

**COUNTY OF SACRAMENTO
EMERGENCY MEDICAL SERVICES AGENCY**



Program Document: **Pediatric Traumatic Cardiac Arrest**

Policy Number: 9005.02

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Signature on File

EMS Medical Director

Signature on File

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:

BLS:

1. Treat immediate threats to life
2. External hemorrhage control per PD# 8065 - Hemorrhage
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:

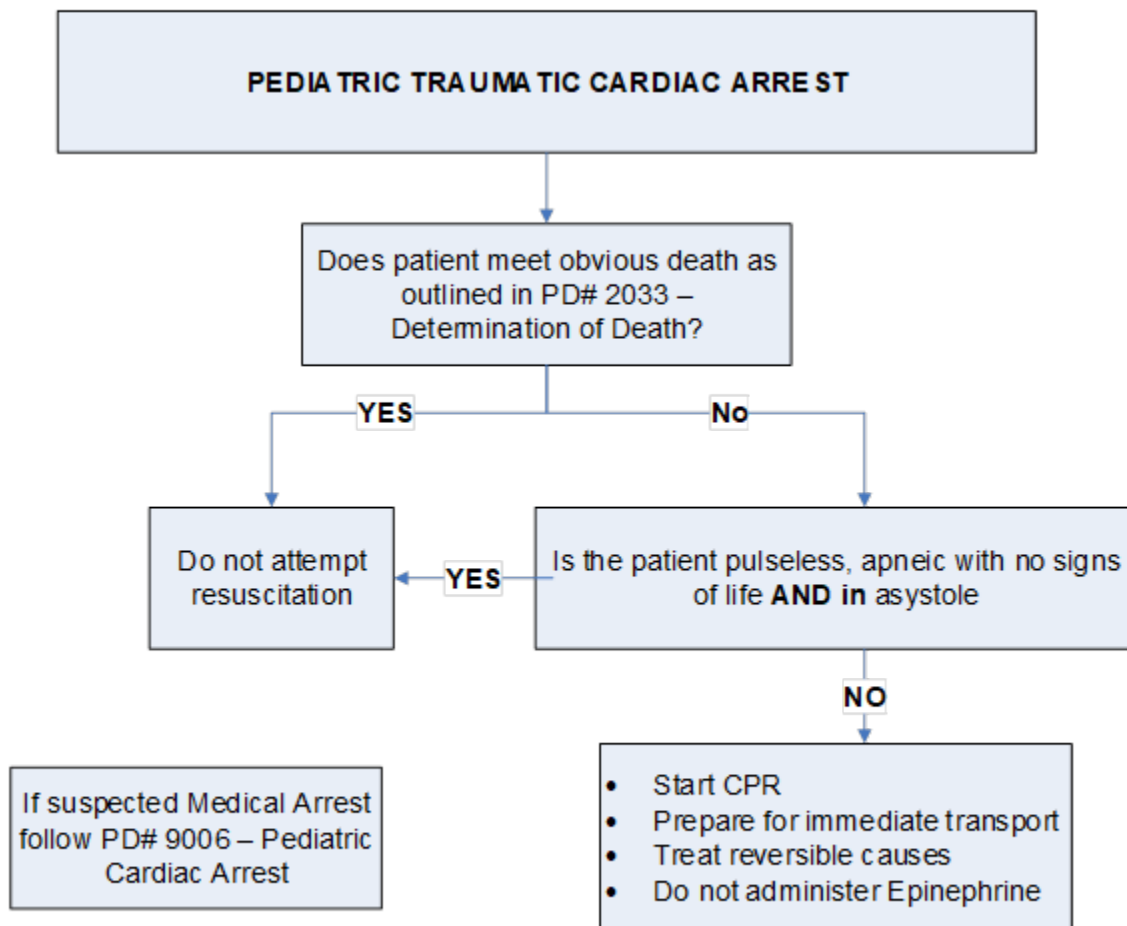
1. Optimize Oxygenation/Ventilation
 - a. Bag Valve Mask (BVM) ventilations is the airway management of choice in all pediatric patients.
 - b. Advanced airway as needed per policy PD# 8837 – Pediatric Airway Management.
 - c. Advanced airway placement shall be confirmed with ETCO₂ detection device or 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
 - a. Obtain IV or IO access
 - b. 20 ml/Kg normal saline bolus via IV/IO. May repeat once
 - i) parameters for pediatric patients older than one year can be approximated by the following formulas:
 $90\text{mm HG} + (2 \times \text{age in years})$
 $70\text{mm HG} + (2 \times \text{age in years}) - \text{Lower limit}$
 - c. Reassess lung sounds after each bolus
4. Treat Cardiovascular Collapse
 - a. High-quality CPR
 - b. 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:
1. Re-assess for and control external hemorrhage
 2. To determine if shock is present, assess capillary refill (≤ 2 seconds) and brachial and femoral pulses (absent, weak, or present)



Cross References:

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