Pediatric Cardiac Arrest



History

- Time of arrest
- Medical history
- Medications
- Possibility of foreign body
- Hypothermia

Signs and Symptoms

- Unresponsive
- Cardiac arrest

Differential

- Respiratory failure: Foreign body, Secretions, Infection (croup, epialotitis)
- Hypovolemia (dehydration)
- Congenital heart disease
- Trauma
- Tension pneumothorax, cardiac tamponade, pulmonary embolism

Do not begin

resuscitation

Follow

Deceased Subjects

Policy

- Hypothermia
- Toxin or medication
- Electrolyte abnormalities (Glucose, K)

Pediatric Asystole /

PEA

Protocol PC 1

Pediatric Airway

Protocol(s) 5. 6

Α

YES

Acidosis

Protocol Age Guidance:

Newborn - 3 days:

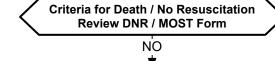
AO2 Newly Born

3- days to 15 years:

PC4 Pediatric Cardiac Arrest

≥ 16 years:

AC3 Cardiac Arrest: **Adult**



Begin Continuous CPR Compressions Push Hard (≥ 1/3 AP Diameter of Chest) (1.5 inches Infant / 2 inches in Children) Push Fast (100 - 120 / min)

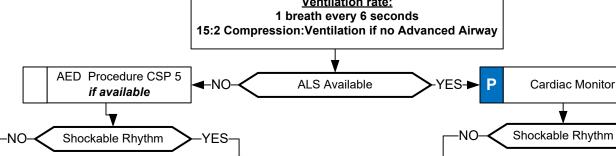
Change Compressors every 2 minutes (sooner if fatigued) (Limit changes / pulse checks ≤ 10 seconds)

Ventilation rate:

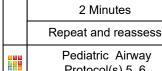
Arrest secondary

to Opioid OD?

NO



Defibrillation Automated



Pediatric Airway Protocol(s) 5, 6

Continue CPR

Naloxone 0.4 - 2 mg IN / IMPeds: 0.1 mg/kg IN Maximum 4 mg

Naloxone 0.4 -2 mg Peds: 0.1 mg/kg IV / IO / IM / IN / ETT Maximum 4 mg

Notify Destination or Contact Medical Control Pediatric Cardiac Protocol Section

YES.

Pediatric VF / VT

Protocol PC 6

Pediatric Tachycardia

Protocol PC 5

Pediatric Airway Protocol(s) 5, 6

Pediatric Cardiac Arrest



ediatric Cardiac Protocol Sectio

Pearls

- * Team Focused Approach / Pit-Crew Approach recommended; assigning responders to predetermined tasks.
- * Efforts should be directed at high quality and continuous compressions with limited interruptions and early defibrillation when indicated. Compress ≥ 1/3 anterior-posterior diameter of chest, in infants 1.5 inches and in children 2 inches.
- * Majority of pediatric arrests stem from a respiratory insult or hypoxic event. Compressions should be coupled with ventilations.
- * When advanced airway not in place perform 15 compressions with 2 ventilations.
- * Use length-based or weight-based pediatric resuscitation system for medication, equipment, cardioversion, and defibrillation guidance. Pediatric paddles should be used in children < 10 kg.
- *** DO NOT HYPERVENTILATE:**

If advanced airway in place ventilate at 1 breath every 6 seconds with continouous uninterrupted compressions

- * Patient survival is often dependent on proper ventilation and oxygenation / airway Interventions.
- * Do not interrupt compressions to place endotracheal tube. Consider BIAD first to limit interruptions.
- * High-Quality CPR:

Make sure chest compressions are being delivered at 100 – 120 / min.

Make sure chest compressions are adequate depth for age and body habitus.

Make sure you allow full chest recoil with each compression to provide maximum perfusion.

Minimize all interruptions in chest compressions to < 10 seconds.

Use AED or apply ECG monitor / defibrillator as soon as available.

* Defibrillation:

First defibrillation is 2 J/kg, second defibrillation is 4 J/kg, subsequent shocks ≥ 4 J/kg (Maximum 10 J/kg or adult dose) Charge defibrillator during chest compressions, near the end of 2-minute cycle, to decrease peri-shock pause.

Following defibrillation, provider should immediately restart chest compressions with no pulse check until end of next cycle.

* End Tidal CO2 (EtCO2)

If EtCO2 is < 10 mmHg, improve chest compressions. Goal is ≥ 20 mmHg.

If EtCO2 spikes, typically > 40 mmHg, consider Return of Spontaneous Circulation (ROSC)

- * IV / IO access and drug delivery are secondary to high-quality chest compressions and early defibrillation.
- * IV access is preferred route. Follow IV or IO Access Protocol UP 6.
- * Special Considerations
 - Maternal Arrest Treat mother per appropriate protocol with immediate notification to Medical Control and rapid transport preferably to obstetrical center if available and proximate. Place mother supine and perform Manual Left Uterine Displacement moving uterus to the patient's left side. IV/IO access preferably above diaphragm. Defibrillation is safe at all energy levels.
 - Renal Dialysis / Renal Failure Refer to Dialysis / Renal Failure Protocol AM 3 caveats when faced with dialysis / renal failure patient experiencing cardiac arrest.
 - **Opioid Overdose** If suspected, administer Naloxone per Overdose / Toxic Ingestion Protocol TE 7 while ensuring airway, oxygenation, ventilations, and high-quality chest compressions.
 - **Drowning / Suffocation / Asphyxiation / Hanging / Lightning Strike** Hypoxic associated cardiac arrest and prompt attention to airway and ventilation is priority followed by high-quality and continuous chest compressions and early defibrillation.
- * Success is based on proper planning and execution. Procedures require space and patient access. Make room to work.