Cardiac Arrest Circular Algorithm

Shout for Help/Activate Emergency Response

Start CPR

- Give Oxygen
- Attach Monitor/Defibrillator

Check Rhythm

2 minutes Return of Spontaneous Circulation (ROSC)

Drug Therapy

- Epinephrine IV/IO Dose: 1 mg every 3-5 minutes
- Amiodarone IV/IO Dose***: First dose: 300 mg bolus, Second dose: 150 mg

Advanced Airway****

- Supraglottic advanced airway or endotracheal intubation
- Waveform capnography to confirm and monitor ET tube placement
- 10 breaths per minute with continuous chest compressions

Continue CPR

Post-Cardiac Arrest Care

Consider Advanced Airway
Quantitative waveform capnography
Treat Reversible Causes
Monitor CPR Quality

CPR Quality

- Push hard (2” to 2.4” or 5-6cm) and fast (100–120/min) and allow complete chest recoil.
- Minimize interruptions in compressions.**
- Avoid excessive ventilation
- Rotate compressor every 2 minutes
- If no advanced airway, 30:2 compression-ventilation ratio
- Quantitative waveform capnography
- If PETCO2<10mm Hg, attempt to improve CPR quality
- If relaxation phase(diastolic) pressure<20mm Hg, attempt to improve CPR quality.

Return of Spontaneous Circulation (ROSC)

- Pulse and blood pressure
- Abrupt sustained increase in PETCO2 (typically ≥ 40 mm Hg)
- Spontaneous arterial pressure waves with intra-arterial monitoring

Shock Energy

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

Reversible Causes

- Hypovolemia
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo-/Hyperkalemia
- Hypothermia
- Tension pneumothorax
- Tamponade, cardiac
- Toxins
- Thrombosis, pulmonary
- Thrombosis, coronary

Doses/Details for the Cardiac Arrest Algorithms

Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypo-/Hyperkalemia
Hypothermia
Tension pneumothorax
Tamponade, cardiac
Toxins
Thrombosis, pulmonary
Thrombosis, coronary

** Dobrow BJ, Clark LL, Evry GA, Chilcote V, Sanders AB, Berg RA, Richman PB. Minimally interrupted cardiopulmonary resuscitation by emergency medical services for out of hospital cardiac arrest. JAMA. 2008;299:1139-1145

Version control: This document is current with respect to 2019 American Heart Association Guidelines for CPR and ECC. These guidelines are current until they are replaced in October 2020. If you are reading this page after October 2020, please contact ACLS Training Center at support@acls.net for an updated document. Version 2020.06a

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Give Oxygen
Attach Monitor/Defibrillator

**Rhythm Shockable?**

- **Y:**
  - VF/VT
  - Shock*
  - CPR 2 min
  - IV/IO access
  - Rhythm Shockable?
  - CPR 2 min
    - Epinephrine every 3–5 min
    - Consider advanced airway, capnography

- **N:**
  - Asystole/PEA
  - CPR 2 min
    - IV/IO access
    - Epinephrine every 3–5 min
    - Consider advanced airway, capnography

**Go to 5 or 7**


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