

Science Summary Table

This table compares topics from 2020 with 2025, providing a quick reference to what has changed and what is new in the science of ACLS.

ACLS topic	2020	2025
Tachycardia	- Follow your specific device's recommended energy level to maximize the success of the first shock - Wide QRS complex, irregular rhythm: defibrillation dose (not synchronized)	- Synchronized cardioversion initial recommended doses: - Narrow-complex tachycardia: 100 J - Monomorphic VT: 100 J - Atrial fibrillation: 200 J - Atrial flutter: 200 J - Polymorphic VT: defibrillation dose (not synchronized) - Removed sotalol from the algorithm - Changed supraventricular tachycardia to narrow-complex tachycardia
Post-Cardiac Arrest Care	- Targeted temperature management 32-36 °C - Hold temperature for 24 hours - Do not give OHCA patients with ROSC targeted temperature management - Hypotension: <90 mm Hg - Oxygen saturation: 92%-98%	- Temperature control 32-37.5 °C - Hold temperature for at least 36 hours - OK to give OHCA patients with ROSC temperature control as long as it is not cold IV fluids - Hypotension: MAP ≥65 mm Hg - Oxygen saturation: 90%-98%
Cardiac Arrest, Chain of Survival	6 links for both chains (IHCA and OHCA); added a Recovery link to the end of both chains	6 links for 1 universal chain
ACLS topic	2025	
Stroke	Adding tenecteplase as a thrombolytic agent	
ACS	- Removed LBBB as a definitive diagnosis for STEMI - Removing clopidogrel as primary anticoagulant - Adding fentanyl (opioids) for secondary pain control (in addition to morphine) - Adding enoxaparin or fondaparinux (anticoagulants) - Adding ACE inhibitors	
Airway	- Removed 600-800 mL for ventilations, adding "one third" squeeze and focusing on chest rise. "Squeeze the bag one third and one half, enough to see visible chest rise." - Removed delivering medications down an ET tube	

Case 1: Out-of-Hospital Respiratory Arrest

Scenario Rating: 3

Lead-in: You are a paramedic and respond to a call for a woman having an asthma attack at a restaurant.

Vital Signs

Heart rate: 120/min

Blood pressure: 60/38 mm Hg

Respiratory rate:

SpO₂: <50% on room air

Temperature:

Weight:

Age:

Initial Information

- The patient is unconscious on the floor, with agonal respirations.
- What are your initial actions?

Additional Information

- She reported difficulty breathing while eating.
 - She began gasping for air and had a decrease in mental status.
 - Her pulse is weak and regular.
 - She has only moderate chest rise and no improvement with bag-mask ventilation.
 - One friend says that the woman is allergic to peanuts.
- What are your next actions?

Additional Information (if needed)

- You gave the following treatments without improvement:
 - Epinephrine 0.3 mg (1:1000) IM
 - Diphenhydramine 50 mg IV
 - Albuterol 2.5 mg via the bag-mask device
- What are your next actions?

Instructor notes: The paramedic must decide whether to attempt an oral endotracheal intubation, which may worsen the airway swelling, or perform a needle cricothyrotomy. Oxygen should be initiated.

Airway Management Skills Testing Checklist

Student Name _____

Date of Test _____

Critical Performance Steps		Check if done correctly
BLS Assessment and Interventions		
Checks for responsiveness		
• Taps and shouts, "Are you OK?"		
Activates the emergency response system		
• Shouts for nearby help/activates the emergency response system and gets the AED		
or		
• Directs second rescuer to activate the emergency response system and get the AED		
Checks breathing		
• Scans chest for movement (5-10 seconds)		
Checks pulse (5-10 seconds)		
Breathing and pulse check can be done simultaneously		
Notes that pulse is present and does not initiate chest compressions or attach AED		
Inserts oropharyngeal or nasopharyngeal airway		
Administers oxygen		
Performs effective bag-mask ventilation for 1 minute		
• Gives proper ventilation rate (once every 6 seconds)		
• _____ Ventilation once every 4 seconds or less or 8 seconds or more does not pass		
• Gives proper ventilation speed (over 1 second)		
• Gives proper ventilation volume (about half a bag)		

STOP TEST

Instructor Notes

- Place a check in the box next to each step the student completes successfully.
- If the student does not complete all steps successfully (as indicated by at least 1 blank check box), the student must receive remediation. Make a note here of which skills require remediation (refer to Instructor Manual for information about remediation).

Test Results

Circle **PASS** or **NR** to indicate pass or needs remediation:

Instructor Initials _____	PASS	NR
Instructor Number _____ Date _____		

Case 16: Out-of-Hospital Unstable Bradycardia

Scenario Rating: 2

Lead-in: You are a paramedic and respond to a call for a patient with an altered mental status.

Vital Signs

Heart rate:

Blood pressure:

Respiratory rate:

SpO₂:

Temperature:

Weight:

Age: 59 years

Initial Information

- The patient is sitting upright on a couch.
- He is disoriented, pale, and diaphoretic.

What are your actions?

Additional Information

- You attach a cardiac monitor/defibrillator.
- A rhythm check finds a third-degree heart block.

Instructor notes: Show ECG strip.

What are your actions?

Additional Information (if needed)

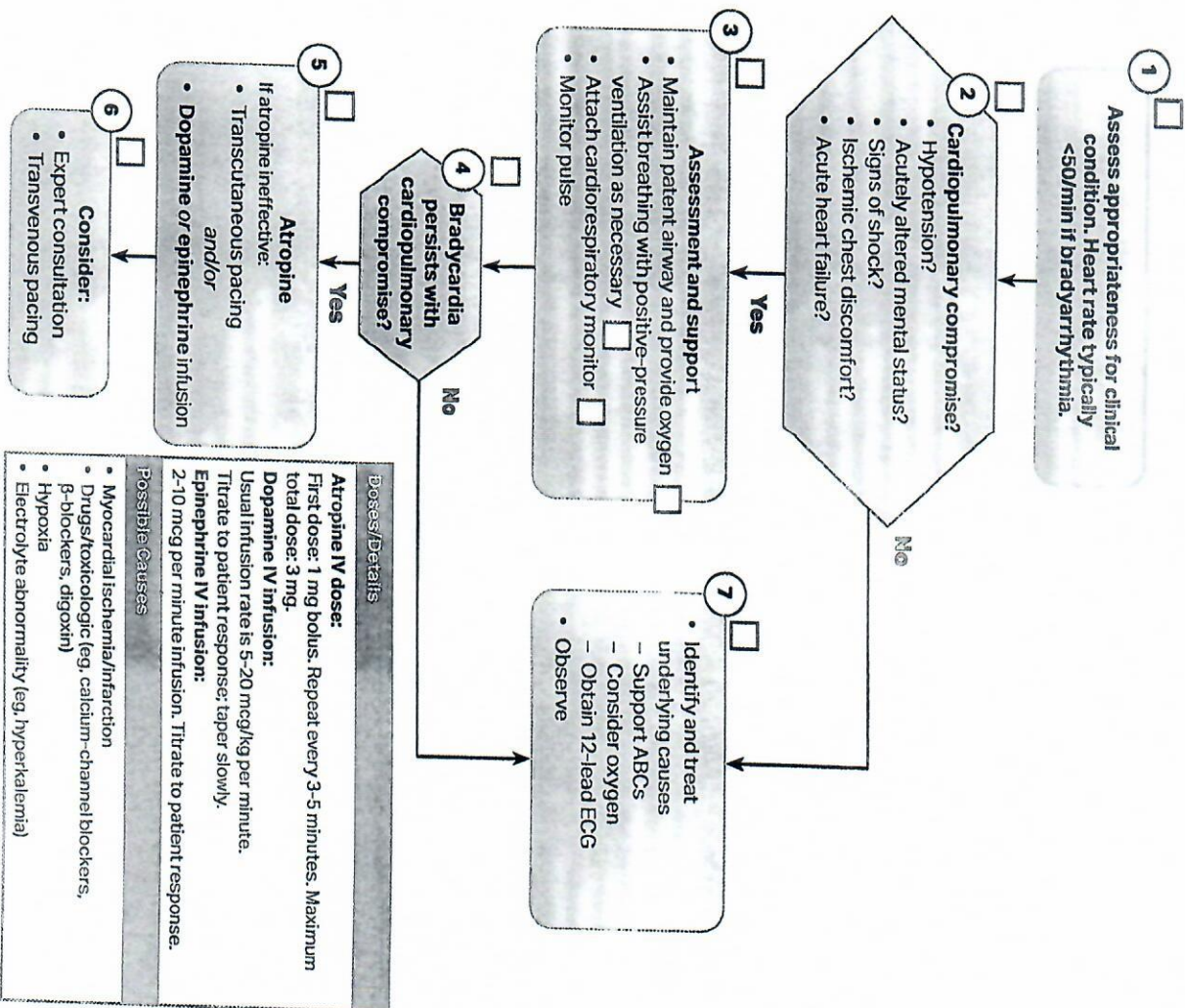
- The patient's wife says the condition came on quickly, and the patient had chest pain just before he became unresponsive.

Instructor notes: If the paramedic correctly initiates the transcutaneous pacing procedure, the patient's condition improves. If not, the patient quickly deteriorates to pulseless.

What are your next actions?

Adult Bradycardia With a Pulse Learning Station Checklist

Adult Bradycardia With a Pulse Algorithm



Case 30: Out-of-Hospital Stable Tachycardia

Scenario Rating: 1

Lead-in: You are a paramedic and respond to a call for a patient with altered mental status.

Vital Signs

Heart rate: 116/min

Blood pressure: 134/82 mm Hg

Respiratory rate: 24/min

SpO₂: 94%

Temperature:

Weight:

Age: 73 years

Initial Information

- The patient feels weak and cannot get out of bed.
- His son says that the day before, his father briefly could not speak or understand words.
- About 3 weeks ago, the patient could not stand unaided because of weakness in his legs.
- He would not go to the emergency department in either case.
- He has a history of atrial fibrillation, hypertension, and diabetes.

What are your next actions?

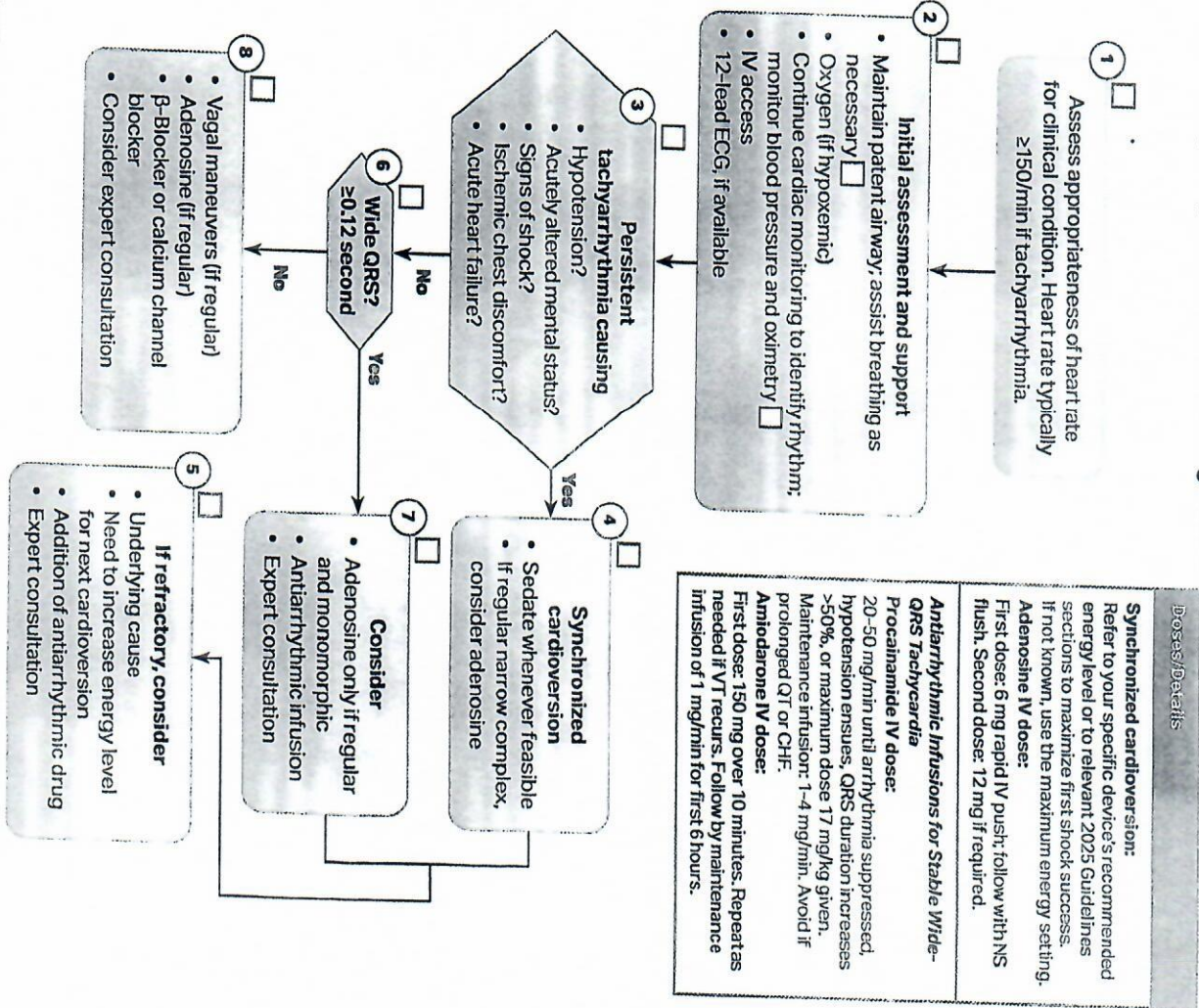
Additional Information

- You attach a cardiac monitor/defibrillator.
- A rhythm check finds atrial fibrillation with rapid ventricular response.

What are your actions?

Adult Tachyarrhythmia With a Pulse Learning Station Checklist

Adult Tachyarrhythmia With a Pulse Algorithm



Case 55: Emergency Department Cardiac Arrest—PEA-Opioid Overdose

Scenario Rating: 2

Lead-in: EMS arrives in your emergency department with an unconscious man. EMS providers are ventilating him with a bag-mask device on arrival. The crew tells you that they were called by a passerby who found the patient lying unconscious on the street.

Vital Signs

Heart rate: 110/min

Blood pressure: 100/75 mm Hg

Respiratory rate: 6/min

SpO₂: 65%

Temperature: 36.5 °C

Weight:

Age: 23

Initial Information

- The patient is unresponsive to voice and painful stimuli.
- The patient's pupils are pinpoint bilaterally.
- He has track marks on both arms and both feet.
- His respirations are infrequent and ineffective.
- He has snoring respirations with some upper airway obstruction.
- He has a thready pulse at approximately 110/min.

What are your initial actions?

Instructor notes: The student should open the airway (positioning with or without an OPA or NPA), place the patient on a monitor, provide oxygen, assess ventilation once the airway is open, and provide bag-mask ventilation as necessary. IV access should be established. The student may choose to administer naloxone. Naloxone 0.04 to 0.4 mg IV would be an appropriate initial dose, with repeat dosing after 2 to 3 minutes of no effect. Appropriate repeat dosing is 2 mg and then 4 mg, based on effect. The goal is to have effective ventilation and improved oxygen saturation.

Additional Information

- Despite the airway being opened, the patient's respirations remain slow and low volume.
- Level of consciousness and oxygen saturations are unchanged.
- Bradypnea progresses to apnea. Repeat pulse check finds no pulse.
- Monitor shows organized rhythm at 110/min.

What is your next intervention?

Instructor notes: Students must move down the PEA pathway on the Adult Cardiac Arrest Algorithm, beginning with start CPR, and focus on high-quality CPR. Students may consider administering naloxone. The benefit of naloxone in cardiac arrest is not clear. The ideal dose is not known, but 2 to 4 mg IV is reasonable.

Adult Cardiac Arrest Learning Station Checklist (Asystole/PEA)

Adult Cardiac Arrest Algorithm (Asystole/PEA)

