

## Adult Cardiac Arrest Algorithm

Cascading numbered boxes correspond to actions the provider should perform in sequence. Each box is separated by an arrow that signifies the pathway the provider should take. Some boxes are separated by 2 arrows that lead to different boxes, meaning that the provider should take a different pathway depending on the outcome of the previous action. Pathways are hyperlinked.

### Box 1

#### Start CPR

- Give oxygen
- Attach monitor/defibrillator

Rhythm shockable?

If Yes, proceed to [Box 2](#) for VF/pVT.

If No, proceed to [Box 9](#) for Asystole/PEA.

### Box 2

VF/pVT

### Box 3

Deliver shock.

### Box 4

#### CPR 2 minutes

- IV/IO access

Is rhythm shockable?

If Yes, proceed to [Box 5](#).

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

### Box 5

Deliver shock.

### Box 6

#### CPR 2 minutes

- **Epinephrine** every 3 to 5 minutes.
- Consider advanced airway, capnography.

Is rhythm shockable?

If Yes, proceed to [Box 7](#).

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

### Box 7

Deliver shock.

### Box 8

#### CPR 2 minutes

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

### Box 9

Asystole/PEA.

Give Epinephrine ASAP.

### Box 10

#### CPR 2 minutes

- IV/IO access.

- **Epinephrine** every 3 to 5 minutes.
- Consider advanced airway, capnography.

Is rhythm shockable?

If Yes, proceed to [Box 5](#) or [Box 7](#).

If No, proceed to [Box 11](#).

### Box 11

**CPR 2 minutes.**

- Treat reversible causes.

Is rhythm shockable?

If Yes, proceed to [Box 5](#) or [Box 7](#).

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

### Box 12

- If no signs of return of spontaneous circulation (ROSC), go to [Box 10](#) or [Box 11](#)
- If ROSC, go to Post-Cardiac Arrest Care
- Consider appropriateness of continued resuscitation

### Sidebar

#### CPR Quality

- Push hard (at least 2 inches [5 cm]) 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, 30 to 2 compression-ventilation ratio.
- Quantitative waveform capnography
  - If PETCO<sub>2</sub> is low or decreasing, reassess CPR quality.

#### Shock Energy for Defibrillation

- **Biphasic:** Manufacturer recommendation (eg, initial dose of 120-200 Joules); if unknown, use maximum available. Second and subsequent doses should be equivalent, and higher doses may be considered.
- **Monophasic:** 360 Joules

#### Drug Therapy

- **Epinephrine IV/IO dose:** 1 milligram every 3 to 5 minutes
- **Amiodarone IV/IO dose:** First dose: 300 milligram bolus. Second dose: 150 milligram.  
*or*  
**Lidocaine IV/IO dose:** First dose: 1-1.5 milligrams per kilogram. Second dose: 0.5-0.75 milligrams per kilogram.

#### 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 per minute) with continuous chest compressions

#### Return of Spontaneous Circulation (ROSC)

- Pulse and blood pressure
- Abrupt sustained increase in PETCO<sub>2</sub> (typically greater than or equal to 40 millimeters of mercury)
- Spontaneous arterial pressure waves with intra-arterial monitoring

#### Reversible Causes

- Hypovolemia
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo-/hyperkalemia
- Hypothermia

- Tension pneumothorax
- Tamponade, cardiac
- Toxins
- Thrombosis, pulmonary
- Thrombosis, coronary