Cardiac Arrest Circular Algorithm

Start CPR

- Give Oxygen
- Attach Monitor/Defibrillator

2 minutes

Check Rhythm

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

Consider Advanced Airway
Quantitative waveform capnography

Treat Reversible Causes

Post-Cardiac Arrest Care

- 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 (e.g. 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

Return of Spontaneous Circulation (ROSC)

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

Doses/Details for the Cardiac Arrest Algorithms

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.

Reversible Causes

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

Version control: This document is current with respect to 2015 American Heart Association Guidelines for CPR and ECC. These guidelines are current until they are replaced on 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 2018.02.a

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Shout for Help/Activate Emergency Response

Start CPR

1. Give Oxygen
   - Attach Monitor/Defibrillator

2. VF/VT
   - Rhythm Shockable?

3. Shock*
   - CPR 2 min
   - IV/IO access

4. CPR 2 min
   - IV/IO access

Rhythm Shockable?

5. Shock
   - CPR 2 min
   - Epinephrine every 3–5 min
   - Consider advanced airway, capnography

6. CPR 2 min
   - Epinephrine every 3–5 min
   - Consider advanced airway, capnography

Rhythm Shockable?

7. Shock
   - CPR 2 min
   - Amiodarone
   - Treat reversible causes

Rhythm Shockable?

8. CPR 2 min
   - Amiodarone
   - Treat reversible causes

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

10. CPR 2 min
    - IV/IO access
    - Epinephrine every 3–5 min
    - Consider advanced airway, capnography

11. CPR 2 min
    - Treat reversible causes

12. If no signs of return of spontaneous circulation (ROSC), go to 10 or 11.
    - If ROSC, go to Post-Cardiac Arrest Care.


http://circ.ahajournals.org/content/122/18_suppl_3/S706

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