over 1 minute) / IM (ages 14-65 only)

#### *If Hypoventilation after Morphine administration*

- Naloxone (Narcan) IV/IO/IM/ IN

## EMT-CC STOP

- Ketamine 0.2-0.3 mg/kg IV/IO

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# Nassau Regional Emergency Medical Services



EMT-CC & Paramedic ONLY	Procedural Sedation	Protocol III. F
		Revised: 8/2/17
		Effective:

## AEMT STOP

*Conscious patients requiring synchronized cardioversion or pacing*

### Standing Orders:

- Airway management
- Vascular access
- Cardiac monitor

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### Medical Control Options: (if available)

- Diazepam (Valium) 5-10 mg IV/IO
- Midazolam (Versed) 1-5 mg IV/IO/IN
- Lorazepam (Ativan) 2-4 mg IV/IO/IN
- Morphine sulfate 2-10 mg (0.1 mg/kg) IV/IO
- Etomidate (Amidate) 0.15 mg/kg IV/IO (*max 20 mg total*)
- Fentanyl 1mcg/kg IV/IO//IN (*max 100 mcg*)

#### *If nausea or vomiting:*

- Ondansetron (Zofran) 4 mg IV/IO *or* 4 mg ODT (Orally Disintegrating Tablet)

## EMT-CC STOP

- Ketamine 1 mg/kg IV / IO

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**Nassau Regional Emergency Medical Services**

<b>EMT-CC &amp; Paramedic ONLY</b>	<b>Severe Nausea / Vomiting</b>	<b>Protocol III. G</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

**AEMT STOP**

*Adult patients with persistent vomiting or severe nausea*

Consider and treat any underlying cause (i.e. poisoning , Myocardial ischemia, etc.)

**Standing Orders:**

- Airway management
  - Vascular access
  - Cardiac monitor
  - Ondansetron (Zofran) 4 mg IV/IO, over 2 minutes *or* 4 mg ODT (*may be repeated*)

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**Medical Control Options:**

- Ondansetron (Zofran) 4 mg IV/IO *or* 4 mg ODT

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	<b>TRAUMA</b>	<b>Protocol III. H</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

*If a patient meets Trauma Criteria - Notify & divert to Trauma center*

**Standing Orders:**

- BLS trauma measures as appropriate
- Airway management
- Treat for shock - per protocol (III.D)

**AEMT STOP**

- Pain management - per protocol (III.E)

**Burns: (thermal & electrical)**

- Transport to a Burn Center if there is a manageable airway \*
- Cover with sterile / clean dry dressing

**Crush injuries:** for patients with entrapment / compression of greater than one hour, especially when a large muscle mass/group is involved.

*Treatment should begin BEFORE the patient is removed if possible.*

- Monitor for dysrhythmias during the period immediately after release.
- Consider Albuterol 0.083% 2.5 mg for possible hyperkalemia (peaked T-waves / wide QRS) wheezing or bronchospasm.
- Keep affected limb at level of the heart.

**EMT-CC STOP**

- Needle decompression - *for suspected tension pneumothorax*

**Medical Control Options:**

- Additional normal saline bolus

**AEMT STOP**

- Sodium Bicarbonate 1 mEq/kg IV/IO (at 10 minute intervals)
- Calcium chloride 1gm IV/IO
- Needle decompression - *for suspected tension pneumothorax*

\* **NOTES:** *If a patient with burns meets Trauma Criteria - Divert to Trauma center  
Administration of narcotic analgesics is contraindicated in patients with burns involving the face and/or airway.*

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# Nassau Regional Emergency Medical Services



	<b>Asthma / Bronchospasm</b>	<b>Protocol III. I</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

## Standing Orders:

- Airway management
- Vascular access as appropriate
- Albuterol <sup>0.083%</sup> 2.5 mg and Ipratropium (Atrovent) <sup>0.02%</sup> 500 mcg via Nebulizer
- Repeat Albuterol 2.5 mg and Ipratropium (Atrovent) <sup>0.02%</sup> 500 mcg via Nebulizer
- CPAP/ BIPAP (if available)

### AEMT STOP

- Cardiac monitor as appropriate

### EMT-CC STOP

#### For severe presentation:

- Epinephrine 1:1000 0.3 mg IM/SQ
- Dexamethasone 12 mg IV/IO/IM
- or*
- Methylprednisolone 125 mg IV/IO/IM
- Magnesium sulfate 2 gm in 100 ml IV/IO - (*over 10 minutes*)

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## Medical Control Options:

- Albuterol 2.5 mg via Nebulizer
- Ipratropium (Atrovent) 500 mcg via Nebulizer
- CPAP/ BIPAP (if available)

### AEMT STOP

- Epinephrine 1:1000 0.3 IM/SQ
- Magnesium sulfate 2 gm in 100 ml IV/IO - (*over 10 minutes*)
- Dexamethasone 12 mg IV/IO/IM
- Methylprednisolone 125 mg IV/IO/IM

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	<b>C.O.P.D.</b>	<b>Protocol III. J</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

## Standing Orders:

- Airway management
- Vascular access as appropriate
- Albuterol <sup>0.083%</sup> 2.5 mg and Ipratropium (Atrovent) <sup>0.02%</sup> 500 mcg via Nebulizer
- Repeat Albuterol 2.5 mg and Ipratropium (Atrovent) <sup>0.02%</sup> 500 mcg via Nebulizer
- CPAP/ BIPAP (if available)

### AEMT STOP

- Cardiac monitor as appropriate

### EMT-CC STOP

**For severe presentation:**

- Dexamethasone 12 mg IV/IO/IM
- or*
- Methylprednisolone 125 mg IV/IO

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## Medical Control Options:

- Albuterol 2.5 mg via Nebulizer
- Ipratropium (Atrovent) 500 mcg via Nebulizer
- CPAP/ BIPAP (if available)

### AEMT STOP

- Dexamethasone 12 mg IV/IO/IM
- Methylprednisolone 125 mg IV/IO

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**Nassau Regional Emergency Medical Services**



	<b>Acute Pulmonary Edema</b>	<b>Protocol III. K</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

**Standing Orders:**

- Airway management
- Vascular access
- Nitroglycerin 0.4 mg SL *or* SL spray one time only  
*If Systolic B/P is  $\geq 120$  or  $\geq 100$  with IV access*
- CPAP/ BIPAP (if available)

**AEMT STOP**

- Cardiac monitor / 12 lead ECG

**EMT-CC STOP**

- Nitroglycerin 0.4 mg SL *or* SL spray - Repeat q 5 minutes (max 3 doses)  
*If Systolic remains  $\geq 120$*

**Medical Control Options:**

- CPAP/ BIPAP (if available)
- Nitroglycerin 0.4 mg SL *or* SL spray

**AEMT STOP**

- Furosemide 40-100 mg IV/IO
- Dopamine drip 5-20 mcg/kg/min IV/IO (*titrated to effect*)
- Norepinephrine (Levophed) 2-4 mcg/min- initial dose IV/IO (*max 30 mcg/min*)  
*- large vein if possible*

**NOTE:** Patients who have used medications for erectile dysfunction within the last 72 hours should not be given Nitroglycerin unless otherwise directed by Medical control.

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	<b>Anaphylaxis</b>	<b>Protocol III. L</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

**Standing Orders:**

- Airway management
- Vascular access
- Epinephrine 1:1000 Epi Kit IM
- or*
- Epinephrine Autoinjector 0.3 mg IM
- IV fluid bolus (AEMT limited to 500 ml)
- Albuterol 0.083% 2.5 mg via Nebulizer - *for bronchospasms*

**AEMT STOP**

- Cardiac monitor
- Epinephrine 1:1000 0.3 mg IM
- Repeat Albuterol 2.5 mg via Nebulizer (*max 3 doses*)
- Diphenhydramine 50 mg IV/IO/ IM
- Dexamethasone 12 mg IV/IO/IM
- or*
- Methylprednisolone 125 mg IV/IO
- IV fluid bolus – up to 2 Liters unless as otherwise directed by MedCon

**Medical Control Options:**

- Additional normal saline bolus
- Epinephrine 1:1000 0.3 mg IM
- Albuterol 2.5 mg via nebulizer

**AEMT STOP**

- Diphenhydramine 50 mg IV/IO/IM
- Dexamethasone 12 mg IV/IO/IM
- Methylprednisolone 125 mg IV/IO
- Epinephrine drip 2-10 mcg/min IV/IO
- Norepinephrine (Levophed) (2-4 mcg/min- *initial dose*) IV/IO (*max 30 mcg/min*) - *large vein if possible*
- Dopamine drip 5-20 mcg/kg/min IV/IO (*only if Epinephrine or Norepinephrine is unavailable*)

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<b>Acute Coronary Syndrome / Chest Pain</b>	<b>Protocol III. M</b>
	<b>Revised: 8/2/17</b>
	<b>Effective:</b>

**Standing Orders:**

- Airway management
- 12 Lead acquisition (*transmit to Medical control*)
- Vascular access
- Aspirin 325 mg. (chewed)

**AEMT STOP**

- Cardiac monitor / 12 lead ECG \*
- Nitroglycerin 0.4 mg SL *or* SL spray - (*If SBP  $\geq$  120 or  $\geq$  100 with IV*)\*  
Caution with inferior wall MI's

**Medical Control Options:**

- Additional normal saline bolus
- Transport to nearest PCI capable hospital \*
- Aspirin 325 mg (chewed)
- Nitroglycerin 0.4 mg SL *or* SL spray

**AEMT STOP**

- Morphine Sulfate 2-10 mg IV/IO
- Fentanyl 1mcg/kg IV/IO/IM/IN (*max 100 mcg*)
- Dopamine drip 5-20 mcg/kg/min IV/IO (*titrated*) - *for hypotension*
- Norepinephrine (Levophed) (2-4 mcg/min- initial dose) IV/IO (*max 30 mcg/min*) - large vein if possible

**\* NOTES:**

*Medical Control Physician will make the determination to divert to PCI center based on transmitted 12-lead. If transmission is NOT possible, advise Physician of machine interpretation or field interpretation.*

*Patients who have used medications for erectile dysfunction within the last 72 hours should not be given Nitroglycerin unless otherwise directed by Medical control.*

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# Nassau Regional Emergency Medical Services



	<b>Cardiac Arrest - VF / Pulseless VT</b>	<b>Protocol III. N</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

## Standing Orders:

- Begin NYS BLS Cardiac Arrest Protocol (CC&P may use manual Defib.)
- Establish IV/IO access - without CPR interruption ( $\geq 18g$  if possible)
- Epinephrine 1:10,000 1 mg IV/IO - one time
- Airway management

## AEMT STOP

- Cardiac monitor
- Epinephrine 1:10,000 1 mg IV/IO - **repeat every 3-5 minutes**
- Amiodarone 300 mg IV/IO

## Contact medical control

## Medical Control Options:

- Epinephrine 1:10,000 1 mg IV/IO
- Defibrillate (*max joules*)

## AEMT STOP

- Amiodarone 150 mg IV/IO (2nd dose)
- Magnesium sulfate 1-2 gm IV/IO
- Sodium bicarbonate 1 mEq/kg IV/IO
- Calcium chloride 1 gm IV/IO

Any of the above orders may be repeated as per Physician's discretion

- \* **NOTE:** CPR should not be paused for procedures or to administer medications.  
Continue CPR while defibrillator charges. If possible - rotate chest compressors q 2 min.  
If ROSC – acquire 12-Lead ECG

All medications should be followed by a normal saline flush.

Consider & treat underlying causes if possible:

Hypoxia, Hypovolemia, Hypothermia, Hyper / Hypokalemia, Hydrogen Ion (acidosis)  
Trauma, Tension pneumothorax, Tamponade, Toxin/Overdose, Thrombosis/Embolus

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# Nassau Regional Emergency Medical Services



	<b>Cardiac Arrest - Asystole / PEA</b>	<b>Protocol III. O</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

## Standing Orders:

- Begin NYS BLS Cardiac Arrest Protocol (CC&P may use manual Defib.)
- Establish IV/IO access - without CPR interruption ( $\geq 18g$  if possible)
- Epinephrine 1:10,000 1 mg IV/IO - one time
- Airway management

### AEMT STOP

- Cardiac monitor
- Epinephrine 1:10,000 1 mg IV/IO - repeat every 3-5 minutes

### EMT-CC STOP

- Needle decompression - *for suspected tension pneumothorax*

## Contact Medical Control

### Medical Control Options:

- Additional normal saline bolus
- Epinephrine 1:10,000 1 mg IV/IO
- Naloxone (Narcan) IV/IO/IN
- Dextrose (D50) 25gm IV/IO bolus (*if blood glucose  $\leq 60$  mg/dl*)

### AEMT STOP

- Sodium bicarbonate 1 mEq/kg IV/IO
- Calcium chloride 1 gm IV/IO
- Glucagon 1mg IV/IO/IN
- Needle decompression - *for suspected tension pneumothorax*
- Termination of resuscitation.

Any of the above orders may be repeated as per Physician's discretion

- \* **NOTE:** CPR should not be paused for procedures or to administer medications.  
Continue CPR while defibrillator charges. If possible - rotate chest compressors q 2 min.  
If ROSC – acquire 12-Lead ECG

All medications should be followed by a normal saline flush.

Consider & treat underlying causes if possible:

Hypoxia, Hypovolemia, Hypothermia, Hyper / Hypokalemia, Hydrogen Ion (acidosis)  
Trauma, Tension pneumothorax, Tamponade, Toxin/Overdose, Thrombosis/Embolus

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**Nassau Regional Emergency Medical Services**

	<b>Tachycardia - with Pulse - (Wide complex)</b>	<b>Protocol III. Q</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

*Treat only if symptomatic*

**Standing Orders:**

- Airway management
- Vascular access
- Fluid challenge - as appropriate (AEMT limited to 500 ml)

**AEMT STOP**

- Cardiac monitor / 12 lead ECG

**EMT-CC STOP**

- Synchronized cardioversion 50-360 j - if unstable (*consider procedural sedation*)
- Amiodarone 150 mg (in 100ml NS) IV/IO - *over 10 min.*

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**Medical Control Options:**

- Additional normal saline bolus

**AEMT STOP**

- Amiodarone 150 mg (in 100ml NS) IV/IO - *over 10 min.*
- Magnesium sulfate 2 gm in 100 ml IV/IO - *over 10 min*
- Synchronized cardioversion 50-360 j - (*consider procedural sedation*)
- Sodium bicarbonate 1 mEq/kg IV/IO
- Calcium chloride 1 gm IV/IO

Draft

  
**Nassau Regional Emergency Medical Services**

	<b>Tachycardia - (Narrow Complex)</b>	<b>Protocol III. R</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

*Treat only if symptomatic*

**Standing Orders:**

- Airway management
- Vascular access
- Fluid challenge as appropriate (AEMT limited to 500 ml)

**AEMT STOP**

- Cardiac monitor / 12 lead ECG as appropriate
- Valsalva maneuver

**EMT-CC STOP**

- For stable A-fib / A-flutter - contact medical control
- Synchronized cardioversion 50-360 j - if unstable (*consider procedural sedation*)
- Adenosine 6mg IV/IO push - (20 ml flush) - if conscious & alert
- Adenosine 12mg IV/IO push - (20 ml flush) - second dose

**Medical Control Options:**

- Additional normal saline bolus

**AEMT STOP**

- Valsalva maneuver
- Adenosine 6mg IV/IO push - (20 ml flush)
- Adenosine 12mg IV/IO push - (20 ml flush) - second dose
- Synchronized cardioversion 50-360 j (*consider procedural sedation*)
- Amiodarone 150 mg (in 100 ml NS) IV/IO - *over 10 minutes.*
- Diltiazem (Cardizem) 0.25 mg/kg slow IV (*over 2 minutes*) - (for A-fib / A-flutter)

Draft

  
**Nassau Regional Emergency Medical Services**

	<b>Symptomatic Bradycardia</b>	<b>Protocol III. S</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

**Standing Orders:**

- Airway management
- Vascular access
- Fluid challenge (AEMT limited to 500 ml)

**AEMT STOP**

- Cardiac monitor / 12 lead ECG as appropriate
- Atropine 0.5 mg IV/IO - repeat every 5 min PRN (max. 3 mg)  
*IF - second degree (type II) or third degree block, pacing recommended*
- Transcutaneous pacing - (start at 60 PPM) - (consider procedural sedation)

---

**Medical Control Options:**

- Additional normal saline bolus

**AEMT STOP**

- Atropine 0.5-1.0 mg IV/IO
- Dopamine drip 5-20 mcg/kg/min IV/IO
- Epinephrine drip 2-10 mcg/min IV/IO
- Calcium chloride 1 gm IV/IO - *if Calcium channel blocker overdose*
- Sodium bicarbonate 1 mEq/kg IV/IO
- Hospital diversion - *if STEMI*

Draft

  
**Nassau Regional Emergency Medical Services**

	<b>Altered Mental Status</b>	<b>Protocol III. T</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

**Standing Orders:**

- Airway management
- Vascular access
- Naloxone (Narcan) 0.4 mg - 2.0 mg (titrated) IV/IO/IM/IN  
*if signs/history of narcotic use with respiratory depression. (give prior to dextrose if OD is suspected)*  
*May repeat x 2*
- Assess blood glucose - treat if  $\leq 60$  mg/dl
  - Oral glucose, juice, etc. - *if patient is alert enough to swallow with intact gag reflex*
  - Dextrose (D50) 25 gm IV/IO
  - Glucagon 1 mg IM / IN *(if no IV access)*

**AEMT STOP**

- Cardiac monitor
- 

**Medical Control Options:**

- Dextrose (D50) 25 gm IV/IO
- Naloxone (Narcan) 0.4 - 2.0 IV/IO/IM/IN
- Glucagon 1 mg IM / IN

Draft



	<b>Active Seizures / Status Epilepticus</b>	<b>Protocol III. U</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

*This protocol is used for patients with generalized active seizures who are unconscious.  
Contact medical Control for patients who are conscious and seizing.*

**Standing Orders:**

- Airway management
- Vascular access
- Assess blood glucose - treat if  $\leq 60$  mg/dl
  - Dextrose (D50) 25 gm IV/IO
  - Glucagon 1 mg IM / IN *(if no IV access)*

**AEMT STOP**

- Cardiac monitor is appropriate
- Diazepam (Valium) 5 mg IV/IO/IM/PR  
*or*
- Midazolam (Versed) 1-5 mg IV/IO/IM/IN  
*or*
- Lorazepam (Ativan) 2-4 mg IV/IO/IM

**Medical Control Options:**

- Dextrose (D50) 25 gm IV/IO
- Glucagon 1 mg IM / IN *(if no IV access)*

**AEMT STOP**

- Diazepam (Valium) 5 mg IV/IO/IM/PR
- Midazolam (Versed) 1-5 mg IV/IO/IM/IN
- Lorazepam (Ativan) 2-4 mg IV/IO/IM
- Magnesium sulfate 2 gm in 100 ml IV/IO - *over 10 min - if eclampsia*

Draft



**Nassau Regional Emergency Medical Services**



Critical Care & Paramedic	<b>Stroke / Transient Ischemic Attack</b>	<b>Protocol III. V</b>
		Revised: 8/2/17
		Effective:

**Standing Orders:**

- Airway management
- Vascular access as appropriate
- Assess blood glucose - treat if  $\leq 60$  mg/dl
  - Dextrose (D50) 25 gm IV/IO
  - Glucagon 1 mg IM / IN (*if no IV access*)
- Cincinnati stroke assessment
- Obtain the Last "known well" time
- Transport to a "stroke center" hospital with notification

**AEMT STOP**

- Cardiac monitor as appropriate
- 

**Medical Control Options:**

- Dextrose (D50) 25 gm IV/IO
- Glucagon 1 mg IM / IN (*if no IV access*)
- Hospital diversion / stroke team activation

Draft

# Nassau Regional Emergency Medical Services



Critical Care & Paramedic	<b>Behavioral Emergency/Agitation</b>	<b>Protocol III. W</b>
		Revised: 8/2/17
		Effective:

*Contact medical control if unable to treat*

## Standing Orders:

- Airway management
- Vascular access
- Additional assistance / restraints as needed \*<sub>(see note)</sub>  
*(Check circulation frequently / document application time if restraints are used)*
- Transport to appropriate hospital - *(prior notification if possible)*

### AEMT STOP

#### For extreme agitation and/or excited delirium

- Midazolam (Versed) 1-5 mg IV or 5-10 mg IM/IN
- Cardiac monitor as appropriate

## Medical Control Options:

### AEMT STOP

- Diazepam (Valium) 2-10 mg IV/IO/IM
- Midazolam (Versed) 1-5 mg IV/IO/IM/IN
- Lorazepam (Ativan) 1-2 mg IV/IO/IM/IN

### EMT-CC STOP

- Ketamine 4 mg/kg IM or 2 mg/kg IV

#### \* NOTE:

*In order to protect the patient's airway, consider placing patient in a lateral recumbent position.  
NO restrained patient shall be transported prone.*

Draft

# Nassau Regional Emergency Medical Services



	<b>Poisoning / OD / Toxic Exposure</b>	<b>Protocol III. X</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

### Standing Orders:

- If external contamination - ***Patient must be decontaminated prior to transport***
- Airway management
- Vascular access as appropriate
- Assess blood glucose - treat if  $\leq 60$  mg/dl
- Naloxone (Narcan) 0.4 - 2.0 mg (titrated) IV/IO/IM/ IN - *If respiratory depression.*  
*If (opiates suspected) May repeat x 2*
- Oral glucose, juice, etc - *if patient can swallow (intact gag reflex)*
- Dextrose (D50) 25 gm IV/IO
- Glucagon 1 mg IM / IN *(if no IV access)*

### AEMT STOP

- Cardiac monitor as appropriate

### Medical Control Options:

#### Opiates

- Naloxone (Narcan) IV/IO/IM/IN

### AEMT STOP

#### Cocaine, amphetamines, sympathomimetics, or ETOH withdrawal

- Midazolam (Versed) 1- 5 mg IV/IO/IM/IN
- Diazepam (Valium) 2-10 mg IV/IO
- Lorazepam (Ativan) 1- 2 mg IV/IO/IM

#### Organophosphates, nerve agents

- Atropine 2 mg IV/IM *(or autoinjector) (repeat as needed)*
- Pralidoxime (2PAM) 600 mg autoinjector IM *(max 3 autoinjector) - if available*
- Diazepam (Valium) 2-10 mg IV/IO/PR *(max total dose 20 mg)*

#### Tricyclic antidepressant (w/ QRS > 10 m/sec)

- Sodium Bicarbonate 1 mEq/kg IV/IO

#### Calcium channel blocker

- Calcium chloride 1gm IV/IO

#### Beta blocker

- Glucagon 1-2 mg IV/IO

#### Eye Injury

- Tetracaine eye drops - 2 drops in affected eye(s) before irrigation

#### Cyanide (including smoke inhalation)

- Obtain blood samples prior to medication administration *(a red & lime green tube)*
- Hydroxocobalamin 5g IV *(over 10 min.) \* **needs dedicated IV** - if available*
- **Start a second I.V. line**
- Sodium Thiosulfate 25% sol. 12.5g IV/IO (50ml NS - over 10 min.) \*
- Dopamine drip 5-20 mcg/ kg /min IV/IO

Draft

# Nassau Regional Emergency Medical Services



	<b>Obstetric / Pregnancy Related</b>	<b>Protocol III. Y</b>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

## Standing Orders:

- BLS childbirth management
- Airway management
- Vascular access ( large bore if appropriate)
- Contact medical control for transport decision to "obstetric" receiving hospital.

### Postpartum hemorrhage

- IV fluid bolus (AEMT limited to 500 ml / CC & Paramedic 1 liter)
- Massage fundus firmly & consider allowing infant to nurse

### Placenta previa or Placenta abruption

- IV fluid bolus (AEMT limited to 500 ml / CC & Paramedic 1 liter) - *if hypotensive*

### Eclampsia (Seizures) *or*

Pre-eclampsia (SBP  $\geq$  160 / DBP  $\geq$  110 and/or severe headache, visual disturbances,  
(acute pulmonary edema, upper abdominal tenderness))

- Transport carefully - with lights dimmed.

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## Medical Control Options:

- Hospital diversion to "obstetric" receiving hospital
- Additional normal saline bolus

### **AEMT STOP**

- Magnesium sulfate 2 gm in 100 ml IV/IO - *over 10 min*
- Diazepam (Valium) 5 mg IV/ IM
- Midazolam (Versed) 1-5 mg IV/IO/IM/IN
- Lorazepam (Ativan) 2-4 mg IV/IO/IM

Draft

# Nassau Regional Emergency Medical Services



<b>Critical Care &amp; Paramedic</b>	<b>Hazardous Materials Treatment</b>	<b>Protocol III. Z</b> <i>Page 1 of 7</i>
		<b>Revised: 8/2/17</b>
		<b>Effective:</b>

**AEMT STOP**

## PURPOSE

It is the intention of these protocols to facilitate rapid medical intervention at the scene of a Hazardous Materials incident. These protocols are written in order to better define the responsibilities of the Hazardous Materials Medical Sector Staff. These protocols although intended for the Hazardous Materials Emergency can be used on other scenes of poisonings when deemed necessary by approved Hazardous Materials Treatment Team staff.

## POLICY

The Hazardous Materials Medical Sector Staff shall recognize the following as emergency treatment for specific exposure conditions.

## DESCRIPTION

The possibility of secondary contamination shall be recognized and measures taken to reduce the chance of such contamination. It is the responsibility of all individuals involved at the scene to take precaution to reduce secondary exposure. However, if an exposure has taken place, the following is a set of medical standing orders that have been authorized by the Medical Director to be used at the scene of a hazardous materials incident or during transport of an exposed victim.

**General Treatment** - Rapid assessment and initial medical practices are a necessity. High dose oxygen concentration shall be delivered to the patient as soon as practical. (This may be started during decontamination). The medical technician in charge shall notify Medical Control to contact the appropriate hospital as soon as practical and advise of the type of exposure and the number of patients involved.

It is imperative that the safety of civilian and emergency personnel be maintained while dealing with Hazardous Materials. Site safety includes barring entry into the HOT ZONE without proper precautions, full protective clothing, and knowledge or permission of the Incident Commander. People who become victims while in the Hot Zone must be brought into the WARM ZONE and decontamination effected ***before*** any medical treatment is performed. Rescuers must not become victims themselves by entering the Hot Zone, Decontamination area, or Warm Zone without proper protection.

**Never transported a contaminated patient!! Remember, leave the contamination at the scene of the emergency, and NEVER take it with you to the hospital!!**

For Use by REMAC APPROVED  
Hazmat Treatment Teams ONLY



<b>Critical Care &amp; Paramedic</b>	<b>Hazardous Materials Treatment</b>	<b>Protocol III. Z</b> <i>Page 2 of 7</i>
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Special treatment modalities for exposure shall be initiated as soon as possible after decontamination. If there will be extended operations on a Hazardous Materials incident, EMS personnel should advise Medical Control to notify the closest appropriate medical facility, advising the Emergency Department of the nature and extent of the operations. This alerts the hospital of the incidents that may require setting up a clean isolation treatment room and/or obtaining specific medications for the exposure treatment. The report should include specific names of chemicals involved, specific amounts, and the type of exposure expected, i.e. inhalation, skin absorption, ingestion, or injection. Determine if a toxicologist is available for consultation. Be sure to have Medical Control notify the hospital at the end of the incident so they can return equipment and personnel to normal use.

**DRUG BOX INVENTORY**

The following is a list of the standard Hazmat Drug Box inventory. It shall be a second medication box carried and used in conjunction with the primary ALS box. This drug box shall be maintained specifically for hazardous materials exposures and poisonings.

**SPECIALITY DRUGS**

Adenosine	Albuterol	Atropine Sulfate
Amyl Nitrite Perles	Dopamine	Ponticaine Hydrochlorite
Topical Calcium Gluconate	Epinephrine	Pralidoxime (2PAM, Protopam)
Calcium Gluconate	Metaproterenol (Alupent)	0.9% Sodium Chloride
Dextrose 5%	Methylene Blue	Sodium Bicarbonate
Dextrose 50	Morgan Irrigation Lens	Sodium Nitrite
Diazepam/Midazolam	Naloxone	Sodium Thiosulfate
Esmolol (Breviblock)	Oxygen	Thiamine

*SPECIFIC TREATMENT PROTOCOLS*

**CARBON MONOXIDE POISONING**

With all cases of altered mental status in the context of hazardous materials. **Note:** Unconsciousness may occur in concentrations of 1.5% or greater and may cause tissue anoxia. Transportation to a facility with a hyperbaric chamber should be considered.

**DESCRIPTION:** Colorless, odorless, tasteless, non-irritating gas. Converts hemoglobin into carboxyhemoglobin a non oxygen-carrying compound causing chemical asphyxiation. Pulse oximetry may indicate incorrect, unusually high oxygen saturation.

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**TREATMENT:**

Immediately administer 100% oxygen if conscious, if unconscious consider intubation.

Start IV of Normal Saline.

Administer Dextrose 50%, given in conjunction with, or followed immediately by 100mg Thiamine.

Follow the 50% Dextrose with immediate hyperventilation and 100% oxygen.

*\*\*If CO poisoning due to suicide attempt give Narcan 2mg IVP.*

**ANILINE DYES, NITRITES, NITRATES, NITROBENZENE, AND NITROGEN DIOXIDE**

**DESCRIPTION:** Commonly found in fertilizers, paints, inks, and dyes. Changes hemoglobin into a non-oxygen carrying compound methemoglobin. Blood color changes from red to a chocolate brown color.

**TREATMENT:**

1. Immediately administer 100% oxygen, if unconscious consider intubation.
2. Start IV Normal Saline.
3. If hypotensive, position patient, increase IV flow, if severe start Dopamine.
4. Administer Methylene Blue, 1-2mg/kg IVP over 5 minutes. (Methylene Blue may momentarily affect the pulse oximeter).

**CYANIDE AND HYDROGEN SULFIDE**

**DESCRIPTION CYANIDE:** One of the most rapid acting poisons. Bitter almond smell to those without sensory deficit. Interferes with the uptake of oxygen into the cell and halts cellular respiration causing chemical asphyxiation. Pulse oximetry will indicate unusually high oxygen saturation due to the cells inability to pick up oxygen from the blood stream.

**DESCRIPTION HYDROGEN SULFIDE:** Also known as Sewer Gas. Has a distinctive smell of rotten eggs but most dangerous when it can't be smelled. Formed naturally by the decomposition of organic substances. Heavier than air. Interferes with cellular respiration.

**TREATMENT:**

1. Amyl Nitrite Perles - Broken and held on a gauze pad under the patient's nose. Allow the patient to inhale for 15-30 seconds of every minute. During the interval, the patient should breathe 100% oxygen. If the patient is not breathing place the Perles into a BVM and ventilate the patient.
2. As soon as possible start an IV of Normal Saline and immediately give:

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Sodium Nitrite 10ml of a 3% solution IV over 2 minutes (300mg). Monitor BP.  
 Children - .33ml/kg of a 3% solution over 10 minutes.  
 Sodium Thiosulfate 50ml of a 25% solution over 10 minutes. Monitor BP.  
 Children - 1.65ml/kg up to 50ml over 10 minutes.  
***Sodium Thiosulfate not given in Hydrogen Sulfide Poisonings.***

**ORGANOPHOSPHATE INSECTICIDE POISONING (OIP) AND CARBAMATE POISONING**

**DESCRIPTION:** Pesticide can be inhaled, ingested, or absorbed. Once in the body it binds with the acetylcholinesterase causing initially excitation of the nervous conduction then paralysis. Common seen signs are Salivation, Lacrimation, Urination, Defecation, GI symptoms, and Emesis (SLUDGE). Can be lethal in less than 5mg dose.

**TREATMENTS:**

1. Immediately give 100% oxygen to insure tissue oxygenation.
2. Start IV Normal Saline and give:  
 Atropine 2-4mg IVP at 5 minute intervals (until respiratory secretions correct).  
*There is no maximum dose.*  
*Use extreme caution in a hypoxic patient.*  
*Giving atropine to a hypoxic heart may stimulate ventricular fibrillation.*  
 Pralidoxime (2-PAM) IVP 1Gm over 2 minutes. ***Not used in Carbamate poisonings.***

**HYDROFLUORIC ACID BURNS AND POISONING**

**DESCRIPTION:** The strongest inorganic acid known. Injury is twofold; causes corrosive burning of the skin and deep underlying tissue. Also, binds with calcium and magnesium of the nerve pathways, bone, and blood stream. The results are spontaneous depolarization producing excruciating pain, and cardiac dysrhythmia degenerating to cardiac arrest.

**TREATMENT:**

**SKIN BURNS:**

1. Immediately flush exposed area with large amounts of water.
2. Apply Topical Calcium Gluconate Gel to burned area.  
*(Mix 10cc of a 10% calcium gluconate solution into a 2oz. tube of water soluble jelly).*
3. Massage into burned area.

***If pain continues then:***

1. Calcium Gluconate in a 5% solution is injected subcutaneously in a volume of 0.5ml/cm<sup>2</sup> or every 1/4 inch into burned area.

For Use by REMAC APPROVED  
 Hazmat Treatment Teams ONLY





## EYE INJURIES:

1. Immediately flush eyes with any means possible.
2. Mix 50cc of a 10% solution into 500cc of NS IV solution.
3. Connect bag and tubing to a Morgan Irrigation Lens and infuse.

## PHENOL

**DESCRIPTION:** Also known as Carboic Acid. Found in many household items and is commonly used as a disinfectant, germicide, antiseptic, and as a wood preservative. It causes injury much the same as other acids by coagulating proteins found in the skin. Systemic effects are seen throughout the central nervous system. Evidenced by CNS depression including respiratory arrest.

## TREATMENT:

1. Decontaminate initially with large volumes of water then irrigate burned area with mineral oil, olive oil, or isopropyl alcohol.
2. Support respirations, control seizures, and ventricular ectopy with recognized means of treatment.

## CHEMICAL BURNS TO EYES

**Note:** Watch water run off so other parts of the body do not become contaminated (especially other parts of the face, ears, and back of neck.) Eye burns are almost always associated with contamination of other parts of the face or body.

## TREATMENT:

1. Immediately start eye irrigation by what ever means possible.
2. Insure all particulate matter or contact lenses are out of the eyes by digitally opening the lids and pouring irrigation fluid across the globe.
3. Prepare the Morgan Lens by attaching an IV solution of NS or LR, insure that the tubing is full and a steady drip of solution is running from lens.
4. Apply 1-2 drops of Ponticaine Hydrochloride into the injured eye.
5. Insert the lens by lowering the bottom lid and inserting then raising upper lid and placing the lens against the globe.
6. Adjust the flow so that a continuous solution is flowing from eye.
7. Continue irrigation until arrival at the hospital.

***BRONCHOSPASMS SECONDARY TO TOXIC INHALATION***

Wheezing due to exposure of the respiratory system to an irritant.

**TREATMENT:**

1. Immediately give 100% humidified oxygen.
2. Issue an updraft of albuterol, 1 unit dose nebulized. - **MEDICAL CONTROL ORDER**
3. Repeat the dose, if needed.

**TACHYDYSRHYTHMIAS**

Supraventricular Tachycardia due to sensitization of a toxic exposure and CNS stimulants.

**TREATMENT:**

1. Establish an IV lock and give;
  - a. 0.5 mg/kg of Breviblock IVP or
  - b. Adenocard 6mg rapid IV push followed by 10cc of saline IVP.

**CHLORAMINE & CHLORINE**

**DESCRIPTION:** Chloramine is the mixture of over the counter bleach and ammonia. Forms an irritating gas that converts to hydrochloric acid in the lining of upper air passages. The mixture is toxic and flammable.

The patient will typically complain of a burning sensation to the upper respiratory system, coughing, and hoarseness.

**TREATMENT:** After the patient is removed from the atmosphere and appropriate decontamination completed give:

1. 100% oxygen via NRB mask.
2. Assemble a nebulizer and administer 5cc of sterile water.
3. If burning persists titrate half strength adult bicarb (3.75% or 4.2%) and administer 5cc through a nebulizer.
4. Consider Steroids

***This is the only time a chemical will be neutralized in or on the body by field medical personnel.***



**OC (OLEORESIN CAPSICUM) pepper spray and other LACRIMATORS**

**DESCRIPTION:** The patient will usually present with extreme burning of the eyes, nose, and congestion due to increased mucous production. Exam will find the patient suffering from increased tear production and blepharospasm.

**TREATMENT:** Since the agent does not cause significant tissue damage the treatment is aimed at relieving the pain caused by nerve stimulation.

1. Initially determine the history of the injury. If a determination can be established that the pain is caused from capsicum spray then the eyes should be immediately numbed.
2. Once it has been assured that the patient is not allergic to *caine* derivatives apply Alcaine, Ponticaine, or Ophthalmacaine.
3. When the blepharospasm is relieved a visual exam is performed to assess for trauma of the eye.
4. Assess for clear lung sounds and BP changes to insure that sensitivity has not occurred.