Pediatric Tachycardia (Unstable)

**History**
- Medications (e.g., Aminophylline, Adderall, diet pills, thyroid supplements, decongestants, and Digoxin)
- Diet (e.g., caffeine and chocolate)
- Drugs (e.g., nicotine and illegal drugs)
- Past medical history
- History of palpations/heart racing
- Syncope/near syncope
- Renal failure
- Missed dialysis

**Signs and Symptoms**
- Heart rate > 150
- Systolic BP < 90
- Dizziness, chest pain, shortness of breath, altered mental status or diaphoresis
- Acute pulmonary edema
- Potential presenting rhythm:
  - Atrial/sinus tachycardia
  - Atrial fibrillation/flutter
  - Multifocal atrial tachycardia
  - Ventricular tachycardia

**Differential**
- Heart disease (e.g., WPW or valvular)
- Sick sinus syndrome
- Myocardial infarction
- Electrolyte imbalance
- Exertion, pain, or emotional stress
- Fever
- Hypoxia
- Hypovolemia or anemia
- Drug effect/overdose (see History)
- Hypothyroidism
- Pulmonary embolus

**Evaluation**
- Oxygen to maintain SpO₂ of 92%
- Cardiac monitor
- Establish IV/IO
- 12-Lead ECG
- Don’t delay therapy

- Evaluate QRS duration

- **≤ 0.08 seconds**
  - **Sinus Tachycardia**
    - Infants: Variable HR < 220/min
    - Children: Variable HR < 180/min
  - Normal Saline bolus
    - Use length-based tape; refer to dosing guide
    - May repeat x2
  - If rhythm change, repeat 12-Lead ECG

- **> 0.08 seconds**
  - **Narrow Complex Tachycardia**
    - Infants: Non-variable HR ≥ 220/min
    - Children: Non-variable HR ≥ 180/min
  - Consider,
    - Valsalva maneuver
    - Use length-based tape; refer to dosing guide
    - Midazolam
    - Synchronized cardioversion
    - Use length-based tape; refer to dosing guide
    - If rhythm change, repeat 12-Lead ECG

- Notify receiving facility.
- Consider Base Hospital for medical direction
Pearls

• Most important goal is to differentiate the type of tachycardia and if STABLE or UNSTABLE.
• Unstable is defined by poor perfusion, hypotension, respiratory difficulty and altered mental status.
• Early transport is always appropriate in unstable patients.
• Consider presentation and known history. Search for and treat cause(s).
• Separating the child from the caregiver may worsen the child’s clinical condition.
• Pediatric pads should be used in children < 10kg or length-based measurement of Purple.
• Monitor for respiratory depression and associated hypotension associated if Midazolam is used.