	<b>COUNTY OF SACRAMENTO</b> EMERGENCY MEDICAL SERVICES AGENCY	Document #	9005.01
	<u>PROGRAM DOCUMENT:</u> <b>Pediatric Traumatic Cardiac Arrest</b>	Initial Date:	05/01/23
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 Signature on File  
 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>
1. Treat immediate threats to life 2. External hemorrhage control per PD# 8065 - Hemorrhage Control 3. Airway and Breathing: Clear airway when indicated, place OPA, BVM ventilations 4. Chest Compressions: Chest compressions should be performed when possible without delaying transport or other treatments

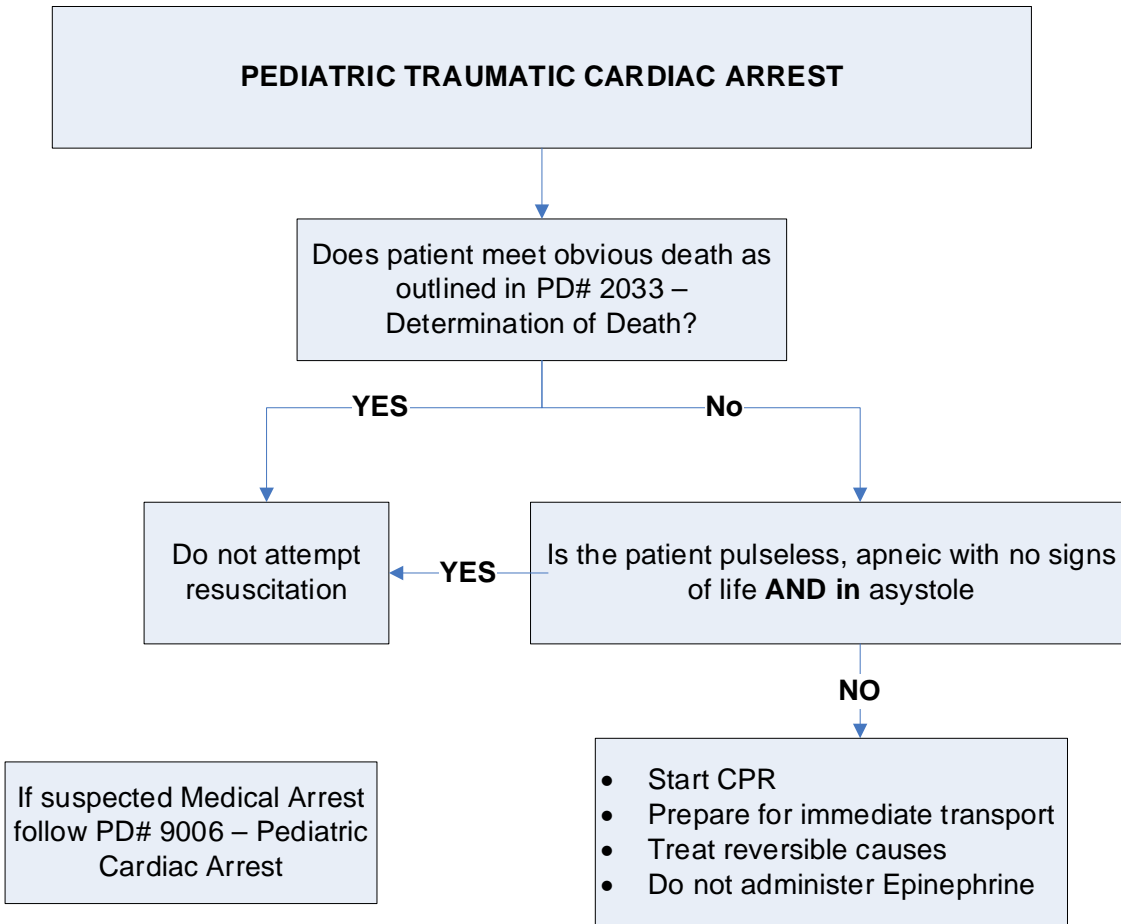
## ALS

1. Optimize Oxygenation/Ventilation
  - Bag Valve Mask (BVM) ventilations is the airway management of choice in all pediatric patients.
  - Advanced airway as needed per policy PD# 8837 – Pediatric Airway Management.
  - Advanced airway placement shall be confirmed with ETCO<sub>2</sub> detection device or waveform Capnography.
2. Correct potential obstructive shock - Maintain high Index of suspicion for tension pneumothorax, Bilateral needle thoracostomy per PD# 9017 – Pediatric Trauma.
3. Treat potential exsanguination
  - Obtain IV or IO access
  - 20 ml/Kg normal saline bolus via IV/IO. May repeat once
    - 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
  - Reassess lung sounds after each bolus
4. Treat Cardiovascular Collapse
  - High-quality CPR
  - ECG monitoring and appropriate defibrillation per PD# 9006 – Pediatric Cardiac Arrest

**NOTES:** 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 > 37°C or 98.6°F

### 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