

Nassau Regional Emergency Medical Services



Advanced Life Support Policy, Procedure, and Protocol Manual

Training Use ONLY

2014_(12/11/13)

Nassau Regional EMS Council

ADULT - Advanced Life Support

Policy – Procedure - Protocol Manual

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Special Notes:

Currently, Nassau County REMSCO does not mandate Controlled Substances, CPAP/BIPAP or Hypothermia procedures for ROSC. These items are considered the standard of care and agencies are encouraged to adopt these items with approval of their agency Medical Director.

Complete vitals must be assessed prior to the administration of any vaso-active medications.

Nasal route of administration is preferred when the patient is violent, with seizures, or if provider safety is compromised.

If D50 is unavailable - D10_w may be used



Critical Care & Paramedic	Airway Management / Respiratory Arrest	Protocol III. A
		Approved: 10/30/13
		Effective: 4/01/14

Standing Orders:

- BLS airway management
- BLS foreign body obstruction techniques as appropriate
- Use a Magill forceps to remove possible obstruction
- Oxygen as appropriate
- Pulse oximetry, waveform capnography, cardiac monitor as appropriate
- Endotracheal intubation *
 - monitor waveform capnography throughout transport.
 - use a colorimetric CO2 detector as a secondary device.
 - 2 attempts only - consider alternate airway device.
- Establish IV access
- Naloxone (Narcan) 2.0 mg IV/IO/ IN - *for suspected narcotic overdose*

Paramedic _____

- Needle decompression - *for suspected tension pneumothorax*

Medical Control Options:

- CPAP / BIPAP (if available)
- Naloxone (Narcan) 2.0 mg IV/IO/ IN
- Needle decompression - *for suspected tension pneumothorax*
- Needle cricothyroidotomy

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Paramedic ONLY	Medication Facilitated <u>Intubation</u>	Protocol III. B
		Approved: 10/30/13
		Effective: 4/01/14

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 20mg*)
After intubation,
 - Diazepam (Valium) 5mg IV/IO for continued sedation.

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Critical Care & Paramedic	Vascular Access / Fluid & Medication Management	Protocol III. C
		Approved: 10/30/13
		Effective: 4/01/14

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 **ONLY**. 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** drugs approved for this route are **Naloxone** (Narcan), **Lorazepam** (Ativan), **Midazolam** (Versed) and **Fentanyl**.

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

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Critical Care & Paramedic	Hypoperfusion / Shock	Protocol III. D
		Approved: 10/30/13 Effective: 4/01/14

Do Not delay transport

Standing Orders:

- Airway management
- Vascular access
- 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)*

Paramedic _____

- Needle Decompression - *for suspected tension pneumothorax*

Medical Control Options:

- 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*
- Continue IV Drip beyond 2 Liters
- Hospital Diversion
- 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

Nassau Regional Emergency Medical Services



Critical Care & Paramedic	Pain Management (Non-cardiac)	Protocol III. E
		Approved: 10/30/13
		Effective: 4/01/14

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)

Paramedic _____

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

If Hypoventilation after Morphine administration

- Naloxone (Narcan) 0.4-2.0 mg IV/IO/IM/ IN

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Critical Care & Paramedic	Procedural Sedation	Protocol III. F
		Approved: 10/30/13
		Effective: 4/01/14

Conscious patients requiring synchronized cardioversion or pacing

Standing Orders:

- Airway management
- Vascular access
- Cardiac monitor

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 10mg total*)
- Fentanyl 1mcg/kg IV/IO//IN (*max 100 mcg*)

If nausea or vomiting:

- Ondansetron (Zofran) 4 mg IV/IO , *may be repeated*

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Critical Care & Paramedic	Severe Nausea / Vomiting	Protocol III. G
		Approved: 10/30/13
		Effective: 4/01/14

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

Paramedic _____

- Ondansetron (Zofran) 4 mg IV/IO, over 2 minutes (*may be repeated one time*)

Medical Control Options:

- Ondansetron (Zofran) 4 mg IV/IO, *may be repeated*

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Critical Care & Paramedic	TRAUMA	Protocol III. H
		Approved: 10/30/13
		Effective: 4/01/14

Standing Orders:

- BLS trauma measures as appropriate
- Airway management
- Treat for shock - per protocol
- Pain management - per protocol

Paramedic

- Needle decompression - *for suspected tension pneumothorax*

Burns: (thermal & electrical)

- Transport to a Burn Center if there is a manageable airway
- Cover with sterile / clean dry dressing or may use Water-Jel (or equivalent)
if < 10% body surface area

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.

Medical Control Options:

- Continue normal saline bolus 500 ml - 1000 ml
- Sodium Bicarbonate 1 mEq/kg IV/IO (*at 10 minute intervals*)
- Calcium chloride 1gm IV/IO
- Needle decompression - *for suspected tension pneumothorax*

NOTE: Administration of narcotic analgesics is contraindicated in patients with burns involving the face and/or airway.

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Critical Care & Paramedic	Asthma / Bronchospasm	Protocol III. I
		Approved: 10/30/13
		Effective: 4/01/14

Standing Orders:

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

Paramedic _____

For severe presentation:

- Epinephrine 1:1000 0.3 mg IM/SQ
- Dexamethasone 12 mg IV/IO/IM
- or*
- Methylprednisolone 125 mg IV/IO/IM

Medical Control Options:

- Albuterol 2.5 mg via Nebulizer
- Ipratropium (Atrovent) 500 mcg via Nebulizer
- Epinephrine 1:1000 0.3 IM/SQ
- Magnesium sulfate 2 gm IV/IO - (*over 10-20 minutes*)
- CPAP/ BIPAP (if available)
- Dexamethasone 12 mg IV/IO/IM
- Methylprednisolone 125 mg IV/IO/IM

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Critical Care & Paramedic	C.O.P.D.	Protocol III. J
		Approved: 10/30/13
		Effective: 4/01/14

Standing Orders:

- Airway management - including waveform capnography
- Vascular access as appropriate
- Cardiac monitor as appropriate
- Albuterol ^{0.083%} 2.5 mg and Ipratropium (Atrovent) ^{0.02%} 500 mcg via Nebulizer
- Repeat Albuterol 2.5 mg via Nebulizer
- CPAP/ BIPAP (if available)

Paramedic _____

For severe presentation:

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

Medical Control Options:

- Albuterol 2.5 mg via Nebulizer
- Ipratropium (Atrovent) 500 mcg via Nebulizer
- CPAP/ BIPAP (if available)
- Dexamethasone 12 mg IV/IO/IM
- Methylprednisolone 125 mg IV/IO

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Critical Care & Paramedic	Acute Pulmonary Edema	Protocol III. K
		Approved: 10/30/13
		Effective: 4/01/14

Standing Orders:

- Airway management
- Vascular access
- Cardiac monitor / 12 lead ECG
- Nitroglycerin 0.4 mg SL *or* SL spray
If Systolic B/P is ≥ 120 or ≥ 100 with IV access
- CPAP/ BIPAP (if available)

Medical Control Options:

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

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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Critical Care & Paramedic	Anaphylaxis	Protocol III. L
		Approved: 10/30/13
		Effective: 4/01/14

Standing Orders:

- Airway management
- Vascular access
- Cardiac monitor
- Epinephrine 1:1000 0.3 mg IM
- or*
- Epinephrine Autoinjector 0.3 mg IM
- IV fluid bolus (*No more than 2 liters unless ordered by medical control*)
- Albuterol 0.083% 2.5 mg via Nebulizer - *for bronchospasms*
- 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

Medical Control Options:

- Epinephrine 1:1000 0.3 mg IM
- Albuterol 2.5 mg via nebulizer
- Diphenhydramine 50 mg IV/IO/IM
- Continue Fluid challenge beyond 2 liters
- 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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Critical Care & Paramedic	Acute Coronary Syndrome / Chest Pain	Protocol III. M
		Approved: 10/30/13
		Effective: 4/01/14

Standing Orders:

- Airway management
- Vascular access
- Aspirin 325 mg. (chewed)
- 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:

- Transport to nearest PCI capable hospital *
- Aspirin 325 mg (chewed)
- Nitroglycerin 0.4 mg SL *or* SL spray
- Morphine Sulfate 2-10 mg IV/IO
- Fentanyl 1mcg/kg IV/IO/IM/IN *(max 100 mcg)*
- Fluid challenge
- 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

Critical Care & Paramedic	Cardiac Arrest - VF / Pulseless VT	Protocol III. N
		Approved: 10/30/13
		Effective: 4/01/14

Standing Orders:

- CPR *per AHA guidelines* - limit interruptions in chest compressions*
- If NO CPR in progress - perform 2 minutes - check pulse /rhythm
- Defibrillate (*max joules*) - repeat every 2 minutes if no rhythm change
- Establish IV/IO access - without CPR interruption ($\geq 18g$ if possible)
- Epinephrine 1:10,000 1 mg IV/IO - **repeat every 3-5 minutes**
May use Vasopressin 40 units IV/ IO (1st or 2nd dose) - if available
- Airway management - including waveform capnography (*keep ETCO₂ >10*)
- Cardiac monitor
- Amiodarone 300 mg IV/IO

Contact medical control

Medical Control Options:

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

*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.*

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

Critical Care & Paramedic	Cardiac Arrest - Asystole / PEA	Protocol III. O
		Approved: 10/30/13
		Effective: 4/01/14

Standing Orders:

- CPR *per AHA guidelines* - limit interruptions in chest compressions*
- If NO CPR in progress - perform 2 minutes - check pulse /rhythm
- Establish IV/IO access - without CPR interruption ($\geq 18g$ if possible)
- Epinephrine 1:10,000 1 mg IV/IO - **repeat every 3-5 minutes**
May use Vasopressin 40 units IV/ IO (1st or 2nd dose) - if available
- Airway management - including waveform capnography (*keep ETCO₂ >10*)
- Cardiac monitor

Paramedic _____

- Needle decompression - *for suspected tension pneumothorax*

Contact Medical Control

Medical Control Options:

- Epinephrine 1:10,000 1 mg IV/IO
- Fluid challenge
- Naloxone (Narcan) 2.0 mg IV/IO/IN
- Dextrose (D50) 25gm IV/IO bolus (*if blood glucose ≤ 60 mg/dl*)
- Sodium bicarbonate 1 mEq/kg IV/IO
- Calcium chloride 1 gm IV/IO
- Glucagon 1mg IV/IO
- 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.
 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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Critical Care & Paramedic	Post Resuscitation / Return of circulation (ROSC)	Protocol III. P
		Approved: 10/30/13
		Effective: 4/01/14

Standing Orders:

- Airway management including waveform capnography (*EtCO₂ 35-45*)
- If hypoperfusion persists - *see Hypoperfusion /shock protocol*
- Treat other medical/trauma conditions as appropriate
- Maintain a waveform capnography value of 35 - 45 mmHg
- Perform 12-lead ECG - evaluate for STEMI criteria
- If patient is Comatose/Unresponsive initiate hypothermic procedures
(if available)
 - Use \geq 18g device (IV/IO)
 - Start rapid infusion of ice cold (4 Celsius) normal saline via IV/IO to a total of 30ml/kg (*max total = 2 liters*) (*use pressure infusion sleeve*)
- Contact medical control for transport to nearest STEMI / Hypothermia capable hospital.

Medical Control Options:

- Hospital diversion
- 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
- Midazolam (Versed) 1-5 mg IV/IO - *for shivering*
- Diazepam (Valium) 5 mg IV/IO
- Fentanyl 1mcg/kg IV/IO (*max 100 mcg*)

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Critical Care & Paramedic	Wide Complex Tachycardia - with Pulse	Protocol III. Q
		Approved: 10/30/13
		Effective: 4/01/14

treat only if symptomatic

Standing Orders:

- Airway management
- Vascular access
- Cardiac monitor / 12 lead ECG

(Paramedic) _____

- Synchronized cardioversion 50-360 j - if unstable *(consider procedural sedation)*
- Amiodarone 150 mg (in 100ml D₅W) IV/IO - *over 10 min.*
- Fluid challenge - as appropriate

Medical Control Options:

- Amiodarone 150 mg (in 100ml D₅W) IV/IO - *over 10 min..*
- Magnesium sulfate 1-2 gm IV/IO - *over 10 min*
- Synchronized cardioversion 50-360 j - *(consider procedural sedation)*
- Fluid challenge
- Sodium bicarbonate 1 mEq/kg IV/IO
- Calcium chloride 1 gm IV/IO

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Critical Care & Paramedic	Narrow Complex Tachycardia	Protocol III. R
		Approved: 10/30/13
		Effective: 4/01/14

treat only if symptomatic

Standing Orders:

- Airway management - including waveform capnography
- Vascular access as appropriate
- Cardiac monitor / 12 lead ECG as appropriate
- Valsalva maneuvers (*such as bearing down*) while preparing for other treatments

(Paramedic) _____

- 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
- For stable A-fib / A-flutter - contact medical control

Medical Control Options:

- 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*)
- Fluid challenge
- Amiodarone 150 mg (in 100ml D₅W) IV/IO - *over 10 minutes.*
- Diltiazem (Cardizem) 0.25 mg/kg slow IV (*over 2 minutes*) - (for A-fib / A-flutter)

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Critical Care & Paramedic	Symptomatic Bradycardia	Protocol III. S
		Approved: 10/30/13
		Effective: 4/01/14

Standing Orders:

- Airway management - including waveform capnography
- Vascular access as appropriate
- 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)*
- Fluid challenge - *if hypotensive*

Medical Control Options:

- Atropine 0.5-1.0 mg IV/IO
- Fluid challenge - *if hypotensive*
- 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*

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Critical Care & Paramedic	Altered Mental Status	Protocol III. T
		Approved: 10/30/13
		Effective: 4/01/14

Standing Orders:

- Airway management - including waveform capnography
- Vascular access as appropriate
- Cardiac monitor as appropriate
- 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 ≤ 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 (*if no IV access*)

Medical Control Options:

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


Nassau Regional Emergency Medical Services

Critical Care & Paramedic	Seizures / Status Epilepticus	Protocol III. U
		Approved: 10/30/13
		Effective: 4/01/14

Standing Orders:

- Airway management - including waveform capnography
- Vascular access as appropriate
- Cardiac monitor as appropriate
- Assess blood glucose - treat if ≤ 60 mg/dl
- Dextrose (D50) 25 gm IV/IO
- Glucagon 1 mg IM (*if no IV access*)

- 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:

- 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
- Dextrose (D50) 25 gm IV/IO
- Glucagon 1 mg IM (*if no IV access*)
- Magnesium sulfate 2 gm IV/IO (*over 10 minutes*) - *if eclampsia*

Training Use ONLY

Nassau Regional Emergency Medical Services



Critical Care & Paramedic	Stroke / Transient Ischemic Attack	Protocol III. V
		Approved: 10/30/13
		Effective: 4/01/14

Standing Orders:

- Airway management - including waveform capnography
- Vascular access as appropriate
- Cardiac monitor as appropriate
- Assess blood glucose - treat if ≤ 60 mg/dl
- Dextrose (D50) 25 gm IV/IO
- Glucagon 1 mg IM (*if no IV access*)
- Cincinnati stroke assessment
- Obtain the "time of onset" of symptoms
- Transport to a "stroke center" hospital with notification

Medical Control Options:

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

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Nassau Regional Emergency Medical Services



Critical Care & Paramedic	Behavioral Emergency/Agitation	Protocol III. W
		Approved: 10/30/13
		Effective: 4/01/14

Contact medical control if unable to treat

Standing Orders:

- Airway management
- Vascular access
- Cardiac monitor
- Additional assistance / restraints as needed *
(Check circulation frequently / document application time if restraints are used)
- Transport to appropriate hospital - *(prior notification if possible)*

Medical Control Options:

- 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
- Haloperidol (Haldol) 2-5 mg IM

*** NOTE:**

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

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Critical Care & Paramedic	Poisoning / OD / Toxic Exposure	Protocol III. X
		Approved: 10/30/13
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Standing Orders:

- If external contamination - ***Patient must be decontaminated prior to transport***
- Airway management - including waveform capnography
- Vascular access as appropriate
- Cardiac monitor as appropriate
- Assess blood glucose - treat if ≤ 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 *(if no IV access)*

Medical Control Options:

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)*
- Diazepam (Valium) 2-10 mg IV/IO/PR *(max total dose 20 mg)*

Opiates

- Naloxone (Narcan) 0.4- 2.0 mg IV/IO/IM/IN

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***
- **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

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Critical Care & Paramedic	Obstetric / Pregnancy Related	Protocol III. Y
		Approved: 10/30/13
		Effective: 4/01/14

Standing Orders:

- BLS childbirth management
- Airway management - including capnography - Oxygen 100% via NRB
- Vascular access (\geq 18g device)
- Contact medical control for diversion to "obstetric" receiving hospital.
- Rapid transport - Do not delay on scene

Postpartum hemorrhage

- IV Bolus - 1 liter Normal saline
- Massage fundus firmly & consider allowing infant to nurse

Placenta previa or Placenta abruption

- IV bolus - 1 liter Normal saline - 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.
- Contact Medical control for Magnesium sulfate or Diazepam order.

Medical Control Options:

- Magnesium sulfate 2 gm - IV/IO (*over 10 minutes*) - *for seizures* - May repeat
- Diazepam (Valium) 5 mg IV/ IM - *for refractory seizures*
- Fluid challenge - *hypotension / bleeding*
- Hospital diversion to "obstetric" receiving hospital

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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!!

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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.

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/cm² or every 1/4 inch into burned area.

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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 Carbohic 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.

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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.

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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.

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