

Pediatric Tachycardia

History

- Past medical history
- Medications or Toxic Ingestion (Aminophylline, Diet pills, Thyroid supplements, Decongestants, Digoxin)
- Drugs (nicotine, cocaine)
- Congenital Heart Disease
- Respiratory Distress
- Syncope or Near Syncope

Signs and Symptoms

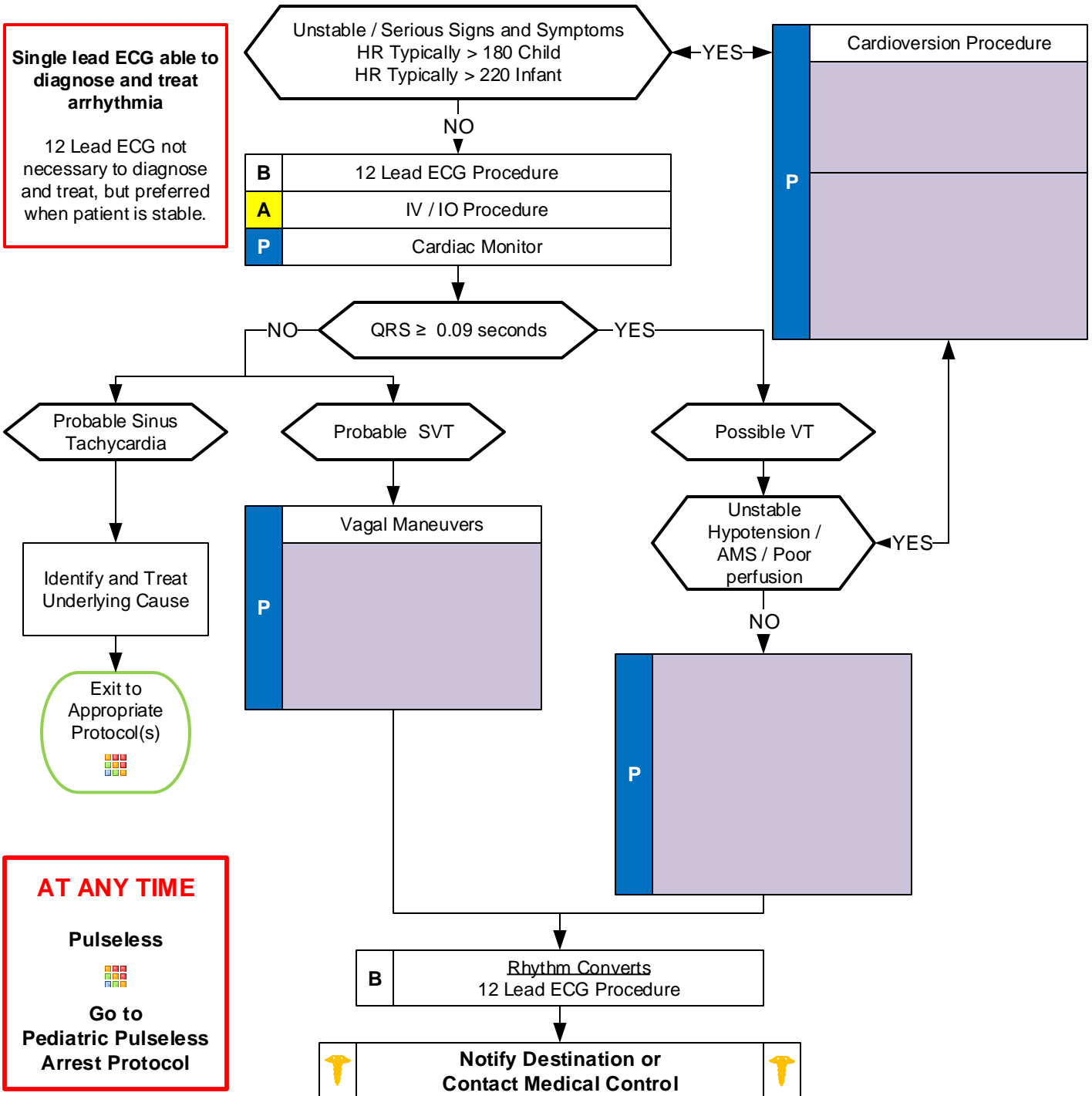
- Heart Rate: Child > 180/bpm
Infant > 220/bpm
- Pale or Cyanosis
- Diaphoresis
- Tachypnea
- Vomiting
- Hypotension
- Altered Level of Consciousness
- Pulmonary Congestion
- Syncope

Differential

- Heart disease (Congenital)
- Hypo / Hyperthermia
- Hypovolemia or Anemia
- Electrolyte imbalance
- Anxiety / Pain / Emotional stress
- Fever / Infection / Sepsis
- Hypoxia, Hypoglycemia
- Medication / Toxin / Drugs (see HX)
- Pulmonary embolus
- Trauma, Tension Pneumothorax

Single lead ECG able to diagnose and treat arrhythmia

12 Lead ECG not necessary to diagnose and treat, but preferred when patient is stable.

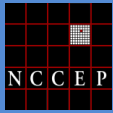


AT ANY TIME

Pulseless

Go to **Pediatric Pulseless Arrest Protocol**

Pediatric Cardiac Protocol Section



Pediatric Tachycardia

Pearls

- **Recommended Exam: Mental Status, Skin, Neck, Lung, Heart, Abdomen, Back, Extremities, Neuro**
- **Serious Signs and Symptoms:**
 - Respiratory distress / failure.
 - Signs of shock / poor perfusion with or without hypotension.
 - AMS
 - Sudden collapse with rapid, weak pulse
- **Narrow Complex Tachycardia (≤ 0.09 seconds):**
 - Sinus tachycardia: P waves present. Variable R-R waves. Infants usually < 220 beats / minute. Children usually < 180 beats / minute.
 - SVT: $> 90\%$ of children with SVT will have a narrow QRS (≤ 0.09 seconds.) P waves absent or abnormal. R-R waves not variable. Usually abrupt onset. Infants usually > 220 beats / minute. Children usually > 180 beats / minute.
 - Atrial Flutter / Fibrillation
- **Wide Complex Tachycardia (≥ 0.09 seconds):**
 - SVT with aberrancy.
 - VT: Uncommon in children. Rates may vary from near normal to > 200 / minute. Most children with VT have underlying heart disease / cardiac surgery / long QT syndrome / cardiomyopathy.
 - Amiodarone 5 mg / kg over 20 – 60 minutes or Procainamide 15 mg / kg over 30 – 60 minutes IV / IO** are recommended agents. They should not be administered together. Consultation with Medical Control is advised when these agents are considered.
- **Torsades de Pointes / Polymorphic (multiple shaped) Tachycardia:**
 - Rate is typically 150 to 250 beats / minute.
 - Associated with long QT syndrome, hypomagnesaemia, hypokalemia, many cardiac drugs.
 - May quickly deteriorate to VT.
 - Administer **Magnesium Sulfate 40 mg / kg IV / IO over 10 minutes**. Cardiac arrest given over 2 minutes.
- **Vagal Maneuvers:**
 - Breath holding. Blowing a glove into a balloon. Have child blow out “birthday candles” or through an obstructed straw. Infants: May put a bag of ice water over the upper half of the face careful not to occlude the airway.
 - Separating the child from the caregiver may worsen the child's clinical condition.
 - Pediatric paddles should be used in children < 10 kg or Broselow-Luten color Purple if available.
 - Monitor for respiratory depression and hypotension associated if Diazepam, Lorazepam, or Midazolam is used.
 - Continuous pulse oximetry is required for all SVT Patients if available.
 - Document all rhythm changes with monitor strips and obtain monitor strips with each therapeutic intervention.
 - Generally, the maximum sinus tachycardia rate is 220 – the patient's age in years.