

## 3.1P

# Bradycardia – Pediatric

### EMT/ADVANCED EMT STANDING ORDERS

E/A

- Routine Patient Care.
- Consider the underlying causes of bradycardia (e.g. hypoxia, hypoglycemia, hypovolemia, and hypothermia).
- Begin/continue CPR if heart rate is <60 bpm with hypoperfusion despite adequate ventilation and oxygenation.
- 12-lead ECG if available.

### PARAMEDIC STANDING ORDERS

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**For symptomatic bradycardia:**

**If hemodynamically unstable:**

- Epinephrine (0.1mg/mL) 0.01 mg/kg IV (0.1 ml/kg of 0.1mg/mL) every 3 – 5 minutes.
- Consider atropine 0.02 mg/kg IV for increased vagal tone or AV blocks, may repeat once (minimum single dose: 0.1 mg; maximum single dose 0.5 mg.)
- Consider transcutaneous pacing.
- Administer procedural sedation prior to/during pacing, if feasible:
  - \*Midazolam 0.05 mg/kg IV/IM or 0.1 mg/kg IN (maximum dose 3 mg); may repeat once in 5 minutes, **OR**
  - Lorazepam 0.05 mg/kg IV/IM (maximum dose 1 mg); may repeat once in 5 minutes, **OR**
  - Diazepam 0.1 mg/kg IV (maximum dose 5 mg); may repeat once in 5 minutes

**Other Causes:**

- For hypoglycemia see [Hypoglycemia 2.9P Protocols](#).
- For symptomatic beta blocker or calcium channel blocker overdose, consider glucagon 0.025 – 0.05 mg/kg.
- For suspected hyperkalemia with ECG changes or symptomatic calcium channel blocker overdose consider:
  - Calcium gluconate (10% solution) 100 mg/kg IV with a maximum 2 gm/dose over 5 minutes; may repeat in 10 minutes if clinical indication persists, **OR**
  - Calcium chloride (10% solution) 20 mg/kg IV (0.2 ml/kg) with a maximum 1 gm/dose over 5 minute; not to exceed 1 ml per minute. May repeat in 10 minutes if clinical indication persists.



\*For IN administration of midazolam use a 5 mg/mL concentration.



For calcium chloride administration, ensure IV patency and do not exceed 1 mL per minute.

### PEARLS:

- Combine age specific heart rates with signs of respiratory failure and shock while assessing. If child is asymptomatic, consider no treatment.
- When pushed too quickly, glucagon can cause nausea and vomiting.