San Mateo County Emergency Medical Services

Pediatric Asystole/PEA

For non-traumatic cardiac arrest in which any resuscitation is initiated, NOT dead on arrival

History
- Events leading to arrest
- Estimated downtime
- Past medical history
- Medications
- End stage renal disease
- Suspected hypothermia
- Suspected overdose
  - Tricyclic
  - Digitalis
  - Beta blockers
  - Calcium channel blockers
- DNR, POLST, or Living Will

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

Differential
- Airway obstruction/respiratory disease
- Hypovolemia (e.g., trauma or other)
- Cardiac tamponade
- Hypothermia
- Drug overdose (e.g., tricyclic, digitalis, beta blockers, or calcium channel blockers)
- Myocardial infarction
- Hypoxia
- Tension pneumothorax
- Pulmonary embolus
- Acidosis
- Hyperkalemia

AT ANY TIME

Return of spontaneous circulation

Go to Post Resuscitation

Cardiac Arrest-Non traumatic

E

Begin chest compressions (15:2 ratio)
1.5 inches for infants; 2 inches for children
Change compressors every 2 minutes
(Limit changes/pulse checks to < 5 seconds)

Shockable rhythm?

Yes → **Pediatric V-Fib/ Pulseless V-Tach**

No

P

Establish IV/IO

Epinephrine (1:10,000)
Use length-based tape; refer to dosing guide

Normal Saline Bolus
Use length-based tape; refer to dosing guide
May repeat x2

Search for reversible causes and treat appropriately

Criteria for discontinuation?

Yes → 12 Lead EKG

$ETCO_2$ documentation

Base Hospital Contact for PEA

Discontinue Resuscitation

Follow Policy 507 – Determining Death

No

Return of spontaneous circulation?

No → (return to P)

Yes → **Post Resuscitation**

Notify receiving facility. Consider Base Hospital for medical direction

Reversible Causes

Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypothermia
Hypo/Hyperkalemia
Hypoglycemia
Tension pneumothorax
Tamponade (cardiac)
Toxins
Thrombosis (pulmonary)(PE)
Thrombosis (coronary)(MI)

Pediatric Cardiac Arrest Treatment Protocols

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Pearls

- Airway is a more important intervention in pediatric arrests. This should be accomplished quickly with a BVM, airway adjunct, and appropriately sized mask. Patient survival is often dependent on proper ventilation and oxygenation.
- Efforts should be directed at high quality chest compressions with limited interruptions.
- Use appropriately sized pediatric BVM with $EtCO_2$.
- Do not delay chest compressions while applying any device or intervention.
- Use a metronome during chest compression to ensure proper rate.
- Provide resuscitative efforts for 30 minutes to maximize chance of ROSC.
- If resuscitative efforts do not attain ROSC, consider cessation of efforts per Policy 507 – Determining Death.
- Resuscitation is based on proper planning and organized execution. Procedures require space and patient access. Make room to work. Utilize a team focused approach assigning responders to predetermined tasks.
- Reassess airway and document $EtCO_2$ frequently.
- Defibrillation vests should be removed by EMS personnel before compressions, but do not cut vests. Once removed, disengage battery to prevent alarming.
- Pediatric pads should be used in children < 10kg or measurement of Purple.