Cardiac Arrest Circular Algorithm

Shout for Help/Activate Emergency Response

Start CPR
- Give Oxygen
- Attach Monitor/Defibrillator

2 minutes
Check Rhythm
Return of Spontaneous Circulation (ROSC)
If VF/VT Shock
Post-Cardiac Arrest Care

Drug Therapy
- IV/IO access
- Epinephrine every 3-5 minutes
- Amiodarone for refractory VF/VT

Consider Advanced Airway
- Quantitative waveform capnography

Treat Reversible Causes

Continuous CPR
Monitor CPR Quality

Does/Details for the Cardiac Arrest Algorithms

CPR Quality
- Push hard (>2 inches [5 cm]) and fast (>100/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 PETCO <10 mm Hg, attempt to improve CPR quality
  - Intra-arterial pressure
  - If relaxation phase (diastolic) pressure <20 mm Hg, attempt to improve CPR quality.

Drug Therapy
- Epinephrine IV/IO Does: 1 mg every 3-5 minutes
- Vasopressin IV/IO Does: 40 units can replace first or second dose of epinephrine
- Amiodarone IV/IO Does: 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
- 8-10 breaths per minute with continuous chest compressions

Return of Spontaneous Circulation (ROSC)
- Pulse and blood pressure
- Abrupt sustained increase in PETCO (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.
- Biphasic: 360 J

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

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Shout for Help/Activate Emergency Response

1. **Start CPR**
   - Give Oxygen
   - Attach Monitor/Defibrillator

2. Rhythm shockable?
   - YES: VF/VT
   - NO: Asystole/PEA

3. Shock

4. CPR 2 min
   - IV/IO access

5. Rhythm shockable?
   - YES
   - NO: 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

7. Shock

8. CPR 2 min
   - Amiodarone
   - Treat reversible cause

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

10. Rhythm shockable?
    - NO
    - CPR 2 min
      - Treat reversible cause

11. Rhythm shockable?
    - YES
    - NO

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

Go to 5 or 7