	COUNTY OF SACRAMENTO EMERGENCY MEDICAL SERVICES AGENCY	Document #	9006.18
	PROGRAM DOCUMENT:	Draft Date:	02/24/95
	PEDIATRIC	Effective:	05/01/18
	Cardiac Arrest	Revised:	06/15/17
		Review:	09/01/19

Signature on File

Signature on File

EMS Medical Director

EMS Administrator

Purpose:

- A. To serve as the treatment standard for EMT's and Paramedics in treating pediatric cardiac arrest patients.
- B. To serve as the pediatric treatment standard for Asystole, Pulseless Electrical Activity (PEA), Ventricular Fibrillation (VF), and Pulseless Ventricular Tachycardia (VT).

Authority:

- A. California Health and Safety Code, Division 2.5
- B. California Code of Regulations, Title 22, Division 9

Protocol:

- A. High-quality Cardiopulmonary Resuscitation (CPR) is fundamental to the management of all cardiac arrest rhythms. Periodic pauses in CPR should be as brief as possible and only as necessary to assess rhythm, shock VF/VT, and perform a pulse check when an organized rhythm is detected, or place an advanced airway.
- B. CPR must be performed with a "Chest Compression, Airway, Breathing" sequence (C-A-B) to emphasize the importance of maintaining blood flow with good compressions.
- C. Airway management per Pediatric Airway Management Policy; PD# 8837.
- D. Vascular access, drug delivery, and advanced airway placement should not cause significant interruptions in chest compressions or delay defibrillation.
- E. **Whenever feasible, transport the medical DPOA or immediate family member with the patient to the hospital. DPOA and immediate family members can provide medical insight and consent for special therapies or termination of resuscitation to hospital staff.**

Pediatric Cardiac Arrest

Assess for responsiveness, spontaneous respirations, and pulses.

**START CPR
ECG / Defib Pads**

**Rhythm
Shockable ?**

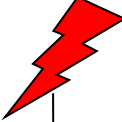
Yes

No

VF/VT

**Rhythm
Shockable ?**

Asystole/PEA



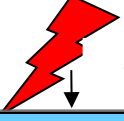
Shock @ 2 J/kg

**CPR 2 min
IV/IO access**

CPR 2 min
IV/IO access
Epi 1:10,000 - 0.01 mg/kg IV/IO q 3-5 min.
For airway management, refer to policy PD# 8837 Pediatric Airway Management

**Rhythm
Shockable?**

No



Shock @ 4 J/kg

CPR 2 min
Epi 1:10,000 - 0.01 mg/kg IV/IO q 3-5min.
For airway management, refer to policy PD# 8837 Pediatric Airway Management

**Rhythm
Shockable?**

Yes

No

**CPR 2 min
Treat Reversible
Causes**

**Rhythm
Shockable?**

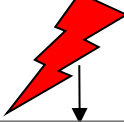
No

For Asystole/PEA--go to
Asystole/PEA above.

No

Yes

**Rhythm
Shockable?**



Shock @ 4 J/kg

CPR 2 min
Amiodarone 5mg/kg IV/IO. Single Max dose 300mg.
May repeat up to 2 times. Total Max dose 450mg.
For refractory VF/ pulseless VT: →→→→

Go to VF/pulseless VT
above

- CPR Quality: Push hard ($\geq 1/3$ of A:P diameter of chest) and fast (at least 100 - 120/min) and allow complete chest recoil. Minimize interruptions in compressions. Avoid excessive ventilations. If no advanced airway, 15:2 compression-ventilation ratio. If advanced airway, 8-10 breaths per minute with continuous compressions.
- Advanced Airway: Waveform Capnography to confirm and monitor ET or supraglottic tube placement.
- Reversible Causes: Hypovolemia, Hypoxia, Hydrogen Ion (Acidosis), Hypoglycemia, Hypo/hyperkalemia, Hypothermia, Tension Pneumothorax, Tamponade (Cardiac), Toxins, Thrombosis (Pulmonary), Thrombosis (Coronary).

POST RESUSCITATION CONSIDERATIONS:

1. IV fluids should be placed @TKO unless hypotension is present.
2. Post-resuscitation Bradycardia, Hypotension and Shock:
 - a. See Cardiac Dysrhythmias Protocol
 - b. Hypotension/Shock:
 - (1) Normal saline 20ml/kg, may repeat once, reassess vital signs after each bolus.
 - (2) To determine if shock is present, assess capillary refill (≤ 2 seconds) and brachial and femoral pulses (absent, weak, or present).
 - (3) Systolic blood pressure parameters for pediatric patients older than one year can be approximated by the following formulas:
 - a. $90\text{mm HG} + (2 \times \text{age in years})$
 - b. $70\text{mm HG} + (2 \times \text{age in years})$ – Lower limit

3. BASE HOSPITAL ORDER ONLY:

~~Dopamine @ 10 mcg/kg/min, if hypotensive~~

~~If Dopamine not available:~~

Epinephrine 0.01 mg/ml (10mcg/ml)-.5-2ml every 2-5 minutes (5-20 mcg) IV/IO, to a minimal systolic blood pressure (SBP), for patients age is reached, improvement of symptoms, or a total of 0.3 mg is given.

Cross Reference: Pediatric Cardiac Dysrhythmias PD# 9014
Pediatric Airway Management PD# 8837