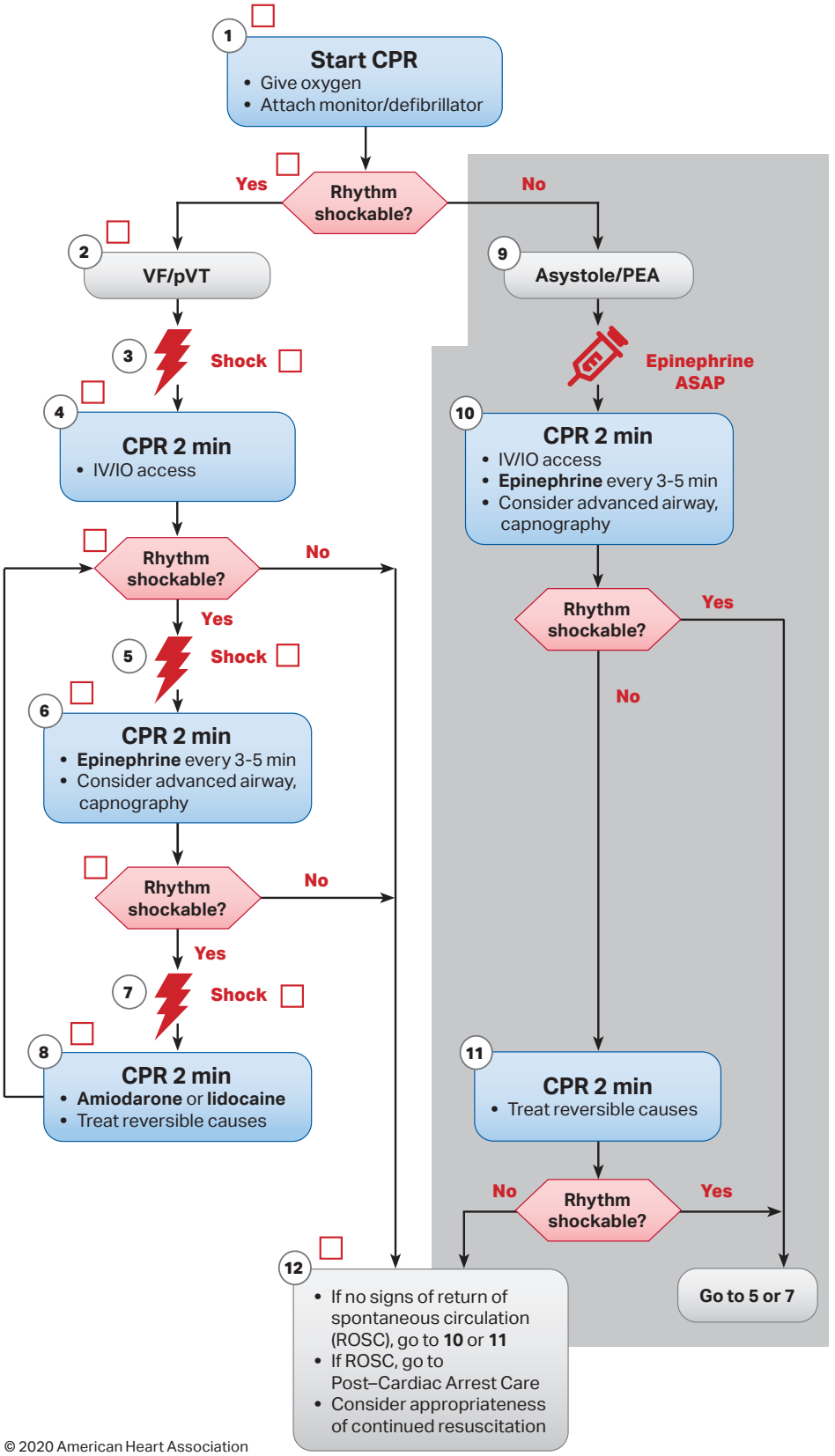
Adult Cardiac Arrest Learning Station Checklist (VF/pVT)

Adult Cardiac Arrest Algorithm (VF/pVT)



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 $PETCO_2$ 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

- 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)

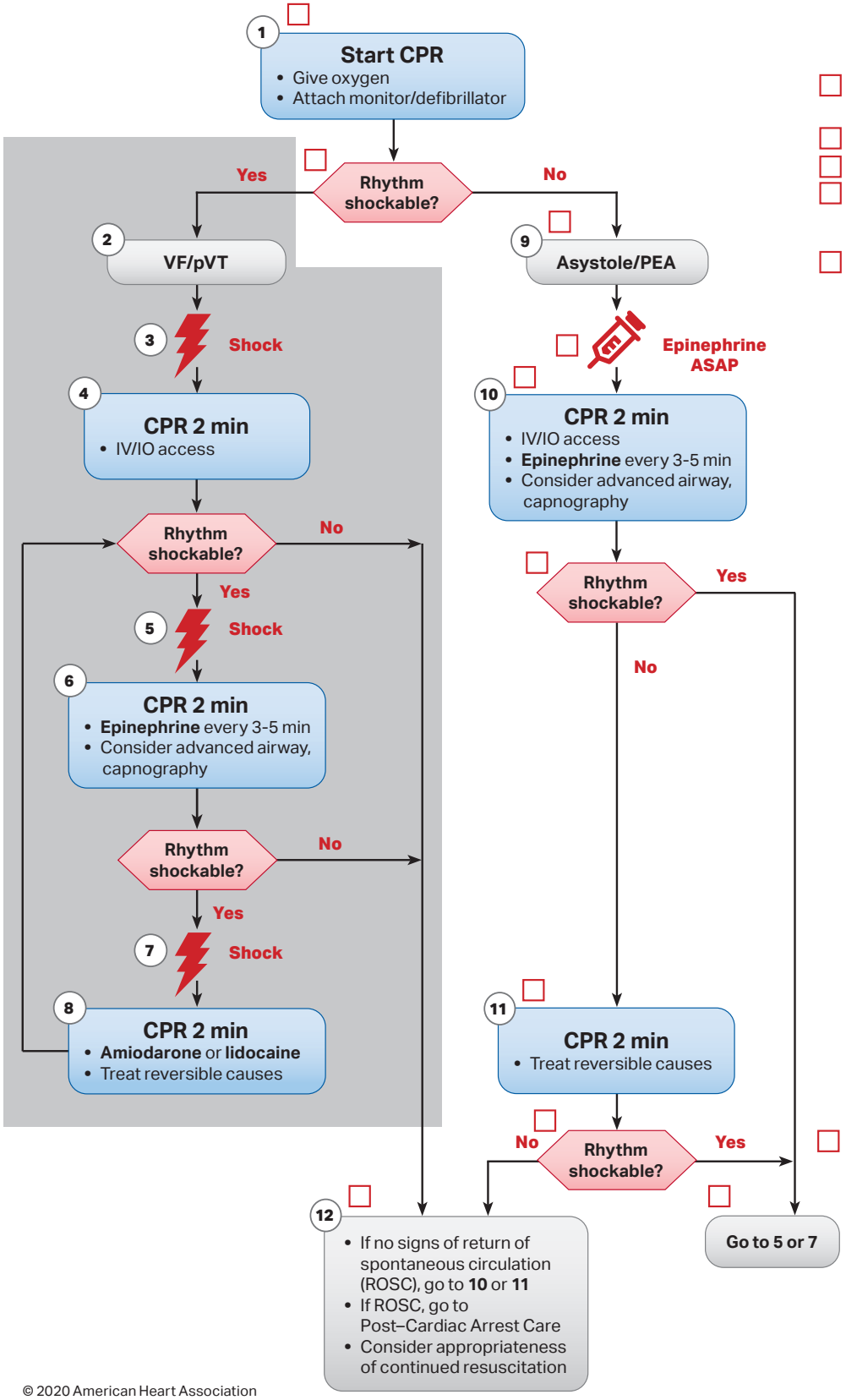
- Pulse and blood pressure
- Abrupt sustained increase in $PETCO_2$ (typically ≥40 mm Hg)
- Spontaneous arterial pressure waves with intra-arterial monitoring

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

Adult Cardiac Arrest Learning Station Checklist (Asystole/PEA)

Adult Cardiac Arrest Algorithm (Asystole/PEA)



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 P_{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

- 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)

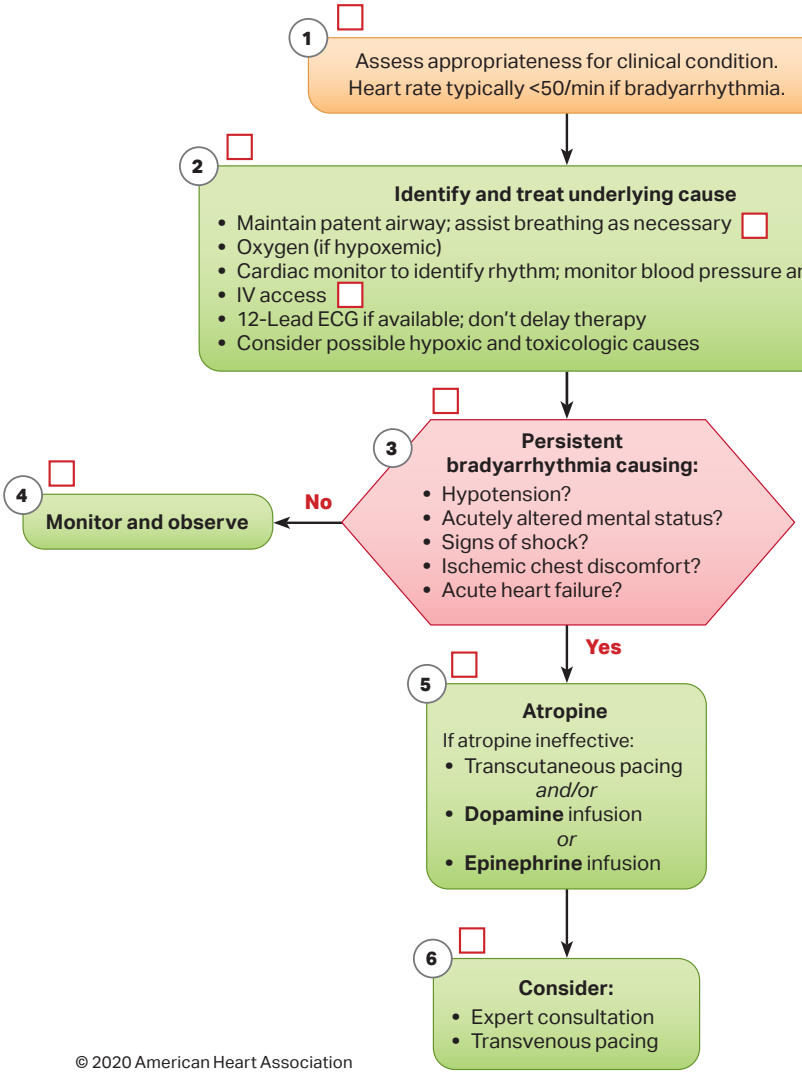
- Pulse and blood pressure
- Abrupt sustained increase in P_{ETCO_2} (typically ≥40 mm Hg)
- Spontaneous arterial pressure waves with intra-arterial monitoring

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

Adult Bradycardia Learning Station Checklist

Adult Bradycardia Algorithm



Doses/Details

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

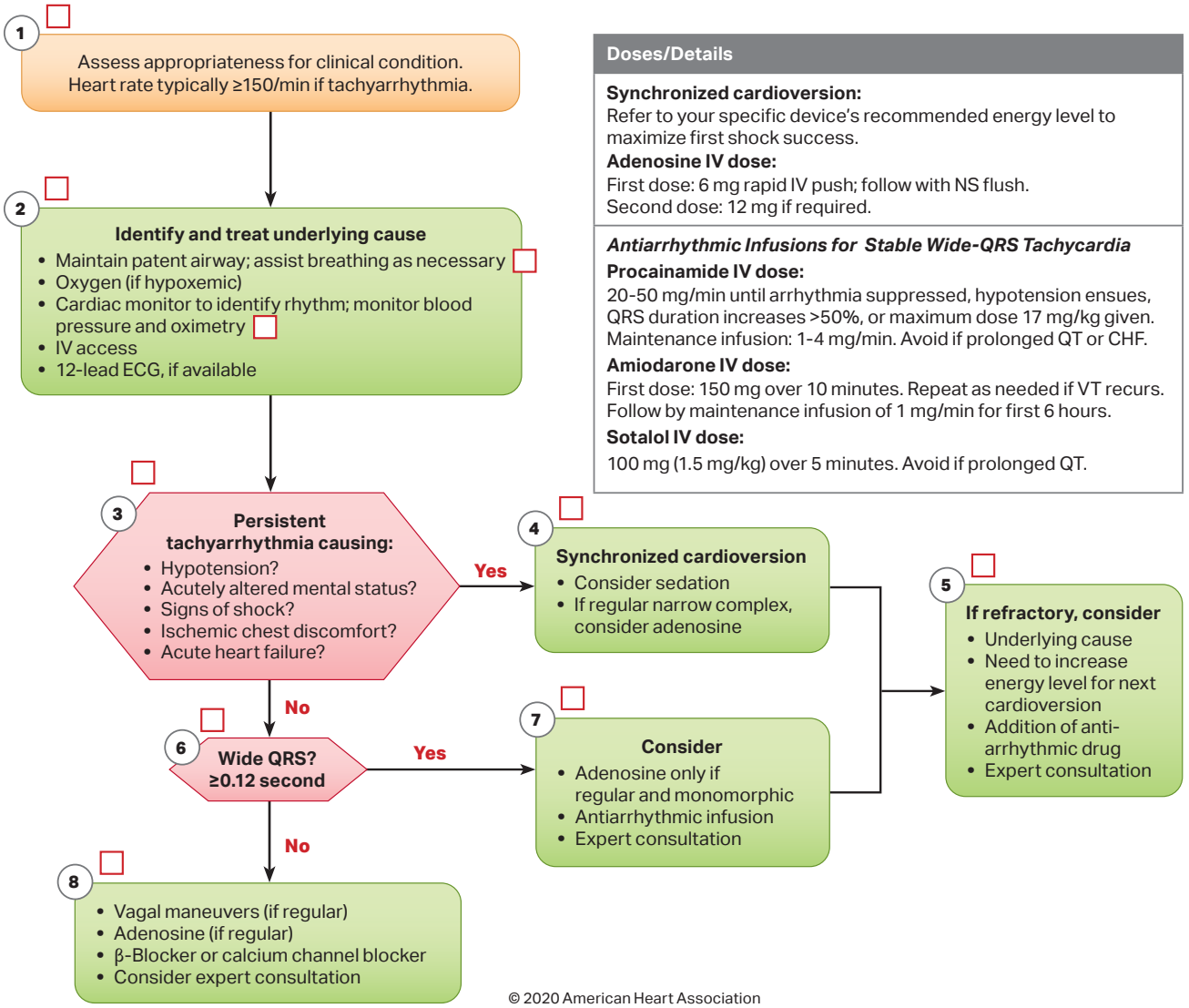
Dopamine IV infusion:
Usual infusion rate is 5-20 mcg/kg per minute.
Titrate to patient response; taper slowly.

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

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

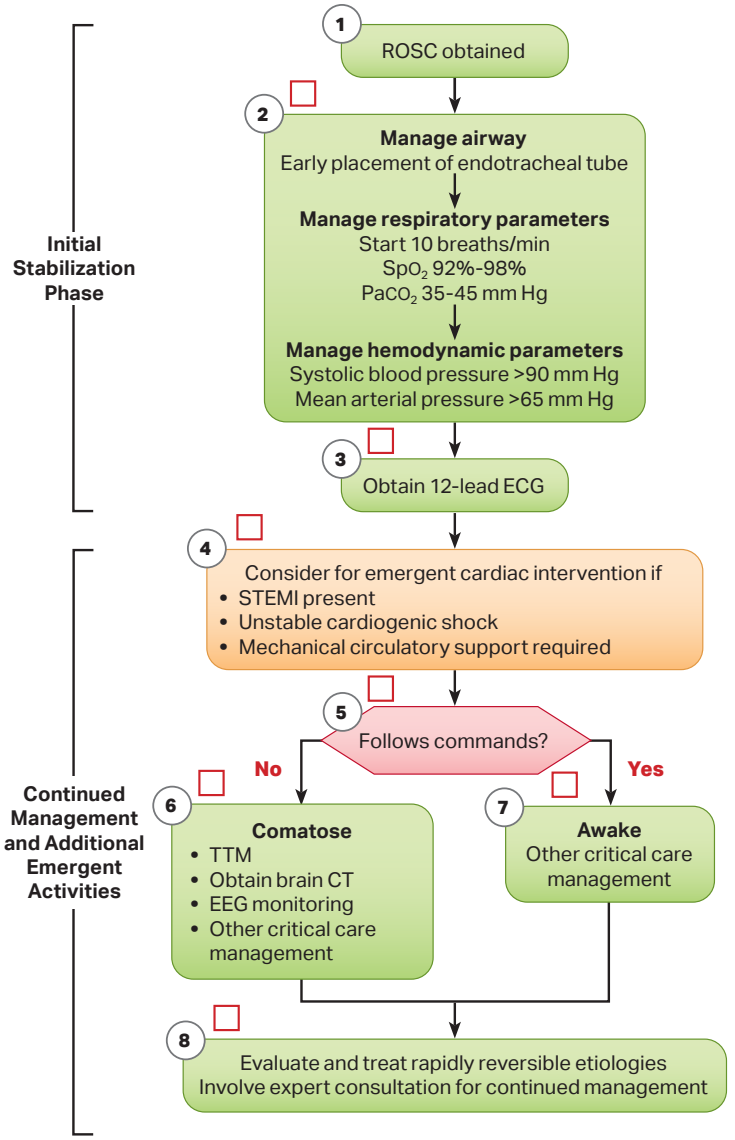
Adult Tachycardia With a Pulse Learning Station Checklist

Adult Tachycardia With a Pulse Algorithm



Adult Post–Cardiac Arrest Care Learning Station Checklist

Adult Post–Cardiac Arrest Care Algorithm



Initial Stabilization Phase

Resuscitation is ongoing during the post-ROSC phase, and many of these activities can occur concurrently. However, if prioritization is necessary, follow these steps:

- Airway management: Waveform capnography or capnometry to confirm and monitor endotracheal tube placement
- Manage respiratory parameters: Titrate FIO_2 for SpO_2 92%-98%; start at 10 breaths/min; titrate to $PaCO_2$ of 35-45 mm Hg
- Manage hemodynamic parameters: Administer crystalloid and/or vasopressor or inotrope for goal systolic blood pressure >90 mm Hg or mean arterial pressure >65 mm Hg

Continued Management and Additional Emergent Activities

These evaluations should be done concurrently so that decisions on targeted temperature management (TTM) receive high priority as cardiac interventions.

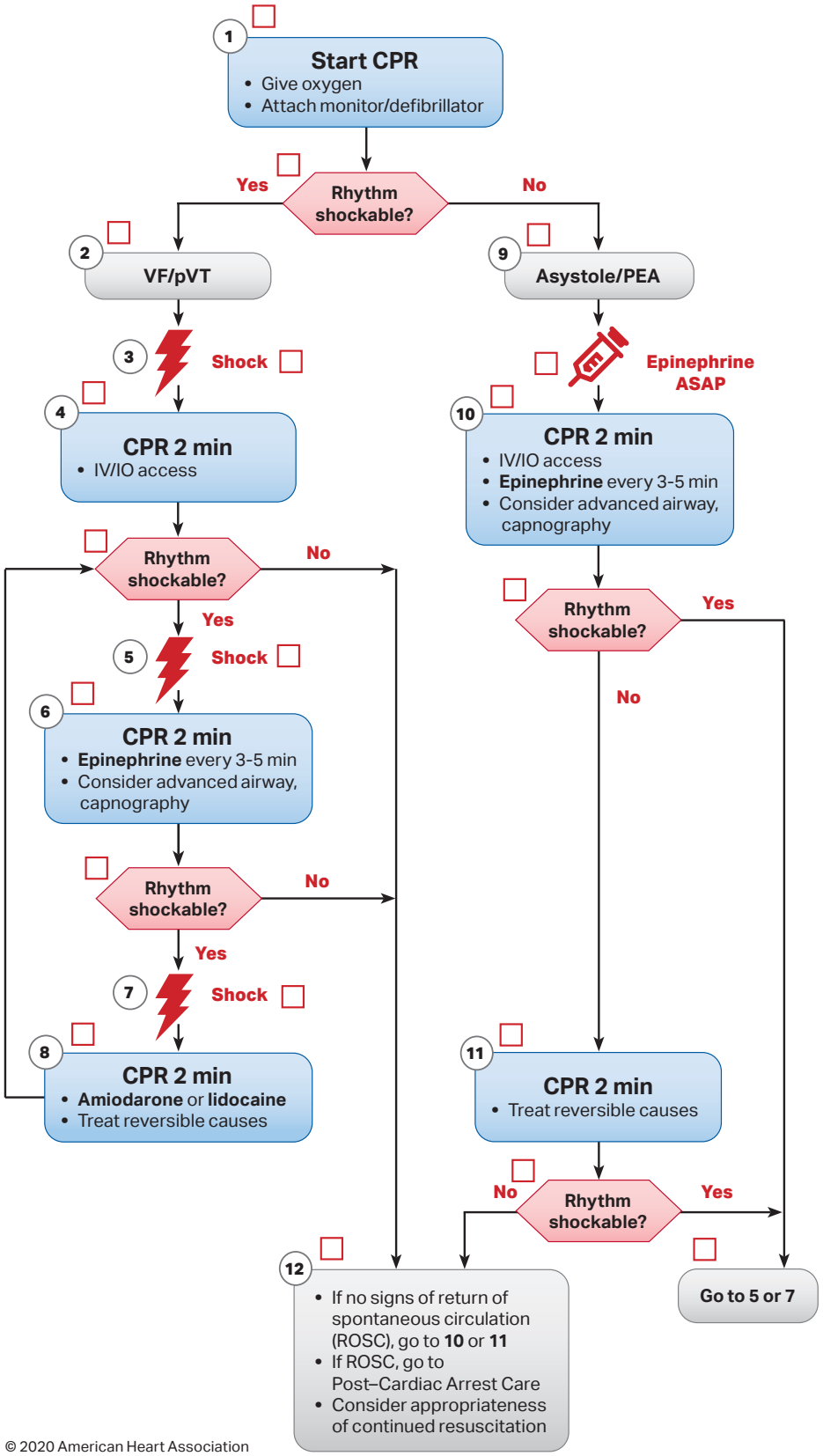
- Emergent cardiac intervention: Early evaluation of 12-lead electrocardiogram (ECG); consider hemodynamics for decision on cardiac intervention
- TTM: If patient is not following commands, start TTM as soon as possible; begin at 32-36°C for 24 hours by using a cooling device with feedback loop
- Other critical care management
  - Continuously monitor core temperature (esophageal, rectal, bladder)
  - Maintain normoxia, normocapnia, euglycemia
  - Provide continuous or intermittent electroencephalogram (EEG) monitoring
  - Provide lung-protective ventilation

H's and T's

Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypokalemia/**h**yperkalemia
Hypothermia
Tension pneumothorax
Tamponade, cardiac
Toxins
Thrombosis, pulmonary
Thrombosis, coronary

Adult Cardiac Arrest Learning Station Checklist (VF/pVT/Asystole/PEA)

Adult Cardiac Arrest Algorithm (VF/pVT/Asystole/PEA)



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 P_{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

- 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)

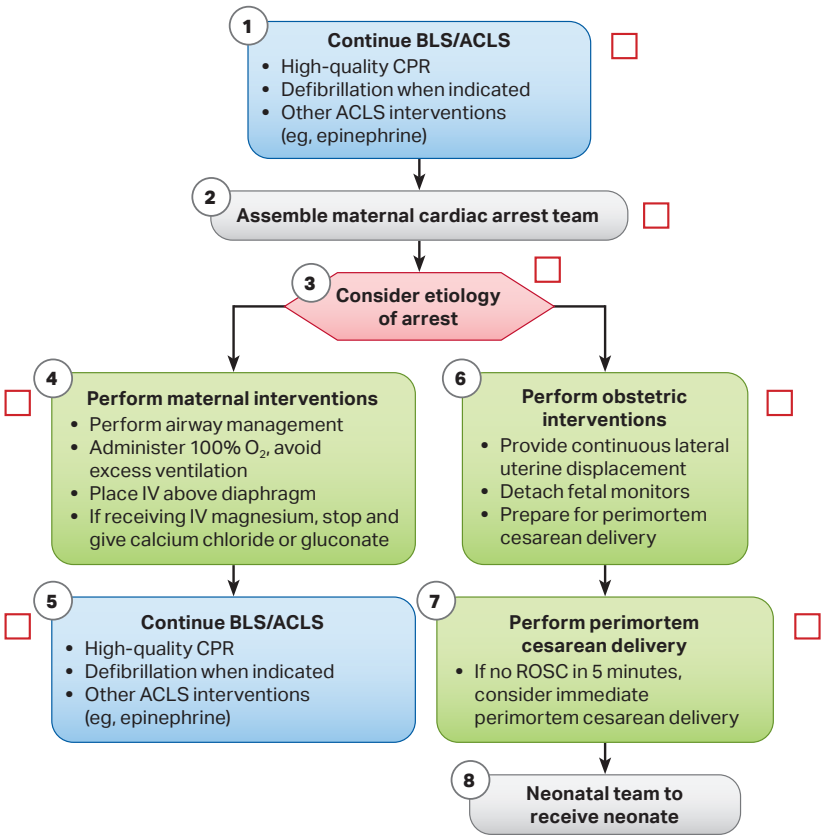
- Pulse and blood pressure
- Abrupt sustained increase in P_{ETCO_2} (typically ≥40 mm Hg)
- Spontaneous arterial pressure waves with intra-arterial monitoring

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

Cardiac Arrest in Pregnancy In-Hospital ACLS Learning Station Checklist

Cardiac Arrest in Pregnancy In-Hospital ACLS Algorithm



Maternal Cardiac Arrest

- Team planning should be done in collaboration with the obstetric, neonatal, emergency, anesthesiology, intensive care, and cardiac arrest services.
- Priorities for pregnant women in cardiac arrest should include provision of high-quality CPR and relief of aortocaval compression with lateral uterine displacement.
- The goal of perimortem cesarean delivery is to improve maternal and fetal outcomes.
- Ideally, perform perimortem cesarean delivery in 5 minutes, depending on provider resources and skill sets.

Advanced Airway

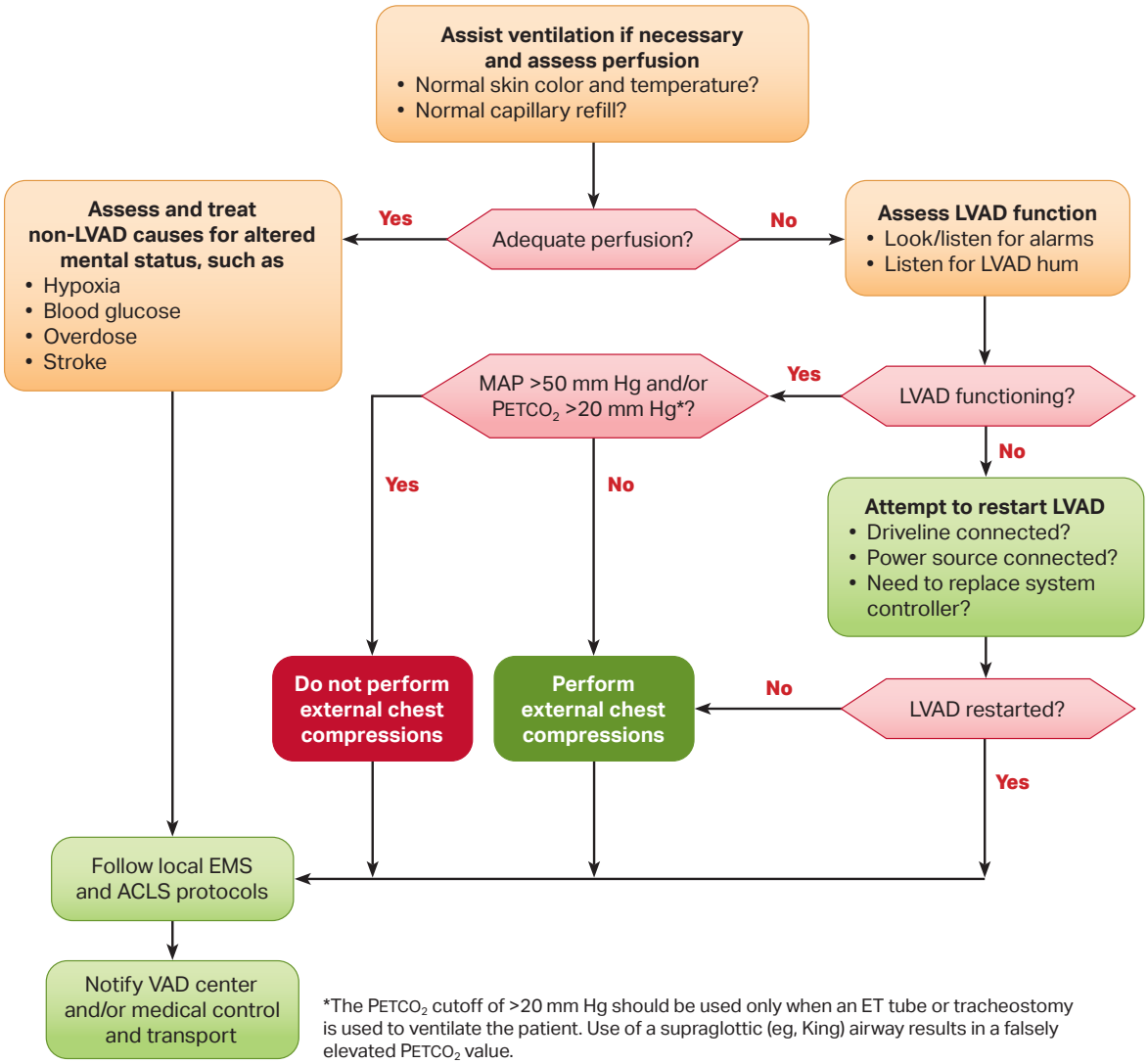
- In pregnancy, a difficult airway is common. Use the most experienced provider.
- Provide endotracheal intubation or supraglottic advanced airway.
- Perform waveform capnography or capnometry to confirm and monitor ET tube placement.
- Once advanced airway is in place, give 1 breath every 6 seconds (10 breaths/min) with continuous chest compressions.

Potential Etiology of Maternal Cardiac Arrest

A Anesthetic complications
B Bleeding
C Cardiovascular
D Drugs
E Embolic
F Fever
G General nonobstetric causes of cardiac arrest (H's and T's)
H Hypertension

Adult Ventricular Assist Device Learning Station Checklist

Adult Ventricular Assist Device Algorithm



*The $PETCO_2$ cutoff of >20 mm Hg should be used only when an ET tube or tracheostomy is used to ventilate the patient. Use of a supraglottic (eg, King) airway results in a falsely elevated $PETCO_2$ value.

Megacode Practice Learning Station Checklist: Case 48
Tachycardia → VF → Asystole → PCAC

Student Name _____ Date of Test _____

Critical Performance Steps						Check if done correctly
Team Leader						
Assigns team member roles						
Ensures high-quality CPR at all times	Compression rate 100-120/min ☐	Compression depth of ≥2 inches ☐	Chest compression fraction >80% ☐	Chest recoil (optional) ☐	Ventilation (optional) ☐	
Ensures that team members communicate well						
Tachycardia Management						
Starts oxygen if needed, places monitor, starts IV						
Places monitor leads in proper position						
Recognizes unstable tachycardia						
Recognizes symptoms due to respiratory arrest (choking)						
VF Management						
Recognizes VF						
Clears before analyze and shock						
Immediately resumes CPR after shocks						
Appropriate airway management						
Appropriate cycles of drug–rhythm check/shock–CPR						
Administers appropriate drug(s) and doses						
Asystole Management						
Recognizes asystole						
Verbalizes potential reversible causes of asystole (H's and T's)						
Administers appropriate drug(s) and doses						
Immediately resumes CPR after rhythm and pulse checks						
Post–Cardiac Arrest Care						
Identifies ROSC						
Ensures BP and 12-lead ECG are performed, O_2 saturation is monitored, verbalizes need for endotracheal intubation and waveform capnography, and orders laboratory tests						
Considers targeted temperature management						

STOP TEST

Test Results Circle **PASS** or **NR** to indicate pass or needs remediation:	**PASS**	**NR**
Instructor Initials _____ Instructor Number _____ Date _____		
Learning Station Competency ☐ Bradycardia ☐ Tachycardia ☐ Cardiac Arrest/Post–Cardiac Arrest Care ☐ Megacode Practice		

Megacode Practice Learning Station Checklist: Case 49/52/57/60/62
Tachycardia → VF → PEA → PCAC

Student Name _____ Date of Test _____

Critical Performance Steps						Check if done correctly
Team Leader						
Assigns team member roles						
Ensures high-quality CPR at all times	Compression rate 100-120/min ☐	Compression depth of ≥2 inches ☐	Chest compression fraction >80% ☐	Chest recoil (optional) ☐	Ventilation (optional) ☐	
Ensures that team members communicate well						
Tachycardia Management						
Starts oxygen if needed, places monitor, starts IV						
Places monitor leads in proper position						
Recognizes unstable tachycardia						
Performs immediate synchronized cardioversion						
VF Management						
Recognizes VF						
Clears before analyze and shock						
Immediately resumes CPR after shocks						
Appropriate airway management						
Appropriate cycles of drug–rhythm check/shock–CPR						
Administers appropriate drug(s) and doses						
PEA Management						
Recognizes PEA						
Verbalizes potential reversible causes of PEA (H's and T's)						
Administers appropriate drug(s) and doses						
Immediately resumes CPR after rhythm and pulse checks						
Post–Cardiac Arrest Care						
Identifies ROSC						
Ensures BP and 12-lead ECG are performed, O_2 saturation is monitored, verbalizes need for endotracheal intubation and waveform capnography, and orders laboratory tests						
Considers targeted temperature management						

STOP TEST

Test Results Circle **PASS** or **NR** to indicate pass or needs remediation:	**PASS**	**NR**
Instructor Initials _____ Instructor Number _____ Date _____		
Learning Station Competency ☐ Bradycardia ☐ Tachycardia ☐ Cardiac Arrest/Post–Cardiac Arrest Care ☐ Megacode Practice		

Megacode Practice Learning Station Checklist: Case 50
Bradycardia → Pulseless VT → Asystole → PCAC

Student Name _____ Date of Test _____

Critical Performance Steps						Check if done correctly
Team Leader						
Assigns team member roles						
Ensures high-quality CPR at all times	Compression rate 100-120/min ☐	Compression depth of ≥2 inches ☐	Chest compression fraction >80% ☐	Chest recoil (optional) ☐	Ventilation (optional) ☐	
Ensures that team members communicate well						
Bradycardia Management						
Starts oxygen if needed, places monitor, starts IV						
Places monitor leads in proper position						
Recognizes symptomatic bradycardia						
Administers correct dose of atropine						
Prepares for second-line treatment						
Pulseless VT Management						
Recognizes pVT						
Clears before analyze and shock						
Immediately resumes CPR after shocks						
Appropriate airway management						
Appropriate cycles of drug–rhythm check/shock–CPR						
Administers appropriate drug(s) and doses						
Asystole Management						
Recognizes asystole						
Verbalizes potential reversible causes of asystole (H's and T's)						
Administers appropriate drug(s) and doses						
Immediately resumes CPR after rhythm and pulse checks						
Post–Cardiac Arrest Care						
Identifies ROSC						
Ensures BP and 12-lead ECG are performed, O_2 saturation is monitored, verbalizes need for endotracheal intubation and waveform capnography, and orders laboratory tests						
Considers targeted temperature management						

STOP TEST

Test Results Circle **PASS** or **NR** to indicate pass or needs remediation:	**PASS**	**NR**
Instructor Initials _____ Instructor Number _____ Date _____		
Learning Station Competency ☐ Bradycardia ☐ Tachycardia ☐ Cardiac Arrest/Post–Cardiac Arrest Care ☐ Megacode Practice		

Megacode Practice Learning Station Checklist: Case 51/54
Bradycardia → Pulseless VT → PEA → PCAC

Student Name _____ Date of Test _____

Critical Performance Steps						Check if done correctly
Team Leader						
Assigns team member roles						
Ensures high-quality CPR at all times	Compression rate 100-120/min ☐	Compression depth of ≥2 inches ☐	Chest compression fraction >80% ☐	Chest recoil (optional) ☐	Ventilation (optional) ☐	
Ensures that team members communicate well						
Bradycardia Management						
Starts oxygen if needed, places monitor, starts IV						
Places monitor leads in proper position						
Recognizes symptomatic bradycardia						
Administers correct dose of atropine						
Prepares for second-line treatment						
Pulseless VT Management						
Recognizes pVT						
Clears before analyze and shock						
Immediately resumes CPR after shocks						
Appropriate airway management						
Appropriate cycles of drug–rhythm check/shock–CPR						
Administers appropriate drug(s) and doses						
PEA Management						
Recognizes PEA						
Verbalizes potential reversible causes of PEA (H's and T's)						
Administers appropriate drug(s) and doses						
Immediately resumes CPR after rhythm and pulse checks						
Post–Cardiac Arrest Care						
Identifies ROSC						
Ensures BP and 12-lead ECG are performed, O_2 saturation is monitored, verbalizes need for endotracheal intubation and waveform capnography, and orders laboratory tests						
Considers targeted temperature management						

STOP TEST

Test Results Circle **PASS** or **NR** to indicate pass or needs remediation:	**PASS**	**NR**
Instructor Initials _____ Instructor Number _____ Date _____		
Learning Station Competency ☐ Bradycardia ☐ Tachycardia ☐ Cardiac Arrest/Post–Cardiac Arrest Care ☐ Megacode Practice		

Megacode Practice Learning Station Checklist: Case 53
Tachycardia → VF → Asystole → PCAC

Student Name _____ Date of Test _____

Critical Performance Steps						Check if done correctly
Team Leader						
Assigns team member roles						
Ensures high-quality CPR at all times	Compression rate 100-120/min ☐	Compression depth of ≥2 inches ☐	Chest compression fraction >80% ☐	Chest recoil (optional) ☐	Ventilation (optional) ☐	
Ensures that team members communicate well						
Tachycardia Management						
Starts oxygen if needed, places monitor, starts IV						
Places monitor leads in proper position						
Recognizes unstable tachycardia						
Recognizes symptoms due to tachycardia						
Performs immediate synchronized cardioversion						
VF Management						
Recognizes VF						
Clears before analyze and shock						
Immediately resumes CPR after shocks						
Appropriate airway management						
Appropriate cycles of drug–rhythm check/shock–CPR						
Administers appropriate drug(s) and doses						
Asystole Management						
Recognizes asystole						
Verbalizes potential reversible causes of asystole (H's and T's)						
Administers appropriate drug(s) and doses						
Immediately resumes CPR after rhythm and pulse checks						
Post–Cardiac Arrest Care						
Identifies ROSC						
Ensures BP and 12-lead ECG are performed, O_2 saturation is monitored, verbalizes need for endotracheal intubation and waveform capnography, and orders laboratory tests						
Considers targeted temperature management						

STOP TEST

Test Results Circle **PASS** or **NR** to indicate pass or needs remediation:	**PASS**	**NR**
Instructor Initials _____ Instructor Number _____ Date _____		
Learning Station Competency ☐ Bradycardia ☐ Tachycardia ☐ Cardiac Arrest/Post–Cardiac Arrest Care ☐ Megacode Practice		

Megacode Practice Learning Station Checklist: Case 55/58
Tachycardia → Pulseless VT → PEA → PCAC

Student Name _____ Date of Test _____

Critical Performance Steps						Check if done correctly
Team Leader						
Assigns team member roles						
Ensures high-quality CPR at all times	Compression rate 100-120/min ☐	Compression depth of ≥2 inches ☐	Chest compression fraction >80% ☐	Chest recoil (optional) ☐	Ventilation (optional) ☐	
Ensures that team members communicate well						
Tachycardia Management						
Starts oxygen if needed, places monitor, starts IV						
Places monitor leads in proper position						
Recognizes unstable tachycardia						
Recognizes symptoms due to tachycardia						
Performs immediate synchronized cardioversion						
Pulseless VT Management						
Recognizes pulseless VT						
Clears before analyze and shock						
Immediately resumes CPR after shocks						
Appropriate airway management						
Appropriate cycles of drug–rhythm check/shock–CPR						
Administers appropriate drug(s) and doses						
PEA Management						
Recognizes PEA						
Verbalizes potential reversible causes of PEA (H's and T's)						
Administers appropriate drug(s) and doses						
Immediately resumes CPR after rhythm and pulse checks						
Post–Cardiac Arrest Care						
Identifies ROSC						
Ensures BP and 12-lead ECG are performed, O_2 saturation is monitored, verbalizes need for endotracheal intubation and waveform capnography, and orders laboratory tests						
Considers targeted temperature management						

STOP TEST

Test Results Circle **PASS** or **NR** to indicate pass or needs remediation:	**PASS**	**NR**
Instructor Initials _____ Instructor Number _____ Date _____		
Learning Station Competency ☐ Bradycardia ☐ Tachycardia ☐ Cardiac Arrest/Post–Cardiac Arrest Care ☐ Megacode Practice		

Megacode Practice Learning Station Checklist: Case 56/59
Bradycardia → VF → Asystole → PCAC

Student Name _____ Date of Test _____

Critical Performance Steps						Check if done correctly
Team Leader						
Assigns team member roles						
Ensures high-quality CPR at all times	Compression rate 100-120/min ☐	Compression depth of ≥2 inches ☐	Chest compression fraction >80% ☐	Chest recoil (optional) ☐	Ventilation (optional) ☐	
Ensures that team members communicate well						
Bradycardia Management						
Starts oxygen if needed, places monitor, starts IV						
Places monitor leads in proper position						
Recognizes symptomatic bradycardia						
Administers correct dose of atropine						
Prepares for second-line treatment						
VF Management						
Recognizes VF						
Clears before analyze and shock						
Immediately resumes CPR after shocks						
Appropriate airway management						
Appropriate cycles of drug–rhythm check/shock–CPR						
Administers appropriate drug(s) and doses						
Asystole Management						
Recognizes asystole						
Verbalizes potential reversible causes of asystole (H's and T's)						
Administers appropriate drug(s) and doses						
Immediately resumes CPR after rhythm and pulse checks						
Post–Cardiac Arrest Care						
Identifies ROSC						
Ensures BP and 12-lead ECG are performed, O_2 saturation is monitored, verbalizes need for endotracheal intubation and waveform capnography, and orders laboratory tests						
Considers targeted temperature management						

STOP TEST

Test Results Circle **PASS** or **NR** to indicate pass or needs remediation:	**PASS**	**NR**
Instructor Initials _____ Instructor Number _____ Date _____		
Learning Station Competency ☐ Bradycardia ☐ Tachycardia ☐ Cardiac Arrest/Post–Cardiac Arrest Care ☐ Megacode Practice		

Megacode Practice Learning Station Checklist: Case 61
Tachycardia → VF → PEA → PCAC

Student Name _____ Date of Test _____

Critical Performance Steps						Check if done correctly
Team Leader						
Assigns team member roles						
Ensures high-quality CPR at all times	Compression rate 100-120/min ☐	Compression depth of ≥2 inches ☐	Chest compression fraction >80% ☐	Chest recoil (optional) ☐	Ventilation (optional) ☐	
Ensures that team members communicate well						
Tachycardia Management						
Starts oxygen if needed, places monitor, starts IV						
Places monitor leads in proper position						
Recognizes unstable tachycardia						
Recognizes symptoms due to gunshot wound						
VF Management						
Recognizes VF						
Clears before analyze and shock						
Immediately resumes CPR after shocks						
Appropriate airway management						
Appropriate cycles of drug–rhythm check/shock–CPR						
Administers appropriate drug(s) and doses						
PEA Management						
Recognizes PEA						
Verbalizes potential reversible causes of PEA (H's and T's)						
Administers appropriate drug(s) and doses						
Immediately resumes CPR after rhythm and pulse checks						
Post–Cardiac Arrest Care						
Identifies ROSC						
Ensures BP and 12-lead ECG are performed, O_2 saturation is monitored, verbalizes need for endotracheal intubation and waveform capnography, and orders laboratory tests						
Considers targeted temperature management						

STOP TEST

Test Results Circle **PASS** or **NR** to indicate pass or needs remediation:	**PASS**	**NR**
Instructor Initials _____ Instructor Number _____ Date _____		
Learning Station Competency ☐ Bradycardia ☐ Tachycardia ☐ Cardiac Arrest/Post–Cardiac Arrest Care ☐ Megacode Practice		