Pediatric Cardiac Arrest Algorithm—2015 Update

Start CPR
• Give oxygen
• Attach monitor/defibrillator

2
Yes
VF/pVT
No
Rhythm shockable?

3
Shock

4
CPR 2 min
• IO/IV access

5
Yes
Shock
Rhythm shockable?

6
CPR 2 min
• Epinephrine every 3-5 min
• Consider advanced airway
Rhythm shockable?

7
Shock
CPR 2 min
• Amiodarone or lidocaine
• Treat reversible causes

8
CPR 2 min
• IO/IV access
• Epinephrine every 3-5 min
• Consider advanced airway
Rhythm shockable?

9
Asystole/PEA

10
CPR 2 min
• IO/IV access
• Epinephrine every 3-5 min
• Consider advanced airway
Rhythm shockable?

11
CPR 2 min
• Treat reversible causes
Rhythm shockable?

12
• Asystole/PEA → 10 or 11
• Organized rhythm → check pulse
• Pulse present (ROSC) → post-cardiac arrest care
Go to 5 or 7

CPR Quality
• Push hard (≥⅓ of anteroposterior diameter of chest) and fast (100-120/min) and allow complete chest recoil.
• Minimize interruptions in compressions.
• Avoid excessive ventilation.
• Rotate compressor every 2 minutes, or sooner if fatigued.
• If no advanced airway, 15:2 compression-ventilation ratio.

Shock Energy for Defibrillation
First shock 2 J/kg, second shock 4 J/kg, subsequent shocks ≥4 J/kg, maximum 10 J/kg or adult dose

Drug Therapy
• Epinephrine IO/IV dose:
0.01 mg/kg (0.1 mL/kg of 1:10 000 concentration). Repeat every 3-5 minutes.
If no IO/IV access, may give endotracheal dose: 0.1 mg/kg (0.1 mL/kg of 1:1000 concentration).
• Amiodarone IO/IV dose:
5 mg/kg bolus during cardiac arrest. May repeat up to 2 times for refractory VF/pulseless VT.
• Lidocaine IO/IV dose:
Initial: 1 mg/kg loading dose. Maintenance: 20-50 mcg/kg per minute infusion (repeat bolus dose if infusion initiated >15 minutes after initial bolus therapy).

Advanced Airway
• Endotracheal intubation or supraglottic advanced airway
• Waveform capnography or capnometry to confirm and monitor ET tube placement
• Once advanced airway in place, give 1 breath every 6 seconds (10 breaths/min) with continuous chest compressions

Return of Spontaneous Circulation (ROSC)
• Pulse and blood pressure
• Spontaneous arterial pressure waves with intra-arterial monitoring

Reversible Causes
• Hypovolemia
• Hypoxia
• Hydrogen ion (acidosis)
• Hypoglycemia
• Hypo-/hyperkalemia
• Hypothermia
• Tension pneumothorax
• Tamponade, cardiac
• Toxins
• Thrombosis, pulmonary
• Thrombosis, coronary