Case 67: Out-of-Hospital Megacode Practice—Tachycardia (SVT) (Unstable Tachycardia > VF > Asystole > PCAC)

Scenario Rating: 2

Lead-in: You are a paramedic and arrive on the scene to find a man in respiratory arrest at a restaurant after he reportedly choked on his dinner.

Vital Signs

Heart rate: 140/min
Blood pressure: 62/P mm Hg
Respiratory rate: 0/min
SpO_2: 88%
Temperature:
Weight:
Age: 82 years

Initial Assessment

- The patient is cyanotic, warm, and dry, and EMS responders are ventilating him.

What are your initial actions?

Instructor notes: This man had an anoxic event from a choking. The case focus, however, is the sustained apnea.

The student should begin to take a history, start an IV, and attach monitor electrodes or pads to the patient. The focus should be on recognizing the periarrest state and improving perfusion to prevent cardiac arrest.

Adult Tachyarrhythmia With a Pulse Algorithm (SVT)

Instructor notes: The student is presented with apnea. A critical action is noting that the obstruction is resolved because ventilation can be administered through bag-mask ventilation.

The anoxic event has caused perfusion changes that put the patient in a periarrest state. The monitor shows a **narrow-complex tachycardia**.

The student should recognize that the tachycardia is a symptom of the preceding event and focus his or her efforts on oxygenation and ventilation.

Adult Cardiac Arrest Algorithm (VF)

Instructor notes: The patient suddenly develops **VF**. The student will follow the VF/pVT pathway of the Adult Cardiac Arrest Algorithm.

Now the student Team Leader will assign team functions and monitor for high-quality CPR.

The case should continue through safe defibrillation, administration of epinephrine, and consideration of an antiarrhythmic drug.

Adult Cardiac Arrest Algorithm (Asystole)

Instructor notes: The patient is now in asystole. The student continues to monitor high-quality CPR and follows the asystole pathway of the Adult Cardiac Arrest Algorithm.

Consider reversible causes.

Post–Cardiac Arrest Care Algorithm

Instructor notes: The team continues high-quality chest compressions, the patient has ROSC, and the team initiates the Post–Cardiac Arrest Care Algorithm.

Megacode Practice Learning Station Checklist: Case 67 Tachycardia → VF → Asystole → PCAC

Student Name _____ Date of Test _____

Critical Performance Steps						Check if done correctly
Team Leader/Team Members						
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 ☐	Ventilation rate _____	
Team Leader 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						
Verbalizes need for endotracheal intubation and continuous waveform capnography, ensures BP and 12-lead ECG are performed and O_2 saturation is monitored, and orders laboratory test						
Considers temperature control						

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

Case 68: Out-of-Hospital Megacode Practice—Unstable Tachycardia (VT), Cardioversion (Unstable VT > VF > PEA > PCAC)

Scenario Rating: 2

Lead-in: You are a paramedic, and you arrive on scene to find a man in severe distress with crushing chest pain.

Vital Signs

Heart rate: Impalpable
Blood pressure: 64/P mm Hg
Respiratory rate: 28/min
SpO_2: 89%

Temperature:
Weight:
Age: 45 years

Initial Assessment

- The patient is pale, sweating profusely, and cool.

What are your initial actions?

Instructor notes: This man is presenting with signs of a severe myocardial infarction. The case focus, however, is the signs of poor perfusion. The student should begin to take a history and attach monitor electrodes or pads to the patient. The patient is in **VT** with a pulse. The focus should be on preparing for immediate synchronized cardioversion. Treatment should not be delayed to accommodate IV and preshock medication.

Adult Tachyarrhythmia With a Pulse Algorithm (VT)

Instructor notes: The student is presented with unstable VT with pulses and needs to follow the unstable VT with pulses pathway of the Adult Tachyarrhythmia With a Pulse Algorithm.

A critical action is noting that synchronized cardioversion is the necessary intervention in this periarrest state. Obtaining a 12-lead ECG or starting an IV will delay the necessary intervention.

The student should recognize that the tachycardia is the likely cause of the symptoms and focus his or her efforts on correcting the underlying rhythm.

Adult Cardiac Arrest Algorithm (VF)

Instructor notes: The patient should suddenly develop VF. The student will follow the VF/pVT pathway of the Adult Cardiac Arrest Algorithm.

Now the student Team Leader will assign team functions and monitor for high-quality CPR. The case should continue through safe defibrillation, administration of a vasopressor, and consideration of an antiarrhythmic drug.

Adult Cardiac Arrest Algorithm (PEA)

Instructor notes: The patient is now in PEA. The student continues to monitor high-quality CPR and follows the PEA pathway of the Adult Cardiac Arrest Algorithm.

Post–Cardiac Arrest Care Algorithm

Instructor notes: The team continues high-quality chest compressions, the patient has ROSC, and the team initiates the Post–Cardiac Arrest Care Algorithm.

Megacode Practice Learning Station Checklist: Case 68/71/76/79/81 Tachycardia → VF → PEA → PCAC

Student Name _____ Date of Test _____

Critical Performance Steps						Check if done correctly
Team Leader/Team Members						
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 ☐	Ventilation rate _____	
Team Leader 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						
Verbalizes need for endotracheal intubation and continuous waveform capnography, ensures BP and 12-lead ECG are performed and O_2 saturation is monitored, and orders laboratory test						
Considers temperature control						

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

Case 69: Out-of-Hospital Megacode Practice—Unstable Bradycardia (Unstable Bradycardia > pVT > Asystole > PCAC)

Scenario Rating: 2

Lead-in: You are a paramedic and arrive on the scene to find a man presenting with chest pain and lethargy.

Vital Signs
Heart rate: 50/min
Blood pressure: 82/P mm Hg
Respiratory rate: 20/min
SpO_2: 91%
Temperature:
Weight:
Age: 57 years

Initial Assessment

- The patient is pale and diaphoretic with cold and clammy skin.

What are your initial actions?

Instructor notes: This man is presenting with signs of chest pain that may be caused by either the rhythm or by an underlying cardiac event. The case focus should be initiating treatment to prevent the patient from going into cardiac arrest while determining the rhythm by 12-lead ECG. The student should begin to take a history and attach monitor electrodes or pads to the patient. The patient presents with a **wide-complex bradycardic** rhythm.

Adult Bradycardia With a Pulse Algorithm

Instructor notes: The student is presented with bradycardia and needs to follow the Adult Bradycardia With a Pulse Algorithm. A critical action is obtaining a 12-lead ECG to determine the underlying cause of the rhythm. This patient's 12-lead ECG shows a **confirmed inferior wall STEMI**.

The student should recognize that the preferred means to correct the rhythm is transcutaneous pacing and focus his or her efforts on correcting the underlying rhythm.

Adult Cardiac Arrest Algorithm (pVT)

Instructor notes: The patient should suddenly develop pVT. The student will follow the VF/pVT pathway of the Adult Cardiac Arrest Algorithm.

Now, the student Team Leader will assign team functions and monitor for high-quality CPR.

The case should continue through safe defibrillation, administration of a vasopressor, and consideration of an antiarrhythmic drug.

Adult Cardiac Arrest Algorithm (Asystole)

Instructor notes: The patient is now in asystole. The student continues to monitor high-quality CPR and follows the asystole pathway of the Adult Cardiac Arrest Algorithm.

Post–Cardiac Arrest Care Algorithm

Instructor notes: The team continues high-quality chest compressions, the patient has ROSC, and the team initiates the Post–Cardiac Arrest Care Algorithm.

Megacode Practice Learning Station Checklist: Case 69 Bradycardia → Pulseless VT → Asystole → PCAC

Student Name _____ Date of Test _____

Critical Performance Steps						Check if done correctly
Team Leader/Team Members						
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 ☐	Ventilation rate _____	
Team Leader 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						
Verbalizes need for endotracheal intubation and continuous waveform capnography, ensures BP and 12-lead ECG are performed and O_2 saturation is monitored, and orders laboratory test						
Considers temperature control						

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

Case 70: Out-of-Hospital Megacode Practice—STEMI/Unstable Bradycardia (Unstable Bradycardia > pVT > PEA > PCAC)

Scenario Rating: 3

Lead-in: You are a paramedic, in the ambulance with your EMT partner. You are dispatched to a local church service to help a woman with an altered level of consciousness.

Vital Signs
Heart rate: 40/min
Blood pressure: 80/46 mm Hg
Respiratory rate:
SpO_2: 94% on room air
Temperature:
Weight:
Age: 60 years

Initial Assessment

- You arrive at the scene to find a fire engine already on scene, and 2 firefighters are waiting to assist with equipment.
- One of the firefighters says that the patient is hard to arouse and she looks really sick.
- You arrive at the patient, who is supine on a bench, with several parishioners nearby.
- She opens her eyes to loud voices but appears very confused.
- Witnesses state that she just slumped over without warning.

What are your initial actions?

- The patient has no respiratory distress, her skin is cold and clammy, and her lungs are clear.
- While you are acquiring a 12-lead ECG, family members state that she has a history of non–insulin-dependent diabetes mellitus and gastroesophageal reflux disease and a family history of cardiac problems.
- The 12-lead ECG shows a **sinus bradycardia** at 40/min, with ST elevation in leads III and aVF, and V_4R shows ST elevation as well.

Adult Bradycardia With a Pulse Algorithm

Instructor notes: The Team Leader should recognize the bradycardia as symptomatic and verbalize the need for atropine.

While you are initiating an IV, the patient starts having agonal respirations and becomes unresponsive.

She is now pulseless, and the limb leads **show monomorphic VT**.

Adult Cardiac Arrest Algorithm (pVT)

Instructor notes: After high-quality CPR, 3 shocks, placement of an advanced airway, a dose of epinephrine, and 300 mg amiodarone, the monitor shows a rhythm consistent with the one originally noted (sinus bradycardia with ST elevation in lead III) before arrest occurred, but no pulse is present (**PEA**).

Adult Cardiac Arrest Algorithm (PEA)

Instructor notes: After another minute of CPR, the quantitative capnography reading goes from 18 mm Hg to 55 mm Hg. Rhythm and pulse checks reveal that the patient has ROSC.

Post–Cardiac Arrest Care Algorithm

Instructor notes: Further assessment after ROSC reveals that the patient has a Glasgow Coma Scale score of 3; she is apneic, and ventilation is being assisted through an advanced airway, with a capnography reading of 44 mm Hg.

Her blood pressure is 88/50 mm Hg, and her finger-stick glucose is 285 mg/dL (15.8 mmol/L).

The nearest hospital is 12 minutes from the scene, and a cardiac arrest receiving center is 30 minutes from the scene.

Megacode Practice Learning Station Checklist: Case 70/73 Bradycardia → Pulseless VT → PEA → PCAC

Student Name _____ Date of Test _____

Critical Performance Steps						Check if done correctly
Team Leader/Team Members						
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 ☐	Ventilation rate _____	
Team Leader 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						
Verbalizes need for endotracheal intubation and continuous waveform capnography, ensures BP and 12-lead ECG are performed and O_2 saturation is monitored, and orders laboratory test						
Considers temperature control						

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

Case 72: Out-of-Hospital Megacode Practice—Unstable Tachycardia (Unstable Tachycardia > VF > Asystole > PCAC)

Scenario Rating: 2

Lead-in: You are a paramedic treating a woman who collapsed after reporting nausea and dizziness.

Vital Signs
Heart rate:
Blood pressure:
Respiratory rate:
SpO_2:
Temperature:
Weight:
Age: 63 years

Initial Assessment

- The patient is lying on the floor.
- She is cyanotic and taking agonal respirations.

What are your initial actions?

Instructor notes: First responders are assembling the bag-mask device when you walk into the room. The student should ensure that the patient is being properly ventilated by first responders.

The student can choose to continue ventilation with the bag-mask device or to insert an advanced airway. Advanced airway insertion will require the use of waveform capnography.

The student should start an IV and attach monitor electrodes or pads to the patient. The ECG is **sinus tachycardia with multiple PVCs**.

Adult Tachyarrhythmia With a Pulse Algorithm

Instructor notes: The patient suddenly develops a **wide-complex tachycardia**. The radial pulse disappears; however, the student can still feel a carotid pulse.

The student should deliver immediate electrical cardioversion. Blood pressure is 78/56 mm Hg. Consideration of drug therapy should not delay cardioversion.

Adult Cardiac Arrest Algorithm (VF)

Instructor notes: After a single cardioversion attempt, the patient develops **VF.** The student will follow the VF/pVT pathway of the Adult Cardiac Arrest Algorithm.

The student should assign team functions and monitor for high-quality CPR. The case should continue through safe defibrillation, administration of epinephrine, and consideration of an antiarrhythmic drug.

Adult Cardiac Arrest Algorithm (Asystole)

Instructor notes: Before the student can administer an antiarrhythmic drug, the patient develops **asystole**.

The student continues to monitor high-quality CPR and follows the asystole pathway of the Adult Cardiac Arrest Algorithm. The student should consider the H's and T's.

Post–Cardiac Arrest Care Algorithm

Instructor notes: After the second dose of epinephrine, the ECG displays an organized rhythm. The rate increases, and the patient has ROSC.

The student should initiate the Post–Cardiac Arrest Care Algorithm.

Megacode Practice Learning Station Checklist: Case 72 Tachycardia → VF → Asystole → PCAC

Student Name _____ Date of Test _____

Critical Performance Steps						Check if done correctly
Team Leader/Team Members						
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 ☐	Ventilation rate _____	
Team Leader 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						
Verbalizes need for endotracheal intubation and continuous waveform capnography, ensures BP and 12-lead ECG are performed and O_2 saturation is monitored, and orders laboratory test						
Considers temperature control						

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

Case 74: Out-of-Hospital Megacode Practice—Unstable Tachycardia (SVT) (Unstable Tachycardia > pVT > PEA > PCAC)

Scenario Rating: 2

Lead-in: You are a paramedic treating a man with an altered mental status.

Vital Signs
Heart rate:
Blood pressure: 80 mm Hg palpated
Respiratory rate: 22/min
SpO_2:
Temperature:
Weight:
Age: 57 years

Initial Assessment

- The patient was working in the yard and told his wife he was feeling dizzy.
- He sat on the porch and soon had noticeable changes in mental status.

What are your initial actions?

- Both radial and brachial pulses are too weak to reliably count.

Adult Tachyarrhythmia With a Pulse Algorithm

Instructor notes: The ECG shows **atrial fibrillation with multiple PVCs**. The student should follow the Adult Tachyarrhythmia With a Pulse Algorithm.

The student should begin to take a history, start an IV, and prepare sedation for cardioversion.

Adult Cardiac Arrest Algorithm (pVT)

Instructor notes: Before the student can administer the sedation, the patient loses consciousness. The ECG displays **VT**. There is no pulse.

The student will follow the VF/pVT pathway of the Adult Cardiac Arrest Algorithm. The student should assign team functions and monitor for high-quality CPR.

The case should continue through safe defibrillation, administration of epinephrine, and consideration of an antiarrhythmic drug.

Adult Cardiac Arrest Algorithm (PEA)

Instructor notes: After the administration of the vasopressor, the patient develops an **organized rhythm that is fast.** There is no pulse. The patient is now in PEA.

The student continues to monitor high-quality CPR and follows the PEA pathway of the Adult Cardiac Arrest Algorithm. The student should consider the H's and T's.

Post–Cardiac Arrest Care Algorithm

Instructor notes: After administering a fluid bolus, the student can now detect a carotid pulse. The patient has ROSC.

The student should initiate the Post–Cardiac Arrest Care Algorithm.

Megacode Practice Learning Station Checklist: Case 74/77 Tachycardia → Pulseless VT → PEA → PCAC

Student Name _____ Date of Test _____

Critical Performance Steps	Check if done correctly
Team Leader/Team Members	
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 ☐; Ventilation rate _____	
Team Leader 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	
Verbalizes need for endotracheal intubation and continuous waveform capnography, ensures BP and 12-lead ECG are performed and O_2 saturation is monitored, and orders laboratory test	
Considers temperature control	

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

Case 75: Emergency Department Megacode Practice—Unstable Bradycardia (Unstable Bradycardia > VF > Asystole > PCAC)

Scenario Rating: 2

Lead-in: You receive a 5-minute notification of an inbound woman reporting nausea and vomiting, abdominal pain, and low blood pressure. By report, the patient is placed on oxygen and vital signs are obtained.

Vital Signs
Heart rate: 43/min
Blood pressure: 70 mm Hg/palp
Respiratory rate: 14/min
SpO_2: 95% on 100% oxygen

Temperature:
Weight:
Age: 75 years

Initial Assessment

What are your initial actions upon arrival?

Instructor notes: The initial differential diagnosis is broad: acute coronary syndrome, abdominal aortic aneurysm, and sepsis syndrome. The initial focus will be the bradycardia.

A history is obtained that indicates hypertension, hyperlipidemia, and previous NSTE-ACS with stents twice. Symptoms begin just before the EMS call.

An IV is started and the patient is placed on a monitor with pacer pads. Her vital signs are similar to her prehospital vital signs. The ECG shows a **second-degree type I AV block**.

Adult Bradycardia With a Pulse Algorithm

Instructor notes: The student should recognize unstable bradycardia and follow the Adult Bradycardia With a Pulse Algorithm. The critical action is to note the abnormal heart rate and hypotension. The bradycardia is narrow complex without ST changes.

The patient is unstable and given IV atropine (1 mg) twice without change in heart rate or blood pressure. While the dopamine infusion is being prepared, the patient becomes unresponsive.

What is the next action?

Adult Cardiac Arrest Algorithm (VF)

Instructor notes: The monitor demonstrates **VF**. The patient has no pulse. CPR is started. The VF/pVT pathway should be followed. The patient is shocked twice. Epinephrine is given. An advanced airway is obtained.

During rhythm check, the monitor shows **asystole**. No pulse or spontaneous respirations are confirmed.

Adult Cardiac Arrest Algorithm (Asystole)

Instructor notes: CPR is continued. Ventilation at 100% oxygen continues. Another dose of epinephrine is given.

Post–Cardiac Arrest Care Algorithm

Instructor notes: The team continues high-quality chest compressions, waveform capnography jumps to 52 mm Hg, and compressions are paused for rhythm and pulse checks that reveal a sinus tachycardia at 126/min.

Initiate the Post–Cardiac Arrest Care Algorithm.

Megacode Practice Learning Station Checklist: Case 75/78 Bradycardia → VF → Asystole → PCAC

Student Name _____ Date of Test _____

Critical Performance Steps						Check if done correctly
Team Leader/Team Members						
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 ☐	Ventilation rate _____	
Team Leader 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						
Verbalizes need for endotracheal intubation and continuous waveform capnography, ensures BP and 12-lead ECG are performed and O_2 saturation is monitored, and orders laboratory test						
Considers temperature control						

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

Case 80: In-Hospital Intermediate Medical-Surgical Unit Megacode Practice—Stable/Unstable Tachycardia (Stable/Unstable Tachycardia > VF > PEA > PCAC)

Scenario Rating: 3

Lead-in: You are a health care professional on an intermediate medical-surgical unit, checking on your patients, when you hear an overhead page (coded) that an intruder is in the hospital. One of your patients was involved in a bar fight and sustained several life-threatening injuries. As the message is delivered, you hear him screaming, "I'm dying—I've been shot!" and you see an unfamiliar man run out of the unit.

Vital Signs
Heart rate: 130/min
Blood pressure: 90/60 mm Hg
Respiratory rate: 40/min
SpO_2:
Temperature:
Weight:
Age: 22 years

Initial Assessment

- While you assess your patient, replacing his nonrebreathing mask and checking IV patency, you notice a chest wound at his left lower rib cage.

What are your initial actions?

Instructor notes: This patient has high potential to experience a respiratory arrest. The focus of this case initially is tachycardia, tachypnea, and hypotension.

Because you know the history of the patient, stabilizing vital signs and the open wound and calming your patient are priorities. You should continue to monitor narrow, rapid cardiac rhythm, increased respiratory rate, and hypotension.

Adult Tachyarrhythmia With a Pulse Algorithm

Instructor notes: Your patient most likely has a sucking chest wound, which can impair breathing due to interruption in the lungs, the diaphragm, and/or the chest wall.

Because your patient has a large defect in his chest wall, he will need a chest tube and, most likely, surgery. So, his **tachycardia** could be caused by the impaired lung integrity or loss of blood from the gunshot wound.

You should be aware of signs of distress, such as continued dyspnea, chest pain, and decreased breath sounds on the side of the injury. If these signs are not acknowledged, your patient will have a respiratory arrest.

Adult Cardiac Arrest Algorithm (VF)

Instructor notes: Shortly after your patient experiences respiratory arrest and you begin ventilation, the patient goes into **VF**. Initiate high-quality CPR and prepare to defibrillate.

Adult Cardiac Arrest Algorithm (PEA)

Instructor notes: Despite adequate management of VF, the patient remains in cardiac arrest.

Options to consider:

- Indication for an emergency thoracotomy in the emergency department or on a surgical floor
- High-quality CPR, ongoing epinephrine as indicated, and a verbalization of the differential diagnosis while preparing to move to surgery

After the second shock and continued CPR, the rhythm changes to a **wide-complex tachycardia**. There is no pulse.

Post–Cardiac Arrest Care Algorithm

Instructor notes: After another round of CPR and medications, the patient regains a pulse.

The student will be expected to reassess vital signs and initiate the Post–Cardiac Arrest Care Algorithm.

Megacode Practice Learning Station Checklist: Case 80 Tachycardia → VF → PEA → PCAC

Student Name _____ Date of Test _____

Critical Performance Steps						Check if done correctly
Team Leader/Team Members						
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 ☐	Ventilation rate _____	
Team Leader 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						
Verbalizes need for endotracheal intubation and continuous waveform capnography, ensures BP and 12-lead ECG are performed and O_2 saturation is monitored, and orders laboratory test						
Considers temperature control						

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