

# Nassau Regional Emergency Medical Services



Advanced Life Support  
Pediatric Protocol Manual

# Nassau Regional Medical Advisory Committee

## PEDIATRIC ADVANCED LIFE SUPPORT PROTOCOLS

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\* = *Revised Protocol*

P-4 = Corrected – 6/11/2008

P-1, 5, 6, 7, 9, 10, 11 = Corrected – 4/5/2006

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<b>Pediatric ALS Protocols</b>	<b>NEWBORN RESUSCITATION</b>	<b>Protocol P1</b>
		Approved: 4/2/2003
		Effective: 5/1/2003
		<i>Corrected – 4/5/2006</i>

**Check fluid for meconium. For newborns requiring resuscitation whose amniotic fluid contains meconium: Suction mouth and nose after the head is delivered**

**IF MECONIUM PRESENT DO NOT STIMULATE THE NEWBORN!**

## Standing Orders

1. BLS Newborn Resuscitation procedures.
2. If newborn is depressed and meconium staining is present, delay drying and stimulation. Suction airway before taking other resuscitative measures.
3. Begin Newborn Resuscitation procedures only after the airway has been cleared of thick meconium, as follows:
  - a. Perform endotracheal intubation and directly suction the endotracheal tube via a meconium aspirator/adaptor while slowly withdrawing the endotracheal tube. Note: Do not exceed 100-mmHg suction vacuum
  - b. Repeat this procedure until little or no meconium is acquired or until the heart rate indicates resuscitation must begin immediately.
  - c. **Do not replace the endotracheal tube once the airway has been cleared of thick meconium unless the newborn remains limp, apneic, or pulseless.**

**For all newborns requiring resuscitation once BLS Newborn Resuscitation procedures have begun:**

**During transport, or if transport is delayed:**

4. If the newborn appears to be in respiratory distress and the heart rate is below 120 BPM, administer oxygen in as high a concentration as possible.
5. If the newborn appears to be in respiratory distress and the heart rate is below 100 BPM, ventilate via BVM or mouth-to-mask with oxygen attached.
- \* 6. If the newborn appears to be in respiratory distress and the heart rate is below 60 BPM, Perform Endotracheal Intubation, Ventilate via BVM or mouth to mask, begin CPR, administer:

Epinephrine 1:10,000 0.01 mg/kg via IV/IO

**OR**

Epinephrine 1:1,000 0.1 mg/kg via ET

## **MEDICAL CONTROL OPTIONS**

- Repeat Epinephrine every 3-5 minutes
- Naloxone 0.1 mg/kg (Birth to 5 years – up to 20 kg.) via the endotracheal tube for newborns, contact Medical Control if you suspect the mother is narcotic dependent or has used narcotics within the past 24 hours.
- If transport is delayed or extended, begin an IV/saline lock or IO infusion of Normal Saline (0.9% NaCl) 10 ml/kg. Attempt IV or IO only once each. Reassess and document after each bolus.

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<b>Pediatric ALS Protocols</b>	<b>PEDIATRIC RESPIRATORY ARREST</b>	<b>Protocol P2</b>
		Approved: 4/2/03
		Effective: 5/1/03

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

## **Standing Orders**

1. Open airway and begin ventilation as per BLS Pediatric Respiratory Distress/Failure procedures.
2. If an obstructed airway is suspected, see obstructed airway protocol. (P3)
3. Perform endotracheal intubation if BLS measures are not adequate.
4. I.V. of Normal Saline (0.9% NaCl) KVO or a saline lock.

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## **MEDICAL CONTROL OPTIONS:**

- *Paramedic – If a tension pneumothorax is suspected consider orders to perform needle decompression, using an 18-20 gauge catheter*
- IO infusion of Normal Saline (0.9% NaCl).
- Naloxone IV/saline lock/IO bolus/ endotracheal tube/IM as directed.

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Pediatric ALS Protocols	PEDIATRIC OBSTRUCTED AIRWAY	Protocol P3
		Approved: 4/2/03
		Effective: 5/1/03

For pediatric patients who are unconscious or present with signs & symptoms of inadequate air exchange:

## Standing Orders

1. Begin BLS Pediatric Obstructed Airway procedures.
2. Perform direct laryngoscopy - attempt to remove the foreign body with appropriate size Magill Forceps.

**NOTE: IF AN ENLARGED EPIGLOTTIS IS VISUALIZED DO NOT ATTEMPT ENDOTRACHEAL INTUBATION. USE BAG-VALVE-MASK (with pop-off disabled)**

3. Perform endotracheal intubation, if BLS measures are not adequate.

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## MEDICAL CONTROL OPTIONS:

- *Paramedic – If child is in respiratory arrest, consider orders to perform needle cricothyrotomy*

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<b>Pediatric ALS Protocols</b>	<b>PEDIATRIC CROUP</b>	<b>Protocol P4</b>
		Approved: 4/2/2003
		Effective: 5/1/2003
		<i>Corrected – 6/11/2008</i>

## Standing Orders

1. Begin BLS Pediatric Croup/Epiglottitis procedures.
2. If child is alert and oriented, transport in position of comfort with parent. Offer cool mist 100% Oxygen if child will allow.
3. If child presents with signs & symptoms of inadequate air exchange, refer to protocol (P3)

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**NOTE: DO NOT ATTEMPT ENDOTRACHEAL INTUBATION. USE BAG-VALVE-MASK (with pop-off valve disabled).**

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## **MEDICAL CONTROL OPTIONS:**

- *Paramedic – if child is in respiratory arrest, needle cricothyrotomy*
- \* Racemic Epinephrine, 0.05 mg/kg in 3cc 0.9% saline (Max. 5 ml) via Nebulizer (if unavailable, Epinephrine may be used at the same nebulizer dose)
- Consider Endotracheal Intubation in acute epiglottitis with an ET tube one mm smaller than calculated.

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<b>Pediatric ALS Protocols</b>	<b>PEDIATRIC NON-TRAUMATIC CARDIAC ARREST</b>	<b>Protocol P5</b>
		Approved: 4/2/2003
		Effective: 5/1/2003

*Corrected – 4/5/2006*

## Standing Orders

1. Begin BLS Pediatric Non-Traumatic Cardiac Arrest procedures.  
     Perform endotracheal intubation, if BLS measures not adequate.
2. Cardiac Monitoring.
  - a. If in ventricular fibrillation or pulseless ventricular tachycardia, immediately defibrillate at 2 joules/kg, using paddles of appropriate size.  
 Resume CPR immediately (5 cycles).  
**Note:** Biphasic AED will automatically calculate appropriate joule level.
  - b. If still in ventricular fibrillation or pulseless ventricular tachycardia, immediately repeat defibrillation at 4 joules/kg.  
 Resume CPR immediately (5 cycles).  
 Epinephrine 1:10,000 0.01 mg/kg via IV or IO (Repeat every 3-5 minutes)  
 – **OR** Epinephrine 1:1,000 0.1 mg/kg via ET (Repeat every 3-5 minutes)
  - c. If still in ventricular fibrillation or pulseless ventricular tachycardia, immediately repeat defibrillation at 4 joules/kg.  
 Resume CPR immediately (5 cycles).  
 Contact Medical Control for additional medication orders.
  - d. Proceed to step 2.b. above.
3. Begin transport keeping child warm

**NOTE: IF THE DEFIBRILLATOR IS UNABLE TO DELIVER THE RECOMMENDED JOULES, USE THE LOWEST AVAILABLE SETTING.**

4. IV or IO infusion of Normal Saline (0.9% NaCl) KVO.

## **MEDICAL CONTROL OPTIONS:**

- Amiodarone IV, IO if patient is in V-Tach or V-Fib **OR** Lidocaine rapid IV push if Amiodarone not available.
- Dextrose D10 or D25.
- Sodium Bicarbonate IV/saline lock or IO bolus.



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<b>Pediatric ALS Protocols</b>	<b>PEDIATRIC ASTHMA/WHEEZING</b>	<b>Protocol P6</b>
		Approved: 4/2/2003
		Effective: 5/1/2003
		<i>Corrected – 4/5/2006</i>

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

### **Standing Orders**

1. Begin BLS Pediatric Respiratory Distress/Failure procedures.
  2. Administer Albuterol Sulfate 0.083% (one unit dose of 3 ml) **OR** Levalbuterol 1.25mg (one unit dose of 3 ml), patients <6 months, ½ unit dose of either, via nebulizer. If no response, 2nd unit dose to follow immediately. If still no response, contact medical control immediately.
  3. Intubation
  4. Consider IV/IO if Patient unstable.
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**Paramedic** – In patients one (1) year of age or older with severe respiratory distress, respiratory failure, and/or decreased breath sounds, administer Epinephrine (1:1,000) 0.01 mg/kg, subcutaneous (maximum dose 0.3 mg).

### **MEDICAL CONTROL OPTIONS:**

- Repeat Albuterol Sulfate OR Levalbuterol, by nebulizer.
- Repeat Epinephrine (1:1,000) 0.01 mg/kg
- IV infusion of Normal Saline (0.9% NaCl) KVO, or a saline lock. Attempt IV/IO
- Atrovent may be used

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Pediatric ALS Protocols	PEDIATRIC ANAPHYLACTIC REACTION	Protocol P7
		Approved: 4/2/2003
		Effective: 5/1/2003

*Corrected – 4/5/2006*

## Standing Orders

1. Begin BLS Anaphylactic Reaction procedures.
2. Administer Diphenhydramine, 1mg/kg IV or IM, and Albuterol Sulfate 0.083% (one unit dose of 3 ml) **OR** Levalbuterol 1.25mg (one unit dose of 3 ml), patients <6 months, ½ unit dose of either, via nebulizer.
3. Administer Epinephrine (1:1,000) 0.01 mg/kg subcutaneous (maximum dose 0.3 mg).

### **During transport, or if transport is delayed:**

4. IV infusion of Normal Saline (0.9% NaCl) via a large bore IV (18-22 gauge) to keep the vein open, or a saline lock.
5. **IF PATIENT IS IN ANAPHYLACTIC SHOCK** and IV cannot be established, IO infusion of Normal Saline (0.9% NaCl) at KVO rate.

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## **MEDICAL CONTROL OPTIONS:**

- Repeat any of the above standing orders.
- Begin rapid IV or IO infusion of Normal Saline (0.9% NaCl), 20 ml/kg. Repeat as necessary.

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<b>Pediatric ALS Protocols</b>	<b>PEDIATRIC ALTERED MENTAL STATUS</b>	<b>Protocol P8</b>
		Approved: 2/03/2010
		Effective: 7/01/2010

For pediatric patients in coma, with evolving neurological deficit, or with altered mental status of unknown etiology:

**NOTE:** MAINTENANCE OF NORMAL RESPIRATORY AND CIRCULATORY FUNCTION IS ALWAYS THE FIRST PRIORITY. PATIENTS WITH ALTERED MENTAL STATUS DUE TO RESPIRATORY FAILURE OR ARREST, OBSTRUCTED AIRWAY, SHOCK, TRAUMA, NEAR DROWNING OR OTHER ANOXIC INJURY SHOULD BE TREATED UNDER OTHER PROTOCOLS.

## Standing Orders

1. Assess respiratory and circulatory status.
2. Begin BLS Altered Mental Status procedures.
3. IV of Normal Saline (0.9% NaCl) KVO, or a saline lock. Attempt IV only once.
4. Dextrose D10 or D25 IV (0.5 gm/kg)
5. Glucagon 0.1 mg/kg IM (if no IV established).

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**\* Note: Perform a Glucometer test for blood sugar level, if it is less than 60 administer dextrose or glucagon as indicated in step 4 or 5 and continue monitoring, as needed, after administration.**

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## **MEDICAL CONTROL OPTIONS:**

- Repeat any of the above orders.
- IO infusion of Normal Saline (0.9% NaCl).
- If there is no change in mental status, administer Naloxone.

\* = Added material



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<b>Pediatric ALS Protocols</b>	<b>PEDIATRIC STATUS EPILEPTICUS</b>	<b>Protocol P9</b>
		Approved: 10/1/2003
		Effective: 11/1/2003

*Corrected – 4/5/2006*

For pediatric patients in Status Epilepticus:

## **Standing Orders**

1. Begin BLS Seizures procedure.

### **During transport, or if transport is delayed:**

2. IV or IO infusion of Normal Saline (0.9% NaCl) KVO, or a saline lock. Attempt IV or IO
3. Dextrose D10 or D25 0.5 gm/kg.
4. Glucagon 0.1 mg/kg IM (if no IV established)

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## **MEDICAL CONTROL OPTIONS:**

- IO infusion of Normal Saline (0.9% NaCl).
- Diazepam or Midazolam, slowly over 2 minutes. If no response within 5 min., repeat dose of Diazepam or Midazolam **slowly**, over 2 minutes. Continue hemodynamic monitoring.
- If IV/saline lock or IO access has not been established, administer Diazepam or Midazolam via rectum.

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

**NOTE: FLUSH I.V. LINE BETWEEN GLUCOSE AND DIAZEPAM OR MIDAZOLAM**

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<b>Pediatric ALS Protocols</b>	<b>PEDIATRIC DECOMPENSATED SHOCK</b>	<b>Protocol P10</b>
		Approved: 4/2/2003
		Effective: 5/1/2003

*Corrected – 4/5/2006*

## Standing Orders

1. Begin BLS Pediatric Shock procedures.
2. If signs of hemorrhage or dehydration are not present, begin Cardiac Monitoring.

**NOTE: FOR PATIENTS IN SUPRAVENTRICULAR TACHYCARDIA OR VENTRICULAR TACHYCARDIA WITH A PULSE, AND WITH EVIDENCE OF LOW CARDIAC OUTPUT, CONTACT MEDICAL CONTROL FOR BELOW OPTIONS.**

### **During transport, or if transport is delayed:**

3. Begin rapid IV Bolus of Normal Saline (0.9% NaCl) 20 ml/kg, via a large-bore IV (18-22 gauge) or IO catheter. Attempt IV or IO only once each.
4. If signs of hemorrhage or dehydration are present, and the patient remains in decompensated shock, begin second large bore IV and repeat bolus up to an additional 20 ml/kg, (total of 40 ml/kg), Attempt second IV only once.

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### **MEDICAL CONTROL OPTIONS:**

- Begin IO infusion
- Continue rapid IV or IO bolus of Normal Saline (0.9% NaCl) up to an additional 20 ml/kg (total of 60 ml/kg).

- If transport is delayed or extended, and:
  1. If in supraventricular tachycardia or ventricular tachycardia with a pulse, with evidence of low cardiac output, and the defibrillator is able to deliver calculated dose, perform synchronized cardioversion at 0.5-1 joules/kg, using paddles of appropriate size. If this fails to convert the dysrhythmia, synchronized cardioversion may be repeated at 1-2 joules/kg, using paddles of appropriate size.
  2. If in supraventricular tachycardia with evidence of low cardiac output, but the Defibrillator is not able to deliver calculated dose, administer Adenosine 0.1 mg/kg, rapid IV or IO bolus (not to exceed 6 mg), followed immediately by 2-3 ml of Normal Saline (0.9% NaCl) flush. If this fails to convert the dysrhythmia, Adenosine may be repeated at 0.2 mg/kg, rapid IV or IO bolus (not to exceed 12 mg), followed immediately by 2-3 ml Normal Saline (0.9% NaCl) flush. If this fails to convert the dysrhythmia, Adenosine may be repeated a third time at 0.4 mg/kg, rapid IV or IO bolus (not to exceed 12 mg), followed immediately by 2-3 ml Normal Saline (0.9% NaCl) flush.

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**NOTE: DO NOT PERFORM SYNCHRONIZED CARDIOVERSION IN PEDIATRIC PATIENTS WITH SUPRAVENTRICULAR TACHYCARDIA OR VENTRICULAR TACHYCARDIA WITH A PULSE UNLESS THE DEFIBRILLATOR IS ABLE TO DELIVER A SYNCHRONOUS CALCULATED DOSE.**



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<b>Pediatric ALS Protocols</b>	<b>PEDIATRIC TRAUMATIC CARDIAC ARREST</b>	<b>Protocol P11</b>
		Approved: 4/2/2003
		Effective: 5/1/2003

*Corrected – 4/5/2006*

## **Standing Orders:**

1. Initiate BLS stabilization procedures
2. Perform ETI if BLS measures not adequate (use caution with possible C-spine injury)
3. Begin Transport as per NYS BLS Trauma Protocol
4. Establish IV or IO access, administer bolus Normal Saline (0.9% NaCl) (no more than 60 cc/Kg unless ordered by Medical Control)
5. Monitor ECG
6. If continued signs of inadequate systemic perfusion persist repeat second IV bolus of up to 60cc/Kg.

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## **Medical Control Options:**

- Continue Normal Saline (0.9% NaCl) IV Drip beyond 60 cc/Kg
- Hospital Diversion
- *Paramedic – If a tension pneumothorax is suspected consider orders to perform needle decompression, using an 18-20 gauge catheter*