

# Part

# 6

## **ACLS Lesson Plans**

Lessons are numbered for labeling and convenience only.



# Precourse Preparation

## Instructor Tips

- The time you invest in preparation is important. Prepare well, and anticipate questions/challenges
- Anticipate what could happen, and have a plan for possible challenges
  - Instructor does not arrive
  - Equipment failure/malfunctions
  - Extra batteries

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## 30 to 60 Days Before Course

- Determine course specifics
  - Target audience
  - Number of students
  - Special needs or equipment
- Review and reserve ACLS equipment
- Schedule room as soon as dates are determined
- Schedule additional instructors, if needed

Activity	Recommended Size or Ratio
Large-group interactions	The size of the group is limited by the size of the room and the number of video monitors or projection screens
Learning stations and Megacode testing	6:1 up to a maximum of 8:1 <ul style="list-style-type: none"><li>• The student-to-instructor ratio should be 6 students to 1 learning station, with 1 instructor for each station. In some cases, a maximum of 8 students to 1 instructor to 1 learning station may be used</li></ul>

### Optional

Instructors or Training Centers may consider offering an ACLS preparation course days or weeks before the ACLS Course to ensure that students understand

- ECGs (rhythm analysis)
- Pharmacology
- Airway management
- BLS skills

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## At Least 3 Weeks Before Course

- Confirm room reservations and setups
- Send students precourse letter with student materials
- Ensure that students understand that precourse preparation is necessary for successful participation in the ACLS Course
- Provide students information on the mandatory Precourse Self-Assessment
- Confirm additional instructors
- **Research local treatment protocols and prepare for discussion**

## Day Before Course

- Set up the room
- Coordinate the plan with additional instructors, if needed for class size
- Ensure that all equipment is available and tested for operation
  - Have extra batteries on hand for equipment
- Check with Training Center Coordinator to determine any Training Center–specific paperwork needed
- Ensure that all course paperwork is in order, such as
  - ACLS course roster
  - Testing checklists
  - Learning station checklists

## Day of Course

- Make sure all equipment is working
- Greet students as they arrive to help make them feel at ease
- Have students fill out the course roster. Rosters may vary between Training Centers; refer to Instructor Network ([www.ahainstructornetwork.org](http://www.ahainstructornetwork.org)). Required: Collect the students' Precourse Self-Assessment certificate (with score of 70% or higher)
  - Refer to the Instructor Manual if a student does not come with a printed copy of his or her Precourse Self-Assessment certificate

Equipment and Supplies	Quantity Needed	Learning/Testing Station Where Equipment Needed
<b>Paperwork</b>		
Course roster	1/course	Beginning of course
Listing of student groups	1/course	All
Name tags	1/student and instructor	All
Course agenda	1/student and instructor	All
Course completion card	1/student	End of course
<i>ACLS Provider Manual</i>	1/student and instructor	All
ECC Handbook (optional)	1/student and instructor	All
ACLS posters	1 set/class	All
Precourse letter	1/student	Precourse
Airway Management Skills Testing Checklist	1/student	Airway Management
High-Quality BLS Testing Checklist	1/student	High-Quality BLS
Megacode Testing Checklist	1/student	Megacode Testing
ACLS Provider Course exam	1/student	Exam

<b>Equipment and Supplies</b>	<b>Quantity Needed</b>	<b>Learning/Testing Station Where Equipment Needed</b>
Blank exam answer sheet	1/student	Exam
Exam answer key	1/course	Exam
<i>ACLS Instructor Manual</i> (including case scenarios) and ACLS Lesson Plans	1/instructor	All
Learning station checklists	1/student	Bradycardia, Tachycardia, Cardiac Arrest, Post-Cardiac Arrest Care, and Megacode Practice
<b>Audiovisual Equipment</b>		
TV with DVD player or computer with video player and projection screen	1/station	High-Quality BLS, Airway Management, ACS, Stroke, Bradycardia, Tachycardia, Team Dynamics, Megacode, Cardiac Arrest, and Post-Cardiac Arrest Care
Course video	1/station	High-Quality BLS, Airway Management, ACS, Stroke, Bradycardia, Tachycardia, Team Dynamics, Megacode, Cardiac Arrest, and Post-Cardiac Arrest Care
<b>CPR and AED Equipment</b>		
Adult CPR manikin with shirt	1/every 3 students	High-Quality BLS
Adult airway manikin	1/every 3 students	Airway Management
Adult manikin (airway, CPR, and defibrillation capable)	1/every 6 students	Technology Review, Bradycardia, Tachycardia, Cardiac Arrest, Post-Cardiac Arrest Care, Megacode Practice, and Megacode Testing
CPR/short board	1/station	High-Quality BLS, Cardiac Arrest, Post-Cardiac Arrest Care, Megacode Practice, and Megacode Testing
Code cart or jump kit	1/station	Technology Review, Bradycardia, Tachycardia, Cardiac Arrest, Megacode, Post-Cardiac Arrest Care, Megacode Practice, and Megacode Testing
Stopwatch/timing device	1/instructor	High-Quality BLS, Airway Management, Cardiac Arrest, Megacode Practice, and Megacode Testing
Countdown timer	1/instructor	All
Feedback device (optional)	1/station	High-Quality BLS, Airway Management, Cardiac Arrest, Megacode Practice, and Megacode Testing
AED trainer with adult AED training pads	1/every 3 students	High-Quality BLS
Step stools to stand on for CPR	1/every 3 students	High-Quality BLS, Cardiac Arrest, Megacode Practice, and Megacode Testing

<b>Equipment and Supplies</b>	<b>Quantity Needed</b>	<b>Learning/Testing Station Where Equipment Needed</b>
<b>Airway and Ventilation</b>		
Adult pocket mask	1/every 3 students or 1/student	High-Quality BLS
1-way valve	1/student	High-Quality BLS
Bag-mask device, reservoir, and tubing	1/every 3 students	All but ACS, Stroke, Bradycardia, and Tachycardia
Oral and nasal airways	1 set/station	All but ACS, Stroke, Bradycardia, and Tachycardia
Water-soluble lubricant	1/station	All but ACS, Stroke, Bradycardia, and Tachycardia
Nonrebreathing mask	1/every 3 students	All but ACS and Stroke
Waveform capnography	1/station	Airway Management, Cardiac Arrest, Post-Cardiac Arrest Care, Megacode Practice, and Megacode Testing
<b>Rhythm Recognition and Electrical Therapy</b>		
ECG simulator/rhythm generator	1/station	All but ACS, Stroke, Airway Management, and High-Quality BLS
Electrodes	1/station	All but ACS, Stroke, Airway Management, and High-Quality BLS
Monitor capable of defibrillation/synchronized cardioversion, transcutaneous pacing	1/station	All but ACS, Stroke, Airway Management, and High-Quality BLS
Pacing pads, defibrillator pads, or defibrillator gel (if pads are not used)	1/station	All but ACS, Stroke, Airway Management, and High-Quality BLS
Spare batteries or power cord	1/station	All but ACS, Stroke, Airway Management, and High-Quality BLS
Spare ECG paper	1/station	All but ACS, Stroke, Airway Management, and High-Quality BLS
<b>Recommended Drugs, Drug Packages, or Drug Cards (Appendix)</b>		
Epinephrine	1/station	Bradycardia, Cardiac Arrest, Post-Cardiac Arrest Care, Megacode Practice, and Megacode Testing
Atropine sulfate	1/station	Bradycardia, Post-Cardiac Arrest Care, Megacode Practice, and Megacode Testing
Amiodarone (or lidocaine)	1/station	Bradycardia, Tachycardia, Cardiac Arrest, Post-Cardiac Arrest Care, Megacode Practice, and Megacode Testing
Adenosine	1/station	Tachycardia, Megacode Practice, and Megacode Testing

<b>Equipment and Supplies</b>	<b>Quantity Needed</b>	<b>Learning/Testing Station Where Equipment Needed</b>
Dopamine	1/station	Bradycardia, Post-Cardiac Arrest Care, Megacode Practice, and Megacode Testing
Saline fluid bags/bottles	1/station	All but ACS, Stroke, Airway Management, and High-Quality BLS
IV pole	1/station	All but ACS, Stroke, Airway Management, and High-Quality BLS
<b>Safety</b>		
Sharps container (if using real needles)	1/station	All but ACS, Stroke, Airway Management, and High-Quality BLS
<b>Advanced Airways (must choose endotracheal tube and at least 1 supraglottic device)</b>		
Endotracheal tube and all equipment and supplies necessary for correct insertion	1/station	Airway Management, Cardiac Arrest, Post-Cardiac Arrest Care, Megacode Practice, and Megacode Testing
Laryngeal tube and supplies necessary for correct insertion	1/station	Airway Management, Cardiac Arrest, Post-Cardiac Arrest Care, Megacode Practice, and Megacode Testing
Laryngeal mask airway and supplies necessary for correct insertion	1/station	Airway Management, Cardiac Arrest, Post-Cardiac Arrest Care, Megacode Practice, and Megacode Testing
Esophageal-tracheal tube and supplies necessary for correct insertion	1/station	Airway Management, Cardiac Arrest, Post-Cardiac Arrest Care, Megacode Practice, and Megacode Testing
Regionally available supraglottic airway and all equipment and supplies necessary for correct insertion	1/station	Airway Management, Cardiac Arrest, Post-Cardiac Arrest Care, Megacode Practice, and Megacode Testing
<b>Cleaning Supplies for Use Between Student Practice and After Course</b>		
Manikin cleaning supplies	Varies	All

*Note:* Consider an ED bed and/or stretcher to place manikins on for a more realistic case-based scenario during appropriate learning stations.

## Instructor Notes

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### Next

Welcome, Introductions, and Course Administration

# Lesson START

## Welcome, Introductions, and Course Administration

15 minutes

### Instructor Tips

- Knowing what you want to communicate, why it's important, and what you want to have happen as a result is critical to the success of your presentation
- Be flexible: Be ready to adjust your Lesson Plan to students' needs and focus on what seems to be more productive rather than sticking to your original plan
- Introductions: Using a visual aid (flip chart, whiteboard), write introduction requirements (name, occupation, specialty, place of practice)



### Discussion

In a large group, with all students, discuss the following:

- Introduce yourself and additional instructors, if needed
- Invite students to introduce themselves and ask them to provide the following information:
  - Name
  - Occupation
  - Specialty
  - Place of practice
- As students are introducing themselves, document their occupation, specialty, etc. This will assist instructors by tailoring future case scenarios and lessons
- Explain that the course is interactive
  - Use of the Provider Manual, learning station checklists
  - Skills testing checklists
  - Hands-on learning stations
- Explain that parts of the course are somewhat physically strenuous
  - For example, Lesson 4 involves adult CPR, which will require you to perform a number of compressions, which could be physically strenuous
- Ask that anyone with a medical concern, such as knee or back problems, speak with one of the instructors
- Explain the layout of the building, including bathrooms and fire exits
- Advise students where an AED can be found in the building
- Tell students to silence cell phones
  - If a call needs to be answered, tell students to answer it in the hallway
- Tell the students, “We are scheduled to end at \_\_\_\_\_”

**Next**

Life Is Why (Optional)



# Life Is Why™ Lesson (Optional)

## Instructor Tips

- Before facilitating this lesson, complete the Life Is Why activity in the Instructor Manual. Have your “\_\_\_\_\_ Is Why” prepared to share with students
- You can make additional copies of the Life Is Why activity from the Instructor Manual for students who do not bring their Provider Manual to class



### Show Life Is Why Video

- Play the video



### Discussion

- To engage the class, after viewing the Life Is Why video, take 2 to 3 minutes to share your Why with the class, based on your completed Life Is Why activity in the Instructor Manual
- Then, encourage students to participate in the following activity:
  - Have students find the “\_\_\_\_\_ Is Why” page in their Provider Manual and follow the directions. Tell students:
    - Complete this activity by filling in the blank with the word that describes your Why
    - Tell your family and friends about your “\_\_\_\_\_ Is Why,” and ask them to discover their Why



### AHA Life Is Why Icon

- Tell students that throughout their Provider Manual, they will find information that correlates what they are learning in this course to Life Is Why and the importance of cardiovascular care. This information is identified by the Life Is Why heart-and-torch icon
- Remind students that what they are learning today has an impact on the mission of the American Heart Association

## Instructor Notes

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### Next

ACLS Course Overview  
and Organization

# Lesson 1

## ACLS Course Overview and Organization

10 minutes

### Instructor Tips

- Make sure to emphasize critical aspects of the course, such as course agenda, design, and completion requirements
- Breaks: Think about how you want to manage breaks during this course. Making yourself available allows you to answer questions people might feel too embarrassed to ask in front of everyone. It also gives you time to create rapport and get feedback
- **Items in boldface have greater importance**



### Discussion

In a large group, with all students, discuss the following:

- Present course overview
- Discuss course agenda, design, and completion requirements
- Be certain that students understand major course concepts
  - Importance of high-quality CPR to patient survival
  - Integration of effective BLS with ACLS interventions
- Discuss importance of effective team interaction and communication during a resuscitation attempt. Explain the learning stations and rotations through stations
  - Provide an overview of how the students will move through the stations, such as the example in Lesson Plan 10C
  - Tell students that learning stations will be performed toward the end of the course
- Answer students' questions
- **Assign students to small groups for learning stations**
  - Limit the number of students to 6 to a maximum of 8 per group
- **Tell students that they will be using their Provider Manuals throughout the course**
- Explain the course completion requirements. Students must
  - Pass the Adult High-Quality BLS Skills Test
  - Pass the Bag-Mask Ventilation Skills Test with OPA/NPA insertion
  - Demonstrate competency in learning station skills
  - Pass the Megacode test
  - Pass the open-resource exam with a minimum score of 84%
    - An open-resource exam allows students the ability to use available resources, such as the ECC Handbook and Provider Manual, posters, algorithms, etc, to process information analytically but also to think independently and creatively with curriculum content
  - You will issue a course completion card immediately after a student successfully completes the course but no later than 20 days after the course

### Next

The Science of Resuscitation

# Lesson 2

## Learning Station: The Science of Resuscitation

15 minutes

### Purpose

- Focus on the key science that drives increased patient survival

### Instructor Tips

- Transitional language: After showing the video, be sure to provide language that helps students with the transition back to teaching, such as a recap of what the video covered and what is next
- When reviewing the material presented in the video with students, ask leading questions to help facilitate discussion; avoid lecturing



### Show Science of Resuscitation Video

In a large group or small groups:



- Introduce video on The Science of Resuscitation
- Play the video
- Review and define systems of care
  - Discuss benefits and ways to improve
- Review and define MET/RRT for IHCA (optional for EMS)
- Discuss high-quality BLS and feedback devices
- Discuss the AHA Chain of Survival in relation to local protocol
- Answer questions
- Review/summarize key points

### Instructor Notes

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**Next**

Systematic Approach

# Lesson 3

## Systematic Approach

15 minutes

### Lesson Objective

- Apply the BLS, Primary, and Secondary Assessments sequence for a systematic evaluation of adult patients

### Instructor Tips

- Ask students to use the Provider Manual in this section to help further engage them and help with retention of information
- Make sure not to interrupt the video if you have any comments to add; write them down and discuss them at the end of the video. Students do not learn well when they are trying to listen to 2 things at once



### Show Systematic Approach Video

- Ask students to open the Provider Manual to Part 4
- Play the video



### Discussion

- Answer students' questions from the video
- Remind students that they will be functioning as Team Leader and different members as they rotate through the learning and testing stations
- Review and summarize key points (use chart below)

BLS Assessment	Primary Assessment
<p><b>Check responsiveness</b></p> <ul style="list-style-type: none"> <li>• Tap and shout, “Are you OK?”</li> </ul>	<p><b>A Airway</b></p> <ul style="list-style-type: none"> <li>• Maintain airway patency by using OPA or NPA or an advanced airway (supraglottic airway or endotracheal tube)</li> <li>• If inserting an advanced airway such as an endotracheal tube, verify correct placement with waveform capnography</li> </ul>
<p><b>Shout for nearby help/activate the emergency response system and get the AED/defibrillator</b></p>	<p><b>B Breathing</b></p> <ul style="list-style-type: none"> <li>• Give O<sub>2</sub>; use bag-mask device with or without an advanced airway to provide adequate ventilation</li> <li>• Avoid excessive ventilation</li> </ul>
<p><b>Check breathing and pulse</b></p> <ul style="list-style-type: none"> <li>• <b>Check for absent or abnormal breathing</b> (no breathing or only gasping) by looking at or <b>scanning the chest for movement</b> (about 5 to 10 seconds)</li> <li><i>Ideally, the pulse check is performed simultaneously with the breathing check to minimize delay in detection of cardiac arrest and initiation of CPR</i></li> <li>• <b>Check pulse</b> for 5 to 10 seconds</li> <li>• If no pulse within 10 seconds, start CPR, beginning with chest compressions</li> <li>• If there is a pulse, start rescue breathing at 1 breath every 5 to 6 seconds. Check pulse about every 2 minutes</li> </ul>	<p><b>C Circulation</b></p> <ul style="list-style-type: none"> <li>• Monitor CPR quality with waveform capnography and intra-arterial relaxation pressure</li> <li>• Attach monitor/defibrillator</li> <li>• Provide defibrillation/cardioversion</li> <li>• Obtain IV/IO access</li> <li>• Give appropriate drugs</li> <li>• Check glucose and temperature</li> <li>• Check for perfusion issues</li> </ul>
<p><b>Defibrillation</b></p> <ul style="list-style-type: none"> <li>• If no pulse, check for a shockable rhythm with an AED/defibrillator as soon as it arrives</li> <li>• Provide shocks as indicated</li> <li>• Follow each shock immediately with CPR, beginning with compressions</li> </ul>	<p><b>D Disability</b></p> <ul style="list-style-type: none"> <li>• Check for neurologic function</li> <li>• Quickly assess for responsiveness, levels of consciousness, and pupil dilation</li> <li>• AVPU: Alert, Voice, Painful, Unresponsive</li> </ul>
	<p><b>E Exposure</b></p> <ul style="list-style-type: none"> <li>• Remove clothing to perform a physical examination, looking for obvious signs of trauma, bleeding, burns, unusual markings, or medical alert bracelets</li> </ul>

### Secondary Assessment

- Focused medical history (SAMPLE)
- H’s and T’s

**Next**

High-Quality  
BLS Practice

# Lesson 4A

## Learning/Testing Station: High-Quality BLS Practice

45 minutes

### Lesson Objective

- Perform prompt, high-quality BLS, including prioritizing early chest compressions and integrating early AED use

### Instructor Tips

- Students should rotate through the skills station
- Tell students that the skills testing portion will happen immediately after this lesson
- Use a stopwatch or timing device to measure compression speed



### Show High-Quality BLS Video

- Introduce the video and clearly state that the student is to only watch the video
- Address what students will learn from the video
- Play the video (video will automatically pause)



### CPR Practice

- Arrange students in groups with manikins
  - 3 or fewer students per manikin
  - Groups can be arranged as follows: 1 instructor to 2 manikins, with 3 students per manikin
- Students rotate through CPR practice (3 rounds of 30:2) on manikins
  - Summarize key points
    - High-quality BLS is the foundation of resuscitation
    - High-quality CPR is the primary component in influencing survival from cardiac arrest, but there is considerable variation in monitoring, implementation, and quality improvement
    - Target CPR performance metrics include the following:
      - Push hard: Compression depth of at least 2 inches (5 cm) in adults
      - Push fast: Compression rate of 100 to 120/min
      - Allow complete chest recoil after each compression
      - Chest compression fraction at least 60% and ideally greater than 80%
      - Avoid excessive ventilation
- Give feedback during practice after watching the video
- Be sure that students perform correct chest compressions throughout the practice session



### Show High-Quality BLS Video

- Resume playing High-Quality BLS video
- Video will focus on CPR and AED scenario

### Next

High-Quality BLS  
Testing—Testing Details

## Lesson 4B

# Learning/Testing Station: High-Quality BLS Testing—Testing Details

### Instructor Tips

- Make sure to use a stopwatch during the appropriate testing steps to allow for objective testing
- Make sure you are familiar with how to use the skills testing checklist (refer to the Instructor Manual for information on how to use testing checklists)
- Complete the skills testing checklist for each student during this portion of the lesson
- Use a stopwatch or timing device to measure compression speed



### Test Students One at a Time

- Tell students who are not testing to practice on another manikin in another room
- Test each student in a reasonably private environment
  - Each student must demonstrate the entire sequence of 2-rescuer CPR and AED *without instructor prompting*
  - Fill out the Adult High-Quality BLS Skills Testing Checklist for each student
- Carefully observe the student being tested
  - For example, check the speed of chest compressions with a stopwatch
- If a student is unsuccessful, refer him or her for immediate remediation
  - Each student may retest 1 additional time during this station
  - If a student remains unsuccessful, he or she may require additional remediation (see information listed in the Instructor Manual)
- Summarize the importance of high-quality CPR to patient survival

### Instructor Notes

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#### Next

Airway Management  
Practice

# Lesson 5A

## Learning/Testing Station: Airway Management Practice

45 minutes

### Lesson Objectives

- Recognize respiratory arrest
- Perform early management of respiratory arrest

### Instructor Tips

- Use a stopwatch to make sure students are ventilating at appropriate intervals
- High-quality chest compressions and defibrillation are the highest priorities. As soon as enough personnel are available, initiate ventilation and oxygenation to support the resuscitation
- Make sure students are not ventilating too quickly or forcefully (about half-a-bag squeeze over 1 second)
- Healthcare providers often deliver excessive ventilation during CPR, particularly when an advanced airway is in place. Excessive ventilation is harmful because it
  - Increases intrathoracic pressure and impedes venous return and therefore decreases cardiac output, cerebral blood flow, and coronary perfusion
  - Causes air trapping, leading to increased end-expiratory lung volume
  - Increases the risk of regurgitation and aspiration in patients without an advanced airway
- For the *respiratory arrest* cases, you only need to use the lead-in and initial information to lead the student through the bag-mask ventilation and OPA/NPA skills testing. You may use the whole respiratory scenario if you want to go deeper into respiratory distress, respiratory failure, and respiratory arrest. The airway management station will need to be expanded to accommodate this approach



### Show Airway Management Video

- Ask students to open the Provider Manual to Part 5
- Play the video



### Airway Management Practice

- Assign student numbers
- Practice session (small groups around a manikin): practice OPA and NPA insertion, discuss oxygen and suction, and practice 1- and 2-rescuer bag-mask ventilation
- Use grid below for 2-rescuer bag-mask ventilation practice

Person Squeezing the Bag	Person Holding the Mask
Student 1	Student 2
Student 2	Student 3
Student 3	Student 1

### Next

Airway Management  
Testing



## Lesson 5B

### Learning/Testing Station:

### Airway Management Testing—Testing Details



#### Test Students One at a Time

- Advise students that they will be tested on bag-mask ventilation with OPA/NPA insertion skills
- Present the respiratory case scenario (case scenarios can be found in Appendix A of the Instructor Manual or on the Instructor CD)
- Each student manages a complete airway case (testing session)
  - Perform full assessment
  - Begin ventilations without delay
  - Insert OPA or NPA
  - Connect bag-mask device to oxygen and adjust flow rate to appropriate level
  - Give bag-mask ventilations with OPA/NPA for 1 minute (skills test)
    - Rate (once every 5 to 6 seconds)
    - Speed (squeeze the bag for 1 second)
    - Volume (about half a bag)
  - Check off student's skills on the skills testing checklist as each student demonstrates adequate management of the respiratory case

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#### Instructor Notes

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#### Next

Airway Management—  
Student Practice Details  
(Optional)

## Lesson 5C

# Learning/Testing Station: Airway Management—Student Practice Details (Optional)

### Instructor Tips

- This portion of the lesson is optional
  - Whether or not you teach this lesson will depend on the makeup of your class. That is why it is important to ask students at the beginning of the class to introduce themselves and provide information about their occupation



### Practice Advanced Airway Insertion (optional, based on students' scope of practice)

- Students practice performing ventilations with a simulated advanced airway in place (on the basis of manikin limitations, instructors may use a standard manikin with a bag-mask device rather than a bag connected to a simulated airway tube)
- Rotate through all students performing ventilations
- Optional advanced airway device modules
  - Laryngeal Tube
  - Laryngeal Mask Airway
  - Esophageal-Tracheal Tube
  - Endotracheal Tube

### Instructor Notes

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**Next**

Technology Review

# Lesson 6

## Technology Review

15 minutes

### Instructor Tips

- If there are 2 instructors, this activity can be done in 2 smaller groups. For 1 instructor, keep the class in 1 large group
- It is important that students get hands-on experience with the equipment they will be responsible for using during the learning stations and testing stations
- Equipment ideally would be the same as would be used in a real emergency
  - Advise students that the equipment may be different in their workplace



### Discussion

- **Demonstrate** and review monitor/defibrillator functions, buttons, and connections (features of your equipment may vary)
  - Power button
  - Transcutaneous pacing
  - Synchronized cardioversion
  - BP
  - PETCO<sub>2</sub>
  - Pulse oximetry
  - Pad connections
  - ECG connections and lead placement (3-lead, 4-lead, 5-lead)
- Review crash cart/jump kit supply locations

### Instructor Notes

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#### Next

Acute Coronary  
Syndromes—Video  
Discussion 1

# Lesson 7A

## Learning Station: Acute Coronary Syndromes—Video Discussion 1

30 minutes

### Lesson Objective

- Discuss early recognition and management of acute coronary syndromes, including appropriate disposition

### Instructor Tips

- Allow students to work together to answer questions and allow for self-discovery
- When summarizing what the video has covered, be sure to allow students to lead this discussion at times by asking for what they observed/learned during the video segment
- Students are often hesitant to answer questions at first. Before this lesson, write down additional leading questions to help prompt discussion. These video-based lessons are designed to allow you to challenge students, whether they are novice or experienced providers. Adjust the difficulty of your questions based on the knowledge level of the students in the course



### Show ACS Video

- Address what students will learn from the video
- Play the video (automatically pauses)
  - Address pause 1 questions 1, 2, and 3
- Refer to Part 5 of the Provider Manual
- Lead the discussion with the group



### Discussion

- Advise students to refer to Part 5, ACS case in the ACLS Provider Manual. Capture key concepts from the discussion



### Pause 1

#### 1. What is the difference between stable angina, unstable angina, and myocardial infarction?

Angina is a tightness or discomfort (not a sharp pain) in the center of the chest and/or the surrounding area. The onset of discomfort associated with stable angina is often predictable; in many cases, it begins during exertion or with strong emotions. It is a symptom, not a diagnosis of coronary artery disease or acute ischemic symptoms. While often associated with myocardial ischemia, chest discomfort may have other causes. In the presence of coronary disease, the most common cause of angina is an obstructing or disrupted coronary plaque.

Angina may be stable and predictably produced by exertion or emotion. At rest, a fixed coronary plaque generally allows enough blood supply. However, blood flow is insufficient during stress. When a plaque becomes unstable, ACS occurs. Due to a sudden reduction in the cross-sectional area of the blood vessel, blood flow is insufficient. This causes a clinical presentation called *unstable angina*, which is characterized by prolonged anginal pain that occurs at rest or with minimal effort. When the lack of blood flow is severe enough to cause damage to the heart muscle, a myocardial infarction is said to occur. This event often correlates with angina episodes of 15 minutes or longer.

**2. This patient is having chest discomfort. What are the possible causes of chest discomfort that may be life threatening?**

Although most life-threatening chest discomfort is due to ACS, the initial emergency diagnosis may include several other disorders. When a diagnosis of ACS is uncertain, the following possible diagnoses should be considered in the initial evaluation as well as the continuing assessment:

- Aortic dissection
- Pulmonary embolism
- Acute pericarditis with effusion and tamponade
- Spontaneous pneumothorax
- Esophageal rupture

**3. What are the classic symptoms of acute ischemic chest discomfort?**

The predominant symptom in most patients with ischemic syndromes is chest discomfort. This discomfort is often not described as a pain. Brief episodes of chest discomfort may be due to ischemia and may or may not progress to infarction. However, when symptoms are constant (ie, last for more than 15 to 20 minutes), myocardial infarction may be present. Symptoms suggestive of ACS include

- Uncomfortable pressure, fullness, squeezing, or pain in the center of the chest lasting several minutes (infarction: usually more than 15 minutes)
- Pain spreading to the shoulders, neck, arms, or jaw, or pain in the back or between the shoulder blades
- Chest discomfort with light-headedness, fainting, sweating, or nausea
- Shortness of breath with or without chest discomfort
- Denial that they are having chest pain/discomfort and minimizing severity

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## Instructor Notes

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**Next**

Acute Coronary  
Syndromes—Video  
Discussion 2

# Lesson 7B

## Learning Station:

### Acute Coronary Syndromes—Video Discussion 2



#### Show ACS Video

- Address what students will learn from the video
- Play the video (automatically pauses)
  - Address pause 2 questions 1, 2, and 3
- Refer to Part 5 in the Provider Manual
- Lead the discussion with the group



#### Discussion

- Advise students to refer to Part 5, ACS case in the ACLS Provider Manual. Capture key concepts from the discussion



#### Pause 2

##### 1. Half of ACS patients do not arrive at the hospital by EMS.

##### Why is early EMS dispatch important for patients with ACS?

Patients with a STEMI have a complete occlusion of a coronary artery. Early opening of the artery reduces mortality and the size of infarction. In many cases, EMS can begin symptom-stabilizing care before the patient arrives at the hospital, which will permit earlier reperfusion therapy. *Early opening of the artery reduces mortality and the size of infarction.* Patients arriving by EMS receive earlier reperfusion. EMS providers should consider the risk of VF in the early hours after a STEMI.

##### What are the most important components of a community ACS recognition program?

ACS is the most common cause of cardiac arrest in adults. Every community should develop a program to respond to cardiac arrest and identify patients with possible ACS. Components of this program include

- Recognizing symptoms of ACS
- Activating the EMS system
- Providing early CPR
- Providing defibrillation with AEDs available through lay rescuer CPR and defibrillation programs

##### 2. What are the goals of therapy for patients with ACS?

Improving systems of care enables early initiation of reperfusion therapy for patients with possible ACS and increases the likelihood of target goal achievement. These goals (discussed in detail in the ACS video) are

- Relief of ischemic chest discomfort
- Prevention of major adverse cardiac events (MACE), such as death, nonfatal MI, and the need for postinfarction urgent revascularization
- Treatment of acute, life-threatening complications of ACS, such as VF/pulseless VT, symptomatic bradycardia, and unstable tachycardia

Reperfusion therapy opens an occluded coronary artery with either drugs or mechanical means. “Clot buster” drugs are called *fibrinolytics*—a more accurate term than *thrombolytics*. Percutaneous coronary intervention (PCI) is a procedure used to open blocked or narrowed coronary (heart) arteries. PCI, performed in the heart catheterization suite following coronary angiography, allows balloon dilation and/or stent placement for an occluded coronary artery. PCI performed as the initial reperfusion method is called *primary PCI*.

**3. What role does aspirin play in ACS? What are the indications and contraindications?**

The most common cause of ACS is the rupture of a lipid-laden plaque with a thin cap. After rupture, a monolayer of platelets covers the surface of the ruptured plaque (platelet adhesion). Additional platelets are recruited (platelet aggregation) and activated. Aspirin irreversibly binds to platelets and partially inhibits platelet function.

Studies have shown that aspirin reduces mortality during MI. The recommended dose is 160 to 325 mg. Aspirin is indicated in all patients with possible ACS.

Contraindications include true aspirin allergy and recent or active GI bleeding.

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## Instructor Notes

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**Next**

Acute Coronary  
Syndromes—Video  
Discussion 3

# Lesson 7C

## Learning Station:

### Acute Coronary Syndromes—Video Discussion 3



#### Show ACS Video

- Address what students will learn from the video
- Play the video (automatically pauses)
  - Address pause 3 questions 1, 2, and 3
- Refer to Part 5 in the Provider Manual
- Lead the discussion with the group



#### Discussion

- Advise students to refer to Part 5, ACS case in the ACLS Provider Manual. Capture key concepts from the discussion



#### Pause 3

1. **Let's review. What is the initial drug therapy for ACS? We have already discussed aspirin.**

Other initial agents may include oxygen (to keep the saturation 90% or greater), nitroglycerin, and opiates (eg, morphine).

#### What are the doses and indications/contraindications/cautions for nitroglycerin?

Nitroglycerin is administered via the sublingual route, either in a tablet or spray form. Three doses may be administered after repeating assessments of blood pressure and heart rate. Conditions where nitroglycerin administration should be used with caution or withheld in patients with ACS include

- **Inferior MI and RV infarction:** Use nitroglycerin with caution in patients with known inferior wall STEMI. For these patients, perform a right-sided ECG to assess the degree of RV involvement. If RV infarction is confirmed by right-sided precordial leads or clinical findings by an experienced provider, nitroglycerin and other vasodilators (morphine) or volume-depleting drugs (diuretics) are contraindicated. Patients with acute RV infarction are very dependent on RV-filling pressures (preload) to maintain cardiac output and blood pressure.
- **Hypotension, bradycardia, or tachycardia:** Avoid use of nitroglycerin in patients with hypotension (systolic BP less than 90 mm Hg), extreme bradycardia (less than 50/min), or tachycardia.
- **Recent use of phosphodiesterase inhibitor (often used for erectile dysfunction):** If the patient has recently taken a phosphodiesterase inhibitor (eg, sildenafil or vardenafil within 24 hours; tadalafil within 48 hours), nitrates may cause severe hypotension refractory to vasopressor agents.

2. **What are the possible ECG groups that help triage initial ACS? What are they called?**

Analysis of the ECG ST segment allows triage of ACS patients into 1 of 3 diagnostic and treatment groups: STEMI, NSTEMI-ACS (high-risk non-ST-elevation ACS), and low-/intermediate-risk ACS. (Refer to the ACS Algorithm.)



**Why is it recommended that EMS send advance notification of the ECG to the receiving facility?**

Time is a critical factor in producing a positive outcome for an ACS patient, especially for STEMI patients. The American Heart Association recommends that EMS systems implement 12-lead ECG programs to assist in the early recognition of those patients who could benefit most from treatment at a specialty cardiac center. EMS providers who lack training in advanced ECG interpretation can still acquire and transmit the 12-lead ECG to the emergency department for interpretation there. With an ECG diagnostic for STEMI, EMS providers should activate the local STEMI response plan at the earliest opportunity.

Early ECG interpretation and notification of the receiving hospital speeds the time to reperfusion therapy, saves heart muscle, and may reduce mortality.

**3. Why is STEMI special and the focus of this case?**

Reperfusion therapy for STEMI is perhaps the most important advance in the treatment of cardiovascular disease in cardiovascular therapy. Early fibrinolytic therapy or direct catheter-based reperfusion has been established as a standard of care for patients with AMI.

Reperfusion therapy reduces mortality and saves heart muscle. The shorter the time to reperfusion, the greater the benefit. For example, a 47% reduction in mortality was noted when fibrinolytic therapy was provided in the first hour after onset of symptoms.

Guidelines have set goals for door-to-drug (fibrinolytic) administration time of *30 minutes* and PCI door-to-balloon time of 90 minutes. STEMI systems of care (EMS systems and emergency department initial triage) have a major impact on these goals.

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**Instructor Notes**

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**Next**

Acute Stroke—Video Discussion 1

# Lesson 8A

## Learning Station: Acute Stroke—Video Discussion 1

30 minutes

### Lesson Objective

- Discuss early recognition and management of stroke, including appropriate disposition

### Instructor Tips

- Allow students to work together to answer questions and allow for self-discovery
  - Encourage student-to-student interaction
- These video-based lessons are designed to allow you to challenge students, whether they are novice or experienced providers. Adjust the difficulty of your questions based on the knowledge level of the students in the course



### Show Acute Ischemic Stroke Video

- Address what students will learn from the video
- Play the video (automatically pauses)
  - Address pause 1 questions 1, 2, and 3
- Refer to Part 5 in the Provider Manual
- Lead the discussion with the group



### Discussion

- Advise students to refer to Part 5, Stroke case in the ACLS Provider Manual. Capture key concepts from the discussion



### Pause 1

#### 1. What signs and symptoms is this patient having?

Students should recognize that the patient is having difficulty speaking and moving. These are some of the warning signs of stroke. Ask students what some other warning signs or symptoms of stroke are.

#### How are they typical of stroke?

The signs and symptoms of a stroke may be subtle. They can include

- Sudden weakness or numbness of the face, arm, or leg, especially on one side of the body
- Sudden confusion
- Trouble speaking or understanding
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking
- Dizziness or loss of balance or coordination
- Sudden severe headache with no known cause

## 2. What are the major types of stroke?

The major types of stroke are

- **Ischemic stroke:** Accounts for 87% of all strokes and is usually caused by an occlusion of an artery to a region of the brain
- **Hemorrhagic stroke:** Accounts for 13% of all strokes and occurs when a blood vessel in the brain suddenly ruptures into the surrounding tissue. Fibrinolytics are contraindicated in this type of stroke

**In addition:**

- **Transient ischemic attack:** Transient ischemic attack is a transient episode of neurologic dysfunction caused by focal brain, spinal cord, or retinal ischemia, without acute infarction

### Is there any treatment that can reduce disability?

*Stroke* is a general term. It refers to acute neurologic impairment that follows interruption in blood supply to a specific area of the brain. Although expeditious care for stroke is important for all patients, this case emphasizes reperfusion therapy for acute *ischemic* stroke because rapid therapy with a fibrinolytic agent can reduce the disability from stroke.

## 3. If this patient is having a stroke, what are some goals for stroke care?

The goal of stroke care is to minimize brain injury and maximize the patient's recovery. The Stroke Chain of Survival described by the AHA and the American Stroke Association is similar to the Chain of Survival for sudden cardiac arrest. It links actions to be taken by patients, family members, and healthcare providers to maximize stroke recovery. These links are

- Rapid recognition and reaction to stroke warning signs
- Rapid activation of the EMS system
- Rapid EMS-system transport to and prearrival notification of the receiving hospital
- Rapid diagnosis and treatment in the hospital

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## Instructor Notes

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**Next**

Acute Stroke—Video  
Discussion 2

# Lesson 8B

## Learning Station: Acute Stroke—Video Discussion 2



### Show Acute Ischemic Stroke Video

- Address what students will learn from the video
- Play the video (automatically pauses)
  - Address pause 2 questions 1, 2, and 3
- Refer to Part 5 in the Provider Manual
- Lead the discussion with the group



### Discussion

- Advise students to refer to Part 5, Stroke case in the ACLS Provider Manual. Capture key concepts from the discussion



### Pause 2

#### 1. What are the critical EMS assessments and actions to provide the best outcome for this patient with a potential stroke?

- **Identify signs:** Define and recognize the signs of TIA and stroke.
- **Support ABCs:** Administer oxygen if the oxygen saturation is less than 94% or the oxygen saturation is unknown.
- **Complete stroke assessment:** Perform a rapid out-of-hospital stroke assessment.
- **Establish time:** Determine when the patient was last known to be at neurologic baseline. This represents time zero. If the patient wakes from sleep and is found with symptoms of stroke, time zero is the last time the patient was seen to be normal.
- **Transport:** Transport the patient and consider triage to a stroke center. Consider bringing a witness, family member, or caregiver with the patient to confirm time of onset of stroke symptoms.
- **Alert hospital:** Provide prearrival notification to the receiving hospital.
- **Check glucose:** During transport, support cardiopulmonary function, monitor neurologic status, and, if authorized by medical control, check blood glucose.

#### 2. What type of hospital is appropriate for this patient?

A stroke center has the capability to rapidly triage and treat patients by using a multidisciplinary approach.

#### Why is advance notification so important?

Evidence indicates a favorable benefit when stroke patients are triaged directly to designated stroke-prepared centers (primary/comprehensive centers) (Class I).

Advance notification allows activation of the facility stroke plan and team, minimizing delay in evaluation and treatment.

### 3. What stroke screen was used in the video?

Cincinnati Prehospital Stroke Scale (CPSS)

#### What are the 3 important physical findings?

The CPSS identifies stroke on the basis of 3 physical findings:

- Facial droop (have the patient smile or try to show teeth)
- Arm drift (have the patient close eyes and hold both arms out)
- Abnormal speech (have the patient say, “You can’t teach an old dog new tricks”)

Using the CPSS, medical personnel can evaluate the patient in less than 1 minute.

The presence of 1 finding on the CPSS indicates a 72% probability of stroke.

The presence of all 3 findings indicates that the probability of stroke is greater than 85%.

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## Instructor Notes

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### Next

Acute Stroke—Video  
Discussion 3

# Lesson 8C

## Learning Station: Acute Stroke—Video Discussion 3



### Show Acute Ischemic Stroke Video

- Address what students will learn from the video
- Play the video
  - Address pause 3 questions 1, 2, and 3
- Lead the discussion with the group



### Discussion

- Advise students to refer to Part 5, Stroke case in the ACLS Provider Manual. Capture key concepts from the discussion



### Pause 3

#### 1. Let's review. What is the initial emergency department assessment and stabilization?

- **Assess ABCDs:** Assess the ABCDs and evaluate baseline vital signs.
- **Provide oxygen:** Provide supplementary oxygen if the patient is hypoxemic, ie, oxygen saturation is less than 94% (Class I) or in patients with an unknown oxygen saturation value.
- **Establish IV access and obtain blood samples:** Establish IV access and obtain blood samples for baseline blood count, coagulation studies, and blood glucose, but do not let this delay obtaining a CT scan of the brain.
- **Check glucose:** Promptly treat hypoglycemia.
- **Perform neurologic screening:** NIH Stroke Scale or Canadian Neurological Scale.
- **Activate stroke team:** Activate the stroke team or arrange consultation with a stroke expert.
- **Order CT brain scan:** Order an emergent CT scan of the brain and have it read promptly by a radiologist.
- **Obtain 12-lead ECG:** Obtain a 12-lead ECG, which may identify a recent AMI or arrhythmias (eg, atrial fibrillation) as a cause of embolic stroke. Life-threatening arrhythmias can follow or accompany stroke, particularly intracerebral hemorrhage. If the patient is hemodynamically stable, treatment of non-life-threatening arrhythmias (bradycardia, VT, and atrioventricular conduction blocks) may not be necessary. This should not delay getting the CT scan of the brain.
- **Consider time goals:** Primary goal: Achieve door-to-needle times within 60 minutes in 75% or more of acute ischemic stroke patients treated with IV rtPA. Secondary goal: Achieve door-to-needle times within 45 minutes in 50% or more of acute ischemic stroke patients treated with IV rtPA.

#### 2. What are the possible outcomes of the CT scan?

Emergent CT or MRI scans of patients with suspected stroke should be promptly interpreted by an expert. The presence of hemorrhage versus no hemorrhage determines the next steps in treatment and whether the patient is a candidate for fibrinolytic therapy.

**Which test result makes the patient a candidate for fibrinolytic therapy?**

**No, hemorrhage is not present.**

If the CT scan shows no evidence of hemorrhage, the patient may be a candidate for fibrinolytic therapy.

**Yes, hemorrhage is present.**

If hemorrhage is noted on the CT scan, the patient is NOT a candidate for fibrinolytics. Consult a neurologist or neurosurgeon and consider transfer for appropriate care.

**3. What does fibrinolytic therapy do for patients with ischemic stroke?**

Several studies have demonstrated a higher likelihood of good-to-excellent functional outcome when rtPA was given to adults with acute ischemic stroke within 3 hours of symptom onset. These results occurred only when rtPA was given by physicians in hospitals with a stroke protocol that rigorously adhered to the eligibility criteria and therapeutic regimen of the NINDS protocol. Evidence from prospective randomized studies in adults also documents a greater likelihood of benefit when treatment begins earlier.

Studies have also shown improved clinical outcome in carefully selected patients when fibrinolytic administration occurred between 3 and 4.5 hours after symptom onset, although the degree of benefit was smaller than seen in the group receiving treatment at 3 hours or more.

- What are some of the considerations when administering IV rtPA for acute ischemic stroke?
  - rtPA is not appropriate under the following circumstances:
    - Head trauma or prior stroke in previous 3 months
    - Symptoms suggest subarachnoid hemorrhage
    - Arterial puncture at noncompressible site in previous 7 days
    - History of previous intracranial hemorrhage
    - Elevated blood pressure (systolic greater than 185 mm Hg or diastolic greater than 110 mm Hg)

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**Instructor Notes**

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**Next**

Acute Stroke—  
Review of 8 D's

# Lesson 8D

## Learning Station: Acute Stroke—Review of 8 D's

### Instructor Tip

- Advise students to refer to Part 5, Stroke case in the ACLS Provider Manual. Capture key concepts from the discussion



### Discussion

In a large group, with all students, discuss the following:

- Patients with acute ischemic stroke have a time-dependent benefit for fibrinolytic therapy similar to that of patients with ST-segment elevation MI, but this time-dependent benefit is much shorter
- The critical time period for administration of IV fibrinolytic therapy begins with the onset of symptoms
  - Detection: Rapid recognition of stroke symptoms
  - Dispatch: Early activation and dispatch of EMS by calling 9-1-1
  - Delivery: Rapid EMS identification, management, and transport
  - Door: Appropriate triage to stroke center
  - Data: Rapid triage, evaluation, and management within the emergency department
  - Decision: Stroke expertise and therapy selection
  - Drug/Device: Fibrinolytic therapy, intra-arterial strategies
  - Disposition: Rapid admission to stroke unit, critical care unit

### Instructor Notes

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**Next**

Team Dynamics and  
Megacode



# Lesson 9

## Team Dynamics and Megacode

30 minutes

### Lesson Objectives

- Model effective communication as a member or leader of a high-performance team
- Recognize the impact of team dynamics on overall team performance

### Instructor Tips

- Clearly communicate the objectives of this lesson to help the students gain a better understanding of the lesson
- This Team Dynamics section is a great way to further engage the students
- Change the inflection in your voice and also change your pace to help change the energy level in the room



### Show Team Dynamics Video

- Ask students to open the ACLS Provider Manual to Part 3
- Address what students will learn from the video
- Play the video (automatically pauses)



### Discussion

- Ask students what bad behaviors they observed
- Correct responses include but are not limited to poor communication, roles not assigned, and lack of mutual respect



### Show Rest of Team Dynamics Video

- Play the video



### Discussion

- Ask students what good team dynamics they observed
  - What behaviors were observed?
- Correct responses include but are not limited to clear roles and responsibilities
- Answer questions (use points below to guide your answers)
  - Elements of effective team dynamics
    - Roles
      - Clear roles and responsibilities
      - Knowing your limitations
      - Constructive intervention

- What to communicate
    - Knowledge sharing
    - Summarizing and reevaluation
  - How to communicate
    - Closed-loop communication
    - Clear messages
    - Mutual respect
  - Remind students that they will be functioning as Team Leaders and different members in the learning and testing stations and they will need to apply these concepts
- 



## Show Megacode Video

- Play the video
    - Choose out-of-hospital version and/or in-hospital version depending on the composition of your audience (may use both for a mixed audience)
    - Play the video
- 



## Discussion

- Ask students what questions they have about Megacode
    - What behaviors were observed?
    - Discuss the H's and T's that can help you to arrive at a diagnosis in this case
    - Experienced providers may consider conducting an ultrasound analysis, although its usefulness has not been well established
- 



## Review/Summarize Key Points

- Team dynamics are critical during a code or resuscitation attempt
- The interaction among team members has a profound impact on the effectiveness of each individual as well as the patient's overall survival
- The better you work as a team, the better the potential outcome for your patient
- That's why it's so important that you understand not just *what* to do in a resuscitation attempt but how to communicate and perform as an effective team, regardless of your role as team member or Team Leader
- The ability to follow and move through multiple algorithms is important
- Emphasize the importance of understanding the choreography of a resuscitation as a team
- Discuss the integration of high-quality BLS and ACLS care

### Next

Cardiac Arrest  
(VF/Pulseless  
VT/Asystole/PEA)

# Lesson 10A

## Learning Station: Cardiac Arrest (VF/Pulseless VT/Asystole/PEA)

110 minutes

### Lesson Objectives

- Recognize cardiac arrest
- Perform early management of cardiac arrest until termination of resuscitation or transfer of care
- Evaluate resuscitative efforts during a cardiac arrest through continuous assessment of CPR quality, monitoring the patient's physiologic response, and delivering real-time feedback to the team

### Instructor Tips

- This activity can be performed with 6 students and 1 instructor
  - If you have fewer than 6 students, you can assign multiple roles to individual students or substitute other instructors for those roles
- Transitional language: After showing the video, be sure to provide a recap of what the video covered and what is next
- Encourage students to use their Provider Manual, pocket reference cards, or ECC Handbook early on during the cases but to become less reliant on those resources as the cases progress
- **Conduct learning station cases in real time**
- When debriefing students:
  - Ask open-ended questions to engage group discussion and allow for greater details
  - When answering a question, acknowledge the individual with eye contact, and then answer to the entire room, coming back to the questioner periodically



### Show Cardiac Arrest Algorithm Video

- Address what students will learn from the video
- Play the video



### Discussion

- Monitor/defibrillator technology review if needed
- Review team roles, responsibilities, and assignments for each case (see Lesson Plans 10B and 10C)
  - Case scenarios can be found in the Appendix of the Instructor Manual or on the Instructor CD
- Students may use the ECC Handbook, pocket reference cards, posters, or crash cart cards
- To show the continuum of care, all VF case scenarios must achieve ROSC
- Ask students to recall the post-cardiac arrest care priorities
  - Maximize oxygenation and ventilation
  - Maximize hemodynamics
  - Implement targeted temperature management

- Post–cardiac arrest care priorities will be covered in detail on Day 2
- Advise that students will perform debriefing
  - See Debriefing Tool in the Instructor Manual
- Select cases for each student to demonstrate appropriate management
- Discuss local protocol



## Students Practice

### Student Rotations in Learning Station Cases According to Resuscitation Team Roles



The **Team Leader** will direct the actions of the other team members. For example, the Team Leader will coach the airway management team member if performance of bag-mask ventilation is not making the chest rise.

**Team members** will perform interventions as directed by the Team Leader. This is an opportunity for students to practice skills and receive feedback from the Team Leader. Students will demonstrate effective team behaviors (eg, closed-loop communication, clear messages).

The **Timer/Recorder** will use a stopwatch to time 2-minute intervals for case management, announce each 2-minute interval for CPR switching, and record critical action times on the ACLS Code Timer/Recorder Sheet (in the Appendix of the Instructor Manual or on the Instructor CD) or a whiteboard.

## Instructor Notes

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### Next

Cardiac Arrest (VF/Pulseless VT/Asystole/PEA)—Rotations

# Lesson 10B

## Learning Station: Cardiac Arrest (VF/Pulseless VT/Asystole/PEA)–Rotations

### Instructor Tips

- It is important that every student have a role in each case
- Student role assignments may vary depending on the number of students at the station. However, every student must function as the Team Leader for 1 case
- Cases may be run in a different order, but ensure that no single student always goes first in subsequent learning stations
- Any additional students may be given roles as additional recorders

### Students Practice

<i>16 minutes per case</i>	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Team Role						
Team Leader	Student 1	Student 2	Student 3	Student 4	Student 5	Student 6
Airway	Student 2	Student 3	Student 4	Student 5	Student 6	Student 1
IV/IO/Medications	Student 3	Student 4	Student 5	Student 6	Student 1	Student 2
Monitor/Defibrillator, Airway 2	Student 4	Student 5	Student 6	Student 1	Student 2	Student 3
Compressor	Student 5	Student 6	Student 1	Student 2	Student 3	Student 4
Timer/Recorder	Student 6	Student 1	Student 2	Student 3	Student 4	Student 5

### Instructor Notes

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#### Next

Cardiac Arrest (VF/Pulseless VT/Asystole/PEA)–  
Details for Case Rotations

# Lesson 10C

## Learning Station: Cardiac Arrest (VF/Pulseless VT/Asystole/PEA) – Details for Case Rotations



### Students Practice

<b>Directions for Case Rotations (6 rotations, 16 minutes each)</b> (Instructors must conduct the scenario in real time)	
<b>Start case scenario (10 minutes)</b>	<ul style="list-style-type: none"><li>• Review assigned team roles from the rotation chart for this case<ul style="list-style-type: none"><li>– Ensure that students understand expectations of assigned roles (eg, “Your role is to use the bag-mask device to give ventilations that cause the chest to rise”)</li></ul></li><li>• Introduce the case by reading the case scenario</li><li>• Set the timer to 10 minutes</li><li>• Ask the Team Leader to begin managing the case</li><li>• Observe and coach<ul style="list-style-type: none"><li>– Effective team performance</li><li>– Appropriate case management</li><li>– High-quality skills performance, including high-quality CPR in real time throughout the scenario</li></ul></li><li>• Guide the Team Leader through management of the case</li><li>• Stop the case after 10 minutes</li></ul>
<b>Case debriefing (6 minutes)</b>	<ul style="list-style-type: none"><li>• Set the timer to 6 minutes</li><li>• Conduct a team debriefing at the end of the case<ul style="list-style-type: none"><li>– See Debriefing Tool in the Instructor Manual</li></ul></li></ul>
<b>Total time for case: 16 minutes</b>	
<b>Repeat for each of the remaining 5 cases</b>	

### Instructor Notes

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**Next**

Vascular Access (Optional)

# Lesson 11

## Learning Station: Vascular Access (Optional)

### Instructor Tip

- Participation in this lesson is not required to complete the ACLS Course



### Show IO Access Video

- Address what students will learn from the video
- Play the video
- Answer students' questions



### Students Practice

- Have students practice IO insertion skills on appropriate manikins
- Ensure that each student can prepare equipment to administer an IO bolus rapidly
- Have students verbalize the correct adult drug dose
- Ensure that each student can perform IO access correctly and confirm when the needle has reached the marrow cavity
- Ensure that each student can prepare equipment to administer an IO bolus, including 3-way stopcock and syringes
- Observe each student; provide corrective feedback

### Instructor Notes

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#### Next

Coping With Death  
(Optional)

# Lesson 12

## Learning Station: Coping With Death (Optional)

### Instructor Tips

- Remind students that if they have recently experienced the loss of a loved one, this video might be difficult to view
- **Participation in this lesson is not required to complete the ACLS Course**
- Students may choose not to view this video at their discretion



### Show Coping With Death Video

- Address what students will learn from the video
- Play the video (video will automatically pause)
- Answer students' questions



### Discussion

- Discuss how the news of the death of the patient could be delivered more effectively
  - Family was not allowed in the room during the resuscitation attempt
  - Family was not informed they had a choice about whether to stay in the room
  - News was delivered in the hallway, with no privacy
  - Vague terms were used to describe the death
  - The words *dead* or *died* were never used
  - Physician left family for “another emergency”
  - Physician left family with no support and no one to answer their questions
- Ask if there are any questions



### Play Rest of Coping With Death Video

- Play the video
- Answer students' questions

### Instructor Notes

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**Next**

Bradycardia



# Lesson 13A

## Learning Station: Bradycardia

60 minutes

### Lesson Objectives

- Recognize bradyarrhythmias that may result in cardiac arrest or complicate resuscitation outcome
- Perform early management of bradyarrhythmias that may result in cardiac arrest or complicate resuscitation outcome

### Instructor Tips

- Students often have difficulty differentiating between the heart block rhythms. Focus more on the treatments for stable versus unstable bradycardia than on detailed analysis of specific rhythms
- For in-hospital case scenarios only, students should request RRT/MET response
- When debriefing students:
  - Ask open-ended questions to engage group discussion and allow for greater details
  - When answering a question, acknowledge the individual with eye contact, and then answer to the entire room, coming back to the questioner periodically



### Show Bradycardia Algorithm Video

- Address what students will learn from the video
- Play the video
- Answer students' questions



### Discussion

- Monitor/defibrillator technology review, if needed
  - Apply limb leads to patient so that pacing can be achieved through pacer pads
- Stable vs unstable patients
- Definition of unstable signs and symptoms
- First degree AV block
- Second degree type 1 AV block
- Second degree type 2 AV block
- Third degree (complete block)
- Junctional rhythms (slow)
- Idioventricular rhythm
- H's and T's
- Local protocol

**Next**

Bradycardia—Rotations

# Lesson 13B

## Learning Station: Bradycardia – Rotations

### Instructor Tips

- This learning station is designed to allow 3 of the 6 students to be a Team Leader and the other 3 to be a Team Leader in Lesson 14: Tachycardia
- When students have to rotate roles during practice, provide enough space for rotation to allow for effective observation and monitoring of student performance
- To ensure incorporation of knowledge into practice, make sure the students actually perform the skills of defibrillation, synchronized cardioversion, and transcutaneous pacing



### Students Practice

#### Student Rotations in Learning Station Cases According to Resuscitation Team Roles

The **Team Leader** will direct the actions of the other team members. For example, the Team Leader will coach the airway management team member if performance of bag-mask ventilation is not making the chest rise.

**Team members** will perform interventions as directed by the Team Leader. This is an opportunity for students to practice skills and receive feedback from the Team Leader. Students will demonstrate effective team behaviors (eg, closed-loop communication, clear messages).

**For bradycardia:** The **Timer/Recorder** will check off critical action boxes on the Bradycardia Learning Station Checklist.



### Students Practice

- Select 3 cases for 3 students' to manage individually in this station
- Student will run scenarios (individually) and perform debriefing for all 3 cases (case scenarios can be found in the Appendix of the Instructor Manual or on the Instructor CD)



### Discussion

- Provide feedback on students' debriefing
  - Use Gather, Analyze, and Summarize debriefing process (below)
- What was challenging?
- What worked well in this case?

## Structured and Supported Debriefing Process

Phase	Goal	Actions
<b>Gather</b>	Listen to students to understand what they think and how they feel about the simulation	<ul style="list-style-type: none"> <li>Request narrative from Team Leader</li> <li>Request clarifying or supplementary information from high-performance team</li> </ul>
<b>Analyze</b>	Facilitate students' reflection on and analysis of their actions	<ul style="list-style-type: none"> <li>Review an accurate record of events</li> <li>Report observations (both correct and incorrect steps)</li> <li>Assist students in thoroughly reflecting on/examining performance during the simulation, as well as on their perceptions during the debriefing</li> <li>Direct and/or redirect students during the debriefing to ensure continuous focus on session objectives</li> </ul>
<b>Summarize</b>	Facilitate identification and review of lesson learned	<ul style="list-style-type: none"> <li>Summarize comments or statements from students</li> <li>Have students identify positive aspects of high-performance team or individual behaviors</li> <li>Have students identify areas of high-performance team or individual behaviors that require change or correction</li> </ul>

<i>10 minutes per case</i>	Case 1	Case 2	Case 3
<b>Team Role</b>			
Team Leader	Student 6	Student 1	Student 2
Airway	Student 1	Student 2	Student 3
IV/IO/Medications	Student 2	Student 3	Student 4
Monitor/Defibrillator	Student 3	Student 4	Student 5
Compressor (if needed)	Student 4	Student 5	Student 6
Timer/Recorder	Student 5	Student 6	Student 1

### Instructor Notes

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**Next**

Bradycardia—Details for Case Rotations

# Lesson 13C

## Learning Station: Bradycardia – Details for Case Rotations

### Students Practice

#### Directions for Case Rotations (3 rotations, 10 minutes each)

(Instructors must conduct the scenario in real time)

#### Start case scenario(s) (6 minutes)

- Review assigned team roles from the rotation chart for this case
  - Ensure that students understand expectations of assigned roles (eg, “Your role is to use the bag-mask device to give ventilations that cause the chest to rise”)
- Introduce the case by reading the case scenario
- Set the timer to 6 minutes
- Ask the Team Leader to begin managing the case
  - Advise Team Leader to observe and coach while being mindful of the case timing
- Students may use the ECC Handbook, pocket cards, or crash cart cards
- Observe and coach
  - Effective team performance
  - Appropriate case management
  - High-quality skills performance, including high-quality CPR, when needed, throughout the scenario
- Guide the Team Leader through management of the case
- Stop the case after 6 minutes

#### Case debriefing (4 minutes)

#### Total time for case: 10 minutes

- Set the timer to 4 minutes
- Conduct a debriefing at the end of the case (see Debriefing Tools in the Instructor Manual)
- Ask the Team Leader to gather, analyze, and summarize the case, roles of team members, and areas for improvement
- Ask the Timer/Recorder to critique the case
- Give a summary of key concepts of the case
  - Differentiating between signs and symptoms that are caused by the slow rate versus those that are unrelated
  - Correctly recognizing the presence and type of AV block
  - Using atropine as the drug intervention of first choice
  - Deciding when to start transcutaneous pacing
  - Deciding when to start epinephrine or dopamine to maintain heart rate and blood pressure
  - Knowing when to call for expert consultation about complicated rhythm interpretation, drugs, or management decisions

Repeat for each of the remaining cases

### Instructor Notes

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#### Next

Tachycardia, Stable  
and Unstable

# Lesson 14A

## Learning Station: Tachycardia, Stable and Unstable

60 minutes

### Lesson Objectives

- Recognize tachyarrhythmias that may result in cardiac arrest or complicate resuscitation outcome
- Perform early management of tachyarrhythmias that may result in cardiac arrest or complicate resuscitation outcome

### Instructor Tips

- Begin with the end in mind: knowing what you want to communicate, why it's important, and what you want to have happen as a result is critical to the success of your lesson
- Emphasize the need for rapid treatment (ie, electrical therapy) in patients with unstable tachycardia
- For in-hospital case scenarios only, students should request RRT/MET response
- To ensure incorporation of knowledge into practice, make sure the students actually perform the skills for defibrillation, synchronized cardioversion, and transcutaneous pacing



### Show Tachycardia Algorithm Video

- Address what students will learn from the video
- Play the video
- Answer students' questions



### Discussion

- Monitor/defibrillator technology review if needed
- Review tachycardias
  - Stable vs unstable patient
  - Sinus tachycardia
  - Reentry supraventricular tachycardia
  - Atrial fibrillation
  - Atrial flutter
  - Junctional rhythms (fast)
  - Monomorphic ventricular tachycardia (with pulse)
  - Polymorphic ventricular tachycardia (with pulse)
    - Torsades de pointes
  - Wide-complex tachycardia of uncertain type
  - Discuss local protocol

### Next

Tachycardia, Stable and  
Unstable—Rotations

# Lesson 14B

## Learning Station: Tachycardia, Stable and Unstable – Rotations

### Instructor Tips

- This station is designed to allow 3 of the 6 students to be a Team Leader in this station and the other 3 to be a Team Leader in Lesson 13: Bradycardia
- Other assigned student roles may vary depending on the number of students at the station
- Cases may be run in a different order, but assigned student roles should not be changed
- If students rotate roles during practice, provide enough space for rotation to allow for effective observation and monitoring of student performance



### Students Practice

#### Student Rotations in Learning Station Cases According to Resuscitation Team Roles

The **Team Leader** will direct the actions of the other team members. For example, the Team Leader will coach the airway management team member if performance of bag-mask ventilation is not making the chest rise.

**Team members** will perform interventions as directed by the Team Leader. This is an opportunity for students to practice skills and receive feedback from the Team Leader. Students will demonstrate effective team behaviors (eg, closed-loop communication, clear messages).

The **Timer/Recorder** will check off critical action boxes on the Tachycardia Learning Station Checklist.



### Students Practice

- Select 3 cases for 3 students to manage individually in this station
- Run scenario and perform debriefing for all 3 cases (case scenarios can be found in the Appendix of the Instructor Manual or on the Instructor CD)

### Instructor Notes

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## Discussion

- Provide feedback on students' debriefing
  - What was challenging?
  - What worked well in this case?

<i>10 minutes per case</i>			
<b>Team Role</b>	<b>Case 1</b>	<b>Case 2</b>	<b>Case 3</b>
Team Leader	Student 3	Student 4	Student 5
Airway	Student 4	Student 5	Student 6
IV/IO/Medications	Student 5	Student 6	Student 1
Monitor/Defibrillator	Student 6	Student 1	Student 2
Compressor (if needed)	Student 1	Student 2	Student 3
Timer/Recorder	Student 2	Student 3	Student 4

## Instructor Notes

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### Next

Tachycardia, Stable and Unstable—Details for Case Rotations

# Lesson 14C

## Learning Station: Tachycardia, Stable and Unstable – Details for Case Rotations

### Students Practice

#### Directions for Case Rotations (3 rotations, 10 minutes each)

(Instructors must conduct the scenario in real time)

#### Start case scenario (6 minutes)

- Review assigned team roles from the rotation chart for this case
  - Ensure that students understand expectations of assigned roles (eg, “Your role is to use the bag-mask device to give ventilations that cause the chest to rise”)
- Introduce the case by reading the case scenario
- Set the timer to 6 minutes
- Ask the Team Leader to begin managing the case
- Students may use the ECC Handbook, pocket cards, or crash cart cards
- Observe and coach
  - Effective team performance
  - Appropriate case management
  - High-quality skills performance
- Guide the Team Leader through management of the case
- Stop the case after 6 minutes

#### Case debriefing (4 minutes)

Total time for case: 10 minutes

- Set the timer to 4 minutes
- Conduct a debriefing at the end of the case
  - See Debriefing Tool in the Instructor Manual
- Ask the Team Leader to summarize the case, roles of team members, and areas for improvement
- Ask the Timer/Recorder to critique the case
- Give a summary of key concepts of the case

Repeat for each of the remaining cases (Stable and Unstable Tachycardia)

### Instructor Notes

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#### Next

Immediate Post–Cardiac Arrest Care



# Lesson 15A

## Learning Station: Immediate Post-Cardiac Arrest Care

40 minutes

### Lesson Objective

- Perform early management of cardiac arrest until termination of resuscitation or transfer of care, including immediate post-cardiac arrest care

### Instructor Tips

- Transitional language: After showing the video, be sure to provide a recap of what the video covered and what is next
- When debriefing students:
  - Ask open-ended questions to engage group discussion and allow for greater details
- Instructor should have working knowledge of all vasopressors associated with the students' workplace



### Show Immediate Post-Cardiac Arrest Care Algorithm Video

- Address what students will learn from the video
- Play the video
- Answer students' questions



### Discussion

- Highlight effective patient management through the Immediate Post-Cardiac Arrest Care Algorithm
- Discuss targeted temperature management

### Instructor Notes

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**Next**

Immediate Post-Cardiac  
Arrest Care—Rotations

# Lesson 15B

## Learning Station: Immediate Post-Cardiac Arrest Care—Rotations

### Instructor Tips

- This station is designed to allow 3 of the 6 students to be a Team Leader in this station
- Other assigned student roles may vary depending on the number of students at the station
- Cases may be run in a different order, but assigned student roles should not be changed
- If students rotate roles during practice, provide enough space for rotation to allow for effective observation and monitoring of student performance



### Students Practice

#### Student Rotations in Learning Station Cases According to Resuscitation Team Roles

The **Team Leader** will direct the actions of the other team members. For example, the Team Leader will coach the airway management team member if performance of bag-mask ventilation is not making the chest rise.

**Team members** will perform interventions as directed by the Team Leader. This is an opportunity for students to practice skills and receive feedback from the Team Leader. Students will demonstrate effective team behaviors (eg, closed-loop communication, clear messages).

The **Timer/Recorder** will check off critical action boxes on the Immediate Post-Cardiac Arrest Care Learning Station Checklist.



### Students Practice

- Number of students per station will depend on class size
- Select 3 cases for 3 students to manage individually in this station
  - Ensure that students address
    - Oxygenation and ventilation
    - Hemodynamic optimization (blood pressure, 12-lead, glycemic control)
    - Targeted temperature management
    - Criteria for PCI
- Run scenario and perform debriefing for all 3 cases (case scenarios can be found in the Appendix of the Instructor Manual or on the Instructor CD)

### Instructor Notes

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## Discussion

- Provide feedback on students' debriefing
  - What was challenging?
  - What worked well in this case?

<b>6 minutes per case</b>	<b>Case 1</b>	<b>Case 2</b>	<b>Case 3</b>
<b>Team Role</b>			
Team Leader	Student 1	Student 2	Student 3
Airway	Student 2	Student 3	Student 4
IV/IO/Medications	Student 3	Student 4	Student 5
Monitor/Defibrillator, Airway 2	Student 4	Student 5	Student 6
Compressor	Student 5	Student 6	Student 1
Timer/Recorder	Student 6	Student 1	Student 2

## Instructor Notes

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### Next

Immediate Post-Cardiac Arrest Care—Details for Case Rotations

# Lesson 15C

## Learning Station: Immediate Post-Cardiac Arrest Care – Details for Case Rotations

### Students Practice

#### Directions for Case Rotations (3 rotations, 10 minutes each)

(Instructors must conduct the scenario in real time)

**Start demonstration of a case scenario (6 minutes)**

- Introduce the case
- Assign Team Leader (3 of 6 students)
- Assign team member roles to students
- Set the timer to 6 minutes
- Begin the case
- Students should demonstrate case management, showing
  - Effective team performance
  - Appropriate application of algorithm
- Stop the case after 6 minutes

**Case debriefing (4 minutes)**

- Set the timer to 4 minutes
- Summarize the case, emphasizing proper roles of Team Leader and team members

**Total time for case demonstration: 10 minutes**

### Instructor Notes

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**Next**

Megacode Practice

# Lesson 16A

## Learning Station: Megacode Practice

100 minutes

### Instructor Tips

- Organize into stations of 6 students each, with 1 instructor per station
- **Conduct learning station cases in real time (do not fast forward)**
- Each scenario should last 10 minutes, and debriefing should take place for 6 minutes
- Learning can be achieved just as effectively during debriefing as during the scenario



### Discussion

- Highlight effective patient management through several algorithms
- **Demonstrate a Megacode case as Team Leader**
- Review team roles, responsibilities, and assignments for each case (see Lesson Plans 16C and 16D)
  - Case scenarios can be found in Appendix A of the Instructor Manual or on the Instructor CD
- Present a Megacode practice case for each student to manage (see Lesson Plan 16C)
- Students may use the ECC Handbook, pocket reference cards, or crash cart cards
- Advise students that they will perform structured debriefing

### Instructor Notes

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#### Next

Megacode Practice—  
Instructor Demo

# Lesson 16B

## Learning/Testing Station: Megacode Practice—Instructor Demo

### Instructor Tips

When debriefing students:

- Ask your audience open-ended questions that focus on their perspective to engage their minds and increase energy focus
- When answering a question, acknowledge the individual with eye contact, and then answer to the entire room, coming back to the questioner periodically

### Students Practice

#### Demonstrate a Case Scenario With You as Team Leader and Students Playing Team Roles

**Start demonstration of a case scenario (10 minutes)**

- Introduce the case
- Assign Team Leader
- Assign team member roles to students
- Set the timer to 10 minutes
- Begin the case
- Students should demonstrate case management, showing
  - Effective team performance
  - Appropriate application of algorithm
  - High-quality skills performance, including high-quality CPR in real time throughout the scenario
- Stop the case after 10 minutes

**Case debriefing (6 minutes)**

- Set the timer to 6 minutes
- Go over Megacode Practice Learning Station Checklist
- Summarize the case, emphasizing proper roles of Team Leader and team members

**Total time for case demonstration: 16 minutes**

### Instructor Notes

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**Next**

Megacode Practice—  
Practice Cases

# Lesson 16C

## Learning Station: Megacode Practice—Practice Cases

### Instructor Tips

- Make sure students understand their roles and responsibilities in managing a Megacode case
- This is the last opportunity to facilitate learning before the Megacode testing. Use this time to address critical areas where students may still be weak



### Students Practice

Present Megacode practice cases for each student, one at a time, 16 minutes each (10-minute case, 6-minute debriefing)

- Determine Team Leader for first case (see rotations on next Lesson Plan)
- Team Leader organizes other students into team roles
- Provide team with an individual case
- Students may use the ECC Handbook, pocket reference cards, or emergency crash cart cards
- Team Leader assigns and directs team through entire Megacode case
- Give feedback and answer questions
- Rotate through all students practicing as Team Leader for remaining 5 cases, depending on the number of students
- Timer/Recorder announces 2-minute intervals and checks off critical actions on Megacode Testing Checklist

### Instructor Notes

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**Next**

Megacode Practice—  
Rotations

# Lesson 16D

## Learning Station: Megacode Practice—Rotations

### Instructor Tips

- Cases may be run in a different order, but assigned Team Leader roles should not be changed
- Each student must have the opportunity to run a complete Megacode case as a Team Leader
- When students have to rotate roles during practice, be sure to designate areas of the room to which students can move to have more space during practice and that allow the instructor to clearly observe and monitor student performance

### Students Practice

Team Role	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Team Leader	Student 2	Student 3	Student 4	Student 5	Student 6	Student 1
Airway	Team Leader assigns other students to each team role					
IV/IO/Medications						
Monitor/Defibrillator						
Compressor						
Timer/Recorder						

### Instructor Notes

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**Next**

Testing Details and Testing Station Setups



# Lesson T1

## Testing Details and Testing Station Setups

### Instructor Tips

- Organize students into 2 groups of 6 for the Megacode testing stations, depending on the number of students and instructors in the course
- In this station, the focus changes to evaluation instead of facilitating learning. Students must perform the test from beginning to end. Do not interrupt students while they are completing the test. Address any deficiencies during remediation
- **Conduct testing station cases in real time**

### Megacode Testing Stations and Exam (Open-Resource Exam)

- Explain the testing rotation for the Megacode test and exam
- Remind students that the passing grade for the open-resource exam is 84%

### Recommended Testing Station Setup

- 2 Megacode stations, 2 instructors, 6 students each (consider 2 instructors per station to optimize student assessment)
- Other testing setups are permissible as long as
  - All students are given the opportunity to be tested as a Team Leader 1 time in Megacode
  - The open-resource exam is proctored and secure
  - The open-resource exam is not interrupted to move a student to the Megacode test

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### Instructor Notes

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#### Next

Megacode Testing and  
Megacode Testing  
Details

# Lessons T2, T3, T4

## Megacode Testing and Megacode Testing Details

75 minutes



### Megacode Testing Stations

Provide Megacode case scenario:

- Using the Megacode Testing Checklist, test each student one at a time as he or she functions as Team Leader
- **You must conduct the scenario in real time**
- Students not being evaluated function as team members
- Students may use the ECC Handbook, pocket reference cards, or emergency crash carts with restrictions (see the Instructor Manual)
- Timer/Recorder announces 2-minute intervals
- Take no longer than 10 minutes to test and give students feedback on their performance (pass/fail)
- Do not give hints or coaching during the test
- Deliver test results in a reasonably private environment for each student after completion of the Megacode test
- Rotate among all students
- Refer students for remediation as needed

### Megacode Test Rotations

- Students may be tested in any order, but each student should have the opportunity to run a complete case as a Team Leader

Team Role	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Team Leader	Student 5	Student 6	Student 1	Student 2	Student 3	Student 4
Airway	Team Leader assigns other students to each team role					
IV/IO/Medications						
Monitor/Defibrillator						
Compressor						
Timer/Recorder						

**Next**

Exam and Exam Details

# Lessons T5, T6

## Exam and Exam Details

~45 minutes



### Exam

- Distribute the open-resource exam
- Proctor the exam
- Collect and score each exam
- Review the answers with the students



### Exam Details

- The exam is an open-resource exam
  - Resources could include the Provider Manual, either in printed form or as an eBook on a personal device, any notes the student took during the course, the ECC Handbook, the 2015 AHA Guidelines Update for CPR and ECC, posters, etc. Open resource does not mean open discussion with other students or the instructor
- Students may not cooperate or talk to each other during the exam
- When a student completes the exam, grade the exam
- Refer to the annotated answer key to discuss questions answered incorrectly
- Answer any questions
- Students who scored less than 84% need immediate remediation
  - Make sure the student understands the errors and corrects the answers
  - Give a second test or have the student orally go over each item that he or she got incorrect, showing understanding of incorrect items

**Do not interrupt the exam to have a student go to the Megacode testing station**

### Instructor Notes

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**Next**

Remediation

# Lesson REM

## Remediation

For Megacode retesting, the instructor may play multiple team member roles, or other available students may be team members.

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### Exam

- Review course material for each student who needs remediation
  - Retest students as necessary
  - Give feedback
  - Evaluate competency
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### Instructor Notes

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