

SAN FRANCISCO EMERGENCY MEDICAL SERVICES AGENCY

Effective: 09/01/06
Supersedes: 02/01/05

Protocol: P-043.1

PEDIATRIC DYSRHYTHMIAS: BRADYCARDIA

SUBJECTIVE FINDINGS

- History, onset and duration of symptoms, appearance, and neurological baseline.
- History of respiratory insufficiency, failure, obstruction, or respiratory arrest.
- History of cardiac disease or etiology, previous episodes, treatment required, medications or possibility of ingestion.
- Antecedent symptoms; dizziness, syncope, or other related chief complaint.

OBJECTIVE FINDINGS

- Clinical signs of respiratory distress or failure/ hypoxemia .
- Apnea.
- Inequality of central and distal pulses.
- Peripheral and/or central cyanosis.
- Hypotension.
- Retractions, flaring or grunting.
- Signs of decreased perfusion:
 - AMS/Abnormal appearance ("TICLS").
 - Slowed or absent capillary refill
 - (< 3 seconds).
 - Loss of distal pulses.

BLS Treatment	ALS Treatment
<ul style="list-style-type: none">• ABC's, oxygenation and ventilation.• Oxygen, high flow by nonrebreather mask; if no response assist ventilations using BVM and 100% oxygen.• Shock and heart rate < 80/min infant, < 60/min/ child < 8 yrs begin chest compressions.• Shock position for decreased perfusion prn.• Routine Medical Care.	<ul style="list-style-type: none">• Cardiac monitor.• Manage airway according to the Airway Management Protocol. (P-004).• IV or IO of NS.• Epinephrine (1:10,000) 0.01 mg/kg IVP or IO max single dose 0.1mg--dilute with NS to volume of 10 ml, may repeat x1 in 5 min.• Atropine: 0.02 mg/kg IVP or IO, repeat x 1 in 3-5 min. Minimum single dose: 0.1 mg Max single dose: CHILD: 0.5 mg (max total dose=1.0 mg) ADOLESCENT: 1mg (max total dose=2.0 mg).

DOCUMENTATION

Respiratory status.

Perfusion status: If inadequate perfusion, airway and ventilation treatment documented and IV of NS established.

PRECAUTIONS AND COMMENTS

- In children, bradycardia almost always means *hypoxia*. Treat for hypoxia FIRST, and then proceed to vasopressors.

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- **Atropine** is rarely effective in treating pediatric bradycardia; be sure that the patient is adequately oxygenated and ventilated. Consider use of **Atropine** if child has a known congenital heart problem or if there is suspicion of overdose or hazardous materials exposure.