

	<b>COUNTY OF SACRAMENTO</b> EMERGENCY MEDICAL SERVICES AGENCY	Document #	9005.02
	<u>PROGRAM DOCUMENT:</u>	Initial Date:	05/01/23
	<b>Pediatric Traumatic Cardiac Arrest</b>	Last Approval Date:	09/23/24
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EMS Medical Director

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EMS Administrator

**Purpose:**

- A. To serve as the treatment standard for treating pediatric traumatic cardiac arrest patients.

**Authority:**

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

**Protocol:**

- A. The pathophysiology of traumatic cardiac arrest differs from medical cardiac arrest and is primarily due to one of or a combination of factors: hypovolemia, obstruction of blood flow, and hypoxia.
- B. The initial cardiac rhythm for most patients in survivable traumatic cardiac arrest is pulseless electrical activity (PEA). Traumatic cardiac arrest PEA is most often a very low output state due to hypovolemia.
- C. Pediatric traumatic cardiac arrest patients undergoing resuscitation shall be transported as quickly as possible to the hospital.
- D. Pediatric patients with trauma in cardiac arrest who by prehospital presentation may have suffered a medical event before trauma shall undergo medical cardiac arrest resuscitation per PD# 9006 – Pediatric Cardiac Arrest, with attention and appropriate management to emergent trauma needs (hemorrhage control, pneumothorax decompression as indicated, and orthopedic immobilization as indicated)
- E. There is no evidence based medical support for the use of medications in traumatic cardiac arrest. In traumatic arrest, Epinephrine and Amiodarone are **NOT** indicated in traumatic cardiac arrest. Epinephrine will not correct arrest caused by a tension pneumothorax, cardiac tamponade, or hemorrhagic shock. If there is any doubt as to the cause of arrest, treat as a non-traumatic arrest.

**Policy:**

<b>BLS</b>
<ol style="list-style-type: none"> <li>1. Treat immediate threats to life</li> <li>2. External hemorrhage control per PD# 8065 - Hemorrhage</li> <li>3. Airway and Breathing: Clear airway when indicated, place OPA, BVM ventilations</li> <li>4. Chest Compressions: Chest compressions should be performed when possible without delaying transport or other treatments</li> </ol>

ALS	
<ol style="list-style-type: none"> <li>1. Optimize Oxygenation/Ventilation <ul style="list-style-type: none"> <li>• Bag Valve Mask (BVM) ventilations is the airway management of choice in all pediatric patients.</li> <li>• Advanced airway as needed per policy PD# 8837 – Pediatric Airway Management.</li> <li>• Advanced airway placement shall be confirmed with ETCO<sub>2</sub> detection device or waveform Capnography.</li> </ul> </li> <li>2. Correct potential obstructive shock - Maintain high Index of suspicion for tension pneumothorax, Bilateral needle thoracostomy per PD# 9017 – Pediatric Trauma.</li> <li>3. Treat potential exsanguination <ul style="list-style-type: none"> <li>• Obtain IV or IO access</li> <li>• 20 ml/Kg normal saline bolus via IV/IO. May repeat once <ul style="list-style-type: none"> <li>○ parameters for pediatric patients older than one year can be approximated by the following formulas:  90mm HG + (2 x age in years)  70mm HG + (2x age in years) – Lower limit</li> </ul> </li> <li>• Reassess lung sounds after each bolus</li> </ul> </li> <li>4. Treat Cardiovascular Collapse <ul style="list-style-type: none"> <li>• High-quality CPR</li> <li>• ECG monitoring and appropriate defibrillation per PD# 9006 – Pediatric Cardiac Arrest</li> </ul> </li> </ol> <p><b>NOTES:</b> Avoiding hypothermia is imperative to the management of the critical pediatric patient. Passive warming measures including warm ambient/environmental temperature, use of blanket, covering head may be used to maintain normal body temperature &gt; 37°C or 98.6°F</p>	

**Post Resuscitation Considerations:**

- A. If palpable pulse becomes present:
  - Re-assess for and control external hemorrhage
  - To determine if shock is present, assess capillary refill ( $\leq 2$  seconds) and brachial and femoral pulses (absent, weak, or present)

**Cross Reference:** PD# 2033 – Determination of Death  
PD# 5052 – Trauma Destination  
PD# 5053 – Trauma Triage Criteria  
PD# 8020 – Respiratory Distress - Airway Management  
PD# 8044 – Spinal Motion Restrictions  
PD# 8065 – Hemorrhage Control  
PD# 8837 – Pediatric Airway Management  
PD# 9006 – Pediatric Cardiac Arrest  
PD# 9013 – Pediatric Shock  
PD# 9016 – Pediatric Parameters  
PD# 9017 – Pediatric Trauma