

Pediatric Cardiac Arrest

History

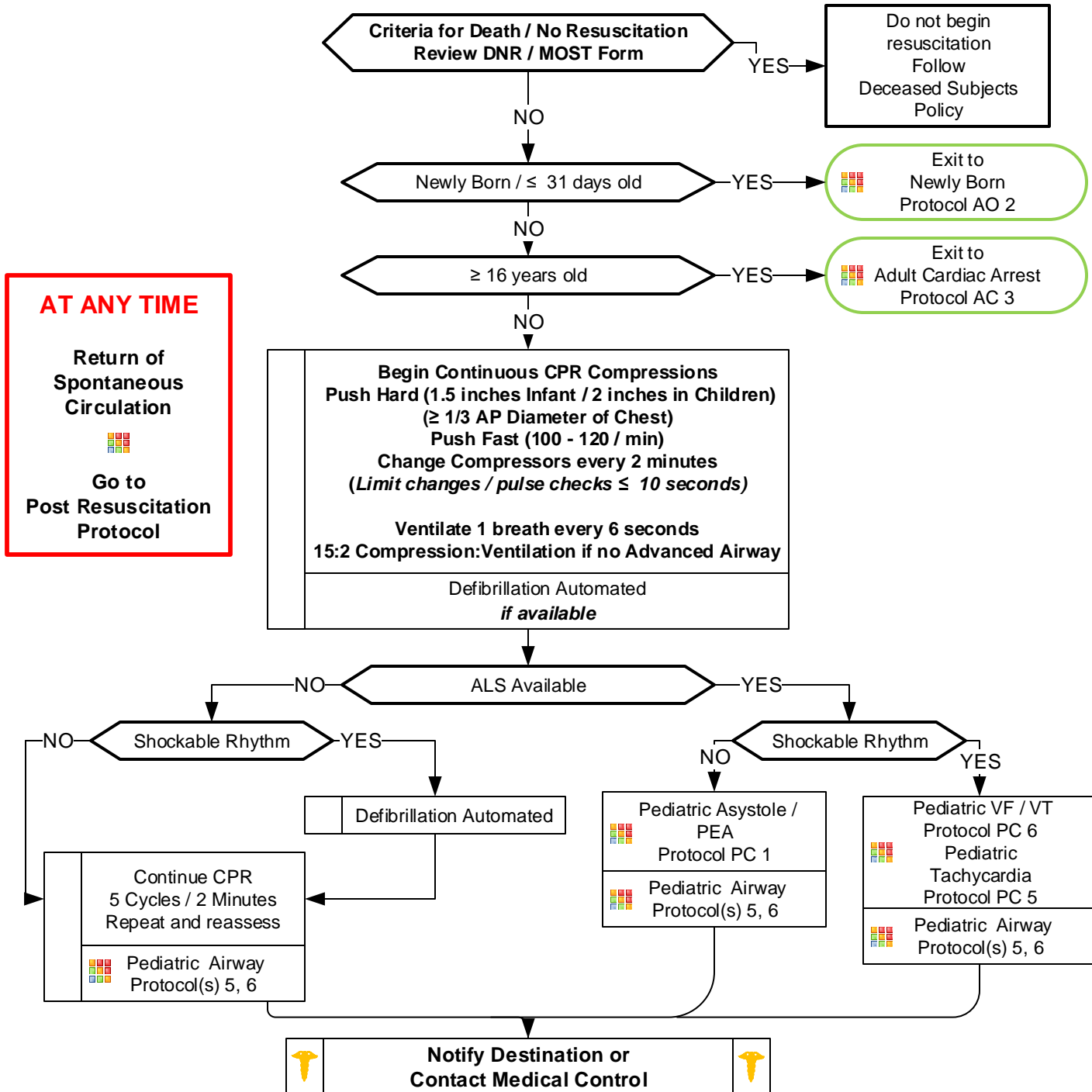
- Time of arrest
- Medical history
- Medications
- Possibility of foreign body
- Hypothermia

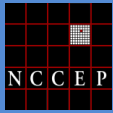
Signs and Symptoms

- Unresponsive
- Cardiac arrest

Differential

- Respiratory failure: Foreign body, Secretions, Infection (croup, epiglottitis)
- Hypovolemia (dehydration)
- Congenital heart disease
- Trauma
- Tension pneumothorax, cardiac tamponade, pulmonary embolism
- Hypothermia
- Toxin or medication
- Electrolyte abnormalities (Glucose, K)
- Acidosis





Pediatric Cardiac Arrest

Pearls

- **Recommended Exam: Mental Status**
- **Beginning compressions first is recommended in pediatric patients during CPR. However, the majority of pediatric arrests stem from a respiratory insult or hypoxic event. Compressions should be coupled with ventilations.**
- **When 1 provider is present, perform 30 compressions with 2 ventilations.**
- **When 2 providers are present, perform 15 compressions with 2 ventilations.**
- **Efforts should be directed at high quality and continuous compressions with limited interruptions and early defibrillation when indicated. Compress $\geq 1/3$ anterior-posterior diameter of chest, in infants 1.5 inches and in children 2 inches. Consider early IO placement if available and / or difficult IV access anticipated.**
- **DO NOT HYPERVENTILATE: If advanced airway in place ventilate 8 – 10 breaths per minute with continuous, uninterrupted compressions.**
- **Do not interrupt compressions to place endotracheal tube. Consider BIAD first to limit interruptions.**
- **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)
- **End Tidal CO₂ (EtCO₂)**
 - If EtCO₂ is < 10 mmHg, improve chest compressions.
 - If EtCO₂ spikes, typically > 40 mmHg, consider Return of Spontaneous Circulation (ROSC)
- **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 caveats when faced with dialysis / renal failure patient experiencing cardiac arrest.
 - **Opioid Overdose** - Naloxone cannot be recommended in opioid-associated cardiac arrest. If suspected, attention to airway, oxygenation, and ventilation increase in importance. Naloxone is not associated with improved outcomes in cardiac arrest.
 - **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.
- **Transcutaneous Pacing:**
 - Pacing is NOT effective in cardiac arrest and pacing in cardiac arrest does NOT increase chance of survival
 - Success is based on proper planning and execution. Procedures require space and patient access. Make room to work. Consider Team Focused Approach / Pit-Crew Approach assigning responders to predetermined tasks. Refer to optional protocol.
 - In order to be successful in pediatric arrests, a cause must be identified and corrected.
 - If no IV / IO access may use **Epinephrine 1:1000 0.1 mg/kg (0.1 mL/kg) via ETT (Maximum 2.5 mg)**