Pediatric Cardiac Arrest Algorithm for Patients With Suspected or Confirmed COVID-19

Start CPR
• Begin bag-mask ventilation and give oxygen*
• Attach monitor/defibrillator

Rhythm shockable?

Yes

Rhythm shockable?

Yes

Rhythm shockable?

No

Rhythm shockable?

Yes

CPR 2 min IV/IO access

CPR 2 min IV/IO access

CPR 2 min IV/IO access

CPR 2 min IV/IO access

Rhythm shockable?

Yes

Shock*

Shock*

Shock*

Shock*

Rhythm shockable?

Yes

Epinephrine ASAP

Epinephrine every 3-5 min

Epinephrine every 3-5 min

Epinephrine every 3-5 min

Rhythm shockable?

Yes

CPR 2 min

CPR 2 min

CPR 2 min

CPR 2 min

Rhythm shockable?

Yes

CPR 2 min

CPR 2 min

CPR 2 min

CPR 2 min

Rhythm shockable?

No

No

No

No

CPR 2 min

CPR 2 min

CPR 2 min

CPR 2 min

Treat reversible causes

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Asystole/PEA

VF/pVT

VF/pVT

VF/pVT

VF/pVT

VF/pVT

CPR Quality
• Push hard (≥⅓ of anteroposterior diameter of chest) and fast (100–120/min) and allow complete chest recoil
• Minimize interruptions in compressions
• Change compressor every 2 minutes, or sooner if fatigued
• If no advanced airway, 15:2 compression-ventilation ratio
• If advanced airway, provide continuous compressions and give a breath every 2-3 seconds

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 IV/IO dose: 0.01 mg/kg (0.1 mL/kg of the 0.1 mg/mL concentration). Max dose 1 mg. Repeat every 3-5 minutes. If no IV/IO access, may give endotracheal dose: 0.1 mg/kg (0.1 mL/kg of the 1 mg/mL concentration).
• Amiodarone IV/IO dose: 5 mg/kg bolus during cardiac arrest. May repeat up to 3 total doses for refractory VF/pulseless VT or Lidocaine IV/IO dose: Initial: 1 mg/kg loading dose

Advanced Airway
• Rapidly apply PPE before AGPs.
• Provide endotracheal intubation or supraglottic advanced airway.
• Perform waveform capnography or capnometry to confirm and monitor ET tube placement.
• For all ventilation, use a HEPA filter.

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

Abbreviations: AGP, aerosol-generating procedure; CPR, cardiopulmonary resuscitation; ET, endotracheal; HEPA, high-efficiency particulate air; IO, intraosseous; IV, intravenous; PEA, pulseless electrical activity; PPE, personal protective equipment; ROSC, return of spontaneous circulation; VF, ventricular fibrillation; pVT, pulseless ventricular tachycardia.

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