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BASIC LIFE SUPPORT

instructor guide
Ver. 9.0, 2021

Basic Life Support Instructor Guide
Basic Life Support for Healthcare Providers
and Professional Rescuers
Instructor Guide, Ver. 9.0, 2021 / 01/27/23

Purpose of This Guide

This Basic Life Support Instructor Guide Ver. 9.0, 2021 is solely intended to provide direction for teaching the HSI Basic Life Support class and evaluating student knowledge and skill competency. The information in this book is furnished for that purpose and is subject to change without notice.

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HSI Basic Life Support Instructor Guide

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HSI Medical Advisory Board

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NOTICE: *This HSI Training Program has been approved by the HSI Medical Advisory Board and reviewed by the HSI Advisory Council. It reflects the latest resuscitation science and treatment recommendations of the 2020 International Consensus on Cardiopulmonary Resuscitation (CPR) and Emergency Cardiovascular Care (ECC) Science with Treatment Recommendations (CoSTR) published by the International Liaison Committee on Resuscitation (ILCOR) and conforms with the 2020 American Heart Association (AHA) Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care and the annual Guidelines Update. This HSI Training Program incorporates AHA recommendations regarding resuscitation education science (Cheng 2018) and reflects established models, theories, and principles of instructional design and training development that have been integrated into HSI training program brands for more than 40 years. HSI is a nationally accredited organization of the Commission on Accreditation of Pre-Hospital Continuing Education (CAPCE) and nationally approved by the Academy of General Dentistry (AGD) Program Approval for Continuing Education (PACE) as a continuing dental education (CDE) provider.*

This training program is dedicated to all front-line health care workers, first responders, and public safety professionals who have and continue to place themselves at great personal risk to provide life supporting care.

We appreciate and admire you.

CONTENTS

ABOUT THIS INSTRUCTOR MANUAL

HSI is in the process of transitioning all of our individual health and safety training brands into a single unified one - HSI. This Instructor Guide consolidates the American Safety and Health Institute (ASHI) and EMS Safety Basic Life Support (BLS) training programs into a single, completely revised training program incorporating the most current guidelines and treatment recommendations. To address the risk of confusion in the market and among regulators and others during our brand transition, HSI's BLS certification cards will continue to carry the ASHI and EMS Safety logos for a prolonged period of time until they are slowly phased out.

We have integrated and expanded on the best aspects of each training program while streamlining and harmonizing them. We have defined key terms to provide clarity. We have added important information to amplify core instructional design and resuscitation concepts. The goal of HSI's emergency care training programs is to assist our approved Training Centers and Authorized Instructors to positively impact the lives of others by helping students acquire and improve their knowledge and skills to protect and preserve life, alleviate suffering, and promote recovery. These outcomes are central to HSI's organizational mission:

Making Workplaces & Communities Safer.™

KEYWORDS & DEFINITIONS

The following keywords and definitions are provided for clarity and quick reference for phrases and concepts included throughout this training program.

1. **Assessment.** The action or an instance of making a judgment about something.[1] Instructors judge students' skill proficiency by looking for correct skill performance and, when necessary, using positive coaching and gentle correction to improve skills.

2. **Basic Life Support (BLS).** Emergency medical care provided by first responders, healthcare providers, and public safety professionals to persons experiencing respiratory or cardiac arrest or an obstructed airway. It requires knowledge and proficiency in cardiopulmonary resuscitation (CPR), use of automated external defibrillators (AED), and techniques to relieve airway obstruction in patients of every age.

3. **Blended Learning.** A mixed-mode approach that uses both online and face-to-face learning. Core knowledge content is provided in video segments and interactive student exercises online, followed by face-to-face skills practice and evaluation.

4. **Challenge.** An evaluation of individuals who wish to earn certification by demonstrating knowledge and skill competency without taking an initial or renewal training class. The instructor's activities are limited to administering the Written Exam and carrying out skill tests using the performance evaluation.

5. **Chest Compression Fraction (CCF).** The proportion of time that chest compressions are performed during a cardiac arrest resuscitation effort.

6. **Classroom.** A place where instructors and students meet face to face, in person, or virtually.

7. **Class Presentation.** An instructional segment that guides the instructor through the requirements of each lesson, with options for initial or blended/renewal training. Streamed through Otis or downloaded to the HSI Instructor Desktop Video Player.

8. **Class Roster.** The principal record of training used to verify student completion of the class by documenting the results of skill assessment, the Written Exam (if used), and remediation (if needed).

9. **Constructive Feedback.** Generally defined as, "Helpful information or criticism given to someone to indicate what can be done to improve something."[2] Instructors and students are encouraged to provide specific and constructive feedback to each other during training. Constructive feedback fosters reflection, correction, and improved performance that enhances learning.

10. **Contextual Learning.** Teaching and helping students learn new information or knowledge "in such a way that it makes sense to them in their own frames of reference."[3]

11. **Required Training Content.** The essential, minimum knowledge and skills that the instructor is required to present and that the student(s) must demonstrate achievement of in order to legitimately earn certification.

12. **Debriefing.** A widely used form of feedback for enhancing the effectiveness of team performance.

13. **Deliberate Practice.** Repeated skill practice by the student to improve performance in response to feedback. Deliberate practice is determined by available resources, the duration of the effort, and the student's motivation to improve.[4]

14. **Distributive or Spaced Practice.** An instructional strategy, where practice is broken up into a number of short interrupted sessions over a longer period of time leading to better long-term retention.[5,6]

15. **Feedback Devices.** Devices that transmit evaluative or corrective information on compression rate, depth, release, and hand position during CPR training. The feedback device can be integrated into a manikin or be used as an accessory with it. *HSI strongly recommends the use of an instrumented directive feedback device in all classes that teach the skills of CPR.*

1 https://www.merriam-webster.com/dictionary/assessment [Retrieved 12/22/2020]
2 https://www.merriam-webster.com/dictionary/feedback [Retrieved8/28/2020]
3 Overview of Contextual Teaching and Learning. Center for Occupational Research and Development. Available: https://www.cord.org/cord_ctl _overview.php [Retrieved 12/22/2020]
4 Ericsson, K. A., The Role of Deliberate Practice in the Acquisition of Expert Performance. Available: http://graphics8.nytimes.com/images/blogs/freakonomics/pdf/DeliberatePractice(PsychologicalReview).pdf [Retrieved 12/22/2020]
5 Distributed practice. Available: https://en.wikipedia.org/wiki/Distributed_practice [Retrieved 8/8/2020]
6 Spacing Effect. APA Dictionary of Psychology Available: https://dictionary.apa.org/spacing-effect [Retrieved 8/8/2020]

16. **Guided Problem-Solving Exercise.** An instructional tool used to develop, improve, or display knowledge and skill. These exercises may take different forms:
    a. **Scenario Sheet** (see term below).
    b. **Debriefing Sheet.** A visual guide (sheet of paper, and/or image on a screen) that is a structured and supported approach to learning that students use to review and reflect on the performance of their individual skills and on teamwork (when 2 or more people work together).

17. **High-Quality Cardiopulmonary Resuscitation (HQ-CPR).** A CPR approach recommended to help improve patient outcomes, made up of five key components: (1) minimizing interruptions in chest compressions, (2) providing chest compressions of adequate rate, (3) providing chest compressions of adequate depth, (4) achieving a high chest compression fraction, while allowing for complete chest recoil between compressions, and (5) avoiding excessive ventilation.

18. **Initial Training.** A traditional classroom or blended learning training class for individuals who have never been certified or whose certification has expired.

19. **Instructional Strategy** (how instruction should be carried out).
    a. **Standard Approach.** The most common instructional method (route or directed way) that HSI instructors use to impart knowledge content and practical application, and to help students develop proficiency. The standard approach includes a lesson presentation to impart knowledge content. When the lesson involves a skill, the lesson presentation is followed by an instructor or video-guided demonstration and instructor-supervised student skill practice and feedback. The standard method is best used as the primary method of delivery for new or infrequent instructors and students.
    b. **Experienced Approach.** An additional instructional method (map, discovery, scenario-based) that a practiced and skilled instructor may use with trained and proficient students who can evaluate their own learning, collaborate with peers, and engage in problem-solving. The Experienced Approach uses guided problem-solving exercises that require students to apply their knowledge and skills with instructor feedback and supervised skill practice. Can be used as a primary method of delivery for renewal classes or in combination with the Standard Approach as needed.

20. **Instructor Demonstration.** A qualified HSI instructor authorized to teach the program, who is physically or virtually present in a live face-to-face setting, showing how to correctly perform the specific steps of a physical task in the proper sequence.

21. **Key Points.** The important and essential information in each lesson, based on the objectives, emphasized by the instructor. Used as needed.

22. **Learning Environment.** A physically safe, comfortable, and appropriate space for learning.

23. **Local Medical Protocol.** Prehospital treatment guidelines, approved by the local EMS medical director, used to manage an emergency medical condition in the field by outlining the permissible and appropriate medical treatment that may be rendered by emergency medical services personnel to a patient experiencing a medical emergency.[7]

24. **Mastery Learning.** An instructional strategy that suggests a majority of students can master (become proficient[8]) in what is being taught.[9]

25. **Online Training & Information System (Otis™).** HSI's web-based platform that delivers lesson presentations, organizes Training Center data, schedules and tracks Instructors and students, and provides automated back office processing. Log in at otis.hsi.com/login.

26. **Performance Evaluation.** A scenario-based formal assessment checklist using a columnized visual guide (sheet[s] of paper and/or an image on a screen) with an imagined, scripted sequence of procedures, actions, and prompts that provides sound, fair, consistent, uniform, objective, and reliable documentation of a student's competency according to the performance criteria.

27. **Rate Your Program.** A class evaluation form available in digital and online format, required to be offered to students completing any HSI training program.

28. **Remediation.** The act or process of remedying - to solve, correct, or improve a problem.

29. **Remote Skill Verification (RSV).** The use of simultaneous interactive videoconferencing technology to evaluate and verify skill competence in real time when instructor and student(s) are in separate locations.

30. **Renewal Training.** A traditional classroom with an instructor-led skills session (live, in-person or via RSV) class for individuals who wish to refresh skill competency and maintain certification.

7 https://www.lawinsider.com/dictionary/medical-protocol [Retrieved 12/22/2020]
8 https://www.merriam-webster.com/dictionary/proficient [Retrieved 12/22/20]
9 Bloom et al, Handbook on Formative and Summative Evaluation of Student Learning. McGraw-Hill. 1971

31. **Review Question.** A question posed to students that revisits an important and essential point from the lesson, based on the enabling objectives. Used as needed.

32. **Scenario Sheet.** Columnized visual guide (sheet[s] of paper and/or image on a screen) with a description of circumstances (setting) followed by a scripted sequence of procedures, actions, and prompts. Instructors or students should alter the setting of the scenario to better match the student's environment, make it more realistic, and aid contextual learning.

33. **Skill Guide.** An instructional tool for hands-on skill practices, including graphic procedures for BLS, Skill Sheets, and Scenario Sheets.

34. **Skill Sheet.** Visual guide (sheet[s] of paper, and/or image on a screen) combining words and images that show how to correctly perform the specific steps of a physical task in the proper sequence.

35. **Student Book.** A comprehensive resource that covers the required knowledge content of the class as well as supplemental information. Each student participant should have a current Student Book appropriate to the class being conducted.

36. **Student Hands-On Practice Methods.** Active physical involvement by students attending a training class, including the use of their hands, to become proficient in a physical task. Methods include video-guided hands-on practice and hands-on practice with a Skill Sheet or Scenario Sheet. Student hands-on practice may take different forms:

    a. Individually,

        i. While watching a video demonstration of the skill.

        ii. While watching the HSI instructor demonstrate, using the Skill Sheet or Scenario Sheet as a reference.

        iii. Following the instructor demonstration, with the HSI instructor prompting the students using the Skill Sheet or Scenario Sheet as a reference.

    b. Collectively,

        i. As a whole class, while watching a video demonstration.

        ii. As a whole class, following the instructor demonstration, with the instructor prompting the students using the Skill Sheet or Scenario Sheet as a reference.

        iii. In small groups of two or three, following the instructor demonstration, with students prompting each other using the Skill Sheet or Scenario Sheet as a reference.

        iv. In small groups of two or three, without an instructor demonstration, with students prompting each other using Scenario Sheet as a reference (Experienced Approach).

37. **Supplemental Training Content.** Additional knowledge and skill content produced by HSI and supplied in an HSI training program that may be added to the required training content by the instructor as desired or required. Supplemental training content may be needed to tailor a training class to unique conditions or potential hazards of a specific workplace or worksite or to comply with federal or state regulatory requirements.

38. **Terminal Objectives.** A statement in specific and measurable terms that describes what a learner will be able to do at the conclusion of the training and learning activity, which may be evaluated.

39. **Third Party Training Content.** Additional materials not produced by HSI that may be used to enhance a training class at the discretion of the Training Center Director.

40. **Traditional Classroom Training.** Instructor-led, in-person, live training approach.

41. **Training Program Standard.** The minimum training requirements for each HSI training program. Training Program Standards include: Intended Audience; Instructor Authorization Requirement; Class Length; Participant Prerequisites; Student-to-Instructor Ratios; Student Certification Requirements; Certification Period; Required Class Documentation; and brief comments or explanations specific to the program. Training Program Standards referenced in this instructor guide are thoroughly detailed in the HSI Training Center Administrative Manual (TCAM, available at emergencycare.hsi.com/quality-assurance-compliance).

42. **Video Demonstration.** A digital visual recording of a qualified person(s) showing how to correctly perform the specific steps of a physical task in the proper sequence.

43. **Video-Guided Practice (VGP).** A hands-on student practice method where students simultaneously practice skills while watching them be performed by a qualified person on a video.

44. **What Students Should Learn.** The knowledge (cognitive) or skill (psychomotor) outcomes that a student should achieve upon completion of a lesson.

45. **Why This Topic Matters.** A motivating statement or rationale for why it's important to cover the information in each lesson.

46. **Written Exam.** A valid assessment tool provided by HSI that reflects the minimum acceptable level of knowledge competency and may be used for informal or formal student assessment.

47. **Wrap Up.** The concluding part of each lesson. The instructor reinforces key points or asks a review question (as needed) and then answers any questions, before moving on to the next lesson.

part one

UNIVERSAL CONCEPTS

Universal concepts cover broad, principle themes
that underlie & influence both BLS instruction and practice.

Infection Control

This BLS program was developed in the midst of the global pandemic of the coronavirus disease 2019 (COVID-19), which has resulted in widespread infection and death worldwide. A great number of frontline healthcare workers and first responders all over the world have been infected and many have lost their lives. COVID-19 and similar coronavirus variants remain an ongoing threat to both life and livelihood.

While the introduction of an authorized emergency use vaccine in the United States and other countries is an encouraging step to ending this global ordeal, at the time of publication of this BLS training program, scientists do not know how long immunity produced by vaccination lasts, or whether annual surges or more virulent mutations of COVID-19 will continue to occur. With that in mind, infection control practices cannot be overemphasized for BLS Providers.

Infection control practices for emergency and healthcare settings are certainly nothing new. The Occupational Safety and Health Administration (OSHA) and the Centers for Disease Control and Prevention (CDC) have published guidelines for infection control for more than two decades. Still, the highly contagious COVID-19 has reinforced the paramount importance of meticulous attention to infection control practices.

According to the CDC, standard precautions are the minimum infection prevention practices that apply to all patient care, regardless of suspected or confirmed infection status of the patient, in any setting where health care is delivered.[10] Hand hygiene and personal protective equipment are fundamental elements of standard precautions that must be used by healthcare workers and first responders who provide BLS to protect them from infection.

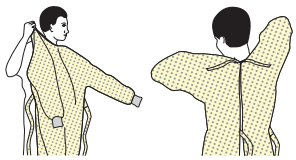
The phrase "take standard precautions" is used throughout this program as one of the first and unquestionably necessary actions before providing BLS. To take standard precautions means to use appropriate personal protective equipment (PPE) to protect against possible exposure to infectious agents. This includes but is not limited to gloves, gowns, masks, respirators, eye protection (goggles/face shield), and bag-mask devices with a HEPA filter. Hand hygiene should be performed immediately after removing gloves.

SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



2. MASK OR RESPIRATOR

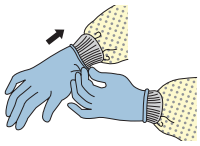
- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator

3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit

4. GLOVES

- Extend to cover wrist of isolation gown



USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene

CS250672-E

This training program is intended to reinforce infection prevention practices. It is not an infection control training curriculum. It is not intended for meeting any occupational licensing regulations or requirements for infection control training and should not be used for that purpose. Comprehensive training in standard precautions is vital to help healthcare workers and first responders make appropriate decisions in their occupational setting and to comply with infection control practices and local medical protocols.

10 Standard Precautions for All Patient Care. Available: https://www.cdc.gov/infectioncontrol/basics/standard-precautions.html [Retrieved 2/3/2021]

High-Quality Cardiopulmonary Resuscitation (HQ-CPR)

High-quality cardiopulmonary resuscitation (HQ-CPR) is foundational to both basic and advanced life support and is a proven technique to improve cardiac arrest outcomes.[11] CPR skills can vary greatly, depending on experience, frequency of practice, physical ability, and available resources. It is normal for there to be a gap between expertly performed CPR skills and typically performed skills. An important goal of BLS training is to narrow that gap as much as possible.

HQ-CPR includes the following:

1. Beginning CPR compressions within 10 seconds of determining cardiac arrest.
2. Compressing fast, at a rate of 100 to 120 times per minute.
3. Compressing hard, at least 2 inches [5 cm] on an adult, and at least 1/3 the depth of the chest for children and infants.
4. Allowing for complete chest recoil at the top of each compression (not leaning on the chest between compressions).
5. Minimizing any interruptions to compressions to less than 10 seconds.
6. Achieving a chest compression fraction (CCF) of at least 60% (ideally 80%).
7. Giving effective rescue breaths that create a visible chest rise, but no more (adult: 1 breath every 6 seconds, over 1 second; infants and children: 1 breath every 2-3 seconds, over 1 second).

Hands-off Time & Chest Compression Fraction (CCF)

Time spent during a resuscitation attempt without chest compression (hands-off time) should be kept as short as possible. Hands-off time includes assessing the patient, checking the pulse, AED operation, and other activities. CCF is the proportion of time that chest compressions are performed during a cardiac arrest resuscitation effort. Higher CCF percentages are associated with high-quality CPR and greater rates of survival. A CCF of at least 60% is recommended, but higher percentages are both desirable and achievable. A CCF of at least 80% has been associated with higher rates of return of spontaneous circulation (ROSC). Signs of ROSC include breathing, coughing, or movement and a palpable pulse or a measurable blood pressure.[12] CCF can be measured from data provided by a real-time CPR feedback device or by using two stopwatches. The first stopwatch is used to time the entire the resuscitation attempt, from beginning to end. The second stopwatch is used to measure the chest compression time. The second stopwatch is started each time compressions begin and is stopped when compressions are interrupted. CCF is calculated by dividing the duration of chest compression by the total duration of the resuscitation attempt.

$$CCF = \frac{\text{DURATION OF COMPRESSIONS}}{\text{DURATION OF CPR ATTEMPT}}$$

11 Meaney, PA et al. Cardiopulmonary Resuscitation Quality: Improving Cardiac Resuscitation Outcomes Both Inside and Outside the Hospital © 2013 American Heart Association®, Inc. Circulation Volume 128, Issue 4, 23 July 2013, Pages 417-435 Available: https://doi.org/10.1161/CIR.0b013e31829d8654 [Retrieved 2/3/2021]
12 Uppiretla AK, G M G, Rao S, Don Bosco D, S M S, Sampath V. Effects of Chest Compression Fraction on Return of Spontaneous Circulation in Patients with Cardiac Arrest; a Brief Report. Adv J Emerg Med. 2019 Jun 6;4(1):e8. doi: 10.22114/ajem.v0i0.147. PMID: 31938777; PMCID: PMC6955024.
18;7(24):e009860. doi: 10.1161/JAHA.118.009860. PMID: 30561251; PMCID: PMC6405605. [Retrieved 1/4/2021]

Teamwork in High-Performance Resuscitation

HQ-CPR an essential part of high-performance resuscitation. The other necessary element is teamwork. Uncoordinated actions during resuscitation increase interruptions in compressions. Teamwork in high-performance resuscitation is similar to the orchestrated actions of individual pit crew members in a car race. An effective high-performance resuscitation team

- has clearly defined roles,
- uses clear and effective communication,
- anticipates next actions,
- minimizes interruptions in compressions, and
- consistently measures its performance and commits significant resources to improve it.

Understanding all the roles within the team is important because each team member may rotate through several of the roles. Figure 1 represents a practicable team arrangement. Positions, roles, and responsibilities are described in Table 1. These differ between in-hospital and out-of-hospital settings, between agencies and institutions, and must be adjusted to be consistent with local practices and protocols.

The CPR Coach

The "CPR Coach" is a relatively new role in many high-performance resuscitation teams. It is designed to optimize psychomotor performance. In addition to bringing, placing, and operating the AED/monitor/defibrillator, the role of CPR Coach is to encourage the team members performing chest compressions and ventilations to provide HQ-CPR. This permits the team leader to focus on higher level problem-solving necessary to properly manage the patient.[13] Ideally, the CPR Coach is positioned directly across from the person performing chest compressions. Minimally, the CPR Coach prompts the other two team members in the resuscitation triad (or triangle) to perform high-quality chest compressions, give effective rescue breaths, switch out compressors efficiently, and perform rapid defibrillation with minimal interruption. When resources permit, the CPR Coach may also provide prompting and guidance on chest compression metrics (depth, rate, etc.) based on data displayed by a CPR feedback device or the defibrillator/monitor.

Teamwork in high-performance resuscitation is mentally and physically challenging. It requires a substantial commitment to performance improvement through training and retraining. It requires effective communication, respect, collaboration, problem-solving, and managing conflicts to improve outcomes around a shared mission and common goal: neurologically intact survival from cardiac arrest.

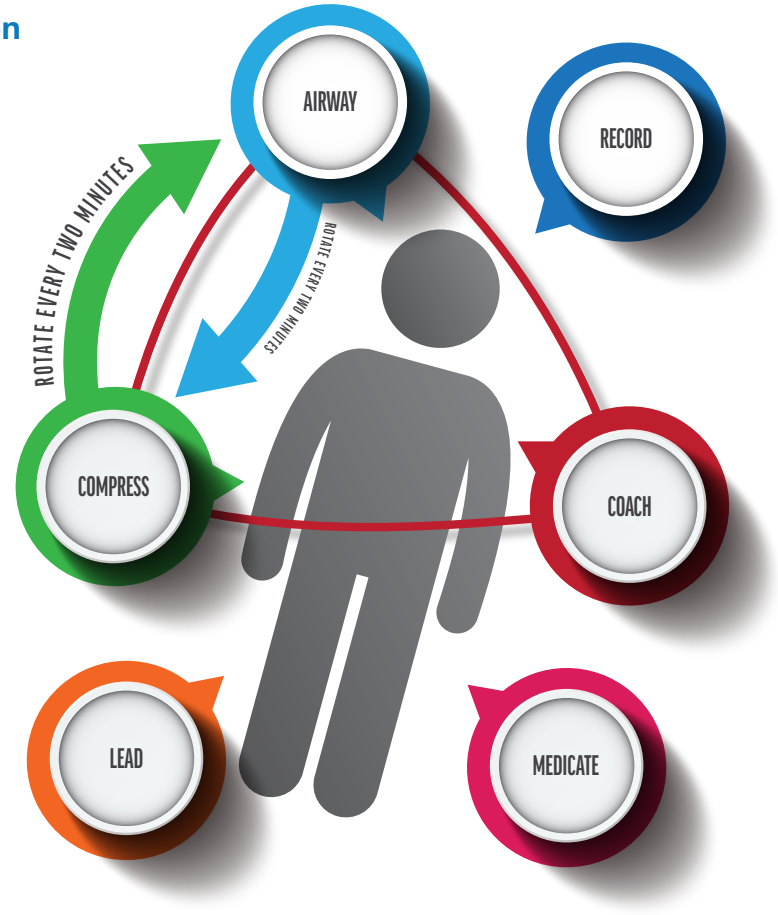


Figure 1: Team Member Positions in High-Performance Resuscitation

Table 1: Team Member Positions in High-Performance Resuscitation

	Resuscitation Triad. These three team members remain in the triangle unless it becomes unsafe.
●	This team member assesses the patient, performs compressions, and rotates with the person in the airway position every 2 minutes or sooner if tired.
●	This team member brings, places, and operates the AED/monitor/defibrillator and acts as the CPR Coach, providing real-time verbal feedback of CPR performance about compressions and ventilations.
●	This team member opens and maintains the airway, inserts airway adjuncts and provides bag-mask ventilation. This team member rotates with the person performing compressions every 2 minutes or sooner if tired.
●	This team member leads the resuscitation team, assigning roles, making treatment decisions and providing feedback to the team as needed.
●	This team member obtains vascular access and administers medications (ALS provider role).
●	This team member records the time of interventions and medications, records the frequency and duration of interruptions in compressions, and communicates these to the team members.

13 Hunt EA, Jeffers J, McNamara L, Newton H, Ford K, Bernier M, Tucker EW, Jones K, O'Brien C, Dodge P, Vanderwagen S, Salamone C, Pegram T, Rosen M, Griffis HM, Duval-Arnould J. Improved Cardiopulmonary Resuscitation Performance With CODE ACES2: A Resuscitation Quality Bundle. J Am Heart Assoc. 2018 Dec

Adult BLS Continuum

When a person's heartbeat unexpectedly stops, anyone can (and everyone should) provide the person a chance for successful resuscitation and meaningful life. However, what is done for the person and how it is done often exist on a continuum, "a set of things on a scale, which have a particular characteristic to different degrees."[14] The continuum in Adult BLS can be represented by a linear scale on two axes. On the on the horizontal axis is equipment and resources. On the vertical axis is training. (Figure 2). Each axis begins at "none or limited" and scales up to "considerable."

As a model example of how the continuum might be viewed, imagine a person who, merely by chance, witnesses an adult suddenly collapse. Alone, completely unfamiliar with CPR, and without anyone nearby to help, this person's only equipment consists of a mobile phone. This is one end of the continuum: the untrained layperson bystander. This person has little or no skill, knowledge, or experience in CPR, no PPE, no emergency equipment, no one else to ask for help. Even so, this person becomes the critical link in the cardiac arrest Chain of Survival by calling 911 to activate EMS and then by following the dispatcher's instructions.

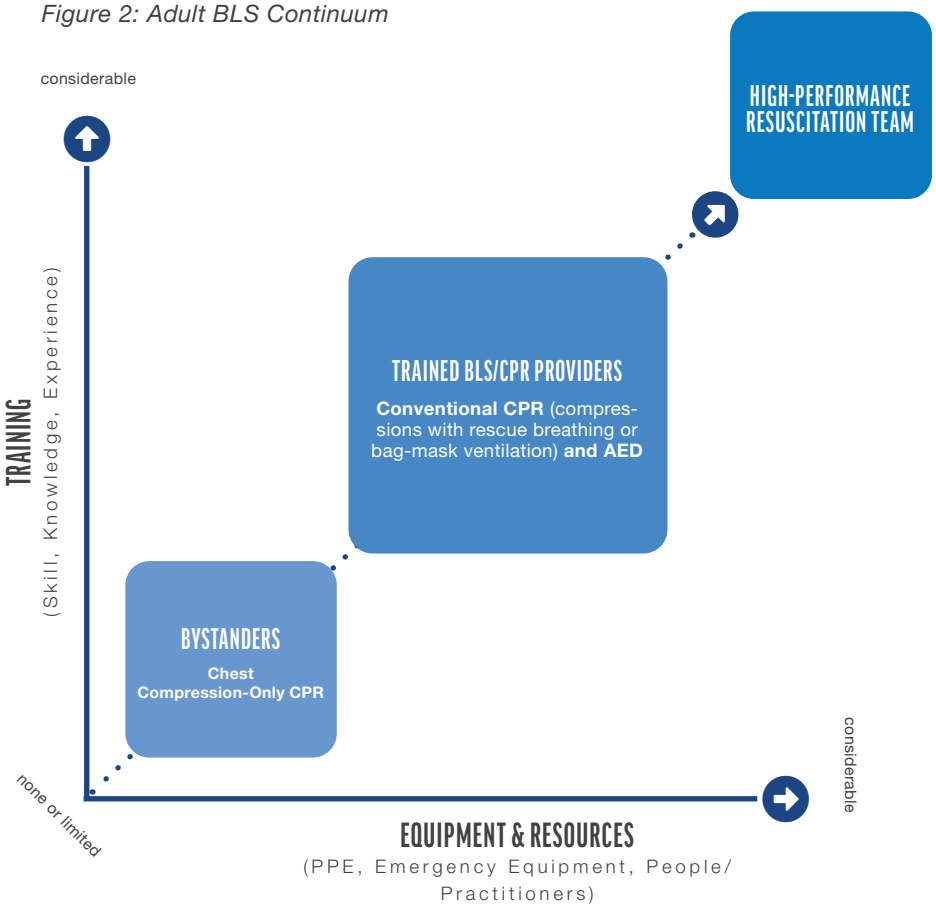
After verifying with the untrained layperson bystander that the person is unresponsive and not breathing normally, the 911 dispatcher (also called a telecommunicator) sends EMS to the scene while encouraging the untrained layperson bystander to provide chest compression-only CPR — pushing hard and fast in the middle of the person's chest. Early activation of the EMS system and chest compression-only CPR can double or triple an adult cardiac arrest victim's chance of survival (though providing effective ventilation is important for resuscitation of children).

At the same time, the dispatcher activates a network of community volunteers using a smartphone application. Two nearby volunteers who are trained BLS/CPR providers receive the alert and respond to the scene. They have appropriate PPE, but no AED. They find the bystander giving chest compressions with verbal coaching by the dispatcher. After advising the dispatcher they have arrived, and after performing a quick assessment to verify the person has no pulse and is not breathing, the BLS Providers begin HQ-CPR. After a few cycles of chest compressions with bag-mask ventilation, another trained volunteer BLS/CPR provider responding to the smartphone alert arrives at the scene with an AED. To minimize interruption in compressions, the AED is attached with chest compressions in progress. The patient is "cleared" while the AED analyzes the heart rhythm. The AED advises a shock. The BLS/CPR providers stay clear of the patient and deliver one shock. CPR is immediately resumed. These BLS/CPR providers represent the middle ground of the continuum (and the primary focus of this training program).

A couple minutes later, a fire engine and ambulance with a high-performance EMS resuscitation team arrives. Communicating calmly and clearly, one of the team members announces that she is the CPR Coach. She gives the BLS/CPR providers positive reinforcement, specifically acknowledging the good depth and rate of chest compressions and effective ventilation. The team takes over with expertly performed CPR, orchestrating a high-performance resuscitation.

A couple minutes later, and following another shock, the patient moans and starts moving. The patient is transferred to the ambulance and transported to an appropriate hospital with a comprehensive post–cardiac arrest treatment system of care. Though facing a long recovery with some mild neurologic impairments, this patient has done something few do — survived sudden cardiac arrest. Critical, key elements of the out-of-hospital Chain of Survival have each played a role in that outcome: early EMS activation, dispatcher-assisted bystander chest compressions, HQ-CPR/AED by trained BLS Providers, and a high-performance EMS resuscitation team.

Figure 2: Adult BLS Continuum



14 https://www.collinsdictionary.com/us/dictionary/english/continuum [Retrieved 1/5/2021]

Constructive Feedback

Instructors and students are encouraged to provide feedback to each other during training. Instructors must skillfully model both giving and receiving feedback. Feedback is often not easy to give and can be even harder to receive. Feedback in the form of criticism, just pointing out faults, doesn't work. To be effective, feedback needs to be constructive; that is, it should tend towards building up, not tearing down. It should focus on helping students and instructors make the most of their abilities. Constructive feedback should be straightforward and results-focused.

For example, if a student is having trouble performing effective ventilations with a bag-mask device, the instructor should carefully watch what the student is doing that isn't working. Is their body position cramped? Is the area around the manikin's head crowded or obstructed by equipment? Is their hand position on the jaw firmly lifting the chin upward to open the airway or pushing the mask into the face, closing it? Is the mask properly sized? Are they bringing the jaw into the mask, to create an effective seal?

Once an instructor has a good idea of what isn't working, they provide possible solutions in an easy-to-understand manner. Avoid saying, "You're not doing that right." Say, "I noticed you are having some difficulty giving effective rescue breaths. Instead of doing this (and demonstrating what they are doing that isn't working), try this instead (with a demonstration of correct technique)."

Use constructive feedback to acknowledge good performance as frequently as possible. Like a good CPR Coach, point out students who are performing well and why. Use it as a teaching moment to emphasize high-quality skills. Done properly, with care, sincerity, and respect, constructive feedback fosters reflection, encourages positive change, and a high level of performance.

Importantly, take feedback from your students calmly and professionally, even if with just a simple "thank you." Constructive feedback can help you improve your teaching skills and better meet the expectations of your students. Through constructive criticism, we learn about our weaknesses. Without that, we can't improve.

Contextual Learning

Contextual learning is learning in context. It's helping students learn in such a way that it relates to them and applies to their real-world setting. In terms of learning BLS, this means presenting situations and experiences that are familiar to the student, for example, adjusting a team training scenario to reflect the student's occupation (fire rescue, EMS, public safety, lifeguarding, dental practice, hospital, clinic, etc.).

Contextual learning can also mean conducting an occupationally focused scenario in the actual place where an event would take place, like a public setting, a pool deck, a dental treatment room, a hospital bed, etc. This can improve realism and help expose situations that require unique problem-solving that cannot be replicated in a typical classroom setting. However, conducting training in a real-life setting often presents logistical, safety, and other challenges that must be addressed and overcome ahead of time.

Incorporating some emotional stress into BLS training in the form of difficulties and distractions (malfunctioning equipment, interfering bystanders, sudden changes in patient status, etc.) may also help to improve realism and maximize learning. So, it is reasonable for an instructor with experience working in the same or similar occupation to add sensible and appropriate emotional stress to scenarios. However, excessively stressful or unrealistic scenarios may overwhelm students and have a negative impact on learning. To be effective, stressors added to contextual learning should not be too easy or too hard, and never punitive. The learning environment must be kept safe and include constructive feedback, not fault-finding criticism.

In a team scenario, students should have the opportunity to learn by reviewing and reflecting on team performance using a structured and supported approach (see "Debriefing"). Occupationally focused contextual learning is probably not a realistic option in an open enrollment class attended by students from diverse professions.

Debriefing

Unlike constructive feedback, which tends to be focused on improving individual student skills, debriefing is a widely used form of feedback that focuses on improving teamwork skills. The goal of debriefing is to learn by reviewing and reflecting on team performance. Evidence demonstrates that teams that debrief perform more than 20% better than those that do not.[15]

A variety of debriefing approaches are used for in-hospital and out-of-hospital settings and between agencies and institutions. This BLS training program includes the 3-step Gather, Analysis, Summary format (below). The setting in which debriefing occurs will influence your student's willingness to be honest about the team's performance. Creating and maintaining a safe and comfortable sharing environment is essential to learning and improving teamwork skills via debriefing.

Figure 3:Debriefing Framework[16]

GATHER	
TEAM LEAD/ RECORDER/ MEMBERS	What happened? Share your perceptions.
INSTRUCTOR/ FACILITATOR	✓ Begin with the Team Lead. ✓ Ask for a self-critique and a synopsis of team performance. ✓ After the Team Lead, encourage comments from the rest of the team. ✓ Listen, then share your perceptions.
ANALYSIS	
TEAM LEAD/ RECORDER/ MEMBERS	What happened? Share your observations.
INSTRUCTOR/ FACILITATOR	✓ Begin with the Recorder. ✓ After the Recorder, encourage comments from the rest of the team. ✓ Ask, in what way did things go well? ✓ Ask, how could improvements be made? ✓ Listen, then share your observations.
SUMMARY	
TEAM LEAD/ RECORDER/ MEMBERS	Summarize. Share the main things you learned.
INSTRUCTOR/ FACILITATOR	✓ Summarize correct actions and areas of improvement.

Ground Rules & Best Practices

The Instructor may use the framework below as an outline for a structured and supported approach. Allow team members to provide the majority of the input. Do not interrupt team members when they are speaking. Listen without criticism and focus on teamwork. Focus on the team, not individuals.

The Instructor needs to demonstrate flexibility, enthusiasm, and motivation to help engage the team. Allow time for team members to think. Encourage self-reflection. Encourage the team to be open and honest, but not judgmental. The Instructor/Facilitator and team members should view errors as opportunities for improvement. Input from team members should be considered equally, regardless of their role on the team or experience/history as a BLS Provider. Persuade the team to be brief and concise, and to consider one task or process, then move on. Be tactful. Show sensitivity to each team member's feelings and point of view.

Deliberate Practice & Mastery Learning

Deliberate practice is repeated skill practice by the student to improve performance in response to feedback. HSI has integrated and emphasized the key principles of deliberate practice—repetition and feedback with sufficient practice to develop proficiency—into the instructional design of its training programs from its inception in 1978. This HSI program, like those before, include numerous instructional tools for developing proficiency via demonstration and prompted practice. This includes scenario-based discovery methods, which are guided problem-solving exercises with feedback. The goal of deliberate practice with these instructional tools is to gain skill competence so that students can successfully complete the class, becoming BLS certified.

Mastery learning is an instructional strategy that suggests a majority of students can master (become proficient) in what is being taught. The basic task is to determine what is meant by mastery and to use effective instructional methods and materials that will help the largest proportion of students to reach it.[17] In BLS, mastery means that the instructor has objectively evaluated each student's Adult BLS and infant BLS skills and documented on the student's Performance Evaluation that each step was successfully completed according to the skill criteria.

15 Goals, ground rules, and best practices adapted from Lyons R, et al. Enhancing the effectiveness of team debriefings in medical simulation: more best practices. Jt Comm J Qual Patient Saf. 2015 Mar;41(3):115-25.
16 GAS (gather-analyze-summarize) model adapted from Bhanji F,et al. Part 14: education: 2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2015;132(suppl 2):S561–S573.
17 Bloom et al, Handbook on Formative and Summative Evaluation of Student Learning. McGraw-Hill. 1971

Distributive or Spaced Practice

Distributive or spaced practice is an instructional strategy where practice is broken up into a number of short interrupted sessions over a longer period of time, which leads to better long-term retention. Without ongoing practice, CPR skills deteriorate rapidly following initial training and certification, within 3 months. When feasible, knowledge and skills training in a single class every two years should be replaced or supplemented with training that focuses on skills and confidence building every 3-6 months.[18]

Manikins and Feedback Devices for Resuscitation Training

A 2016 study for teaching compression-only CPR featured a brief online CPR video and skill practice on a homemade mannequin made using a towel, a roll of toilet paper, and a T-shirt.[19] The results of that study showed an improvement in compression-only CPR skills, though researchers observed that participants performed compressions of inadequate depth and that the toilet paper roll began to fatigue after several compressions, producing less recoil. While brief online CPR video and practice with a homemade mannequin has the ability to teach basic compression-only CPR skills, it does not permit the instructor or students to correctly demonstrate high-quality chest compressions, open the airway, or give effective rescue breaths with a CPR mask or bag-mask device. Legitimate training and certification in BLS requires the use of commercial adult and infant CPR manikins that allow instructors to demonstrate—and students to practice—HQ-CPR.

CPR feedback devices transmit evaluative or corrective information on compression rate, depth, release, and hand position during CPR training. The scientific evidence highlighted in the 2020 AHA Guidelines recommended feedback devices as useful, effective, and beneficial.[20] The feedback device can be integrated into a manikin or be used as an accessory with it. HSI strongly recommends CPR feedback devices that measure each student's skill performance in real time be used during BLS training.

18 Riggs M, Franklin R, Saylany L. Associations between cardiopulmonary resuscitation (CPR) knowledge, self-efficacy, training history and willingness to perform CPR and CPR psychomotor skills: A systematic review. Resuscitation. 2019 May;138:259-272.]
19 Wanner, G. et al. Brief compression-only cardiopulmonary resuscitation training video and simulation with homemade mannequin improves CPR skills. BMC Emerg Med. 2016; 16: 45. Published online 2016 Nov 29. doi: 10.1186/s12873-016-0110-5 Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5127099/ [retrieved 12/2/2020]
20 Cheng A, et al. Part 6: Resuscitation Education Science: 2020 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2020 Oct 20;142(16_suppl_2):S551-S579.

part two

BLS PROGRAM DESCRIPTION

Course Goal

The purpose of this BLS training program is for participants to gain or improve knowledge and skill proficiency in HQ-CPR skills and teamwork for the adult, child, and infant.

Terminal Learning Objectives

These objectives identify what participants will know and be able to do upon successful completion of this class.

- Recognize the elements of high-quality CPR for an adult, child, and infant, and their importance on survival from cardiac arrest.
- Identify the links in the chains of survival for inside and outside the hospital.
- Recognize how to apply the BLS procedures in the chains of survival.
- Recognize when high-quality CPR is required.
- Correctly demonstrate how to provide effective rescue breaths using a CPR mask and bag-mask device.
- Identify the steps to correctly use an AED.
- Correctly demonstrate how to use an AED.
- Perform high-quality CPR for an adult, a child, and an infant.
- Recognize the value of team roles during high-performance resuscitation.
- Correctly demonstrate how to perform CPR with two or more BLS Providers on an adult, child, or infant.
- Recognize and provide treatment for a choking adult, child, or infant.

Course Audience

Healthcare providers and other public safety professionals working a wide variety of occupational settings—in and out hospital—and individuals enrolled in healthcare and public safety career training programs.

Course Instructor

This class may only be taught by an HSI Instructor currently authorized to teach BLS.

6:1 Student-to-Instructor Ratio (SIR)

The recommended student-to-instructor ratio (SIR) is 6 students to 1 instructor (6:1). The maximum SIR is 10 students to 1 instructor (10:1). In a Performance Evaluation, the maximum SIR is 2 students to 1 instructor (2:1).

1:1 Student-to-Manikin Ratio (SMR)

For optimal practice, the recommended student-to-manikin ratio (SMR) is 1 student to 1 manikin (1:1). The maximum SMR is no more than 3 students to 1 manikin (3:1).

Course Design

This BLS program is founded on basic principles of instructional design and learning theory. It has been constructed to provide instructors with the necessary flexibility, format, tools, activities, and materials to teach students with varying BLS knowledge, skills, and experience.

Course Flexibility

HSI programs are designed to be flexible. Flexibility is "characterized by a ready capability to adapt to new, different, or changing requirements."[21] In the case of BLS, and whenever possible, adjust the class to reflect the student's occupation. This also includes adjusting the class as necessary to be consistent with local medical protocol (see "Part One, Contextual Learning").

Course Format

There are three formats by which students can gain certification in BLS using this class.

1. **Initial Training:** A traditional classroom or blended learning training class for individuals who have never been certified or whose certification has expired.
2. **Renewal Training.** A traditional classroom or RSV class for individuals who wish to refresh skill competency and maintain certification.
3. **Challenge.** A traditional classroom or RSV class for individuals who wish to earn certification by demonstrating both knowledge and skill competency without taking an initial or renewal training class.

21 "Flexible." Merriam-Webster.com Dictionary, Merriam-Webster, https://www.merriam-webster.com/dictionary/flexible. Accessed 13 Jan. 2021.

Instructional Strategy

There are two factors that contribute significantly to a student gaining or improving their BLS knowledge and skill proficiency: the role of the instructor and how instruction should be carried out.

1. ***The role of the BLS instructor.***

   The role of the instructor is to facilitate learning. The definition of facilitate is "to make easier: help bring about."[22] The instructor's behavior in helping students learn BLS is designed to be as a coach, helper, guide, encourager, consultant, and resource. This behavior, when combined with the opportunity for deliberate practice with constructive feedback (and whenever possible, contextual learning), will help each student develop mastery in HQ-CPR skills. Accordingly, the BLS Instructor not only has an important and meaningful impact on the students, but on the student's patients as well.

2. ***How instruction should be carried out.***[23]

   The shape that BLS instruction takes should be directly influenced by the students' position on the BLS continuum; this strengthens the learning experience for the student by meeting the student where they are, from novice to highly trained. On the vertical training axis of the continuum, a BLS student's knowledge, skills, and experience can range from "none or limited" to "considerable," or somewhere in between. For example, teaching a BLS Class to students who have little or no CPR knowledge, skills, and experience (such as those enrolled in their first emergency medical technician class) requires a different strategy than teaching BLS to a group with considerable experience, such as working EMTs who are used to providing CPR as a part of a high-performance resuscitation team. The knowledge and skill objectives of the class are the same, but the approach should be adjusted to address the students' position on the continuum. To address this reality, BLS instruction using this program should be carried out using one of two approaches: standard or experienced. Either format may be used to deliver distributive or spaced practice.

   - **Standard Approach.** This approach is aimed at instruction of BLS/CPR Providers in the low-to mid-range of the BLS continuum. Its focus is on technical knowledge and skill proficiency for those with no or limited BLS training (or those with an expired BLS certification, i.e., more than two years since their last BLS training).
   - **Experienced Approach.** This approach is aimed at instruction of experienced BLS/CPR Providers in the mid-to higher range of the BLS continuum. While maintaining attention on HQ-CPR skills, this is a scenario-based design that features student application of knowledge and skills in guided problem-solving exercises. It may be useful or necessary to mix these two strategies in a traditional initial or renewal class.

     For example, imagine arriving to teach a traditional renewal class for students you have never taught before. The person with whom you scheduled the renewal class assured you that all students were currently certified in BLS and only needed "a refresher." After delivering the first three introductory lessons in the renewal class, you introduce the first scenario. After describing how they are to conduct this guided problem-solving exercise, the students arrange themselves in small groups of two or three with the appropriate equipment and Scenario Sheet 6: Adult BLS. Then they begin. And then you quickly realize they need more than a scenario-based opportunity to display their knowledge and skills; they really need more work on the quality of their basic skills (assessment, compressions, etc.). So, tactfully, you change to the "standard approach" and run either a video-guided hands-on practice or a small group practice using skill sheets.

     In the opposite scenario, imagine arriving to teach a traditional initial class for a group of students who you have never taught before. After introductions, you ask about previous training to connect the students' experiences and knowledge to this class. You discover that this is far from the first BLS Class they have ever taken. If fact, they tell you they have taken many over the years but let their certification lapse. You decide to check their skills in a guided problem-solving exercise. The students arrange themselves in small groups of two or three with the appropriate equipment and Scenario Sheet 6: Adult BLS. Then they begin, and their skills are quite good! A little fine-tuning is needed, but they are enjoying the challenge of the scenario-based approach. So, when the scenario is finished, you conduct a quick debriefing using the structured and supported approach. After emphasizing a few key points regarding HQ-CPR, you move on to the next lesson and scenario.

Of course, most classes tend to be a mix of experienced and inexperienced students, and their skill abilities can vary significantly. To address that, the instructional strategy is designed with the flexibility to allow the instructor to adjust the class "on the fly" by selecting and using different approaches and instructional elements as needed.

22 "Facilitate." Merriam-Webster.com Dictionary, Merriam-Webster, https://www.merriam-webster.com/dictionary/facilitate. Accessed 12 Jan. 2021.
23 Adapted from Romiszowski AJ, Designing Instructional Systems, Decision making in course planning and curriculum design. Copyright 1981. Published 1983. Routledge pgs. 300–303.

Instructor Proficiency

Just as a BLS Provider's proficiency exists on a continuum from limited to considerable, the same is true for a BLS instructor's teaching proficiency. Effective use of the Experienced Approach requires an experienced instructor. Gaining such experience takes time and a commitment to excellence. An experienced instructor is one who:

1. Teaches often,
2. Has good people skills,
3. Manages time effectively,
4. Has strong subject knowledge,
5. Has outstanding skill competency,
6. Understands adult learning styles,
7. Can teach with or without audiovisual presentations,
8. Is motivated, well-prepared, confident, and patient, and
9. Can effectively use problem-solving scenarios as teaching tools.

Instructional Elements

The instructional elements are the training materials and the medium used to teach this BLS program. These elements include: this instructor guide with lesson plans, key points, and review questions; lesson presentations with core training content including video and video-guided hands-on practice segments; skill, scenario, and debriefing sheets for interactive, face-to-face skill practice; written exams and performance evaluations to document student competency; and a student book that covers core and supplemental knowledge content. Use of these instructional elements is described in Part Three.

Enabling Lesson Objectives

These objectives support the terminal objectives and describe the knowledge and skills that participants should learn in each lesson. For example, "Correctly demonstrate high-quality adult chest compressions." These objectives are listed in each lesson under "What Students Should Learn."

Methods

Methods are the plan an instructor uses to achieve the objectives of a lesson. These methods are detailed under the headings "Why This Topic Matters," "Present," "Practice & Assess," and "Wrap Up" in the Lesson Plans (see Part Four).

Evaluation

Evaluation is the measurement of the result of instruction. To receive an HSI BLS certification card, students must be evaluated on the core training content. They must pass a written exam with a passing score, correctly demonstrate all skill objectives, and successfully complete a performance evaluation of Adult BLS and Infant BLS (see Part Three).

Core Training Content

The core training content is the minimum knowledge and skill content to be covered in this class. Content not identified as optional is core training content.

Supplemental Training Content

This is additional knowledge and skill content produced by HSI that may be added to the core training content by the instructor as desired or required. Supplemental training content may be needed to tailor a training class to unique conditions of a specific workplace.

Third-Party Training Content

Additional materials not produced by HSI that may be used to enhance a training program at the discretion of the instructor or Training Center Director. These additional materials may not be used in lieu of HSI training materials and may not be used to shorten or otherwise alter the core training content.

part three

TEACHING BLS

BLS CLASS FORMAT & DELIVERY

As described in Part Two, there are three formats for a BLS Provider class: Initial Training, Renewal Training, and Challenge. There are also several methods to deliver these formats: Traditional Classroom; Blended Learning with In-Person, Instructor-Led Skills Session; and Blended Learning with Remote Skills Verification (RSV). These methods are described below.

Traditional Classroom

This is the most familiar format for training; all lessons are delivered by the instructor in a place where instructors and students physically meet in person. See Part Four for lesson plans for conducting Initial Training, Renewal Training, and Challenges in the traditional classroom.

Blended Learning with In-Person, Instructor-Led Skills Session

Blended learning (also called "hybrid learning") is a mixed-mode approach that uses self-directed online lessons followed by an in-person, instructor-led skills session in a traditional classroom setting.

> *HSI offers a fully integrated blended learning solution for Training Centers through the Otis management system. See Part Four for blended learning lessons plans for initial and renewal training.*

Remote Skills Verification (RSV)

Remote skills verification (RSV) is the use of simultaneous interactive videoconferencing technology to practice, evaluate, and verify skill competence in real time when instructor and student(s) are in separate locations. Research has shown RSV to be acceptable and feasible for both class participants and remote skill evaluators.[24, 25, 26] Particularly for individuals working in remote settings, opportunities to get the training and certification necessary to comply with employment policies, occupational regulation, or licensing requirements is often limited by the accessibility and availability of Authorized Instructors. In these settings and others, including public health emergencies like the COVID-19 pandemic, RSV offers a practical and useful alternative to a traditional classroom setting.[27, 28, 29]

24 Weeks DL, Molsberry DM. Feasibility and reliability of remote assessment of PALS psychomotor skills via interactive videoconferencing. Resuscitation. 2009 Mar; 80(3):354-8.
25 Okrainec et al. Remote FLS testing in the real world: ready for "prime time." Surg Endosc. 2015 Nov 18.
26 Mikrogianakis A. et al. Telesimulation: an innovative and effective tool for teaching novel intraosseous insertion techniques in developing countries. Acad Emerg Med. 2011 Apr;18(4):420-7.
27 Jain A, Agarwal R, Chawla D, Paul V, Deorari A. Tele-education vs. classroom training of neonatal resuscitation: a randomized trial. J Perinatol. 2010 Apr 1.
28 Reynolds PA, Eaton KA, Mason R. Seeing is believing: dental education benefits from developments in videoconferencing. Br Dent J. 2008 Jan 26; 204(2):87-92.
29 Gonzales-Zamora JA, Alave J, De Lima-Corvino DF, Fernandez A. Videoconferences of Infectious Diseases: An Educational Tool That Transcends Borders. A Useful Tool Also for the Current COVID-19 Pandemic. Infez Med. 2020 Ahead of print Jun 1;28(2):135-138. Available: https://www.infezmed.it/media/journal/Vol_28_2_2020_2.pdf [Accessed 4/21/20]

BEFORE THE BLS CLASS

Instructor Authorization

Before teaching and certifying students in BLS, please check with your Training Center Director or log in to Otis at hsi.com/login to verify your authorization status as a BLS instructor is current. Make note of your expiration date. HSI will not recognize any HSI (ASHI, EMS Safety) BLS certification card issued by an Instructor or Instructor Trainer with an expired authorization. Ensuring that each Authorized Instructor or Instructor Trainer affiliated with the Training Center is properly authorized by HSI is the responsibility of the Training Center and/or Instructor or Instructor Trainer, not HSI. The authorization period is two (2) years.

Quality Assurance

By submitting a print or digital application for authorization, all HSI instructors agree to comply with the terms and conditions of Instructor or Instructor Trainer Authorization as described in the most current version of the HSI Training Center Administrative Manual (TCAM), available at emergencycare.hsi.com/quality-assurance-compliance).

Preparing for Class

Prepare well for your role as an HSI BLS Instructor; it's the key to success for you, for your students, and for their patients. Some elements of class preparation will vary depending on the class format and delivery method chosen. General class preparation tasks are described below. See the lesson plans in Part Four for Preparation Checklists specific to the class format and delivery method.

About a Month or Two Before Class

- ✓ Determine the class format and delivery method.
- ✓ Confirm the date, location, and number of students.
- ✓ Reserve training equipment for the class.
- ✓ Schedule and confirm additional HSI authorized BLS instructors as required or preferred.
- ✓ If teaching a traditional class, order HSI BLS certification cards and other training materials as necessary.
- ✓ If teaching a blended learning with in-person, instructor-led skills session or running an RSV session, log in to Otis to purchase credits, and create and schedule the online portion of the class.

About Three Weeks Before Class

- ✓ Confirm the required BLS equipment is clean and disinfected, operable, and ready to go (all equipment shipped using HSI's RSV option has been thoroughly cleaned, disinfected, and sanitized to ensure each user's safety).
- ✓ Familiarize yourself with any differences between what is taught in this BLS Class and local medical protocols for your students.

A Few Days Before Class

- ✓ If you are not well (experiencing fever, coughing, shortness of breath, diarrhea, fatigue, or muscle aches) leading up to or on the day of class, find another instructor to teach the class or reschedule it.
- ✓ Review the Lesson Plan for the class format and delivery method you have chosen.
- ✓ If you plan to stream the HSI BLS Class Presentation, confirm your internet connection will be accessible and adequate for streaming from Otis without difficulty. For ease of use or in cases where Wi-Fi or internet may be difficult to access, download the HSI BLS Class Presentation to the HSI Instructor Desktop Video Player or Mobile App and verify the media plays as expected.

BLS Class Materials and Equipment

Certain materials and equipment are required for any BLS Class, no matter which format and delivery method is chosen.

Required Class Materials

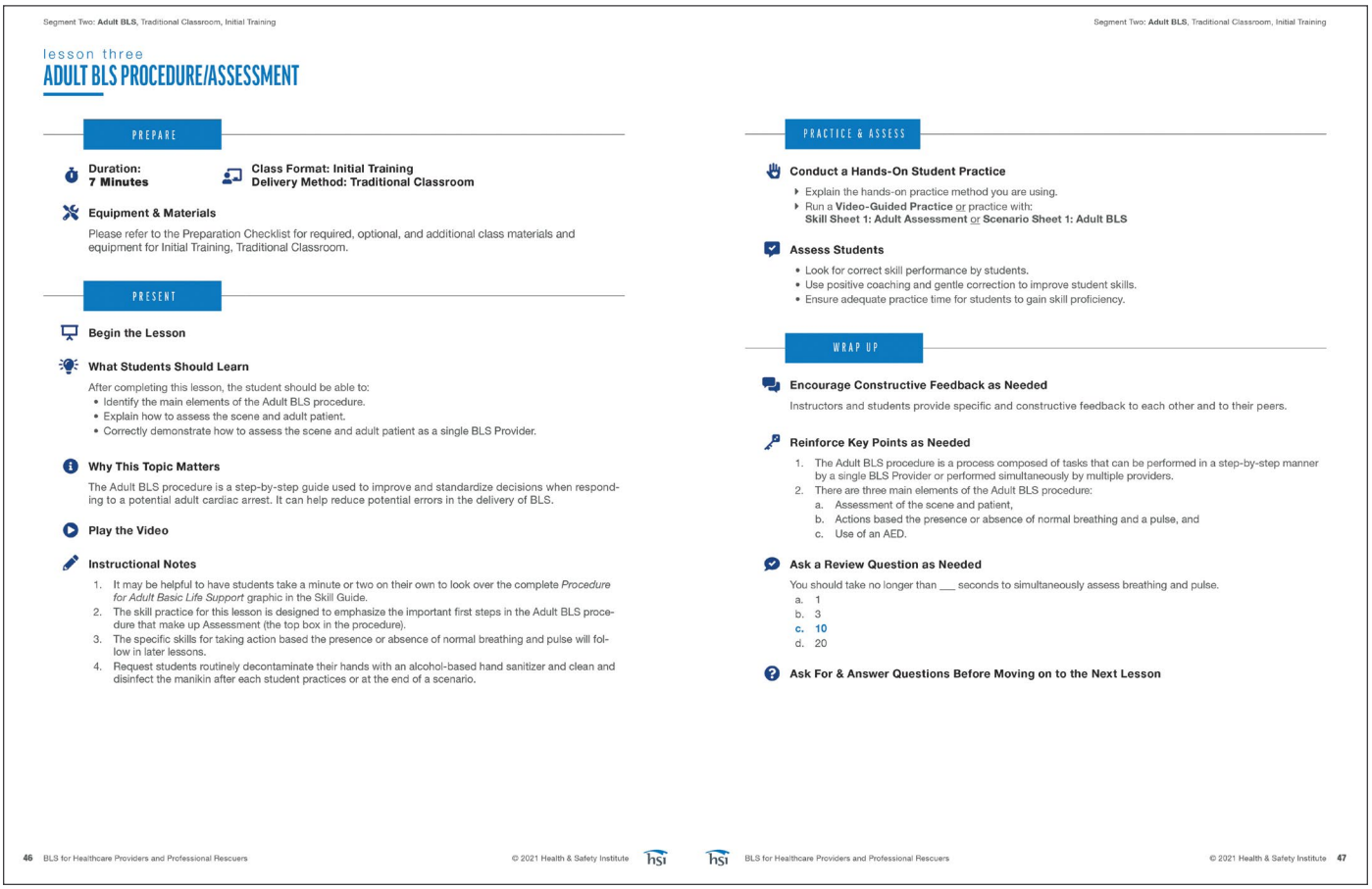
- ✓ HSI BLS Instructor Guide with Lesson Plans, 1 per instructor (print or digital).
- ✓ HSI BLS Skill Guide, minimum 1 for each 3 students (print).

Required Class Equipment

- ✓ Desktop or laptop computer (Windows or Mac).
- ✓ Internet connection (when streaming the BLS Class Presentation).
- ✓ Video monitor or computer projector and screen.
- ✓ CPR manikins, 1 adult and 1 infant (minimum 1 for each 3 students for traditional classroom; 1 adult and 1 infant for every 1 student for RSV).
- ✓ AED Trainer with adult and pediatric pads, minimum 1 for each 3 students for traditional classroom, minimum 1 AED Trainer for every 1 student for RSV.
- ✓ CPR mask with valve and one-way disposable mouthpiece, 1 for each student.
- ✓ Bag-mask device, minimum 1 adult-size and 1 pediatric-size for each 3 students in traditional classroom, minimum 1 adult-size and 1 pediatric-size for every 1 student in RSV.
- ✓ Disposable gloves (nonlatex), minimum 1 pair for each student.

DURING THE CLASS

Arrive early for any BLS Class, no matter which format and delivery method is chosen. Give yourself plenty of time to get organized.



Segment Two: **Adult BLS**, Traditional Classroom, Initial Training

lesson three

ADULT BLS PROCEDURE/ASSESSMENT

PREPARE

Duration: **7 Minutes**

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment & Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:
- Identify the main elements of the Adult BLS procedure.
- Explain how to assess the scene and adult patient.
- Correctly demonstrate how to assess the scene and adult patient as a single BLS Provider.

Why This Topic Matters

The Adult BLS procedure is a step-by-step guide used to improve and standardize decisions when responding to a potential adult cardiac arrest. It can help reduce potential errors in the delivery of BLS.

Play the Video

Instructional Notes

1. It may be helpful to have students take a minute or two on their own to look over the complete *Procedure for Adult Basic Life Support* graphic in the Skill Guide.
2. The skill practice for this lesson is designed to emphasize the important first steps in the Adult BLS procedure that make up Assessment (the top box in the procedure).
3. The specific skills for taking action based the presence or absence of normal breathing and pulse will follow in later lessons.
4. Request students routinely decontaminate their hands with an alcohol-based hand sanitizer and clean and disinfect the manikin after each student practices or at the end of a scenario.

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Segment Two: **Adult BLS**, Traditional Classroom, Initial Training

PRACTICE & ASSESS

Conduct a Hands-On Student Practice
- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 1: Adult Assessment or **Scenario Sheet 1: Adult BLS**

Assess Students
- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. The Adult BLS procedure is a process composed of tasks that can be performed in a step-by-step manner by a single BLS Provider or performed simultaneously by multiple providers.
2. There are three main elements of the Adult BLS procedure:
   a. Assessment of the scene and patient,
   b. Actions based the presence or absence of normal breathing and a pulse, and
   c. Use of an AED.

Ask a Review Question as Needed

You should take no longer than ___ seconds to simultaneously assess breathing and pulse.
a. 1
b. 3
c. 10
d. 20

Ask For & Answer Questions Before Moving on to the Next Lesson

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Using Lesson Plans

A lesson plan is the instructor's guide for running the BLS Class. Part Four contains the following Lesson Plans:

- Initial Training, Traditional Classroom
- Initial Training, Blended Learning (online and traditional classroom, or online and RSV)
- Renewal Training (traditional classroom or RSV)
- Challenge (traditional classroom or RSV)

Follow the lesson plan as you teach the class. For example, when using a traditional classroom delivery method for Initial Training, begin the lesson by introducing it. Your goal is to help the students achieve the enabling objectives of the lesson. These are listed under the heading "What Students Should Learn." Tell the students what they should know or be able to do after the lesson is completed. An effective way to motivate students as to why they should achieve these enabling objectives is to share a brief statement about the importance of the topic, "Why This Topic Matters." Then play the lesson video. For topics with skills, conduct a hands-on student practice. Explain the hands-on practice method you will use: Video-Guided Practice or practice with Skill Sheet or Scenario Sheet. Assess the students as they practice.

- Look for correct skill performance by students.
- Use positive reinforcement and gentle constructive feedback to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

Following the skill practice, wrap up the lesson by encouraging specific and constructive feedback, reinforcing key points, and checking their mastery of the material by asking them a review question as needed. Before moving on to the next lesson, ask for and answer any other questions students may have.

Lesson plans for Blended Learning or Renewal Training follow the same sequence as Initial Training in a traditional classroom, but they are adapted to reflect what students may not need to see, such as not playing the lesson video that students taking blended learning have already viewed online.

Using the Class Presentations

In addition to this Instructor Guide, HSI provides the BLS Initial Class Presentation, which supports and enhances training in a classroom (Fig.1). The HSI BLS Initial Class Presentation contains all the necessary elements to teach the initial class, including cognitive and skill practice videos. As a convenience, a separate BLS class presentation includes only the skill practice lessons that are required in Blended or Renewal classes.

To use these tools, Instructors download the Class Presentations from Otis for playback on a computer, or live-stream the presentation through an internet connection with sufficient bandwidth during class. While an Instructor may opt to teach BLS using a class DVD with this guide, HSI recommends all instructors become familiar with and use the Class Presentations. Instructors using the HSI BLS Class Presentations will benefit by having the most up-to-date class training materials available.

The HSI BLS Initial Class Presentation contains several slides to pace each lesson. The lesson title slide provides you the opportunity to introduce the lesson, describe the enabling objectives, and tell the students why the topic matters. The next slide contains the video for the lesson. For lessons that include skills, the next slide is the "Student Hands-On Practice" slide. These slides contain an embedded Video-Guided Practice, Skill Sheet, and Scenario Sheet. You choose the element you wish to use. This allows you to select the standard (video-guided hands-on practice or a small group practice using Skill Sheets) or experienced (guided problem-solving exercise with Scenario Sheets) approach.

Student Hands-On Practice Methods

Student hands-on practice may take different forms depending on what the instructor chooses. That choice may be influenced by several factors: the experience level of the instructor and the students, the number of students, the class format, and the delivery method.

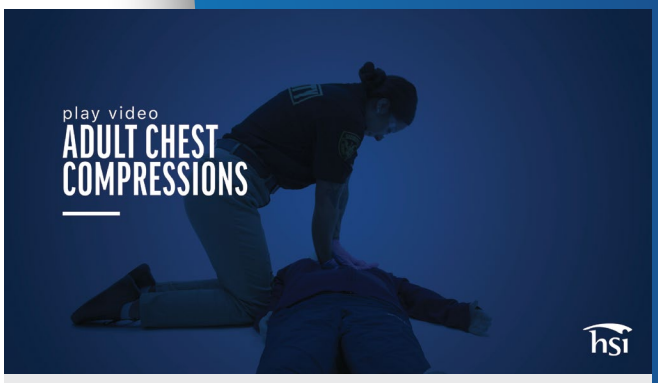
See Examples on Next Page

Conducting Video-Guided Practice

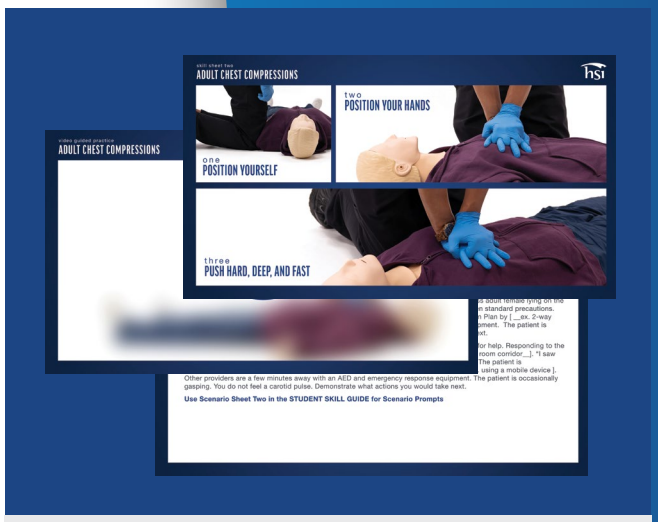
Video-Guided Practice can only be used in a traditional classroom setting, not via RSV. Optimally, using a 1:1 Student-to-Manikin Ratio, students are arranged in the classroom facing a video monitor or computer projection with a screen large enough that all can easily see it. Instruct students to position themselves with a manikin and any necessary equipment to be ready to practice. Once the students are ready, the instructor plays the video practice. The instructor should be able to directly observe students as they practice on their manikins along with the video. Following the video, instructors provide corrective feedback. If more practice is needed to help students gain HQ-CPR skills, instructors should repeat the practice or can select another method for repeat skill practice.

Figure 1

Slide #1: Begin the Lesson



Slide #2: Play the Video



Slide #3: Choose a Practice Method Type

Slide #4: Wrap Up

Practicing with Skill Sheets

In an initial training traditional or blended learning class, students should view the lesson video either in the online portion, or in the traditional classroom setting. Then the instructor should demonstrate the skill in real time to reinforce what has been presented on the video. A high-quality real time skill demonstration is essential. Instructors may choose to provide a more detailed demonstration using the WHOLE-PART-WHOLE method:[30]

1. **WHOLE:** The instructor demonstrates the entire skill, beginning to end while briefly naming each action or step.
2. **PART:** The instructor demonstrates the skill again, step-by-step, explaining each part in detail.
3. **WHOLE:** The instructor demonstrates the entire skill, beginning to end, without interruption and usually without commentary.

Following the demonstration, arrange students in small groups of no more than 3 students to 1 manikin (3:1). Students assume the role of BLS Provider(s) and Prompter. One student prompts the others by reading the skill steps from the Skill Sheet while another student performs the skills. Students rotate through the roles until all have acted as Prompter and BLS Provider. This role-playing from different perspectives fosters self-discovery and naturally increases the number of repetitions, helping students integrate both knowledge and skill performance. During small group practice, instructors assess the students' skill competency. The instructor circulates through the classroom, answering questions, correcting errors in technique, providing constructive feedback, and ensuring adequate practice time for students to gain skill proficiency.

Skill Sheets can also be used by the instructor for reference during demonstration and by the student for practice during a renewal class or RSV.

Practicing with Scenario Sheets

Scenario Sheets are practice tools used to help simulate real-world medical emergencies. They provide a description of circumstances (the scenario) followed by a scripted, standardized sequence of procedures, actions, and prompts to guide the practice. A short scenario is provided for both in-hospital/clinic and out-of-hospital settings. Instructors or students should adjust the scenarios by filling in the blanks in the scenario to reflect the student's occupational setting, if possible.

Brackets of each Scenario Sheet provide an example of how the scenarios can be adjusted.

> **Out-of-Hospital Setting:** You and another BLS Provider have responded to a call from [__ ex. emergency medical dispatch __] for a person struck by lightning. Upon arrival on the scene, you see a bystander performing poor quality compression-only CPR on an adult. The scene is safe. You have taken

30 2002 National Guidelines for Educating EMS Instructors. Module 17 - Teaching Psychomotor Skills. Available: https://one.nhtsa.gov/people/injury/ems/instructor/instructor_ems/2002_national_guidelines.htm [Accessed 2/1/21]

Example 1: Initial Class in a Traditional Classroom Setting. A New Instructor with 6 New Students and a 1:1 Student-to-Manikin Ratio.

In this setting, where both the instructor and the students are inexperienced and each student has their own manikin, we recommend the standard approach to instruction using a video-guided hands-on practice. The instructor plays the Video-Guided Practice from the lesson presentation and the whole class practices along on their manikin with the video demonstration.

Example 2: Renewal Class in a Traditional Classroom Setting. An Experienced Instructor with 9 Experienced Students and a 3:1 Student-to-Manikin Ratio.

In this setting, where both the instructor and the students are experienced and there is one manikin for each three students, we recommend first trying the Experienced Approach. Students are arranged in small groups of three with a manikin. They use the Scenario Sheets to prompt each other through a guided problem-solving scenario. If it becomes clear after the first scenario practice that the students' skills are substandard, we recommend changing to the standard approach to focus on improving their skills using either a Video-Guided Practice or an instructor demonstration followed by small group practice with Skill Sheets.

Example 3: Initial Blended Class with RSV. An Experienced Instructor with 1 New Student and a 1:1 Student-to-Manikin Ratio.

In this setting, the student has completed the online lessons portion of the blended learning initial class and is ready to begin the previously scheduled remote skills session through the RSV platform. The instructor and student are in separate locations, so each has an adult and an infant manikin and all appropriate equipment for skill practices. The student and instructor are each positioned in front of their own device camera in a way that provides a clear view of skills using the equipment at hand. Here we recommend using the standard approach with an instructor demonstration followed by a student demonstration using a Skill Sheet as a reference. The instructor offers prompts and direction as needed, and also plays the role of a second BLS Provider for skills practice and performance evaluation.

standard precautions. The patient is unresponsive. You have activated EMS or your occupational emergency action plan by [__ ex. using a mobile device __]. Other providers are a few minutes away with an AED. The patient is not breathing. No carotid pulse is felt. You have an adult bag-mask device in your emergency response equipment. Demonstrate what actions you would take next.

In-Hospital/Clinic Setting: You and another BLS Provider have responded to a shout for help from [__ ex. Radiology __]. As you approach the scene, you see an anxious [__ ex. patient transporter __] kneeling next to a motionless adult. "She unconscious. She's not breathing right." The scene is safe. You have taken standard precautions. The patient is unresponsive. You have activated EMS or your occupational emergency action plan by [__ ex. pushing the code button __]. Other providers are a few minutes away with an AED. The patient is occasionally gasping and making gurgling sounds. No carotid pulse is felt. You have an adult bag-mask device in your emergency response equipment. Demonstrate what actions you would take next.

The instructor should give a demonstration or an explanation of how students use Scenario Sheets to practice. Students are then arranged in small groups of no more than 3 students to 1 manikin (3:1). Students assume the role of BLS Provider(s) and Prompter. The Prompter starts by reading the scenario aloud to the group.

Once the scenario has been read, the BLS Provider(s) demonstrates what actions they would take next to simulate delivering appropriate treatment. The Prompter provides directive information about the patient only as needed. For example, when the BLS Provider taps or squeezes the manikin's shoulder and asks, "Are you okay?" the Prompter states, "Patient is unresponsive."

If the BLS Provider(s) makes a mistake or forgets to do something, the Prompter can assist them by telling them what action is necessary according to the performance criteria on the Scenario Sheet. During the small group practice, instructors assess the students as they practice. The instructor circulates through the classroom, answering questions, correcting errors in technique, and providing constructive feedback. This continues to the end of the scenario. Following the scenario, students should briefly discuss what went right and what needed improvement. Students should rotate through the roles until all have played Prompter and BLS Provider.

Instructors may play the role of Prompter for a whole class, or as Prompter and as a second BLS Provider when necessary for the class format and delivery method, for example, in the in-person skills session of a blended learning class held for a single student.

> *Please note: Practicing with Scenario Sheets is an imperfect simulation of reality. Real-life patient care occurs in a complex reality that requires a continuous and constant process of observing and interacting with the patient, equipment, other providers and often, family, or bystanders.*

Evaluation

Performance Evaluation Is Required

A HSI BLS certification card may not be issued unless the student demonstrates skill competency as indicated by the skill criteria on the Adult BLS and Infant BLS Performance Evaluation sheets. Performance Evaluation is conducted the same for initial and renewal class whether delivered in the traditional classroom, blended learning with in-person, instructor-led skills session or using RSV. Remediation is not permitted in a Challenge. A CPR feedback device is strongly recommended for accuracy.

Conducting Performance Evaluation

The instructor starts by reading the scenario aloud to the student. Once the scenario has been described, the student should begin promptly after the instructor says, "Demonstrate what actions you would take next." The student should do whatever they think is necessary, determining for themselves what actions to take. If they make a mistake or forget to do something, they should do their best to correct the error and keep going. The instructor should not coach the student or answer questions about BLS procedures, skills, or actions. The Instructor should only offer the information that is in the scenario and Instructor Prompt column when appropriate.

1. Whenever possible, conduct the performance evaluations in private.
2. Have the student being evaluated perform the treatment actions on a manikin.
3. Conduct the Adult BLS Performance Evaluation. Carefully watch the actions taken for each procedure to make sure they are correctly performed according to the performance criteria listed.
4. When an action requires feedback to move on, provide the indicated Instructor prompt.
5. Check off the box in each row of BLS procedures as the student successfully completes it.
6. Use a stopwatch to ensure an accurate compression rate of 100–120 times per minute.
7. In the Adult BLS scenario, another student or an instructor should play the role of second BLS Provider bringing the AED, handing it to the student being evaluated, and taking over compressions. *CPR should continue while the pads are attached.*
8. When the scenario is complete, check off either the box stating the student did or did not successfully completed it.
9. If the student has not correctly performed all listed actions (there is at least one unchecked box), the student must receive remediation.
10. Sign the sheet attesting that you have conducted the performance evaluation.
11. Conduct the Infant BLS Performance Evaluation in a similar way.

> *The required performance evaluation sheets are included on the following pages, which may be duplicated.*

Knowledge Evaluation Is Required

An HSI BLS certification card may not be issued unless the student obtains a passing score of 74% or better on the 21-question exam (Written Exam, print or online). The BLS exams are valid, appropriately matched to content, and consistent with established item-writing standards. Online exams include additional questions in the test bank, and questions are automatically randomized.

Subjectively raising the passing score is improper as it may result in a person who has an adequate level of knowledge competence failing the test. The online Written Exam will automatically indicate if a student has received a passing score. If a student does not pass the first Written Exam (print or online), they must take the alternative version (they may do so right away). If a student does not pass the alternative version, they must retake the class.

HSI permits open-book exams. Open-book exams decrease test anxiety and emphasize critical thinking and problem solving over recall of memorized facts. Open-book exams mean that students may use reference materials to take exams. Students should not be allowed to openly discuss the exam with other students or the instructor. Their answers should be their own. Instructors may read aloud the exam to the students as necessary without providing the answers.

Consider the following tips to help prevent cheating in a traditional class setting.

1. Request a photo ID if you suspect someone may be taking the test in place of another student.
2. Before distributing the exams, remind students that those who are caught cheating are not eligible for certification.
3. Inform students there is no talking among students during the exam. If a student has a question during the exam, ask that student to raise a hand and you will go to them.
4. For extra precaution, use both versions of the exam, alternating them between students to make copying from another student more difficult.
5. Walk around the room throughout the exam. Do not do other work while monitoring the exam.

Class Evaluation Is Required

Encouraging class participants to provide feedback and then using that feedback to improve instruction is an essential aspect of any quality educational effort. HSI requires that students be given the opportunity to evaluate their BLS Class using the “Rate Your Program” class evaluation form. Completed class evaluations should be promptly delivered to the training center responsible for the class. Class participants may also provide feedback directly to HSI at emergencycare.hsi.com/quality-assurance-compliance.

Remediation

Remediation is the act or process of remedying (to solve, correct, or improve) a problem. Informal remediation occurs throughout the class as the instructor provides constructive feedback to help students learn and make the most of their abilities. Making sure students have plenty of time for repeated skill practice during the class will reduce the amount of formal remediation.

Formal remediation takes place directly after a student fails to successfully complete the required Adult and/or Infant BLS Performance Evaluations. Use the performance criteria in the Procedure column to objectively point out where required actions were ineffective or omitted. Review the performance criteria with the student. Use the debriefing framework to guide the conversation. Ask the student what happened. Share your observations. Summarize the correct actions and what needs to improve.

Depending on the class format and delivery method there may be time for the student to practice the criteria needing improvement with another student or another instructor while other students complete their performance evaluations (this does not apply to the Challenge option). If time allows, repeat the Performance Evaluation for the student following remediation, using a new Performance Evaluation sheet. If there is a fundamental incompatibility in personalities between the student and the instructor conducting the performance evaluation, it may be necessary to have a different instructor conduct the second performance evaluation. If a student requires more informal or formal remediation than can be reasonably provided during a class, recommend the student attend BLS training again and do not issue a certification card.

ADULT BLS PERFORMANCE EVALUATION

Student Name: _____ Class Date: _____

Out-of-Hospital Setting Scenario

You are a BLS Provider responding alone to assist a person having a seizure. As you approach the scene, you see a bystander kneeling next to a motionless adult lying on the floor. The person's tissue color is bluish. The bystander says, "He fainted. His arms and legs were shaking." You have appropriate PPE. An AED is located nearby. Demonstrate what actions you would take next.

In-Hospital/Clinic Setting Scenario

You have just arrived at work when you hear the receptionist shout, "Help!" As you reach the waiting room, you see the receptionist kneeling next to an adult collapsed on the floor. The person's tissue color is extremely pale. The startled receptionist says, "She… just… went down." You have appropriate PPE. An AED is located nearby. Demonstrate what actions you would take next.

BLS Procedure	BLS Provider Action (Performance Criteria)	Instructor Prompt	Check Off
Performs Assessment	• Assesses scene safety. • Takes standard precautions. • Assesses responsiveness. • Activates EMS and/or EAP. • Gets an AED and emergency response equipment (or sends some else to).	*"Scene is safe."* *"Patient is unresponsive."* *"EMS/EAP activated."* ▸ ***"The bystander is going to get the AED, equipment, and help."***	☐
Assesses Breathing & Pulse	• Assesses breathing and carotid pulse at the same time for no more than 10 seconds.	▸ ***"No pulse felt."*** ▸ ***"Patient is slowly gasping."***	☐
Starts High-Quality CPR	• Positions patient on firm flat surface. › Performs 30 chest compressions. › Positions two hands on lower half of breastbone. › Uses upper body weight to compress. › Compresses at least 2 inches (5 cm). › Compresses at a rate of 100–120 times per minute (in no less than 15 and no more than 18 seconds). › Allows chest to fully recoil at top of compressions.		☐
Gives Rescue Breaths	• Seals CPR mask against patient's face. • Opens airway using the head tilt–chin lift maneuver. • Gives two rescue breaths. • Ensures each breath is 1 second in length. • Creates visible rise of chest, but no more. • Resumes chest high-quality chest compressions in less than 10 seconds.		☐
Continues High-Quality CPR	• Repeats CPR cycle of 30:2 compressions to breaths.	***[Student needs to complete this cycle before Second BLS Provider arrives with AED.]***	☐

Continued on Next Page ›

BLS Procedure	BLS Provider Action (Performance Criteria)	Instructor Prompt	Check Off
Operates the AED	• Powers on the AED. • Bares chest. • Correctly applies AED pads. • Follows AED prompts.	▸ ***[Second BLS Provider arrives] "Here is AED. I'll take over CPR while you operate the AED."***	☐
Clears for Analysis	• Makes sure no one is touching patient.	▸ ***[AED] "Analyzing."***	☐
Safely Delivers Shock	• Makes sure no one is touching patient. • Presses shock button.	▸ ***[AED] "Shock advised."*** ▸ ***[Instructor] "Patient's muscles contract suddenly."***	☐
Resumes High-Quality CPR	• Ensures CPR is immediately resumed by second BLS Provider.		☐
END PERFORMANCE EVALUATION			

☐ Successfully Completed. ☐ Not Successfully Completed. Remediation Required.

Signature of Authorized Instructor: Registry Number: _____

INFANT BLS PERFORMANCE EVALUATION

Student Name: _____ Class Date: _____

Out-of-Hospital Setting

You are a BLS Provider responding alone to a call for a "baby who is not breathing." As you reach the scene, an obviously distraught teenager hands you a limp, mottled infant, pleading, "Please help… he's not breathing!" You have appropriate PPE, including a pediatric CPR mask. Demonstrate what actions you would take next.

In-Hospital/Clinic Setting

You have just arrived at work and parked your car. As you walk through the facility parking lot in your scrubs, another vehicle screeches to a stop just feet away. The passenger door opens and a frightened looking teenager steps out and runs toward you. The person hands you a limp, mottled infant, pleading, "Please help… he's not breathing!" You have appropriate PPE, including a pediatric CPR mask. Demonstrate what actions you would take next.

BLS Procedure	BLS Provider Action (Performance Criteria)	Instructor Prompt	Check Off
Performs Assessment	• Assesses scene safety. • Takes standard precautions. • Assesses responsiveness. • Activates EMS and/or EAP. • Gets an AED and emergency response equipment (or sends someone else to get them).	*"Scene is safe."* *"Patient is unresponsive."* *"EMS/EAP activated."* ▸ ***"A person nearby witnessed what happened. They will call 911 and get help."***	☐
Assesses Breathing & Pulse	• Assesses breathing and brachial pulse at the same time for no more than 10 seconds.	▸ ***"Not breathing. No pulse felt."***	☐
Starts High-Quality CPR	• Positions patient on firm flat surface. › Performs 30 chest compressions. › Positions two fingers or two thumbs on breastbone, just below nipple line. › Compresses at least 1/3 depth of chest or about 1½ inches (4 cm). › Compresses at a rate of 100–120 times per minute (in no less than 15 and no more than 18 seconds). • Allows chest to fully recoil at top of compressions.		☐
Gives Rescue Breaths	• Seals CPR mask against patient's face. • Opens airway using the head tilt–chin lift maneuver. • Gives two rescue breaths. • Ensures each breath is 1 second in length. • Creates visible rise of chest, but no more. • Resumes high-quality chest compressions in less than 10 seconds.		☐

Continued on Next Page ›

BLS Procedure	BLS Provider Action (Performance Criteria)	Instructor Prompt	Check Off
Continues High-Quality CPR	• Repeats CPR cycle of 30:2 compressions to breaths	***[Student needs to complete this cycle before a second BLS Provider arrives with pediatric bag-mask device.)***	☐
Switches to Two-BLS Provider High-Quality CPR	• First BLS Provider switches to a 15:2 compression to ventilation ratio. • Performs 15 compressions in no less than 7 seconds and no more than 9 seconds. (2-Thumb Encircling-Hands Technique is preferred.) • After 15 compressions, First BLS Provider pauses briefly to allow Second BLS Provider to give two rescue breaths.	▸ ***[Second BLS Provider arrives.] "I'll take over ventilation."***	☐
Gives Rescue Breaths	• Second BLS Provider gives two rescue breaths.	***[Second BLS Provider is not evaluated.]***	
Continues High-Quality CPR	• First BLS Provider resumes high-quality chest compressions in less than 10 seconds. • After 15 compressions, First BLS Provider pauses briefly to allow Second BLS Provider to give two rescue breaths.	▸ ***[Students need to complete at least one additional cycle before switching.]***	☐
Switch Roles	• BLS Providers switch roles.	***[Instructor or Second BLS Provider says "Two minutes is up. Let's switch."]***	
Continues High-Quality CPR	• After 15 compressions, Second BLS Provider pauses briefly to allow First BLS Provider to give two rescue breaths. › First BLS Provider opens airway. › Gives two rescue breaths. › Ensures each breath is 1 second in length. › Creates visible rise of chest, but no more. › Second BLS Provider resumes high-quality chest compressions in less than 10 seconds.	***[First BLS Provider must give two effective rescue breaths with the bag-mask device.]***	☐
CONTINUES HIGH-QUALITY CPR			

☐ Successfully Completed. ☐ Not Successfully Completed. Remediation Required.

Signature of Authorized Instructor: Registry Number: _____

AFTER THE BLS CLASS

Documentation and Record Keeping

Class Roster

The most current HSI BLS Class Roster is the principal record of training. The Class Roster must be completed within 30 days of the BLS training class. This time frame may be extended up to 60 days under extenuating circumstances. A complete, accurate, and legible Class Roster reflecting the actual class date(s) of the training class signed by the Authorized Instructor or Instructor Trainer or electronically submitted through Otis is required for every HSI BLS Class. Clear, legible, and orderly Class Rosters (paper or electronic) must be kept by the Training Center for no less than three (3) years or as required for compliance with a specific state or federal regulation.

You may use a Class Roster of your own making, but it must contain the exact same data fields and attesting statement as the HSI BLS Class Roster. Signing or electronically submitting a Class Roster for an HSI BLS Class is confirmation that all participants listed met the terms and conditions for certification. These terms and conditions are detailed in the Training Center Administrative Manual (TCAM). The TCAM is available at emergencycare.hsi.com/quality-assurance-compliance.

Performance Evaluation Sheets

Performance evaluation is a secondary record of training. HSI strongly recommends that Training Centers keep the Performance Evaluations for any student who fails to successfully complete the required Adult and/or Infant BLS Performance Evaluations.

Continuing Education Hours for EMS Professionals

HSI is a nationally accredited organization of the Commission on Accreditation of Pre-Hospital Continuing Education (CAPCE). CAPCE is the national accrediting body for Emergency Medical Services (EMS) continuing education courses and course providers. CAPCE accreditation requires an evidence-based peer-review process for continuing education programs comparable to all healthcare accreditors.

As an accredited organization of CAPCE, HSI is committed to providing high-quality EMS Continuing Education. Our CAPCE Organizational Accreditation demonstrates that HSI has voluntarily submitted to an objective assessment of its ability to meet established standards for educational planning, implementation, and evaluation, and that it has met or exceeded those criteria.[31] CAPCE accreditation exists so that EMS providers have access to standard-driven continuing education activities and are awarded credit for participating in those activities. HSI BLS offers CAPCE-approved EMS continuing education hours (CEH). HSI and its Training Centers and Instructors are required to collect and submit information from each EMS provider who completes a CAPCE-accredited course. While this information must be collected and submitted to HSI, students who are EMS providers are not obligated to accept the CEH or to claim the CEH certificate.

To Offer CEH for HSI BLS:

1. Before, during, or within 30 days of the blended or classroom class, use the CAPCE Data Collection Form to collect the required information from each EMS provider (see Appendix).
2. Purchase CAPCE CEH credits for EMS Providers.
   a. Otis>Store> Search> “CAPCE”
3. Enter the required information from each EMS Provider into the CAPCE roster.
4. HSI will report the CEH directly to CAPCE.
5. Print or email the CAPCE CEH certificate to the student(s).

If you have questions about purchasing CEH for EMS providers who complete an HSI BLS Class, log in to Otis, send an email to customerservice@hsi.com, or give us call at 800.447.3177.

31 CAPCE represents only that its accredited programs have met CAPCE standards for accreditation. CAPCE accreditation does not represent that the content conforms to any national, state or local standard or best practice of any nature.

Continuing Dental Education for Dental Professionals

The Academy of General Dentistry (AGD) Program Approval for Continuing Education (PACE) was created to assist members of the AGD and the dental profession in identifying and participating in quality continuing dental education (CDE). HSI is recognized nationally as a AGD PACE-approved CDE provider. As such, HSI and its Approved Training Centers (TCs) and Instructors are permitted to award CDE hours for the HSI BLS Class to licensed dental professionals such as dentists (DDS), registered dental hygienists (RDH), and registered dental assistants (RDA).

HSI bears the overall administrative responsibility for ensuring compliance with the 13 PACE Standards and Criteria. These standards are based on the best practices of any type of CE provider and are intended to bring uniformity to CDE providers. However, AGD considers HSI, the TC, and the instructor to be "joint program providers." This means that the TC and Authorized Instructor share responsibility with HSI for compliance with PACE Standards and Criteria for publicity, evaluation, class records, and conflict of interest (Standards 9-12). Every TC and instructor teaching the HSI BLS Class who wishes to offer PACE-approved CDE are expected to comply with these Standards and Criteria.

To learn more about how to offer CDE, log into and download the AGD PACE document package. The package can be found in Otis>Documents/Resources>Search> "PACE."

> **PLEASE NOTE:** *THE AWARD OF CONTINUING EDUCATION HOURS IS NOT CERTIFICATION. CERTIFICATION IS DOCUMENTED BY A SEPARATELY ISSUED CERTIFICATION CARD. CONTINUING EDUCATION HOURS ARE NOT AVAILABLE TO EMS OR DENTAL PROFESSIONALS WHO CHALLENGE THE PROGRAM.*

part four

LESSON PLANS

TRADITIONAL CLASSROOM, INITIAL TRAINING

Learning Environment

The ideal traditional classroom learning environment is comfortable, efficient, and distraction-free with sufficient space, seating, resources, and equipment. Instructors should take reasonable efforts to ensure a physically safe, comfortable, and appropriate learning environment. The room should be well lit, well ventilated, and comfortable in temperature.

Nevertheless, instructors must often create a makeshift classroom out of a noisy shop floor, cafeteria, conference room, and even outdoor spaces. Such challenges should be anticipated, and the learning environment be made as favorable as possible. With personal safety and professionalism in mind, HSI strongly advises against conducting traditional classroom classes in the instructor's home - particularly private, one-on-one classes. Whenever possible, training should take place in a professional business or education setting, public meeting space, or via RSV.

Classroom Space

10:1

In a maximum capacity traditional initial or renewal class, the room should be large enough to accommodate chairs, tables, and skill practice space for up to 10 students per instructor and no more than 3 students to 1 manikin. Allow at least 15 to 17 square feet per student whenever possible.[32] Students should have adequate space for individual and/or small group activities using manikins and equipment.

32 Laird, Holton, Naquin. Approaches to Training and Development: Third Edition Revised and Updated (New Perspectives in Organizational Learning, Performance, and Change) 2003

CLASSROOM HEALTH AND SAFETY

Protecting Health

To help prevent the spread of infectious disease, both instructors and students should:

Wash Hands

Wash their hands often with soap and water for at least 20 seconds. Keeping hands clean is one of the most important steps instructors and students can take to avoid getting sick and spreading germs to others. For more information, visit the Centers for Disease Control and Prevention hand washing website at cdc.gov/handwashing/.[33]

Stay Home

Reschedule if they are ill or if their hands, mouth, or lips have uncovered open wounds or sores.

Sanitize

Make alcohol-based hand rubs available during all in-person training, to be used by all instructors and students before, during, and after training. Alcohol-based rubs with 60% or more alcohol can reduce germs on hands.[34]

Follow the CDC guidance for "Cleaning and Disinfecting Public Spaces, Workplaces, Businesses, Schools, and Homes"[35] to reduce the risk of exposure to infectious disease, including the virus that causes COVID-19 and similar variants.

Follow all recommendations regarding decontamination and sanitary practices supplied by the manufacturer of the manikins used during training.

Use PPE

Train with sanitary personal protective equipment (PPE), including but not limited to disposable face masks, safety glasses, face shields, pocket masks with one-way valves, bag-mask devices, and gloves.

- Having students train with disposable PPE (gloves, face masks, and/or face shields) during this class is strongly recommended. It can improve realism and help expose situations that require unique problem-solving that cannot be replicated in a typical classroom setting.
- If the instructor chooses not to train with disposable PPE, students should use the phrase "I've taken standard precautions" (or something similar) to indicate the critical importance of infection prevention practices in all settings where BLS is delivered.

Follow the Recommendations & Take Reasonable Precautions

Follow current local, state, and federal recommendations from health authorities regarding physical (often called social) distancing, mask wearing, reducing aerosol transmission, etc. Adapt training while these guidelines are in effect:

- Rescue breaths with a CPR mask and one-way valve may be simulated. Students must correctly demonstrate how to place the mask on the manikin, open the airway with a head tilt–chin lift, and then verbalize that they would give two breaths, one-second each, and watch for visible chest rise. Students should not share a CPR mask or valves.
- Students may practice two-provider CPR on separate manikins as if they were performing it together on a single manikin.

> ***Take all other reasonable precautions to minimize the risk of infectious disease transmission.***

33 https://www.cdc.gov/handwashing/
34 https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/hand-sanitizer.html
35 https://www.cdc.gov/coronavirus/2019-ncov/community/reopen-guidance.html

CLASSROOM HEALTH AND SAFETY

Preventing Injury

To help prevent classroom injury, instructors should:

Avoid Harmful Situations

Warn students to avoid awkward or extreme postures of the body. Improper lifting and moving is a leading cause of back injury.

Encourage students who have a history of back problems or other physical disabilities to request reasonable accommodations.

Be Prepared

Know and share with students:

- The location of the fire/emergency exits, fire alarm pull stations, and emergency evacuation routes.
- The location of a first aid kit, bleeding control kit, AED, and fire extinguisher.
- Pertinent elements of any emergency action plan (EAP) specific to the worksite/training location.

Use Training Devices

Prohibit inappropriate psychomotor skills practice on humans. Examples include but are not limited to abdominal thrusts, rescue breathing, chest compressions, and defibrillation. These skills must be performed on training manikins designed for that purpose.

Use device trainers to simulate attributes of actual devices. ***Under no circumstances should actual devices such as a live AED or actual naloxone nasal spray be used during training.***

Use Appropriate Behavior

Model appropriate behavior. Discourage students from smoking, eating, and engaging in inappropriate behavior in the classroom.

CLASS PREPARATION

About a Month or Two Before Class

- ✓ Secure a classroom with an adequate space and learning environment.
- ✓ Confirm the date, location, and number of students.
- ✓ Reserve training equipment for the class.
- ✓ Schedule and confirm additional HSI authorized BLS instructors as required/ preferred.
- ✓ Order HSI BLS certification cards and other training materials as necessary.
- ✓ Familiarize yourself with any differences between what is taught in this BLS Class and local medical protocols for your students.

About Three Weeks Before Class

Send a pre-Class letter or email to each student that:

- ✓ Confirms the class location, agenda, and time.
- ✓ Encourages them to check with their employer or accrediting, credentialing, or licensing agency to ensure the HSI BLS Class will meet their requirements before attending training.
- ✓ Informs them that the class will involve close contact with other students, resuscitation manikins, and other equipment.
- ✓ Reviews any pertinent recommendations from local, state, or federal health authorities that affects what participants should expect in the classroom setting.
- ✓ Requests that they reschedule their training if they may have been exposed to an infectious disease; are experiencing fever, coughing, shortness of breath, diarrhea, fatigue, or muscle aches; or if they have open wounds or sores on their hands or mouth.
- ✓ Describes the steps you take to protect students and help ensure a safe and healthy learning environment (hand hygiene, cleaning and disinfecting of surfaces and equipment, physical distancing, etc.).
- ✓ Reminds them to wear loose, comfortable clothing suitable for skill practice.
- ✓ Advises them to let you know if they have a physical disability and what reasonable accommodations may be necessary (See Americans with Disabilities Act in the TCAM for more).
- ✓ Provides your contact information.

A Few Days Before Class

- ✓ If you may have been exposed to an infectious disease; are experiencing fever, coughing, shortness of breath, diarrhea, fatigue, or muscle aches; or have open wounds or sores on your hands or mouth, find another instructor to teach the class or reschedule it.
- ✓ Make sure you have adequate copies of essential Class paperwork (or access to electronic versions), including:
  - › HSI BLS Skill Guide
  - › HSI BLS Paper Written Exams
  - › HSI BLS Performance Evaluation Sheets (Adult BLS and Infant BLS per student, plus spares).
  - › HSI BLS Class Roster (one per class)
  - › HSI BLS CAPCE Data Collection Form (for awarding EMS Provider Continuing Education Hours, as needed)
  - › HSI AGD PACE Verification of Participation Document and HSI Academy of General Dentistry (AGD) Continuing Education Class Roster (for awarding Continuing Dental Education, as needed)
- ✓ Briefly review the Traditional Classroom, Initial Training Lesson Plans.
- ✓ Confirm your internet connection will be available to log in to Otis if you plan to stream the BLS Class Presentation or download it to the HSI Instructor Desktop Video Player or Mobile App and verify the media plays as expected.

Day of Class

- ✓ Arrive early. Give yourself plenty of time to get set up and organized.
- ✓ Greet students as they arrive, introducing yourself to each one.
  - › Be friendly, considerate, respectful, and professional.
  - › Have students sign in on a sign-in sheet or the HSI BLS Class Roster.
  - › Have students complete a name tag or tent card and select a seat.
- ✓ Begin class. Start on time.
- ✓ Consider using a short, appropriate icebreaker as a warm-up exercise.
  - › Great ideas for these activities can be found on the internet by searching with the key word “icebreakers.”
- ✓ Establish a connection with the students.
  - › Ask about previous training. Connect the students’ experiences and knowledge to this class.
- ✓ Briefly cover class goal, agenda, breaks, certification requirements, facility and classroom safety.
  - › Know and share the locations of the following: Bathrooms, fire/emergency exits, fire alarm pull stations, best emergency evacuation route, first aid kits, emergency oxygen, and closest AED.
- ✓ Distribute the HSI BLS Skill Guide.

PREPARATION CHECKLIST

Required Class Materials

- ☐ HSI BLS Instructor Guide with Lesson Plans, 1 per instructor.
- ☐ HSI BLS Class Roster, 1 copy.
- ☐ HSI BLS Class Presentation, Initial Class (downloaded from Otis for playback or streamed).
- ☐ HSI Skill Guide, minimum 1 for each 3 students.
- ☐ HSI BLS Performance Evaluations, 1 copy Adult BLS and 1 Infant BLS per student.
- ☐ HSI BLS Written Exam A and Answer Sheet, 1 copy per student.
- ☐ HSI BLS Written Exam B, and Answer Sheet, enough copies for student retakes, as needed, or to alternate between students.
- ☐ HSI BLS Written Exam Answer Key, 1 for each version of the exam.

Optional Class Equipment

(Strongly Recommended)

- ☐ Disposable gloves (nonlatex), minimum 1 pair for each student.
- ☐ Surgical mask or N95 respirator, minimum 1 for each student.
- ☐ CPR feedback devices, minimum 1 per manikin.
- ☐ Stopwatches for high-performance CPR team practice, minimum 2 for each 4 students (online, smartphone app, or handheld digital).
- ☐ Metronomes, minimum for each 3 students (smartphone app, or traditional).
- ☐ HSI “Rate Your Program” Class Evaluation, 1 paper copy per student.

Additional Class Equipment, Supplemental Topics

- ☐ Naloxone administration training device, minimum 1 for each 3 students.

Required Class Equipment

- ☐ Desktop or laptop computer (Windows or Mac), or smartphone or tablet, 1 per instructor.
- ☐ Internet connection (for streaming), HSI Instructor Desktop Video Player or HSI Instructor Mobile App with downloaded BLS Class Presentation media.
- ☐ Video monitor or computer projector and screen large enough for all students in class to see.
- ☐ CPR manikins, minimum 1 adult and 1 infant for each 3 students.
- ☐ CPR manikin cleaning and disinfecting wipes.
- ☐ Alcohol-based hand sanitizer, 1 pump bottle or similar for each 3 students.
- ☐ AED Trainer with adult and pediatric pads, minimum 1 for each 3 students.
- ☐ CPR mask and disposable mouthpiece with valve/filter for CPR mask, 1 for each student.
- ☐ Bag-mask device, minimum 1 adult and 1 pediatric for each 3 students.
- ☐ Stopwatch for Adult BLS Performance Evaluation, minimum 1 per instructor (online, smartphone app, or handheld digital).

Day of Class

- ☐ Pens or pencils, 1 for each student.
- ☐ Blankets, kneeling pads or mats, 1 for each 3 students.
- ☐ Name tags or tent cards, 1 for each student.
- ☐ Spare projector bulb (as needed).
- ☐ Extension cord(s).
- ☐ Multi-strip power surge protector.
- ☐ Whiteboard with dry erase pens and eraser.
- ☐ Large black markers for student name tags or tent cards.
- ☐ Large envelope for class paperwork.

INITIAL BLS TRAINING CLASS OUTLINE AND TIME FRAME

Traditional classroom for individuals who have never been certified or whose certification has expired.

Segment One: Introduction

#	Lesson Title	Approximate Length (min)
1	Introduction to BLS	9:00

Segment Two: Adult BLS

#	Lesson Title	Approximate Length (min)
2	Sudden Cardiac Arrest	5:00
3	Adult BLS Procedure/Assessment	7:00
4	Adult Compressions	7:00
5	Adult Airway	4:00
6	Adult Breathing	13:00
7	Adult Automated External Defibrillation	10:00
8	Adult CPR: One BLS Provider	10:00
9	Adult CPR: Multiple BLS Providers	15:00
10	Additional Adult BLS Considerations	7:00
11	Suspected Opioid-Associated Emergency	5:00
12	Adult CPR: Teamwork in High-Performance Resuscitation	7:00-25:00*

Segment Three: Child BLS

#	Lesson Title	Approximate Length (min)
13	Pediatric Chains of Survival	3:00
14	Child BLS Procedure/Assessment	7:00
15	Child Compressions	5:00
16	Child Airway and Breathing	5:00
17	Child Automated External Defibrillation	4:00
18	Child CPR: One BLS Provider	5:00
19	Child CPR: Multiple BLS Providers	11:00

Segment Four: Infant BLS

#	Lesson Title	Approximate Length (min)
20	Infant BLS Procedure/Assessment	6:00
21	Infant Compressions	5:00
22	Infant Airway and Breathing	8:00
23	Infant Automated External Defibrillation	2:00
24	Infant CPR: One BLS Provider	4:00
25	Infant CPR: Multiple BLS Providers	11:00
26	Infant CPR: Teamwork in High-Performance Resuscitation (Optional)	20:00*

Segment Five: Choking

#	Lesson Title	Approximate Length (min)
27	Relief of Choking	11:00

Segment Six: Required Knowledge & Skill Evaluation

#	Lesson Title	
28	BLS Written Exam	30:00
29	BLS Performance Evaluation	40:00

Segment Seven: Conclusion

#	Lesson Title	
30	Conclusion	15:00

Total Breaks[36]: 20:00 minutes

Total Time[37]: 4 hours, 51 minutes

* This lesson contains an optional skill practice. Optional skill practice times are not included in the total time for this course. See lesson plan for details.
36 Adult education guidelines recommend a break for at least 5 minutes each hour. Class timing can vary. Because of this, no specific breaks have been designated in this class outline. Class size, class location, instructor-to-student ratios, and other factors will affect the actual schedule. Breaks should be provided but may be rearranged or combined as required or desired.
37 Projected times for lessons consider video run times, brief introductions and answers to questions, demonstrations, and student practices with up to 3 students in a class of 10. Stated class times are based on covering required lessons only. Lesson times are influenced by class preparation, available equipment, instructor efficiency, and number of students. These factors may increase or decrease the time needed to meet the required learning objectives.

segment one
INTRODUCTION

lesson one
INTRODUCTION TO BLS

PREPARE

Duration:
9 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment & Materials

Please refer to the Preparation Checklist on page 41 for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain the purpose of BLS training.
- Describe differences between national guidelines and local medical protocols. (Optional)

Why This Topic Matters

Basic life support providers who proficiently deliver high-quality CPR and early defibrillation play an integral role in strong chains of survival and can significantly contribute to meaningful survival, function, and recovery of the cardiac arrest victim.

Play the Video

Instructional Notes

1. It is helpful to let your students know right at the start of class that your goal is to create a safe learning environment. Mistakes are learning opportunities. You are here to help them make the most of their abilities with a focus on high-quality skills. This will help students relax and feel more comfortable.
2. If possible, use contextual learning to help students learn in such a way that it relates to them and applies to their real-world setting (fire rescue, EMS, public safety, lifeguarding, dental practice, hospital, clinic, etc.).
3. It is a best practice to know what differences may exist between what is taught in this BLS Class and your students' local medical protocols. It is often helpful to have a short discussion with the students to address these differences. Where local protocols differ from national guidelines, students may practice their skills in the context of their local protocols. However, this class is based on national guidelines for CPR and emergency cardiovascular care with a primary focus on the middle ground of the BLS continuum. Notwithstanding local protocols, certification in this BLS Class requires students to complete a performance evaluation for Adult BLS and Infant BLS based on national guidelines, not local protocols.

WRAP UP

Reinforce Key Points as Needed

1. This BLS training program is intended for healthcare providers and other public safety professionals working a wide variety of occupational settings.
2. The purpose of this BLS training program is for participants to gain or improve knowledge and skill proficiency in high-quality CPR skills for the adult, child, and infant.
3. BLS Providers play a key role in resuscitation effort following cardiac arrest, both out of hospital and in hospital or clinic settings.
4. EMS providers should always follow their local physician-directed medical protocols.

Ask a Review Question as Needed

BLS requires knowledge and proficiency in CPR, AEDs, and techniques to relieve airway obstruction in what age group of patients?

a. Adults only.
b. Infants only.
c. Adults and infants.
d. Adults, children, and infants.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson two
SUDDEN CARDIAC ARREST

PREPARE

Duration:
5 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment & Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Describe how to recognize and provide treatment for sudden cardiac arrest.
- Identify the links in the adult chains of survival for inside and outside the hospital.

Why This Topic Matters

Sudden cardiac arrest can happen anywhere with little or no warning. A strong Chain of Survival, including high-quality CPR and early defibrillation with an AED can more than double the likelihood for survival.

Play the Video

WRAP UP

Reinforce Key Points as Needed

1. CPR is the immediate treatment for suspected cardiac arrest.
2. The most effective way to end pulseless ventricular tachycardia and ventricular fibrillation is defibrillation.
3. Immediate, high-quality CPR and early defibrillation with an AED can more than double the likelihood for survival.
4. Immediate CPR and early defibrillation are parts of the adult "Chain of Survival," a series of six interdependent links that describe the best approach to cardiac arrest care.
5. The greatest chance for survival exists when all the links of the chains of survival are strong.

Ask a Review Question as Needed

When the lower chambers of the heart beat too quickly or quiver, the heart cannot pump blood. These abnormal heart rhythms, or dysrhythmias, are known as _____ and _____.

a. Stroke, heart attack
b. Cardiac arrest, defibrillation
c. Secondary cardiac arrest, heart attack
d. Pulseless ventricular tachycardia (VT), ventricular fibrillation (VF)

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson three

ADULT BLS PROCEDURE/ASSESSMENT

PREPARE

Duration:
7 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment & Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Identify the main elements of the Adult BLS procedure.
- Explain how to assess the scene and adult patient.
- Correctly demonstrate how to assess the scene and adult patient as a single BLS Provider.

Why This Topic Matters

The Adult BLS procedure is a step-by-step guide used to improve and standardize decisions when responding to a potential adult cardiac arrest. It can help reduce potential errors in the delivery of BLS.

Play the Video

Instructional Notes

1. It may be helpful to have students take a minute or two on their own to look over the complete *Procedure for Adult Basic Life Support* graphic in the Skill Guide.
2. The skill practice for this lesson is designed to emphasize the important first steps in the Adult BLS procedure that make up Assessment (the top box in the procedure).
3. The specific skills for taking action based the presence or absence of normal breathing and pulse will follow in later lessons.
4. Request students routinely decontaminate their hands with an alcohol-based hand sanitizer and clean and disinfect the manikin after each student practices or at the end of a scenario.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 1: Adult Assessment or **Scenario Sheet 1: Adult BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. The Adult BLS procedure is a process composed of tasks that can be performed in a step-by-step manner by a single BLS Provider or performed simultaneously by multiple providers.
2. There are three main elements of the Adult BLS procedure:
   a. Assessment of the scene and patient,
   b. Actions based the presence or absence of normal breathing and a pulse, and
   c. Use of an AED.

Ask a Review Question as Needed

You should take no longer than ___ seconds to simultaneously assess breathing and pulse.

a. 1
b. 3
c. 10
d. 20

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson four

ADULT COMPRESSIONS

PREPARE

Duration:
7 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment & Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Recognize high-quality adult chest compressions.
- Correctly demonstrate high-quality adult chest compressions.

Why This Topic Matters

High-quality CPR is the primary influence on survival from cardiac arrest. High-quality chest compressions are the foundation of high-quality CPR.

Play the Video

Instructional Notes

1. CPR feedback devices transmit evaluative or corrective information on compression rate, depth, release, and hand position during CPR training. The feedback device can be integrated into a manikin or be used as an accessory with it. HSI strongly recommends CPR feedback devices that measure each student's skill performance in real time be used during BLS training.
2. Remind students to routinely decontaminate their hands with an alcohol-based hand sanitizer and clean and disinfect the manikin after each student practices or at the end of a scenario.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 2: Adult Chest Compressions or **Scenario Sheet 2: Adult BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. Push hard and deep, straight down, using your upper body weight to compress the chest at least 2 inches (5 cm). Chest compressions are most often performed too shallowly.
2. At the end of each compression, lift all your weight off the patient's chest, allowing it to completely recoil, or rebound, to its normal position but do not lose contact with the chest.
3. Push fast. Compress the chest at a rate of 100-120 compressions per minute.
4. Minimize interruption in chest compressions. Fewer and shorter interruptions in chest compressions are associated with better outcomes.

Ask a Review Question as Needed

When chest compressions stop, blood flow _____significantly.

a. increases
b. decreases
c. improves
d. circulates

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson five

ADULT AIRWAY

PREPARE

Duration:
4 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment & Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain how to open the adult airway using a head tilt–chin lift and jaw thrust.

Why This Topic Matters

Artificial ventilation of the lungs is an important component for successful resuscitation. To give rescue breaths, there must be an open airway.

Play the Video

WRAP UP

Reinforce Key Points as Needed

1. Two methods to open the airway are the head tilt–chin lift, and jaw thrust.
2. Use the head tilt–chin lift maneuver to open the airway of a patient when head or neck injury is not suspected.
3. If the BLS Provider suspects a spinal injury, open the airway using a jaw thrust without head tilt.
4. An open airway is a higher priority than protecting a possible spinal injury.
5. If the jaw thrust does not open the airway, use the head tilt–chin lift maneuver.

Ask a Review Question as Needed

To open the airway with a jaw thrust, position yourself:

a. Above the patient's head.
b. At the side of the patient, below the hips.
c. At the side of the patient, close to the chest.
d. At the side of the patient, close to the head.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson six

ADULT BREATHING

PREPARE

Duration:
13 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain how to provide effective adult rescue breaths using a CPR mask.
- Explain how to provide effective adult rescue breaths using a bag-mask device.
- Correctly demonstrate how to provide effective adult rescue breaths using a CPR mask.
- Correctly demonstrate how to provide effective adult rescue breaths using a bag-mask device.

Why This Topic Matters

Rescue breaths are critically important in BLS care, as they provide life-sustaining oxygen and ventilation directly to the patient's lungs.

Play the Video

Instructional Notes

1. PPE, including CPR masks and bag-mask devices, are fundamental elements of standard precautions that must be used by healthcare workers and first responders who provide BLS to protect them from infection. Having students practice BLS skills while wearing and using PPE appropriate to their occupational setting can improve realism and help expose situations that require unique problem-solving.
2. Remind students to routinely decontaminate their hands with an alcohol-based hand sanitizer and clean and disinfect the manikin after each student practices or at the end of a scenario.
3. The immediate cause of death in drowning is a deficiency of oxygen. Lifeguards and other well-trained professional rescuers may provide rescue breathing for a submersion victim while they are being brought to the pool deck, shore, or boat. This "in-water resuscitation" can lead to an improved likelihood of survival over delaying ventilation until the victim is out of the water. Procedures for in-water resuscitation should be based on local medical protocol, organizational guidelines and professional training standards.
4. As soon as the unresponsive victim is removed from the water, open the airway and assess breathing. If there is no breathing, give 2 rescue breaths that make the chest rise (if this was not done previously in the water).

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 3 & 4: Adult Rescue Breaths with CPR Mask and **Adult Rescue Breaths with Bag-Mask Device, One BLS Provider** or **Scenario Sheets 3 & 4: Adult BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. Rescue breaths are critically important, as they provide life-sustaining oxygen and ventilation directly to the patient's lungs.
2. Gasping is common in SCA, but it is not normal breathing.
3. If the pulse is definitely felt but the unresponsive patient is not breathing normally, provide rescue breathing. Open the airway and give 1 breath every 6 seconds, or 10 breaths per minute.
4. Excessive ventilation can be harmful. Give enough air to make the patient's chest rise, but no more than that. Stop ventilating as soon as you see chest rise.
5. Take standard precautions when providing adult rescue breaths. Use a CPR mask or bag-mask device in addition to other appropriate PPE. HEPA filters can trap airborne virus particles.

Ask a Review Question as Needed

Your adult patient is making abnormal gasping, snoring sounds. You definitely feel a carotid pulse. What should you do?

a. Assess scene safety.
b. Check the pulse about every two minutes.
c. Immediately start high-quality CPR, beginning with chest compressions.
d. Provide rescue breathing or bag-mask ventilation.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson seven

ADULT AUTOMATED EXTERNAL DEFIBRILLATION

PREPARE

Duration:
10 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Identify the steps to use an AED [Trainer] on an adult.
- Correctly demonstrate how to use an AED [Trainer] on an adult.

Why This Topic Matters

When indicated, an electrical shock passed through the chest can restore the heart's normal contractions.

Play the Video

Instructional Notes

1. Always verify that each AED Trainer is not a live AED and the device is incapable of delivering a shock.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 5: Adult Automated External Defibrillation, One BLS Provider or
  Scenario Sheet 5: Adult BLS

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. If you have an AED in your workplace, be familiar with its operation. AED design varies by model and manufacturer, but they all operate in a similar manner.
2. Use adult AED pads for patients 8 years of age or older.
3. If directed by the AED, deliver a shock. Continue CPR while the device is charging, then clear everyone from the patient before pressing the shock button.
4. If the patient begins responding, regularly reassess the patient's responsiveness, airway, breathing, and pulse. If a pulse is felt but the patient is not breathing normally, provide rescue breathing or bag-mask ventilation.

Ask a Review Question as Needed

You are a lone BLS Provider responding to a possible adult cardiac arrest. The scene is safe. You have taken standard precautions. The patient is unresponsive. You have activated EMS and/or your EAP. Other providers are on the way. You have an AED. The patient is occasionally gasping. You do not feel a carotid pulse. What should you do?

a. Immediately start CPR, beginning with chest compressions.
b. Power on the AED. Apply adult pads to patient's bare chest.
c. Reassess the patient's responsiveness, airway, breathing, and pulse.
d. Open the airway and provide rescue breathing or bag-mask ventilation.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson eight

ADULT CPR: ONE BLS PROVIDER

PREPARE

Duration:
10 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Apply the BLS links of the Adult Chain of Survival.
- Correctly demonstrate adult CPR and AED with a CPR mask as one BLS Provider.

Why This Topic Matters

While working as a coordinated team is common, BLS Providers also need to be able to provide high-quality CPR and AED use as a single provider using a CPR mask.

Play the Video

Instructional Notes

1. The skill practice for this lesson is designed to help students apply the BLS links of the adult chains of survival by putting together the knowledge and skills required to take action for adult cardiac arrest as a lone provider, with a CPR mask, and an AED brought by a bystander. The “bystander” role is played by another student. If there is only one student in the class, the instructor will need to play this role.
2. The next practice session will cover adult CPR with a bag-mask device and multiple BLS Providers.
3. Remind students to routinely decontaminate their hands with an alcohol-based hand sanitizer and clean and disinfect the manikin after each student practices or at the end of a scenario.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 6: Adult CPR and AED with CPR Mask, One BLS Provider or
  Scenario Sheet 6: Adult BLS

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. Perform the Assessment
   a. If the patient is unresponsive, activate EMS and/or your EAP.
   b. Get an AED and emergency response equipment or send someone else to get them.
   c. Assess the patient's breathing and carotid pulse at the same time for no more than 10 seconds
2. If the patient is not breathing normally or only gasping and you do not feel a pulse, start high-quality CPR.
3. Repeat CPR cycles of 30 compressions and 2 breaths for two minutes.
4. Operate the AED as soon as it is available.
5. Continue the resuscitation attempt until another BLS Provider or advanced life support providers arrive and take over, or until the patient starts breathing, moving, or reacting in other ways.

Ask a Review Question as Needed

You are a lone BLS Provider responding to a possible cardiac arrest. The scene is safe. You have taken standard precautions. An untrained bystander heard the person collapse. You have activated EMS and/or your EAP. Other providers are on the way. An AED is located in the building, about 3 minutes away. The adult patient is unresponsive and making gurgling sounds. You do not feel a carotid pulse. You have a CPR mask with a one-way valve. What should you do?

a. Send the bystander to get the AED. Start high-quality CPR.
b. Get the AED. Tell the bystander to stay with the patient.
c. Open the airway and provide rescue breathing with the CPR mask.
d. Reassess the patient's responsiveness, airway, breathing, and pulse.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson nine

ADULT CPR: MULTIPLE BLS PROVIDERS

PREPARE

Duration:
15 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain how to provide adult CPR and AED use with two or more BLS Providers.
- Correctly demonstrate how to perform adult CPR and AED with two or more BLS Providers.

Why This Topic Matters

It is common for multiple providers to respond to a potential cardiac arrest; coordination among providers can improve likelihood of survival.

Play the Video

Instructional Notes

1. It is required for students to practice Adult CPR and AED with 2 providers using a bag-mask device. This lesson also contains an optional skill practice for practicing teamwork with 3 or more BLS Providers. The skill practice focuses on coordinating compressions, ventilations with a bag-mask device, switching roles between two BLS Providers, integrating a third BLS Provider arriving with an AED, and adding a fourth BLS Provider to assist with bag-mask ventilation during CPR. Two BLS Providers working together can provide more effective and efficient bag-mask ventilation during CPR than a single provider can.
2. If there are only 3 students in the class for the optional skill practice, the instructor will need to play the role of the fourth provider assisting with bag-mask ventilation.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 7: Adult CPR and AED with Bag-Mask, 2 Providers or Scenario Sheet 7: Adult BLS
- **Optional Practice: Skill Sheet 8: Adult CPR and AED with Bag-Mask Device, Multiple BLS Providers or Scenario Sheet 8: Adult BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. First provider: If you are the first BLS Provider to reach the patient's side, assess responsiveness, breathing, and pulse.
   a. If the patient is not breathing normally or only gasping and you do not feel a pulse, start high-quality CPR.
2. Second provider: Activate EMS and/or your EAP, and get the AED and emergency response equipment, if available.
   a. Open the airway and give 2 effective rescue breaths using a CPR mask or bag-mask device.
3. Switch the person in the compressor's position frequently, about every two minutes. Try to minimize interruptions to compressions to less than 10 seconds.
4. Third provider: Arrives and operates the AED.
   a. Do not interrupt chest compressions to apply the AED pads.
5. Fourth provider: Arrives and assists provider in the position ventilating by squeezing the bag.

Ask a Review Question as Needed

Four BLS Providers have been performing CPR on an adult cardiac arrest patient for 18 minutes. The last switch in roles was only about a minute ago, but the compressor says, "I'm exhausted." What should they do?

a. Switch out the compressor.
b. Stop CPR for about 2 minutes to rest.
c. Encourage the compressor to continue perform high-quality compressions.
d. Stop compressions. Continue to ventilate the patient once every 6 seconds.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson ten

ADDITIONAL ADULT BLS CONSIDERATIONS

PREPARE

Duration:
7 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Identify special considerations for the AED.
- Describe the procedures and priorities for BLS in pregnancy.
- Identify alternative ventilation methods.

Why This Topic Matters

Certain patients or circumstances require additional considerations by the BLS Provider for most effective CPR and AED use.

Play the Video

WRAP UP

Reinforce Key Points as Needed

1. If chest hair is preventing pad-to-skin contact, use the razor that is typically included with a CPR and AED response kit to quickly shave the spots where the pads will be placed.
2. Do not use an AED if the patient is immersed in water.
3. Avoid placing the AED pad directly over an implant, as the device may interfere with shock delivery.
4. Do not place AED electrode pads directly on top of a medication patch.
5. Do not delay chest compressions or defibrillation for a pregnant patient.
6. If the patient is visibly pregnant and additional BLS or ALS providers are available to give CPR, one provider can manually move the uterus towards the patient's left side. This will relieve pressure on major abdominal vessels, helping to increase blood flow.
7. Once an advanced airway device is in place, it is no longer necessary to pause compressions to give breaths. Continuous compressions at a rate of 100-120 per minute are provided. The BLS Provider squeezes the bag to deliver 1 breath every six seconds.

Ask a Review Question as Needed

You are using a bag-mask device to ventilate a 16-year-old in cardiac arrest who collapsed suddenly during a soccer game. An endotracheal tube has been placed by an advanced life support provider on the resuscitation team. Proper ventilation technique in the situation requires that you:

a. Squeeze the bag to deliver 1 breath every 6 seconds.
b. Squeeze the bag to deliver 1 breath every 10 seconds.
c. Squeeze the bag to deliver 1 breath when the AED is analyzing the heart rhythm.
d. Squeeze the bag to deliver 1 breath every 6 seconds during each pause in compressions.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson eleven

SUSPECTED OPIOID-ASSOCIATED EMERGENCY (OEA)

PREPARE

Duration:
5 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Describe the BLS procedure for suspected opioid-associated emergency (OAE).
- Correctly demonstrate how to administer naloxone intranasally using Narcan® Nasal Spray. (Optional)

Why This Topic Matters

A quick response to an opioid overdose, including administering naloxone, can prevent brain injury and death.

Play the Video

Instructional Notes

1. It may be helpful to have students take a minute on their own to look over the complete ***Procedure for Opioid-Associated Emergencies*** graphic in the HSI Skill Guide.
2. This is an optional skill practice that requires a minimum of two students. The skill practice focuses on coordinating ventilations with a bag-mask device and practice with an intranasal naloxone administration training device.
3. If there is only one student in the class, the instructor will need to play the role of ventilating BLS Provider.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Optional: Skill Sheet 9: Adult Suspected Opioid-Associated Emergency or
  Scenario Sheet 9: Adult BLS

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. Perform an assessment. Activate EMS and/or your EAP.
   a. If you are alone, get naloxone and an AED, if available.
2. If you suspect an opioid-associated emergency, give naloxone according to local medical protocol.

Ask a Review Question as Needed

You are attempting to resuscitate an unresponsive 25-year-old who overdosed on fentanyl. The scene is safe. You have taken standard precautions. EMS and/or your EAP has been activated. The patient is making snorting sounds. The carotid pulse is definitely felt. You have a bag-mask device, AED, and Narcan Nasal Spray. What should you do?

a. Immediately start CPR, beginning with chest compressions.
b. Power on the AED. Apply adult pads to patient's bare chest.
c. Reassess the patient's responsiveness, airway, breathing, and pulse.
d. Ventilate the patient once every 6 seconds. Give naloxone according to local medical protocol.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson twelve

ADULT CPR: TEAMWORK IN HIGH-PERFORMANCE RESUSCITATION

PREPARE

Duration:
7 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Identify the qualities of high-performance adult CPR.
- Describe the roles and responsibilities of each team member during high-performance adult resuscitation.
- Explain the goal and benefit of high-performance adult CPR team debriefing.
- Participate as a team member during high-performance adult CPR. (Optional)
- Participate as a team member in a high-performance adult CPR team debriefing. (Optional)

Why This Topic Matters

With effective communication, collaboration, and problem-solving, BLS Providers working as part of a team can improve outcomes for cardiac arrest patients.

Play the Video

Instructional Notes

1. This lesson includes an optional, scenario-based skill practice. Allow 20-30 additional minutes for this practice.
2. The skill practice focuses on teamwork during high-performance CPR with the specific goal of producing a chest compression fraction (CCF) of at least 60%.
3. Positions, roles, and responsibilities may be adjusted consistent with local medical protocol.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

1. In a small class, this skill practice requires a minimum of three students (Airway, Compressor, and CPR Coach) with the instructor playing the role of Team Lead and Recorder.
2. In larger classes, divide the students into groups of four or five.
3. Briefly review the team member roles (as needed).
   - **Compressor.** This team member assesses the patient, performs compressions, and rotates with the person in the airway position every 2 minutes or sooner if tired.
   - **CPR Coach.** This team member brings, places, and operates the AED [Trainer]. In addition, this team member acts as the CPR Coach, providing real-time verbal feedback of CPR performance to the team. The primary focus of the CPR Coach is to prompt team members to perform high-quality CPR by:
     - Minimizing interruptions in chest compressions.
     - Ensuring chest compressions of adequate rate and depth.
     - Encouraging complete chest recoil between compressions.
     - Avoiding excessive ventilation.
   - **Airway.** This team member opens and maintains the airway and provides bag-mask ventilation. This team member rotates with the person performing compressions every 2 minutes or sooner if tired.
   - **Leader.** This team member leads the resuscitation team, assigning roles, making treatment decisions, and providing feedback to the team as needed.
   - **Recorder.** This team member will time the resuscitation attempt and calculate the CCF using two stopwatches (or by using a real-time CPR feedback device if available).
     - **First stopwatch.** The Recorder will start the first stopwatch as soon as resuscitation attempt begins. It will run continuously until the end of the resuscitation attempt. In this practice, that will be 10 minutes.
     - **Second stopwatch.** The second stopwatch is used to measure the chest compression time. The Recorder will start the second stopwatch as soon as the Compressor begins chest compressions and will stop the stopwatch anytime compressions are interrupted. Don't reset it, just restart when compressions begin again, and allow the stopwatch to continue counting up.
4. Tell the team(s) to practice using closed loop communication to reduce miscommunication.
5. Ask for and answer any questions.
6. When the teams(s) are ready, choose a scenario to read out loud. When possible, fill in the blanks to match the student's environment, make it more realistic, and to aid in contextual learning.

Out-of-Hospital Setting:

Your BLS team has responded to a call from [__ ex. security officers __] for a possible cardiac arrest. Upon arrival at the scene, you find a bystander performing good quality compression-only CPR on an adult. The scene is safe. You have taken standard precautions. The patient is unresponsive. You have activated EMS and/or your EAP by [__ ex. 2-way radio __].The patient is not breathing. No carotid pulse is felt. You have an AED and adult bag-mask device in your emergency response equipment. Demonstrate what actions you would take next.

In-Hospital/Clinic Setting:

Your BLS team has responded to a shout for help from the [__ ex. Medical Records Department __]. As you approach the scene, you see an anxious [__ ex. records clerk __] kneeling next to a motionless adult. "I saw her faint. She's breathing." The scene is safe. You have taken standard precautions. The patient is unresponsive. You have activated EMS and/or your EAP by [__ ex. calling 5555 or pressing the code button __]. The patient is taking very weak, irregular breaths and making snorting sounds. No carotid pulse is felt. You have an AED and adult bag-mask device. Demonstrate what actions you would take next.

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.

7. Stop the high-performance resuscitation at 10 minutes.
8. Calculate or have the Recorder calculate the CCF.
   a. Convert the time on the second stopwatch (total compression time) to seconds. Multiply the time value by 60 (for example, 7 minutes x 60 = 420 secs.)
   b. Convert the time on the first stopwatch (total resuscitation time) to seconds. Multiply the time value by 60 (10 minutes x 60 = 600 secs.). Divide the total compression time by the total resuscitation time (420 / 600 = .70).
   c. Determine the CCF by converting the decimal value to a percentage. Multiply the decimal value by 100 (.70 x 100 = 70%).
9. Have the Recorder share the team's CCF. A CCF of at least 60% is recommended, but higher percentages are both desirable and achievable. A CCF of at least 80% has been associated with higher rates of ROSC.

WRAP UP

Encourage Constructive Feedback as Needed

- Conduct a debriefing. Use the framework below as an outline for a structured and supported approach.
- Team members should view errors as opportunities for improvement. Input from team members should be considered equally, regardless of their role on the team or experience/history as a BLS Provider.
- Persuade the team to be brief, concise, and to consider one task or process, then move on. Be tactful.
- Show sensitivity to each team member's feelings and point of view.

GATHER	
TEAM LEAD/RECORDER/MEMBERS	✓ What happened? Share your perceptions.
INSTRUCTOR/FACILITATOR	✓ Begin with the Team Lead. ✓ Ask for a self-critique and a synopsis of team performance. ✓ After the Team Lead, encourage comments from the rest of the team. ✓ Listen, then share your perceptions.
ANALYSIS	
TEAM LEAD/RECORDER/MEMBERS	✓ What happened? Share your observations.
INSTRUCTOR/FACILITATOR	✓ Begin with the Recorder. ✓ After the Recorder, encourage comments from the rest of the team. ✓ Ask, in what way did things go well? ✓ Ask, how could improvements be made? ✓ Listen, then share your observations.
SUMMARY	
TEAM LEAD/RECORDER/MEMBERS	✓ Summarize. Share the main things you learned.
INSTRUCTOR/FACILITATOR	✓ Summarize correct actions and areas of improvement.

Reinforce Key Points as Needed

1. An effective high-performance resuscitation team:
   a. has clearly defined roles,
   b. uses clear and effective communication,
   c. anticipates next actions,
   d. minimizes interruptions in compressions, and
   e. consistently measures its performance.
2. Understanding the roles within the team is important, as some team members may rotate roles during a resuscitation attempt.
3. The compressor, coach, and airway team members make up the resuscitation triad, or triangle. These three team members remain in the triangle unless it becomes unsafe.
4. Use closed loop communication to reduce miscommunication.
5. Debriefing is a widely used form of feedback that focuses on improving teamwork skills. The goal of debriefing is to learn by reviewing and reflecting on team performance. Evidence demonstrates that teams that debrief perform more than 20% better than those that do not.

Ask a Review Question as Needed

Teamwork in high-performance resuscitation requires the use of _____.

f. An AED
g. Two stopwatches
h. A bag-mask device
i. Clear and effective communication

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson thirteen

PEDIATRIC CHAINS OF SURVIVAL

PREPARE

Duration:
3 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment & Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Identify the links in the pediatric chains of survival for inside and outside the hospital.

Why This Topic Matters

All the links the pediatric chains of survival are critical to improve outcomes. This class focuses on three BLS links: early recognition, activation of emergency response, and high-quality CPR.

Play the Video

Instructional Notes

It is helpful to have students take a minute to look over the ***Pediatric Chains of Survival*** graphics for inside and outside the hospital in their Skill Guide.

WRAP UP

Reinforce Key Points as Needed

1. Sudden cardiac arrest in children is not typical, but it can and does occur in children of all ages. More often though, cardiac arrest in a child results from asphyxia, a lack of oxygen caused by respiratory failure or respiratory arrest.
2. In this BLS Class, a child is defined as 1 year of age until the onset of puberty. Puberty can be identified by breast development in females and the presence of armpit hair in males. For those with signs of puberty, provide Adult BLS.

Ask a Review Question as Needed

When breathing slows or stops, it leads to bradycardia, a slow heart rhythm of fewer than ___ beats per minute.

a. 90
b. 75
c. 60
d. 70

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson fourteen

CHILD BLS PROCEDURE/ASSESSMENT

PREPARE

Duration:
7 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Identify the main elements of the child BLS procedure.
- Explain how to assess the scene and child patient.
- Correctly demonstrate how to assess the scene and child patient as a single BLS Provider. (Optional)

Why This Topic Matters

The child BLS procedure is a step-by-step guide used to improve and standardize decisions when responding to a potential pediatric cardiac arrest. It can help reduce potential errors in the delivery of BLS.

Play the Video

Instructional Notes

1. It may be helpful to have students take a minute or two on their own to look over the complete *Procedure for Pediatric Basic Life Support* graphic in the Skill Guide.
2. The optional skill practice for this lesson is designed to emphasize the important first steps in the child BLS procedure; Assessment (the top box in the procedure).
3. The specific skills for taking action based the presence or absence of normal breathing and pulse will follow in later lessons.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Optional: Skill Sheet 10: Child Assessment or **Scenario Sheet 10: Child BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. There are three main elements of the child BLS procedure:
   a. Assessment of the scene and patient,
   b. Actions based on the presence or absence of normal breathing and a pulse, and
   c. Use of an AED.
2. If the scene is not safe, do not enter until hazards have been minimized or eliminated.
3. If the scene is safe, assess responsiveness. Tap or squeeze the patient's shoulder and ask loudly, "Are you okay?"
4. If the patient is unresponsive, call 911 to activate EMS using a mobile device or activate your facility's occupational emergency action plan.
5. Take no more than 10 seconds to simultaneously assess breathing and the child's carotid or femoral pulse.
6. Then, take action based on the presence or absence of normal breathing and pulse.

Ask a Review Question as Needed

A BLS Provider should simultaneously assess the patients breathing and carotid or femoral pulse. This assessment should take no longer than ___ seconds.

a. 5
b. 10
c. 15
d. 20

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson fifteen

CHILD COMPRESSIONS

PREPARE

Duration:
5 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Recognize high-quality child chest compressions.

Why This Topic Matters

As in the adult procedure, high-quality chest compressions are the foundation of high-quality CPR.

Play the Video

Instructional Notes

1. Child chest compression skill practice is integrated into a later lesson.

WRAP UP

Reinforce Key Points as Needed

1. For child chest compressions, place 1 or 2 hands on the center of the chest. For a small child, 1 hand may be enough.
2. Whether you use 1 or 2 hands, push hard, straight down, using your upper body weight to compress the chest at least 2 inches (5 cm).
3. At the end of each compression, lift all your weight off the patient's chest, allowing it to completely recoil, or rebound, to its normal position without losing contact with the chest. Avoid leaning on the chest between compressions. Complete chest recoil allows the heart to refill.
4. Compress the chest at a rate of 100-120 compressions per minute. Minimize interruption in chest compressions.

Ask a Review Question as Needed

Fewer and shorter interruptions in chest compressions are associated with _____.

a. Better outcomes
b. Worse outcomes
c. Closed-loop communication
d. Improved assessment

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson sixteen

CHILD AIRWAY & BREATHING

PREPARE

Duration:
5 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain how to open the child airway using a head tilt–chin lift and jaw thrust.
- Explain how to provide effective child rescue breaths using a CPR mask.
- Explain how to provide effective child rescue breaths using a bag-mask device.

Why This Topic Matters

As with an adult, there must be an open airway to give rescue breaths to a child. Rescue breaths are extremely important for children because cardiac arrest typically results from asphyxia.

Play the Video

Instructional Notes

1. Previous guidelines recommended 1 breath every 3 to 5 seconds.[38] The recommendation to "give one breath every 2-3 seconds, about 20-30 breaths per minute" for an infant or child in respiratory arrest is based on one small study of intubated children who received at least 1 minute of CPR.[39] There is no relevant evidence for a specific ventilation rate for the infant or child with respiratory arrest and a pulse.[40] Local medical protocols may be different.
2. The immediate cause of death in drowning is a deficiency of oxygen. Lifeguards and other well-trained professional rescuers may provide rescue breathing for a submersion victim while they are being brought to the pool deck, shore, or boat. This "in-water resuscitation" can lead to an improved likelihood of survival over delaying ventilation until the victim is out of the water. Procedures for in-water resuscitation should be based on local medical protocol, organizational guidelines and professional training standards.
3. As soon as the unresponsive victim is removed from the water, open the airway and assess breathing. If there is no breathing, give 2 rescue breaths that make the chest rise (if this was not done previously in the water).

38 Berg MD, et al. Part 13: pediatric basic life support: 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2010 Nov 2;122(18 Suppl 3):S862-75. doi: 10.1161/CIRCULATIONAHA.110.971085.
39 Sutton RM, et al. Ventilation Rates and Pediatric In-Hospital Cardiac Arrest Survival Outcomes. Crit Care Med. 2019 Nov;47(11):1627-1636. doi: 10.1097/CCM.0000000000003898.
40 Maconochie IK, et al. Pediatric Life Support: 2020 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations. Circulation. 2020 Oct 20;142(16_suppl_1):S140-S184. doi: 10.1161/CIR.0000000000000894.

WRAP UP

Reinforce Key Points as Needed

1. The two methods to open the airway are the same as the adult: head tilt–chin lift, and jaw thrust.
2. Open the airway and give 1 breath every 2 to 3 seconds, or 20 to 30 breaths per minute.
3. Excessive ventilation can be harmful. Give enough air to create a visible rise of chest, but no more. Stop ventilating as soon as you see chest rise.

Ask a Review Question as Needed

You are in the airway position of your BLS team providing bag-mask ventilation for a 6-year-old child pulled unresponsive from a swimming pool. A carotid pulse at about 100 beats per minute is definitely felt. Proper bag-mask ventilation requires that you:

a. Give 30 to 40 breaths per minute.
b. Position yourself at the patient's side.
c. Stop ventilating as soon as you see the chest rise.
d. Give a rescue breath by blowing through the valve opening on the mask.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson seventeen

CHILD AUTOMATED EXTERNAL DEFIBRILLATION

PREPARE

Duration:
4 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Identify the steps to use an AED on a child.

Why This Topic Matters

When indicated, an electrical shock passed through the chest can restore the heart's normal contractions.

Play the Video

WRAP UP

Reinforce Key Points as Needed

1. Most AEDs are designed for both adult and pediatric use. The energy level of the shock for pediatric use is reduced from the standard adult energy setting.
2. Pediatric pads are recommended for children below 8 years of age. If the child pads are not available, use the adult pads.
3. Do not apply child pads to patients 8 years of age and older because the energy level of the shock will be too low.
4. If the AED advises a shock, continue high-quality compressions while the AED is charging.

Ask a Review Question as Needed

Do not apply child pads to patients 8 years of age and older because:

a. The energy level of the shock will be too high.
b. The energy level of the shock will be too low.
c. Some pads require a front-and-back position.
d. The energy level of the shock is increased from the standard adult energy setting.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson eighteen

CHILD CPR: ONE BLS PROVIDER

PREPARE

Duration:
5 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Identify the BLS links of the pediatric Chain of Survival.

Why This Topic Matters

While working as a coordinated team is common, BLS Providers also need to be able to provide high-quality child CPR as a single provider.

Play the Video

WRAP UP

Reinforce Key Points as Needed

1. Perform the assessment.
2. If no pulse is felt and the child is not breathing normally or only gasping:
   a. For witnessed sudden collapse:
      i. If you are alone and an AED is nearby, get the AED.
      ii. Activate EMS and/or your EAP if you haven't done so already.
      iii. Quickly return to the patient, use the AED, and perform CPR.
   b. For unwitnessed arrest:
      i. If you are alone, immediately start high-quality CPR, beginning with chest compressions.
      ii. Perform about 2 minutes of high-quality CPR before leaving the child to activate EMS and/or your EAP if you haven't done so already, and get an AED.
3. Repeat CPR cycles of 30 compressions and 2 breaths for two minutes.
4. Operate the AED as soon as it is available.
   a. Use pediatric pads for children below 8 years of age.
   b. If the child pads are not available, use the adult pads.
5. Continue the resuscitation attempt until another BLS Provider or advanced life support providers arrive, or until the patient starts breathing, moving, or reacting in other ways.

Ask a Review Question as Needed

You are the only BLS Provider responding to witnessed collapse of a 11-year-old child during a softball game. The scene is safe. You have taken standard precautions. The patient is unresponsive and gasping occasionally. You do not feel a carotid pulse. An AED is within sight. What should you do?

a. Assess for a femoral pulse.
b. Open the airway and provide rescue breathing or bag-mask ventilation.
c. Immediately start high-quality CPR, beginning with chest compressions.
d. Activate EMS and/or your EAP and get the AED.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson nineteen

CHILD CPR: MULTIPLE BLS PROVIDERS

PREPARE

Duration:
11 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain how to provide child CPR with two or more BLS Providers.
- Correctly demonstrate how to perform child CPR with two or more BLS Providers.

Why This Topic Matters

It is common for multiple providers to respond to a potential cardiac arrest.

Play the Video

Instructional Notes

1. The skill practice for this lesson is for coordinating compressions, ventilations with a bag-mask device, and switching roles between multiple BLS Providers.
2. If there is only one student in the class, the instructor will need to play the role of a second BLS Provider.
3. If you prefer, you can conduct the Adult BLS Performance Evaluation after this lesson or do it later in Segment 6: Required Knowledge and Skill Evaluation.
4. Remind students to routinely decontaminate their hands with an alcohol-based hand sanitizer and clean and disinfect the manikin after each student practices or at the end of a scenario.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 11: Child CPR with Bag-Mask Device, 2 BLS Providers or
  Scenario Sheet 11: Child BLS

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. Provider 1: Deliver high-quality compressions.
   a. Position yourself and place 1 or 2 hands on the center of the chest.
   b. Compress fast, at a rate of 100-120 times per minute.
   c. Compress hard, at least 2 inches (5 cm).
   d. Allow complete chest recoil at the top of each compression.
   e. Do not lean on the chest between compressions.
   f. Perform 15 compressions. Count out loud.
2. Provider 2: Deliver effective breaths.
   a. Use a pediatric bag-mask device.
   b. Open the airway and give 2 rescue breaths.
   c. Deliver each breath over 1 second in length while watching for chest rise.
   d. Encourage the compressor to perform high-quality compressions: fast, hard, and with complete recoil.
3. Provider 1 & 2: Repeat CPR cycles of 15 compressions and 2 breaths for two minutes.
   a. Switch positions. Try to minimize interruptions to compressions to less than 10 seconds.

Ask a Review Question as Needed

When ventilating a child with a bag-mask device, give 1 breath every 2-3 seconds. Deliver each breath over ____ second(s) in length while watching for chest rise.

a. .5
b. 1
c. 1.5
d. 2

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson twenty

INFANT BLS PROCEDURE/ASSESSMENT

PREPARE

Duration:
6 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Identify the main elements of the pediatric BLS procedure.
- Explain how to assess the scene and infant patient.
- Correctly demonstrate how to assess the scene and infant patient as a single BLS Provider. (Optional)

Why This Topic Matters

The pediatric BLS procedure is a step-by-step guide used to improve and standardize decisions when responding to a potential pediatric cardiac arrest. It can help reduce potential errors in the delivery of BLS.

Play the Video

Instructional Notes

1. The optional skill practice for this lesson is designed to emphasize the important first steps in the infant BLS procedure; Assessment (the top box in the procedure).
2. The specific skills for taking action based the presence or absence of normal breathing and pulse will follow in later lessons.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Optional: Skill Sheet 12: Infant Assessment or **Scenario Sheet 12: Infant BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. There are three main elements of the infant BLS procedure:
   a. Assessment of the scene and patient,
   b. Actions based on the presence or absence of normal breathing and a pulse, and
   c. Use of an AED.
2. If the scene is not safe, do not enter it until hazards have been minimized or eliminated.
3. If the scene is safe, assess responsiveness. Gently tap the victim and ask loudly, “Are you okay?”
4. If the infant is unresponsive, call 911 to activate EMS using a mobile device and/or activate your EAP. If you don’t have a mobile phone nearby, bring the infant with you to activate.
5. Take no more than 10 seconds to simultaneously assess breathing and the infant’s brachial pulse. Then, take action based on the presence or absence of normal breathing and pulse.

Ask a Review Question as Needed

You and another BLS Provider have responded to a call for a 5-month-old infant with trouble breathing. The scene is safe. You have taken standard precautions. The infant is unresponsive and gasping. You have activated EMS and/or activate your EAP. A weak brachial pulse at about 40 beats per minute is felt. Other BLS Providers are a few minutes away with an AED. What should you do?

a. Start high-quality CPR.
b. Maintain an open airway.
c. Reassess responsiveness, airway, breathing, and pulse.
d. Provide bag-mask ventilation and check the pulse every 2 minutes.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson twenty-one

INFANT COMPRESSIONS

PREPARE

Duration:
5 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Recognize high-quality infant chest compressions.
- Correctly demonstrate high-quality infant chest compressions.

Why This Topic Matters

As in the adult and child procedure, high-quality chest compressions are the foundation of high-quality CPR.

Play the Video

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 13: Infant Chest Compressions or **Scenario Sheet 13: Infant BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. For infant chest compressions, use one of three hand-position techniques:
   a. 2-Finger Technique
   b. 2-Thumb Encircling-Hands Technique
   c. Heel of One Hand Technique
2. Whichever technique you use, push hard, straight down, to compress the chest approximately 1 ½ inches (4 cm). This depth should be at least one third the diameter of the infant's chest.
3. At the end of each compression, allow complete chest recoil.
4. Compress the chest at a rate of 100-120 compressions per minute. Minimize interruptions.

Ask a Review Question as Needed

This technique may be useful for larger infants or when the BLS Provider has difficulty compressing the appropriate depth.

a. The 2-Finger Technique
b. The 2-Hands Technique
c. The Heel of One Hand Technique
d. The 2-Thumb Encircling-Hands Technique

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson twenty-two

INFANT AIRWAY AND BREATHING

PREPARE

Duration:
8 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain how to open the infant airway using a head tilt–chin lift, and jaw thrust.
- Explain how to provide effective infant breaths using a CPR mask.
- Explain how to provide effective infant rescue breaths using a bag-mask device.
- Correctly demonstrate how to provide effective infant rescue breaths using a bag-mask device.

Why This Topic Matters

As with an adult, there must be an open airway to give rescue breaths to a child. Rescue breaths are extremely important for children because cardiac arrest typically results from asphyxia.

Play the Video

Instructional Notes

1. Previous guidelines recommended 1 breath every 3 to 5 seconds.[41] The recommendation to "give one breath every 2-3 seconds, about 20-30 breaths per minute" for an infant or child in respiratory arrest is based on one small study of intubated children who received at least 1 minute of CPR.[42] There is no relevant evidence for a specific ventilation rate for the infant or child with respiratory arrest and a pulse.[43] Local medical protocols may be different.
2. The immediate cause of death in drowning is a deficiency of oxygen. Lifeguards and other well-trained professional rescuers may provide rescue breathing for a submersion victim while they are being brought to the pool deck, shore, or boat. This "in-water resuscitation" can lead to an improved likelihood of survival over delaying ventilation until the victim is out of the water. Procedures for in-water resuscitation should be based on local medical protocol, organizational guidelines and professional training standards.
3. As soon as the unresponsive victim is removed from the water, open the airway and assess breathing. If there is no breathing, give 2 rescue breaths that make the chest rise (if this was not done previously in the water).

41 Berg MD, et al. Part 13: pediatric basic life support: 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2010 Nov 2;122(18 Suppl 3):S862-75. doi: 10.1161/CIRCULATIONAHA.110.971085.
42 Sutton RM, et al. Ventilation Rates and Pediatric In-Hospital Cardiac Arrest Survival Outcomes. Crit Care Med. 2019 Nov;47(11):1627-1636. doi: 10.1097/CCM.0000000000003898.
43 Maconochie IK, et al. Pediatric Life Support: 2020 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations. Circulation. 2020 Oct 20;142(16_suppl_1):S140-S184. doi: 10.1161/CIR.0000000000000894.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 14: Infant Rescue Breaths with a Bag-Mask Device, One BLS Provider or
  Scenario Sheet 14: Infant BLS

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. To use an infant bag-mask device as a single provider:
   a. Position yourself above the patient's head.
      i. Place the mask flat on the patient's face, covering the nose and mouth, with the top of the mask over the bridge of the nose.
      ii. Use your thumb and index finger of one hand in a C position to press the edges of the mask to the face.
      iii. Use your remaining fingers in an E position under the bony ridge of the jaw.
      iv. Tilt the head and lift the jaw up into the mask to open the airway. Maintain a neutral "sniffing" position.
   b. Give a rescue breath by squeezing the bag. Deliver each breath over 1 second in length while watching for chest rise.
   c. Give one breath every 2-3 seconds.
   d. Check the pulse about every two minutes. If the pulse is felt but the heart rate is less than 60 beats per minute with signs of poor perfusion, or there is no pulse, start high-quality CPR.

Ask a Review Question as Needed

You are in the airway position of your BLS team providing bag-mask ventilation for a 6-month-old infant pulled unresponsive from a bathtub. A brachial pulse at about 140 beats per minute is definitely felt. Proper bag-mask ventilation requires that you:

a. Give 1 breath every 6 seconds.
b. Position yourself at the patient's side.
c. Stop ventilating as soon as you see the chest rise.
d. Give a rescue breath by blowing through the valve opening on the mask.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson twenty-three

INFANT AUTOMATED EXTERNAL DEFIBRILLATION

PREPARE

Duration:
2 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Identify the steps to use an AED on an infant.

Why This Topic Matters

When indicated, an electrical shock passed through the chest can restore the heart's normal contractions.

Play the Video

WRAP UP

Reinforce Key Points as Needed

1. Turn on the AED and bare the patient's chest. If there is a button, "key," or another type of mechanism for switching to pediatric use, activate it.
2. Pediatric pads are recommended for children below 8 years of age.
3. If child pads are not available, use the adult pads. The standard adult shock will be higher, but a higher energy shock is better than no shock at all.
4. The front-and-back pad position is common for infants.
5. If the AED advises a shock, continue high-quality compressions while the AED is charging.

Ask a Review Question as Needed

If child pads are not available, _____.

a. Use the adult AED pads
b. Immediately resume CPR
c. Do not use the adult AED pads
d. Make sure the adult pads overlap each other

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson twenty-four

INFANT CPR: ONE BLS PROVIDER

PREPARE

Duration:
4 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Apply the BLS links of the pediatric chains of survival.

Why This Topic Matters

While working as a coordinated team is common, BLS Providers also need to know how to provide high-quality infant CPR as a single provider.

Play the Video

WRAP UP

Reinforce Key Points as Needed

1. Perform the assessment.
2. If no pulse is felt and the infant is not breathing normally or only gasping:
   a. For witnessed sudden collapse:
      i. If you are alone and an AED is nearby, get the AED.
      ii. Activate EMS and/or your EAP if you haven't done so already.
      iii. Quickly return to the patient, use the AED, and perform CPR.
   b. For unwitnessed arrest:
      i. If you are alone, immediately start high-quality CPR, beginning with chest compressions.
      ii. Perform about 2 minutes of high-quality CPR before activating EMS or your EAP if you haven't done so already.
3. Repeat CPR cycles of 30 compressions and 2 breaths for two minutes.
4. Operate the AED as soon as it is available.
   a. Use pediatric pads for children below 8 years of age.
   b. If the child pads are not available, use the adult pads.
5. Continue the resuscitation attempt until another BLS Provider or advanced life support providers arrive, or until the patient starts breathing, moving, or reacting in other ways.

Ask a Review Question as Needed

You are the only BLS Provider responding to "baby not breathing." A panic-stricken grandparent says they put the baby down for a regular nap and discovered her not breathing 3 hours later. The scene is safe. You have taken standard precautions. The infant is unresponsive. You have activated EMS and/or your EAP. Other providers are on the way with an AED. The infant is not breathing. There is no brachial pulse. The infant's lips are blue. The extremities are cool. What should you do?

a. Assess for a femoral pulse.
b. Provide one breath every 2-3 seconds.
c. Immediately start high-quality CPR, beginning with chest compressions.
d. Check the brachial pulse every 2 minutes until other providers arrive the AED.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson twenty-five

INFANT CPR: MULTIPLE BLS PROVIDERS

PREPARE

Duration:
11 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain how to provide infant CPR with two or more BLS Providers.
- Correctly demonstrate how to perform infant CPR with two or more BLS Providers.

Why This Topic Matters

It is common for multiple providers to respond to a potential cardiac arrest; coordination among providers can improve likelihood of survival.

Play the Video

Instructional Notes

1. The skill practice for this lesson is for coordinating chest compressions, ventilations with a bag-mask device, and switching roles between multiple BLS Providers.
2. If there is only one student in the class, the instructor will need to play the role of a second BLS Provider.
3. If you prefer, you can conduct the Infant BLS Performance Evaluation after this lesson or do it later in Segment 6: Required Knowledge and Skill Evaluation.
4. Remind students to routinely decontaminate their hands with an alcohol-based hand sanitizer and clean and disinfect the manikin after each student practices or at the end of a scenario.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 15: Infant CPR with Bag-Mask Device, 2 BLS Providers or
  Scenario Sheet 15: Infant BLS

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. Provider 1: Deliver high-quality chest compressions.
   a. Use the 2-Thumb Encircling-Hands Technique.
   b. Compress fast, at a rate of 100-120 times per minute.
   c. Compress the chest approximately 1 ½ inches (4 cm).
   d. Allow complete chest recoil at the top of each compression. Do not lean on the chest between compressions.
   e. Perform 15 compressions. Count out loud.
2. Provider 2: Deliver effective breaths.
   a. Open the airway and give 2 rescue breaths. Deliver each breath over 1 second in length while watching for chest rise.
   b. Encourage the compressor to perform high-quality compressions: fast, hard, and with complete recoil.
3. Provider 1 & 2: Repeat CPR cycles of 15 compressions and 2 breaths for two minutes.
   a. Switch positions. Try to minimize interruptions to compressions to less than 10 seconds.
   b. Repeat CPR cycles of 15 compressions and 2 breaths for two minutes.

Ask a Review Question as Needed

The BLS Provider ventilating an infant with a bag-mask device should:

a. Ventilate fast, at a rate 1 breath every second.
b. Keep the infant's head tilted beyond the neutral position.
c. Encourage the compressor to perform high-quality compressions.
d. Give a rescue breath by blowing through the valve opening of the mask.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson twenty-six

INFANT CPR: TEAMWORK IN HIGH-PERFORMANCE RESUSCITATION (OPTIONAL)

PREPARE

Duration:
20 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Participate as a team member during high-performance infant CPR. (Optional)
- Participate as a team member in a high-performance infant CPR team debriefing. (Optional)

Why This Topic Matters

With effective communication, collaboration, and problem-solving, BLS Providers working as part of a team can improve outcomes for cardiac arrest patients.

Instructional Notes

1. This lesson is an optional, scenario-based skill practice.
2. The skill practice focuses on teamwork during high-performance infant CPR with the specific goal of producing a chest compression fraction (CCF) of at least 60%.
3. Positions, roles, and responsibilities may be adjusted consistent with local medical protocol.
4. Refer to Section One, Adult CPR: Teamwork in High-Performance Resuscitation for how to conduct the hands-on practice.
5. When the teams(s) are ready, choose one of the infant scenarios below to read out loud. When possible, fill in the blanks to match the student's environment, make it more realistic, and aid in contextual learning.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

Out-of-Hospital Setting:

Your BLS team has responded to a call from [__ ex. the 911 Call Center __] for a baby not breathing. Upon arrival at the scene, you find a panicked adult unsuccessfully attempting to provide mouth-to-mouth rescue breathing to a 3-month-old infant. The adult says, "She can't breathe! Please help!" The scene is safe. You have taken standard precautions. The patient is unresponsive. You have activated EMS and/or your EAP by [__ ex. 2-way radio __].The patient is not breathing. No brachial pulse is felt. You have a pediatric-ready AED and bag-mask device in your emergency response equipment. Demonstrate what actions you would take next.

In-Hospital/Clinic Setting:

Your BLS team has responded to a shout for help from [__ ex. the pediatric treatment room __]. As you approach, you see an anxious [__ ex. colleague __] performing chest compression on a 3-month-old infant. She says, "Code Blue." The scene is safe. You have taken standard precautions. The patient is unresponsive. You activate EMS and/or your EAP by [__ ex. pushing the emergency alert button __]. The infant is not breathing. No brachial pulse is felt. You have a pediatric-ready AED and bag-mask device. Demonstrate what actions you would take next.

WRAP UP

Encourage Constructive Feedback as Needed

- Conduct a debriefing. Use the framework below as an outline for a structured and supported approach.
- Team members should view errors as opportunities for improvement. Input from team members should be considered equally, regardless of their role on the team or experience/history as a BLS Provider.
- Persuade the team to be brief, concise, and to consider one task or process, then move on. Be tactful. Show sensitivity to each team member's feelings and point of view.

lesson twenty-seven

RELIEF OF CHOKING

PREPARE

Duration:
11 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Traditional Classroom.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Describe how to recognize and provide treatment for a choking adult, child, or infant.
- Correctly demonstrate how to perform treatment for a choking infant.

Why This Topic Matters

When a severe airway obstruction occurs, the patient cannot get air in or out of the lungs. This is a life-threatening medical emergency. If the foreign body is not removed, the patient will quickly become unresponsive and suffer a secondary cardiac arrest within minutes.

Play the Video

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 16: Infant Relief of Choking or **Scenario Sheet 16: Infant BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. If the patient is an adult or child:
   a. Each abdominal thrust needs to be given with the intent of dislodging and expelling the object.
   b. If the patient becomes unresponsive, begin CPR starting with compressions.
      i. Do not check for a pulse.
      ii. Before opening the airway to provide rescue breaths, open the patient's mouth wide.
      iii. If you see an object, remove it with your fingers.
2. If the patient is an infant:
   a. Give each back slap and chest thrust forcefully with the intent of dislodging and expelling the object.
   b. If the patient becomes unresponsive, begin CPR starting with compressions.
      i. Do not check for a pulse.
      ii. Before opening the airway to provide rescue breaths, open the mouth wide.
      iii. If you see an object, carefully remove it with your fingers.
      iv. Don't stick your finger blindly in an infant's throat and attempt to sweep out an object.

Ask a Review Question as Needed

You are responding to a shout for help from [__ ex. Outpatient Services __]. As you approach, you find a distraught teen holding a pale, 2-month-old infant. "I was feeding him. He started choking. Oh please - please - help him." The scene is safe. You have taken standard precautions. The responsive infant is coughing weakly and making a whistling sound when inhaling. You have activated your facility's EAP. What should you do now?

a. Calm the teen. Stand ready to help if things get worse.
b. Attempt to sweep out the obstruction with your finger.
c. Hold the infant facedown over your forearm and give 5 back slaps.
d. Place the infant on a firm, flat surface. Begin CPR starting with compressions.

Ask For & Answer Questions Before Moving on to the Next Lesson

REQUIRED KNOWLEDGE & SKILL EVALUATION

lesson twenty-eight

PERFORMANCE EVALUATION

PREPARE

Duration:
40 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Required for Each Student:

- CPR manikin, adult and infant
- AED Trainer, adult and pediatric pads
- Adult CPR mask and one-way valve
- Infant-sized bag-mask device

Optional:

- CPR feedback device
- Surgical mask or N95 respirator
- Disposable gloves

Instructor:

- Stopwatch

PRESENT

What Students Should Learn

After completing this lesson, the student should be able to:

- Demonstrate skill competency as indicated by the skill criteria on the "Adult BLS" and "Infant BLS" Performance Evaluation Sheets.

Why This Topic Matters

BLS skill competency is vital for improving patient outcomes from cardiac arrest.

Instructional Notes

1. An HSI BLS certification card may not be issued unless the student demonstrates skill competency as indicated by the skill criteria on the "Adult BLS" and "Infant BLS" Performance Evaluation Sheets.
2. Please refer to "Part Three, Evaluation" for instructions on conducting a performance evaluation for each student.
3. If a student fails to successfully complete the required Performance Evaluations, formal remediation is required. Please see "Part Three, Remediation" for more.

lesson twenty-nine

KNOWLEDGE EVALUATION

PREPARE

Duration:
30 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Each student:

- HSI BLS Written Exam, Version A or Version B (alternating versions between students if desired)

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Demonstrate knowledge competency as indicated by obtaining a passing score of 74% or better on the 21-question BLS exam (print or online).

Why This Topic Matters

BLS knowledge competency is vital for improving patient outcomes from cardiac arrest.

Instructional Notes

1. Please refer to “Part Three, Evaluation” for instructions on Knowledge Evaluation of each student.

segment seven

CONCLUSION

lesson thirty

CLASS EVALUATION, CONTINUING EDUCATION, DOCUMENTATION, & CERTIFICATION

PREPARE

Duration:
15 Minutes

Class Format: Initial Training
Delivery Method: Traditional Classroom

Equipment and Materials

Each student:

- HSI "Rate Your Program" Class Evaluation
- HSI BLS certification card for each student who successfully completes the BLS Class (print or digital)

Instructor:

- BLS Class Roster
- CAPCE Data Collection Form (for EMS Provider CE), PACE Verification of Participation Document and Academy of General Dentistry Continuing Education Course Roster (for Dental Professional CE)

PRESENT

Why This Topic Matters

HSI's quality assurance procedures and processes are used to continually improve the validity, defensibility, and effectiveness of HSI and its approved Training Centers and Authorized Instructors and Instructor Trainers.

Instructional Notes

1. Congratulate and thank students who successfully completed the class!
2. HSI requires that students be given the opportunity to evaluate their BLS Class using the "Rate Your Program" class evaluation form (print or online at hsi.com/rateyourprogram).
   a. Completed print class evaluations should be promptly delivered to the training center responsible for the class (see Appendix).
3. A complete, accurate, and legible Class Roster reflecting the actual class date(s) of the training class signed by the Authorized Instructor or Instructor Trainer or electronically submitted through Otis is required for every HSI BLS Class (see Appendix).
4. Continuing Education Hours for EMS and Dental professionals is available through HSI. See "Part Three, After the BLS Class" for more.
5. The Authorized Instructor is required to legitimately issue an authentic HSI BLS print or digital certification card to each student who successfully completed this course.
   a. The certification card must be current, complete, accurate, and legible. It must contain the name of the participant and the Authorized Instructor, the Instructor's Registry Number, the Class Completion Date, the Expiration Date, the Training Center Phone Number and the Training Center Identification Number (TCID).
6. HSI's compete quality assurance standards, including all requirements for instructor authorization, conduct, and student certification, are located in the most recent HSI Training Center Administrative Manual (TCAM) available at emergencycare.hsi.com/quality-assurance-compliance.

BLENDED LEARNING, INITIAL TRAINING

Blended learning combines the convenience of online learning with a practical skills session (in person or via remote skills verification) in order to meet both knowledge and skill objectives. A U.S. Department of Education meta-analysis and review of evidence-based practices in online learning found that, on average, blended learning was more effective than either face-to-face or online learning alone.[44]

Class Preparation

The Learning Environment, Classroom Space, Health and Safety are all the same as the Traditional Classroom and are not repeated here.

The best way to handle the BLS exam is for each student to complete the HSI BLS Exam online as part of Blended Learning. Because the BLS exam is open-book, students may use their BLS Student Book as a reference while taking the online exam. The online exam can be completed prior to the classroom or RSV skills session, eliminating the class time required to have students complete the exam in person (and permitting them to complete the online exam at their own pace).

Note: Only the HSI BLS Exam may be used. It is a violation of HSI quality assurance standards to use any other exam, including exams created by the Training Center or instructor, or to post the exam to an intranet or the Internet. Using any other exam invalidates the certification card and is grounds for suspension or revocation or Training Center approval and/or instructor authorization.

44 Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies. U.S. Department of Education, Office of Planning, Evaluation, and Policy Development, Policy and Program Studies Service Revised September 2010 Available: https://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf [Accessed 11/21/19]

CLASS PREPARATION

About a Month or Two Before Class

- ✓ Secure a classroom with an adequate space and learning environment.
- ✓ Confirm the date, location, and number of students.
- ✓ Reserve training equipment for the class.
- ✓ Schedule and confirm additional HSI authorized BLS instructors as required/preferred.
- ✓ Log in to Otis to purchase blended learning credits, create and schedule the online portion of the class.
  - › Note: You can learn to create and manage blended and classroom training, add the course and tasks, and navigate the two calendar views that are provided with the system. Log in to Otis and go to the Support Center>Browse Help Topics.
- ✓ If using RSV for the practical skills session, log in to Otis to purchase RSV credits and set up an RSV session.
- ✓ Familiarize yourself with any differences between what is taught in this BLS class and local medical protocols for your students.

About Three Weeks Before Class

- ✓ Track student progress in Otis for the online portion of the BLS Class.
- ✓ If using the in-person classroom practical skills session format, send an email (via Otis, if you wish) to each student that:
  - › Confirms the class location, agenda, and time.
  - › Encourages them to check with their employer or accrediting, credentialing, or licensing agency to ensure the HSI BLS Class will meet their requirements before attending training.
  - › Informs them that the class will involve close contact with other students, resuscitation manikins, and other equipment.
  - › Reviews any pertinent recommendations from local, state, or federal health authorities that affects what participants should expect in the classroom setting.
  - › Requests that they reschedule their training if they may have been exposed to an infectious disease; are experiencing fever, coughing, shortness of breath, diarrhea, fatigue, or muscle aches; or if they have open wounds or sores on their hands or mouth.
  - › Describes the steps you take to protect students and help ensure a safe and healthy learning environment (hand hygiene, cleaning and disinfecting of surfaces and equipment, physical distancing, etc.).
  - › Reminds them to wear loose, comfortable clothing suitable for skill practice.
  - › Advises them to let you know if they have a physical disability and what reasonable accommodations may be necessary (see Americans with Disabilities Act in the TCAM for more).
  - › Provides your contact information.

A Few Days Before Class

- ✓ If you may have been exposed to an infectious disease; are experiencing fever, coughing, shortness of breath, diarrhea, fatigue, or muscle aches; or have open wounds or sores on your hands or mouth, find another instructor to teach the class or reschedule it.
- ✓ Make sure you have adequate copies of essential class paperwork (or access to electronic versions), including:
  - › HSI BLS Skill Guide
  - › HSI BLS Performance Evaluation Sheets (Adult BLS and Infant BLS per student, plus spares)
  - › HSI BLS CAPCE Data Collection Form (for awarding EMS Provider Continuing Education Hours, as needed)
  - › HSI AGD PACE Verification of Participation Document and HSI Academy of General Dentistry (AGD) Continuing Education Class Roster (for awarding Continuing Dental Education, as needed)
- ✓ Briefly review the Initial Training, Blended Learning Lesson Plans.
- ✓ Confirm your internet connection will be available to log in to Otis if you plan to stream the BLS Class Presentation, Skill Practice Lessons (optional), or download it to the HSI Instructor Desktop Video Player or Mobile App and verify the media plays as expected.

Day of Class

- ✓ Arrive early. Give yourself plenty of time to get set up and organized.
- ✓ Greet students as they arrive, introducing yourself to each one.
  - › Be friendly, considerate, respectful, and professional.
  - › Have students sign in on a sign-in sheet or the HSI BLS Class Roster.
  - › Have students complete a name tag or tent card and select a seat.
- ✓ Begin class. Start on time.
- ✓ Consider using a short, appropriate icebreaker as a warm-up exercise.
  - › Great ideas for these activities can be found on the internet by searching with the keyword “icebreakers.”
- ✓ Establish a connection with the students.
  - › Ask about previous training. Connect the students’ experiences and knowledge to this class.
- ✓ Briefly cover class goal, agenda, breaks, certification requirements, facility and classroom safety.
  - › Know and share the locations of the following: Bathrooms, fire/emergency exits, fire alarm pull stations, best emergency evacuation route, first aid kits, emergency oxygen, and closest AED.
- ✓ Distribute the HSI BLS Skill Guide.

PREPARATION CHECKLIST

Required Class Materials

- ☐ HSI BLS Instructor Guide with Lesson Plans, 1 per instructor.
- ☐ HSI Skill Guide, minimum 1 for each 3 students.

Required Class Equipment

- ☐ CPR manikins, minimum 1 adult and 1 infant for each 3 students.
- ☐ CPR manikin cleaning and disinfecting wipes.
- ☐ Alcohol-based hand sanitizer, 1 pump bottle or similar for each 3 students.
- ☐ AED Trainer with adult and pediatric pads, minimum 1 for each 3 students.
- ☐ CPR mask and one-way disposable mouthpiece with valve for CPR mask, 1 for each student.
- ☐ Bag-mask device, minimum 1 adult and 1 pediatric for each 3 students.
- ☐ Stopwatch for Adult BLS Performance Evaluation, minimum 1 per instructor (online, smartphone app, or handheld digital).

Additional Class Equipment,Supplemental Topics

- ☐ Naloxone administration training device. Minimum 1 for each 3 students.

Optional Class Equipment

(Strongly Recommended)

- ☐ HSI BLS Class Presentation, Skill Practice Lessons for Renewal/Blended/RSV (downloaded from Otis for playback or streamed).
- ☐ Desktop or laptop computer (Windows or Mac), or smartphone or tablet, 1 per instructor.
- ☐ Internet connection (for streaming), HSI Instructor Desktop Video Player or HSI Instructor Mobile App with downloaded HSI BLS Class Presentation, Skill Practice Lessons for Renewal/Blended/RSV.
- ☐ Video monitor or computer projector and screen large enough for all students in class to see (traditional classroom portion).
- ☐ Disposable gloves (nonlatex), minimum 1 pair for each student.
- ☐ Surgical mask or N95 respirator, minimum 1 for each student.
- ☐ CPR feedback devices, minimum 1 per manikin.
- ☐ Stopwatches for high-performance CPR team practice, minimum 2 for each 4 students (online, smartphone app, or handheld digital).
- ☐ Metronomes, minimum 1 for each 3 students. (smartphone app, or traditional).
- ☐ HSI “Rate Your Program” Class Evaluation, 1 paper copy per student.

Additional Recommended Tools

- ☐ Pens or pencils, 1 for each student.
- ☐ Blankets, kneeling pads or mats, 1 for each 3 students.
- ☐ Name tags or tent cards, 1 for each student.
- ☐ Spare projector bulb (as needed).
- ☐ Extension cord(s).
- ☐ Multi-strip power surge protector.
- ☐ Whiteboard with dry erase pens and eraser.
- ☐ Large black markers for student name tags or tent cards.
- ☐ Large envelope for class paperwork.

INITIAL BLS BLENDED LEARNING TRAINING CLASS OUTLINE AND TIME FRAME

In-Person Hands-On Skills Class or Remote Skills Verification (RSV) for individuals who have never been certified or whose certification has expired.

Segment One: Introduction

#	Lesson Title	Approximate Length (min)
1	Introduction to BLS	1:00

Segment Two: Adult BLS

#	Lesson Title	Approximate Length (min)
2	Adult BLS Procedure/Assessment	3:00
3	Adult Compressions	3:00
4	Adult Breathing	5:00
5	Adult Automated External Defibrillation	4:00
6	Adult CPR: One BLS Provider	6:00
7	Adult CPR: Multiple BLS Providers	10:00
8	Suspected Opioid-Associated Emergency	2:00
9	Adult CPR: Teamwork in High-Performance Resuscitation	2:00-20:00*

Segment Three: Child BLS

#	Lesson Title	Approximate Length (min)
10	Child BLS Procedure/Assessment	3:00
11	Child CPR: Multiple BLS Providers	6:00

Segment Four: Infant BLS

#	Lesson Title	Approximate Length (min)
12	Infant BLS Procedure/Assessment	3:00
13	Infant Compressions	3:00
14	Infant Airway and Breathing	5:00
15	Infant CPR: Multiple BLS Providers	7:00
16	Infant CPR: Teamwork in High-Performance Resuscitation (Optional)	20:00*

Segment Five: Choking

#	Lesson Title	Approximate Length (min)
17	Relief of Choking	13:00

Segment Six: Required Knowledge & Skill Evaluation

#	Lesson Title	
18	BLS Performance Evaluation	40:00

Segment Seven: Conclusion

#	Lesson Title	
19	Conclusion	15:00

Total Breaks[45]: 10:00

Total Time[46]: 2 hours, 15 minutes

* This lesson contains an optional skill practice. Optional skill practice times are not included in the total time for this course. See lesson plan for details.
45 Adult education guidelines recommend a break for at least 5 minutes each hour. Class timing can vary. Because of this, no specific breaks have been designated in this class outline. Class size, class location, instructor-to-student ratios, and other factors will affect the actual schedule. Breaks should be provided but may be rearranged or combined as required or desired.
46 Projected times for lessons consider video run times, brief introductions and answers to questions, demonstrations, and student practices with up to 3 students in a class of 10. Stated class times are based on covering required lessons only. Lesson times are influenced by class preparation, available equipment, instructor efficiency, and number of students. These factors may increase or decrease the time needed to meet the required learning objectives.

segment one

INTRODUCTION

lesson one

INTRODUCTION TO BLS

PREPARE

Duration:
1 Minute

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment & Materials

Please refer to the Preparation Checklist on page 107 for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain the purpose of BLS training.
- Describe differences between national guidelines and local medical protocols. (Optional)

Why This Topic Matters

Basic life support providers who proficiently deliver high-quality CPR and early defibrillation play an integral role in strong chains of survival and can significantly contribute to meaningful survival, function, and recovery of the cardiac arrest victim.

Instructional Notes

1. It is helpful to let your students know right at the start of class that your goal is to create a safe learning environment. Mistakes are learning opportunities. You are here to help them make the most of their abilities with a focus on high-quality skills. This will help students relax and feel more comfortable.
2. If possible, use contextual learning to help students learn in such a way that it relates to them and applies to their real-world setting (fire rescue, EMS, public safety, lifeguarding, dental practice, hospital, clinic, etc.).
3. It is a best practice to know what differences may exist between what is taught in this BLS Class and your students' local medical protocols. It is often helpful to have a short discussion with the students to address these differences. Where local protocols differ from national guidelines, students may practice their skills in the context of their local protocols. However, this class is based on national guidelines for CPR and emergency cardiovascular care with a primary focus on the middle ground of the BLS continuum. Notwithstanding local protocols, certification in this BLS Class requires students to complete a performance evaluation for Adult BLS and Infant BLS based on national guidelines, not local protocols.

WRAP UP

Reinforce Key Points as Needed

1. This BLS training program is intended for healthcare providers and other public safety professionals working a wide variety of occupational settings.
2. The purpose of this BLS training program is for participants to gain or improve knowledge and skill proficiency in high-quality CPR skills for the adult, child, and infant.
3. BLS Providers play a key role in resuscitation effort following cardiac arrest, both out of hospital and in hospital or clinic settings.
4. EMS providers should always follow their local physician-directed medical protocols.

Ask a Review Question as Needed

BLS requires knowledge and proficiency in CPR, AEDs, and techniques to relieve airway obstruction in what age group of patients?

a. Adults only.
b. Infants only.
c. Adults and infants.
d. Adults, children, and infants.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson two
ADULT BLS PROCEDURE/ASSESSMENT

PREPARE

Duration:
3 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment & Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Identify the main elements of the Adult BLS procedure.
- Explain how to assess the scene and adult patient.
- Correctly demonstrate how to assess the scene and adult patient as a single BLS Provider.

Why This Topic Matters

The Adult BLS procedure is a step-by-step guide used to improve and standardize decisions when responding to a potential adult cardiac arrest. It can help reduce potential errors in the delivery of BLS.

Instructional Notes

1. It may be helpful to have students take a minute or two on their own to look over the complete *Procedure for Adult Basic Life Support* graphic in the Skill Guide.
2. The skill practice for this lesson is designed to emphasize the important first steps in the Adult BLS procedure; Assessment (the top box in the procedure).
3. The specific skills for taking action based the presence or absence of normal breathing and pulse will follow in later lessons.
4. Request students routinely decontaminate their hands with an alcohol-based hand sanitizer and clean and disinfect the manikin after each student practices or at the end of a scenario.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 1: Adult Assessment or **Scenario Sheet 1: Adult BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. The Adult BLS procedure is a process composed of tasks that can be performed in a step-by-step manner by a single BLS Provider or performed simultaneously by multiple providers.
2. There are three main elements of the Adult BLS procedure:
   a. Assessment of the scene and patient,
   b. Actions based the presence or absence of normal breathing and a pulse, and
   c. Use of an AED.

Ask a Review Question as Needed

You should take no longer than ___ second(s) to simultaneously assess breathing and pulse.

a. 1
b. 3
c. 10
d. 20

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson three

ADULT COMPRESSIONS

PREPARE

Duration:
3 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment & Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Recognize high-quality adult chest compressions.
- Correctly demonstrate high-quality adult chest compressions.

Why This Topic Matters

High-quality CPR is the primary influence on survival from cardiac arrest. High-quality chest compressions are the foundation of high-quality CPR.

Instructional Notes

1. CPR feedback devices transmit evaluative or corrective information on compression rate, depth, release, and hand position during CPR training. The feedback device can be integrated into a manikin or be used as an accessory with it. HSI strongly recommends CPR feedback devices that measure each student's skill performance in real time be used during BLS training.
2. Remind students to routinely decontaminate their hands with an alcohol-based hand sanitizer and clean and disinfect the manikin after each student practices or at the end of a scenario.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 2: Adult Chest Compressions or **Scenario Sheet 2: Adult BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. Push hard and deep, straight down, using your upper body weight to compress the chest at least 2 inches (5 cm). Chest compressions are most often performed too shallowly.
2. At the end of each compression, lift all your weight off the patient's chest, allowing it to completely recoil, or rebound, to its normal position but do not lose contact with the chest.
3. Push fast. Compress the chest at a rate of 100-120 compressions per minute.
4. Minimize interruption in chest compressions. Fewer and shorter interruptions in chest compressions are associated with better outcomes.

Ask a Review Question as Needed

When chest compressions stop, blood flow _____significantly.

a. increases
b. decreases
c. improves
d. circulates

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson four

ADULT BREATHING

PREPARE

Duration:
5 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain how to provide effective adult rescue breaths using a CPR mask.
- Explain how to provide effective adult rescue breaths using a bag-mask device.
- Correctly demonstrate how to provide effective adult rescue breaths using a CPR mask.
- Correctly demonstrate how to provide effective adult rescue breaths using a bag-mask device.

Why This Topic Matters

Rescue breaths are critically important in BLS care, as they provide life-sustaining oxygen and ventilation directly to the patient's lungs.

Instructional Notes

1. PPE, including CPR masks and bag-mask devices, are fundamental elements of standard precautions that must be used by healthcare workers and first responders who provide BLS to protect them from infection. Having students practice BLS skills while wearing and using PPE appropriate to their occupational setting can improve realism and help expose situations that require unique problem-solving.
2. Remind students to routinely decontaminate their hands with an alcohol-based hand sanitizer and clean and disinfect the manikin after each student practices or at the end of a scenario.
3. The immediate cause of death in drowning is a deficiency of oxygen. Lifeguards and other well-trained professional rescuers may provide rescue breathing for a submersion victim while they are being brought to the pool deck, shore, or boat. This "in-water resuscitation" can lead to an improved likelihood of survival over delaying ventilation until the victim is out of the water. Procedures for in-water resuscitation should be based on local medical protocol, organizational guidelines and professional training standards.
4. As soon as the unresponsive victim is removed from the water, open the airway and assess breathing. If there is no breathing, give 2 rescue breaths that make the chest rise (if this was not done previously in the water).

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 3 & 4: Adult Rescue Breaths with CPR Mask and **Adult Rescue Breaths with Bag-Mask Device, One BLS Provider** or **Scenario Sheets 3 & 4: Adult BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. Rescue breaths are critically important, as they provide life-sustaining oxygen and ventilation directly to the patient's lungs.
2. Gasping is common in SCA but is not normal breathing.
3. If the pulse is definitely felt but the unresponsive patient is not breathing normally, provide rescue breathing. Open the airway and give 1 breath every 6 seconds, or 10 breaths per minute.
4. Excessive ventilation can be harmful. Give enough air to make the patient's chest rise, but no more than that. Stop ventilating as soon as you see chest rise.
5. Take standard precautions when providing adult rescue breaths. Use a CPR mask or bag-mask device in addition to other appropriate PPE. HEPA filters can trap airborne virus particles.

Ask a Review Question as Needed

Your adult patient is making abnormal gasping, snoring sounds. You definitely feel a carotid pulse. What should you do?

a. Assess scene safety.
b. Check the pulse about every two minutes.
c. Immediately start high-quality CPR, beginning with chest compressions.
d. Provide rescue breathing or bag-mask ventilation.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson five

ADULT AUTOMATED EXTERNAL DEFIBRILLATION

PREPARE

Duration:
4 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Identify the steps to use an AED [Trainer] on an adult.
- Correctly demonstrate how to use an AED [Trainer] on an adult.

Why This Topic Matters

When indicated, an electrical shock passed through the chest can restore the heart's normal contractions.

Instructional Notes

1. Always verify that each AED Trainer is not a live AED and the device is incapable of delivering a shock.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 5: Adult Automated External Defibrillation, One BLS Provider or
  Scenario Sheet 5: Adult BLS

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. If you have an AED in your workplace, be familiar with its operation. AED design varies by model and manufacturer, but they all operate in a similar manner.
2. Use adult AED pads for patients 8 years of age or older.
3. If directed by the AED, deliver a shock. Continue CPR while the device is charging, then clear everyone from the patient before pressing the shock button.
4. If the patient begins responding, regularly reassess the patient's responsiveness, airway, breathing, and pulse. If a pulse is felt but the patient is not breathing normally, provide rescue breathing or bag-mask ventilation.

Ask a Review Question as Needed

You are a lone BLS Provider responding to a possible adult cardiac arrest. The scene is safe. You have taken standard precautions. The patient is unresponsive. You have activated EMS and/or your EAP. Other providers are on the way. You have an AED. The patient is occasionally gasping. You do not feel a carotid pulse. What should you do?

a. Immediately start CPR, beginning with chest compressions.
b. Power on the AED. Apply adult pads to patient's bare chest.
c. Reassess the patient's responsiveness, airway, breathing, and pulse.
d. Open the airway and provide rescue breathing or bag-mask ventilation.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson six

ADULT CPR: ONE BLS PROVIDER

PREPARE

Duration:
6 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Apply the BLS links of the Adult Chain of Survival.
- Correctly demonstrate adult CPR and AED with a CPR mask as one BLS Provider.

Why This Topic Matters

While working as a coordinated team is common, BLS Providers also need to be able to provide high-quality CPR and AED use as a single provider using a CPR mask.

Instructional Notes

1. The skill practice for this lesson is designed to help students apply the BLS links of the adult chains of survival by putting together the knowledge and skills required to take action for adult cardiac arrest as a lone provider, with a CPR mask, and an AED brought by a bystander. The “bystander” role is played by another student. If there is only one student in the class, the instructor will need to play this role.
2. The next practice session will cover adult CPR with a bag-mask device and multiple BLS Providers.
3. Remind students to routinely decontaminate their hands with an alcohol-based hand sanitizer and clean and disinfect the manikin after each student practices or at the end of a scenario.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 6: Adult CPR and AED with CPR Mask, One BLS Provider or
  Scenario Sheet 6: Adult BLS

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. Perform the Assessment.
   a. If the patient is unresponsive, activate EMS and/or your EAP.
   b. Get an AED and emergency response equipment or send someone else to get them.
   c. Assess the patient's breathing and carotid pulse at the same time for no more than 10 seconds.
2. If the patient is not breathing normally or only gasping and you do not feel a pulse, start high-quality CPR.
3. Repeat CPR cycles of 30 compressions and 2 breaths for two minutes.
4. Operate the AED as soon as it is available.
5. Continue the resuscitation attempt until another BLS Provider or advanced life support providers arrive and take over, or until the patient starts breathing, moving, or reacting in other ways.

Ask a Review Question as Needed

You are a lone BLS Provider responding to a possible cardiac arrest. The scene is safe. You have taken standard precautions. An untrained bystander heard the person collapse. You have activated EMS and/or your EAP. Other providers are on the way. An AED is located in the building, about 3 minutes away. The adult patient is unresponsive and making gurgling sounds. You do not feel a carotid pulse. You have a CPR mask with a one-way valve. What should you do?

a. Send the bystander to get the AED. Start high-quality CPR.
b. Get the AED. Tell the bystander to stay with the patient.
c. Open the airway and provide rescue breathing with the CPR mask.
d. Reassess the patient's responsiveness, airway, breathing, and pulse.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson seven

ADULT CPR: MULTIPLE BLS PROVIDERS

PREPARE

Duration:
10 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain how to provide adult CPR and AED use with two or more BLS Providers.
- Correctly demonstrate how to perform adult CPR and AED with two or more BLS Providers.

Why This Topic Matters

It is common for multiple providers to respond to a potential cardiac arrest; coordination among providers can improve likelihood of survival.

Instructional Notes

1. It is required for students to practice Adult CPR and AED with 2 providers using a bag-mask device. This lesson also contains an optional skill practice for practicing teamwork with 3 or more BLS Providers. The skill practice focuses on coordinating compressions, ventilations with a bag-mask device, switching roles between two BLS Providers, integrating a third BLS Provider arriving with an AED, and adding a fourth BLS Provider to assist with bag-mask ventilation during CPR. Two BLS Providers working together can provide more effective and efficient bag-mask ventilation during CPR than a single provider can.
2. If there are only 3 students in the class for the optional skill practice, the instructor will need to play the role of the fourth provider assisting with bag-mask ventilation.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 7: Adult CPR and AED with Bag-Mask, 2 Providers or Scenario Sheet 7: Adult BLS
- **Optional Practice: Skill Sheet 8: Adult CPR and AED with Bag-Mask Device, Multiple BLS Providers or Scenario Sheet 8: Adult BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. First provider: If you are the first BLS Provider to reach the patient's side, assess responsiveness, breathing, and pulse.
   a. If the patient is not breathing normally or only gasping and you do not feel a pulse, start high-quality CPR.
2. Second provider: Activate EMS and/or your EAP, and get the AED and emergency response equipment, if available.
   a. Open the airway and give 2 effective rescue breaths using a CPR mask or bag-mask device.
3. Switch the person in the compressor's position frequently, about every two minutes. Try to minimize interruptions to compressions to less than 10 seconds.
4. Third provider: Arrives and operates the AED.
   a. Do not interrupt chest compressions to apply the AED pads.
5. Fourth provider: Arrives and assists provider in the ventilating position by squeezing the bag.

Ask a Review Question as Needed

Four BLS Providers have been performing CPR on an adult cardiac arrest patient for 18 minutes. The last switch in roles was only about a minute ago, but the compressor says, "I'm exhausted." What should they do?

a. Switch out the compressor.
b. Stop CPR for about 2 minutes to rest.
c. Encourage the compressor to continue perform high-quality compressions.
d. Stop compressions. Continue to ventilate the patient once every 6 seconds.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson eight

SUSPECTED OPIOID-ASSOCIATED EMERGENCY (OEA)

PREPARE

Duration:
2 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Describe the BLS procedure for suspected opioid-associated emergency (OAE).
- Correctly demonstrate how to administer naloxone intranasally using Narcan® Nasal Spray. (Optional)

Why This Topic Matters

A quick response to an opioid overdose, including administering naloxone, can prevent brain injury and death.

Instructional Notes

1. It may be helpful to have students take a minute on their own to look over the complete ***Procedure for Opioid-Associated Emergencies*** graphic in the HSI Skill Guide.
2. This is an optional skill practice that requires a minimum of two students. The skill practice focuses on coordinating ventilations with a bag-mask device and practice with an intranasal naloxone administration training device.
3. If there is only one student in the class, the instructor will need to play the role of ventilating BLS Provider.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Optional: Skill Sheet 9: Adult Suspected Opioid-Associated Emergency or
  Scenario Sheet 9: Adult BLS

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. Perform an assessment. Activate EMS and/or your EAP.
   a. If you are alone, get naloxone and an AED, if available.
2. If you suspect an opioid-associated emergency, give naloxone according to local medical protocol.

Ask a Review Question as Needed

You are attempting to resuscitate an unresponsive 25-year-old who overdosed on fentanyl. The scene is safe. You have taken standard precautions. EMS or EAP has been activated. The patient is making snorting sounds. The carotid pulse is definitely felt. You have a bag-mask device, AED, and Narcan Nasal Spray. What should you do?

a. Immediately start CPR, beginning with chest compressions.
b. Power on the AED. Apply adult pads to patient's bare chest.
c. Reassess the patient's responsiveness, airway, breathing, and pulse.
d. Ventilate the patient once every 6 seconds. Give naloxone according to local medical protocol.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson nine

ADULT CPR: TEAMWORK IN HIGH-PERFORMANCE RESUSCITATION

PREPARE

Duration:
2 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Identify the qualities of high-performance adult CPR.
- Describe the roles and responsibilities of each team member during high-performance adult resuscitation.
- Explain the goal and benefit of high-performance adult CPR team debriefing.
- Participate as a team member during high-performance adult CPR. (Optional)
- Participate as a team member in a high-performance adult CPR team debriefing. (Optional)

Why This Topic Matters

With effective communication, collaboration, and problem-solving, BLS Providers working as part of a team can improve outcomes for cardiac arrest patients.

Instructional Notes

1. This lesson includes an optional, scenario-based skill practice.
2. The skill practice focuses on teamwork during high-performance CPR with the specific goal of producing a chest compression fraction (CCF) of at least 60%.
3. Positions, roles, and responsibilities may be adjusted consistent with local medical protocol.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

1. In a small class, this skill practice requires a minimum of three students (Airway, Compressor, and CPR Coach) with the instructor playing the role of Team Lead and Recorder.
2. In larger classes, divide the students into groups of four or five.
3. Briefly review the team member roles (as needed).

- **Compressor.** This team member assesses the patient, performs compressions, and rotates with the person in the airway position every 2 minutes or sooner if tired.
- **CPR Coach.** This team member brings, places, and operates the AED [Trainer]. In addition, this team member acts as the CPR Coach, providing real-time verbal feedback of CPR performance to the team. The primary focus of the CPR Coach is to prompt team members to perform high-quality CPR by:
  - Minimizing interruptions in chest compressions.
  - Ensuring chest compressions of adequate rate and depth.
  - Encouraging complete chest recoil between compressions.
  - Avoiding excessive ventilation.
- **Airway.** This team member opens and maintains the airway and provides bag-mask ventilation. This team member rotates with the person performing compressions every 2 minutes or sooner if tired.
- **Leader.** This team member leads the resuscitation team, assigning roles, making treatment decisions, and providing feedback to the team as needed.
- **Recorder.** This team member will time the resuscitation attempt and calculate the CCF using two stopwatches (or by using a real-time CPR feedback device if available).
  - **First stopwatch.** The Recorder will start the first stopwatch as soon as resuscitation attempt begins. It will run continuously until the end of the resuscitation attempt. In this practice, that will be 10 minutes.
  - **Second stopwatch.** The second stopwatch is used to measure the chest compression time. The Recorder will start the second stopwatch as soon as the Compressor begins chest compressions and stop it anytime compressions are interrupted. Don't reset it, just restart when compressions begin again, and allow the stopwatch to continue counting up.

4. Tell the team(s) to practice using closed loop communication to reduce miscommunication.
5. Ask for and answer any questions.
6. When the teams(s) are ready, choose a scenario to read out loud. When possible, fill in the blanks to match the student's environment, make it more realistic, and aid in contextual learning.

Out-of-Hospital Setting:

Your BLS team has responded to a call from [__ ex. security officers __] for a possible cardiac arrest. Upon arrival at the scene, you find a bystander performing good quality compression-only CPR on an adult. The scene is safe. You have taken standard precautions. The patient is unresponsive. You have activated EMS and/or your EAP by [__ ex. 2-way radio __].The patient is not breathing. No carotid pulse is felt. You have an AED and adult bag-mask device in your emergency response equipment. Demonstrate what actions you would take next.

In-Hospital/Clinic Setting:

Your BLS team has responded to a shout for help from the [__ ex. Medical Records Department __]. As you approach the scene, you see an anxious [__ ex. records clerk __] kneeling next to a motionless adult. "I saw her faint. She's breathing." The scene is safe. You have taken standard precautions. The patient is unresponsive. You have activated EMS and/or your EAP by [__ ex. calling 5555 or pressing the code button __]. The patient is taking very weak, irregular breaths and making snorting sounds. No carotid pulse is felt. You have an AED and adult bag-mask device. Demonstrate what actions you would take next.

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.

7. Stop the high-performance resuscitation at 10 minutes.
8. Calculate or have the Recorder calculate the CCF.
   a. Convert the time on the second stopwatch (total compression time) to seconds. Multiply the time value by 60 (for example, 7 minutes x 60 = 420 secs).
   b. Convert the time on the first stopwatch (total resuscitation time) to seconds. Multiply the time value by 60 (10 minutes x 60 = 600 secs.). Divide the total compression time by the total resuscitation time (420 / 600 = .70).
   c. Determine the CCF by converting the decimal value to a percentage. Multiply the decimal value by 100 (.70 x 100 = 70%).
9. Have the Recorder share the team's CCF. A CCF of at least 60% is recommended, but higher percentages are both desirable and achievable. A CCF of at least 80% has been associated with higher rates of ROSC.

WRAP UP

Encourage Constructive Feedback as Needed

- Conduct a debriefing. Use the framework below as an outline for a structured and supported approach.
- Team members should view errors as opportunities for improvement. Input from team members should be considered equally, regardless of their role on the team or experience/history as a BLS Provider.
- Persuade the team to be brief, concise, and to consider one task or process, then move on. Be tactful.
- Show sensitivity to each team member's feelings and point of view.

GATHER	
TEAM LEAD/RECORDER/MEMBERS	✓ What happened? Share your perceptions.
INSTRUCTOR/FACILITATOR	✓ Begin with the Team Lead. ✓ Ask for a self-critique and a synopsis of team performance. ✓ After the Team Lead, encourage comments from the rest of the team. ✓ Listen, then share your perceptions.
ANALYSIS	
LEADER/RECORDER/MEMBERS	✓ What happened? Share your observations.
INSTRUCTOR/FACILITATOR	✓ Begin with the Recorder. ✓ After the Recorder, encourage comments from the rest of the team. ✓ Ask, in what way did things go well? ✓ Ask, how could improvements be made? ✓ Listen, then share your observations.
SUMMARY	
TEAM LEAD/RECORDER/MEMBERS	✓ Summarize. Share the main things you learned.
INSTRUCTOR/FACILITATOR	✓ Summarize correct actions and areas of improvement.

Reinforce Key Points as Needed

1. An effective high-performance resuscitation team:
   a. has clearly defined roles,
   b. uses clear and effective communication,
   c. anticipates next actions,
   d. minimizes interruptions in compressions, and
   e. consistently measures its performance.
2. Understanding the roles within the team is important, as some team members may rotate roles during a resuscitation attempt.
3. The compressor, coach, and airway team members make up the resuscitation triad, or triangle. These three team members remain in the triangle unless it becomes unsafe.
4. Use closed loop communication to reduce miscommunication.
5. Debriefing is a widely used form of feedback that focuses on improving teamwork skills. The goal of debriefing is to learn by reviewing and reflecting on team performance. Evidence demonstrates that teams that debrief perform more than 20% better than those that do not.

Ask a Review Question as Needed

Teamwork in high-performance resuscitation requires the use of _____.

f. An AED
g. Two stopwatches
h. A bag-mask device
i. Clear and effective communication

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson ten
CHILD BLS PROCEDURE/ASSESSMENT

PREPARE

Duration:
3 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Identify the main elements of the child BLS procedure.
- Explain how to assess the scene and child patient.
- Correctly demonstrate how to assess the scene and child patient as a single BLS Provider. (Optional)

Why This Topic Matters

The child BLS procedure is a step-by-step guide used to improve and standardize decisions when responding to a potential pediatric cardiac arrest. It can help reduce potential errors in the delivery of BLS.

Instructional Notes

1. It may be helpful to have students take a minute or two on their own to look over the complete *Procedure for Pediatric Basic Life Support* graphic in the Skill Guide.
2. The optional skill practice for this lesson is designed to emphasize the important first steps in the child BLS procedure; Assessment (the top box in the procedure).
3. The specific skills for taking action based the presence or absence of normal breathing and pulse will follow in later lessons.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Optional: Skill Sheet 10: Child Assessment or **Scenario Sheet 10: Child BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. There are three main elements of the child BLS procedure:
   a. Assessment of the scene and patient,
   b. Actions based the presence or absence of normal breathing and a pulse, and
   c. Use of an AED.
2. If the scene is not safe, do not enter it until hazards have been minimized or eliminated.
3. If the scene is safe, assess responsiveness. Tap or squeeze the patient's shoulder and ask loudly, "Are you okay?"
4. If the patient is unresponsive, call 911 to activate EMS using a mobile device or activate your EAP.
5. Take no more than 10 seconds to simultaneously assess breathing and the child's carotid or femoral pulse.
6. Then, take action based the presence or absence of normal breathing and pulse.

Ask a Review Question as Needed

A BLS Provider should simultaneously assess the patients breathing and carotid or femoral pulse. This assessment should take no longer than ___ seconds.

a. 5
b. 10
c. 15
d. 20

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson eleven

CHILD CPR: MULTIPLE BLS PROVIDERS

PREPARE

Duration:
6 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain how to provide child CPR with two or more BLS Providers.
- Correctly demonstrate how to perform child CPR with two or more BLS Providers.

Why This Topic Matters

It is common for multiple providers to respond to a potential cardiac arrest.

Instructional Notes

1. The skill practice for this lesson is for coordinating compressions, ventilations with a bag-mask device, and switching roles between multiple BLS Providers.
2. If there is only one student in the class, the instructor will need to play the role of a second BLS Provider.
3. If you prefer, you can conduct the Adult BLS Performance Evaluation after this lesson or do it later in Segment 6: Required Knowledge and Skill Evaluation.
4. Remind students to routinely decontaminate their hands with an alcohol-based hand sanitizer and clean and disinfect the manikin after each student practices or at the end of a scenario.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 11: Child CPR with Bag-Mask Device, 2 BLS Providers or
  Scenario Sheet 11: Child BLS

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. Provider 1: Deliver high-quality compressions.
   a. Position yourself and place 1 or 2 hands on the center of the chest.
   b. Compress fast, at a rate of 100-120 times per minute.
   c. Compress hard, at least 2 inches (5 cm).
   d. Allow complete chest recoil at the top of each compression.
   e. Do not lean on the chest between compressions.
   f. Perform 15 compressions. Count out loud.
2. Provider 2: Deliver effective breaths.
   a. Use a pediatric bag-mask device.
   b. Open the airway and give 2 rescue breaths.
   c. Deliver each breath over 1 second in length while watching for chest rise.
   d. Encourage the compressor to perform high-quality compressions: fast, hard, and with complete recoil.
3. Provider 1 & 2: Repeat CPR cycles of 15 compressions and 2 breaths for two minutes.
   a. Switch positions. Try to minimize interruptions to compressions to less than 10 seconds.

Ask a Review Question as Needed

When ventilating a child with a bag-mask device, give 1 breath every 2-3 seconds. Deliver each breath over ____ second(s) in length while watching for chest rise.

a. .5
b. 1
c. 1.5
d. 2

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson twelve

INFANT BLS PROCEDURE/ASSESSMENT

PREPARE

Duration:
3 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Identify the main elements of the pediatric BLS procedure.
- Explain how to assess the scene and infant patient.
- Correctly demonstrate how to assess the scene and infant patient as a single BLS Provider. (Optional)

Why This Topic Matters

The pediatric BLS procedure is a step-by-step guide used to improve and standardize decisions when responding to a potential pediatric cardiac arrest. It can help reduce potential errors in the delivery of BLS.

Instructional Notes

1. The optional skill practice for this lesson is designed to emphasize the important first steps in the infant BLS procedure; Assessment (the top box in the procedure).
2. The specific skills for taking action based the presence or absence of normal breathing and pulse will follow in later lessons.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Optional: Skill Sheet 12: Infant Assessment or **Scenario Sheet 12: Infant BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. There are three main elements of the infant BLS procedure:
   a. Assessment of the scene and patient,
   b. Actions based the presence or absence of normal breathing and a pulse, and
   c. Use of an AED.
2. If the scene is not safe, do not enter it until hazards have been minimized or eliminated.
3. If the scene is safe, assess responsiveness. Gently tap the victim and ask loudly, “Are you okay?”
4. If the infant is unresponsive, call 911 to activate EMS using a mobile device or activate your EAP. If you don’t have a mobile phone nearby, bring the infant with you to activate.
5. Take no more than 10 seconds to simultaneously assess breathing and the infant’s brachial pulse. Then, take action based the presence or absence of normal breathing and pulse.

Ask a Review Question as Needed

You and another BLS Provider have responded to a call for a 5-month-old infant with trouble breathing. The scene is safe. You have taken standard precautions. The infant is unresponsive and gasping. You have activated EMS and/or your EAP. A weak brachial pulse at about 40 beats per minute is felt. Other BLS Providers are a few minutes away with an AED. What should you do?

a. Start high-quality CPR.
b. Maintain an open airway.
c. Reassess responsiveness, airway, breathing, and pulse.
d. Provide bag-mask ventilation and check the pulse every 2 minutes.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson thirteen

INFANT COMPRESSIONS

PREPARE

Duration:
3 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Recognize high-quality infant chest compressions.
- Correctly demonstrate high-quality infant chest compressions.

Why This Topic Matters

As in the adult and child procedure, high-quality chest compressions are the foundation of high-quality CPR.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 13: Infant Compressions or **Scenario Sheet 13: Infant BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. For infant chest compressions, use one of three hand-position techniques:
   a. 2-Finger Technique
   b. 2-Thumb Encircling-Hands Technique
   c. Heel of One Hand Technique
2. Whichever technique you use, push hard, straight down, to compress the chest approximately 1 ½ inches (4 cm). This depth should be at least one third the diameter of the infant's chest.
3. At the end of each compression, allow complete chest recoil.
4. Compress the chest at a rate of 100-120 compressions per minute. Minimize interruptions.

Ask a Review Question as Needed

This technique may be useful for larger infants or when the BLS Provider has difficulty compressing the appropriate depth.

a. The 2-Finger Technique
b. The 2-Hands Technique
c. The Heel of One Hand Technique
d. The 2-Thumb Encircling-Hands Technique

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson fourteen

INFANT AIRWAY AND BREATHING

PREPARE

Duration:
5 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain how to open the infant airway using a head tilt–chin lift, and jaw thrust.
- Explain how to provide effective infant breaths using a CPR mask.
- Explain how to provide effective infant rescue breaths using a bag-mask device.
- Correctly demonstrate how to provide effective infant rescue breaths using a bag-mask device.

Why This Topic Matters

As with an adult, there must be an open airway to give rescue breaths to a child. Rescue breaths are extremely important for children because cardiac arrest typically results from asphyxia.

Instructional Notes

1. Previous guidelines recommended 1 breath every 3 to 5 seconds.[47] The recommendation to "give one breath every 2-3 seconds, about 20-30 breaths per minute" for an infant or child in respiratory arrest is based on one small study of intubated children who received at least 1 minute of CPR.[48] There is no relevant evidence for a specific ventilation rate for the infant or child with respiratory arrest and a pulse.[49] Local medical protocols may be different.
2. The immediate cause of death in drowning is a deficiency of oxygen. Lifeguards and other well-trained professional rescuers may provide rescue breathing for a submersion victim while they are being brought to the pool deck, shore, or boat. This "in-water resuscitation" can lead to an improved likelihood of survival over delaying ventilation until the victim is out of the water. Procedures for in-water resuscitation should be based on local medical protocol, organizational guidelines and professional training standards.
3. As soon as the unresponsive victim is removed from the water, open the airway and assess breathing. If there is no breathing, give 2 rescue breaths that make the chest rise (if this was not done previously in the water).

47 Berg MD, et al. Part 13: pediatric basic life support: 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2010 Nov 2;122(18 Suppl 3):S862-75. doi: 10.1161/CIRCULATIONAHA.110.971085.
48 Sutton RM, et al. Ventilation Rates and Pediatric In-Hospital Cardiac Arrest Survival Outcomes. Crit Care Med. 2019 Nov;47(11):1627-1636. doi: 10.1097/CCM.0000000000003898.
49 Maconochie IK, et al. Pediatric Life Support: 2020 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations. Circulation. 2020 Oct 20;142(16_suppl_1):S140-S184. doi: 10.1161/CIR.0000000000000894.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 14: Infant Rescue Breaths with a Bag-Mask Device, One BLS Provider or
  Scenario Sheet 14: Infant BLS

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. To use an infant bag-mask device as a single provider:
   a. Position yourself above the patient's head.
      i. Place the mask flat on the patient's face, covering the nose and mouth, with the top of the mask over the bridge of the nose.
      ii. Use your thumb and index finger of one hand in a C position to press the edges of the mask to the face.
      iii. Use your remaining fingers in an E position under the bony ridge of the jaw.
      iv. Tilt the head and lift the jaw up into the mask to open the airway. Maintain a neutral "sniffing" position.
   b. Give a rescue breath by squeezing the bag. Deliver each breath over 1 second in length while watching for chest rise.
   c. Give one breath every 2-3 seconds.
   d. Check the pulse about every two minutes. If the pulse is felt, but the heart rate is less than 60 beats per minute with signs of poor perfusion, or if there is no pulse, start high-quality CPR.

Ask a Review Question as Needed

You are in the airway position of your BLS team providing bag-mask ventilation for a 6-month-old infant pulled unresponsive from a bathtub. A brachial pulse at about 140 beats per minute is definitely felt. Proper bag-mask ventilation requires that you:

a. Give 1 breath every 6 seconds.
b. Position yourself at the patient's side.
c. Stop ventilating as soon as you see the chest rise.
d. Give a rescue breath by blowing through the valve opening on the mask.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson fifteen

INFANT CPR: MULTIPLE BLS PROVIDERS

PREPARE

Duration:
7 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain how to provide infant CPR with two or more BLS Providers.
- Correctly demonstrate how to perform infant CPR with two or more BLS Providers.

Why This Topic Matters

It is common for multiple providers to respond to a potential cardiac arrest; coordination among providers can improve likelihood of survival.

Play the Video

Instructional Notes

1. The skill practice for this lesson is for coordinating chest compressions, ventilations with a bag-mask device, and switching roles between multiple BLS Providers.
2. If there is only one student in the class, the instructor will need to play the role of a second BLS Provider.
3. If you prefer, you can conduct the Infant BLS Performance Evaluation after this lesson or do it later in Segment 6: Required Knowledge and Skill Evaluation.
4. Remind students to routinely decontaminate their hands with an alcohol-based hand sanitizer and clean and disinfect the manikin after each student practices or at the end of a scenario.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 15: Infant CPR with Bag-Mask Device, 2 BLS Providers or
  Scenario Sheet 15: Infant BLS

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. Provider 1: Deliver high-quality chest compressions.
   a. Use the 2-Thumb Encircling-Hands Technique.
   b. Compress fast, at a rate of 100-120 times per minute.
   c. Compress the chest approximately 1 ½ inches (4 cm).
   d. Allow complete chest recoil at the top of each compression. Do not lean on the chest between compressions.
   e. Perform 15 compressions. Count out loud.
2. Provider 2: Deliver effective breaths.
   a. Open the airway and give 2 rescue breaths. Deliver each breath over 1 second in length while watching for chest rise.
   b. Encourage the compressor to perform high-quality compressions: fast, hard, and with complete recoil.
3. Provider 1 & 2: Repeat CPR cycles of 15 compressions and 2 breaths for two minutes.
   a. Switch positions. Try to minimize interruptions to compressions to less than 10 seconds.
   b. Repeat CPR cycles of 15 compressions and 2 breaths for two minutes.

Ask a Review Question as Needed

The BLS Provider ventilating an infant with a bag-mask device should:

a. Ventilate fast, at a rate 1 breath every second.
b. Keep the infant's head tilted beyond the neutral position.
c. Encourage the compressor to perform high-quality compressions.
d. Give a rescue breath by blowing through the valve opening of the mask.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson sixteen

INFANT CPR: TEAMWORK IN HIGH-PERFORMANCE RESUSCITATION (OPTIONAL)

PREPARE

Duration:
20 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Participate as a team member during high-performance infant CPR. (Optional)
- Participate as a team member in a high-performance infant CPR team debriefing. (Optional)

Why This Topic Matters

With effective communication, collaboration, and problem-solving, BLS Providers working as part of a team can improve outcomes for cardiac arrest patients.

Play the Video

Instructional Notes

1. This lesson is an optional, scenario-based skill practice.
2. The skill practice focuses on teamwork during high-performance infant CPR with the specific goal of producing a chest compression fraction (CCF) of at least 60%.
3. Positions, roles, and responsibilities may be adjusted consistent with local medical protocol.
4. Refer to Section One, Adult BLS, Adult CPR: Teamwork in High-Performance Resuscitation for how to conduct the hands-on practice.
5. When the teams(s) are ready, choose one of the infant scenarios below to read out loud. When possible, fill in the blanks to match the student's environment, make it more realistic, and aid in contextual learning.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

Out-of-Hospital Setting:

Your BLS team has responded to a call from [__ ex. the 911 Call Center __] for a baby not breathing. Upon arrival at the scene, you find a panicked adult unsuccessfully attempting to provide mouth-to-mouth rescue breathing to a 3-month-old infant. The adult says, "She can't breathe! Please help!" The scene is safe. You have taken standard precautions. The patient is unresponsive. You have activated EMS and/or your EAP by [__ ex. 2-way radio __].The patient is not breathing. No brachial pulse is felt. You have a pediatric-ready AED and bag-mask device in your emergency response equipment. Demonstrate what actions you would take next.

In-Hospital/Clinic Setting:

Your BLS team has responded to a shout for help from [__ ex. the pediatric treatment room __]. As you approach, you see an anxious [__ ex. colleague __] performing chest compression on a 3-month-old infant. She says, "Code Blue." The scene is safe. You have taken standard precautions. The patient is unresponsive. You activate EMS and/or EAP by [__ ex. pushing the emergency alert button __]. The infant is not breathing. No brachial pulse is felt. You have a pediatric-ready AED and bag-mask device. Demonstrate what actions you would take next.

WRAP UP

Encourage Constructive Feedback as Needed

- Conduct a debriefing. Use the framework below as an outline for a structured and supported approach.
- Team members should view errors as opportunities for improvement. Input from team members should be considered equally, regardless of their role on the team or experience/history as a BLS Provider.
- Persuade the team to be brief, concise, and to consider one task or process, then move on. Be tactful. Show sensitivity to each team member's feelings and point of view.

lesson seventeen
RELIEF OF CHOKING

PREPARE

Duration:
5 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Describe how to recognize and provide treatment for a choking adult, child, or infant.
- Correctly demonstrate how to perform treatment for a choking infant.

Why This Topic Matters

When a severe airway obstruction occurs, the patient cannot get air in or out of the lungs. This is a life-threatening medical emergency. If the foreign body is not removed, the patient will quickly become unresponsive and suffer a secondary cardiac arrest within minutes.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 16: Infant Relief of Choking or **Scenario Sheet 16: Infant BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. If the patient is an adult or child:
   a. Each abdominal thrust needs to be given with the intent of dislodging and expelling the object.
   b. If the patient becomes unresponsive, begin CPR starting with compressions.
      i. Do not check for a pulse.
      ii. Before opening the airway to provide rescue breaths, open the patient's mouth wide.
      iii. If you see an object, remove it with your fingers.
2. If the patient is an infant:
   a. Give each back slap and chest thrust forcefully with the intent of dislodging and expelling the object.
   b. If the patient becomes unresponsive, begin CPR starting with compressions.
      i. Do not check for a pulse.
      ii. Before opening the airway to provide rescue breaths, open the mouth wide.
      iii. If you see an object, carefully remove it with your fingers.
      iv. Don't stick your finger blindly in an infant's throat and attempt to sweep out an object.

Ask a Review Question as Needed

You are responding to a shout for help from [__ ex. Outpatient Services __]. As you approach, you find a distraught teen holding a pale, 2-month-old infant. "I was feeding him. He started choking. Oh please - please - help him." The scene is safe. You have taken standard precautions. The responsive infant is coughing weakly and making a whistling sound when inhaling. You have activated your facility's EAP. What should you do now?

a. Calm the teen. Stand ready to help if things get worse.
b. Attempt to sweep out the obstruction with your finger.
c. Hold the infant facedown over your forearm and give 5 back slaps.
d. Place the infant on a firm, flat surface. Begin CPR starting with compressions.

Ask For & Answer Questions Before Moving on to the Next Lesson

segment six

REQUIRED SKILL EVALUATION

lesson eighteen

PERFORMANCE EVALUATION

PREPARE

Duration:
40 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment and Materials

Each student:

- CPR manikin, adult and infant
- AED Trainer, adult and pediatric pads
- Adult CPR mask and one-way valve
- Infant-sized bag-mask device

Optional:

- CPR feedback device
- Surgical mask or N95 respirator
- Disposable gloves

Instructor:

- Stopwatch

PRESENT

What Students Should Learn

After completing this lesson, the student should be able to:

- Demonstrate skill competency as indicated by the skill criteria on the "Adult BLS" and "Infant BLS" Performance Evaluation Sheets.

Why This Topic Matters

BLS skill competency is vital for improving patient outcomes from cardiac arrest.

Instructional Notes

1. An HSI BLS certification card may not be issued unless the student demonstrates skill competency as indicated by the skill criteria on the "Adult BLS" and "Infant BLS" Performance Evaluation Sheets.
2. Please refer to "Part Three, Evaluation" for instructions on conducting a performance evaluation for each student.
3. If a student fails to successfully complete the required Performance Evaluations, formal remediation is required. Please see "Part Three, Remediation" for more information.

lesson nineteen

CLASS EVALUATION, CONTINUING EDUCATION, DOCUMENTATION, & CERTIFICATION

PREPARE

Duration:
15 Minutes

Class Format: Initial Training
Delivery Method: Blended Learning

Equipment and Materials

Each student:

- HSI "Rate Your Program" Class Evaluation
- HSI BLS certification card for each student who successfully completes the BLS Class (print or digital)

Instructor:

- BLS Class Roster
- CAPCE Data Collection Form (for EMS Provider CE), PACE Verification of Participation Document and Academy of General Dentistry Continuing Education Course Roster (for Dental Professional CE)

PRESENT

Why This Topic Matters

HSI's quality assurance procedures and processes are used to continually improve the validity, defensibility, and effectiveness of HSI and its approved Training Centers and Authorized Instructors and Instructor Trainers.

Instructional Notes

1. Congratulate and thank students who successfully completed the class!
2. HSI requires that students be given the opportunity to evaluate their BLS Class using the "Rate Your Program" class evaluation form (print or online at hsi.com/rateyourprogram).
   a. Completed print class evaluations should be promptly delivered to the training center responsible for the class (see Appendix).
3. A complete, accurate, and legible Class Roster reflecting the actual class date(s) of the training class signed by the Authorized Instructor or Instructor Trainer or electronically submitted through Otis is required for every HSI BLS Class (see Appendix).
4. Continuing Education Hours for EMS and Dental professionals is available through HSI. See "Part Three, After the BLS Class" for more information.
5. The Authorized Instructor is required to legitimately issue an authentic HSI BLS print or digital certification card to each student who successfully completed this course.
   a. The certification card must be current, complete, accurate, and legible. It must contain the name of the participant and the Authorized Instructor, the Instructor's Registry Number, the Class Completion Date, the Expiration Date, the Training Center Phone Number and the Training Center Identification Number (TCID).
6. HSI's compete quality assurance standards, including all requirements for instructor authorization, conduct, and student certification are located in the most recent HSI Training Center Administrative Manual (TCAM) available at emergencycare.hsi.com/quality-assurance-compliance.

RENEWAL TRAINING

To renew means to repeat. The Renewal Class is a repetition of BLS skills to refresh maintain competency. To recertify is the process of being certified again. Recertification requires evaluation of knowledge and skill. The Renewal Class is both retraining and recertification. It is for individuals who are currently certified and desire (or are required) to refresh BLS skill competency and maintain certification. Individuals with expired certification (beyond the current 2-year standard) may not participate in a renewal class.

The Renewal Class is generally shorter than the Initial Class because of its skill-focus. However, it is well established that BLS skills deteriorate in 3 to 6 months after training.[50] For that reason, we recommend that renewal training not be offered as a single class near the end of the 2-year certification period, but rather, be broken up into a number of shorter, interrupted, skill-focused training sessions over a longer period of time (spaced practice). This has been shown to improve both skill retention and performance.[51] When it is feasible, retraining and recertification in a single class every 2 years (Full Renewal Class, Example 1) should be replaced or supplemented with training that focuses on skills and confidence building every 3-6 months (Partial Renewal Class, Example 2).[52]

Example 1:
2-Year Biennial Renewal

Month Year	BLS Class Format	Segments Taught
October 2021	Full Initial Class	All, 1-7
October 2023	Full Renewal Class	All, 1-7

Example 2:
2-Year Semi-Annual Renewal (spaced practice)

Month Year	BLS Class Format	Segments Taught
October 2021	Full Initial Class	All, 1-7
April 2022	Partial Renewal Class	1 & 2
October 2022	Partial Renewal Class	3
April 2023	Partial Renewal Class	4
October 2023	Partial Renewal Class	5, 6, 7

Example 3:
2-Year Quarterly Renewal (spaced practice)

Month Year	BLS Class Format	Segments Taught
October 2021	Full Initial Class	All, 1-7
January 2022	Partial Renewal Class	1, 2, 3
April 2022	Partial Renewal Class	4, 5
July 2022	Partial Renewal Class	1, 2, 3
October 2022	Partial Renewal Class	4, 5
January 2023	Partial Renewal Class	1, 2, 3
April 2023	Partial Renewal Class	4, 5
July 2023	Partial Renewal Class	1, 2, 3
October 2023	Partial Renewal Class	4, 5, 6 & 7

50 Kovács E, et al. The timing of testing influences skill retention after basic life support training: a prospective quasi-experimental study. BMC Med Educ. 2019 Dec 4;19(1):452. doi: 10.1186/s12909-019-1881-7
51 Cheng A, et al. Resuscitation Education Science: Educational Strategies to Improve Outcomes from Cardiac Arrest: A Scientific Statement From the American Heart Association. Circulation. 2018 Aug 7;138(6):e82-e122. doi: 10.1161/CIR.0000000000000583.
52 Riggs M, Franklin R, Saylany L. Associations between cardiopulmonary resuscitation (CPR) knowledge, self-efficacy, training history and willingness to perform CPR and CPR psychomotor skills: A systematic review. Resuscitation. 2019 May;138:259-272.]

Renewal Instructional Strategy

When teaching a renewal class, we recommend first trying the Experienced Approach. For skill practice, students are arranged in small groups of three with a manikin. They use the Scenario Sheets to prompt each other through a guided problem-solving scenario. If it becomes clear after the first scenario practice that the students' skills are substandard, we recommend changing to the standard approach to focus on improving their skills using either a Video-Guided Practice or an instructor demonstration followed by small group practice with Skill Sheets.

Renewal Recertification Strategy

Just as in an initial BLS certification, knowledge and skill evaluation is required for recertification. Students must demonstrate knowledge competency by obtaining a passing score of 74% or better on the 21-question BLS exam and demonstrate skill competency as indicated by the skill criteria on the "Adult BLS" and "Infant BLS" Performance Evaluation Sheets. The required knowledge and skill evaluation need only be done once by each student. They may complete both at any time during renewal prior to expiration of their certification card.

The best way to handle the BLS exam is for each student to complete the HSI BLS Exam online. Because the BLS exam is open-book, students may use their BLS Student Book as a reference while taking the online exam. The online exam can be completed prior to the renewal skills session, eliminating the class time required to have students complete the exam in person (and permitting them to complete the online exam at their own pace). To offer the BLS exam online to your students, log in to Otis to purchase credits, then create and schedule the exam.

> *Note: Only the HSI BLS Exam may be used. It is a violation of HSI quality assurance standards to use any other exam, including exams created by the Training Center or instructor, or to post the exam to an intranet or the Internet. Using any other exam invalidates the certification card and is grounds for suspension or revocation or Training Center approval and/or instructor authorization.*

CLASS PREPARATION

About a Month or Two Before Class

- ✓ Secure a classroom with an adequate space and learning environment.
- ✓ Confirm the date, location, and number of students.
- ✓ Reserve training equipment for the class.
- ✓ Schedule and confirm additional HSI authorized BLS instructors as required/preferred.
- ✓ If offering the BLS Exam online, log in to Otis to purchase credits, then create and schedule the exam.
- ✓ If using RSV for the practical skills session, log in to Otis to purchase RSV credits and set up an RSV session.

About Three Weeks Before Class

- ✓ Send a pre-Class letter or email to each student that:
  - › Confirms the class location, agenda, and time.
  - › Reviews any pertinent recommendations from local, state, or federal health authorities that affects what participants should expect in the classroom setting.
  - › Requests that they reschedule their training if they may have been exposed to an infectious disease; are experiencing fever, coughing, shortness of breath, diarrhea, fatigue, or muscle aches; or if they have open wounds or sores on their hands or mouth.
  - › Describes the steps you take protect students and help ensure a safe and healthy learning environment (hand hygiene, cleaning and disinfecting of surfaces and equipment, physical distancing, etc.)
  - › Reminds them to wear loose, comfortable clothing suitable for skill practice.
  - › Advises them to let you know if they have a physical disability and what reasonable accommodations may be necessary (see Americans with Disabilities Act in the TCAM for more).
  - › Provides your contact information.

A Few Days Before Class

- ✓ If you may have been exposed to an infectious disease; are experiencing fever, coughing, shortness of breath, diarrhea, fatigue, or muscle aches; or if have open wounds or sores on your hands or mouth, find another instructor to teach the class or reschedule it.
- ✓ Make sure you have adequate copies of essential Class paperwork (or access to electronic versions), including:
  - › HSI BLS CAPCE Data Collection Form (for awarding EMS Provider Continuing Education Hours, as needed), and/or
  - › HSI AGD PACE Verification of Participation Document and HSI Academy of General Dentistry (AGD) Continuing Education Class Roster (for awarding Continuing Dental Education, as needed).
- ✓ Briefly review the Traditional Classroom, Renewal Training Lesson Plans.
- ✓ Confirm your internet connection will be available to log in to Otis if you plan to stream the BLS Class Presentation or download it to the HSI Instructor Desktop Video Player or Mobile App and verify the media plays as expected.

Day of Class

- ✓ Arrive early. Give yourself plenty of time to get set up and organized.
- ✓ Greet students as they arrive, introducing yourself to each one.
  - › Be friendly, considerate, respectful, and professional.
  - › Have students sign in on a sign-in sheet or the HSI BLS Class Roster.
  - › Have students complete a name tag or tent card and select a seat.
- ✓ Begin class. Start on time.
- ✓ Briefly cover class goal, agenda, breaks, certification requirements, facility and classroom safety.
  - › Know and share the locations of the following: bathrooms, fire/emergency exits, fire alarm pull stations, best emergency evacuation route, first aid kits, emergency oxygen, and closest AED.
- ✓ Distribute the HSI BLS Skill Guide.

PREPARATION CHECKLIST

Required Class Materials

- ☐ HSI BLS Instructor Guide with Lesson Plans, one per instructor.
- ☐ HSI BLS Class Roster, 1 copy.
- ☐ HSI Spaced Practice Sessions, Attendance Sheet (if using spaced practice, see Appendix)).
- ☐ HSI Skill Guide, minimum 1 for each 3 students.
- ☐ HSI BLS Performance Evaluations, 1 copy Adult BLS and 1 Infant BLS per student
- ☐ HSI BLS Written Exam A and Answer Sheet, 1 copy per student (If not offering the BLS exam online).
- ☐ HSI BLS Written Exam B, and Answer Sheet, enough copies for student retakes, as needed, or to alternate between students.
- ☐ HSI BLS Written Exam Answer Key, 1 for each version of the exam.

Required Class Equipment

- ☐ CPR manikins, minimum 1 adult and 1 infant for each 3 students.
- ☐ CPR manikin cleaning and disinfecting wipes.
- ☐ Alcohol-based hand sanitizer, 1 pump bottle or similar for each 3 students.
- ☐ AED Trainer with adult and pediatric pads, minimum 1 for each 3 students.
- ☐ CPR mask and one-way disposable mouthpiece with valve for CPR mask, 1 for each student.
- ☐ Bag-mask device, minimum 1 adult and 1 pediatric for each 3 students.
- ☐ Stopwatch for Adult BLS Performance Evaluation, minimum 1 per instructor (online, smartphone app, or handheld digital).

Additional Class Equipment, Supplemental Topics

- ☐ Naloxone administration training device, minimum 1 for each 3 students.

Optional Class Equipment

(Strongly Recommended)

- ☐ Desktop or laptop computer (Windows or Mac), or smartphone or tablet, 1 per instructor (optional).
- ☐ Internet connection (for streaming), HSI Instructor Desktop Video Player or HSI Instructor Mobile App with downloaded HSI BLS Class Presentation, Skill Practice Lessons for Renewal/Blended/RSV and video monitor or computer projector (optional).
- ☐ Disposable gloves (nonlatex), minimum 1 pair for each student.
- ☐ Surgical mask or N95 respirator, minimum 1 for each student.
- ☐ CPR feedback devices, minimum 1 per manikin.
- ☐ Stopwatches for high-performance CPR team practice, minimum 2 for each 4 students (online, smartphone app, or handheld digital).
- ☐ Metronomes, minimum 1 for each 3 students (smartphone app, or traditional).
- ☐ HSI “Rate Your Program” Class Evaluation, 1 paper copy per student.

Additional Recommended Tools

- ☐ Pens or pencils, 1 for each student.
- ☐ Blankets, kneeling pads or mats, 1 for each 3 students.
- ☐ Name tags or tent cards, 1 for each student.
- ☐ Spare projector bulb (as needed).
- ☐ Extension cord(s).
- ☐ Multi strip power surge protector.
- ☐ Whiteboard with dry erase pens and eraser.
- ☐ Large black markers for student name tags or tent cards.
- ☐ Large envelope for class paperwork.

RENEWAL BLS TRAINING CLASS OUTLINE AND TIME FRAME

In-Person Hands-On Skills Class or Remote Skills Verification (RSV) for individuals who are currently certified and desire (or are required) to refresh BLS skill competency and maintain certification.

Segment One: Introduction

#	Lesson Title	Approximate Length (min)
1	Introduction to BLS	1:00

Segment Two: Adult BLS

#	Lesson Title	Approximate Length (min)
2	Adult CPR: One BLS Provider	6:00

Segment Three: Child BLS

#	Lesson Title	Approximate Length (min)
3	Child CPR: Multiple BLS Providers	6:00

Segment Four: Infant BLS

#	Lesson Title	Approximate Length (min)
4	Infant Compressions	3:00
5	Infant CPR: Multiple BLS Providers	7:00

Segment Five: Relief of Choking

#	Lesson Title	Approximate Length (min)
6	Relief of Choking	5:00

Segment Six: Required Knowledge & Skill Evaluation

#	Lesson Title	
7	BLS Written Exam	30:00
8	BLS Performance Evaluation	40:00

Segment Seven: Conclusion

#	Lesson Title	
9	Conclusion	15:00

Total Breaks[53]: 5:00

Total Time[54]: 1 hour, 58 minutes

53 Adult education guidelines recommend a break for at least 5 minutes each hour. Class timing can vary. Because of this, no specific breaks have been designated in this class outline. Class size, class location, instructor-to-student ratios, and other factors will affect the actual schedule. Breaks should be provided but may be rearranged or combined as required or desired.

54 Projected times for lessons consider video run times, brief introductions and answers to questions, demonstrations, and student practices with up to 3 students in a class of 10. Stated class times are based on covering core lessons only. Lesson times are influenced by class preparation, available equipment, instructor efficiency, and number of students. These factors may increase or decrease the time needed to meet the core learning objectives.

segment one

INTRODUCTION

lesson one

INTRODUCTION TO BLS

PREPARE

Duration:
1 Minute

Class Format: Renewal Training
Delivery Method: Traditional Classroom or RSV

Equipment and Materials

Please refer to the Preparation Checklist on page 154 for required, optional, and additional class materials and equipment for Initial Training, Blended Learning.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain the purpose of BLS training.
- Describe differences between national guidelines and local medical protocols. (Optional)

Why This Topic Matters

Basic life support providers who proficiently deliver high-quality CPR and early defibrillation play an integral role in strong chains of survival and can significantly contribute to meaningful survival, function, and recovery of the cardiac arrest victim.

Instructional Notes

1. It is helpful to let your students know right at the start of class that your goal is to create a safe learning environment. Mistakes are learning opportunities. You are here to help them make the most of their abilities with a focus on high-quality skills. This will help students relax and feel more comfortable.
2. If possible, use contextual learning to help students learn in such a way that it relates to them and applies to their real-world setting (fire rescue, EMS, public safety, lifeguarding, dental practice, hospital, clinic, etc.).
3. It is a best practice to know what differences may exist between what is taught in this BLS Class and your students' local medical protocols. It is often helpful to have a short discussion with the students to address these differences. Where local protocols differ from national guidelines, students may practice their skills in the context of their local protocols. However, this class is based on national guidelines for CPR and emergency cardiovascular care with a primary focus on the middle ground of the BLS continuum. Notwithstanding local protocols, certification in this BLS Class requires students to complete a performance evaluation for Adult BLS and Infant BLS based on national guidelines, not local protocols.

WRAP UP

Reinforce Key Points as Needed

1. This BLS training program is intended for healthcare providers and other public safety professionals working a wide variety of occupational settings.
2. The purpose of this BLS training program is for participants to gain or improve knowledge and skill proficiency in high-quality CPR skills for the adult, child, and infant.
3. BLS Providers play a key role in resuscitation efforts following cardiac arrest, both out of hospital and in hospital or clinic settings.
4. EMS providers should always follow their local physician-directed medical protocols.

Ask a Review Question as Needed

BLS requires knowledge and proficiency in CPR, AEDs, and techniques to relieve airway obstruction in what age group of patients?

a. Adults only.
b. Infants only.
c. Adults and infants.
d. Adults, children, and infants.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson two
ADULT CPR: ONE BLS PROVIDER

PREPARE

Duration:
6 Minutes

Class Format: Renewal Training
Delivery Method: Traditional Classroom or RSV

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Renewal Training.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Apply the BLS links of the Adult Chain of Survival.
- Correctly demonstrate adult CPR and AED with a CPR mask as one BLS Provider.

Why This Topic Matters

While working as a coordinated team is common, BLS Providers also need to be able to provide high-quality CPR and AED use as a single provider using a CPR mask.

Instructional Notes

1. The skill practice for this lesson is designed to help students apply the BLS links of the adult chains of survival by putting together the knowledge and skills required to take action for adult cardiac arrest as a lone provider, with a CPR mask, and an AED brought by a bystander. The “bystander” role is played by another student. If there is only one student in the class, the instructor will need to play this role.
2. The next practice session will cover adult CPR with a bag-mask device and multiple BLS Providers.
3. Remind students to routinely decontaminate their hands with an alcohol-based hand sanitizer and clean and disinfect the manikin after each student practices or at the end of a scenario.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 6: Adult CPR and AED with CPR Mask, One BLS Provider or
  Scenario Sheet 6: Adult BLS

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. Perform the assessment
   a. If the patient is unresponsive, activate EMS and/or your EAP.
   b. Get an AED and emergency response equipment or send someone else to get them.
   c. Assess the patient's breathing and carotid pulse at the same time for no more than 10 seconds
2. If the patient is not breathing normally or only gasping and you do not feel a pulse, start high-quality CPR.
3. Repeat CPR cycles of 30 compressions and 2 breaths for two minutes.
4. Operate the AED as soon as it is available.
5. Continue the resuscitation attempt until another BLS Provider or advanced life support providers arrive and take over, or until the patient starts breathing, moving, or reacting in other ways.

Ask a Review Question as Needed

You are a lone BLS Provider responding to a possible cardiac arrest. The scene is safe. You have taken standard precautions. An untrained bystander heard the person collapse. You have activated EMS and/or your EAP. Other providers are on the way. An AED is located in the building, about 3 minutes away. The adult patient is unresponsive and making gurgling sounds. You do not feel a carotid pulse. You have a CPR mask with a one-way valve. What should you do?

a. Send the bystander to get the AED. Start high-quality CPR.
b. Get the AED. Tell the bystander to stay with the patient.
c. Open the airway and provide rescue breathing with the CPR mask.
d. Reassess the patient's responsiveness, airway, breathing, and pulse.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson three
CHILD CPR: MULTIPLE BLS PROVIDERS

PREPARE

Duration:
6 Minutes

Class Format: Renewal Training
Delivery Method: Traditional Classroom or RSV

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Renewal Training.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain how to provide child CPR with two or more BLS Providers.
- Correctly demonstrate how to perform child CPR with two or more BLS Providers.

Why This Topic Matters

It is common for multiple providers to respond to a potential cardiac arrest.

Instructional Notes

1. The skill practice for this lesson is for coordinating compressions, ventilations with a bag-mask device, and switching roles between multiple BLS Providers.
2. If there is only one student in the class, the instructor will need to play the role of a second BLS Provider.
3. If you prefer, you can conduct the Adult BLS Performance Evaluation after this lesson or do it later in Segment 6: Required Knowledge and Skill Evaluation.
4. Remind students to routinely decontaminate their hands with an alcohol-based hand sanitizer and clean and disinfect the manikin after each student practices or at the end of a scenario.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 11: Child CPR with Bag-Mask Device, 2 BLS Providers or
  Scenario Sheet 11: Child BLS

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. Provider 1: Deliver high-quality compressions.
   a. Position yourself and place 1 or 2 hands on the center of the chest.
   b. Compress fast, at a rate of 100-120 times per minute.
   c. Compress hard, at least 2 inches (5 cm).
   d. Allow complete chest recoil at the top of each compression.
   e. Do not lean on the chest between compressions.
   f. Perform 15 compressions. Count out loud.
2. Provider 2: Deliver effective breaths.
   a. Use a pediatric bag-mask device.
   b. Open the airway and give 2 rescue breaths.
   c. Deliver each breath over 1 second in length while watching for chest rise.
   d. Encourage the compressor to perform high-quality compressions: fast, hard, and with complete recoil.
3. Provider 1 & 2: Repeat CPR cycles of 15 compressions and 2 breaths for two minutes.
   a. Switch positions. Try to minimize interruptions to compressions to less than 10 seconds.

Ask a Review Question as Needed

When ventilating a child with a bag-mask device, give 1 breath every 2-3 seconds. Deliver each breath over ____ second(s) in length while watching for chest rise.

a. .5
b. 1
c. 1.5
d. 2

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson four
INFANT COMPRESSIONS

PREPARE

Duration:
3 Minutes

Class Format: Renewal Training
Delivery Method: Traditional Classroom or RSV

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Renewal Training.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Recognize high-quality infant chest compressions.
- Correctly demonstrate high-quality infant chest compressions.

Why This Topic Matters

As in the adult and child procedure, high-quality chest compressions are the foundation of high-quality CPR.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 13: Infant Chest Compressions or **Scenario Sheet 13: Infant BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. For infant compressions, use one of three hand-position techniques:
   a. 2-Finger Technique
   b. 2-Thumb Encircling-Hands Technique
   c. Heel of One Hand Technique
2. Whichever technique you use, push hard, straight down, to compress the chest approximately 1 ½ inches (4 cm). This depth should be at least one third the diameter of the infant's chest.
3. At the end of each compression, allow complete chest recoil.
4. Compress the chest at a rate of 100-120 compressions per minute. Minimize interruptions.

Ask a Review Question as Needed

This technique may be useful for larger infants or when the BLS Provider has difficulty compressing the appropriate depth.

a. The 2-Finger Technique
b. The 2-Hands Technique
c. The Heel of One Hand Technique
d. The 2-Thumb Encircling-Hands Technique

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson five

INFANT CPR: MULTIPLE BLS PROVIDERS

PREPARE

Duration:
7 Minutes

Class Format: Renewal Training
Delivery Method: Traditional Classroom or RSV

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Renewal Training.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain how to provide infant CPR with two or more BLS Providers.
- Correctly demonstrate how to perform infant CPR with two or more BLS Providers.

Why This Topic Matters

It is common for multiple providers to respond to a potential cardiac arrest; coordination among providers can improve likelihood of survival.

Play the Video

Instructional Notes

1. The skill practice for this lesson is for coordinating chest compressions, ventilations with a bag-mask device, and switching roles between multiple BLS Providers.
2. If there is only one student in the class, the instructor will need to play the role of a second BLS Provider.
3. If you prefer, you can conduct the Infant BLS Performance Evaluation after this lesson or do it later in Segment 6: Required Knowledge and Skill Evaluation.
4. Remind students to routinely decontaminate their hands with an alcohol-based hand sanitizer and clean and disinfect the manikin after each student practices or at the end of a scenario.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 15: Infant CPR with Bag-Mask Device, 2 BLS Providers or
  Scenario Sheet 15: Infant BLS

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. Provider 1: Deliver high-quality chest compressions.
   a. Use the 2-Thumb Encircling-Hands Technique.
   b. Compress fast, at a rate of 100-120 times per minute.
   c. Compress the chest approximately 1 ½ inches (4 cm).
   d. Allow complete chest recoil at the top of each compression. Do not lean on the chest between compressions.
   e. Perform 15 compressions. Count out loud.
2. Provider 2: Deliver effective breaths.
   a. Open the airway and give 2 rescue breaths. Deliver each breath over 1 second in length while watching for chest rise.
   b. Encourage the compressor to perform high-quality compressions: fast, hard, and with complete recoil.
3. Provider 1 & 2: Repeat CPR cycles of 15 compressions and 2 breaths for two minutes.
   a. Switch positions. Try to minimize interruptions to compressions to less than 10 seconds.
   b. Repeat CPR cycles of 15 compressions and 2 breaths for two minutes.

Ask a Review Question as Needed

The BLS Provider ventilating an infant with a bag-mask device should:

a. Ventilate fast, at a rate 1 breath every second.
b. Keep the infant's head tilted beyond the neutral position.
c. Encourage the compressor to perform high-quality compressions.
d. Give a rescue breath by blowing through the valve opening of the mask.

Ask For & Answer Questions Before Moving on to the Next Lesson

lesson six
RELIEF OF CHOKING

PREPARE

Duration:
5 Minutes

Class Format: Renewal Training
Delivery Method: Traditional Classroom or RSV

Equipment and Materials

Please refer to the Preparation Checklist for required, optional, and additional class materials and equipment for Renewal Training.

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Describe how to recognize and provide treatment for a choking adult, child, or infant.
- Correctly demonstrate how to perform treatment for a choking infant.

Why This Topic Matters

When a severe airway obstruction occurs, the patient cannot get air in or out of the lungs. This is a life-threatening medical emergency. If the foreign body is not removed, the patient will quickly become unresponsive and suffer a secondary cardiac arrest within minutes.

PRACTICE & ASSESS

Conduct a Hands-On Student Practice

- Explain the hands-on practice method you are using.
- Run a **Video-Guided Practice** or practice with:
  Skill Sheet 16: Infant Relief of Choking or **Scenario Sheet 16: Infant BLS**

Assess Students

- Look for correct skill performance by students.
- Use positive coaching and gentle correction to improve student skills.
- Ensure adequate practice time for students to gain skill proficiency.

WRAP UP

Encourage Constructive Feedback as Needed

Instructors and students provide specific and constructive feedback to each other and to their peers.

Reinforce Key Points as Needed

1. If the patient is an adult or child:
   a. Each abdominal thrust needs to be given with the intent of dislodging and expelling the object.
   b. If the patient becomes unresponsive, begin CPR starting with compressions.
      i. Do not check for a pulse.
      ii. Before opening the airway to provide rescue breaths, open the patient's mouth wide.
      iii. If you see an object, remove it with your fingers.
2. If the patient is an infant:
   a. Give each back slap and chest thrust forcefully with the intent of dislodging and expelling the object.
   b. If the patient becomes unresponsive, begin CPR starting with compressions.
      i. Do not check for a pulse.
      ii. Before opening the airway to provide rescue breaths, open the mouth wide.
      iii. If you see an object, carefully remove it with your fingers.
      iv. Don't stick your finger blindly in an infant's throat and attempt sweep out an object.

Ask a Review Question as Needed

You are responding to a shout for help from [__ ex. Outpatient Services __]. As you approach, you find a distraught teen holding a pale, 2-month-old infant. "I was feeding him. He started choking. Oh please - please - help him." The scene is safe. You have taken standard precautions. The responsive infant is coughing weakly and making a whistling sound when inhaling. You have activated your facility's EAP. What should you do now?

a. Calm the teen. Stand ready to help if things get worse.
b. Attempt to sweep out the obstruction with your finger.
c. Hold the infant facedown over your forearm and give 5 back slaps.
d. Place the infant on a firm, flat surface. Begin CPR starting with compressions.

Ask For & Answer Questions Before Moving on to the Next Lesson

segment six

REQUIRED KNOWLEDGE & SKILL EVALUATION

lesson seven

PERFORMANCE EVALUATION

PREPARE

Duration:
40 Minutes

Class Format: Renewal Training
Delivery Method: Traditional Classroom or RSV

Equipment and Materials

Each student:

- CPR manikin, adult and infant
- AED Trainer, adult and pediatric pads
- Adult CPR mask and one-way valve
- Infant-sized bag-mask device

Optional:

- CPR feedback device
- Surgical mask or N95 respirator
- Disposable gloves

Instructor:

- Stopwatch

PRESENT

What Students Should Learn

After completing this lesson, the student should be able to:

- Demonstrate skill competency as indicated by the skill criteria on the "Adult BLS" and "Infant BLS" Performance Evaluation Sheets.

Why This Topic Matters

BLS skill competency is vital for improving patient outcomes from cardiac arrest.

Instructional Notes

1. An HSI BLS certification card may not be issued unless the student demonstrates skill competency as indicated by the skill criteria on the "Adult BLS" and "Infant BLS" Performance Evaluation Sheets.
2. Please refer to "Part Three, Evaluation" for instructions on conducting a performance evaluation for each student.
3. If a student fails to successfully complete the required Performance Evaluations, formal remediation is required. Please see "Part Three, Remediation" for more.

lesson eight

KNOWLEDGE EVALUATION (IF NOT OFFERING ONLINE BLS EXAM)

PREPARE

Duration:
30 Minutes

Class Format: Renewal Training
Delivery Method: Traditional Classroom or RSV

Equipment and Materials

Each student:

- HSI BLS Written Exam, Version A or Version B (alternating versions between students if desired)

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Demonstrate knowledge competency as indicated by obtaining a passing score of 74% or better on the 21-question BLS exam.

Why This Topic Matters

BLS knowledge competency is vital for improving patient outcomes from cardiac arrest.

Instructional Notes

1. Knowledge and skill evaluation is optional in the first year of renewal training. The certification period for BLS is 2 years from month of issue. Each student needs to successfully complete the Written Exam and Performance Evaluation once each 2 years.
2. Please refer to “Part Three, Evaluation” for instructions on Knowledge Evaluation of each student.

segment six

CONCLUSION

lesson nine

CLASS EVALUATION, CONTINUING EDUCATION, DOCUMENTATION, & CERTIFICATION

PREPARE

Duration:
15 Minutes

Class Format: Renewal Training
Delivery Method: Traditional Classroom or RSV

Equipment and Materials

Each student:

- HSI "Rate Your Program" Class Evaluation
- HSI BLS certification card for each student who successfully completes the BLS Class (print or digital)

Instructor:

- BLS Class Roster
- CAPCE Data Collection Form (for EMS Provider CE), PACE Verification of Participation Document and Academy of General Dentistry Continuing Education Course Roster (for Dental Professional CE)

PRESENT

Why This Topic Matters

HSI's quality assurance procedures and processes are used to continually improve the validity, defensibility, and effectiveness of HSI and its approved Training Centers and Authorized Instructors and Instructor Trainers.

Instructional Notes

1. Congratulate and thank students who successfully completed the class!
2. HSI requires that students be given the opportunity to evaluate their BLS Class using the "Rate Your Program" class evaluation form (print or online at hsi.com/rateyourprogram).
   a. Completed print class evaluations should be promptly delivered to the training center responsible for the class (see Appendix).
3. A complete, accurate, and legible Class Roster reflecting the actual class date(s) of the training class signed by the Authorized Instructor or Instructor Trainer or electronically submitted through Otis is required for every HSI BLS Class (see Appendix).
4. Continuing Education Hours for EMS and Dental professionals is available through HSI. See "Part Three, After the BLS Class" for more.
5. The Authorized Instructor is required to legitimately issue an authentic HSI BLS print or digital certification card to each student who successfully completed this course.
   a. The certification card must be current, complete, accurate, and legible. It must contain the name of the participant and the Authorized Instructor, the Instructor's Registry Number, the Class Completion Date, the Expiration Date, the Training Center Phone Number and the Training Center Identification Number (TCID).
6. HSI's compete quality assurance standards, including all requirements for instructor authorization, conduct, and student certification are located in the most recent HSI Training Center Administrative Manual (TCAM) available at emergencycare.hsi.com/quality-assurance-compliance.

CHALLENGE

A Challenge is for individuals who wish to earn BLS certification by demonstrating knowledge and skill competency without taking an initial or renewal class. Anyone is eligible to participate in a Challenge regardless of certification status. There are no lessons or teaching in a Challenge. Participants are solely responsible to be prepared to take the written exam and performance evaluations.

Delivery Method

A performance evaluation in a challenge can be delivered in a traditional classroom or via RSV. The best way to handle the BLS exam is for each participant to complete the HSI BLS Exam online, either before or after the performance evaluation. To offer the BLS exam online, log in to Otis to purchase credits, then create and schedule the exam.

> *Note: Only the HSI BLS Exam may be used. It is a violation of HSI quality assurance standards to use any other exam, including exams created by the Training Center or Instructor, or to post the exam to an intranet or the internet. Using any other exam invalidates the certification card and is grounds for suspension or revocation of Training Center approval and/or instructor authorization.*

CLASS PREPARATION

Other than the absence of practice sessions, the Learning Environment, Classroom Space, Health and Safety are essentially the same as the Traditional Classroom and are not repeated here.

About a Month or Two Before Class

- ✓ Secure a classroom with an adequate space.
- ✓ Confirm the date, location, and number of participant(s).
- ✓ Reserve training equipment for the class.
- ✓ Schedule and confirm additional HSI authorized BLS instructors as required/preferred.
- ✓ Log in to Otis to purchase BLS Exam credits, create and schedule the exam portion of the Challenge.
- ✓ If using RSV for the performance evaluation, log in to Otis to purchase RSV credits and set up an RSV session.

About Three Weeks Before Class

- ✓ Track the participants progress in Otis for the BLS Exam.
- ✓ If conducting an in-person classroom performance evaluation, send an email (via Otis, if you wish) to each participant that:
  - › Confirms the class location, agenda, and time.
  - › Encourages them to check with their employer or accrediting, credentialing, or licensing agency to ensure the HSI BLS Class will meet their requirements before attending training.
  - › Informs them that the class may involve close contact with other participants, resuscitation manikins, and other equipment, if conducted in a classroom setting.
  - › Reviews any pertinent recommendations from local, state, or federal health authorities that affects what participants should expect in the classroom setting.
  - › Requests that they reschedule their training if they may have been exposed to an infectious disease; are experiencing fever, coughing, shortness of breath, diarrhea, fatigue, or muscle aches; or if they have open wounds or sores on their hands or mouth.
  - › Describes the steps you take protect participants and help ensure a safe and healthy environment (hand hygiene, cleaning and disinfecting of surfaces and equipment, physical distancing, etc.), when conducting a Challenge in a traditional classroom setting or via RSV with multiple participants.
  - › Advises them to let you know if they have a physical disability and what reasonable accommodations may be necessary (see Americans with Disabilities Act in the TCAM for more).
  - › Provides your contact information.

A Few Days Before Class

- ✓ If you may have been exposed to an infectious disease; are experiencing fever, coughing, shortness of breath, diarrhea, fatigue, or muscle aches; or if have open wounds or sores on your hands or mouth, find another instructor to teach the class or reschedule it.
- ✓ Make sure you have adequate copies of the HSI BLS Performance Evaluation Sheets (Adult BLS and Infant BLS per student).

Day of Class

- ✓ Arrive early. Give yourself plenty of time to get set up and organized.
- ✓ Greet participant(s) as they arrive, introducing yourself to each one.
  - › Be friendly, considerate, respectful, and professional.
  - › Have participant(s) sign in on a sign-in sheet.
  - › Have participant(s) complete a name tag or tent card and select a seat.
- ✓ Establish a connection with the participant(s).
  - › Ask about previous training. Connect the participants' experiences and knowledge to the Challenge.
- ✓ In a classroom setting, briefly cover certification requirements, facility and classroom safety.
  - › Know and share the locations of the following: bathrooms, fire/emergency exits, fire alarm pull stations, best emergency evacuation route, first aid kits, emergency oxygen, and closest AED.

PREPARATION CHECKLIST

Required Class Materials

- ☐ HSI BLS Instructor Guide with Lesson Plans, one per instructor.
- ☐ HSI BLS Class Roster, 1 copy.
- ☐ HSI BLS Performance Evaluations, 1 copy Adult BLS and 1 Infant BLS per participant.
- ☐ HSI BLS Exam A and Answer Sheet, 1 copy per participant (if not offering the BLS exam online).

Required Class Equipment

- ☐ Desktop or laptop computer (Windows or Mac), or smartphone or tablet, 1 per instructor (if via RSV)
- ☐ Internet connection (if via RSV)
- ☐ CPR manikins, minimum 1 adult and 1 infant.
- ☐ CPR manikin cleaning and disinfecting wipes (traditional classroom).
- ☐ Alcohol-based hand sanitizer, 1 pump bottle or similar (traditional classroom).
- ☐ AED Trainer with adult and pediatric pads, minimum 1.
- ☐ CPR mask and one-way disposable mouthpiece with valve for CPR mask, 1 for each participant.
- ☐ Bag-mask device, minimum 1 adult and 1 pediatric.
- ☐ Stopwatch for Adult BLS Performance Evaluation, minimum 1 per instructor (online, smartphone app, or handheld digital).

Optional Class Equipment

(Strongly Recommended)

- ☐ Disposable gloves (nonlatex), minimum 1 pair for each participant.
- ☐ Surgical mask or N95 respirator, minimum 1 for each participant.

Additional Recommended Tools

- ☐ Pens or pencils, 1 for each student.
- ☐ Blankets, kneeling pads or mats, 1 for each 3 students.
- ☐ Name tags or tent cards, 1 for each student.

CHALLENGE BLS TRAINING CLASS OUTLINE AND TIME FRAME

In-Person Hands-On Skills or Remote Skills Verification (RSV) for individuals who wish to earn BLS certification by demonstrating knowledge and skill competency without taking an initial or renewal class; anyone is eligible to participate in a Challenge regardless of certification status.

Segment One: Introduction

#	Lesson Title	Approximate Length (min)
1	Introduction to BLS	2:00

Segment Two: Required Knowledge & Skill Evaluation

#	Lesson Title	
2	BLS Written Exam	30:00
3	BLS Performance Evaluation	40:00

Segment Three: Conclusion

#	Lesson Title	
4	Conclusion	10:00

Total Time[55]: 1 hour, 22 minutes

55 Projected times for lessons consider video run times, brief introductions and answers to questions, demonstrations, and student practices with up to 3 students in a class of 10. Stated class times are based on covering core lessons only. Lesson times are influenced by class preparation, available equipment, instructor efficiency, and number of students. These factors may increase or decrease the time needed to meet the core learning objectives.

segment one

INTRODUCTION

lesson one

INTRODUCTION TO BLS

PREPARE

Duration:
2 Minutes

Class Format: Renewal Training
Delivery Method: Traditional Classroom or RSV

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Explain the purpose of BLS training.
- Describe differences between national guidelines and local medical protocols. (Optional)

Why This Topic Matters

Basic life support providers who proficiently deliver high-quality CPR and early defibrillation play an integral role in strong chains of survival and can significantly contribute to meaningful survival, function, and recovery of the cardiac arrest victim.

Instructional Notes

1. Arrive early. Give yourself plenty of time to get set up and organized.
2. Greet the participant(s) as they arrive.
   a. Introduce yourself. Be friendly, considerate, respectful, and professional.
3. Have participants sign in on a sign-in sheet or the HSI BLS Class Roster (Traditional Classroom).
   a. If using RSV for the performance evaluation, you should have already logged-in to Otis, purchased RSV credits and set up an RSV session and built an online Roster.
4. Establish a connection with the person. Ask about previous training.
   a. If possible, use contextual learning to apply performance evaluation to the participants real-world setting (fire rescue, EMS, public safety, lifeguarding, dental practice, hospital, clinic, etc.).
5. Regulatory agencies may require certain individuals complete a specific number of classroom hours of instruction to comply with occupational licensing requirements. Challenging the course in these circumstances may be prohibited and invalidate certification earned in this manner.

WRAP UP

Reinforce Key Points as Needed

1. Skill and knowledge remediation is not permitted in a Challenge.
2. EMS providers should always follow their local medical protocols.
    a. Notwithstanding local protocols, certification via Challenge requires the participant to complete a performance evaluation for adult and infant BLS based on national guidelines, not local protocols.

Ask For & Answer Questions Before Moving on to the Next Lesson

segment two

REQUIRED SKILL EVALUATION

lesson two

PERFORMANCE EVALUATION

PREPARE

Duration:
40 Minutes

Class Format: Challenge
Delivery Method: Traditional Classroom or RSV

Equipment and Materials

Each student:

- CPR manikin, adult and infant
- AED Trainer, adult and pediatric pads
- Adult CPR mask and one-way valve
- Infant-sized bag-mask device

Optional:

- CPR feedback device
- Surgical mask or N95 respirator
- Disposable gloves

Instructor:

- Stopwatch

PRESENT

What Students Should Learn

After completing this lesson, the student should be able to:

- Demonstrate skill competency as indicated by the skill criteria on the "Adult BLS" and "Infant BLS" Performance Evaluation Sheets.

Why This Topic Matters

BLS skill competency is vital for improving patient outcomes from cardiac arrest.

Instructional Notes

1. An HSI BLS certification card may not be issued unless the student demonstrates skill competency as indicated by the skill criteria on the "Adult BLS" and "Infant BLS" Performance Evaluation Sheets.
2. Please refer to "Part Three, Evaluation" for instructions on conducting a performance evaluation for each student.

lesson three

KNOWLEDGE EVALUATION (IF NOT OFFERING ONLINE BLS EXAM)

PREPARE

Duration:
30 Minutes

Class Format: Challenge
Delivery Method: Traditional Classroom or RSV

Equipment and Materials

Each student:

- HSI BLS Written Exam, Version A

PRESENT

Begin the Lesson

What Students Should Learn

After completing this lesson, the student should be able to:

- Demonstrate knowledge competency as indicated by obtaining a passing score of 74% or better on the 21-question BLS exam.

Why This Topic Matters

BLS knowledge competency is vital for improving patient outcomes from cardiac arrest.

Instructional Notes

1. BLS knowledge competency is vital for improving patient outcomes from cardiac arrest.

lesson four

CLASS EVALUATION, CONTINUING EDUCATION, DOCUMENTATION, & CERTIFICATION

PREPARE

Duration:
10 Minutes

Class Format: Challenge
Delivery Method: Traditional Classroom or RSV

Equipment and Materials

Each student:

- HSI "Rate Your Program" Class Evaluation
- HSI BLS certification cards for each student who successfully completes the BLS Class (print or digital)

Instructor:

- BLS Class Roster
- CAPCE Data Collection Form (for EMS Provider CE), PACE Verification of Participation Document and Academy of General Dentistry Continuing Education Course Roster (for Dental Professional CE)

PRESENT

Why This Topic Matters

HSI's quality assurance procedures and processes are used to continually improve the validity, defensibility, and effectiveness of HSI and its approved Training Centers and Authorized Instructors and Instructor Trainers.

Instructional Notes

1. Congratulate the successful participant. If unsuccessful, assist them in scheduling a full initial or renewal BLS Class, as applicable.
2. HSI requires that students be given the opportunity to evaluate their BLS Class using the "Rate Your Program" class evaluation form (print or online at hsi.com/rateyourprogram).
3. A complete, accurate, and legible Class Roster reflecting the actual class date(s) of the training class signed by the Authorized Instructor or Instructor Trainer or electronically submitted through Otis is required for every HSI BLS Class (see Appendix).
4. Continuing Education Hours for EMS and Dental professionals are NOT available for those individuals who challenge the program.
5. The Authorized Instructor is required to legitimately issue an authentic HSI BLS print or digital certification card to each person who successfully challenged the course.
    a. The certification card must be current, complete, accurate, and legible. It must contain the name of the participant and the Authorized Instructor, the Instructor's Registry Number, the Class Completion Date, the Expiration Date, the Training Center Phone Number and the Training Center Identification Number (TCID).
6. HSI's compete quality assurance standards, including all requirements for instructor authorization, conduct, and student certification are located in the most recent HSI Training Center Administrative Manual (TCAM) available at emergencycare.hsi.com/quality-assurance-compliance.

part five

APPENDIX

BASIC LIFE SUPPORT CLASS ROSTER

Class Format		Delivery Method	
☑	Initial	☐	Traditional Classroom
☐	Renewal	☐	Blended Learning, Online & Classroom
☐	Challenge	☐	Blended Learning, Online & RSV

Instructor & Training Center (TC) Information	
Primary Instructor:	TCID#:
Primary Instructor Registry #:	Address:
Primary Instructor Authorization Exp. Date:	City, State:
TC Name:	Class Location:

Class Information	
Class Start Date:	# of Certification Cards Issued:
Class End Date:	Issue Date of Certification Cards:
Total Hours of Instruction:	Student to Manikin Ratio:

Assisting Instructors

Instructor Name	Registry #	Author. Expiration Date	Instructor Name	Registry #	Author. Expiration Date

Students checked “complete” on the following page(s) successfully completed the Adult and Infant BLS Performance Evaluation and received a passing score on the BLS Written Exam. This class was taught in accordance with the Training Center Standards as described in the most recent version of the HSI Training Center Administrative Manual (TCAM).

Primary Instructor Signature: _____ Date: _____

BASIC LIFE SUPPORT CLASS ROSTER

Class Participants				
#	Student Info (Please Print Clearly)		Complete?	Remediation Date
1	Participant Name:	Mailing Address:	☐	
	Email:	Phone:		
2	Participant Name:	Mailing Address:	☐	
	Email:	Phone:		
3	Participant Name:	Mailing Address:	☐	
	Email:	Phone:		
4	Participant Name:	Mailing Address:	☐	
	Email:	Phone:		
5	Participant Name:	Mailing Address:	☐	
	Email:	Phone:		
6	Participant Name:	Mailing Address:	☐	
	Email:	Phone:		
7	Participant Name:	Mailing Address:	☐	
	Email:	Phone:		
8	Participant Name:	Mailing Address:	☐	
	Email:	Phone:		
9	Participant Name:	Mailing Address:	☐	
	Email:	Phone:		
10	Participant Name:	Mailing Address:	☐	
	Email:	Phone:		

renewal training

SPACED PRACTICES SESSIONS, ATTENDANCE SHEET

		Renewal Session Dates (Check Box for Attendance)								Complete
	Participant Name									
1		☑	☐	☐	☐	☐	☐	☐	☐	☐
2		☐	☐	☐	☐	☐	☐	☐	☐	☐
3		☐	☐	☐	☐	☐	☐	☐	☐	☐
4		☐	☐	☐	☐	☐	☐	☐	☐	☐
5		☐	☐	☐	☐	☐	☐	☐	☐	☐
6		☐	☐	☐	☐	☐	☐	☐	☐	☐
7		☐	☐	☐	☐	☐	☐	☐	☐	☐
8		☐	☐	☐	☐	☐	☐	☐	☐	☐
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10		☐	☐	☐	☐	☐	☐	☐	☐	☐
11		☐	☐	☐	☐	☐	☐	☐	☐	☐
12		☐	☐	☐	☐	☐	☐	☐	☐	☐
13		☐	☐	☐	☐	☐	☐	☐	☐	☐
14		☐	☐	☐	☐	☐	☐	☐	☐	☐
15		☐	☐	☐	☐	☐	☐	☐	☐	☐
16		☐	☐	☐	☐	☐	☐	☐	☐	☐
17		☐	☐	☐	☐	☐	☐	☐	☐	☐
18		☐	☐	☐	☐	☐	☐	☐	☐	☐
19		☐	☐	☐	☐	☐	☐	☐	☐	☐
20		☐	☐	☐	☐	☐	☐	☐	☐	☐
	Instructor Name									
1		☐	☐	☐	☐	☐	☐	☐	☐	☐
2		☐	☐	☐	☐	☐	☐	☐	☐	☐

CAPCE CEH DATA COLLECTION FORM

Instructions

Training Center Director/Instructors:

Before, during, or within 30 days of the course, use a copy of this form to gather the required information and signature from each EMS provider who completed the class. Log in to Otis and go to the Store. Search for "CAPCE." Purchase the CAPCE Reporting Credits for the course the students successfully completed (Initial, Renewal, Blended). Each credit purchased will allow you to create a roster and process CAPCE CEH automatically. HSI will report the CEH electronically to the CAPCE Accreditation Management System (AMS).

EMS Provider:

Continuing Education Hours (CEH) for EMS providers are available from the Health and Safety Institute (HSI), a nationally accredited organization of the Commission on Accreditation of Pre-Hospital Continuing Education (CAPCE). To ensure receipt and proper reporting of your earned CEH to your state EMS agency or the National Registry of Emergency Medical Technicians (NREMT) via CAPCE, please provide all requested information and your signature below (please print clearly):

Full Name:			
Mailing Address:			
City:	State:	Zip:	Phone:
Email:			

Complete this section if you are nationally registered and want your CEH reported to NREMT:

National EMS Certification Level: ☐ EMR ☐ AEMT ☐ EMT ☐ PARAMEDIC ☐ OTHER

State and Licence Number:	Expiration Date:

Complete this section if you are state licensed or certified and want your CEH reported to your State EMS Agency:

National EMS Certification Level: ☐ EMR ☐ AEMT ☐ EMT ☐ PARAMEDIC ☐ OTHER

State and Licence Number:	Expiration Date:

Student Privacy Statement (signature required):

I understand that HSI, as a requirement of CAPCE accreditation, will submit a record of my course completions to the CAPCE AMS. I further understand that my course completion records may be accessed by or shared with such regulators as state EMS offices, training officers, and NREMT on a password-protected, need-to-know basis. In addition, I understand that I may review my record of CAPCE accredited course completions by contacting CAPCE.

Signature: _____ Date: _____

version a - answer key

BASIC LIFE SUPPORT WRITTEN EXAM

Written Exam Version A – Quick Reference Answer Key

1.	b	8.	c	15.	d
2.	a	9.	b	16.	c
3.	c	10.	c	17.	d
4.	d	11.	a	18.	a
5.	a	12.	d	19.	b
6.	d	13.	b	20.	a
7.	d	14.	a	21.	b

1. When chest compressions stop, blood flow _____significantly.

a. increases
b. **decreases**
c. improves
d. circulates

2. You are using a bag-mask device to ventilate a 16-year-old in cardiac arrest who suddenly collapsed. An endotracheal tube has been placed by an advanced life support provider on the resuscitation team. Proper ventilation technique in the situation requires that you:

a. **Squeeze the bag to deliver 1 breath every 6 seconds.**
b. Squeeze the bag to deliver 1 breath every 10 seconds.
c. Squeeze the bag to deliver 1 breath when the AED is analyzing the heart rhythm.
d. Squeeze the bag to deliver 1 breath during each pause in compressions.

3. This technique may be useful for larger infants or when the BLS Provider has difficulty compressing the appropriate depth.

a. The 2-Finger Technique
b. The 2-Hands Technique
c. **The Heel of One Hand Technique**
d. The 2-Thumb Encircling-Hands Technique

4. You are the only BLS Provider responding to the witnessed collapse of a 11-year-old child during a softball game. The scene is safe, and you have taken standard precautions. The patient is unresponsive and gasping occasionally. You do not feel a carotid pulse and an AED is within sight. What should you do?

a. Assess for a femoral pulse and, if absent, deliver about 2 minutes of CPR.
b. Open the airway and provide rescue breathing or bag-mask ventilation.
c. Immediately start high-quality CPR, beginning with chest compressions.
d. **Activate EMS or your occupational emergency action plan and get the AED.**

5. Which link in the out-of-hospital adult Chain of Survival is critical to survival when a patient's heart is in an abnormal rhythm like pulseless ventricular tachycardia (VT) and ventricular fibrillation (VF)?

a. **Defibrillation**
b. Post-Cardiac Arrest Care
c. Prevention
d. Recovery

6. Supporting a patient's physical and emotional needs that are ongoing after hospital discharge is which link in the Chain of Survival?

a. Early Recognition and Prevention
b. Activation of Emergency Response
c. Advanced Resuscitation
d. **Recovery**

7. Your adult patient is making abnormal gasping, snoring sounds. You definitely feel a carotid pulse. What should you do?

a. Start high-quality CPR, beginning with chest compressions.
b. Assess scene safety and take standard precautions.
c. Check the carotid pulse about every two minutes.
d. **Provide rescue breathing or bag-mask ventilation.**

8. **When assessing an unresponsive adult, child, or infant, you should take no longer than ___ seconds to simultaneously assess breathing and pulse.**

   a. 1
   c. **10**
   b. 3
   d. 20

9. **When ventilating a child with a bag-mask device, give 1 breath every 2-3 seconds. Deliver each breath over ____ second(s) in length while watching for chest rise.**

   a. .5
   c. 1.5
   b. **1**
   d. 2

10. **You are the only BLS Provider responding to "baby not breathing." The scene is safe, and you have taken standard precautions. The infant is unresponsive. You have activated EMS or your occupational emergency action plan. Other providers are on the way with an AED. You do not feel a brachial pulse. What should you do?**

    a. Assess for a femoral pulse.
    b. Provide one breath every 2-3 seconds.
    c. **Immediately start high-quality CPR, beginning with chest compressions.**
    d. Check the brachial pulse every 2 minutes until other providers arrive the AED.

11. **You and another BLS Provider have responded to a call for a 5-month-old infant with trouble breathing. The scene is safe. You have taken standard precautions. The infant is unresponsive and gasping. You have activated EMS or your occupational emergency action plan. A weak brachial pulse at about 40 beats per minute is felt. The infant's skin is mottled, and the hands and feet are cool to touch. Other BLS Providers are a few minutes away with an AED. What should you do?**

    a. **Start high-quality CPR.**
    b. Maintain an open airway.
    c. Reassess responsiveness, airway, breathing, and pulse.
    d. Provide bag-mask ventilation and check the pulse every 2 minutes.

12. **You are attempting to resuscitate an unresponsive 25-year-old who overdosed on fentanyl. The scene is safe. You have taken standard precautions. EMS or your occupational emergency action plan has been activated. The patient is making snorting sounds. The carotid pulse is definitely felt. You have a bag-mask device, AED, and Narcan® Nasal Spray. What should you do?**

    a. Start high-quality CPR, beginning with chest compressions.
    b. Power on the AED. Apply adult pads to patient's bare chest.
    c. Reassess the patient's responsiveness, airway, breathing, and pulse.
    d. **Ventilate the patient and give naloxone per local medical protocol.**

13. **You are a lone BLS Provider responding to a possible cardiac arrest. The scene is safe, and you have taken standard precautions. The patient is unresponsive. You have activated EMS or your occupational emergency action plan. Other providers are on the way and you have an AED. The patient is occasionally gasping. You do not feel a carotid pulse. What should you do?**

    a. Immediately start CPR, beginning with chest compressions.
    b. **Power on the AED. Apply adult pads to patient's bare chest.**
    c. Reassess the patient's responsiveness, airway, breathing, and pulse.
    d. Open the airway and provide rescue breathing or bag-mask ventilation.

14. **You are providing CPR to a child under 8 years of age when the AED arrives, but there are no child AED pads available. What should you do?**

    a. **Use the adult AED pads.**
    b. Immediately resume CPR.
    c. Do not use the adult AED pads.
    d. Make sure the adult pads overlap each other.

15. **When using an AED on a pediatric patient, it may be necessary to:**
    a. Adjust the attenuator after a shock is advised.
    b. Pause compressions while the device is charging.
    c. Turn off the attenuator to adjust the energy setting higher.
    d. **Activate the button or "key" to adjust the shock level lower.**

16. **You are working as part of a high-performance resuscitation team. The BLS Provider ventilating an infant with a bag-mask device should:**
    a. Keep the infant's head tilted beyond the neutral position.
    b. Ventilate fast, at a rate 1 breath every second, or 60 per minute.
    c. **Encourage the compressor to perform high-quality compressions.**
    d. Give a rescue breath by blowing through the valve opening of the mask.

17. **Teamwork in high-performance resuscitation requires the use of _____.**
    a. an AED
    b. two stopwatches
    c. a bag-mask device
    d. **effective communication**

18. **Four BLS Providers have been performing CPR on a cardiac arrest patient for 18 minutes. The last switch in roles was only about a minute ago, but the compressor says, "I'm exhausted." What should they do?**
    a. **Coordinate to switch out the compressor.**
    b. Stop CPR for about 2 minutes to rest.
    c. Encourage the compressor to perform high-quality compressions.
    d. Stop compressions but continue to ventilate once every 6 seconds.

19. **A teenager nearby is eating and laughing with friends when suddenly he begins coughing. Then his coughing stops, and he stands, holding his hands to his throat. The scene is safe, and you have taken standard precautions. You should:**
    a. Encourage him to continue coughing to relieve a minor airway obstruction.
    b. **Have someone activate EMS or your EAP while you begin abdominal thrusts.**
    c. Perform about 2 minutes of CPR before leaving to activate EMS or your EAP.
    d. Open his mouth to check for an object before delivering rescue breaths.

20. **A 6-year-old who was eating suddenly begins coughing loudly. The scene is safe, and you have taken standard precautions. You approach and the child says, "I choked… on my crackers." You should:**
    a. **Encourage the child to continue coughing forcefully.**
    b. Kneel behind the child and begin abdominal thrusts.
    c. Attempt to sweep the obstruction out of the mouth.
    d. Stand behind the child and forcefully deliver 5 back slaps.

21. **You are attempting to relieve a severe airway obstruction in a responsive pregnant patient. You should:**
    a. Give 5 forceful back slaps and 5 chest thrusts.
    b. **Use chest thrusts instead of abdominal thrusts.**
    c. Perform about 2 minutes of CPR before checking pulse.
    d. Reach into the mouth to sweep for the obstructing object.

version b - answer key

BASIC LIFE SUPPORT WRITTEN EXAM

Written Exam Version B – Quick Reference Answer Key

1. b	8. c	15. b
2. c	9. d	16. c
3. a	10. d	17. c
4. b	11. a	18. a
5. d	12. a	19. d
6. d	13. a	20. c
7. a	14. b	21. b

1. To open the airway with a jaw thrust, position yourself:

a. Below the patient's hips.
b. **Above the patient's head.**
c. At the side of the patient, close to the chest.
d. At the side of the patient, close to the head.

2. Allow _____ between chest compressions so the heart can refill.

a. Excessive ventilation
b. Carotid pulse checks
c. **Complete chest recoil**
d. Longer and more frequent interruptions

3. You are using a bag-mask device to ventilate a 16-year-old in cardiac arrest who suddenly collapsed. An endotracheal tube has been placed by an advanced life support provider on the resuscitation team. Proper ventilation technique in the situation requires that you:

a. **Squeeze the bag to deliver 1 breath every 6 seconds.**
b. Squeeze the bag to deliver 1 breath every 10 seconds.
c. Squeeze the bag to deliver 1 breath when the AED is analyzing the heart rhythm.
d. Squeeze the bag to deliver 1 breath during each pause in compressions.

4. The first link in the out-of-hospital pediatric cardiac arrest Chain of Survival is:

a. Activating EMS by calling 911 or activating your occupational emergency action plan.
b. **Preventing causes of respiratory failure or respiratory arrest, which lead to cardiac arrest.**
c. Providing advanced life support (ALS) treatment with a focus on ROSC, and transport to a hospital.
d. Supporting a patient's physical and emotional needs that are ongoing after hospital discharge.

5. Early recognition of cardiac arrest and prompt activation of EMS is which link in the adult Out-of-Hospital Chain of Survival?

a. Post-Cardiac Arrest Care
b. High-Quality CPR
c. Advanced Resuscitation
d. **Activation of Emergency Response**

6. You are the only BLS Provider responding to witnessed collapse of a 11-year-old child during a softball game. The scene is safe, and you have taken standard precautions. The patient is unresponsive and gasping occasionally. You do not feel a carotid pulse and an AED is within sight. What should you do?

a. Assess for a femoral pulse and, if absent, deliver about 2 minutes of CPR.
b. Open the airway and provide rescue breathing or bag-mask ventilation.
c. Immediately start high-quality CPR, beginning with chest compressions.
d. **Activate EMS or your occupational emergency action plan and get the AED.**

7. You and another BLS Provider are giving CPR to a 7-year-old child when the AED arrives. You turn on the AED, switch the AED to pediatric energy levels, and apply the pads. The other BLS Provider should:

a. **Continue high-quality compressions while the AED is charging.**
b. Loudly say, "Clear!" to make sure no one is touching the patient.
c. Press the button on the AED to deliver the shock, if advised.
d. Pause compressions and breaths until the AED is ready to analyze.

8. **To locate the brachial pulse on an infant, place two or three fingers:**
   a. midway between the hip bone and pubic bone, just below the crease to the leg.
   b. in the groove on the patient's neck, between the trachea and side neck muscles.
   c. **inside of the upper arm, midway between the elbow and shoulder.**
   d. under the bony part of the jaw, in the soft tissue near the chin.

9. **Your adult patient is making abnormal gasping, snoring sounds. You definitely feel a carotid pulse. What should you do?**
   a. Start high-quality CPR, beginning with chest compressions.
   b. Assess scene safety and take standard precautions.
   c. Check the carotid pulse about every two minutes.
   d. **Provide rescue breathing or bag-mask ventilation.**

10. **When breathing slows or stops, it leads to bradycardia, a slow heart rhythm of fewer than ¬¬__beats per minute.**
   a. 140
   b. 90
   c. 75
   d. **60**

11. **You are a lone BLS Provider responding to a possible adult cardiac arrest. The scene is safe. You have taken standard precautions. An untrained bystander heard the person collapse. You have activated EMS or your occupational emergency action plan. Other providers are on the way. An AED is located in the building, about 3 minutes away. The patient is unresponsive and making gurgling sounds. You do not feel a carotid pulse. You have a CPR mask with a one-way valve. What should you do?**
   a. **Send the bystander to get the AED. Start high-quality CPR.**
   b. Get the AED. Tell the bystander to stay with the patient.
   c. Open the airway and provide rescue breathing with the CPR mask.
   d. Reassess the patient's responsiveness, airway, breathing, and pulse.

12. **You and another BLS Provider have responded to a call for a 5-month-old infant with trouble breathing. The scene is safe. You have taken standard precautions. The infant is unresponsive and gasping. You have activated EMS or your occupational emergency action plan. A weak brachial pulse at about 40 beats per minute is felt. The infant's skin is mottled, and the hands and feet are cool to touch. Other BLS Providers are a few minutes away with an AED. What should you do?**
   a. **Start high-quality CPR.**
   b. Maintain an open airway.
   c. Reassess responsiveness, airway, breathing, and pulse.
   d. Provide bag-mask ventilation and check the pulse every 2 minutes.

13. **You have applied adult AED pads to your patient's chest, but the patient's chest hair is preventing the pads from adhering to the skin. What should you do?**
   a. **Remove the pads, shave the hair where necessary, and reapply pads.**
   b. Place 1 pad on the middle of the chest and 1 in the center of the back.
   c. Hold the pads firmly in place until just before a shock is delivered.
   d. Remove the pads, quickly dry the chest, then reapply pads.

14. **The use of pediatric pads should be avoided in patients 8 years of age and older because:**
   a. The energy level of the shock will be too high.
   b. **The energy level of the shock will be too low.**
   c. Some pads require a front-and-back position.
   d. The energy level of the shock will be fatal.

15. **You are a lone BLS Provider responding to a possible cardiac arrest. The scene is safe, and you have taken standard precautions. The patient is unresponsive. You have activated EMS or your occupational emergency action plan. Other providers are on the way and you have an AED. The patient is occasionally gasping. You do not feel a carotid pulse. What should you do?**
   a. Immediately start CPR, beginning with chest compressions.
   b. **Power on the AED. Apply adult pads to patient's bare chest.**
   c. Reassess the patient's responsiveness, airway, breathing, and pulse.
   d. Open the airway and provide rescue breathing or bag-mask ventilation.

16. **You are in the airway position of your BLS team providing bag-mask ventilation for a 6-year-old child pulled unresponsive from a swimming pool. A carotid pulse at about 100 beats per minute is definitely felt. Proper bag-mask ventilation requires that you:**
    a. Give 30 to 40 breaths per minute.
    b. Position yourself at the patient's side.
    c. **Ventilate until you see the chest rise.**
    d. Give a rescue breath by blowing through the mask valve.

17. **The resuscitation triad, or triangle, is made up of the roles:**
    a. Team Lead, CPR Coach, and Medicator
    b. Team Lead, Compressor, and Airway
    c. **Compressor, CPR Coach, and Airway**
    d. Compressor, Airway, and Medicator

18. **Four BLS Providers have been performing CPR on a cardiac arrest patient for 18 minutes. The last switch in roles was only about a minute ago, but the compressor says, "I'm exhausted." What should they do?**
    a. **Coordinate to switch out the compressor.**
    b. Stop CPR for about 2 minutes to rest.
    c. Encourage the compressor to perform high-quality compressions.
    d. Stop compressions but continue to ventilate once every 6 seconds.

19. **You have been giving abdominal thrusts to a choking adult with signs of a severe obstruction. He suddenly becomes unresponsive and slumps to the floor. You should:**
    a. Sweep the mouth with your fingers.
    b. Check for a carotid or femoral pulse.
    c. Leave immediately to activate EMS.
    d. **Begin CPR, starting with compressions.**

20. **You are responding to a shout for help from Outpatient Services. As you approach, you find a distraught teen holding a pale, 2-month-old infant. "I was feeding him. He started choking. Oh please - please - help him." The scene is safe, and you have taken standard precautions. The responsive infant is coughing weakly and making a whistling sound when inhaling. You have activated your facility's occupational emergency action plan. What should you do now?**
    a. Calm the teen. Stand ready to help if things get worse.
    b. Attempt to sweep out the obstruction with your finger.
    c. **Hold the infant facedown over your forearm and give 5 back slaps.**
    d. Place the infant on a firm, flat surface. Begin CPR starting with compressions.

21. **You are attempting to relieve a severe airway obstruction in a responsive pregnant patient. You should:**
    a. Give 5 forceful back slaps and 5 chest thrusts.
    b. **Use chest thrusts instead of abdominal thrusts.**
    c. Perform about 2 minutes of CPR before checking pulse.
    d. Reach into the mouth to sweep for the obstructing object.

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