

PEORIA AREA EMS SYSTEM
PEDIATRIC PREHOSPITAL CARE MANUAL

Pediatric Bradycardia Protocol

Pediatric bradycardia is defined as a heart rate less than the normal beats per minute for a given age group. Determining the stability of the pediatric patient with bradycardia is an important factor in patient care decisions. The assessment of the patient with bradycardia should include evaluation for signs and symptoms of hypoperfusion and hypoventilation.

First Responder Care

First Responder Care should be focused on assessing the situation and initiating routine patient care to treat for shock.

1. Render initial care in accordance with the *Routine Pediatric Care Protocol*.
2. Assess the pediatric patient for signs and symptoms of hypoperfusion and possible causes, including:
 - Respiratory difficulty
 - Cyanosis
 - Cool/Cold skin
 - Hypotension/Lack of palpable blood pressure
 - Decreasing level of consciousness
3. **Oxygen:** 15 L/min via BVM if the child is in respiratory distress. If the child is alert, 10-15 L/min via non-rebreather mask or 4-6 L/min via nasal cannula if the child will not tolerate a mask.
4. For children <12 months of age: If, despite oxygen and ventilation the child continues to appear hypoperfused and has a pulse <60 beats per minute, **initiate chest compressions**.
5. *Immediately* turn patient care over to the transporting provider or ALS intercept upon their arrival.

BLS CARE

BLS Care should be directed at conducting a thorough patient assessment, initiating routine patient care to treat for shock and preparing the patient for or providing transport.

1. Render initial care in accordance with the Routine Pediatric Care Protocol.
2. Assess the pediatric patient for signs and symptoms of hypoperfusion and possible causes, including:
 - Respiratory difficulty
 - Cyanosis
 - Cool/Cold skin
 - Hypotension/Lack of palpable blood pressure
 - Decreasing level of consciousness
3. If spontaneous respirations are not present after 30 seconds of HR <100, begin Positive Pressure Ventilations BVM & 100% O2 at 30-40 vpm
4. **Oxygen:** 15 L/min via BVM positive-pressure ventilation. If the child is alert, 10- 15 L/min via non-rebreather mask or 4-6 L/min via nasal cannula if the child will not tolerate a mask.
5. **If after 30 seconds** of continuous ventilation the child continues to appear hypoperfused and has a pulse < 60 beats per minute, **Initiate Chest Compressions**.

6. For children **<12 months of age**: If, despite oxygen and ventilation the child continues to appear hypoperfused and has a pulse **<60 beats per minute**, **initiate chest compressions**.
7. **Immediately** turn patient care over to the transporting provider or ALS intercept upon their arrival.

ILS CARE

ILS Care should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. ILS Care includes all components of *First Responder & BLS Care*.
2. Render initial care in accordance with the *Routine Pediatric Care Protocol*.
 - a. If spontaneous respirations are not present after 30 seconds or HR <100, begin Positive Pressure Ventilations BVM & 100% O2 at 30-40 vpm.
3. **Oxygen**: 15 L/min via BVM positive-pressure ventilation. If the child is alert, 10- 15 L/min via non-rebreather mask or 4-6 L/min via nasal cannula if the child will not tolerate a mask.
4. **If after 30 seconds** of continuous ventilation the child continues to appear hypoperfused and has a pulse **< 60 beats per minute**, **Initiate Chest Compressions**.
5. **IV(NS) Fluid Therapy**: 20mL/kg bolus if hypovolemia is suspected.
6. Initiate ALS intercept and transport as soon as possible. (*Transport can be initiated at any time during this sequence*).
7. **Contact Medical Control** as soon as possible.
8. **Epinephrine 1:10,000**: 0.01mg/kg IV (**Max single dose: 1mg**) (**with Medical Control order only**) and repeat every **3 to 5 minutes** as needed.
9. **Atropine**: 0.02mg/kg IV (**with Medical Control order only**) (*Minimum dose: 0.1mg*) (**Max single dose: 1mg**) for children who are **greater than 6 months of age**.

ALS CARE

ALS Care should be directed at continuing or establishing care, conducting a thorough patient assessment, stabilizing the patient's perfusion and preparing for or providing patient transport.

1. ILS Care includes all components of *First Responder & BLS Care*.
2. Render initial care in accordance with the *Routine Pediatric Care Protocol*.
3. If spontaneous respirations are not present after 30 seconds or HR <100, begin Positive Pressure Ventilations BVM & 100% O2 at 30-40 vpm
4. **Oxygen**: 15 L/min via BVM positive-pressure ventilation. If the child is alert, 10- 15 L/min via non-rebreather mask or 4-6 L/min via nasal cannula if the child will not tolerate a mask.
5. **If after 30 seconds** of continuous ventilation the child continues to appear hypoperfused and has a pulse **< 60 beats per minute**, **Initiate Chest Compressions**.
6. **IV (NS) Fluid Therapy**: 20mL/kg bolus if hypovolemia is suspected.
7. **Contact Medical Control** as soon as possible.
8. **Epinephrine 1:10,000**: 0.01mg/kg IV/IO (**Max single dose: 1mg**) and repeat every **3 to 5 minutes** as needed.
9. **Atropine**: 0.02mg/kg IV/IO (*Minimum dose: 0.1mg*) (**Max single dose: 1 mg**) for children who are greater than 6 months of age.
10. **Immediate Transcutaneous Pacing**: If the patient remains bradycardic with continued signs of hypoperfusion.
 - Contact Medical Control for specific rate.
 - Current should be set at minimum to start and increased until capture is achieved.

11. **Midazolam (Versed):** 0.1mg/kg IV/IO (**Max single dose: 2mg**) for patient comfort after pacing is initiated. Re-check vital signs 5 minutes after administration. May repeat dose one time if systolic BP > 100mmHg and respiratory rate is > 10 rpm. Additional doses require **Medical Control order**.
12. **Midazolam (Versed):** Versed Intranasal may also be used if unable to give IV Versed. (**See intranasal dosing sheet**).
13. Transport as soon as possible (*Transport can be initiated at any time during this sequence*).

Critical Thinking Elements

- Monitor the child's respiratory status, SP O2 and or Waveform Capnography if available.
- Assess for the possibility of foreign body
- Hypothermia-warm the patient
- Assess for mechanical problems with oxygen delivery
- Hypoxemia
- Hypoglycemia, severe dehydration and narcotic effects may produce bradycardia
- Most maternal medications pass through breast milk in the infant

