Pediatric Cardiac Arrest Algorithm

1. Start CPR
   • Give oxygen
   • Attach monitor/defibrillator

2. Rhythm shockable?
   Yes: VF/pVT
   No: CPR 2 min
      • IO/IV access

3. Shock
   Yes: CPR 2 min
      • IO/IV access
   No: Rhythm shockable?

4. Rhythm shockable?
   Yes: Shock
   No: CPR 2 min
      • IO/IV access

5. Shock
   Yes: CPR 2 min
      • Epinephrine every 3-5 min
      • Consider advanced airway
   No: Rhythm shockable?

6. Rhythm shockable?
   Yes: Shock
   No: CPR 2 min
      • Amiodarone or lidocaine
      • Treat reversible causes

7. Shock
   Yes: CPR 2 min
      • IO/IV access
      • Epinephrine every 3-5 min
      • Consider advanced airway, capnography
   No: Rhythm shockable?

8. Rhythm shockable?
   Yes: Shock
   No: CPR 2 min
      • Treat reversible causes

9. Asystole/PEA
   CPR 2 min
   • IO/IV access
   • Epinephrine every 3-5 min
   • Consider advanced airway, capnography

10. CPR 2 min
    • IO/IV access
    • Epinephrine every 3-5 min
    • Consider advanced airway, capnography

11. CPR 2 min
    • Treat reversible causes

12. Rhythm shockable?
    Yes: Shock
    No: CPR 2 min
       • IO/IV access
       • Epinephrine every 3-5 min
       • Consider advanced airway, capnography

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CPR Quality
• Push hard (≥3/8 of anteroposterior diameter of chest) and fast (100-120/min) and allow complete chest recoil.
• Minimize interruptions in compressions.
• Avoid excessive ventilation.
• Change 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 the 0.1 mg/mL concentration). Repeat every 3-5 minutes. If no IO/IV access, may give endotracheal dose: 0.1 mg/kg (0.1 mL/kg of the 1 mg/mL concentration).
• Amiodarone IO/IV dose:
  5 mg/kg bolus during cardiac arrest. May repeat up to 2 times for refractory VF/pulseless VT.
  -OR-
  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