PALS

Pediatric Post–Cardiac Arrest Care Algorithm

Return of spontaneous circulation (ROSC)

INITIAL STABILIZATION

STABILIZE AFTER ROSC

Airway

- Assess the child's ability to maintain and protect the airway
- If an endotracheal tube is present, confirm and monitor placement with clinical assessment and waveform capnography
- If a supraglottic airway is present, assess position and effective ventilation

Oxygenation and ventilation

- Continue support while obtaining reliable measurements
- Target SpO_2 94% to 99%, or the child's usual appropriate saturation
- Target $PaCO_2$ for the child's condition, generally 35 to 45 mm Hg or the established baseline

Hemodynamics and perfusion

- Maintain systolic and mean arterial pressure above the 10th percentile for age and sex
- Monitor rhythm, arterial pressure when resources are available, perfusion, lactate, and urine output
- Use fluid and vasoactive support according to the child's physiology

Glucose and electrolytes

- Monitor glucose levels and prevent hypoglycemia
- Identify and correct clinically significant electrolyte imbalances

IDENTIFY AND TREAT THE ARREST CAUSE AND COMPLICATIONS

- Review events before and during the arrest
- Obtain cause-directed laboratory tests and imaging
- Obtain a 12-lead ECG for a suspected cardiac cause or recurrent arrhythmia
- Use echocardiography for suspected myocardial dysfunction or structural or obstructive disease

Assess neurologic status
Account for sedation, neuromuscular blockade, temperature management, shock, and organ dysfunction

Has neurologic status returned to baseline?

No or unsure

Yes

ONGOING MANAGEMENT AND RECOVERY

✕ ONGOING CRITICAL CARE PLUS NEUROLOGIC CARE

- Continue all pediatric critical-care targets and cause-directed treatment
- If comatose, use a 5-day TTM strategy; continue serial neurologic assessment and EEG when available; treat seizures
- Obtain EEG, imaging, and other tests as needed
- Delay definitive prognostic conclusions until at least 72 hours after cardiac arrest. Use findings from multiple modalities and account for confounding factors

✓ ONGOING PEDIATRIC CRITICAL CARE

- Continue pediatric oxygenation, ventilation, blood-pressure, and cause-directed care
- Repeat neurologic assessments and monitor for recurrent instability or secondary organ injury
- Begin recovery planning

RECOVERY AND FOLLOW-UP

Rehabilitation, first-year physical/cognitive/emotional assessment, and family support

INITIAL STABILIZATION

Resuscitation continues after ROSC. Perform assessments and interventions in parallel whenever possible.

- **Airway and breathing:**
  - Assess airway protection and the effectiveness of ventilation.
  - Confirm and monitor an endotracheal tube with clinical assessment and waveform capnography.
  - Titrate oxygen to SpO_2 94% to 99%, or the child's usual saturation.
  - Target $PaCO_2$ for the underlying condition, generally 35 to 45 mm Hg or the established baseline.
- **Perfusion and metabolism:**
  - Maintain systolic and mean arterial pressure above the 10th percentile for age and sex.
  - Use fluids and vasoactive support according to physiology.
  - Follow glucose, electrolytes, lactate, urine output, and perfusion.
- **Cause and complications:**
  Use history, examination, laboratory testing, ECG, echocardiography, or other imaging according to the suspected cause. Treat recurrent respiratory failure, shock, arrhythmias, bleeding, infection, toxins, trauma, or obstruction as identified.

ONGOING MANAGEMENT

- **Temperature control:**
  If the child remains comatose, monitor central temperature and prevent temperatures above 37.5°C.
  Use either 32°C to 34°C for 48 hours followed by 36°C to 37.5°C for 3 days, or 36°C to 37.5°C throughout all 5 days.
- **Neuromonitoring:**
  Continue serial neurologic examinations.
  If the child is not at baseline and resources are available, use continuous EEG.
  Treat clinical seizures.
- **Prognostication:**
  Begin neurologic assessment and indicated testing early. Delay definitive prognostic conclusions until at least 72 hours after cardiac arrest. Use multiple modalities and account for confounders.
- **Recovery:**
  Evaluate rehabilitation needs and plan physical, cognitive, emotional, developmental, and family follow-up during the first year.