Adult Cardiac Arrest Algorithm—2018 Update

1. Start CPR
   - Give oxygen
   - Attach monitor/defibrillator

2. Rhythm shockable?
   - Yes
   - VF/pVT
   - Shock

3. CPR 2 min
   - IV/O access
   - Rhythm shockable?
     - Yes
     - Shock

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

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

6. CPR 2 min
   - Amiodarone or lidocaine
   - Treat reversible causes

7. CPR 2 min
   - Treat reversible causes

8. CPR 2 min
   - IV/O access

9. Asystole/PEA
   - Shock

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

11. CPR 2 min
    - Treat reversible causes

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

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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, 30:2 compression-ventilation ratio.
- Quantitative waveform capnography
  - If PETCO2 <10 mm Hg, attempt to improve CPR quality.
- Intra-arterial pressure
  - If relaxation phase (diastolic) pressure <20 mm Hg, attempt to improve CPR quality.

Shock Energy for Defibrillation
- 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

Drug Therapy
- Epinephrine IV/O dose:
  - 1 mg every 3-5 minutes
- Amiodarone IV/O dose:
  - First dose: 300 mg bolus. Second dose: 150 mg.
- OR-
  - Lidocaine IV/O dose:
    - First dose: 1.1-1.5 mg/kg. Second dose: 0.5-0.75 mg/kg.

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/min) with continuous chest compressions

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

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