Pediatric Bradycardia

For any bradycardic rhythm <60bpm

**History**
- Past medical history
- Heart transplant
- Medications
  - Beta blockers
  - Calcium channel blockers
  - Clonidine
  - Digoxin
  - Pacemaker

**Signs and Symptoms**
- Heart rate < 60 with associated hypotension, acute altered mental status, chest pain, acute CHF, seizures, syncope or shock secondary to bradycardia
- Age dependent hypotension
- Chest pain
- Respiratory distress
- Hypotension or shock
- Altered mental status
- Syncope

**Differential**
- Airway obstruction/respiratory disease
- Acute myocardial infarction
- Pacemaker failure
- Hypothermia
- Sinus bradycardia
- Athletes
- Head injury (elevated ICP) or stroke
- Spinal cord lesion
- Sick sinus syndrome
- AV blocks (e.g., 1\(^{\circ}\), 2\(^{\circ}\) or 3\(^{\circ}\))
- Overdose

**Pearls**
- The majority of pediatric bradycardia is due to airway problems.
- Hypoglycemia, severe dehydration and narcotic effects may produce bradycardia.
- Most maternal medications pass through breast milk to the infant. Obtain medication use and history of nursing mother.

**HR < 60 and symptomatic:**
Hypoperfusion, hypotension, respiratory difficulty or altered mental status

- Yes
  - High flow oxygen via non-rebreather mask or ventilate with BVM
  - If HR remains < 60 with instability after O\(_2\) and ventilation, begin chest compressions (15:2 ratio)
    - 1.5 inches for infants; 2 inches for children
- No
  - Support ABCs
  - Give Oxygen
  - Observe

**E**
- Cardiac monitor
- Establish IV/IO

**P**
- If HR remains < 60 with instability after CPR
  - Epinephrine (1:10,000)
    - Use Broselow Tape; refer to dosing guide
  - Consider, 12-Lead ECG
  - For increased vagal tone or primary AV block
    - Consider, Atropine
      - Use Broselow Tape; refer to dosing guide
  - Consider, Normal Saline bolus
    - Use Broselow Tape; refer to dosing guide
    - May repeat x2
  - EtCO\(_2\) monitoring (if available)

**Notify receiving facility.
Consider Base Hospital for medical direction**