Pediatric Traumatic Cardiac Arrest

EMS Medical Director:
Signature on File
EMS Administrator:
Signature on File

History
- Code status (DNR or POLST)
- Events leading to arrest
- Estimated downtime
- Prior resuscitation attempts
- Past medical history
- Medications
- Existence of terminal illness
- Suspected physical abuse

Signs and Symptoms
- Unresponsive
- Apneic
- Pulseless

Differential
- Respiratory failure (foreign body, secretions, infection)
- Hypovolemia (dehydration)
- Congenital heart disease
- Trauma
- Hypothermia
- Tension pneumothorax, cardiac tamponade, or PE
- Toxin or medication
- Electrolyte abnormalities (glucose, potassium)
- Acidosis

Criteria for death/no resuscitation
Review DNR/POLST form

Yes → Decomposition
Rigor mortis
Dependent lividity

Injury incompatible with life or traumatic arrest with asystole

Do not begin resuscitation

Follow PD# 2033 – Determination of Death

Exit to PD# 2033 – Determination of Death

No

E	Treat immediate threats to life	
E	External hemorrhage control per PD# 8065 – Hemorrhage	→ Exit to PD# 8065 – Hemorrhage
E	Airway and breathing: Clear airway when indicated, place OPA, BVM ventilations	
E	Chest compressions: Chest Compressions should be performed when possible without delaying transport	
A	Optimize oxygenation/ventilation: BVM ventilations is the preferred airway management, Advanced airways as needed per PD# 8837 Advanced airway placement shall be confirmed with ETCO2 detection device or waveform capnography	→ Exit to PD# 8837 Pediatric Airway Management
A	Treat potential exsanguination: 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	
A	Treat Cardiovascular Collapse: High-Quality CPR, ECG monitoring and appropriate defibrillation	
P	Correct potential obstructive shock: consider tension pneumothorax, bilateral needle thoracostomy per PD# 9017 – Pediatric Trauma	→ Exit to PD# 9017 Pediatric Trauma

E	EMT
A	AEMT
P	Paramedic

Notify receiving facility. Contact Base Hospital for medical direction if needed

Pediatric Cardiac Treatment Protocols

Document: 9005.02
Initial: 05/01/23
Approved: 09/23/24
Effective: 05/01/25
Next Review: 09/01/26

Pediatric Traumatic Cardiac Arrest

- DO NOT HYPERVENTILATE
- Whenever feasible, transport the medical Durable Power of Attorney (DPOA) or immediate family member with the patient to the hospital.
- 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.
- 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
- Pediatric traumatic cardiac arrest patients undergoing resuscitation shall be transported as quickly as possible to the hospital
- 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 TP# 9006 – Pediatric Cardiac Arrest, with attention and appropriate management to emergent trauma needs (hemorrhage control, pneumothorax decompression as indicated, and orthopedic immobilization as indicated)
- 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.

Pearls

- Efforts should be directed at high quality chest compressions with limited interruptions and early defibrillation when indicated. Compress 1.5 inches in infants and 2 inches in children. Consider early IO placement if available or direct IV access if anticipated.
- Airway is a more important intervention in pediatric arrests. This should be accomplished quickly with a BVM and appropriately sized mask. Patient survival is often dependent on proper ventilation and oxygenation.
- Resuscitation is based on proper planning and organized execution. Procedures require space and patient access. Make room to work. Utilize team focused approach assigning responders to predetermined tasks.
- Prevent hypothermia by moving to a warm environment and avoid unnecessary exposure.

Document: 9005.01
Initial: 05/01/23
Approved: 09/08/22
Effective: 05/01/23
Next Review: 09/01/25