

POLICY: 555.14  
TITLE: Pediatric Bradycardia

EFFECTIVE: 02/01/2026  
REVIEW: 02/2028  
SUPERCEDES:

APPROVAL SIGNATURES ON FILE IN EMS OFFICE

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## PEDIATRIC BRADYCARDIA

- I. AUTHORITY  
Health and Safety Code, Division 2.5, California Code of Regulations, Title 22, Division 9
- II. PURPOSE  
To serve as a patient treatment standard for EMRs, EMTs, and Paramedics within their scope of practice.
- III. PROTOCOL  
Bradycardia is characterized by a decrease in the rate of atrial depolarization due to slowing of the sinus node. The rhythm is regular or slightly irregular. Bradycardia is defined as heart rate < 80 in infants (< 1 year of age) and < 60 in children (1 year to 12 years of age). QRS complexes are normal, each preceded by a P wave.

**NOTE: Most bradycardia in children is due to hypoxia.**

**Provider Key: F = First Responder/EMR      E = EMT      O = EMT Local Optional SOP  
P = Paramedic                                      D = Base Hospital Physician Order Required**

|  | F | E | O | P | D |
|--|---|---|---|---|---|
| <b>ASSESSMENT:</b> look for signs of poor perfusion or respiratory distress (delayed capillary refill, diminished distal pulses, cool extremities, ALOC).  | X | X | X | X |   |
| <b>OXYGEN:</b> 100% by non-rebreather mask or blow-by.   | X | X | X | X |   |
| <b>BLS AIRWAY:</b> okay if airway patent. Support ventilations with appropriate airway adjuncts.   | X | X | X | X |   |
| <b>SUPRAGLOTTIC AIRWAY:</b> if GCS is < 8 and not rapidly improving.   |   |   | X | X |   |
| <b>PULSE OXIMETRY:</b> apply and monitor.  |   | X | X | X |   |
| <b>CAPNOGRAPHY:</b> apply and monitor if SGA has been placed.  |   |   |   | X |   |
| <b>ECG MONITOR:</b> lead placement may be delegated. Treat as indicated.   |   |   |   | X |   |
| <b>*CONSIDER HP-CPR:</b> if heart rate < 60, despite oxygen and ventilations if signs of poor perfusion.   | X | X | X | X |   |
| <b>VASCULAR ACCESS:</b> IV/IO, rate as indicated.  |   |   |   | X |   |
| <b>FLUID BOLUS:</b> NS 20 mL/kg as indicated. Reassess after each bolus.   |   |   |   |   |   |
| <b>EPINEPHRINE:</b> 0.01 mg/kg of 1:10,000 (0.1 mg/mL) IV/IO. Repeat every 3-5 minutes. Maximum of 1 mg per administration.  |   |   |   | X |   |
| <b>ATROPINE:</b> 0.02 mg/kg IV/IO. May be repeated once. Minimum dose of 0.1 mg. Maximum single dose 0.5 mg.   |   |   |   | X |   |
| <b>TRANSCUTANEOUS CARDIAC PACING:</b> If patient remains hemodynamically unstable with serious signs & symptoms, DO NOT delay TCP waiting for vascular access or for atropine to take effect. <b><u>Place pacing pads on the Anterior/ Posterior thorax.</u></b> Start current level at 10 milliamps, increase current until electrical capture noted. Start at a rate of 60/minute and increase rate as |   |   |   | X |   |

|  |  |  |  |  |  |
|--|--|--|--|--|--|
| indicated. Check pulses to confirm mechanical capture. |  |  |  |  |  |
|--|--|--|--|--|--|

**\*During CPR**

- Push hard (1/3 of Anterior-Posterior depth) and fast (at least 100/min)
- Ensure full chest recoil
- Minimize interruptions in chest compressions
- One cycle of CPR: 15 compressions then 2 breaths; 5 cycles = 1 – 2 min
- Avoid hyperventilation
- After advanced airway placement, give continuous chest compressions

**CONSIDER CAUSES AND TREAT PER TREATMENT GUIDELINES**

- Hypovolemia
- Hypoglycemia
- Hypoxia
- Hypothermia
- Hypo or Hyperkalemia
- Acidosis
- Toxins
- Cardiac Tamponade
- Tension Pneumothorax

**Pediatric Normal Vital Signs**

| <i>Age</i>         | HR      | RR    | BP            | Temp (C) | Temp (F)   |
|--------------------|---------|-------|---------------|----------|------------|
| <i>Premie</i>      | 120-170 | 40-70 | 55-75/35-45   | 36-38    | 96.8-100.4 |
| <i>0-3 months</i>  | 100-160 | 35-60 | 65-85/45-55   | 36-38    | 96.8-100.4 |
| <i>3-6 months</i>  | 90-120  | 30-45 | 70-90/50-65   | 36-38    | 96.8-100.4 |
| <i>6-12 months</i> | 80-120  | 25-40 | 80-100/55-65  | 36-38    | 96.8-100.4 |
| <i>1-3 years</i>   | 70-110  | 20-30 | 90-105/55-70  | 36-38    | 96.8-100.4 |
| <i>3-6 years</i>   | 65-110  | 20-25 | 90-110/60-75  | 36-38    | 96.8-100.4 |
| <i>6-12 years</i>  | 65-100  | 14-22 | 90-120/60-75  | 36-38    | 96.8-100.4 |
| <i>12+</i>         | 55-100  | 12-20 | 100-135/65-85 | 36-38    | 96.8-100.4 |