Lesson 1
Course Introduction

5 minutes

Instructor Tips

- Be familiar with the learning objectives and BLS Course content. It's critical that you know what you want to communicate, why it's important, and what you want to happen as a result.
- Prebrief the students. Explain that this is a safe space for learning and that mistakes are expected as part of the learning process. Students can practice skill repetition with your feedback to improve their performance. Remind students that they must demonstrate mastery of key resuscitation skills to successfully complete the course.
- Tailor the learning experience to students' real-world scope of practice, if possible. Consider the types of students, their settings, and the resources that are available to them. Structure team training so that scenarios, team composition, and roles are relevant.
- Think about how you'll manage breaks during the course. Consider using the time to establish rapport, get feedback, and answer questions students might feel too embarrassed to ask in front of everyone.

Discussion

- Introduce yourself and any additional instructors.
- Invite students to introduce themselves.
- Explain that the course is interactive. Discuss your role, video-based learning, the provider manual, the scenarios, practice while watching, and skills tests and the exam.
  - Refer to Part 3: Teaching the Course for detailed information about practice while watching.
- Ask students to speak to an instructor if they anticipate difficulties due to medical concerns, such as knee or back problems. Refer to Part 1: General Concepts for more about students with special needs.
- Explain the layout of the building, including bathrooms and emergency exits.
- Tell students the location of the nearest AED and the emergency response number.
- Describe the course agenda, including when you'll have breaks and when the class will end.
- Remind students that at the end of the BLS Course, they will be able to
  - Describe the importance of high-quality CPR and its impact on survival
  - Describe all of the steps of the Chain of Survival
  - Apply the BLS concepts of the Chain of Survival
  - Recognize the signs of someone needing CPR
  - Perform high-quality CPR for an adult, a child, and an infant
  - Describe the importance of using an AED as soon as possible
  - Demonstrate the appropriate use of an AED
  - Provide effective ventilation by using a barrier device

  - Describe the importance of teams in multirescuer resuscitation attempts
  - Perform as an effective team member during multirescuer CPR
  - Describe the techniques for relief of foreign-body airway obstruction for an adult, a child, and an infant
- For further detail on the video and scenarios to be shown during the course, refer to the BLS Course Outline in Part 3: Teaching the Course.
- Remind students that to complete the course, they must
  - Pass the Adult CPR and AED Skills Test
  - Pass the Infant CPR Skills Test
  - Score at least 84% on the exam

Lesson 2
1-Rescuer Adult BLS

30 minutes

Part 1: Adult Chains of Survival

Part 2: Scene Safety, Assessment, and Adult Compressions (Practice While Watching)

Part 3: Pocket Mask (Practice While Watching)

Part 4: 1-Rescuer Adult BLS (Practice While Watching)

Learning Objectives

Tell students that at the end of this lesson, they will be able to

- Describe the importance of high-quality CPR and its impact on survival
- Describe all of the steps of the Chain of Survival
- Apply the BLS concepts of the Chain of Survival
- Recognize the signs of someone needing CPR
- Perform high-quality CPR for an adult

Instructor Tips

- Remind students that they will be practicing while watching a video segment so that they are prepared to get into place quickly to practice.
- When students are practicing, focus your feedback on what you *do* want rather than what you *don't* want. Always state feedback in a positive tone.
- Tell students to have their provider manuals accessible during the course.
- When concluding a practice-while-watching session, ask students if they are ready to move to the next skill or if they would like to repeat practice while watching.
- Learn how to assemble and operate the equipment that students will use in class. Be prepared to help them with it as needed and troubleshoot any problems.
- Select a provider option to play for this lesson: in-facility or prehospital.
- To review this lesson, students can refer to Part 3: BLS for Adults in the provider manual.

Play Video

The video will show the scenario and discuss the adult Chains of Survival, scene safety, assessment, and adult compressions.

Video Pauses

- Ask students to position themselves at the side of their manikins.
- Tell them that they will practice being the first rescuer on the scene, checking for scene safety, and assessing the victim. In addition, they will practice adult compressions, completing 3 sets of 30 compressions.

Practice While Watching: Scene Safety, Assessment, and Adult Compressions

Scene Safety and Assessment

Before playing the video, tell students to follow along with the video and complete the actions for scene safety and assessment. Tell students the following:

- Verify that the scene is safe for you and the victim.
- Check for responsiveness. Tap the victim's shoulder and shout, "Are you OK?"
- If the victim is not responsive, shout for nearby help.
- Assess the victim for the presence of a pulse and normal breathing.
- Activate the emergency response system in your setting.
- Get the AED. If someone else is available, have that person get it.

You can also remind students that it's important to know where to find personal protective equipment in their work environment.

Adult Compressions

Before playing the video, tell students to follow along with the video and complete the steps for adult compressions. Tell students the following:

- Position yourself at the victim's side.
- Put the heel of one hand on the center of the victim's chest, on the lower half of the breastbone (sternum).
- Put the heel of your other hand on top of the first hand.
- Straighten your arms and position your shoulders directly over your hands.
- Give chest compressions:
  - Press down at least 2 inches (5 cm) with each compression. Make sure you push straight down on the victim's breastbone.
  - Deliver compressions at a rate of 100 to 120/min.
  - Allow complete chest recoil after each compression without leaning on the chest between compressions.
- Minimize interruptions in chest compressions (trying to limit any interruptions in chest compressions to less than 10 seconds).

Emphasize core concepts: Use correct hand placement, push hard and fast, allow complete chest recoil after each compression, and minimize pauses in compressions.

Play Video

The video will show and discuss pocket masks.

Video Pauses

- Ask students to position themselves at the side of their manikins.
- Tell them that they will practice using a pocket mask and complete 5 sets of 2 breaths.

Practice While Watching: Pocket Mask

Before playing the video, tell students to follow along with the video and complete the steps for using a pocket mask. Tell students the following:

- Position yourself at the victim's side.
- Place the pocket mask on the victim's face, using the bridge of the nose as a guide for correct position.
- Seal the pocket mask against the face:
  - Using your hand that is closer to the top of the victim's head, place the index finger and thumb along the edge of the mask that is on the nose.
  - Place the thumb of your other hand along the edge of the mask that is on the chin.
- Place the remaining fingers of your second hand along the bony margin of the jaw and lift the jaw. Perform a head tilt–chin lift to open the airway.
- While you lift the jaw, press firmly and completely around the outside edge of the mask to seal the pocket mask against the face.
- Deliver each breath over 1 second, enough to make the victim's chest rise.

Tell students to hold the mask firmly against the face. Emphasize visible chest rise.

Play Video

The video will show and discuss 1-rescuer adult BLS.

Video Pauses

- Ask students to position themselves at the side of their manikins.
- Tell them that they will practice the entire 1-rescuer adult BLS sequence and complete 3 sets of 30 compressions, with 2 breaths after each set of compressions.

Practice While Watching: 1-Rescuer Adult BLS

Before playing the video, tell students to follow along with the video. They will complete the steps for scene safety and assessment, adult compressions, and pocket mask. Refer to each skill in this lesson plan for detailed steps. Coach students to perform high-quality CPR and minimize pauses in compressions. The interval of time between breaths and compressions should be as short as possible.

Lesson 3
AED and Bag-Mask Device

20 minutes

Part 1: AED (Students Practice)

Part 2: Bag-Mask Device (Practice While Watching)

Learning Objectives

Tell students that at the end of this lesson, they will be able to

- Describe the importance of early use of an AED
- Demonstrate the appropriate use of an AED
- Provide effective ventilation by using a barrier device

Instructor Tips

- Select a provider option to play for this lesson: in-facility or prehospital.
- To review this lesson, students can refer to Part 4: Automated External Defibrillator for Adults and Children 8 Years of Age and Older and Part 3: BLS for Adults in the provider manual.

Play Video

The video will show and discuss the use of an AED and a bag-mask device, including AED special considerations, such as if the person

- Has a hairy chest
- Is immersed in water or has water covering the chest
- Has an implanted defibrillator or pacemaker
- Has a transdermal medication patch or other object on the surface of the skin where the AED pads need to be placed
- Is an infant or child less than 8 years of age
- Is a pregnant woman

Video Pauses: AED Review

During the pause, show students the AED trainer and

- Explain how to use the AED trainer; remind students that it will not deliver a real shock
- Emphasize following the AED prompts
- Direct students to have their AED trainers out and ready to use
- Tell students that they are now going to practice using the AED

Students Practice: AED

Provide the following instructions on how to use an AED. First show the steps while using your AED trainer, and then ask students to practice.

Instructions for Students

1. Open the carrying case. Power on the AED if needed.
   - Some devices will power on automatically when you open the lid or case.
   - Follow the AED prompts for the next steps.
2. Attach AED pads to the victim's bare chest.
   - Choose adult pads (not child pads or a child system) for victims 8 years of age and older.
   - Peel the backing from the AED pads.
   - Attach the adhesive AED pads to the victim's bare chest. Place one pad on the manikin's upper-right chest (directly below the collarbone). Place the other pad to the side of the left nipple, with the top edge of the pad a few inches below the armpit.
   - Attach the AED connecting cables to the AED box (some are preconnected).
3. Clear the manikin and analyze the rhythm.
   - If the AED prompts you, clear the victim during analysis. Be sure no one is touching the victim, not even the rescuer in charge of giving breaths.
   - Some AEDs will tell you to push a button to allow the AED to begin analyzing the heart rhythm; others will do that automatically. The AED may take a few seconds to analyze.
   - The AED then tells you if a shock is needed.
4. If the AED advises a shock, it will tell you to clear the victim.
   - Clear the victim before delivering the shock; be sure no one is touching the victim.
   - Loudly state a "clear the victim" message, such as "Everybody clear" or simply "Clear."
   - Look to be sure no one is in contact with the victim.
   - Press the shock button.
5. The shock will produce a sudden contraction of the victim's muscles.
6. If the AED prompts that no shock is advised, or after any shock is delivered, immediately resume CPR, starting with chest compressions.

Play Video

The video will show and discuss bag-mask devices.

Video Pauses

- Ask students to position themselves at the side of their manikins.
- Tell them that they will practice using the bag-mask device and complete 5 sets of 2 breaths.

Practice While Watching: Bag-Mask Device

Before playing the video, tell students to follow along with the video and complete the steps for using a bag-mask device. Tell students the following:

- Position yourself directly above the victim's head.
- Place the mask on the victim's face, using the bridge of the nose as a guide for correct position.
- Use the E-C clamp technique to hold the mask in place while you lift the jaw to hold the airway open.
  - Perform a head tilt–chin lift.
  - Place the mask on the face, with the narrow portion at the bridge of the nose.
  - Use the thumb and index finger of one hand to form a C on the side of the mask, pressing the edges of the mask to the face.
  - Use the remaining fingers to lift the angles of the jaw (3 fingers form an E), open the airway, and press the face to the mask.
- Squeeze the bag to give breaths (1 second each) while watching for chest rise. Deliver each breath over 1 second, whether or not you use supplemental oxygen.
  - Instructors: Make sure students give 2 breaths and watch for chest rise.

Lesson 4
2-Rescuer Adult BLS

9 minutes

Learning Objective

Tell students that at the end of this lesson, they will be able to perform as an effective team member during multirescuer CPR.

Instructor Tips

- Select a provider option to play for this lesson: in-facility or prehospital.
- To review this lesson, students can refer to Part 3: BLS for Adults in the provider manual.

Play Video

The video will show and discuss the scenario and 2-rescuer adult BLS.

Video Pauses

- Ask students to position themselves at the side of their manikins.
- Tell them that they will practice each role of the 2-rescuer adult CPR sequence. Assign students to play Rescuer 1 and Rescuer 2.
- After the first practice-while-watching segment, the video will be repeated for students to switch and practice the duties of the other role. Each student will complete 3 sets of 30:2.

Practice While Watching: 2-Rescuer Adult BLS

Before playing the video, tell students to follow along with the video and complete the following steps:

Rescuer 1

Ask Rescuer 1 to get into position at the victim's side to practice chest compressions. The student should

- Compress the chest at least 2 inches (5 cm)
- Compress at a rate of 100 to 120/min
- Allow complete chest recoil after each compression without leaning on the chest between compressions
- Minimize interruptions in compressions (trying to limit any interruptions in chest compressions to less than 10 seconds)
- Use a compression-to-ventilation ratio of 30:2
- Count compressions out loud

Rescuer 2

Ask Rescuer 2 to get into position at the victim's head and maintain an open airway. The student should

- Perform a head tilt–chin lift or jaw thrust

- Give breaths with a bag-mask device, watching for chest rise and avoiding excessive ventilation

Tell Rescuer 2 to encourage Rescuer 1 to perform compressions that are deep enough and fast enough and to allow complete chest recoil after each compression.

Observe students and provide positive and corrective feedback on their performance.

Repeat Segment

Ask students to switch roles and repeat the practice-while-watching segment.

Students Practice (Optional): 2-Rescuer Adult BLS With AED

- After students complete the 2-rescuer CPR sequence in the practice-while-watching segment, tell them to incorporate the AED into their full adult CPR sequence.
  - Follow the steps on the Adult CPR and AED Skills Testing Checklist for how to use the AED in a 2-rescuer CPR sequence.
- Observe students and provide positive and corrective feedback, while emphasizing
  - Arrival and activation of the AED
  - Correct placement of the AED pads
  - Following the AED prompts
- Make sure all students complete the practice session.

Lesson 5
Special Considerations

10 minutes

Part 1: Mouth-to-Mouth Breaths

Part 2: Rescue Breathing (Practice While Watching)

Part 3: Breaths With an Advanced Airway

Part 4: Opioid-Associated Life-Threatening Emergency

Part 5: Maternal Cardiac Arrest

Instructor Tips

- Select a provider option to play for this lesson: in-facility or prehospital.
- To review this lesson, students can refer to Part 8: Alternate Ventilation Techniques and Part 9: Opioid-Associated Life-Threatening Emergencies in the provider manual.

Play Video

The video will show and discuss mouth-to-mouth breaths and rescue breathing.

Video Pauses

- Ask students to position themselves at the side of their manikins.
- Tell them that they will practice rescue breathing on the manikin.
- You may ask students to practice rescue breathing on infant manikins instead of adult manikins. If selecting this option, go to Students Practice: Rescue Breathing (Infants and Children) instead of Practice While Watching: Rescue Breathing (Adults).

Practice While Watching: Rescue Breathing (Adults)

Before playing the video, tell students to follow along with the video and complete the steps for adult rescue breathing. Tell students the following:

- Give 1 breath every 6 seconds.
- Give each breath over 1 second, ensuring that each breath results in visible chest rise.
- Check the pulse about every 2 minutes.

Students Practice: Rescue Breathing (Infants and Children)

Discuss and then ask students to practice the following steps for providing rescue breathing for infants and children:

- Give 1 breath every 2 to 3 seconds (about 20 to 30 breaths per minute).
- Give each breath over 1 second.
- Each breath should result in visible chest rise.
- Check the pulse about every 2 minutes

Play Video

The video will show and discuss breaths with an advanced airway, opioid-associated life-threatening emergencies, and maternal cardiac arrest.

- Advanced airway
  - No pauses in compressions
  - Adults: 1 breath every 6 seconds
  - Children and infants: 1 breath every 2 to 3 seconds
- Opioid-associated life-threatening emergencies
  - In all instances of opioid-associated life-threating emergencies, activate emergency medical services
  - If the victim is breathing and has a pulse, monitor breathing and consider naloxone
  - If the victim is not breathing and has a pulse, provide rescue breathing and give naloxone
  - If the victim is not breathing and has no pulse, start CPR
- Maternal cardiac arrest
  - Compressions, ventilation, and AED use remain unchanged for a pregnant woman
  - Manual displacement of the rounded abdomen to mother's left side (lateral uterine displacement) should be done if enough rescuers are present to continue with CPR

Lesson 6
High-Performance Teams

26 minutes

Part 1: Team Dynamics

Part 2: High-Performance Teams

Part 3: High-Performance Teams Activity (Optional)

Learning Objective

Tell students that at the end of this lesson, they will be able to describe the importance of teams in multirescuer resuscitation.

Instructor Tips

- To engage students during discussion, ask open-ended questions that elicit students' own unique perspectives. This will help increase participation.
- When answering a question, make eye contact to acknowledge the student. Then, address the entire room. From time to time, direct your attention back to the student who asked the question.
- The Team Dynamics portion of this lesson focuses on the elements of effective team dynamics, including the roles everyone must play. The High-Performance Teams portion of the lesson focuses on the skills needed to achieve specific performance metrics, including a high CCF.
- CCF is the proportion of time that rescuers perform chest compressions during CPR. Shorter duration of interruptions in chest compressions is associated with a better outcome. A CCF of at least 60% increases the likelihood of return of spontaneous circulation, shock success, and survival to hospital discharge. With good teamwork, rescuers can often achieve 80% CCF or more. In a 10-minute scenario, total chest compression time must be about 8 minutes to achieve an 80% CCF.
- Explain that BLS providers are responsible for performing only the roles on a resuscitation team that are within their training and scope of practice. It is important, however, to understand all team roles to be an effective team member.
- Select a provider option to play for this lesson: in-facility or prehospital.
- To review this lesson, students can refer to Part 5: Team Dynamics in the provider manual.

Play Video: Team Dynamics

The video will show and discuss good team dynamics; team roles, including Team Leader, Compressor, Airway, IV/IO/Medications, Monitor/Defibrillator/CPR Coach, and Timer/Recorder; and the following information about successful resuscitation teams:

- The roles of each member
  - Clear roles and responsibilities
  - Knowing your limitations
  - Constructive intervention (be tactful)

- What to communicate
  - Knowledge sharing and frequently asking for observations
  - Summarizing and reevaluating, which can help respond to the patient's changing condition
- How to communicate
  - Closed-loop communication
  - Confirm order
  - Call people by their names
  - Confirm intervention complete
  - Clear messages
  - Speak in a calm, confident manner
  - Mutual respect
  - Behave in a professional manner
  - Use a friendly, controlled voice
  - Avoid shouting or aggression
- Debriefing
  - Debrief together as a team
  - Debrief after a resuscitation attempt
  - Debriefing may improve team performance and patient outcomes after cardiac arrest
- CPR Coach
  - The CPR Coach supports performance of high-quality BLS skills, allowing the Team Leader to focus on other aspects of clinical care. Studies have shown that resuscitation teams with a CPR Coach perform higher-quality CPR with higher CCF and shorter pause durations compared with teams that don't use a CPR Coach. This role was briefly covered in the Team Dynamics portion of this lesson.
  - The CPR Coach focuses only on compressions and ventilation to ensure high-quality CPR. They help minimize the length of pauses during provider switches and defibrillation.
  - The CPR Coach should be positioned next to the Defibrillator and in the direct line of sight of the Compressor.
  - Because the CPR Coach must continually talk to give ongoing coaching, they must adjust their tone and volume so that they do not disrupt other aspects of patient care.
  - The CPR Coach should respect the Team Leader's role and not be perceived as trying to take over leadership. They should keep the Team Leader informed, share their understanding with the Team Leader, and ask for verification of key tasks and decisions.
  - Any healthcare professional can be a CPR Coach if they have a current BLS Provider card, understand the responsibilities of a CPR Coach, and demonstrate the ability to coach Compressors and Airway providers effectively to improve performance.

Video Resumes: High-Performance Teams

The video will show and discuss the following information about the skills needed to achieve specific high-performance team metrics like CCF by eliminating the pauses commonly seen in a resuscitation attempt. Some key concepts covered include

- Hovering hands over the chest when compressions are paused
- Advanced providers checking the pulse and precharging the defibrillator about 15 seconds before pausing compressions every 2 minutes
- Switching Compressors every 2 minutes or whenever a Compressor is fatigued, with the second Compressor coming in behind the first
- Using real-time feedback devices during CPR, or a metronome if a feedback device is not available

Play Video: High-Performance Teams Activity (Optional)

The video will show and discuss the high-performance teams activity.

Instructor Tips

- During this activity, watch the performance of multiple rescuers simultaneously. Take note of team performance that can be improved to inform topics of discussion during the debriefing. You will present one 10-minute scenario and follow with a 5-minute debriefing.
- While students practice, you will calculate the CCF.

How Do I Measure CCF?

Option 1: Use 2 stopwatches.

1. Start one stopwatch once you have given the scenario to the team. Let it run continuously to the 10-minute mark (total resuscitation time) as a reminder to stop the case.
2. Use a second stopwatch to measure total compression time during the scenario. Start the stopwatch each time a Compressor starts chest compressions. Pause the stopwatch when the Compressor stops or when chest compressions are interrupted. Do this for each set of compressions during the entire scenario. Don't reset the stopwatch during the scenario; allow the stopwatch to continue counting up. This will give you the cumulative time that chest compressions were being performed during the scenario.
3. Convert the time on the second stopwatch to seconds (eg, 8 minutes = 480 seconds).
4. Divide the total compression time in seconds by the total resuscitation time in seconds (ie, 10 minutes = 600 seconds).
5. This will give you the CCF. For example, if the time on the second stopwatch is 520 seconds, divide by 600 (total resuscitation time): 520/600=0.8667. Then, round to 2 places and convert to a percentage: 87%.

Option 2: Use the AHA's Full Code Pro app. This app is a free, easy-to-use, mobile application that allows rescuers to document critical interventions during CPR. You can use Full Code Pro during real resuscitation events or in practice scenarios. Go to **https://itunes.apple.com/us/app/full-code-pro/id589451064?mt=8** to download the app for iOS devices. A Full Code Pro Tutorial video is available on the AHA Instructor Network.

Option 3: Use a manikin that captures resuscitation data.

Video Pauses

- Divide students into groups for the scenario. Assign team roles. Explain that after you read the scenario, students will begin the high-performance teams activity, which will run for 10 minutes. You will evaluate the resuscitation, looking for high-quality CPR and ensuring that students enforce the principles of highly effective teams. Briefly remind students that you will be tracking CCF because limiting interruptions in chest compressions improves outcome.
- Begin CCF tracking as soon as the Compressor begins chest compressions during CPR.

Students Practice

Read this scenario to each team:

- "As part of a multirescuer emergency response team, you respond to a call about a 65-year-old woman who suddenly collapsed. Your team arrives within seconds after the incident, and you notice that a bystander is performing compression-only CPR."
- Coach students in teamwork throughout the activity. Monitor CPR performance to inform high-quality CPR coaching, including minimizing pauses in compressions during the use of the AED. Provide focused practice as needed.
- Pay particular attention to the Compressor's performance toward the end of each 2-minute rotation. Monitor for high-quality compressions of adequate rate and depth. Remind the Compressor to allow complete chest recoil after each compression without leaning on the chest between compressions.

Discussion: High-Performance Teams Activity Debriefing

- At the end of the scenario, debrief by asking team members what they thought went well and what could have been better.
  - Disclose the CCF and discuss any strategies for improvement.
  - Talk about whether the team maintained high-quality CPR.
  - Allow the team to lead the conversation; ask open-ended questions to facilitate discussion.
- Coach on improving communication with closed-loop communication principles:
  - The Team Leader gives a message, an order, or an assignment to a team member.
  - The team member gives a clear response and makes eye contact to confirm that they heard and understood the message.
  - The Team Leader listens for confirmation of task performance from the team member before assigning another task.

Lesson 6A
Local Protocols Discussion (Optional)

20 minutes

Instructor Tips

- Across the country, EMS systems develop treatment protocols based on local need, preference of administration, and medical direction. In some cases, these protocols differ from established national standards, so this course may occasionally direct providers to act in ways that are not consistent with their local protocols. The AHA does not want to conflict with established local protocols.
- When you lead this discussion, make sure you know what the local protocols are. If you are a member of the local EMS system, you should already be aware of local protocols, but if you are not, study them before the course so that you can have a meaningful discussion.

Although the AHA does not endorse a particular protocol or strategy, it does issue evidence-based guidelines, which are relevant and broadly applicable. These guidelines are developed by experts in the field, who use a rigorous, scientific process. This discussion is a chance for students to articulate and practice AHA skills within the context of their local protocols.

Discussion

Lead students through a discussion about high-performance teams and local protocols. Use these questions to help guide this discussion:

- Does your system currently use a high-performance team approach to resuscitation?
- How can you incorporate high-performance teamwork into your department's protocols?
- What are some potential challenges to incorporating high-performance teamwork into your protocols?
- What are some potential challenges to high-performance teamwork in terms of location, patients, or equipment?
- How does the local protocol compare and contrast with the AHA BLS Healthcare Provider Adult Cardiac Arrest Algorithm?

The following examples show some common differences between local protocols and what is taught in the course. Use these sections only if students ask questions about these examples.

What to say when local protocols for chest compressions differ from what the course teaches:

In the course, you learned to do 30 high-quality chest compressions and then 2 breaths. This could differ from your local protocol, which may have you do 90 seconds of continuous chest compressions or 200 chest compressions before beginning breaths, or a variation of these.

- Follow the local protocol.
- The important factors in this lesson are to perform the compressions at a rate of 100 to 120/min, at least 2 inches in depth, while allowing the chest to recoil completely after each compression.
- The next Compressor should be immediately ready to switch roles to minimize interruption in compressions.

Studies show that patients who receive chest compressions at a rate of 100 to 120/min and a CCF of greater than 80% have a much better chance of survival.

What to say when local protocols for AED use differ from what the course teaches:

In the course, you learned to use the AED immediately after it arrives. This could differ from your local protocol, which may have you use the AED only after you do 200 chest compressions (or 2 minutes of CPR) or a variation of this.

- Follow the local protocol.
- Continue high-quality chest compressions up to the point of allowing the AED to analyze.
- Immediately begin chest compressions after a shock is delivered or the AED states, "no shock advised."
- Keep in mind that as time to defibrillation increases, the chance of survival decreases.

The greatest chance of survival from cardiac arrest is found when a patient receives high-quality CPR and early defibrillation.

What to say when local protocols for role assignment differ from what the course teaches:

In the course, you learned about the different roles that prehospital providers may have (Compressor, Timer/Recorder, etc). This could differ from your workplace protocol, which assigns you a role based on your role on the fire engine, ambulance, or other team.

- Follow the local protocol.
- Know your potential assignments ahead of time to reduce confusion during a real event.
- Make sure that all roles and responsibilities are clear so that interruptions in chest compressions are minimized and teamwork is smooth and efficient.
- It is critical that high-performance teams practice in the same way that they will perform in real situations.
- Appoint a Team Leader who oversees the event, assesses the efficacy of efforts, and makes changes when resuscitation performance is less than adequate.
- To optimize efforts in the future, provide a debriefing after each course scenario and after each real resuscitation attempt.

What to say when local protocols for the use of a bag-mask device differ from what the course teaches:

In the course, you learned about providing ventilation with a bag-mask device. Your local protocol may call for chest compressions only, 200 chest compressions before breaths, use of a bag-mask device with a face mask for a short time until a supraglottic airway can be placed (as soon as possible), or a variation of these.

- Follow the local protocol.
- Provide only enough volume with each ventilation to make the chest rise (do not deliver large breaths that can potentially inhibit venous blood flow back into the chest).
- When delivering ventilation during CPR with an advanced airway, provide no more than 12 breaths per minute (excessive ventilation can increase intrathoracic pressure, impede venous return, and potentially reduce cerebral blood flow).
- Do not interrupt chest compressions for extended lengths of time to place an advanced or supraglottic airway.

Lesson 7
Child BLS

10 minutes

Part 1: Pediatric Chains of Survival

Part 2: Child BLS

Part 3: 2-Rescuer Child CPR (Practice While Watching)

Learning Objective

Tell students that at the end of this lesson, they will be able to perform high-quality CPR for a child.

Instructor Tips

- Remind students to use their mobile phones to activate the emergency response system, if applicable.
- If you are using adult manikins for the child BLS practice, inform students that they may need to use 2 hands while practicing CPR because it's difficult to compress the adult manikin with 1 hand.
- Remind students that the technique used for child CPR will depend on the size of the child and the physical ability of the person performing compressions.
- Select a provider option to play for this lesson: in-facility or prehospital.
- To review this lesson, students can refer to Part 6: BLS for Infants and Children in the provider manual.

Play Video

The video will show and discuss the scenario, the pediatric Chains of Survival, and child BLS, including 2-rescuer child CPR and the differences between adult and child BLS:

- Witnessed vs unwitnessed if you are a single rescuer:
  - Witnessed: Immediately activate emergency response system and get an AED
  - Unwitnessed: If you are alone and must leave to activate the emergency response system, perform 5 cycles of CPR before leaving
- Compression depth: Compress approximately 2 inches (5 cm) or at least one third the depth of the chest
- Using 1 or 2 hands for child compressions: Use whichever allows you to provide deep, effective compressions
- Compression-to-ventilation ratio: 1-rescuer ratio is 30:2, and 2-rescuer ratio is 15:2

Video Pauses

- Ask students to position themselves at the side of their manikins.
- Tell them that they will practice each role of the 2-rescuer child BLS sequence. Assign students to play Rescuer 1 and Rescuer 2.
- After the first practice-while-watching segment, repeat the video for students to switch and practice the duties of the other role. Each student will complete 3 sets of 15:2.

Practice While Watching: 2-Rescuer Child CPR

Before playing the video, tell students to follow along with the video and complete the following steps:

Rescuer 1

- Ask Rescuer 1 to get into position at the victim's side to practice chest compressions. The student should
  - Compress at least one third the depth of the chest, approximately 2 inches (5 cm)
  - Compress at a rate of 100 to 120/min
  - Allow complete chest recoil after each compression without leaning on the chest between compressions
  - Minimize interruptions in compressions (try to limit any interruptions in chest compressions to less than 10 seconds)
  - Use a compression-to-ventilation ratio of 15:2
  - Count compressions out loud

Rescuer 2

- Ask Rescuer 2 to get into position at the victim's head and maintain an open airway. The student should
  - Perform a head tilt–chin lift or jaw thrust
  - Give breaths with a bag-mask device, watching for chest rise and avoiding excessive ventilation
- Tell Rescuer 2 to encourage Rescuer 1 to perform compressions that are deep enough and fast enough and to allow complete chest recoil after each compression.
- Emphasize the core concepts: push hard, push fast; allow complete chest recoil after each compression; when giving breaths, watch for chest rise; minimize interruptions in compressions (trying to limit any interruptions in chest compressions to less than 10 seconds).

Repeat Segment

Ask students to switch roles and repeat the practice-while-watching segment.

Skills Test (Optional)

You have the option to administer the Adult CPR and AED Skills Test now. If you choose to administer the skills test now, refer to Lesson 11: Skills Test in the BLS Lesson Plans.

Lesson 8
Infant BLS

20 minutes

Part 1: Infant BLS

Part 2: Infant Compressions (Practice While Watching)

Part 3: Bag-Mask Device for Infants (Practice While Watching)

Part 4: 2-Rescuer Infant CPR (Practice While Watching)

Part 5: AED for Infants and Children Less Than 8 Years of Age

Learning Objective

Tell students that at the end of this lesson, they will be able to perform high-quality CPR for an infant.

Instructor Tips

- Select a provider option to play for this lesson: in-facility or prehospital.
- To review this lesson, students can refer to Part 6: BLS for Infants and Children and Part 7: Automated External Defibrillator for Infants and Children Younger Than 8 Years of Age in the provider manual.

Play Video

The video will show and discuss the scenario, infant BLS, and infant compressions.

Video Pauses

- Ask students to position themselves at the side of their manikins.
- Tell them that they will practice infant chest compressions and complete 3 sets of 30 compressions.

Practice While Watching: Infant Compressions

Before playing the video, tell students to follow along with the video and complete the steps for infant compressions. Tell students the following:

- Place the infant on a firm, flat surface.
- Place 2 fingers in the center of the infant's chest, just below the nipple line, on the lower half of the breastbone. If students prefer, they can use the 2 thumb–encircling hands technique. Do not press the tip of the breastbone.
- Push hard and fast at a depth of at least one third the depth of the chest, approximately 1½ inches (4 cm). Deliver compressions at a rate of 100 to 120/min. If the student cannot achieve the recommended depth, you can tell the student that it may be reasonable to use the heel of 1 hand.
- Allow complete chest recoil after each compression without leaning on the chest between compressions.

- Minimize interruptions in compressions (trying to limit any interruptions in chest compressions to less than 10 seconds).

Play Video

The video will show and discuss bag-mask devices for infants.

Video Pauses

- Ask students to position themselves at the side of their manikins.
- Tell them that they will practice using the bag-mask device for infants. Each student will complete 5 sets of 2 breaths.

Practice While Watching: Bag-Mask Device for Infants

Before playing the video, tell students to follow along with the video and complete the steps for using a bag-mask device for infants. Tell students the following:

- Position yourself directly above the victim's head.
- Place the mask on the victim's face, using the bridge of the nose as a guide for correct position.
- Use the E-C clamp technique to hold the mask in place while you lift the jaw to hold the airway open.
  - Perform a head tilt–chin lift.
  - Place the mask on the face, with the narrow portion at the bridge of the nose.
  - Use the thumb and index finger of one hand to form a C on the side of the mask, pressing the edges of the mask to the face.
  - Use the remaining fingers to lift the angles of the jaw (3 fingers form an E), open the airway, and press the face to the mask.
- Squeeze the bag to give breaths (1 second each) while watching for chest rise. Deliver each breath over 1 second, whether or not you use supplemental oxygen.
  - Make sure students give 2 breaths and watch for chest rise.

Play Video

The video will show and discuss 2-rescuer infant CPR.

Video Pauses

- Ask students to position themselves at the side of their manikins.
- Tell students that they will practice each role of the 2-rescuer infant CPR sequence. Assign students to play Rescuer 1 and Rescuer 2.
- After the first practice-while-watching segment, the video will repeat for students to switch and practice the duties of the other role. Each student will complete 3 sets of 15:2.

Practice While Watching: 2-Rescuer Infant CPR

Before playing the video, tell students to follow along with the video and complete the following actions:

Rescuer 1

Ask Rescuer 1 to get into position by the victim's feet to practice the 2 thumb–encircling hands technique for providing chest compressions:

- Compress at least one third the depth of the infant's chest, approximately 1½ inches (4 cm).
- Compress at a rate of 100 to 120/min.
- Allow complete chest recoil after each compression without leaning on the chest between compressions.
- Minimize interruptions in compressions (trying to limit any interruptions in chest compressions to less than 10 seconds).
- Use a compression-to-ventilation ratio of 15:2.
- Count compressions out loud.

Rescuer 2

Have Rescuer 2 get into position at the victim's head and maintain an open airway. The student should

- Perform a head tilt–chin lift or jaw thrust
- Give breaths with a bag-mask device, watching for chest rise and avoiding excessive ventilation

Tell Rescuer 2 to encourage Rescuer 1 to perform compressions that are deep enough and fast enough and to allow complete chest recoil after each compression. Emphasize core concepts: push hard, push fast; allow complete chest recoil after each compression; when giving breaths, watch for chest rise; minimize interruptions in compressions (try to limit any interruptions in chest compressions to less than 10 seconds).

Repeat Segment

Ask students to switch roles and repeat the practice-while-watching segment.

Play Video

The video will show and discuss AED use for infants and children less than 8 years of age.

Students Practice: High-Performance Teams Activity

For additional student practice with high-performance teams, students can complete the high-performance teams activity by using an infant scenario. Refer to Lesson 6: High-Performance Teams in the BLS Lesson Plans for more on how to complete this activity with the following scenario:

"As part of a multirescuer emergency response team, you respond to a call from a parent who says her 9-month-old infant started having breathing difficulties after feeding."

Skills Test (Optional)

You have the option to administer the Infant CPR Skills Test now. If you choose to administer the skills test now, refer to Lesson 11: Skills Test in the BLS Lesson Plans. Remember that you may need the infant manikins for Lesson 9: Relief of Choking.

Lesson 9
Relief of Choking

7 minutes

Part 1: Adult and Child Choking

Part 2: Infant Choking (Practice While Watching)

Learning Objective

Tell students that at the end of this lesson, they will be able to describe the technique for relief of foreign-body airway obstruction for an adult, a child, and an infant.

Instructor Tips

- Select a provider option to play for this lesson: in-facility or prehospital.
- To review this lesson, students can refer to Part 11: Choking Relief for Adults, Children, and Infants in the provider manual.

Play Video

The video will show and discuss relief of choking in a responsive or an unresponsive adult or child.

Discussion

Ask students, "What questions do you have about choking relief for adults and children?" If needed, use the following to guide the discussion:

- What are signs of a severe airway obstruction?
- What actions should you take to help a person with a severe airway obstruction?
- How do you help a person with a severe airway obstruction who is pregnant, overweight, or can't stand?
- What should you do if the person becomes unresponsive?

Play Video

This video will show and discuss relief of choking in a responsive or an unresponsive infant.

Video Pauses

- Ask students to position themselves per the video instructions.
- Tell them that they will practice the relief of choking on a responsive infant and complete 1 set of 5 back slaps and 5 chest thrusts.

Practice While Watching: Relief of Choking in a Responsive Infant

Before playing the video, tell students to follow along with the video and complete the steps for relief of choking in a responsive infant. Tell students the following:

- Kneel or sit with the infant in your lap.
- If you can do it easily, remove clothing from the infant's chest.
- Hold the infant facedown, with the head slightly lower than the chest, resting on your forearm. Support the infant's head and jaw with your hand. Avoid compressing the soft tissues of the infant's throat. Rest your forearm on your lap or thigh to support the infant.
- Using the heel of your hand, deliver up to 5 back slaps forcefully between the infant's shoulder blades. Deliver each slap with enough force to dislodge the foreign body.
- After delivering up to 5 back slaps, place your free hand on the infant's back, supporting the back of the infant's head with the palm of your hand. The infant will be cradled adequately between your 2 forearms, with the palm of one hand supporting the face and jaw while the palm of the other hand supports the back of the infant's head.
- Turn the infant over while carefully supporting the head and neck. Hold the infant faceup, with your forearm resting on your thigh. Keep the infant's head lower than the trunk.
- Provide up to 5 quick downward chest thrusts in the middle of the chest, over the lower half of the breastbone (the same as for chest compressions during CPR). Deliver chest thrusts at a rate of about 1 per second with enough force to dislodge the foreign body.
- Repeat the sequence of up to 5 back slaps and up to 5 chest thrusts until the object is removed or the infant becomes unresponsive.
  - If the infant becomes unresponsive, activate the emergency response system. Start CPR with the additional step of checking the airway for a foreign object after each set of compressions.

Stop Video

Ask students to return to their seats for the conclusion of the course.

Lesson 10
Conclusion

5 minutes

Instructor Tips

- When summarizing what was covered in the course, allow students to lead the discussion. Ask 1 or 2 students what they observed or learned during the course.
- Explain to students the importance of skills practice on an ongoing basis. Evidence shows that when providers take standardized resuscitation courses, whether online or in person, their skills decay over time. Give students clear directions on specific actions to take for further study, including AHA resources for postclassroom training.

Discussion

Conclude the course by doing the following:

- Thank students for their participation.
- Summarize what they learned during the course. Refer to the BLS Course Outline in Part 3: Teaching the Course.
- Ask students if they have any questions before the exam.
- Make sure that students complete their evaluation forms.
- Collect all completed forms.

Lesson 11
Skills Test

40 minutes

Optional: The Adult CPR and AED Skills Test also can be completed at the end of Lesson 7: Child BLS and the Infant CPR Skills Test can be completed at the end of Lesson 8: Infant BLS in the BLS Renewal Lesson Plans.

Part 1: Adult CPR and AED Skills Test

Part 2: Infant CPR Skills Test

Instructor Tips

- For skills testing, be prepared and organized by reviewing the skills testing checklists before class. Have all materials ready to properly test students on every step.
- Make sure students review the skills testing checklist before skills testing.

Discussion

Before the Adult CPR and AED Skills Test, read the following script aloud to each student or to the whole class at once:

"This test is like a real emergency: you should do whatever you think is necessary to save the victim's life. You will have to determine for yourself what you need to do. For example, if you check for a response on the manikin and there is no response, then you should do whatever you would do for a person who is not responding. I will read a short scenario to you, but I can't answer any questions. You can treat me like another healthcare provider who has arrived with you and tell me to do something to help you. If you make a mistake or forget to do something important, don't stop. Just do your best to correct the error. Continue doing what you would do in an actual emergency until I tell you to stop. Do you have any questions before we start?"

Skills Test

- Refer to the Adult CPR and AED Skills Testing Checklist in Part 4: Testing for directions on how to test students on adult BLS skills. Check off each skill as the student demonstrates competency per the critical skills descriptors.
- After starting, if the student asks any questions about BLS skills or sequences, do not answer. Rather, tell the student, "Do what you think is best right now." If the student asks questions about what to do with the manikin, say, "Check the manikin yourself and do what you think is needed to save a life." If the student seems unsure, reiterate that he or she will be assessing the manikin and doing whatever is necessary.

Discussion

Before the Infant CPR Skills Test, read the following script aloud to the student or to all students at once:

"This test is like a real emergency: you should do whatever you think is necessary to save the victim's life. You will have to determine for yourself what you need to do. For example, if you check the response on the manikin and there is no response, then you should do whatever you would do for a person who is not responding. I will read a short scenario to

you, but I can't answer any questions. You can treat me like another healthcare provider who has arrived with you and tell me to do something to help you. If you make a mistake or forget to do something important, don't stop. Just do your best to correct the error. Continue doing what you would do in an actual emergency until I tell you to stop. Do you have any questions before we start?"

Skills Test

- Refer to the Infant CPR Skills Testing Checklist in Part 4: Testing for directions on how to test students on infant BLS skills. Check off each skill as the student demonstrates competency per the critical skills descriptors.
- After starting, if the student asks any questions about BLS skills or sequences, do not answer. Rather, tell the student, "Do what you think is best right now." If the student asks questions about what to do with the manikin, tell the student, "Check the manikin yourself and do what you think is needed to save a life." If the student seems unsure, reiterate that he or she will be assessing the manikin and doing whatever is necessary.

Remediation

For students who need remediation, follow these steps, and refer to Lesson 13: Remediation in the BLS Lesson Plans:

- Determine where the student is having trouble during their Adult CPR and AED Skills Test and/or Infant CPR Skills Test.
- If needed, replay sections of video or practice skills to reinforce learning.
- Retest skills as necessary.
- Some students may need additional practice or to repeat the course to demonstrate skills competency and receive a course completion card.

Lesson 12
Exam

25 minutes

Instructor Tips

- Exams are administered online, though there may be an occasional need to administer a paper exam. Refer to the Instructor Network for more information about delivering exams.
- You should administer the exam after skills testing at the end of the course.
- During testing and remediation, assign each additional instructor a different role, especially with large classes. This will help remediation be efficient and effective. This also will help the class end on time.
- For the exam, provide students with an environment that's conducive to testing: quiet, with minimal distractions and plenty of time to finish.

Discussion

Give students the following instructions:

- For students taking a paper exam: Do not write on the exam. Write only on your answer sheet.
- Do not cooperate with or talk to each other during the exam.
- Exams are open resource, so you can use the provider manual and any other accessible resources while taking the exam.

Refer to Part 1: General Concepts for details about open-resource exams.

Exam

- For students taking a paper exam: Distribute answer sheets and exams.
- As students finish, collect their exams and answer sheets and begin to grade them.
- Regardless of their scores, all students should receive their exam results so that they can review and ask questions.

Remediation

For students who need remediation, refer to Lesson 13: Remediation in the BLS Lesson Plans.

Lesson 13
Remediation

15 minutes

Part 1: Skills Testing Remediation

Part 2: Exam Remediation

Instructor Tips

- Use the formal remediation lesson if a student did not pass the skills testing during the course.
- For further detail on remediation and retesting students, refer to Part 1: General Concepts.
- As an instructor, you will need to determine which section of the course the student is having trouble with.

Play Video: Skills Testing Remediation

- Replay instruction and/or practice-while-watching segments of the video as needed to reinforce learning and for the student to have additional practice.
- Repeat practice until the student feels comfortable and is ready to move forward with the skills test.
  - Some students may need additional practice or to repeat the course to demonstrate skills competency and receive a course completion card.
- Formal remediation should occur if all boxes on the skills testing checklist are not checked as complete.

Skills Test

- Retest BLS skills as necessary by using the skills testing checklists. Refer to Lesson 11 in the BLS Lesson Plans for additional instructions on administering the skills tests.

Exam

Students who are taking the paper exam and score less than 84% need immediate remediation and must retake the exam.

- Provide remediation by giving a second test or by having students verbally answer each item they answered incorrectly, showing an understanding of the incorrect items.
- Give students their failed exams to study in preparation for retaking the exam.
- After successful remediation, students should show improvement in providing and understanding correct responses.
- Collect all exams and answer sheets from all students at the end of the course or after remediation.

Postcourse
Immediately After the Course

At the end of each class

- Collect, organize, and check all course paperwork for completeness
- Rearrange the room
- Clean and store equipment
- Fill out Training Center course report forms
- Read and consider comments from course evaluations
- Conduct a debriefing with assisting staff
- Issue eCards according to Training Center policy; if you are unsure of the policy, check with the Training Center Coordinator

Reminder: To ensure that students receive their course completion cards within 20 business days after completing a class, submit the paperwork to your Training Center as soon as possible after the class.