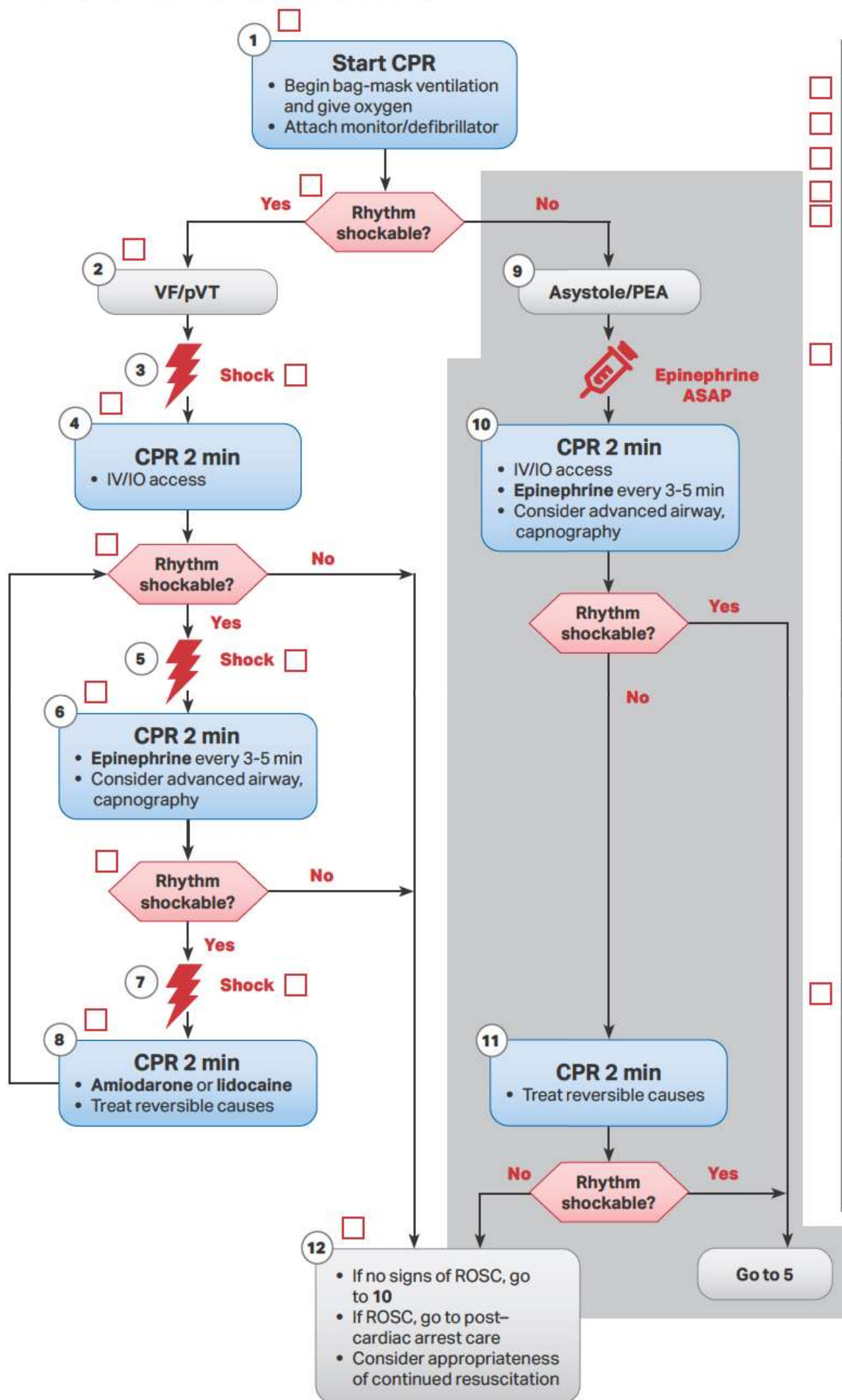
# Adult Cardiac Arrest Learning Station Checklist (VF/pVT)

## Adult Cardiac Arrest Algorithm (VF/pVT)




### High-Quality CPR

- Push hard (at least 2 inches [5 cm]).
- Push 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, use 30:2 compression-ventilation ratio.
- If advanced airway in place, give 1 breath every 6 seconds (10 breaths/min) with continuous chest compressions.
- Continuous waveform capnography
  - If $ETCO_2$ is low or decreasing, reassess 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/IO dose:** 1 mg every 3-5 minutes
- **Amiodarone IV/IO dose:** First dose: 300 mg bolus Second dose: 150 mg
  *or*
  **Lidocaine IV/IO dose:** First dose: 1-1.5 mg/kg Second dose: 0.5-0.75 mg/kg

### Advanced Airway

- ET intubation or supraglottic advanced airway
- Continuous waveform capnography or capnometry to confirm and monitor ET tube placement

### Reversible Causes

- **H**ypovolemia
- **H**ypoxia
- **H**ydrogen ion (acidosis)
- **H**ypo-/hyperkalemia
- **H**ypothermia
- **T**ension pneumothorax
- **T**amponade, cardiac
- **T**oxins
- **T**hrombosis, pulmonary
- **T**hrombosis, coronary

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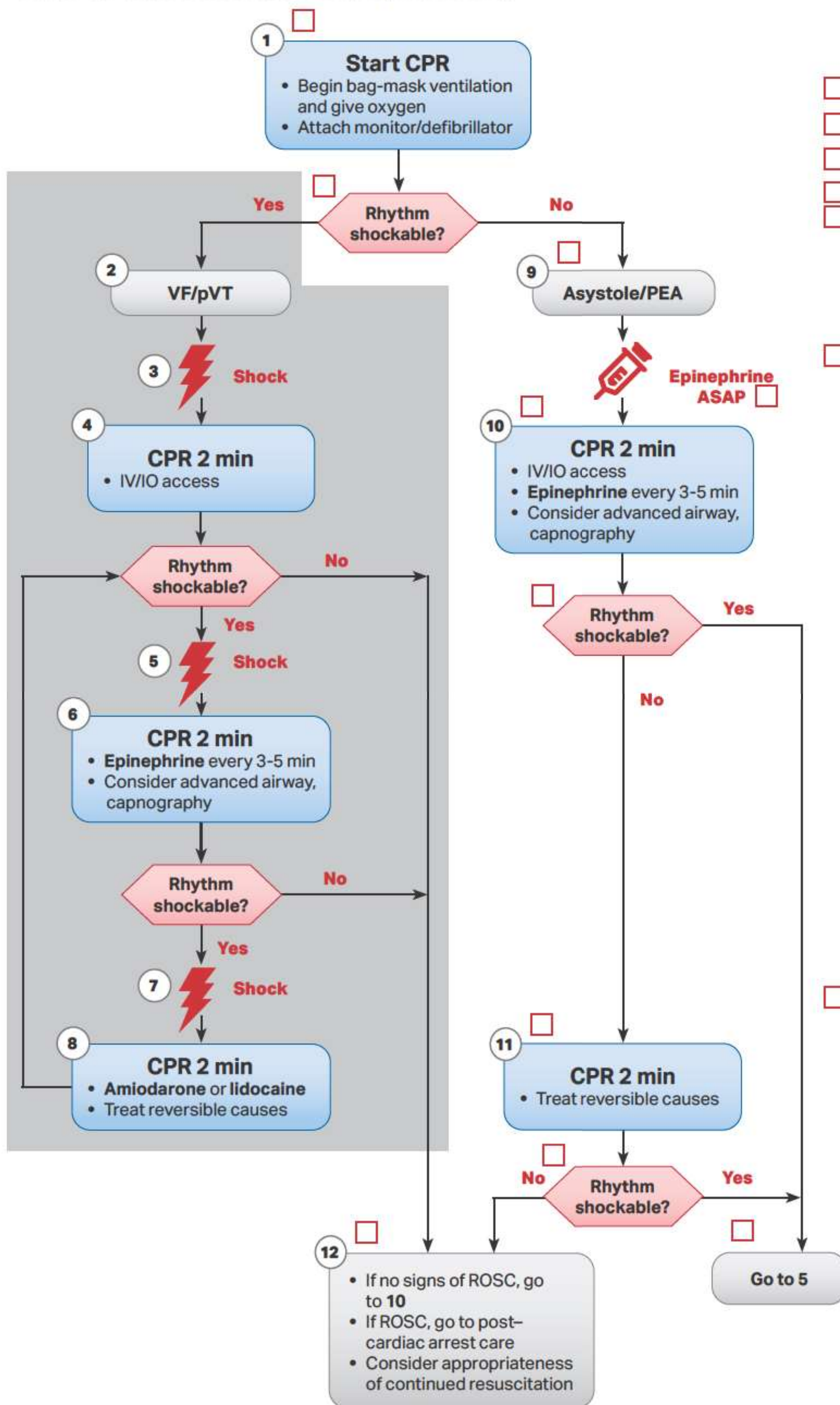
# Adult Cardiac Arrest Learning Station Checklist (Asystole/PEA)

## Adult Cardiac Arrest Algorithm (Asystole/PEA)




**High-Quality CPR**

- ☐ Push hard (at least 2 inches [5 cm]).
- ☐ Push 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.
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- ☐ Continuous waveform capnography
  - If $ETCO_2$ is low or decreasing, reassess CPR quality.

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☐ **Reversible Causes**

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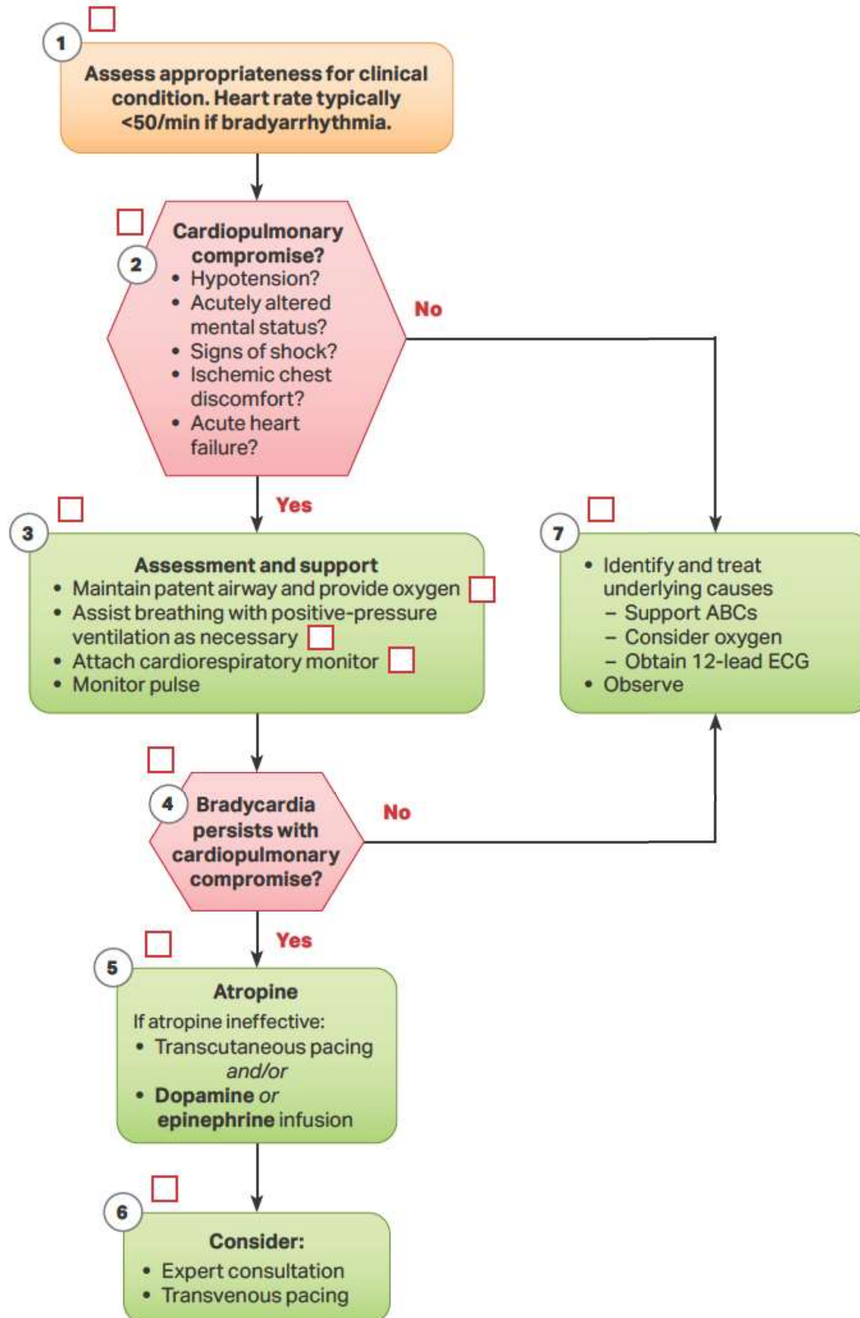
# Adult Bradycardia Learning Station Checklist

## Adult Bradycardia With a Pulse Algorithm




**Doses/Details**

**Atropine IV dose:**
First dose: 1 mg bolus.
Repeat every 3-5 minutes.
Maximum total dose: 3 mg.

**Dopamine IV infusion:**
Usual infusion rate is 5-20 mcg/kg per minute.
Titrate to patient response; taper slowly.

**Epinephrine IV infusion:**
2-10 mcg per minute infusion.
Titrate to patient response.

**Possible Causes**

- Myocardial ischemia/infarction
- Drugs/toxicologic (eg, calcium-channel blockers, β-blockers, digoxin)
- Hypoxia
- Electrolyte abnormality (eg, hyperkalemia)

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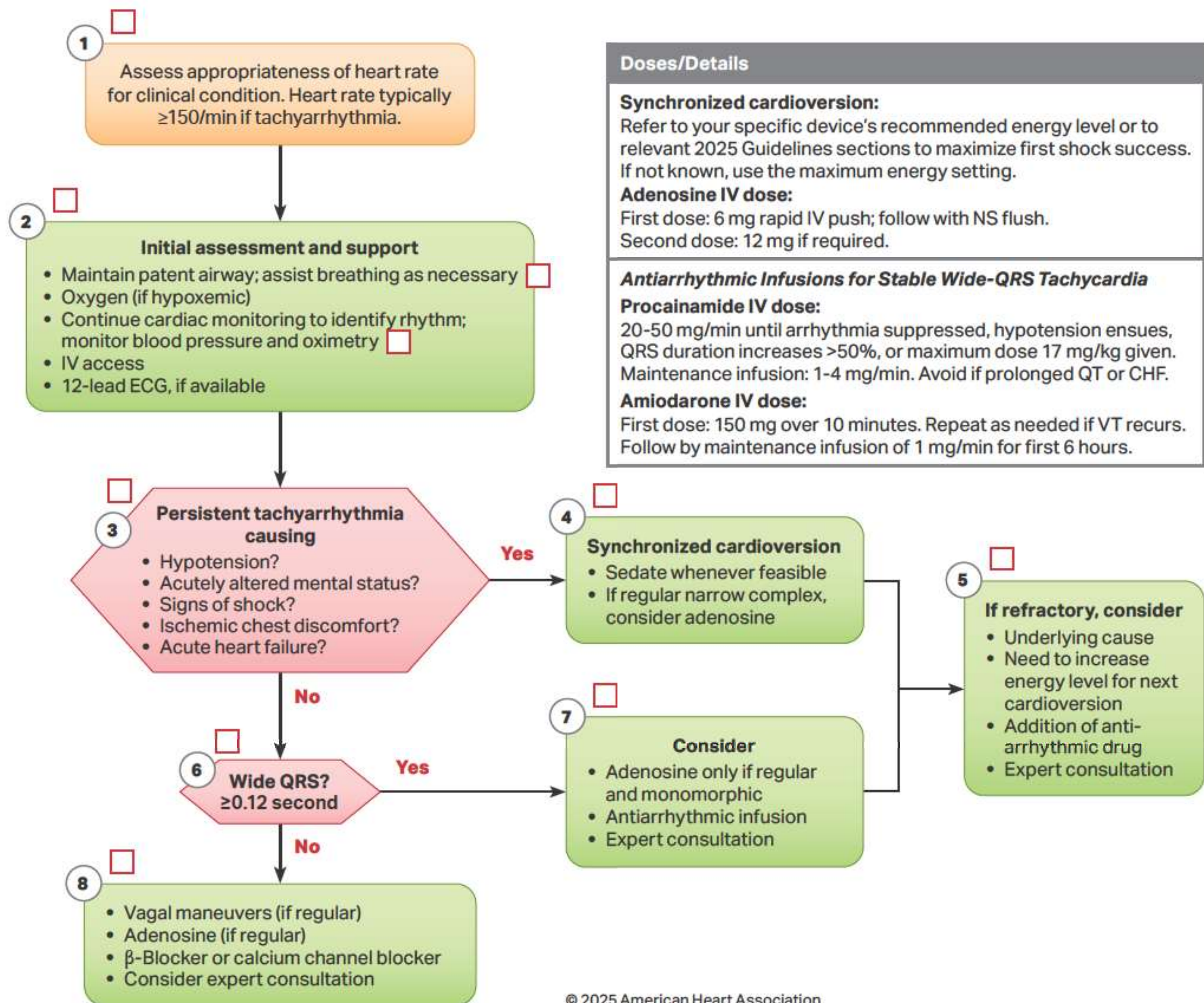
# Adult Tachycardia With a Pulse Learning Station Checklist

## Adult Tachyarrhythmia With a Pulse Algorithm

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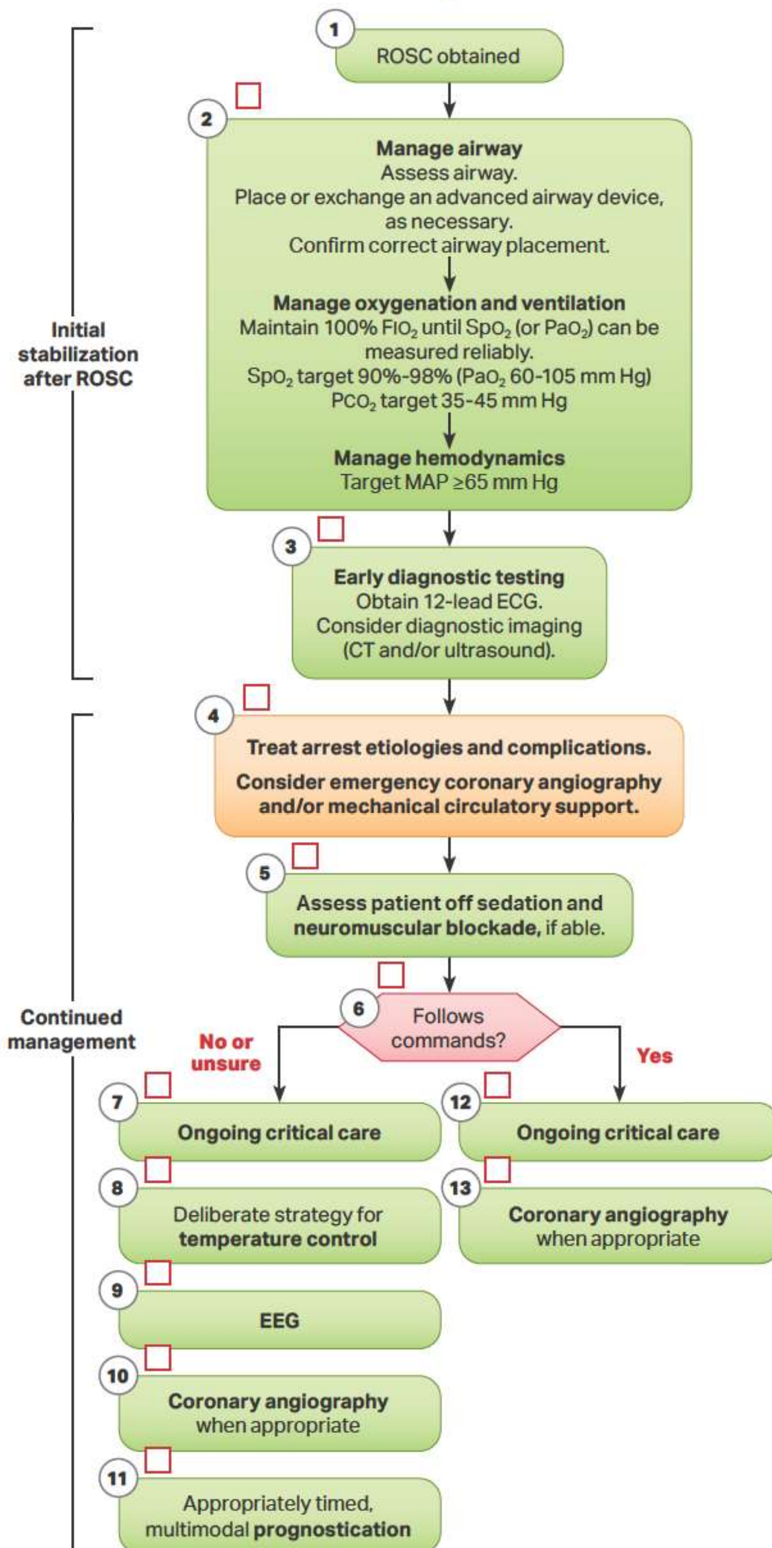
# Adult Post–Cardiac Arrest Care Learning Station Checklist

## Adult Post–Cardiac Arrest Care Algorithm




### Initial Stabilization After ROSC

Resuscitation is ongoing during the post-ROSC phase, and many of these activities can occur concurrently.

**Manage airway:** Assess and consider placement or exchange of an advanced airway device (usually endotracheal tube or supraglottic device). Confirm correct placement of an advanced airway. This generally includes the use of waveform capnography or capnometry.

**Manage oxygenation and ventilation:** Titrate $FIO_2$ for $SpO_2$ 90%-98% (or $PaO_2$ 60-105 mm Hg). Adjust minute ventilation to target $PCO_2$ 35-45 mm Hg in the absence of severe acidemia.

**Manage hemodynamics:** Initiate or adjust vasopressors and/or fluid resuscitation as necessary for goal MAP ≥65 mm Hg.

**Early diagnostic testing:** Obtain 12-lead ECG to assess for ischemia or arrhythmia. Consider CT head, chest, abdomen, and/or pelvis to determine cause of arrest or assess for injuries sustained during resuscitation. Point-of-care ultrasound or echocardiography may be reasonable to identify clinically significant diagnoses requiring intervention.

### Continued Management

**Treat arrest etiologies and complications.**

**Consider emergency cardiac intervention:**

- Persistent ST-segment elevation present
- Cardiogenic shock
- Recurrent or refractory ventricular arrhythmias
- Severe myocardial ischemia

**Temperature control:** If patient is not following commands off sedation and neuromuscular blockade or is unable to assess, initiate a deliberate strategy of temperature control with goal 32 °C-37.5 °C as soon as possible.

**Evaluate for seizure:** Evaluate for clinical seizure and obtain EEG to evaluate for seizure in patients not following commands.

**Prognostication:** Multimodal approach with delayed impressions (≥72 hours from ROSC or achieving normothermia).

**Ongoing critical care includes the following:**

- Target $PaO_2$ 60-105 mm Hg, $PCO_2$ 35-45 mm Hg (unless severe acidemia); avoid hypoglycemia (glucose <70 mg/dL) and hyperglycemia (glucose >180 mg/dL); target MAP ≥65 mm Hg.
- Consider antibiotics.

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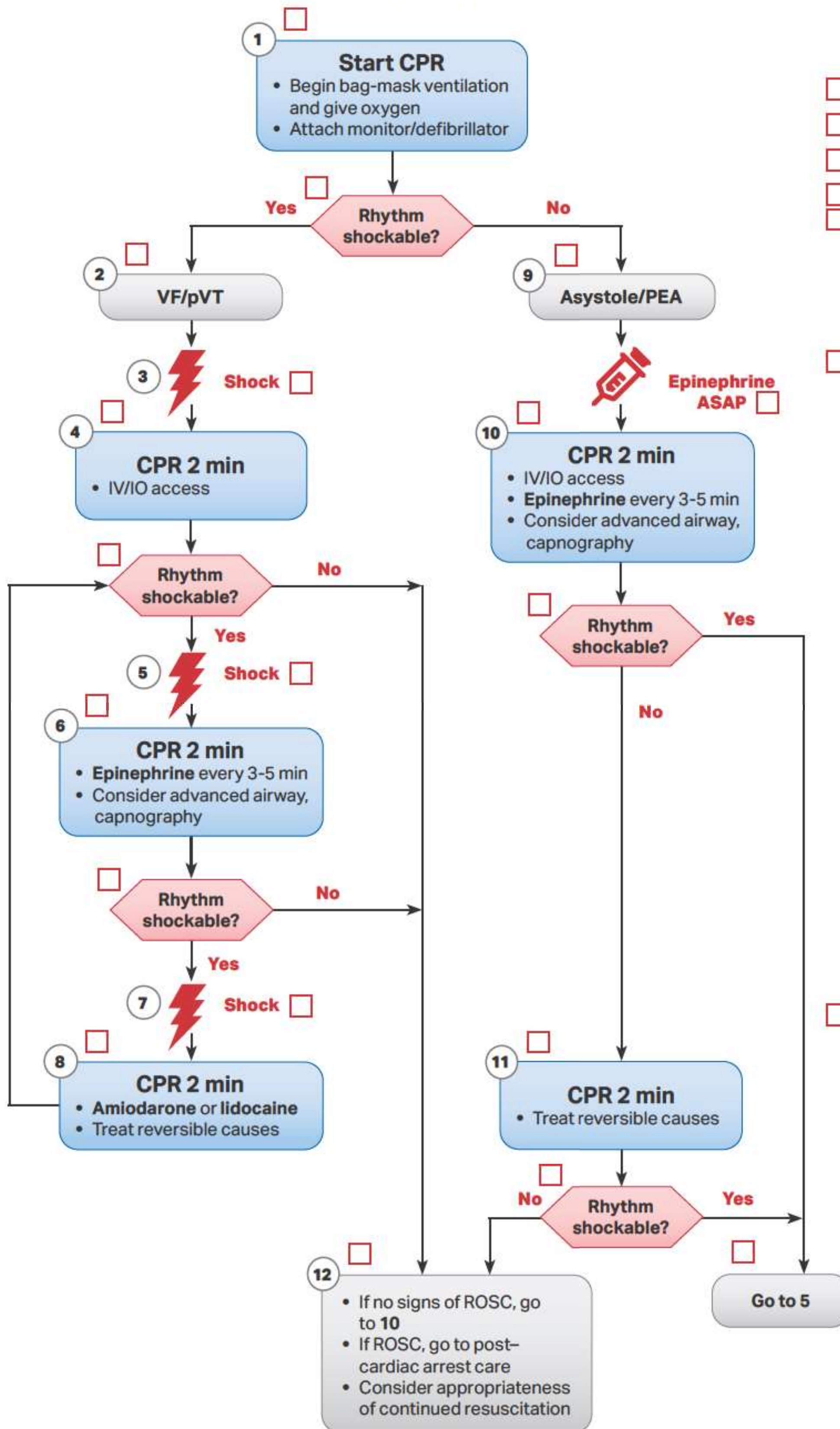


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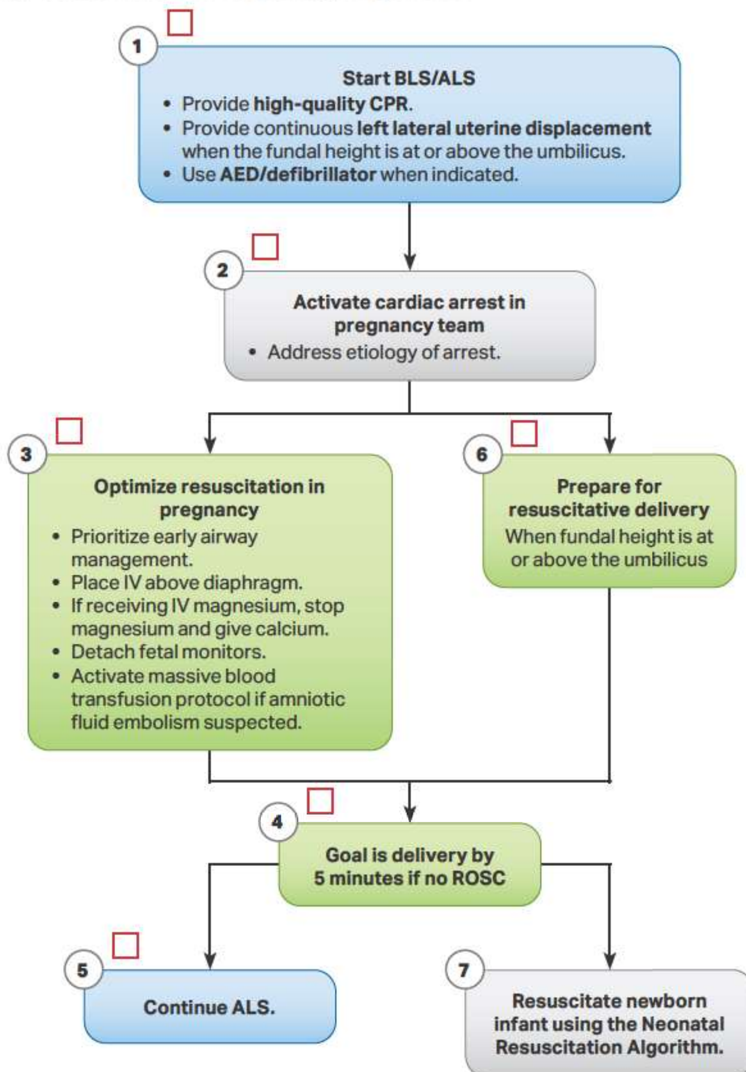
# Cardiac Arrest in Pregnancy In-Hospital ACLS Learning Station Checklist

## Cardiac Arrest in Pregnancy Algorithm

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### Explanation of Cardiac Arrest Interventions

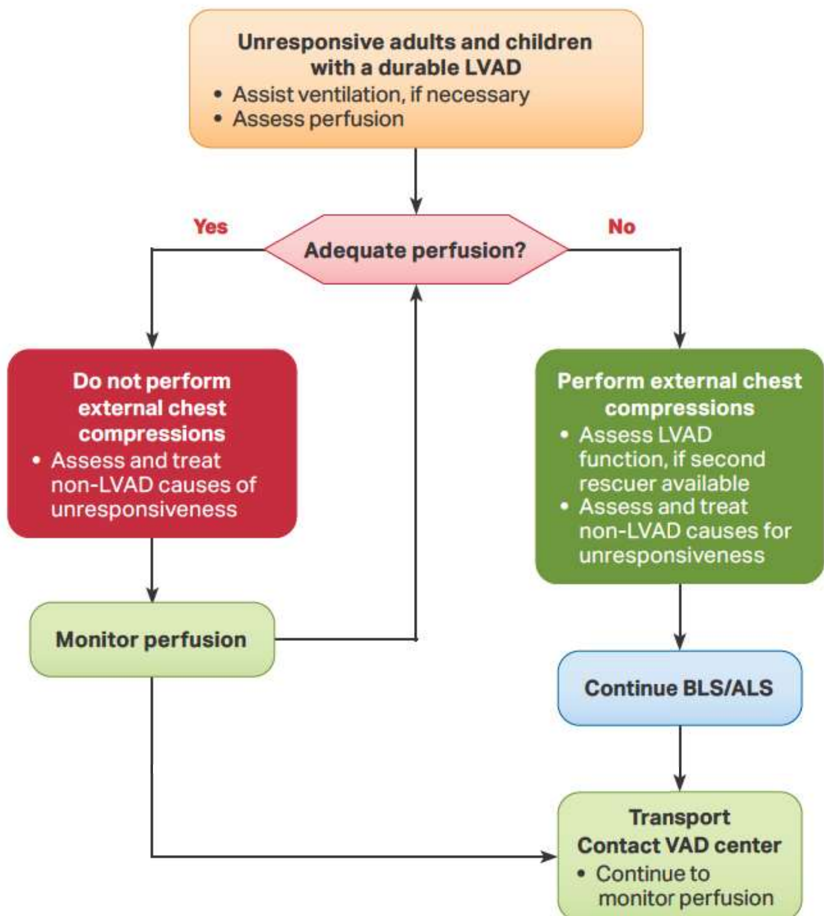
- Cardiac arrest in pregnancy team will vary according to local resources but may include:
  - Team Leader
  - Anesthesiologist
  - Obstetrician
  - Neonatologist
  - Nurses
  - Pharmacists
  - Other professionals
- The goal of left lateral uterine displacement is to relieve aortocaval compression and to facilitate effective chest compressions.
- The goal of resuscitative delivery is to improve the pregnant patient's outcome, and when feasible, the newborn infant's outcome.
- Ideally, perform resuscitative delivery by 5 minutes, depending on local resources.
- In pregnancy, difficult airway is common and is managed (eg, endotracheal intubation or supraglottic airway) by the most experienced professional.

### Etiologies of Cardiac Arrest

**A** Anesthetic complications
**B** Bleeding
**C** Cardiovascular
**D** Drugs
**E** Embolic (amniotic fluid or pulmonary embolism)
**F** Fever
**G** General causes (H's and T's)
**H** Hypertension (eg, preeclampsia)

# Adult Ventricular Assist Device Learning Station Checklist

## Adult and Pediatric Durable Left Ventricular Assist Device Algorithm




**Assessing Perfusion**

**Adequate perfusion* if any of the following present:**

- Normal skin color and temperature
- Normal capillary refill
- MAP >50 mm Hg (if noninvasive BP cuff nonfunctional, use doppler or arterial line, if available)
- $PETCO_2$ >20 mm Hg

**Patients may not have palpable pulse*

**Non-LVAD Causes of Unresponsiveness**

- Dysrhythmia
- Hemorrhage/hypovolemia
- Hypoglycemia
- Hypoxia
- Overdose
- Right ventricular failure
- Sepsis
- Stroke

**Assess and Attempt to Restart LVAD Function**

- Look/listen for alarms
- Listen for LVAD hum
- Driveline connected?
- Power source connected?
- Need to replace system controller?

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