	COUNTY OF SACRAMENTO EMERGENCY MEDICAL SERVICES AGENCY	Document #	9005.02
	PROGRAM DOCUMENT: **Pediatric Traumatic Cardiac Arrest**	Initial Date:	05/01/23
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Signature on File   Signature on File
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EMS Medical Director   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:

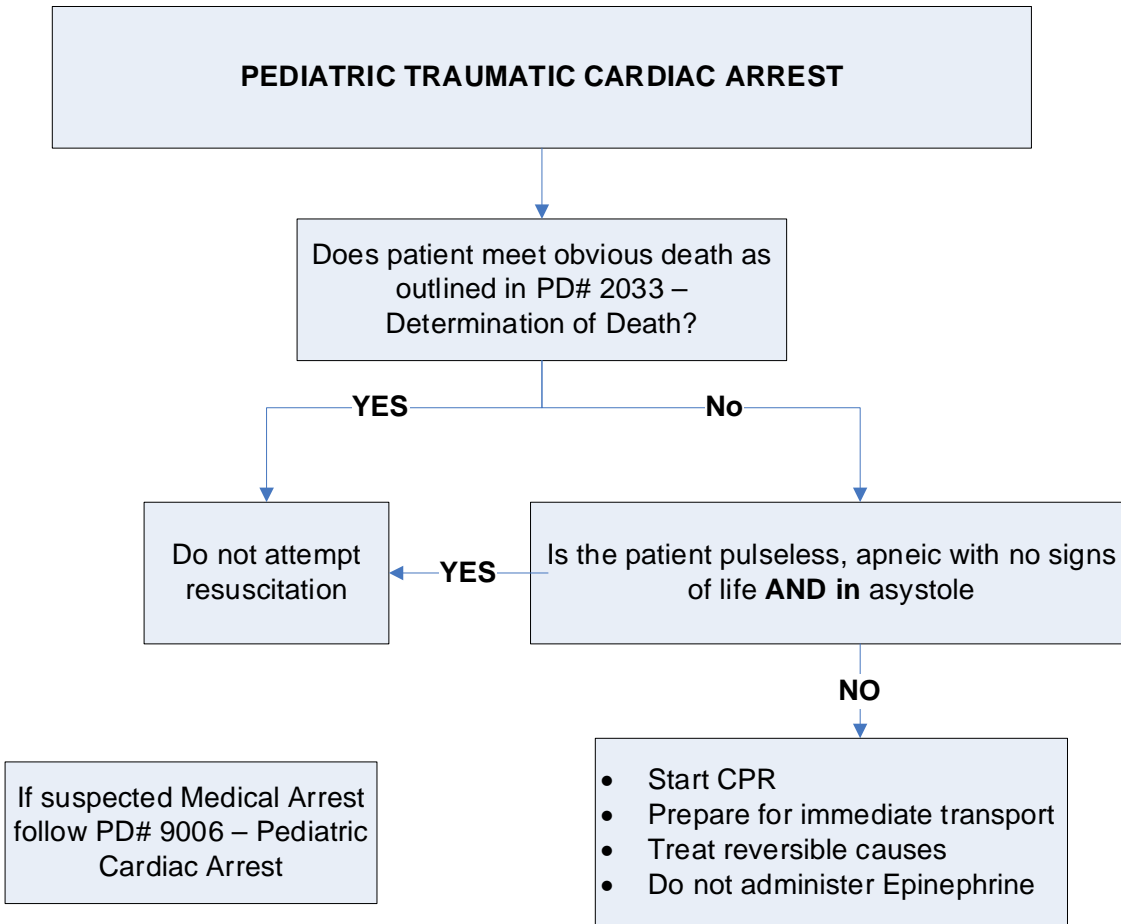| BLS |
|---|
| 1. Treat immediate threats to life |
| 2. External hemorrhage control per PD# 8065 - Hemorrhage ~~Control~~ |
| 3. Airway and Breathing: Clear airway when indicated, place OPA, BVM ventilations |
| 4. Chest Compressions: Chest compressions should be performed when possible without delaying 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 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
  • Obtain IV or IO access
  • 20 ml/Kg normal saline bolus via IV/IO. May repeat once
    o 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 > 37ºC or 98.6ºF

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 (≤ 2 seconds) and brachial and femoral pulses (absent, weak, or present)

PEDIATRIC TRAUMATIC CARDIAC ARREST

Does patient meet obvious death as outlined in PD# 2033 – Determination of Death?

YES → **Do not attempt resuscitation**

No → **Is the patient pulseless, apneic with no signs of life AND in asystole**

YES → **Do not attempt resuscitation**

If suspected Medical Arrest follow PD# 9006 – Pediatric Cardiac Arrest

NO →
- Start CPR
- Prepare for immediate transport
- Treat reversible causes
- Do not administer Epinephrine

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