The Pediatric Cardiac Arrest Algorithm

Text in cascading boxes describes the actions that a provider should perform in sequence during a pediatric cardiac arrest. Arrows guide providers from one box to the next as they perform the actions. Some boxes have 2 arrows that lead outward, each arrow to a different treatment pathway depending on the outcome of the most recent action taken. Pathways are hyperlinked.

Box 1

Start CPR

- Begin bag-mask ventilation and give oxygen
- Attach monitor/defibrillator

Is the rhythm shockable?
If Yes, it is shockable, proceed to Box 2.
If No, it is nonshockable, proceed to Box 9.

Box 2

The patient has **VF or pVT**; proceed to Box 3.

Box 3

Deliver shock.

Box 4

CPR 2 minutes

- IV or IO access

Is the rhythm shockable?
If Yes, it is shockable, proceed to Box 5.
If No, it is nonshockable, proceed to Box 12.

Box 5

Deliver shock.

Box 6

CPR 2 minutes.

- **Epinephrine** every 3 to 5 minutes
- Consider advanced airway

Is the rhythm shockable?
If Yes, it is shockable, proceed to Box 7.
If No, it is nonshockable, proceed to Box 12.

Box 7

Deliver shock.

Box 8

CPR 2 minutes

- **Amiodarone** or **lidocaine**
- Treat reversible causes

Is the rhythm shockable?
If Yes, it is shockable, return to Box 5.
If No, it is nonshockable, proceed to Box 12.

Box 9

The patient has asystole or PEA; **give epinephrine ASAP**.

Box 10

CPR 2 minutes

- IV or IO access
- **Epinephrine** every 3 to 5 minutes
- Consider advanced airway and capnography

Is the rhythm shockable?
If Yes, it is shockable, proceed to Box 7.
If No, it is nonshockable, proceed to Box 11.

Box 11

CPR 2 minutes

Treat reversible causes.
Is rhythm shockable?
If Yes, it is shockable, proceed to Box 7.
If No, it is nonshockable, proceed to Box 12.

Box 12

- If there are no signs of return of spontaneous circulation, proceed to Box 10
- If return of spontaneous circulation is achieved, go to Post–Cardiac Arrest Care checklist

Sidebar for the Pediatric Cardiac Arrest Algorithm

CPR Quality

- Push hard (at least one-third of the anteroposterior diameter of the chest) and fast (100 to 120 per minute) and allow complete chest recoil
- Minimize interruptions in compressions
- Change compressor every 2 minutes, or sooner if fatigued
- If no advanced airway, 15 to 2 compression to ventilation ratio
- If advanced airway, provide continuous compressions and give a breath every 2 to 3 seconds

Shock Energy for Defibrillation

- First shock: 2 Joules per kilogram
- Second shock: 4 Joules per kilogram
- Subsequent shocks: at least 4 Joules per kilogram, up to a maximum of 10 Joules per kilogram or adult dose

Drug Therapy

- **Epinephrine IV or IO dose**: 0.01 milligrams per kilogram (0.1 milliliter per kilogram of the 0.1 milligram per milliliter concentration). Maximum dose: 1 milligram. Repeat every 3 to 5 minutes. If no IV or IO access, may give endotracheal dose of 0.1 milligrams per kilogram (0.1 milliliter per kilogram of the 1 milligram per milliliter concentration)
- **Amiodarone IV or IO dose**: 5 milligrams per kilogram bolus during cardiac arrest. May repeat up to 3 total doses for refractory VF or pulseless VT
  or
  Lidocaine IV or IO dose: Initial: 1 milligram per kilogram loading dose

Advanced Airway

- Endotracheal intubation or supraglottic advanced airway
- Waveform capnography or capnometry to confirm and monitor ET tube placement

Reversible Causes

- Hypovolemia
- Hypoxia
- Hydrogen ion (acidosis)
- Hypoglycemia

- Hypokalemia or hyperkalemia
- Hypothermia
- Tension pneumothorax
- Tamponade, cardiac
- Toxins
- Thrombosis, pulmonary
- Thrombosis, coronary