Adult Cardiac Arrest

Shout for Help/Activate Emergency Response

Start CPR
- Give oxygen
- Attach monitor/defibrillator

2 minutes

Check Rhythm

Return of Spontaneous Circulation (ROSC)

Post-Cardiac Arrest Care

Drug Therapy
- IV/I/O 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

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 PETCO₂ <10 mm Hg, attempt to improve CPR quality
  - Intra-arterial pressure
    - If <20 mm 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 (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/I/O Dose: 1 mg every 3-5 minutes
- Vasopressin IV/I/O Dose: 40 units can replace first or second dose of epinephrine
- Amiodarone IV/I/O 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
- 8-10 breaths per minute with continuous chest compressions

Reversible Causes
- Hypovolemia
- Hypoxia
- Hyper/hypokalemia
- Hyperthermia
- Tension pneumothorax
- Tamponade, cardiac
- Toxins
- Thrombosis, pulmonary
- Thrombosis, coronary
**Adult Bradycardia (With Pulse)**

1. Assess appropriateness for clinical condition. Heart rate typically <50/min if bradycardia.

2. Identify and treat underlying cause
   - Maintain patent airway; assist breathing as necessary
   - Oxygen (if hypoxemic)
   - Cardiac monitor to identify rhythm; monitor blood pressure and oximetry
   - IV access
   - 12-Lead ECG if available; don’t delay therapy

3. Persistent bradyarrhythmia causing:
   - Hypotension?
   - Acutely altered mental status?
   - Signs of shock?
   - Ischemic chest discomfort?
   - Acute heart failure?

   - No
   - Yes

4. Monitor and observe

5. Atropine
   - If atropine ineffective:
     - Transcutaneous pacing OR
     - Dopamine infusion OR
     - Epinephrine infusion

6. Consider:
   - Expert consultation
   - Transvenous pacing

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**Doses/Details**

- **Atropine IV Dose:**
  - First dose: 0.5 mg bolus
  - Repeat every 3-5 minutes
  - Maximum: 3 mg

- **Dopamine IV Infusion:**
  - 2-10 mcg/kg per minute

- **Epinephrine IV Infusion:**
  - 2-10 mcg per minute
1. Assess appropriateness for clinical condition. Heart rate typically ≥150/min if tachyarrhythmia.

2. Identify and treat underlying cause
   - Maintain patent airway; assist breathing as necessary
   - Oxygen (if hypoxemic)
   - Cardiac monitor to identify rhythm; monitor blood pressure and oximetry

3. Persistent tachyarrhythmia causing:
   - Hypotension?
   - Acutely altered mental status?
   - Signs of shock?
   - Ischemic chest discomfort?
   - Acute heart failure?

4. Synchronized cardioversion
   - Consider sedation
   - If regular narrow complex, consider adenosine

5. Wide QRS? ≥0.12 second
   - Yes
     - Synchronized cardioversion
   - No

6. Synchronized cardioversion
   - Consider adenosine only if regular and monomorphic
   - Consider antiarrhythmic infusion
   - Consider expert consultation

7. IV access and 12-lead ECG if available
   - Vagal maneuvers
   - Adenosine (if regular)
   - β-Blocker or calcium channel blocker
   - Consider expert consultation

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Doses/Details

**Synchronized Cardioversion**
Initial recommended doses:
- Narrow regular: 50-100 J
- Narrow irregular: 120-200 J biphasic or 200 J monophasic
- Wide regular: 100 J
- Wide irregular: defibrillation dose (NOT synchronized)

**Adenosine IV Dose:**
First dose: 6 mg rapid IV push; follow with NS flush.
Second dose: 12 mg if required.

**Antiarrhythmic Infusions for Stable Wide-QRS Tachycardia**

- **Propranolol IV Dose:**
  20-50 mg/min until arrhythmia suppressed, hypotension ensues, QRS duration increases >50%, or maximum dose 17 mg/kg given.
  Maintenance infusion: 1-4 mg/min.
  Avoid if prolonged QT or CHF.

- **Amiodarone IV Dose:**
  First dose: 150 mg over 10 minutes.
  Repeat as needed if VT recurs.
  Follow by maintenance infusion of 1 mg/min for first 6 hours.

- **Sotalol IV Dose:**
  100 mg (1.5 mg/kg) over 5 minutes.
  Avoid if prolonged QT.

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