Cardiac Arrest VF/Pulseless VT Learning Station Checklist

Adult Cardiac Arrest

☐ Shout for Help/Activate Emergency Response

Start CPR
- Give oxygen
- Attach monitor/defibrillator

Rhythm shockable?

No
Yes

VF/VT

Shock

CPR 2 min
- IV/IO access

Rhythm shockable?

No
Yes

Shock

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

Rhythm shockable?

No
Yes

Shock

CPR 2 min
- Amiodarone
- Treat reversible causes

Rhythm shockable?

No
Yes

Shock

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

Rhythm shockable?

No
Yes

Shock

CPR 2 min
- Treat reversible causes

Rhythm shockable?

No
Yes

Go to 5 or 7

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

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Cardiac Arrest PEA/Asystole Learning Station Checklist

Adult Cardiac Arrest

☐ Shout for Help/Activate Emergency Response

1 Start CPR
- Give oxygen
- Attach monitor/defibrillator

2 VF/VT

3 Shock

4 CPR 2 min
- IV/IO access

5 Shock

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

7 Shock

8 CPR 2 min
- Amiodarone
- Treat reversible causes

9 Asystole/PEA

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

11 CPR 2 min
- Treat reversible causes

12 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 relaxation phase (diastolic) pressure <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 (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

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

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

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

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Immediate Post–Cardiac Arrest Care Learning Station Checklist

**Adult Immediate Post–Cardiac Arrest Care**

1. Return of Spontaneous Circulation (ROSC)

2. Optimize ventilation and oxygenation
   - Maintain oxygen saturation >94%
   - Consider advanced airway and waveform capnography
   - Do not hyperventilate

3. Treat hypotension (SBP <90 mm Hg)
   - IV/IO bolus
   - Vasopressor infusion
   - Consider treatable causes
   - 12-Lead ECG

4. Follow commands?
   - Yes
   - No

5. Consider induced hypothermia
   - Yes
   - No

6. CORONARY REPERFUSION
   - Yes
   - No

7. STEMI OR high suspicion of AMI
   - Yes
   - No

8. Advanced critical care

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**Doses/Details**

**Ventilation/Oxygenation**
- Avoid excessive ventilation. Start at 10-12 breaths/min and titrate to target P\textsubscript{ET}CO\textsubscript{2} of 35-40 mm Hg. When feasible, titrate Fi\textsubscript{O}2 to minimum necessary to achieve Sp\textsubscript{O}2 >94%.

**IV Bolus**
- 1-2 L normal saline or lactated Ringer’s. If inducing hypothermia, may use 4°C fluid.

**Epinephrine IV Infusion**
- 0.1-0.5 mcg/kg per minute (in 70-kg adult: 7-35 mcg per minute)

**Dopamine IV Infusion**
- 5-10 mcg/kg per minute

**Norepinephrine IV Infusion**
- 0.1-0.5 mcg/kg per minute (in 70-kg adult: 7-35 mcg per minute)

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

Adult Bradycardia (With Pulse)

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

2. Identify and treat underlying cause
   - Maintain patent airway; assist breathing as necessary
   - Oxygen (if hypoxic)
   - 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?

4. Monitor and observe
   - No

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

6. Consider:
   - Expert consultation
   - Transvenous pacing

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

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Assess appropriateness for clinical condition. Heart rate typically ≥150/min if tachyarrhythmia.

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

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

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

Wide QRS? ≥0.12 second
- IV access and 12-lead ECG if available
- Vagal maneuvers
- Adenosine (if regular)
- β-Blocker or calcium channel blocker
- Consider expert consultation

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

Procainamide 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.