Pediatric Asystole / PEA

History
- Events leading to arrest
- Estimated downtime
- SAMPLE
- Existence of terminal illness
- Airway obstruction
- Hypothermia
- Suspected abuse

Signs and Symptoms
- Pulseless
- Apneic
- No electrical activity on ECG
- No heart tones on auscultation

Differential
- Respiratory failure
- Foreign body
- Infection (croup, epiglotitis)
- Congenital heart disease
- See Reversible Causes below

Pediatric Pulseless Arrest Protocol

Criteria for Death / No Resuscitation
Review DNR / MOST Form

YES →
Decomposition
Rigor mortis
Dependent lividity
Blunt force trauma
Injury incompatible with life
Extended downtime with asystole

Do not begin resuscitation

Follow Deceased Subjects Policy

NO ↓

Begin Continuous CPR Compressions
Push Hard (1.5 inches Infant / 2 inches in Children)
(≥ 1/3 AP Diameter of Chest)
Push Fast (100 - 120 / min)
Change Compressors every 2 minutes
(Limit changes / pulse checks ≤ 10 seconds)

Ventilate 1 breath every 6 seconds
15:2 Compression:Ventilation if no Advanced Airway

AED Procedure
if available

Search for Reversible Causes

Blood Glucose Analysis Procedure

P Cardiac Monitor

P Consider Chest Decompression-Needle Procedure

A IV / IO Procedure

A **Epinephrine1:10,000**
0.01 mg/kg IV / IO Maximum Single Dose 1mg
Or
Epinephrine 1:1000 0.1 mg / kg ETT Maximum 2.5 mg
Repeat every 3 – 5 minutes

Normal Saline Bolus 20 mL/kg IV / IO
May repeat as needed
Maximum 60 mL/kg

P Consider
Epinephrine 0.1 – 1 mcg / kg / min IV / IO
Or
Dopamine 2 – 20 mcg /kg / min IV / IO
See Pearls

Reversible Causes

Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypothermia
Hypo / Hyperkalemia

Tension pneumothorax
Tamponade; cardiac
Toxins
Thrombosis; pulmonary (PE)
Thrombosis; coronary (MI)

AT ANY TIME

Return of Spontaneous Circulation

Go to Post Resuscitation Protocol

Notify Destination or Contact Medical Control

Pediatric Cardiac Protocol Section

Pediatric Asystole / PEA

Pearls

- **Recommended Exam: Mental Status**
- **Beginning compressions first is recommended in pediatric patients during CPR. However, the majority of pediatric arrests stem from a respiratory insult or hypoxic event. Compressions should be coupled with ventilations.**
- **When 1 provider is present, perform 30 compressions with 2 ventilations.**
- **When 2 providers are present, perform 15 compressions with 2 ventilations.**
- **Efforts should be directed at high quality and continuous compressions with limited interruptions and early defibrillation when indicated. Compress ≥ 1/3 anterior-posterior diameter of chest, in infants 1.5 inches and in children 2 inches. Consider early IO placement if available and / or difficult IV access anticipated.**
- **DO NOT HYPERVENTILATE: If advanced airway in place ventilate 8 – 10 breaths per minute with continuous, uninterrupted compressions.**
- **Do not interrupt compressions to place endotracheal tube. Consider BIAD first to limit interruptions.**
- **High-Quality CPR:**
  - Make sure chest compressions are being delivered at 100 – 120 / min.
  - Make sure chest compressions are adequate depth for age and body habitus.
  - Make sure you allow full chest recoil with each compression to provide maximum perfusion.
  - Minimize all interruptions in chest compressions to < 10 seconds.
  - Do not hyperventilate, ventilate every 6 seconds only.
- **Use AED or apply ECG monitor / defibrillator as soon as available.**
- Airway is a more important intervention in pediatric arrests. This should be accomplished quickly with BVM or BIAD. Patient survival is often dependent on proper ventilation and oxygenation / Airway Interventions.
- Success is based on proper planning and execution. Procedures require space and patient access. Make room to work. Consider Team Focused Approach / Pit-Crew Approach assigning responders to predetermined tasks. Refer to optional protocol.
- **Vasopressor agents:**
  - **Dopamine 2 – 20 mcg / kg / min IV / IO**
  - **Epinephrine 0.1 – 1 mcg / kg / min IV / IO**
  - **Norepinephrine 0.1 – 2 mcg / kg / min IV / IO**
  - **Dose Calculation: mL / hour = kg x dose(mcg / kg / min) x 60 (min / hr) / concentration (mcg / mL)**
- In order to be successful in pediatric arrests, a cause must be identified and corrected.
- If no IV / IO access may use **Epinephrine 1:1000 0.1 mg/kg (0.1 mL/kg)** via ETT (**Maximum 2.5 mg**)