

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 ASAP.

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 ASAP.

Box 6

CPR 2 minutes.

- **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 12](#).

Box 7

Deliver shock ASAP.

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 5](#).

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 5](#).

If No, it is nonshockable, proceed to [Box 12](#).

Box 12

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

Sidebar for the Pediatric Cardiac Arrest Algorithm

High-Quality CPR

- Push hard (at least one-third of the anteroposterior diameter of the chest)
- Push fast: 100 to 120 per minute
- Allow complete chest recoil
- Minimize interruptions in compressions
- Change compressor every 2 minutes, or sooner if fatigued
- If no advanced airway, use compression to ventilation ratio of
 - 15:2 if 2 rescuers (prepuberty)
 - 30:2 if 2 rescuers (postpuberty onset)
 - 30:2 if 1 rescuer (any age)
- If advanced airway, provide continuous compressions and give a breath every 2 to 3 seconds
- Monitor ETCO₂ and, when available, invasive diastolic BP

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 milligram per milliliter concentration). Maximum dose: 1 milligram.
- **Amiodarone IV or IO dose:** 5 milligrams per kilogram bolus (maximum 300 milligrams). May repeat up to 3 doses (maximum 150 milligram for subsequent doses).
or
Lidocaine IV or IO dose: 1 milligram per kilogram

Advanced Airway

- Endotracheal intubation or supraglottic airway
- ETCO₂ to confirm and monitor endotracheal tube placement

Reversible Causes

- Hypovolemia
- Hypoxia
- Hydrogen ion (acidosis)

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